

2.0 BACKGROUND

2.1 Canal History

The St Helens Canal was authorised by Parliament as the Sankey Brook Navigation in 1755 but was constructed as a true canal, the first in England, and was the first canal designed to carry industrial cargoes as opposed to agricultural goods.

It was opened between collieries at Blackbrook, Haydock and Sankey Bridges, for access to the River Mersey, in 1757. To improve access to the Mersey Estuary for the coal traffic to Liverpool, an extension from Sankey Bridges to Fiddlers Ferry was opened in 1762.

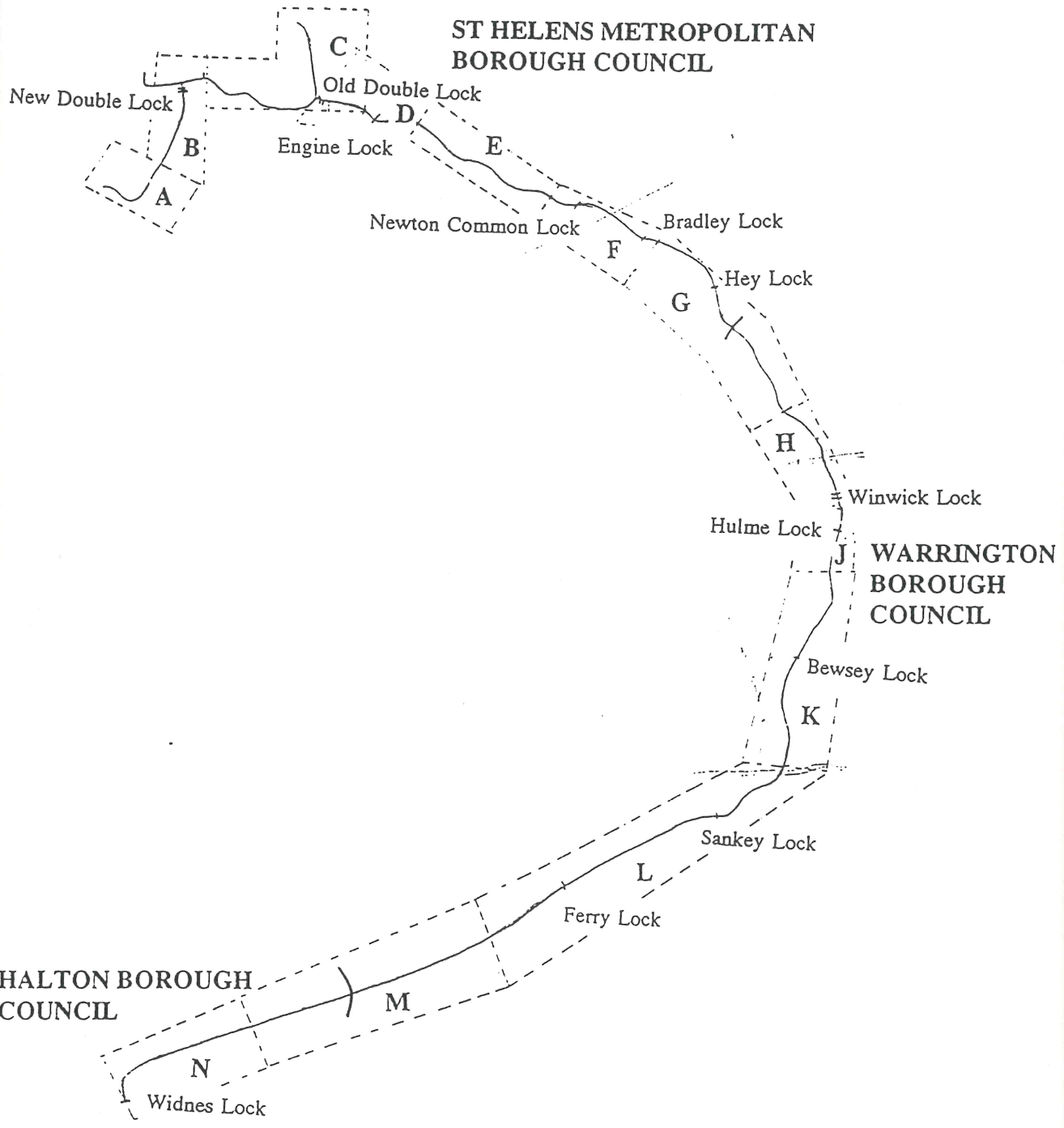
By 1775 the canal had been extended into the centre of St Helens and all branches in the St Helens area, ie. Blackbrook, Boardmans Lane, Gerrards Bridge, Pocket Nook, Sutton and Ravenhead had been completed. The canal was later extended from Fiddlers Ferry to Widnes, again to improve access to the estuary, with this final section being opened in 1833.

This period of expansion was the busiest in the canal's history with barges supplying the raw materials for the iron foundries, copper smelting works, alkali works, glass works and various chemical industries of St Helens.

In 1845 the canal company was amalgamated with the St Helens and Runcorn Gap Railway Company and subsequently, in 1864, the St Helens Canal and Railway Company was absorbed by the London and North Western Railway.

In the mid 1800's most of the works which used the canal to transport their raw materials relocated to Widnes and sections of the canal in St Helens began to fall into disuse. Increasing competition from railways also led to a decline in traffic. In 1898 a section at the end of the Ravenhead branch became the first part of the canal to be filled in.

The last boat to navigate the full length of the canal up to St Helens did so in 1919 and in 1931 the canal was officially abandoned above Earlestown. In 1959 the last commercial traffic was seen on the canal when a cargo of sugar was carried to the Sankey Sugar Works in Earlestown. In 1963 the canal was officially abandoned along its remaining length by Act of Parliament.



ST HELENS CANAL
 Key Plan
 Canal Sections

Between 1963 and the mid 1970's the canal was completely neglected and several sections were infilled with waste material and domestic refuse.

In the late 1970's and the 1980's the three Local Authorities Halton, Warrington and St Helens carried out various improvements on the sections of canal which were still in-water vastly improving the appearance and amenity value of the canal. Moorings for pleasure craft were provided at Widnes and Fiddlers Ferry which could be accessed from the River Mersey via the Widnes and Fiddlers Ferry Locks respectively. However, by this time a large proportion of the canal had been in-filled and several large obstacles had been constructed across the line of the canal preventing through navigation from being re-established.

2.2 Engineering and Heritage

The St Helens Canal was an important link in the transition from river navigations to canals and was a major factor in the establishment of the Industrial Revolution in the North West of England.

Navigable Waterways in the Mersey Basin

By the early eighteenth century, the practice of improving rivers for navigation by constructing weirs and pound locks and by making artificial channels or cuts was well established. But a higher degree of expenditure and of engineering expertise would be required to construct wholly artificial waterways above rivers. Works to improve the rivers Mersey and Irwell, involving the construction of eight locks between Bank Quay at Warrington and Manchester were completed about 1725. The rivers had been surveyed by Thomas Steers who, it is believed, also acted as engineer.

Steers was also responsible for the Douglas Navigation between Wigan and the Ribble Estuary and subsequently for major dock works in Liverpool and London. More significantly, in the context of the St Helens Canal, he also surveyed and supervised the construction of the Newry Canal in Northern Ireland linking Carlingford Lough and Lough Neagh. This, the first true canal in the British Isles, was opened in 1745.

Thomas Steers' assistant on the Newry Canal was Henry Berry, who took part in the survey for the proposed scheme to make the Sankey Brook navigable from St Helens to the Mersey. Although originally conceived as a river navigation, it was at Berry's suggestion that a canal was built instead and supplied with water from the upper tributaries of Sankey Brook and from the brook itself. Although not a summit level canal like the Newry Canal, it was not constructed as a river canalisation but with a

separate parallel channel and became, therefore, the first canal to be built in England. Thus, predating by four years, the Bridgewater Canal, which opened from Worsley to Manchester in 1761.

From 1758, Henry Berry worked on a programme of improvements to the Weaver Navigation, which had made the River Weaver navigable up to Winsford in 1732.

All these improvements to the navigable waterways in the Mersey Basin in the first part of the eighteenth century reaching into the Cheshire saltfields and Lancashire coalfields gave rise to the birth of the chemical industry.

St Helens Canal

The canal was constructed to carry sailing vessels, such as Mersey Flats and other sailing barges, entering from the estuary. There were, therefore, no fixed bridges and the waterway width, draft and side clearances were determined by the need to allow the passage of sailing craft.

No records remain of the canal's construction. It seems unlikely that, as originally constructed, the canal was lined with puddled clay to retain water, as for much of its length the canal appears to have been routed within natural clay and obtaining water supplies in what was then a rural area was unlikely to be a problem. It is possible, however, that clay would have been used in places where sand or other permeable stratum was encountered in the formation of the canal and where seepage could have caused bank failure.

It is understood that the Bridgewater Canal was not lined with puddle clay except where, for example, the bed of canal was constructed in permeable soils in sidelong ground, where the downhill side bank usually has clay core. In later canals, in permeable soils, or where water supply was a problem, the tendency was to construct a puddled clay lining.

Henry Berry built two double locks on the St Helens Canal, with Old Double Lock being the oldest lock of this type in England.

The canal was also used for one of the earliest experiments in using steam power as a means of propulsion for canal boats, when in 1793, a loaded barge was worked up and down the canal by a steam engine on board the barge.

The sites of particular importance to the industrial heritage are described in Volume 4.

2.3 Present Condition

The 'Guide to the Sankey Canal Towpath' produced by the Sankey Canal Restoration Society (SCARS) provides an excellent introduction to and description of the canal and its present condition. It is not intended to reproduce that text here, but the following comments include the references used in the guide so that the two documents can be read in conjunction. The sections referred to in the guide are shown in Figure 2.1.

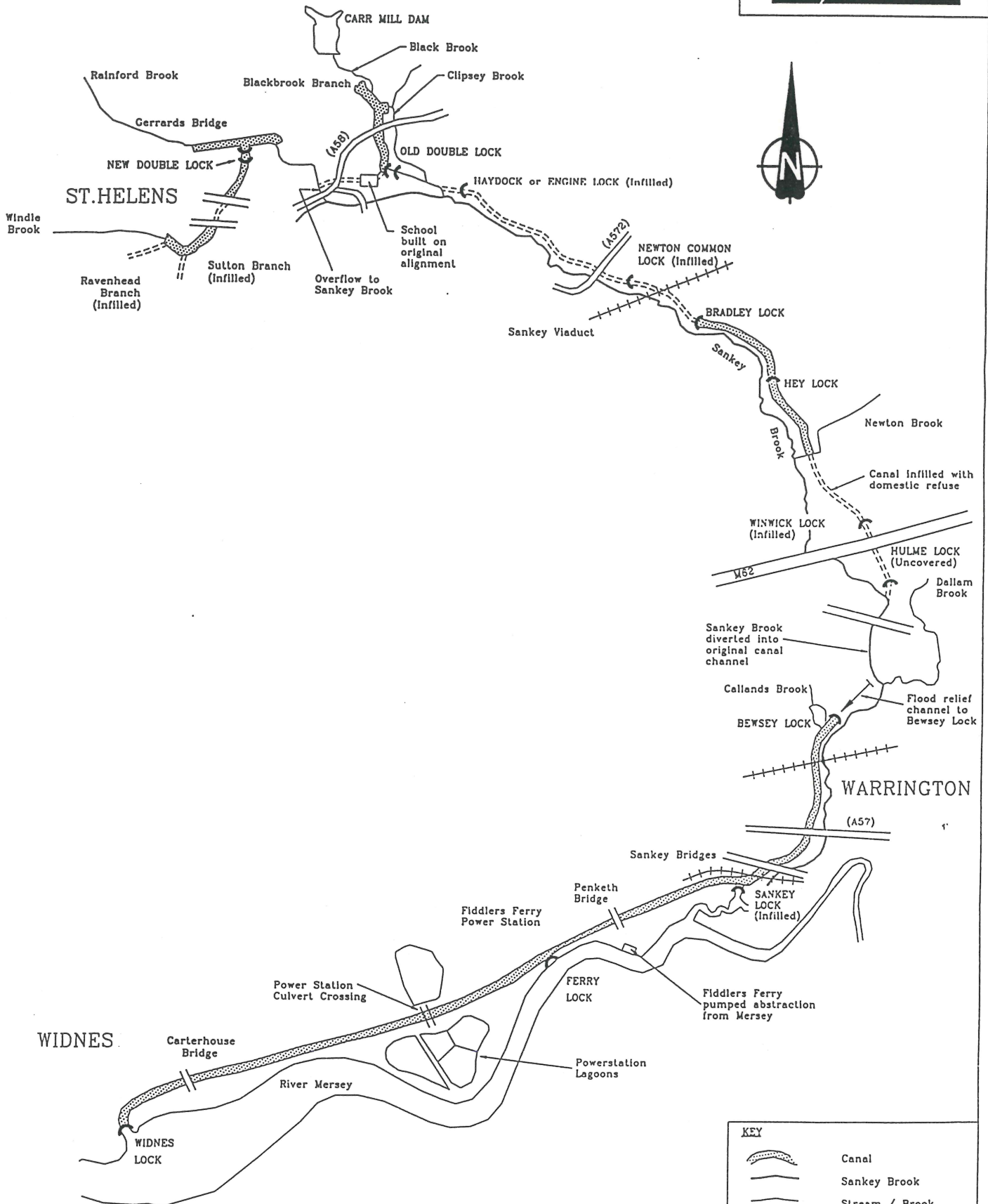
Ownership of the St Helens Canal is held by St Helens MBC, Warrington BC and Halton BC, within their respective boundaries, except where noted to the contrary in the summary of features that follows below.

At present, much of the canal has been infilled. The remaining in-water sections are a recreational asset and are managed by the three Borough Councils to provide angling and wildlife habitats. Navigation on these existing sections is restricted due to the number of structural obstacles and the level of silt in the canal. The only sections which are regularly used for boating are the yacht havens at Fiddlers Ferry and Spike Island. A schematic of the canal's current status is shown in Figure 2.2. Canal chainages can be referred to in the track sheets provided in Volume 5.

A brief summary of the features of each section of canal is given below. Further details on the structures and statutory services along each section are provided in Volume 2. A description of the ecology along the canal route is included in Volume 4.

Section A : Safeway to The Salvation Army Hostel (Corporation Street) Chainage 24,450 - 23,580

Ownership of the culvert under the Safeway car park which supplies the canal is not clear. It would appear to be owned by British Waterways, although the water entering the canal feeder is supplied by Pilkingtons from a series of reservoirs under their ownership. Pilkingtons control the flow into the canal at this point and maintain the canal feeder, though they do not claim ownership of this section. It is understood that the whole of the "Hotties" section of the canal above the weir (24,275m) to the present terminus at the Safeway supermarket (24,450m) was sold by British



KEY	
	Canal
	Sankey Brook
	Stream / Brook
	Canal crossing
	Railway
	Lock
	Infilled canal
Project	ST HELENS CANAL RESTORATION
Title	SCHEMATIC OF CANALS CURRENT STATUS

Waterways to Pilkingtons in 1992. The weir is used to maintain sufficient water depth for Pilkingtons' abstractions.

Navigation on this section is obstructed both by the weir and by an embankment carrying the Liverpool to Wigan railway line (24,350m). The original bridge spanning the canal and towpath was replaced by an embankment, with a pipe to maintain water flow, across the canal and a separate short span bridge across the towpath.

The section of the canal from the Pilkingtons weir (24,275m) to the dual carriageway (Parr Street) is owned by St Helens MBC. At the time of the inspections for the feasibility study, this section of the canal was undergoing renovation work. No canal liner was apparent and the canal was being excavated to a depth in excess of 3.5m in places.

The abattoir that was located on the infilled section near Corporation Street has now closed down and the site has been cleared for new development. St Helens MBC are encouraging a development that will reinstate the canal on this site.

Section B : Corporation Street to Islands Brow
Chainage 23,580 - 22,425

The canal in this section has been renovated by St Helens MBC

The canal has been infilled near the Technology Campus (23,220m) and Pocket Nook Street to provide access to the campus. The infilled length is 87m long and the campus access road would not allow the required air draft for navigation at its existing level. Two pipelines from British Oxygen to Pilkingtons cross the canal on the south side of Pocket Nook Street.

The New Double Locks have been refurbished, a by-wash constructed and new lock gates installed. An access road links 2 factory buildings of the Ravenhead Glass plant just upstream of New Double Locks. The access road is constructed on an earth embankment, which infills the canal, and carries two pipelines from British Oxygen (BOC) to Pilkingtons.

Rainford Brook has been diverted into the Gerrard's Bridge section of the canal, which is now designated as "main river" by the Environment Agency (EA) (formerly the National Rivers Authority). A number of threatened legal actions by the EA have promoted schemes which have considerably improved the water quality in this

section. The greatest improvement arose from the construction of a cut-off drain for the Burgy Banks by Pilkingtons and the possibility of further improvements are under discussion.

Section C : Islands Brow to Black Brook

Chainage 22,425 - 20,695

The section of canal from Islands Brow to the overflow into the Sankey Brook (22,425 - 21,475) is designated "main river" by the EA as it carries Rainford Brook.

The section up to Old Double Locks (21,475 - 20,695) has been completely infilled and is now occupied by a school and playing fields. Black Brook Road A58 has also been constructed across this infilled section adjacent to the school.

The Black Brook Branch is still owned by British Waterways. It is currently in-water and is designated "main river" by the EA as it carries the greater part of the flow in Black Brook. There are 3 No pipelines in the bed of the canal over much of the length of this branch. They are owned by ICI, Shell and British Gas and are a major obstacle to canal restoration and on-going maintenance of this section.

Section D : Old Double Lock to Engine Lock

Chainage 20,695 - 19,795

The section from Old Double Lock to the junction with the Sankey Brook (20,695 - 20,055) is designated main river by the EA. It is supplied by water overflowing from the Black Brook branch at the Old Double Locks.

Black Brook itself runs parallel to the line of the canal joining the canal near its confluence with the Sankey Brook.

The flow in the canal from Black Brook has eroded a deep channel in this area and the original canal banks, though heavily overgrown, are still visible on both sides.

Section E : Engine Lock to Penkford Bridge

Chainage 19,795 - 17,675

This section is infilled over much of its length and is of considerable ecological and environmental value due to the wildlife habitat it provides in a series of isolated pools which also includes the Havanah Flashes. The flashes are not only of value as a

habitat, but also act as a useful flood relief for the Sankey Brook, during low return period storms.

The periodic inflow from these storms, rainfall and natural land drainage are the only water supplies to this section. These seem to be sufficient to sustain these isolated ponds.

Section F : Penkford Bridge to Bradley Lock
Chainage 17,675 - 16,375

This section is completely infilled and much of the line is obscured. Pipelines cross the canal near Penkford Road Bridge (17,670m) at a level which would not provide sufficient air draft to allow navigation.

Significant contamination of this infilled section occurs as a result of leachate from the adjacent Sankey Valley Industrial Estate, on the site of the former Sankey Sugar Works.¹

A track access for farm vehicles across the infilled canal exists upstream of Newton Common Lock (17,260m). This access would have to be maintained after the canal restoration.

Section G : Bradley Lock to Newton Brook
Chainage 16,375 - 14,635

This is the longest in-water section in St Helens and is an important habitat and public asset as it is used for angling, walking and riding. It is maintained by inflows from the surrounding surface water sewerage systems and land drainage.

The depth of water in this section is insufficient to allow navigation and dredging would be required if it were to be re-established.

¹ A leachate interception channel has recently been constructed within the infilled canal and connected to the foul sewer also within the infilled canal.

Section H : Newton Brook to Winwick
Chainage 14,635 - 12,645

This section is completely infilled with domestic refuse.

The canal is crossed by Alder Lane/Hollins Lane on a high level bridge (14,115m) and by Alder Lane/Watery Lane at original canal level on the site of a former swing bridge (13,365m). Access to a scrap yard and a small garden shed manufacturer encroaches onto the line of the canal just north and south of the M62 respectively.

The construction of the M62 (12,795m) allowed for the maintenance of the hydraulic continuity of the canal by provision of 2 x 32" culverts beneath the embankment. These are still in place and could be utilised as part of a phased restoration programme.

Section J : Winwick to Dallam
Chainage 12,645 - 11,000

Sankey Brook originally crossed the canal at two locations north of Dallam. It was culverted under the canal and immediately upstream, at Water's Meeting, it crossed on the same level as the canal, thus providing an additional source of water for the lower pounds. In the late 1970's, as part of a flood alleviation scheme, Sankey Brook was diverted into the canal channel, after deepening, and the original course of Sankey Brook through Dallam was renamed Dallam Brook.

The canal upstream of Dallam was then abandoned and infilled north of the Sankey Brook up to Newton Brook. The canal channel through Dallam was then deepened to accommodate the Sankey Brook flow and a new channel was constructed to connect the diverted Sankey Brook with its original course to the east of Bewsey.

Section K : Bewsey Lock to Liverpool Road
Chainage 11,000 - 8,155

The dry channel from the Sankey Brook to Bewsey Lock is a valuable wildlife habitat due to the intermittent flooding it receives from the Sankey Brook.

Just south of Bewsey Lock, Callands Brook enters the canal from the West via Callands Pool (10,450m). This water source is intermittent and can dry up for long periods during summer months.

The canal is crossed by the old Bewsey Swing Bridge, which is no longer able to swing and is now fixed in position, and a new footbridge (10,280m) which do not provide sufficient air draft to allow navigation.

The canal is also crossed by the Sankey Way Dual Carriageway (8,855m) which is again at a level which does not provide sufficient air draft for navigation.

This section of the canal is highly silted with the water depth varying considerably. In general the required absolute minimum draft of 1.2m is not available to allow navigation. However, as part of organized events in the Sankey Valley Park and at Bewsey Hall the canal has had boats sailing along it between the Bewsey Swing Bridge (10,280m) and Sankey Way (8,855m). Boats had to be lifted into and out of the canal at Sankey Way and have proved a popular attraction.

Section L : Liverpool Road to Fiddlers Ferry Lock
Chainage 8,155 - 5,200

This section is in-water and contains the Fiddlers Ferry yacht haven managed by Warrington Borough Council.

This section of canal is crossed by a number of bridges the most significant of which are Liverpool Road (8,155m) and the Warrington to Widnes freight railway (8,035m) both of which have insufficient air draft to permit navigation. However, an access bridge at Penketh has been replaced recently by Warrington BC with a new structure which is capable of being modified to allow its operation.

Section M : Fiddler's Ferry Lock to Carter House Bridge
Chainage 5,200 - 1,770

This section is again in-water, but is heavily silted. The canal has again been narrowed at certain parts to protect the high pressure gas main in the southern bank.

Section N : Carter House Bridge to Widnes
Chainage 1,770 - 0

This section is in-water and includes the Spike Island yacht haven which is operated by Halton Borough Council. Except for the yacht haven, the canal is heavily silted.

2.4 Key Issues Affecting Restoration

From an appraisal of the canal in its present condition and the initial stages of the feasibility study, a number of issues were identified as being critical to the satisfactory restoration of the canal to navigation.

- **Water Demand and Supply**

Since the abandonment of the canal, the original canal water supplies may no longer be available for use by the restored canal and alternative sources may be unsuitable in terms of quantity and quality.

This is discussed in this volume, Section 3, Hydrology.

- **Flood Defence**

Since abandonment of the canal the former arrangement of sluices at Waters Meeting has been abandoned and part of the former canal bed has been used as a new river channel, in order to alleviate flooding from Sankey Brook in the Dallam area.

Any increase in the flood risk to properties as a result of the canal restoration would not be acceptable. This is also discussed in this volume Section 3 Hydrology.

- **Infilled Sections**

Obviously these will need to be excavated. Where the sections have been filled with inert material this would be relatively straightforward. Where, however, sections of the canal have been infilled with refuse their restoration is more complex. The ground investigations undertaken in these areas are described in Volume 3 Technical Appendix - Geotechnics.

- **Contaminated Silt**

The in-water sections will need to be dredged but the silt is likely to be contaminated from years of industrial processes and cargoes.

The results of the investigations undertaken into the silt are also discussed in Volume 3 Technical Appendix - Geotechnics.

- Major Structures

Numerous fixed crossings of roads and rail lines over the canal at low level will require reconstruction. Some of these, including the M62 crossing, will form short tunnels rather than bridge crossings and a new aqueduct will be needed over the Sankey Brook.

These structures are described in Volume 2 Technical Appendix - Structures.

- Park Road/Boardmans Lane/Old Double Lock

The original canal bed was infilled many years ago and the route almost obliterated. A school has since been constructed on or close to the former route.

Options considered for new alternative alignments are discussed in this volume Section 4 Constraints on Restoration.

- Blackbrook Branch

A former swing bridge about half way along this branch was replaced by a low level fixed bridge many years ago to carry Blackbrook Road A58 across the canal. Additionally, for most of its length, the branch has been used as a route for a multiple pipeline laid in the canal bed.

Options considered for restoring this branch are discussed in this volume Section 4, Constraints on Restoration.