Grand Canal Barrow Line and Barrow Navigation
Architectural, Engineering and Industrial Heritage Assessment
2007
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Assessment 2007.

Commissioned by Waterways Ireland and carried out by Headland Archaeology Ltd

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1. INTRODUCTION

This report presents a built heritage inventory and complete survey of the architectural, engineering, industrial heritage of the Grand Canal Barrow Line and Barrow Navigation (Figure 1), with an analysis of the importance of each site/feature identified, to help inform Waterways Ireland on the nature of the surviving cultural heritage features associated with the navigation that may be impacted upon by future development strategies. The assessment was carried out along the navigation corridor as defined by map detail, encompassing a zone extending 50m either side of a discernable centre-line, irrespective of property ownership.

The Grand Canal Barrow Line and Barrow Navigation are located in a mixed urban and rural landscape which has been subject to much change since the entire stretch was first opened to traffic in 1791. In its entirety (127 km), the combination of canal and navigation passes through the counties of Kildare, Laois, Carlow and Kilkenny.

The Grand Canal Barrow Line, which includes the Mountmellick branch, begins at Lowtown and passes through a primarily rural landscape as well as the towns of Rathangan, Monasterevin and Athy. These urban centres are dominated by a residential and industrial landscape, the nature and extent of which have been influenced greatly by the construction of the canal. The navigation promoted the commercialisation and industrialisation of these areas during the late eighteenth/nineteenth centuries and found physical expression in the warehouses and canal hotels such as that at Roberstown and Monasterevin, as well as the many houses which were built by the prosperous merchant class. Though many of these features have since disappeared, a number are still visible in today’s landscape and serve as a reminder of the heritage of the navigation.

The Barrow Navigation incorporates the Barrow River and stretches from Athy to St. Mullins in Co. Carlow. Like the Grand Canal Barrow Line, it passes through a primarily rural setting but also through a number of towns. These include Goresbridge, Graiguenamanagh, Carlow, Leighlinbridge, Bagenalstown and St. Mullins. These urban centres have been subject to much economic and architectural influence relating to the construction of the canal. Evidence of this influence is similarly to be found in the today’s landscape in the form of warehouses and houses that were built by the merchant classes. These serve as a reminder of the prosperity brought to these areas during the late eighteenth/nineteenth centuries and again emphasise the built heritage of the navigation and its hinterland.

2. HISTORICAL BACKGROUND

For the purpose of this report, the various construction phases of the Grand Canal Barrow Line and Barrow Navigation have been dealt with separately and accordingly, these have been assigned individual historical background (HB) numbers. In order to contextualise these construction phases, brief overviews of the years preceding this work as well as the construction techniques adopted during the execution of the navigation, are presented below.

Table 2.1: Historical Background Areas.

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In addition, an economic overview of the Grand Canal, comprising the Grand Canal Barrow Line and Barrow Navigation, is provided following the accounts of the various construction phases (HB01-HB04). This effectively allows the subject of the navigation to be examined against the backdrop of its economic success, subsequent decline and present day circumstances.

Early Years

In 1715, Act 2 Geo I, c 12 (Ir) authorised extensive navigation schemes throughout Ireland at the public expense. One of the schemes authorised by the Act had been a proposal to link Dublin with the rivers Shannon and Barrow. Each improvement was to be in the hands of a body of commissioners. However, little work was achieved and an Act of 1721 revised the appointment of commissioners, henceforth to be Members of the Parliament and Justices of the Peace in the counties where the works were undertaken. This was again altered in 1729, the revised Act stipulated the appointment of a group of commissioners for each province and further empowered parliament to collect dues on certain luxury items and to disburse these monies on navigation projects. This Act led to the construction of the Newry Canal and the initiation of the Coalisland Canal.

By 1751, complete centralisation had been achieved with the establishment of the ‘The Corporation for Promoting and Carrying on an Inland Navigation in Ireland’, a group more commonly known as the Commissioners of Inland Navigation. Recognising Ireland’s need for an extensive network system to encourage trade during this ever-increasing industrial era, the group was responsible for setting the wheel in motion. It was under this body that construction of the Grand Canal commenced in 1756, and thus began the real era of canal construction in Ireland.

This group was also responsible for commencing work on making the River Barrow navigable from Monasterevin to St. Mullins in 1761. Initially this work was financed by public work grants but as these funds reduced it was declared that the work would have to be financed by the commissioners from their appropriated duties. In 1787 the commissioners were abolished and local commissioners were subsequently nominated to administer works on the navigation.

An earlier Act passed in 1771-72 allowed the commissioners to transfer works to private undertakers, while at the same time another contemporary Act authorized partnerships to be formed to make navigations. It was under this body of legislation that the Grand Canal Company was incorporated. Public financing of previous projects had been scandalously corrupt so it was felt more may be achieved by private enterprise. The Barrow line was transferred in this way when work on its construction commenced in 1761.

Construction Techniques

For the most part private contractors were responsible for executing the construction works, although it was not until the early nineteenth century that large-scale contracting got underway. In the early years of canal construction, most of the work was carried out by small-scale local contractors, to whom the relevant overseeing company supplied all the building materials and work-men’s tools, and transported these materials by boat to the works in hand. Mechanical excavators had not been invented in time to aid with the majority of canal construction, so an immense force of human labour was required. For example, during the year 1790, 3,944 men were reported as working on the Grand Canal, while some 2,000 men were reported as working on the Royal Canal, upon which work had commenced that year. This system of employing small-scale private contractors was challenged when
the canal construction company ‘Henry, Mullins and McMahon’ was incorporated in 1808. Their success was unrivalled and they served as a real threat to smaller contractors.

A typical survey to be carried out prior to the construction of a canal is described by Charles Vallencey in his book which was first published in 1763. He states ‘The ground should be frequently bored when the canal is to be dug in order to avoid if possible all bogs and rocks which exceedingly increase the expense of building the canal’. He also recommended that cross-sections should be cut across the line of the canal at intervals so as to establish the type of soils that would be encountered during construction works. Subsequent to the proposed route having been surveyed, plans were drawn up concerning the details of features such as locks, lock-keeper’s houses, bridges, aqueducts and sluices which were to be constructed along the route also. Canal construction techniques adopted in Ireland were influenced by continental, as well as British methods in many instances. We see this continental influence in features such as locks, whereby the lock chambers on early canals and river navigations of the 1750s tended to be both wide and long. Once the route had been set out construction works could commence. A supervising resident engineer was usually elected to oversee the running of this day-to-day work. Along with his assistants he would peg out the line of the cut, allotting sections to a number of canal contractors who would be commissioned to carry out the construction work.

In order to make the canal watertight, puddle clay was used. This was a light loam or clay mixed with water, the principal of which was to impregnate the earth or clay so that it could hold no more water. Puddle was prepared by finely chopping loam, preferably mixed with coarse sand or gravel as a deterrent to rats, with a spade and mixing it with water to a semi-plastic state. It was then applied in 9” or 10” layers. This technique had been used prior to the canal age, by tanners to line their pits, and for the Dutch drainage works in the Fens. If the canal was dug out of permeable ground, both the sides and bed would have been lined with puddle, while if the canal was in a watertight bed, then only the banks thrown up above ground level necessitated sealing with what was called a puddle-ditch or puddle-gutter. In the banks, the puddle ditch was built up as the banks rose, the sides of the ditch being lined with sods or spits of earth. The ditch was generally about three feet wide and went about a foot into the watertight layer to make a good seal.

As the canals often took many years to reach completion, a number of engineers and consultants were commonly involved in any one project, as will be exemplified by the following discussions on the various construction phases of the Barrow Line and Barrow Navigation.

HB01: Lowtown to Monasterevin

Work began on linking the river Barrow with the Grand Canal in 1783. By this time work on the Grand Canal was already well under way and the company decided that it would be more practical to complete a junction with the River Barrow before proceeding with the line to Shannon. Advertisements were issued seeking tenders for the earthworks of the canal to Monasterevin in lots of ½ mile and these were undertaken by private individuals.

Thomas Black was one such individual who signed a new contract to construct two locks at Ballyteague bog for £750 each, with an undertaking to keep them in repair for seven years.

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2 Rynne 2006, 345
4 Paget-Tomlinson 2006, 35
5 Ibid.
Advertisements were issued seeking tenders for the construction of the canal to Monasterevin in lots of $\frac{1}{2}$ a mile. In September 1783, the *Freeman’s Journal* reported:

‘Last Tuesday the evaluation of the lands through which the Grand Canal is to be cut to Monasterevin was concluded to the satisfaction of all parties, the line being mostly through bog will, by drainage thereof, be of infinite service to the contiguous proprietors. The work of this great national undertaking is now carrying on with the greatest spirit at the bog of Ballyteague.’

Construction works forged ahead and by May 1784 the committee of works reported 300 men working at Ballyteague. Optimism remained high and it was anticipated that the canal would reach Monasterevin by the end of the same year. This was not to be, however, for the stretch of canal through Ballyteague bog proved very difficult to construct and severe bog subsidence eventually forced the canal company to construct a new stretch of canal and close the original section. Some discrepancies in the levels also necessitated the erection of an additional lock at Ballyteague and the conversion of the Rathangan lock into a double lock. Bernard and M. B. Mullins wrote a paper entitled *The Origin and Reclamation of Peat Bog with some Observations on the Construction of Roads, Railways and Canals in Bog* in which they refer to these mistakes. In this paper they state:

‘...the water was forced into the canal before a sufficient sectional area was obtained; and it was by dredging at a great expense and loss of time, that an imperfect navigable depth of canal was subsequently had; and so clumsy were the operations then carried on, ...it was discovered, on the opening of the navigation, that a mistake of 4ft 6in had been made in the bog level.’

The difficulties imposed by the boggy terrain coupled with imperfect engineering techniques resulted in costly and time consuming alterations, the 21st lock, which was originally at the southern end of the bog near the aqueduct, was removed, the 20th lock became the 21st at a lower level and a new lock was inserted, the present 20th. All signs of the old line have now disappeared with the exception of the original 21st lock, the position of which is apparent from the lockhouse sitting on its original foundations. This arduous experience was to be invaluable for one individual, as it was during construction work through Ballyteague bog that Mullins gained valuable experience about the difficulty of constructing a canal through boggy terrain. He was later to become one of the partners in Henry, Mullins and Mc Mahon, the first major canal contractor in Ireland.

On 15th January 1785 the *Dublin Evening Post* informed its readers that the canal would be completed to Monasterevin in less than a month. Finally on 20th October it was reported that a boat, the Carlow Volunteer, had entered the canal from the Barrow at Monasterevin, ‘an event that must give pleasure to all who have this great inland navigation at heart’. Although Irish canals were originally intended to facilitate cheap bulk transport, passenger services were also introduced from a relatively early period. In 1780, passenger boats were introduced on the Grand Canal, serving Osberstown in Co. Kildare, and Dublin. This service was extended to Robertstown in 1784 and Athy, Co. Kildare in 1791 and transported passengers to and from all areas in-between including the Lowtown to Monasterevin stretch of canal. These passenger boats served as far south as Carlow once this route had been

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6 Quoted in Delany 1995, 25
7 Quoted in Delany 1995, 26
8 Quoted in Delany 1995, 26
completed but it was not as successful as was anticipated and the Barrow Line service was subsequently reduced and served only as far as Athy from 1809 onwards.

The canal was a huge catalyst in creating the town of Monasterevin as it today. The town’s economy thrived on distilling (e.g. Cassidy’s distillery 1784-1934) and milling, the success of each which was no doubt promoted by the canals. A series of warehouses along with a canal hotel were constructed, evidence of which is still visible today. The money generated from the commercialisation and industrialisation of the town as a result of the Grand Canal found physical expression in the many houses that were built by the prosperous merchants, who succeeded in capitalising on the potential offered to the area by the canal. Such houses include a number of those on Drogheda Street as well as Bell Harbour on Canal Harbour which was a former canal agent’s house.

HB02: Mountmellick Branch

The construction of the Mountmellick Branch had been under consideration for many years before work actually commenced. The Queen’s County Canal Company, which formed in 1800, wished to construct a canal from Monasterevin to Castlecomer via Mountmellick and Portlaoise (Maryborough). Surveys were made by John Killaly and Mitchell Sparks. Killaly, who surveyed the line from Monasterevin to Maryborough, chose to work with an earlier survey drawn up by William Chapman, in which Chapman had suggested the construction of an aqueduct over the Barrow at Monasterevin to replace the cumbersome system of locking down into the river and up again. Discussions took place between the Queen’s County Canal Company and the Grand Canal Company but no active steps were taken to implement the proposed scheme for a number of years. Finally, in 1824 with construction of the Ballinasloe canal well underway, the Grand Canal Company directors decided to focus their attentions on this new line and they subsequently sought a loan to proceed with a canal to Mountmellick, with a possible extension to Maryborough. Initially, the loan commissions turned down the scheme but eventually approval was granted. Henry, Mullins and McMahon, one of the first private construction companies to be established in Ireland, won the contract and work commenced under Killaly’s supervision early in 1827.

The canal was 11.5 miles long with three rising locks and works preceded smoothly. The only challenge was a dispute started by a group of local gentlemen who complained that the ascent to some of the bridges was too steep. The company finally agreed to substitute turning bridges at Portarlington and Monasterevin. In order to allow the junction to be made with the new line and aqueduct, trade on the Barrow Line was stopped for several weeks in June 1829. Killaly warned that the new canal might take some time to fill because the dry gravelly soil would absorb a great deal of water. His prediction proved right and it was not until March 1831 that the canal was finally accepted from the contractors.

The first years of the Barrow as a working navigation were turbulent. The dry condition of the soil was to continue causing problems for John Stokes who stepped in to supervise the completion of the canal upon the resignation of Killaly in May of the previous year. He reported difficulty in keeping the water level up even to 3 ft after it was opened to traffic. In 1830 the canal was also forced to deal with a large number of claims from the adjoining landowners for damage to their properties resulting from the canal. At the same time, trade only built up slowly; in the years 1831 - 1834 the total revenue from

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9 Irish Commons Journal, 2 July 1800, XIX, part 2, app mlxxix-mlxxx; Journal of the House of Commons, 1805 (169), IV, 351, app B, p31; Tighe, William, Statistical Observations Relative to the County of Kilkenny (Dublin, 1802), app 4-6; Delany, pp 53-5: quoted in Delany 1995, 95
10 Delany 1995, 95
the canal amounted to £1,429 and the net profit of £342 was handed over to the loan commissioners. During subsequent years the profit never exceeded £100; the original loan had amounted to £33,416, thus the success envisioned for this section of the Barrow Line never fully materialised.

The Mountmellick Branch had originally been planned as a section of a canal which was to reach the Castlecomer fields. However, construction works never recommenced beyond the 11 miles (18km) to Mountmellick. By the 1950s it had almost ceased to be used and it was officially closed to navigation in 1960. The land was sold off, and many stretches including the section through Portarlington, have now been filled in.

HB03: Monasterevin to Athy

Work on the canal between Monasterevin and Athy commenced in 1789. The canal had reached Monasterevin in 1785 and as a result of the river between there and Athy being so full of shallows, it was decided to continue a still-water canal to Athy. Like the Lowtown to Monasterevin stretch, the canal was divided up into lots of about a mile which were taken on by various private contractors. Construction of the bridges, locks and aqueducts was similarly undertaken by local contractors. It was not until some time later that the larger canal contractors emerged, but it is interesting to note that one of the local contractors on this stretch of canal was John McMahon who later combined with two partners to found the engineering firm of Henry, Mullins & McMahon. Initially Richard Evans was the engineer in charge but as a result of his continuing commitments to other navigation companies which he refused to abandon, he was dismissed in December 1789 and subsequently became engineer to the Royal Canal Company.

His three assistants, William Rhodes, James Oates and Archibald Millar were consequently left in charge in his absence. By April 1790, Archibald Millar had taken over the role of head engineer. In April of the same year he reported that there were 3,944 men at work on the canal. In this report he highlighted the fact that it was quite difficult to find labourers:

‘In obedience to your orders and agreeably to my appointment, I have been over the works several times and have given general salutory facilitating instructions which I hope will soon have a good effect, along with proper instructions the regular supply of money will I expect in a short time puts a new face on the Athy Canal – thirteen pence per day subsistence mentioned to the labourers on the works has opened the countenance of every workman on the line – that will bring forward a great many more labourers to the works’.11

As had been encountered on the Lowtown to Monasterevin stretch of the canal, mistakes were made during construction and Millar’s subsequent report stated that parts of the canal would have to be deepened and the fall of two locks increased to allow depth of 5 ft on the Camac and Grattan aqueducts.

Many of the contractors found it difficult to complete the work within the timescale that had been agreed upon and as a result Millar declared that more men would have to be employed. When the Grand Canal Company refused his request to provide the tools and equipment necessary for the additional labour, they received an angry response:

‘I have been at great pains to hold forth the only certain mode by way of salve for curing the disorders of your backward works and shatter’d Contractors. I beg leave to repeat that it is

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11 Quoted in Delany 1986, 81
Eventually the board agreed to provide half of the required equipment. During the summer of 1790 Jessop, a figure who was rapidly becoming one of the foremost canal engineers in England, visited and reported on the development of the canal works stating that ‘the several works of the canal (putting expense out of the question) appear to be executed in a mannerly way’ 13. Thus it appears that the mistakes previously made were successfully rectified and that there was an ample supply of labour engaged.

Work continued through the winter and in January 1791 Millar reported:

‘Xmas times and very little work – weather also bad- a few of the subtaskers may finish this week’ 14

By March of the same year the canal was opened to trade and passage boats as far as Athy, although final work on the locks was still being undertaken. Millar received a gratuity of fifty guineas as a token of the board’s ‘approbation and esteem’ and was subsequently transferred to work on the Circular Line in Dublin which had begun the previous year.

The canal served as a huge catalyst in establishing Athy as a successful market town. As well as being an important location for trading, Athy served as a strategic location for many passengers who arrived to and from the canal passenger boats at this point, especially from 1809 onwards when the service to Carlow was withdrawn and Athy was the most southern location served by the Grand Canal passenger boats. The money generated from the commercialisation and industrialisation of the town as a result of the Grand Canal also found physical expression in the many houses that were built by the prosperous merchants who succeeded in capitalising on the potential offered to the area by the canal, evidence of which is still visible today in the town’s landscape.

Omer’s original estimate for the canal from Dublin to Athy had been £98,000; the final cost was a far cry from this modest calculation. Once the works had been completed, the figure stood at just under half a million pounds.

HB04: Athy to St. Mullins

In 1703 a Committee of the Irish House of Commons was appointed to bring in a bill to make the River Barrow navigable which would be paid for by public expense. An enormous amount of work was necessary to make the canal sufficiently navigable for the operation of the larger boats for which it was proposed to transport. New locks were to be constructed, old ones enlarged and additional lateral canals were to be built so as a navigation of 5ft could be provided for throughout. It was also necessary to make parts of the navigation deeper so as to accommodate the larger vessels that it would be transporting.

In 1709 it was reported by Colonel Smithwick that the river could be made navigable from Athy to the sea for £3,000. No work was undertaken until 1759, however, when the Burgess of Carlow petitioned Parliament for an amount of £2,000 to begin works from Monasterevin to St. Mullins. By this time the Commissioners Inland Navigation had been established, a body which was responsible for setting in

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12 Quoted in Delany 1995, 29
13 Ibid. 30
14 Ibid.
motion the real era of Irish canal construction. The grant sought by the Burgess was approved and by 1761, work commenced on the Barrow Navigation under engineers Thomas Omer and John Semple (overseer).

It wasn’t long before the £2,000 was reported as being spent, forcing Omer and Semple to seek an additional £5,263 just to complete the first four miles of the navigation from St. Mullins upstream to Graignamanagh. Two years later Omer reported that he had completed three miles of the navigation and that ‘considerable trade was being carried on’. However, he also sought another £2,000 to enable him to reach Graignamanagh.

Progress was slow and over twenty years later in 1783, construction efforts had only reached Clashganny, just upstream from Graignamanagh. By this time total expenditure stood at just over £32,000; a far cry from the original estimate especially considering that only a section of the project had been completed.

Tolls had been implemented for those sections that were already navigable. Humphrey Michell was the clerk and inspector for the Barrow Navigation in 1787. After a board meeting of the Barrow Navigation held on 7 September 1787 at Carlow, to decide the future tolls and regulations for the company, the following advertisement appeared in Finn’s Leinster Journal:

‘A Toll of 2s 2d. on every Boat carrying Loading, and plying between the Town of Athy and City of Waterford, up or down the River.

A Toll of 1s. 1d. on every empty Boat plying between the Town of Athy and City of Waterford, up or down the River.

The Pay-Gates for collecting the Tolls, viz.

Down the River, loaden Boats, Aughnagasha Lock 1s. 1d. – Graignemanagh Lock 1s. 1d.

Up the River, loaden Boats, St. Mullin’s Lock 1s. 1d. – Lodge Lock 1s. 1d.

Down the River, empty Boats, Aughnagasha Lock 6 ½ d. – Graignemanagh Lock 6 ½ d

Up the River, empty Boats, St. Mullin’s Lock 6 ½ d. – Lodge Lock 6 ½ d.

N.B. Any boats plying between the stated Stages must take out a ticket at the first Lock they pass through, and pay, which carries them no further than to the next Pay-Gate.

All Owners of Boats which ply on said Navigation, are required to number their Boats and the Owner’s Name with Letters and Figures of at least an inch in length, at their own expense, on the most conspicuous Part of their Boats, and to register the same with the Clerk and Inspector of this Board, under Penalty of being double tolled; and for the better Regulation of said Navigation, all Lock-Keepers are furnished with proper Books and Tickets for entering and passing Boats, and are required to keep and Account of the Date, No. Owners’ Names, where shipped from, and bound to, Quality of Loading, Burthen (Burden), and computed Value of all Boats passing their Locks; and the Masters of all Boats are required to give satisfactory answers, and to produce their tickets, which are to be indorsed by the different Lock Keepers between the Pay-Gates, and to give them up at the last Lock they are to pass through.
And the Act of Parliament provides against any Person or Persons obstructing or destroying any Work, Weirs, or Matters relative to navigations, to be deemed guilty of Felony, and punished accordingly.

By Order,

Hum. Michell, Clk. & Insp.
Carlow, September 8, 1787.¹⁵

When the commissioners were abolished in 1787, local commissioners were nominated to administer the navigation. Consequently, a number of efforts were made to form a company to take over the works. Eventually a group of subscribers produced a survey by Charles Tarrant and undertook to complete the navigation within ten years if they received a grant of £30,000, which they promised to match with subscriptions. It was to be a large undertaking as William Chapman stated that in order to enable boats of up to eighty tons to navigate the whole river from St. Mullins to the Grand Canal, twenty more locks would be required in addition to the seven already completed. On 10 October 1788, a general meeting of these subscribers was held at the County Court-House of Carlow, to discuss the opening of a complete communication by water between the bridge at Athy and the tide water at St. Mullins. William Burton was in the chair and the following resolutions were passed:

‘Resolved that the completing of an easy passage by water, for boats of Barthen (burden) ........ would be productive of the greatest utility, not only to the several counties through which the farne is to run, but also to the kingdom in general.

Resolved, therefore, that in order the more effectually to carry the intended scheme into immediate execution, a committee, be appointed, for the purpose of considering of plans and estimates of the several works necessary to be done; and that the following persons are hereby nominated for the purpose, viz.

His Grace the Duke of Leinster
Rt. Hon. Ld. Clifden
Tho. Burgh, Esq
Rt. Hon. D. Latouche
Corn. Bolton, Esq
Wm. Burton, Esq
Rich. Vickers, Esq
Sir R. Butler, Bart
William Colvil, Esq
Beauch. Bagenel, Esq
Hans. Hamilton, Esq
Sir Ch. Burton, Bart
Nich. Gordon, Esq
Hen Bruen, Esq
Robt. Cornwall, Esq
J Stannton Rochford, Esq
Nich. Loftus, Tottenham, Esq
Stewart Weldon, Esq
James Butler, Esq
Rich. Mercer, Esq

¹⁵ Quoted from http://www.askaboutireland.ie/show_narrative_page.do?page_id=3193
Sam. Carpenter, Esq
J. Hamilton, Esq
J. Stewart, Esq

Resolved, that any five of said Committee be quorum, and are hereby empowered to act as effectually as if the whole were present.

Resolved, that in order to enable the said Committee the better to execute the Powers to them given, a Deposite of one per Cent according to the Sum subscribed, be paid by each subscriber, into the Bank of the Rt. Hon. David Latouche, on or before the first Day of January, next; and that any five or more of said Committee, shall have Power from time to time of drawing for so much of the said deposite, as they shall judge necessary, provided that no money shall be so drawn for, unless such Drafts shall be signed by five or more of the said Committee.

Resolved that every subscriber who shall neglect to make good his deposite on or before the Day above-mentioned, shall be no longer considered a subscriber to the said Navigation.

Resolved, that Col. Tarrant be requested by this Meeting to complete accurate Plans and Estimates for a Navigation to follow the bed of the River, and also for a Canal on each side of said River, adhering as near as practicable to said river, with as much Expedition as in his power, in order to able the subscribers to make and application Parliament to carry on said works.

Resolved, that Notices, for convening the Committee shall be published one a month at least previous to the Time of Meeting, in the Dublin Evening Post, Leinster Journal and Carlow Mercury; and that the next meeting of the Committee shall be held in the County Court House of Carlow, Saturday the 29th Day of November next, at the hour of eleven o’clock.

By order,

Humph Michell, Clk and Inspector,
Barrow Navigation.

N.B. Such subscribers as are in the County are requested to pay their deposite of one cent, as abovementioned, to James Butler, Esq, Mr. Latouches Agent, at Carlow on or before October 29th.16

The following year, the arrival and departure of passenger boats at Carlow was advertised locally. The Directors of the Barrow Navigation Company gave notice that from 1 May to 21 August 1789, their passage boat would leave Carlow at five o’clock in the morning and would arrive at Athy before eight o’clock, at which time the Grand Canal Boat would leave Athy for Dublin. This was operated in conjunction with the Grand Canal Company and hotels were established at Carlow and Graignamanagh. Before the days of the steam engine the boats were provided with long sweeps of oars for propulsion in the tidal waters and a small square sail was set on a mast stepped forward. The mast could be lowered and removed when not in use. The crew of a Barrow boat was two men. The rudder was lashed and the

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two men worked the oars. If the wind was favourable the sail was hoisted and as the boats always travelled with the tide this method of travel served well enough.17

The first recorded account of travel on the Barrow section of the Grand Canal comes from Monsieur Latocnaye’s in his “A Frenchman’s Walk Through Ireland in 1796”. He stated:

‘I stopped at Carlow, situated on the Barrow, which joins with the Grand Canal of Ireland. Wishing to see something of this waterway I went to Athy, from whence there is every day a service of public boats to Dublin. The Canal boats are very comfortable, being indeed like those of Holland, but the cost here is nearly double. The Canal is a magnificent piece of work, crossing immense tracts of moor, where 10 or 12 feet of peat have been removed before reaching earth in which the waterway could be cut. Several aqueducts have been necessary, one of them of really prodigious length and height”.

As early as 1809, however, passenger boats ceased between Athy and Carlow. Efforts to run it as a private service also failed even when subsidised by the Grand Canal Company with a bounty of 10d for first class and 6d for common cabin passengers who transferred to its boats.

In 1790 the Barrow Navigation Company was incorporated and took over the completed works. By this time shallow draught boats were navigating the river. During the following year the Monasterevin to Athy section of the Barrow canal was completed. The Barrow Navigation project gained impetus during this period and works progressed under William Chapman. Ten new locks were built and four of Omer’s originals were reconstructed so that boats of up to eighty tons could be accommodated. The locks which today number 23 (one of these is a double lock), are of varied size, although Chapman was working to a standard of 80’ by 16’.

Maintenance and improvement efforts continued and by 1800 the trackway from St. Mullins to Athy was completed. In 1803 a contract was agreed with the Directors General of Inland Navigation to complete the navigation to a depth of 5 ft and to reduce the tolls in return for an additional grant; an obligation that was to endanger the future economic viability of the navigation company. The work went ahead and in 1806 when Jessop inspected the progress, he stated:

‘…completely dissipated with me every shadow of doubt and left me at liberty to say without any hesitation that the River Barrow may be made navigable with a five foot depth of water in every part of it in the driest seasons not only without injury to private property but with considerable benefit to all the existing mills on the river and to the lands on the borders of it.”18

Unfortunately this optimistic perception was short-lived as the company was later to admit that three feet was the best that could be managed in the dry season, an issue that was to cause many difficulties throughout the canal’s period of use.

There were some subsequent attempts by the company to address this problem and they investigated the possibility of constructing a sea-lock south of St. Mullins so that boats could pass over the shallow sections of the river bed and enter the navigation at all times of the tide. Schemes were drawn up by

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17 Hayden 1953
18 Quoted in Delany 1986, 70
Humphrey Mitchell in the early 1800s, Thomas Rhodes in 1841 and Christopher Mulvaney in 1850 but the work was never carried out.\textsuperscript{19}

The Barrow Navigation was bought by the Grand Canal Company in 1894 and a report in 1922 by the Canals and Inland Waterways Commission illustrates that they too were unable to resolve the problem of shallow waters in the dry season. However, they did succeed in putting a tug on to assist barges in winter and erected no fewer than 70 winches with wire ropes at points along the banks to help craft upstream. In 1935 the situation was made greatly worse when a drainage scheme on the upper river greatly increased the problem of silting in the lateral canals, which led to an ever greater current in certain sections of the river. The Grand Canal Company eventually accepted £18,000 compensation and put a more powerful steamer on the river with winches on the shore at the places where the current was most severe, alas no measures could be implemented to prevent silting. Traffic below Carlow gradually declined, but the establishment of the Carlow Sugar Company’s factory in 1926 boosted trade between Carlow and the Grand Canal at Athy.

The Barrow Navigation as well as the Barrow Line were transferred to CIE in 1950 and owing to continuing navigational problems, coupled with the threat imposed by the railways, commercial trade was officially withdrawn from the entire navigation in 1959 and the works were allowed to fall into disrepair; for the time being at least the end of an era had arrived for both the water systems. As will be illustrated in the account below which deals with the economic circumstances of the entire navigation.

**Economic overview of the Grand Canal Barrow Line and Barrow Navigation**

*As the Barrow Line and Barrow Navigation essentially form part of the Grand Canal waterway system, thus resulting in the economic affairs of each being inextricably interwoven, one should refer to the ‘Economic Overview of the Grand Canal’ for a comprehensive contextualisation and economic overview of the two aforementioned waterway systems.*

*Taking into account that trade on the Barrow Navigation was not taken over by the Grand Canal Company until 1878 and that the Barrow Navigation Company was not actually purchased by this company until 1894, a brief economic overview of the Barrow Navigation up to 1894 is offered here.*

Work commenced on making the River Barrow navigable in 1761 and although these works were not completed until the beginning of the nineteenth century, a passenger service was introduced on the navigation in 1788 which operated between Carlow and Athy. This service never enjoyed great success however, and as a result it ceased to operate in 1809.

In 1790 the Barrow Navigation Company was incorporated. By this time the debenture scheme for public works was in operation and the company was allocated a loan one-third of the cost of completing the works which was estimated to be £60,000.\textsuperscript{20} This ensured progression of the works and by 1800 the trackway from St. Mullins to Athy had been completed. At this point, the company was in grave financial difficulty. It was unable to find the funds necessary to continue work, by-passing necessary parts of the navigation as well as constructing lateral canals which, it was believed, would help to provide a navigation of 5ft throughout. Unfortunately, as is exemplified in the above account dealing with the Athy to St. Mullins construction phase, the problem concerning the depth of the navigation was one which was to rear its head throughout the operational life of the navigation. When attempting to address this problem in 1800, the navigation company approached the newly appointed Directors

\textsuperscript{19} Rosanna Nolan pers. comm.

\textsuperscript{20} Delany 1986, 70
General. In return for a reduction in tolls, they agreed to provide the Barrow Navigation Company with the necessary funds to undertake the work as outlined above. The enforced implementation of this reduction in tolls naturally had an impact on the navigation company and served to challenge its economic viability at a time when its profits were crucial to ensure its survival.

In 1810 the company found itself in financial difficulty once again. By this stage over £120,000, about one quarter of which had come from public funds, had been spent on the project. Inspection, surveys and investigative reports ensued and finally the Directors General agreed to provide half the estimated cost of £60,000 still needed to achieve the five foot navigation. Ultimately, this was not achieved and, as a consequence, the Directors General refused to hand over the final instalment of this grant.

Despite the continuous problems posed by the navigation, trade did increase and rose from 16,000 tons in 1790 to nearly 60,000 in 1830. Trade continued to improve and fifteen years later this had risen to 88,000 tons which was evenly divided between upriver and downriver traffic. Half of the total shipments consisted of corn, meal, malt and flour.

Trade was carried out by independent boat owners and the company derived its revenue from tolls as it was restricted by statute from operating as carriers on its own navigation. In 1845, this regulation was withdrawn and the company built up its own fleet. At that time William Colvill was the Chairman of the Barrow Navigation Company as well as Chairman of the Great Southern and Western Railway Company, with which the canals were finding themselves increasingly in competition. With his assistance, a rates agreement enabled the company to retain traffic at a reasonable profit. In the 1870s, dividends of up to six per cent were declared. However, increasing competition from the railways coupled with high rates imposed on use of the Grand Canal, which forced the Barrow Navigation Company to restrict its trading business to the river in 1878, served to convince the company that they were in danger of being superseded and they decided to sell out to the Grand Canal Company.

The initial proposed selling price of £54,000 was rejected. The Barrow Navigation Company in turn, rejected an offer of £48,000. Eventually, in 1894 it was sold at a much lower figure of £30,000; a grim reflection of the company’s financial position. On 1 July 1894, all the rights of the Barrow Navigation Company were taken over by the Grand Canal Company. On the 4 August 1894 the following article appeared in Carlow Nationalist and Leinster Times:

‘On the first of July all the rights of the Barrow Navigation Company, whose authority on the river extended from Athy to Waterford, passed into the hands of the Grand Canal Company. This company now controls all the waterways throughout the south of Ireland. All the barges and steamers of course have become the property of the Canal Company, who are carrying on the traffic in the usual way. Rumours of the establishment of an improved service are in the air, and it is said that some of the officials of the Company favour the development of a summer pleasure service by means of steamers specially built to navigate the upper reaches of the Barrow.’

The fate of the navigation now lay in the hands of a new company, the Grand Canal Company. Needless to say, challenging times lay ahead.

For over one hundred years, from 1790 to 1894, the Barrow Navigation remained operational in the ownership of the Barrow Navigation Company. Ownership was then transfer to the Grand Canal Company until 1950, at which point the navigation control was given over to CIE. 1986 saw the handover of the navigation to The Office of Public Works. In 1996 these functions were transferred to the Department of Arts, Culture & the Gaeltacht under the Heritage (Transfer of Departmental Administration and Ministerial Functions) Order 1999 (SI No 62 1996) and Heritage (Transfer of
Functions of Commissioners of Public Works in Ireland) Order, 1996 (SI No. 332 of 1996) and became the responsibility of “Dúchas”, The Heritage Service.

In 2000 the responsibility for the Shannon, Grand Canal, Royal Canal, Barrow Navigation and Shannon-Erne Waterway (South) was transferred to the Minister for Arts, Heritage, Gaeltacht and the Islands. Following the British Irish Agreement in 1999, Waterways Ireland was established. Waterways Ireland is the North/South Implementation Body for the inland navigable waterway systems of Ireland and was established North and South by means of the North/South (Implementation Bodies) (Northern Ireland) Order 1999 [SI No 859 Northern Ireland] and the British Irish Agreement Act, 1999, respectively. On 2nd December 1999 the Shannon Erne Waterway in the North was transferred from the Rivers Agency in the Department of Agriculture Northern Ireland (Now the Department of Agriculture and Rural Development) to the newly established Waterways Ireland.

On 1st April 2000, the responsibility of the remaining navigations, north and south, including the Grand Canal, Royal Canal and Barrow Navigation, the Erne and the Lower Bann officially became the responsibility of Waterways Ireland whose statutory remit is to manage, maintain, develop and restore the inland navigable waterways, principally for recreational purposes. Waterways Ireland is now under the remit of the Department of Community Rural and Gaeltacht Affairs in the South and the Department of Culture Arts and Leisure in the North.

Today the cultural heritage of the canal, as well as the potential it offers for tourism has recently begun to be acknowledged. Consequently, restoration works have been taking place in parts, under the supervision of Waterways Ireland, to re-establish this extensive canal system to its former glory. This in turn, will inevitably serve to re-awaken a fascinating period of Irish history; a glimpse into which has been offered in the above discussions.

3. ASSESSMENT METHODOLOGY

The assessment comprised a baseline survey (documentary research and field survey) followed by an assessment of the significance of identified areas, groups of features and individual structures and artefacts associated with the navigation.

The focus of the assessment concentrated on sites of architectural, engineering and industrial heritage interest pre-dating the 2nd Edition Ordnance Survey and those sites of more recent date that have a direct relationship with the navigation.

Survey Area and Sub-Divisions

All identified sites have been allocated a unique number with a WIAH prefix (Waterways Ireland Inventory of Architectural Heritage) and are included in Appendix 1, Plates and Figures 5-10.

The assessment has been divided into 5 areas:

Area 1 (Fig 5, 5a): Lowtown to Monasterevin, including Mountmellick Branch and Milltown feeder (includes Rathangan)
Area 2 (Fig 6, 6a, 6b): Monasterevin to Athy (includes Monasterevin, Vicarstown)
Area 3 (Fig 7, 7a): Athy to Carlow (includes Athy)
Area 4 (Fig 8, 8a, 8b, 8c): Carlow to Bagenalstown (includes Carlow)
Area 5 (Fig 9, 9a, 10, 10a): Bagenalstown to St. Mullins (includes Bagenalstown, Graiguenamangh)
Within each area above, all sites of architectural, engineering and industrial heritage interest have been assessed within the navigation corridor as defined by map detail, encompassing a zone extending 50m either side of a discernable centre-line, irrespective of property ownership. In order to ensure that any features associated with the canal out-with the 50m buffer zone were included within the assessment; the initial desk based assessment introduced a temporary 100m buffer to ensure exclusivity. This was particularly the case in built-up areas and those that contained concentrations of structures and features of interest. Once peripheral sites had been identified, these were added to those within the canal corridor and the 50m buffer zone.

**Desk-Based Assessment**

A complete and exhaustive desktop study was undertaken to include a summary of key issues relating to relevant architectural heritage features in Ireland in a waterways/canals context which are relevant to this study. The study included a comprehensive historical, cartographic and archaeological search of all published and publicly available material. This included as a minimum (where relevant):

- Record of Monuments and Places (RMP)
- Sites and Monuments Record (SMR)
- Register of Historic Monuments
- National Inventory of Architectural Heritage (NIAH)
- County Development Plans
- Urban Archaeological Surveys
- Town Development Plans
- Irish Antiquities Division, National Museum of Ireland Topographical Files
- Ordnance Survey first and subsequent editions
- Published County Archaeological Inventories and Surveys
- Excavations Bulletin (www.excavations.ie)
- Relevant published archaeological corpora
- Local archaeological societies
- All relevant published sources

A full list of sources consulted is listed in the Reference.

**Field Survey**

A walkover survey of the assessment area was undertaken by K. Murphy and D. Yates of Headland Archaeology Ltd between the 02/10/2007 & 30/10/2007. The walkover visited those sites identified during the desk-based assessment (140 sites) and those unrecorded features not previously identified (175 sites). The walkover survey was assisted by both jeep and boat where appropriate. Logistical support was provided by John McCarthy of Headland Archaeology Ltd and, where necessary, a guide with local knowledge was appointed by Waterways Ireland to assist and / or advise the survey team.

**4. SIGNIFICANCE RATING**

For the purposes of this assessment, a significance rating is given to all the sites within the assessment. This significance is measured in terms of the contribution of a site or group of sites to the architectural, engineering and industrial heritage of the canal, canal corridor and immediate hinterland. These criteria are summarised in Table 4.1 below and presented for all sites in Appendix 3.
Table 4.1: Criteria for assessing the significance of sites of architectural, engineering or industrial heritage interest.

<table>
<thead>
<tr>
<th>SIGNIFICANCE</th>
<th>DEFINITION</th>
</tr>
</thead>
<tbody>
<tr>
<td>High</td>
<td>Any sites that make a large contribution to the architectural, engineering or industrial heritage of the canal. This includes sites of a date that are contemporary with its construction, operation, administration and / or applications in trade and transport, but also sites that are not related to the canal but still of architectural interest.</td>
</tr>
<tr>
<td>Medium</td>
<td>Any sites that make a moderate contribution to the architectural, engineering or industrial heritage of the canal by being contemporary with its construction, operation, administration and / or applications in trade and transport but having being altered to an extent in modern times that its heritage value is reduced.</td>
</tr>
<tr>
<td>Low</td>
<td>Any sites that make a low contribution to the architectural, engineering or industrial heritage of the waterway by appearing to be of relatively modern construction with the possibility of an earlier site or feature having being incorporated into its layout or fabric.</td>
</tr>
<tr>
<td>Negligible</td>
<td>Any sites that make very little or no contribution to the architectural, engineering or industrial heritage of the canal by being of modern construction.</td>
</tr>
</tbody>
</table>

5. CONDITION RATING

For the purposes of this assessment, a heritage condition rating is given to all the sites within the assessment. This rating is not intended to be an authoritative or technical comment on the structural condition of a structure / feature. It is an observation made in the field of the overall state of repair of the structure / feature at the time of inspection. The condition associated with each condition rating is given in Table 5.1 below and presented for all sites in Appendix 3.

Table 5.1: Condition ratings for sites of architectural, engineering or industrial heritage interest.

<table>
<thead>
<tr>
<th>HERITAGE CONDITION RATING</th>
<th>HERITAGE CONDITION</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>Ruin or Absent</td>
</tr>
<tr>
<td>1</td>
<td>Derelict</td>
</tr>
<tr>
<td>2</td>
<td>Poor</td>
</tr>
<tr>
<td>3</td>
<td>Fair</td>
</tr>
<tr>
<td>4</td>
<td>Good</td>
</tr>
<tr>
<td>5</td>
<td>Excellent</td>
</tr>
</tbody>
</table>
6. ACTION RATING

For the purposes of this assessment, an action rating is given to all the sites within the assessment. This rating is not intended to be an authoritative or technical comment on the need for structural repair or other maintenance. It is an observation made in the field based on the overall state of repair of the structure/feature at the time of inspection (see condition rating above), intended to indicate either the need or potential for repair or maintenance. Details of the nature of the condition and subsequent action can be gleaned from the description. The action associated with each action rating is given in Table 6.1 below and presented for all sites in Appendix 3.

Table 6.1: Action ratings for sites of architectural, engineering or industrial heritage interest.

<table>
<thead>
<tr>
<th>ACTION RATING</th>
<th>ACTION</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Needs immediate intervention</td>
</tr>
<tr>
<td>2</td>
<td>Significant repairs</td>
</tr>
<tr>
<td>3</td>
<td>Minor repairs</td>
</tr>
<tr>
<td>4</td>
<td>Minimal aesthetic work</td>
</tr>
<tr>
<td>5</td>
<td>Stable</td>
</tr>
</tbody>
</table>

7. PLANNING POLICY CONTEXT

Archaeological conservation operates under the National Monuments Acts, 1930 – 1994 which provides formal and legal protection of monuments and places of particular heritage interest. This includes the Register of Monuments and Places / Sites and Monuments Record (SMR)* comprising some one hundred and twenty thousand protected archaeological sites throughout Ireland affording them a level of statutory protection. The Department of the Environment, Heritage and Local Government manages over eight hundred major archaeological monuments in state ownership or state guardianship under the National Monument Acts. Many important or threatened archaeological sites which are not in the ownership of the state are also protected under legislation from being damaged or interfered with.

*The Sites & Monuments Record (SMR) consists of Ordnance Survey 6-inch maps with annotated known and suspected archaeological sites that generally pre-date AD 1700. The SMR was collated from documentary sources; various editions of Ordnance Survey maps, aerial photography, historical and archaeological literature, seventeenth century Down Survey and Civil Survey maps, eighteenth century estate maps and folklore/oral traditions. The National Monuments Act (1994) made provision for a Record of Monuments & Places (RMP). The RMP is a revised set of SMR maps, on which newly-discovered sites have been added and locations which proved not to be of antiquity have been de-listed by the National Monuments Service.

Of the 315 sites and features recorded in this assessment only two were found to have RMP numbers. These are represented in Table 7.1 below.

Table 7.1: Known RMP sites along the Grand Canal Barrow Line & Barrow Navigation.

<table>
<thead>
<tr>
<th>WIAH</th>
<th>RMP</th>
<th>Name</th>
</tr>
</thead>
<tbody>
<tr>
<td>WIAH 207</td>
<td>CW 012-07002</td>
<td>Leighlinbridge Fixed Bridge</td>
</tr>
<tr>
<td>WIAH 82</td>
<td>KD 021-006</td>
<td>Coughlan’s Bridge, Collinafearagh and Passlands</td>
</tr>
</tbody>
</table>
It is also important to note that many towns in Ireland are assigned an SMR number as the town itself is of historical value. The extent of the zone of protection often extends to the limits of the original settlement: Rathangan (KD017-011), Athy (KD034-003), Carlow Town (CW007-018).

The National Inventory of Architectural Heritage (NIAH) is a state initiative under the administration of the Department of the Environment, Heritage and Local Government. The aim of the NIAH is to complete the preliminary surveys of the post-1700 built heritage of all counties in the Republic of Ireland in order to provide sufficient information to allow the Minister to make informed recommendations to local authorities for inclusion of sites/structures/groups of structures in the Record of Protected Structures as per Section 53 of the Local Government (Planning and Developments) Act 2000.

A Record of Protected Structures list is compiled and maintained by each local authority and available online or on request. For the purposes of this assessment lists were obtained for each county. Due to the varying nature of the information provided by each county authority, that was in turn used for cross-referencing with the sites featured in this assessment, the results are not entirely conclusive or inclusive. The following is a list of identified protected structures along the Grand Canal Barrow Line & Barrow Navigation.

Table 7.2: List of known protected structures on the Grand Canal Barrow Line & Barrow Navigation.

<table>
<thead>
<tr>
<th>WIIAH_No</th>
<th>NIAH_No</th>
<th>Bridge</th>
<th>Name</th>
<th>Reference</th>
<th>Reference No.</th>
</tr>
</thead>
<tbody>
<tr>
<td>156</td>
<td></td>
<td>Ardree Lifting Bridge</td>
<td>Kildare County Development Plan for 2005-2011</td>
<td>B35-05</td>
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<tr>
<td>163</td>
<td></td>
<td>Tankardstown Brige</td>
<td>Kildare County Development Plan for 2005-2011</td>
<td>B37-11</td>
<td></td>
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<tr>
<td>165</td>
<td>11903701</td>
<td>Tankardstown Swing Bridge</td>
<td>Kildare County Development Plan for 2005-2011</td>
<td>B37-13</td>
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<tr>
<td>168</td>
<td>12802609</td>
<td>147 Maganey Bridge</td>
<td>Kildare County Development Plan for 2005-2011</td>
<td>B39-04</td>
<td></td>
</tr>
<tr>
<td>108</td>
<td>11903401</td>
<td>Moores Thatched Cottage</td>
<td>Kildare County Development Plan for 2005-2011</td>
<td>B34-04</td>
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<tr>
<td>308</td>
<td>11901813</td>
<td>Hanged Man's</td>
<td>Kildare County Development Plan for 2005-2011</td>
<td>B18-16</td>
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<tr>
<td>167</td>
<td>11903711</td>
<td>Levitstown Mill</td>
<td>Kildare County Development Plan for 2005-2011</td>
<td>B37-14</td>
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<tr>
<td>89</td>
<td>12801402</td>
<td>Grattan Aqueduct</td>
<td>Laois County Development Plan for 2006-2012</td>
<td>RPS 593</td>
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<tr>
<td>91</td>
<td>12801430</td>
<td>Detached single storey canal warehouse</td>
<td>Laois County Development Plan for 2006-2012</td>
<td>RPS 608</td>
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<td>No.</td>
<td>Code</td>
<td>Description</td>
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<tr>
<td>92</td>
<td>12801429</td>
<td>Two storey canal warehouse</td>
<td>Laois County Development Plan for 2006-2012</td>
<td>RPS 607</td>
<td></td>
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<td>93</td>
<td>12801403</td>
<td>Vicarstown Bridge</td>
<td>Laois County Development Plan for 2006-2012</td>
<td>RPS 594</td>
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<td>95</td>
<td>12801328</td>
<td>Canal Warehouse</td>
<td>Laois County Development Plan for 2006-2012</td>
<td>RPS 606</td>
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<tr>
<td>98</td>
<td>12801414</td>
<td>Camac Aqueduct</td>
<td>Laois County Development Plan for 2006-2012</td>
<td>RPS 603</td>
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<td>170</td>
<td>10300201</td>
<td>Bestfield lock</td>
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<td>187</td>
<td>10300703</td>
<td>Clogrennan Lock</td>
<td>Carlow County Development Plan 2003</td>
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<td>205</td>
<td>10301244</td>
<td>Rathvinden Lock</td>
<td>Carlow County Development Plan 2003</td>
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<tr>
<td>236</td>
<td>10301608</td>
<td>Fenniscourt Lock</td>
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<td>214</td>
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<td>Rathelin Lock</td>
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<td>Carlow County Development Plan 2003</td>
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<td>243</td>
<td>10301903</td>
<td>Ballyellin Upper Lock</td>
<td>Carlow County Development Plan 2003</td>
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<td>247</td>
<td>10301904</td>
<td>Gores Bridge</td>
<td>Carlow County Development Plan 2003</td>
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<tr>
<td>250</td>
<td>10301905</td>
<td>Ballyelin Lower lock</td>
<td>Carlow County Development Plan 2003</td>
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<td>252</td>
<td>10302201</td>
<td>Ballytiegelea Lock No. 15</td>
<td>Carlow County Development Plan 2003</td>
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8. BASELINE DESCRIPTION

The study has identified a total of 315 sites / features through fieldwork. Of these, 175 had not been identified during the desk-based study. The 140 sites identified during the desk-based assessment became apparent through a variety of means such as the NIAH, The Waterways Ireland Bridge Survey, RMPs, cartographic sources and literary sources.

AREA 1 – Lowtown to Monasterevin (Figures 5, 5a)

Lowtown is at the junction of the main line of the Grand Canal, the Barrow Line and the Old Barrow line. Lowtown’s main function now is as a marina facilitating mooring and repairs. Both the Barrow Line and the Old Barrow Line run parallel southwards from here until they merge together south of the 19th lock (WIIAH 9). The canal cutting in this section is surrounded, for the most part, by low lying poor pasture. The Old Barrow line is joined by the Milltown feeder to the north of the 19th lock (WIIAH 9). This stretch of the canal has numerous bridges (WIIAH 3, 4, 5, 8, 10), a footbridge (WIIAH 1), two locks (WIIAH 9, 11), a public house (WIIAH 6), one lock-keepers cottage (WIIAH 12) and one partially exposed cobbled area on the towpath.

A little way to the east of the 19th lock Huband Bridge straddles the tributary flow of the Milltown feeder, one of the main supplies of water for the Grand Canal. Running south the feeder channel travels through land which for the most part is pasture, this eventually gives way to fen land in the south where the feeder draws its source in Pollardstown Fen from the Seven Springs. There are some buildings of interest along this stretch of the waterway including two mills (WIIAH 313, 315), four stone bridges (306, 310, 311,312) and a less interesting footbridge of wooden construction (WIIAH 314) built in 1986.

Below the 21st lock (WIIAH 14) the canal is embanked as it crosses a stretch of reclaimed boggy countryside, that appears to have gone out of agricultural use, before returning to a cutting as it approaches the better pasture land around Rathangan; this length of canal had a single aqueduct (WIIAH 15), bridges (WIIAH 18, 23, 27), locks (WIIAH 17, 26), overflow & feeder (WIIAH 22, 24) and lock-keepers cottages/houses (WIIAH 13, 16).
Rathangan town contained further sites related to the canal infrastructure such as quays (WIIAH 21, 31), warehouses / stores (WIIAH 19, 29, 20), houses (WIIAH 25, 28), and a milestone (WIIAH 30).

Southwest of Rathangan the canal continues as a cutting through low lying pasture with occasional areas of young tree plantations / farmers set aside. Occasional areas of embankment are found around bridges and culverts. Most features are related directly to the canal navigation in the form of bridges (WIIAH 33, 36, 39, 49), locks (WIIAH 42), quays (WIIAH 38), lock keepers cottages (WIIAH 43), aqueducts & culverts (WIIAH 34, 48, 50), overflows (WIIAH 35), feeders (WIIAH 45). However other sites along this part the canal relate to structures already in existence prior to the construction of the navigation such as domestic cottages (WIIAH 37, 40, 41, 46) or structures sited specifically because of the location on the canal such as Ballykelly Mill (WIIAH 44).

On leaving Monasterevin and crossing the aqueduct, a spur of the canal, formerly the Mountmellick Branch, heads west. The first part of this branch line is still open (but dammed off in sections) and filled with water. However a short way beyond the Portarlington road bridge (WIIAH 82) & lock (WIIAH 83) it would appear that the former navigation is in private ownership and is partially filled in. Other features along this branch line include two bridges (WIIAH 56, 81) and a lock-keeper’s cottage (WIIAH 84).

**AREA 2 – Monasterevin – Athy (Figures 6, 6a, 6b)**

Monasterevin town features many sites directly related to the canal. The canal approaches the town from the northeast passing three bridges (WIIAH 54, 55, 57) and one lock (WIIAH 80). The navigation runs through the north western outskirts of the town. A harbour area (WIIAH 58) is situated on the north western side of the canal, just before the canal briefly turns west to cross the River Barrow via the Monasterevin aqueduct (WIIAH 60).

The harbour area (WIIAH 58) has been re-developed, however the berthing bays and the former canal agents house (WIIAH 59) have been left intact. On the opposite side of the canal & just south of the aqueduct are the remains of Moores bridge (WIIAH 55) marking the original line of the canal. Other sites of cultural interest in this area include a warehouse (WIIAH 52) and cultural furniture relating to the town as a whole (WIIAH 86, 87). Further features of interest relating to the improvements of the communications network and post dating the canal are two railway bridges (WIIAH 51, 53) and the railway station (WIIAH 85).

The navigation cut continues southwards, before turning into an embankment to follow the large bend in the River Barrow. Further south it reverts back to a cutting again. For the most part the navigation passes through good pasture land. Most of the features on this stretch directly associated with the navigation include bridges (WIIAH 69, 74), quays (WIIAH 76), feeders (WIIAH 79), culverts (WIIAH 65, 78) and aqueducts (WIIAH 72, 89, 90).

Approximately midway between Monasterevin and Athy the canal runs through Vicarstown, now a small quiet village, however it is obvious from the number of sites here that at one point this place was once the commercial focus for the surrounding area. An Inn (WIIAH 96) and a pub (WIIAH 97) are located either side of the canal bridge (WIIAH 93), and a number of warehouses (WIIAH 91, 92, 95) that served as the canal stores and a cottage (WIIAH 94) are situated just to the north.

From Vicarstown a road runs parallel to the navigation as it turns southeast towards Athy. For the majority of this section the canal is in a cutting which ran through pasture land and occasional crop fields; a short length of the western bank was lined with beech trees. On reaching the outskirts of
Athy the canal starts dropping down in level before joining the River Barrow. Features related to the navigation on this stretch include bridges (WIIAH 110, 101, 114), aqueducts (WIIAH 98, 99, 103), locks (WIIAH 112) and milestones (WIIAH 100). Other sites of socio-historical interest were cottages / houses (WIIAH 111, 102, 104, 106, 107, 108) and a cemetery (WIIAH 113).

**AREA 3 – Athy to Carlow** (Figures 7, 7a)

The canal enters the western end of Athy passing through several locks before joining the River Barrow. Prior to joining the river, numerous sites of cultural interest are situated along the canal basin and are closely linked with operation of the navigation. Adjacent to the Castlecomer road bridge (WIIAH 123), that traverses the canal, are the remains of quaysides (WIIAH 305, 129), a dry dock (WIIAH 115), a lock crane (WIIAH 121), timber bollards (WIIAH 117), a canal stores (WIIAH 118), a malt house (WIIAH 119) and a former canal office (WIIAH 122). The eastern side of the quayside is at present undergoing redevelopment. To access the river from this point two locks must be negotiated (WIIAH 120, 133). Upon entering the River Barrow a further quayside (WIIAH 134) and associated structures (WIIAH 135) are situated on the eastern bank just below Cromaboo Bridge (WIIAH 138), one of five bridges on the river (others WIIAH 131, 123, 143, 144). Many other sites of socio-historical interest relating to the general character of the town were recorded (WIIAH 116, 126, 139, 141, 142, 140, 130, 127) and some town architecture (WIIAH 125, 136, 145, 132, 137).

Leaving Athy and heading southwards, the river includes lateral canals and weirs to facilitate navigation. Between Athy and Carlow the route of the canal passes through a landscape of both fertile pasture and tillage, with the land in the river valley prone to seasonal flooding. A series of cuts, incorporating locks and weirs, allow the canal to retain its depth and bypass low points in the river. The longest of these is the Levitstown cutting, notable in places for its obvious cut along the eastern bank and an embankment along its west side (a good example is the area north of Tankardstown Bridge; WIIAH 163). Many of the small islands formed by the cut became the site of mills, utilising a guaranteed head water. Below Bestfield lock (WIIAH 170), the navigation follows the course of the river to Carlow. In this section the river is joined from the east by two smaller rivers, the River Greese and the River Lerr, both of which are crossed by bridges along the towpath.

Most of the sites of cultural interest along this part of the navigation have a direct association with the canal, namely bridges (WIIAH 156, 162, 161, 163, 165, 168, 169, 174, 177), weirs (WIIAH 160, 171, 175, 176, 146), locks (WIIAH 158, 166, 172, 170), lock-keepers’ cottages (WIIAH 173) and milestones (WIIAH 300). Other associated features closely linked to the canal include mills (WIIAH 155, 157) and houses or barns (WIIAH 164, 159).

**AREA 4 – Carlow to Bagenalstown** (Figure 8, 8a, 8b, 8c)

Most of the sites within the navigation corridor in Carlow have a direct link with the construction of the canal, its operation and trade. On both sides of the river bank the remains of related industry can be seen. The eastern bank has an extensive quayside (WIIAH 149) and to the north of this are the remains of small quay (WIIAH 148) associated with factories that have since been demolished. On the western bank the remains of dry docks (WIIAH 147, 152), stores and warehouses (WIIAH 150, 151, 184) are visible. This whole area north of the Graiguecullen road bridge (WIIAH 178) has undergone extensive redevelopment in recent times. The most noticeable feature to the south is the large weir (WIIAH 181), built across two thirds of the river and utilised, with additional shuttering, to keep the head race for the mill active during times of low river water. Also in the area of the former mill (WIIAH 182 - now apartments) are a lock (WIIAH 180), milestone (WIIAH 185) and associated
buildings (WIIAH 183), one of which is likely to have been the lock-keeper’s cottage. Just beyond the southern end of the lock is a small modern marina (WIIAH 179).

Continuing southwards the navigation travels along long stretches of the river interspersed by short slow moving sections of canal cut. The navigation passes through the fertile pasture and tillage land in the broad river valley of the Barrow with only the low lying land along the river bank prone to seasonal flooding. Each cutting has associated sites directly linked to the canal such as locks (WIIAH 187, 199, 205), weirs (WIIAH 196, 203), overflows (WIIAH 186) and lock-keepers’ cottages (WIIAH 188, 201, 204). Other sites include bridges (WIIAH 195, 197, 198, 200, 202, 206, 189, 191, 193), quays (WIIAH 194), milestone (WIIAH 190) and stores (WIIAH 192).

The navigation continues southwards, into Leighlinbridge, a small town built up around the river, located in a relatively flat area with pasture and crop land around its built-up centre. There is a bridge (WIIAH 207), two associated drainage channels (WIIAH 209) which feed into the navigation and a large bonded warehouse (WIIAH 208) with a group of former warehouses and a now long disused quayside (WIIAH 210).

South of Leighlinbridge the channel continues south entering a wooded area south of the town with small areas given over to pasture where the navigation gradually curves towards the southeast. South of the town is a weir (WIIAH 211) that separates the navigation channel away from the main river temporarily until it reaches Rathellin lock (WIIAH 214), where the navigation rejoins the main river and turns to the south again. En-route the navigation passes under two bridges (WIIAH 212, 213), one lock (WIIAH214) and a lock-keeper’s cottage (WIIAH 216). At this point the navigation returns to the river passing a towpath tributary bridge (WIIAH 215) and a milestone (WIIAH 217) before passing another long weir (WIIAH 218) again splitting the navigation off from the river proper before turning west and entering Bagenalstown at its eastern end. The surrounding area remains relatively low lying and flat as the navigation enters Bagenalstown with the pasture and crops areas becoming more regular just to the north of the town.

**AREA 5 – Bagenalstown to St Mullins** (Figures 9, 9a, 10, 10a)

Within Bagenalstown the navigation continues to be separated from the river to the north by a long narrow island running east-west passing several features of interest, namely four stores and mill complexes (WIIAH 219, 221, 225, 227), a stream outlet and steps (WIIAH 220) along with a selection of various features (WIIAH 223) set into the long quayside (WIIAH 222), that runs along the south bank of the navigation channel. As the channel reaches the outskirts of Bagenalstown there is a bridge built into the trackway (WIIAH 224) associated with the mill complex (WIIAH 227). There is also a lift bridge (WIIAH 229) a lock-keeper’s cottage (WIIAH 226) and a lock (WIIAH 228), where the navigation leaves Bagenalstown to the west.

Upon exiting from the western end of Bagenalstown the navigation channel continues as a cut through low-lying wooded country side, occasionally broken by stretches of pasture land and small areas of wild scrubland. The navigation channel passes several features of interest along this route including three locks (WIIAH 236, 241, 243), three bridges (WIIAH 232, 234, 238), two lock-keepers’ cottages (WIIAH 237,242), two milestones (WIIAH 233, 239), a relatively modern concrete overflow (WIIAH 230), a large limeworks factory (WIIAH 245), two associated short towpath bridges (WIIAH 246, 231) and three weirs (WIIAH 235, 240, 244) separating the navigation channel from the river.

The navigation continues through a mixture of wooded and pasture land until it reaches Goresbridge, now little more than a small village, containing only two features of interest, the large nine span road
bridge (WIIAH247) and a large bonded warehouse located on the edge of the navigation (WIIAH 248). The village sits within a wide shallow river valley consisting mostly of pasture and crop land. The land gradually becomes more wooded as the navigation reaches the area just north of Graiguenamanagh.

Along the stretch between Goresbridge and Graiguenamanagh the navigation meanders southwards reflecting the fact that the navigation is passing through, essentially, a natural river valley gradually deepening as it progresses southward. The navigation is bordered with areas of scrub and woodland that are occasionally broken up by short stretches of pasture, with the steeper areas maintaining a wilder character. There are numerous islands throughout the navigation in this area, most of which are long and thin in shape, many having been adapted to partition the river using weirs (WIIAH 249, 257, 265, 267, 303) further defining the navigation channel.

In addition to the weirs listed, numerous other features are passed on this section that are directly linked to the function and history of the canal, namely six locks (WIIAH 250,252,258,264,268,271), their associated lock-keepers’ cottages (WIIAH 251,253,259,263,270,272), two channel spanning bridges (the second of which is the only swing bridge along the navigation; WIIAH 256,273), three tributary bridges set into the eastern bank towpath (WIIAH 262,269,274) and two small overflow (WIIAH 254, 261). Further to these features there is a single milestone (WIIAH 255), an iron winch (WIIAH 266) and an interesting disused Marina with a bridge built into the towpath (WIIAH 260).This feature is related to the Borris house estate to the east.

Graiguenamanagh lies to the south of the wooded section of the canal below Ballykennean Lock (WIIAH 271). As the navigation reaches the outskirts of the town the tree line gives way to houses and other amenity buildings, whilst the trees to the east continue until the canal turns and enters the town.

The town sits within a wide river valley containing numerous sites that relate directly to the canal whist the navigation, which turns sharply to the west when entering the town, exits to the southwest before curving southwards. Sites of interest include a double lock and former canal agent’s house (WIIAH 285, 284), two bridges (WIIAH 279, 287), a substantial weir (WIIAH 281), two quays (WIIAH 276, 282) and a disused dry dock area (WIIAH 280). There are several buildings relating to the former commercial character of the town (WIIAH 277,278,283,275). There is also one further building of interest, known as Tinnahinch estate cottage (WIIAH 284), which is of cultural and historical interest. On the whole the canal related buildings and structures are concentrated around the two quay sides to the north and south of the bridge (WIIAH 279) with the exception of the lock (WIIAH 285), which is located on the southern part of the navigation channel, divided by an island to the north and a weir (WIIAH 281).

Upon leaving Graiguenamanagh from its southwestern end the navigation curves sharply east for a short distance before turning again sharply to the south and continuing in that direction to St. Mullins.

This stretch includes three long islands, (the last of which carries St Mullins Lock, it is from this point that the waters become tidal), and the banks are predominantly wooded but this is occasionally broken by short stretches of pasture and uncultivated land (possibly nature reserves). The tow path continues to follow the navigation along the eastern bank. Along this stretch there are several interesting features which relate to the canal. Theses features include three locks (WIIAH 289, 288, 294) lock keepers cottages/houses (WIIAH 291, 290, 293), one bridge (WIIAH 292) a large weir (WIIAH 296) and a milestone (WIIAH 295).

After leaving St Mullins lock and entering the final tidal section of the navigation at the last weir the river gradually meanders out towards the east entering St. Mullins nestled in a deep and broad tree
lined river valley. Prior to the building of the canal this town was of historical importance and still contains many sites of outstanding historical value such as the monastic settlement and Motte. Several other sites of interest are present here and all of them are strongly linked to the canal. The first of these is a former grain store (WIIAH 297) now used as holiday apartments, a widened tow path bridge over a small tributary stream (WIIAH 298), a very large former flour mill (WIIAH 299), a milestone (WIIAH 300) and finally a short area of disused and ruinous quayside on the east bank at the southern end of the town.

9. SUMMARY

The nature of the Grand Canal Barrow Line and Barrow Navigation and its hinterland, as defined within this assessment, has changed considerably since the canal was completed in the late eighteenth/early nineteenth century. Despite this, the two combined lengths of waterway are still navigable and managed by Waterways Ireland, principally for recreation purposes. As a result, much of the waterway’s associated heritage has been afforded some protection. A great number of sites and features found along the navigation that are featured in this assessment highlight the many characteristics inherent in its architectural, industrial and engineering heritage and as such define particular facets of this important heritage asset. It is recommended that the heritage value of the navigation is developed alongside its role as a recreational asset.

Recommendations

Due to fact that the Grand Canal Barrow Line and Barrow Navigation are maintained as navigable waterways, there is certain amount of maintenance afforded to the waterway itself and its locks. As a result, both are in relatively good condition.

Although functionality and safety must be of primary importance when adapting bridges for road and pedestrian usage, it is recommended that the original character of the bridge be maintained if possible. This is especially true of pedestrian guardrails (e.g. WIIAH 4) and building materials used to for repairs (e.g. WIIAH 10). Although some bridges may have been adapted with modern materials to facilitate heavier loads (e.g. WIIAH 10), others are still of the original construction, and clearly at risk from the effect of heavy traffic (e.g. WIIAH 18). As with buildings, the growth, spread and effects of ivy needs to be monitored and managed in order to prevent structural damage (e.g. WIAH 58, 74).

Lock-keepers cottages are of heritage and aesthetic value to the canal and its environs. Their occupancy and upkeep should be encouraged. Similarly, other buildings such as houses and farm buildings not directly linked to the canal can be of architectural interest and contribute to the aesthetic character of the canal (e.g. WIIAH 25, 28, 40, 46, 47). Derelict or ruinous lock-keepers cottages (e.g. WIIAH 13) and other former dwellings, still add to the character of the canal but need to be maintained in their present state if they are not to be renovated (e.g. WIIAH 13). At a minimum this could involve the clearance of vegetation and the stabilisation of the remaining structure to prevent further deterioration or collapse. Re-roofing, where possible, is recommended as an immediate preservation action (e.g. WIIAH 237, 263). Lock-keepers cottages that are semi-derelict still have the potential for development through renovation (e.g. WIIAH 16). Where the original character of the building is still evident, it is recommended that such a renovation is in keeping with the original materials.

Public houses (e.g. WIIAH 6) sited next to the canal are indirectly linked to the heritage of the canal and are therefore of socio-historical interest. In addition to this they are often of architectural interest.
Publicans, without encouragement, often display old photographs of the area as a means of decoration and source of interest for customers. This form of public information should be supported and, where appropriate and welcomed, supplemented with archive photos and accompanying text.

**Warehouses, stores, mills** (e.g. WIIAH 167, 221) and other such complexes provide excellent opportunity for preservation through renovation (WIIAH 283). In the absence of such a scenario these buildings should be maintained, stabilised and preserved as a visual reminder of the canal’s rich industrial heritage. Derelict warehouses, stores and quaysides, such as those at Rathangan (e.g. WIIAH 19, 20, 119), that are strategically located in a populated town and available for development provide an excellent opportunity to revamp such locations for modern usage. The positioning of a new development on such a site could be equally beneficial to both the aspect of the new buildings and that of the canal. Existing buildings of heritage interest derelict or otherwise can be incorporated to good effect (e.g. WIIAH 58, 59).

Canal-side locations centrally located in a town provide an ideal opportunity to enhance the lives of inhabitants and visitors by bringing recreation activities to the canal bank either by means of a public space or a new development that makes the most of the aspect. The antithesis of this can be seen at such a location in Athy, where a prime canal-side site with a view of Cromaboo Bridge and White Castle is occupied by a supermarket.

A partially exposed **cobbled surface** (WIIAH 7), possibly evidence of a loading area, offers an interesting opportunity to expose an aesthetically pleasing surface with minimal labour, however the viability of this would be subject to an assessment of the safety of using the newly exposed surface for pedestrians. It is recommended that this work, if carried out, is done by hand to prevent damage to the cobbles.

**Lift-bridges** (e.g. WIIAH 54), **cranes** (e.g. WIIAH 121), **winches** (e.g. WIIAH 266) **sluice gates** (e.g. WIIAH 157) and other mechanical devices should be maintained where possible. **Aqueducts** (e.g. WIIAH 48), **culverts** (e.g. WIIAH 65), **feeders** (e.g. WIIAH 193), **overflows** (e.g. WIIAH 186), and **siphons** when of aesthetically pleasing construction and visible from the road, canal or walkways should be maintained to add visual interest and to illustrate the technology and engineering associated with the canal. There are scant remains of canal furniture such as **milestones** (e.g. WIIAH 30) and **street furniture** (e.g. WIIAH 36, 87). The few remaining examples should be preserved **in situ**, or, where salvaged, incorporated into new developments or relocated to a similar setting.

Administrative buildings associated with the canal such as **former canal offices** (e.g. WIIAH 122) and **agent’s houses** (e.g. WIIAH 286), that are in new usage should be provided with material such as historical information and archive photographs to illustrate the history of the building to visitors (e.g. WIIAH 122).

The **marina** at Lowtown is still an active location and has an atmosphere that is reminiscent of the former activities of the canal in its heyday. On the day of inspection there were several occupied boats and people coming and going. The presence of old boats and associated machinery and materials add to the character of the marina but require some management. This marina is not under the direct management of WI.

The **Mountmellick Branch** still has features of heritage interest but these are mostly in a state of disrepair, inaccessible or, in the case of some sections of the canal, filled in. This may prove to be an awkward area for heritage management, due to private ownership of land.
Key Recommendations

- Management of the navigation as a living heritage resource for this generation and future generations.
- Development of a strategic approach to the management of the architectural, industrial and engineering heritage of the navigation.
- Use the waterway and its surviving architectural heritage as a catalyst for local development, whilst maintaining control over the blending of the new structures with the receiving environment and existing structures.
- A long term conservation plan for the entire length of the waterway, including maintenance of the canal basin, associated infrastructure, canal contemporary structures and other older or more recent structures or features that add to the aesthetic and heritage value of the canal environs.
- Inclusion of these recommendations in the relevant County Development Plans.
- Restoration, where feasible, of buildings including lock keeper’s cottages, houses, mills, stores, warehouses etc.
- Regular monitoring and reviews of the condition and action required for structures and canal banks, recording any deterioration, alteration, damage or improvements.
- Regular maintenance and upkeep of all canal associated structures and features.
- Mitigate the impact of modern additions to the waterway and its environs:
  - Ensure that new additions or changes to existing structures are in keeping with the original character of the structure.
  - Ensure new development is appropriately sited, complementing and adding to the value of the navigation, whilst continuing public access.
- Repair work is recommended for many features which were built as part of the initial construction phase of the canal. These works should include re-pointing in lime render and they should interfere as little as possible with the original character of the structure.
- Re-roofing is recommended as an immediate preservation action for as many ruined structures as possible, particularly those that are at the early stages of collapse.
- Use the waterway and its associated structures as a recreational and commercial amenity:
  - Repair and use original structures to enhance the waterway and house services such as toilets, showers etc. needed for canal users.
  - The repair and subsequent use of derelict buildings could be made available to local enterprise e.g. artists residences / studios / workshops, cafes, shops, accommodation, clubhouses, storage, offices, information centres etc.
  - Placing of benches, archaeological and geographical information boards etc. along various lengths of the canal.
- Removal of graffiti on many structures, evident particularly in towns and villages.
- Repair and upkeep of the entire length of the towpath for recreational purposes, thereby allowing access for all canal users and ensuring a greater interest in the canal as well as making it safer for all users.
- Repair and upkeep of numerous quay sides and harbours for boaters, tourists and locals, with the possibility of developing parks, recreational areas or greenways close to the canal banks.
Recommend that appropriate authority restrict access for large vehicles across masonry canal bridges in order to prevent accidental damage to the bridge faces and its overall structural stability.

The Grand Canal Barrow Line and Barrow Navigation and its associated architectural, industrial and engineering heritage are offered some level of protection by ongoing maintenance in the interest of recreation. However, if the full potential of the navigation is to be realised in terms of its heritage value and subsequent benefits to local communities and tourism, the multitude of sites and features worthy of preservation presented in this assessment must be afforded further protection, maintenance and restoration when needed. It is recommended that this is achieved by the consolidation and monitoring of all available data, most importantly the results of this assessment, the current details of site ownership, the Sites and Monument Record and the Record of Protected Structures. It is in the interests of Waterways Ireland to both pursue and promote the protection, maintenance and restoration of its waterways and associated heritage in order to maximise their appeal for both recreation and sympathetic redevelopment.

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