

Lee Conservancy

The Stort Navigation

30, Great George Street
Westminster

18th May 1870

Gentlemen,

In accordance with the minute of your Board of the 23rd February 1870, I have since that date examined the River Stort very carefully by myself and assistants in reference to its available depth for barges, its state of repair, capability for traffic and general prospects, and I have now the honor (sic) to make the following Report under these several heads

Available depth. Cross sections have been taken throughout the navigation (see appendix) at every place where the depth materially changes by which it has been ascertained the amount of dredging really necessary for giving more ample breadth of deep water for Barges, so as to enable them to pass each other and generally to effect the journey more expeditiously and with larger barges.

The River Stort Navigation is 13½ miles in length with a navigable depth not much exceeding 3'6'' and a narrow channel, this depth is taken at head water; in dry seasons during a great part of each day the Mills work the water below Head, so that a voyage takes a loaded barge frequently 2 days – and in the Summer of 1868 3 days were required. The same distance has not occupied more than 7 hours upon the Lee for many years past, with a freight of 70 Tons and upwards.

A Barge can take to Harlow and Sawbridgeworth 50 Tons or 55 Tons in extreme cases. A Stortford Barge carries 44 tons at the outside, drawing from 2' 10'' to 3' 0'' water, if she could get 6'' more water, she would carry 55 tons, and a Harlow or Sawbridgeworth Barge would carry as much more in proportion. Thus 25 per cent more Freight would be carried at no greater expense than at present, and practically this would give a reduction of 6d per Ton on the River Tolls, exclusive of the saving in wear and tear of Barges, Locks and Works generally, and having one journey in five omitted, there would be a very saving in the River Lee Works as well as those of the Stort.

I hold that the deepening of the Stort is the main point in which your Board have a strong interest, coupled perhaps with the minor advantage of the purification of the water that would follow if the River had generally a better depth and had the mud cleared out.

As long as the River Stort runs towards London, it is almost patent that it will be maintained as a moderately prosperous Navigation from Maltsters and Millers whose establishments are necessarily upon the River – the delivery of Malt to the Brewery of Barclay and others, and on shipboard, and return of Corn direct from the Ship's side in the Thames cannot be done in any way so expeditiously and cheaply (taking the two objects together) as by water.

The Millers will always take good care to keep up the head of water for their own purposes, and the water must pass through each Mill Head in succession, and finally into the Lee. The Stort Proprietors have a clear and substantial profit, and even if any Railway Company were so foolish as to buy the River, they would be legally compelled by the Millers to keep the River open. In fact, it would be a suicidal course on the part of any Railway Company to stop up what makes the chief trade of the Valley, and gives them incidentally a great deal of traffic, without which the district would have less trade than many of the other sparsely populated parts of Essex.

The length to be dredged out of the 13½ miles will be about 7¾ miles.

The quantity will be about 52,260 cube yards as shown by Cross Sections attached to this report and the cost 9d per yard.

To dredge the River promptly and effectually would necessitate the purchase of a narrow dredger and 2 or 3 boats at a cost say of£1,500. 0. 0

Add 42,600 cube yards dredging at 9d per yd.....£1,597. 10. 0

Total £3,097. 10. 0

Gravel sold would about pay for contingencies.

Generally with regard to the River Channel, I think that it would be of no material benefit to make any amendment of the navigable course. I do not see that the passage of Barges would be materially expedited by any other alteration than the dredging above named.

As to the state of repair

Wharfing. In so shallow and narrow a River, this is not much required, but there are a great many places where there ought to be some little protection which does not now exist. A great deal of the existing wharfing is in bad repair there can be no reduction in the expenditure under this head. In point of fact I think that there ought to be a further expenditure of from £50 to £100 a year under this head.

Tumbling Bays. The Navigation Proprietors are only liable for 6 of these – 4 have been well re-constructed, including one of them in hand that will be finished in a few weeks. The other 2 will be rebuilt shortly at a probable cost of £500 after which their maintenance for many years to come will be reduced.

Culverts under the River and Trunks under Towing Path. These are not costly in maintenance. If Iron Pipes are substituted for the present Timber work, the cost will disappear in a few years.

Towing Paths. These are in a fair average state, the traffic is so small over some portion of the River, that the maintenance is almost nominal. If the River should be dredged the paths will be reinstated so as not to require material repairs for 25 years. In this statement I exclude the cost of wharfing above referred to.

Bridges. There are 50 bridges on the Navigation including small Towing path Structures, and those across the end of the Locks. A great deal of money has been spent in renewing these since 1858. A small proportion have been reconstructed in Iron, some in Oak; but the greater number have been renewed in Fir Timber.

The life of these Fir Bridges cannot be taken as longer than 12 years. Considering that there are about (*blank*) bridges still to be rebuilt, and that the wings of several, that do not otherwise require reconstruction, are in very bad repair. I can see no hope of a reduction in the expenses of maintaining this department of the Navigation. Appendix A contains a description of these Bridges with the date of their last repair or erection, as painted or cut thereon, together with their mode of construction and present condition.

Locks. The total fall of the River is 95 feet which is divided into 15 Ponds with Locks thereon as given in detail in Schedule B. The minimum depth when the water is at full head is 3' 3" at Fixes Lock. This Lock is in a deplorable state of repair and can readily be deepened whilst being rebuilt.

The General state of the Locks stands as follows:

- 6 are in good repair
 - Sawbridgeworth
 - Shearing
 - Harlow
 - Latton Mill
 - Burnt Mill
 - Fieldes
- 2 Locks are in middling repair
 - Hunsdon Mill
 - Roydon Mill
- 7 Locks are in bad repair
 - South Mill
 - Twyford
 - Spellbrook
 - Tedmonbury
 - Fixes
 - Parndon Mill
 - Roydon

Some of the first series of Locks have had heavy repairs since my Report of January 1858.

The general survey confirms the view taken in that Report as follows:-

“There is nothing formidable in maintaining them in a sound state, say for £500 a year, which if spent, or devoted to them, continually for 40 years would leave the property probably in better repair than at present.”

In 1858 I considered 10 locks out of the 15 were in a fair state of repair. Now only 8 out of 15 are in a good state; it is therefore clear that the expenses charged for maintenance have not kept this expensive part of the Navigation repairs up to the mark; indeed it is evident that some of the recent locks and other repairs have been carried to Capital Account.

Landed Property and Houses

The Navigation possesses quite sufficient land for its practical working. There are many strips and wide banks along the River suitable for deposit of Dredging &c. but not of intrinsic value for sale, nor should they be sold.

There are wharves or conveniences for unloading at several places with Malt Shops at Harlow and Sawbridgeworth also a Crane at the latter place.

The property at Stortford is of considerable extent, including Wharves, Malt Shops, Work Yards, Houses &c. as described in Plan No 2 attached to this Report. The Rental amounts to £554. 17s. 6d. per annum. They are low rented because they form part of and assist the profit of the Navigation – with the exception of two small houses and gardens, and the large house belonging to Messrs Taylor, Nos 6 and 1a which might be sold without detriment to the Navigation, if money were an object. Their rental amounts to £148 10s. 0d per annum, being part of the above gross income.

The property at Stortford has been examined by Mr G. E. Young an experienced Surveyor – his report is transmitted herewith. I agree with him that the property is in a fair average state of repair, excluding some of the Malt Shops which might be better pulled down to make room for some more useful structures.

Trade and Revenue

The Tolls charged upon the Stort for the through journey are:-

Malt per ton	1s.	4d.
Grain		9d.
Coals, Flour, Bricks &c.		4d.
Sundries		9d
Wheat	1s	0d

The Revenue from Tolls from 1855 to 1859 are shown in Appendix D; in round numbers they have realised £1900 a year, in addition to which there is rental of property before stated £554 per annum.

The Stort Trader has to pay 6d. per Barge each way at 13 Mills for the water taken for Lockage as defined by Act of Parliament. This charge adds nearly 4d. per Ton to the Tolls, so that Malt has to pay nearly 1s. 8d. per Ton and Wheat 1s. 4d. in addition to the 1s. charged upon the Lee. I do not think that the Mill Charge could be got rid of to advantage for if purchased it would probably cost more in the end than the sum now paid.

The Stort Trader pays in Tolls about £2000 to the River Lee – this is not all profit as the wear and tear probably amounts to 2d. per Ton and for all down trade a rent charge of 1d. per Ton is paid by the Conservators to Sir William Wake and others. It is probable that £400 a year is the fair deduction, leaving a net profit of £1600 per annum to the Lee Conservators from the Stort Trade.

As long as Corn and Malt Trade exists I think this is likely to be kept up, there may be a loss on Coals, but on the other hand the Bricks and other Trades may increase.

The particulars of the Tolls paid upon the Lee by the Stort traders as prepared by Mr Glass are given in Appendix E

As to Profit or Net Income

The Return of the Proprietors (Appendix D) shows an average net expenditure from 1855 to 1859 of £1564 11s. 2d. which deducted from the average receipts of £2431 10s. 6d. leaves a net income £866 19s. 4d. This is in my opinion more than would be realised if your Board were to take the property, even supposing that the Capital sum £3097 for Dredging before refer stillred to were to be paid for entirely out of your own Funds.

I think that the River Stort is quite as economically managed as it would be in the hands of a public Board; but notwithstanding the Proprietors have carried a sum of £5,800* expended in heavy repairs, to Capital Account so that if this has to be provided forc, there must be a deduction from the £866 19s. 4d. to meet the interest on £5,800 and it is my opinion that to maintain the Locks, and almost rebuild some of them it will be necessary to spend for some years to come, a good deal more than the average expenditure of late years, or carry further charge to Capital Account

*£1,800 of this has been added since 1867 – See Appendix D

In concluding this Report I will not pretend to put a purchase value upon the Navigation as a property nor would it seem prudent for you Board to give notice for Compulsory Purchase. On gong to the Arbitrator under such a Notice it would be very easy to make a valuation amount to any fancy sum. My view is that probable net income is the only test of its value and a fixed rent charge can be the only basis for a Transfer into the hands of your Board.

It would not be prudent to take the River Stort navigation without providing for the immediate dredging and the reconstruction and deepening of Fixes Lock which together may be expected to cost £5000. What more may be required I do not feel able to give a certain opinion.

Yours obediently

Nath Beardmore (signed)

To:
The River Lee Conservancy Board
Office
1, St Helens Place, E.C.

(Appendices follow)

Appendix A

Table of Bridges with dates of their last repair or erection, mode of construction and present condition.

No	Date	How Constructed	Present Condition	<i>Modern Location</i> <i>No longer exists</i>
1	1868	Oak	Good repair	<i>Lower Lock tail</i>
2	1861	Fir timber	Very low, in fair repair	<i>Towpath over River</i>
3	1831	Timber	Bad repair	<i>Brick Lock tail</i>
4	1860	Brick Abutments	All bad, but brickwork	<i>Towpath over River</i>
5	1861	Iron and brick abutments	Good repair	<i>Roydon Mill access</i>
6	1841	Brick Abutments, Piles and Timber Top	All bad, but brickwork	<i>Roydon road bridge</i>
7	1858	Brick Abutments and Timber. 2 Rows of Piles	Timber work in bad repair	<i>Hunsdon Mill tailstream</i>
8	1840	Timber and Brick Abutments	Bad repair	<i>Roydon Lock tail</i>
9	1868	-do- -do- with Iron Railings	Good repair	<i>Accommodation over River</i>
10	1868	-do- -do- as No 9	-do- -do-	<i>Hunsdon Mill Lock tail</i>
11	1858	All timber	Bad repair	<i>Accommodation over River</i>
12	1840	Timber	-do-	<i>Accommodation over River</i>
13	1844	Timber	Fair repair	<i>Parndon Mill tailstream</i>
14	-	Iron	Good repair	<i>Parndon Lock tail</i>
15	1866	Fir timber	-do- -do-	<i>Accommodation over River</i>
16	1863	-do-	Good repair	<i>Burnt Mill road bridge</i>
17	1862	Timber	Fair repair	<i>Burnt Mill headstream</i>
18	1867	Fir timber. Brick Abutments and Piles	Pretty good, all but piles	<i>Towpath over River</i>
19	1863	Timber	Ordinary repair	<i>Towpath bridge</i>
20	1860	Timber over brick ends of Lock	Good repair	<i>Latton Lock tail</i>
21	1847	Timber foot bridge	Bad repair	<i>Latton Mill</i>
22	1844	Timber	Tolerable repair	<i>Towpath bridge</i>
23	-	Little Foot Bridge	Good repair	<i>Harlow Lock tail</i>
24	1862	Timber Fir	-do- -do-	<i>Towpath bridge</i>
25	1862	Fir Small Timber Horse Bridge	Fair repair	<i>Towpath bridge</i>
26	1846	Timber -do-	Fair repair	<i>Towpath bridge Pincey Brook</i>
27	1836	Timber Foot Bridge over Lock	Very bad	<i>Feakes Lock tail</i>
28	-	Timber	Bad repair	<i>Towpath over River</i>
29	1865	-do- Fir	Good repair	<i>Towpath bridge</i>
30	1844	Timber	Bad repair	<i>Towpath bridge</i>
31	1869	Iron	New	<i>Towpath bridge</i>
32	1869	Fir. Cast Iron Piles	Good	<i>Towpath bridge</i>

No	Date	How Constructed	Present Condition	<i>Modern Location</i> <i>No longer exists</i>
34	1861	Timber	Good repair	<i>Towpath bridge</i>
35	1862	Brick Abutments. Timber Top & piles in River	Good repair	<i>Sawbridgeworth road bridge</i>
36	1869	Iron	New	<i>Sawbridgeworth lock tail</i>
37	1858	Small Timber foot	Good repair	<i>Kecksey's Bridge</i>
38	-	Timber Tow Path Bridge	Ordinary repair	<i>Towpath bridge</i>
39	-	-do- -do-	-do-	<i>Towpath bridge</i>
40	1869	Brick abutments. Cast Iron piles. Fit Timber Top and Iron Handrail	New	<i>Hallingbury Mill tail</i>
41	1849	Timber top over Lock	Fair repair	<i>Tednambury Lock tail</i>
42	1868	Brick Abutments and Iron	New	<i>Hallingbury Mill head</i>
43	1853	Timber	Good repair	<i>Towpath bridge</i>
44	1861	Brick Abutments and Timber	Good repair	<i>Accommodation over River</i>
45	-	Timber	-do- -do-	<i>Towpath bridge</i>
46	1867	Fir -do- Brick Abutments	-do- -do-	<i>Towpath bridge</i>
47	1858	Timber Foot Bridge	Hand rail bad	<i>Roley Croke</i>
48	1865	Timber top over Lock	Good repair	<i>Twyford Lock Road</i>
49	1861	-do- -do-	Fair repair	<i>South Mill tail</i>
50	-	Timber. Brick Abutments	Good repair	<i>London Road, Bishops Stortford</i>

Appendix B

Locks on the River Stort

Name of Lock	Depth on Upper Sill		Depth on Lower Sill		Fall of Lock		Observations
	ft	ins	ft	ins	ft	ins	
Stortford or South Mill Lock	3	9	3	6	5	6	
Twyford Mill Lock	4	6	3	7	6	6	
Spelbrook Lock (no mill)	5	0	4	6	6	0	
Tedmanbury Mill Lock	4	5	4	0	6	9	
Sawbridgeworth Mill Lock*	4	0	5	0	6	9	
Sheering Mill Lock*	5	0	3	7	6	6	
Fixes Lock (no mill)	3	5	3	3	6	3	
Harlow Mill Lock	3	4	4	4	8	6	
Latton Mill Lock	3	8	3	6	6	4	
Burnt Mill Lock	4	0	4	2	4	0	
Parndon Mill Lock	4	3	3	9	6	9	

Name of Lock	Depth on Upper Sill		Depth on Lower Sill		Fall of lock		Observations
Hunsdon Mill Lock	4	3	4	0	7	0	92 ft 10 in rise from Feildes Weir
Roydon Lock (no mill)	5	5	3	9	5	6	
Roydon Mill Lock	4	6	3	6	7	6	
Feilde's Lock*	4	3	5	6	3	0	

The locks marked with an asterisk have been lowered since 1856

Appendix C

Statement of the River Stort Property with Rental exclusive of the Tolls

At Bishops Stortford			
Messrs Taylor's - the Wharf house per ann.*	125	0	0
-do- Malt & Coal Shops (with Wharves)	163	2	0
-do- Coal Wharf	35	12	0
-do- Coal Sheds	16	0	0
-do- Wharf for landing ashes	1	0	0
-do- Ground Rent	15	0	0
William Hughes - Leasehold Premises	5	0	0
-do- Ground adjoining -do-		10	0
J L Glasscocks Leasehold premises &c	5	0	0
Messrs Boulcott, Deal and Slate Yard	10	10	0
-do- Ground for landing timber	4	0	0
Mrs Patmore, House in South Street*	15	0	0
Samuel Trott, Cottage in -do- *	8	0	0
Josiah Miller for a meadow -do-	16	0	0
George White for pasture land			0
Reginald Jennings, Ground rent	1	0	0
House, premises & garden the residence of the Surveyor		No Rent	
Mr Whitnall - 11 Malt & Coal Shops at Sawbridgeworth	27	10	0
John Barnard - 10 Malt Shops at Harlow	20	0	10
Land let at Roydon	3	6	0
-do- Parndon		7	6
-do- Harlow		5	0
-do- Latton		5	0
-do- Hertford	7	0	0
Part of Wharf Hertford	4	10	0
Osiers produce	16	0	0
Shops at Stortford let to Miller	7	0	0
-do- let to Harvey & Co	22	0	0
-do- let to Tucker	5	0	0
New House at Stortford let to Harvey	21	0	0
	£554	17	6

Appendix D

River Stort Navigation – Account of Tonnage and Revenue

Year	Corn	Flour	Sundries	Total	Receipts			Expenditure			Net Income		
	Tons	Tons	Tons	Tons	£	s	d	£	s	d	£	s	d
1855	20,787	2,412	14,461	37,660	2,052	8	3	1,016	5	11	1,036	2	4
1856	24,174	2,870	14,141	41,185	2,081	13	6	1,261	11	3	820	2	3
1857	32,131	2,005	16,098	48,234	2,348	19	3	1,277	14	8	1,071	4	7
1858	29,517	2,030	16,277	47,824	2,441	12	0	1,768	14	5	672	17	7
1859	28,682	1,217	15,843	45,742	2,511	18	4	1,870	13	11	641	4	5
1860	27,917	1,419	15,769	45,105	2,201	6	8	2,155	6	11	45	19	9
1861	24,915	2,105	19,690	46,710	2,170	19	10	1,880	3	4	290	16	6
1862	23,650	2,193	14,284	40,127	2,201	15	1	1,158	1	8	1,043	13	5
1863	28,374	2,079	14,506	44,959	2,386	3	8	1,365	8	8	1,020	15	0
1864	29,283	2,392	12,085	43,760	2,843	19	0	1,586	16	5	1,257	2	7
1865	31,472	2,432	13,633	47,537	2,489	10	7	1,479	14	3	1,009	16	4
1866	33,426	2,022	13,238	48,686	3,198	17	2	1,462	13	6	1,736	3	8
1867	36,080	2,151	11,955	50,186	2,403	12	10	1,704	6	9	699	6	1
1868				48,295	2,581	4	5	1,430	17	5	1,150	7	0
1869	32,685	2,354	11,046	46,085	2,558	17	0	2,049	18	2	508	18	10
Mean	28,792	2,120	14,502	45,473	2,431	10	6	1,564	11	2	866	19	4

The present Owners have in addition to the amount of their Mortgage, laid out in new Buildings and Improvements of the Property up to the year 1867.....£4,000
 -Do- -Do- -Do- since that year..... £1,800
£5,800*

*This is all in addition to the mean Annual Expenditure of £1,564.11.2.

Appendix E

Return by Mr Glass Traffic Manager of the River Lee Conservancy of the Tons charged and Tolls collected on the Lee Navigation for the Traffic during the last Ten years 1860 to 1869

Year	Tolls			Tons Charged	Tons of Manure
	£	s	d		
1860	1,838	0	11	40,621	3,955
1861	1,817	12	4	40,458	5,909
1862	1,937	19	2	42,743	7,216
1863	2,076	15	7	46,489	4,541
1864	2,038	3	1	44,937	5,246
1865	2,168	11	9	47,361	4,786
1866	2,191	8	4	47,768	4,748
1867	2,103	9	5	45,975	4,694
1868	2,231	11	6	48,295	5,231
1869	2,035	7	4	46,085	4,739
Average during last 10 years	2,043	7	4	45,073	3,104