

# A Tudor Canal Scheme for the River Lea

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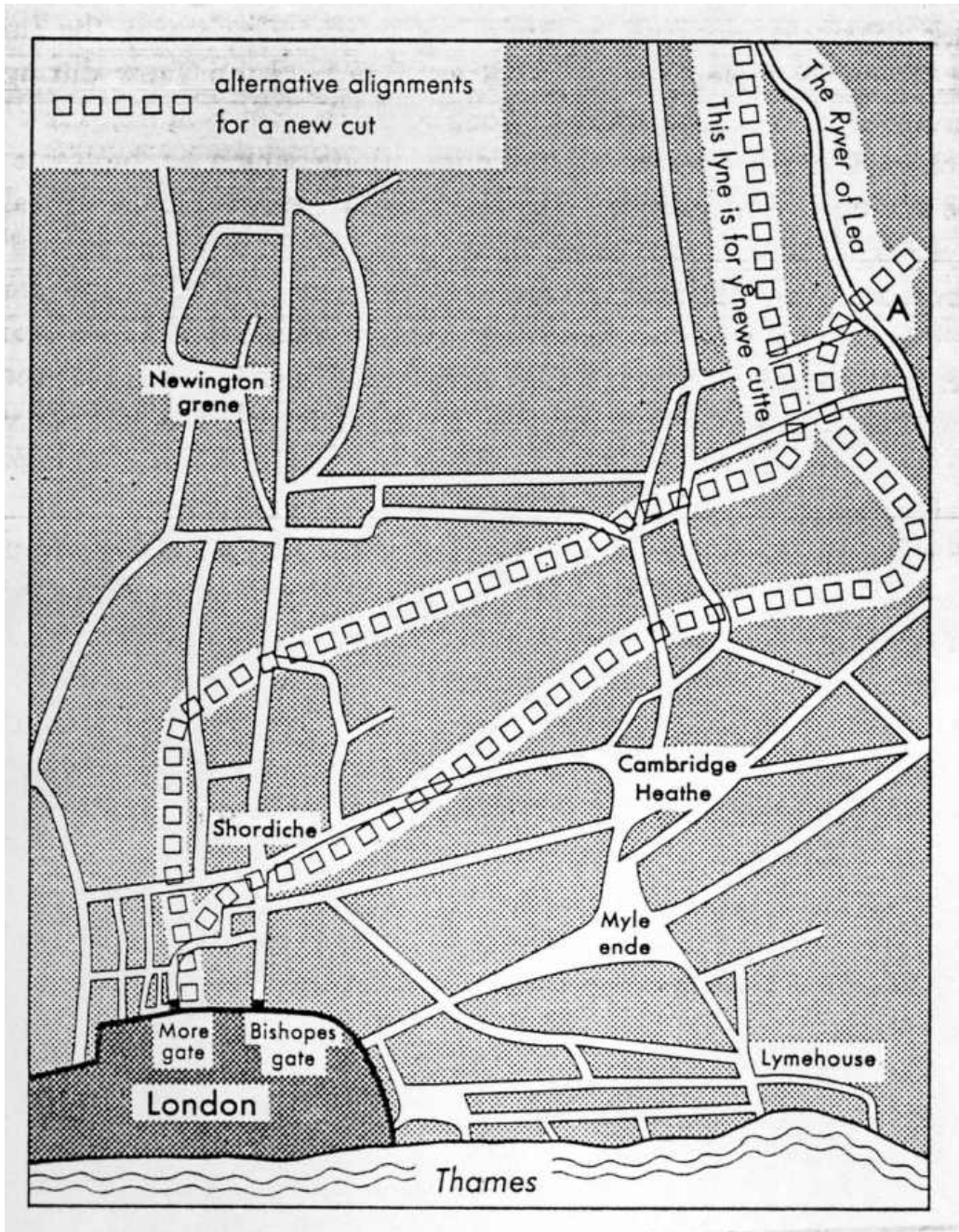
In 1571 an Act of Parliament (13 Eliz c. i 8) was passed 'for the brynging of the Ryver of Lee to the Northside of ye Citye of London'. The act, sponsored by the City, outlined plans to build a 'newe cut' which was to leave the Lea 'in the most aptest and meetest place... to have from thence the leadinge and passage of the saide Water throughe such a convenyent and meete cut...unto the saide Citye of London . . .'. The City proposed to construct and control this canal themselves, but they also sought additional powers whereby, once this task had been completed, further improvements could be carried out by a newly elected Commission of Sewers with representatives from the counties of Essex, Middlesex and Hertfordshire. The City's main reason for sponsoring such ambitious plans was a desire to improve the supplies of agricultural produce, but they also envisaged that the new canal could also be used for local passenger traffic. The problems of shortages and rising prices in the city markets were becoming so acute, that the city authorities were themselves forced to take active steps to promote trade, and their proposals to improve the Lea must be seen as one facet of this policy.

The Lea was in use before the City made their plans, but the boats were small, and most of the traffic involved the small communities which lay along its course. The City hoped that improvements to its navigable condition would stimulate an important trade in grain from the rich agricultural lands of Hertfordshire and Cambridgeshire.

The act itself did not specify the course which the canal was to take, this was left to the discretion of its promoters. However the map reproduced in Figure 1 must, I think, show the plans which the City had in mind when they sponsored the act.<sup>1</sup> Two alternative courses are shown, but the inscription 'This Lyne is for ye Newe Cutte' does suggest that the longer cut was preferred, the shorter alternative probably being presented as a precaution when parliamentary approval was sought. Traditionally, the City enjoyed rights of jurisdiction over the tidal waters of the Thames, and investigation in 1560 had fixed the limits of such waters along the Lea at Temple Bridge in Hackney.<sup>2</sup> The City might well have expected Parliament to restrict their powers to use water from the Lea to within these traditional limits, so the shorter course might well have been surveyed in readiness for such a contingency. Since Parliament did not impose any such restriction, it does seem likely that it was the longer course which was under consideration when the act was passed. Unfortunately the top edge of the map has been torn off, so the exact place where the canal was to leave the Lea cannot be ascertained.

In order to construct the canal, the City sought and obtained powers to acquire land both for the actual trench and also for additional strips of land on either side of it, which could be up to 50 or 60 feet wide. The width of the trench was not specified, but the combined

width of the trench and the adjacent strips was not to exceed 160 feet. These adjacent strips were to provide a means of access during the period of construction, and to act as a dumping ground for excavated earth. Once the trench had been dug, the strips were to be laid out as towpaths so that 'People maye with great Ease and Comoditie go in and out of their Tyltebotes and other Vessells whatsoever without prill, and so walke by foote as long as it shall please them, and also that Bargemen maye upon the same Grounde without offending any other, draw their Vessels from place to place alongest the same'.



The area through which the canal was to pass was both low and fairly level, so any slight variations were to be evened out by cut and fill technique rather than by the use of locks. At least this seems the implication from the wording of the act, and there is no suggestion on the map that locks were considered. Presumably, though there is no evidence of this, the City also intended to open a new market near Moregate, at the terminus of the canal. These proposals were extremely ambitious, and if the City had succeeded in carrying them out, then they could have claimed to have built the first canal in this country, almost 200 years before the first ones were actually built. For although the City always referred to their scheme as a new cut, it must in fact be described as a canal rather than a river cut.

There were other schemes to improve rivers during the Tudor period,<sup>3</sup> but, with one exception, they were all unambitious schemes concentrating upon dredging and removing obstructions which impeded the traditional navigable channel. The only other Tudor scheme which was as ambitious as the City's was the improvements carried out along the lower part of the River Exe by John Trew during the period 1564-7.<sup>4</sup> In an effort to allow ships to dock at Exeter once more, Trew built a new navigable channel nearly two miles in length, along which he built the first pound locks to be set up in this country. However Trew's new channel ran alongside the traditional river channel in the same flood plain, and the prime reason that it was built was because the traditional channel was obstructed by mill dams and weirs, and it was felt that it would be too difficult to remove these. The City's plan to build a canal which led out of the river valley across and into an area previously without water communication was something else again. Indeed it was not till well into the following century that such ambitious, and unsuccessful, schemes emerged for other rivers in this country.<sup>5</sup>

As early as 1559, the first evidence appears of the City's interest in improving the Lea. In that year the Court of Alderman appointed a committee comprising Alderman Thomas Lodge, Richard Spryngham a mercer, and John Dymock and Thomas Wheler, both of whom were drapers.<sup>6</sup> This committee was entrusted with the task of taking the pains some day the next weke at the Cyties charge to viewe the Ryver of Laye as far as Ware and upward to the hed of the same Ryv And to consyder whither yt maye be so clenysyd that Barges and other Vesselles may passe therupon unto this Cytie with fuell corne hay & other necessaryes out of those ptes or not'. Within a couple of months this committee made their report, in which they suggested that the navigation below Ware could be improved to the City's advantage.<sup>7</sup> In reaching this decision they made use of the services of two surveyors, Garrett Honrighe and Adrian Tymberman, both of whom were referred to as 'alyens and strangers born', whilst elsewhere Honrighe is described as a Dutchman. Honrighe in fact was also giving the city advice upon water supplies, and for his work in surveying the Lea, and for 'the makinge of a certeyne instrument whereby he dyd declare howe water might be conveyed out of the Thames unto dyvers places of the Cytie', he was awarded £10.<sup>8</sup> No further action, however, seems to have been taken at the time, but when in 1566 a new Commission of Sewers was appointed for the River Lea,<sup>9</sup> they soon approached Sir Thomas Lodge to ask for details of the decisions reached by the two Dutch surveyors.<sup>10</sup>

Unfortunately, no records remain of the work of this Commission, so it cannot be ascertained whether the plans which emerged in 1571 represented the work of these Dutch surveyors, or whether fresh technical advice was sought. Neither can it be said whether this Commission backed the City's plans or not, for it was the city rather than the Commissioners who submitted plans to Parliament. All that can be said with any certainty is that the Court of Aldermen approved a draft of the bill on 16 April 1571,<sup>11</sup> before it was sent to parliament.

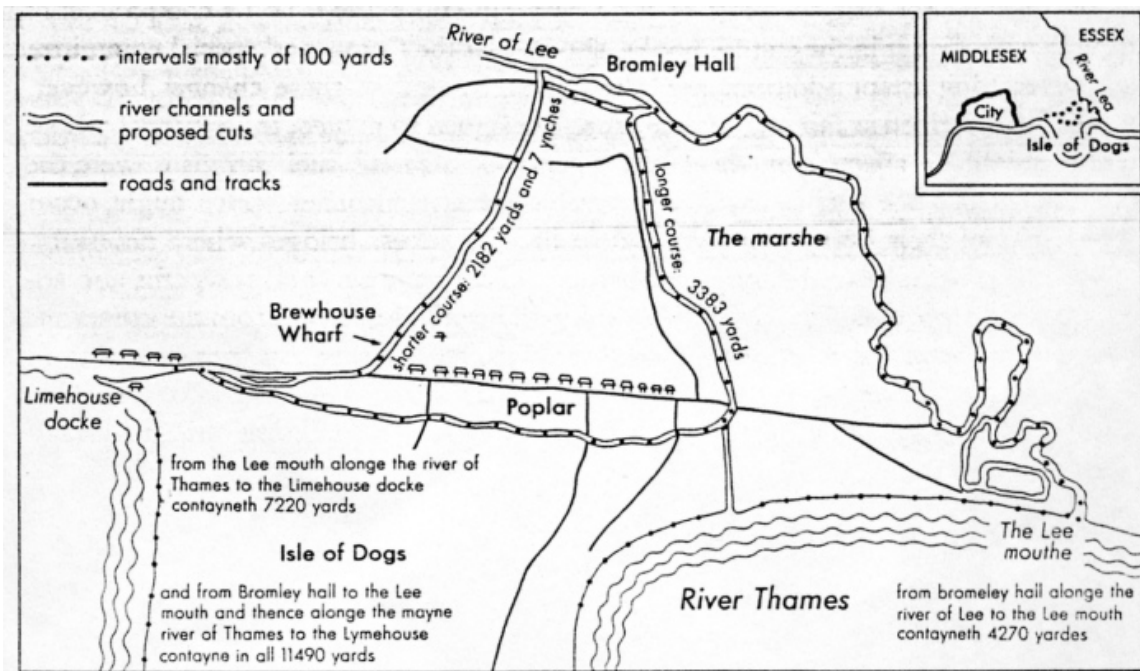
The bill first appeared before the House of Lords on 21 May, and within three days they had read and passed it, and then sent it to the Commons. There the bill was given its first reading during the morning session of 26 May, at which time a special committee was appointed to consider the bill in greater detail. However, since the parliamentary session was nearly over, the second and third readings of the bill were rushed through that same afternoon, before the special committee had had time to deliberate. However on the following day, this committee submitted various alterations and provisos which were thrice read and passed, and incorporated into the final bill which received the royal assent.<sup>12</sup>

What must be the original draft of the City's bill still exists,<sup>13</sup> and a comparison of this draft with the act in the statute books, shows that the Commons' special committee made several important additions and alterations. Several of these changes however, can only be described as fair and just measures, designed to protect those parties whose interests might be affected by the City's proposals. Among such provisos were the requirements that the City be made responsible for any breaches which might occur in the banks of their canal, that they had to provide access bridges where necessary, and that they had to plant hedges or construct fences between their towpaths and adjacent private properties. The committee also paid heed to lobbying from the numerous mill owners in Stratford, and insisted that the City be liable to pay compensation to any miller whose water supply was adversely affected by the construction of the canal. In addition they imposed a time limit of ten years, within which time the City had to complete their work.

The Commons also found themselves unable to accept the City's proposals for acquiring the land. The aldermen, in an attempt to protect themselves from the effects of inflation, had proposed that they `for ever shall have the saide groundes ... to be holden of the Lordes and onors of the soyle and Soyles aforesaide in fee Ferme for ever, paying suche rente for the same and everie pcell thereof... as the same shalbe lett for by and after the rente of an Acre, at the tyme that the saide Mayor Comonaltie and citizens shall take in the same for the saide good purpose'. A House of Commons dominated by landlords was unlikely to favour such an attempt to freeze rents, so they redrafted the clause to give the city powers to acquire the land `for such Composition as they shall make with ye Lorde Owners and Occupiers of the Soyle'. Changes were also made to the City's proposals for arbitration procedures in case of dispute, so that those representing the City held a less dominant position in the settlement of such disputes.

The most important change to the City's draft however, was the addition of a proviso which read:- `...all the Queenes Subjectes theyr Boates and Vessells shall have free

Passage through the said Ryver, aswell the newe Cut as the older Ryver, without interruption or molestacon, by reason of or for his or theyre Passage, as in other comone Ryvers and Waters they lawfully may do'. Though no specific evidence remains to show that the City intended to charge tolls, it seems unlikely that such a project could be supported or financed without some expectation of future income. Such a toll would not in fact have been a heavy burden for the bargemen to bear, since the canal would have allowed the bargemen to avoid the Stratford area where numerous mills competed for the water, and where the bargemen often had to lay up above Bow lock for the tide to turn. In addition the bargemen would have. also avoided the long winding course of the Lee below Bow Lock (see Figure 2) which was navigable only with tidal assistance, and the long haul along the Thames round the Isle of Dogs and up to Queenhithe, once more having to wait for favourable tides.



Thus, though the proviso vetoing tolls was cloaked in the language of protecting ancient rights, its insertion must be taken as evidence of strong opposition to the City's schemes rather than any desire to protect navigation interests. Unfortunately no firm evidence remains about the complaints and activities of those who opposed these plans, but such opposition could be motivated by several factors. Millers, riparian landowners, fishermen and those who pastured their cattle in the adjacent meadows and marshes all had good reason to fear that the proposed improvements might interfere with their enjoyment of traditional rights. However in the light of later events, it seems likely that it was the 'badgers' who provided the strongest opposition.

Badgers were dealers in grain, who bought in the country markets near London in order to resell in the capital's markets. Such merchants obviously feared any new competition

which might arise once the river was open to traffic, especially since it was generally recognised that river carriage was much cheaper than their own forms of transportation, by cart and packhorse. Those badgers who lived along the Lea valley, in Enfield, Cheshunt and Waltham, were particularly worried by the city's proposals, and they made common cause with their poorer neighbours, whom they employed to accompany the carts and horses on the journey into London. These poorer neighbours must have been very worried at the prospect of barge traffic, for it was well known that barges employed far fewer people to transport the same quantities of grain than did carts and horses. Such a combination of interests lay behind the riots which broke out along the river in 1581 and 1592 after more moderate improvements than those proposed by the City had been made, so it seems likely that such interests would have been vociferous in their representations against the City's bill in 1571.

At least one member of the Commons' committee responsible for changing the City's bill had strong reasons to lend his support to such opposition. This was Robert Wroth, whose family were the largest landowners in the Enfield area. Not only did the family own Enfield Mill, the largest along the river, but many of their tenants were involved in the trade of carrying grain to the capital by road. Wroth himself was named as one of the main instigators of the 1581 riots at Enfield, and he was also closely involved in the 1592 riots at Waltham, so it seems reasonable to assume that he played an important role in committee in effecting the alterations to the City's bill.

The alderman must have regarded all these alterations with distaste, but the veto on tolls, in particular, must have caused them considerable annoyance; indeed this veto must be counted as one of the major reasons why the City never carried out their intentions to construct a new cut. However there is evidence to show that the City did not give up this intention immediately, but instead brought forward new plans designed to meet this unexpected veto on tolls. In 1573 there is an entry in the City records which reads:- 'Itm yt was ordered and Agreed that Mr Chambleyn takinge with hym Mr Bates the Bridgemaster and other whom he shall thinke mete shall go with Anthony Trapper stranger to viewe & surveye the River of Lee a longe to the iij<sup>or</sup> mylnes at Stratford. . . to make reporte . . what opynyon the same Anthony is of towchinge + concernynge the conveyinge of the said Ryver of Lee to this Citey of London... . ' <sup>14</sup> Another entry states that Anthony Trotter(sic) was to be allowed £8 for 'his charge + paynes in vewing the Ryver of Laye . . . ' <sup>15</sup> There are no further references to a Trapper or Trotter in the City records, but a map in the Public Record Office (reproduced in Figure 2) may be taken as evidence of the plans drawn up by Trapper on the City's instructions, even though the map has been dated as being of the time of James I. <sup>16</sup>

Much remains to be interpreted but it is plain that the map was drawn up to illustrate new plans for a navigation cut or cuts across the Isle of Dogs. Two such cuts are shown, both of which leave the Lea below Bow lock, and both of which terminate in the dock at Limehouse. The longer cut is obviously a newly surveyed route, for which there can be no other purpose than to serve as a navigation cut. Its course is marked off at 100 yard intervals with dots which when added give a total length of 3,383 yards. Similar dots are also found along the course of the lower Lea, and along the Thames around the Isle of

Dogs. This was the traditional route taken by the barges, and totalled 11,490 yards. Thus the construction of the longer cut would have allowed a saving of over 8,000 yards.

Another considerable advantage would accrue from its construction, for in the top left hand corner of the map there is an inscription which reads 'Here must ye cut 13 foote deepe that the maine river maie at all ebbs yeld it 2 foote water otherwise it will at everie tide be drie'. Though this particular inscription might well refer to the shorter proposed route, it suggests that the builders intended to make the new cut navigable at all times, which was not the case with the traditional river route. The lower Lea could only be navigated with the outgoing tide, and then barges had to wait at Lea Mouth for the tide to turn before continuing along the Thames.<sup>17</sup>

It is the shorter course, however, which raises the greatest problems of interpretation. Its total distance is given as 2182 yards and 7 inches, but unlike the longer route this distance is not measured out by dots placed at even 100 yard intervals. The dots which are shown are much more unevenly spaced, and seem to accord with the boundaries of different landholdings along its course. Is this sufficient to suggest: that some form of channel already existed; the upper part of which was nothing more than a drainage channel, whilst the lower part had been widened to allow barges to come up and discharge malt and hops at the Brewhouse wharf? Did Trapper survey this particular course because he favoured it as the shortest and cheapest route, or was it because he felt that his favoured longer route would still have been too expensive, and the shorter route offered the only means of salvaging something from the City's once ambitious schemes? Whatever the answer, the map does show that the City made some effort to overcome the setback they had received in parliament, for Trapper's plan retains some of the advantages envisaged in the original proposals, but at a greatly reduced cost. Even his cheaper proposals, however, still left the City with the problem of how to finance them without the expectation of future income, and the fact that Trapper's plans, too, were never carried out, must be attributed once more to the veto on tolls.

There is no evidence to suggest that the City ever took serious steps to implement these schemes after 1573, but the fact that such schemes had been aired, and an Act of Parliament passed, aroused the interest of others. Once it became clear that the City had no intention of constructing the new cut, these other interested parties decided to take advantage of the other clauses in the City's act to effect more modest improvements to the traditional river channel below Ware.<sup>18</sup> John Norden ascribes this later initiative to the 'instant suyte of the inhabitants of Hartfordshire',<sup>19</sup> who saw that improvements to the Lea could allow them to capture an important share in the growing traffic in malt and meal down the Lea valley.

These improvers, much of whose success must be attributed to the efforts of Thomas Fanshawe, the Queen's Remembrancer, were much more modest in intention than the City had been. Though they did approach the city with a request that they present their plans for a new cut again,<sup>20</sup> there is no evidence to suggest that they ever had serious intentions of carrying out such expensive work. Through the authority of a newly appointed Commission of Sewers, these improvers concentrated on cheap but effective

measures such as dredging, the removal of fishing and mill weirs from the navigable channel, the blocking off of many of the small streams which flowed into the surrounding marshes and meadows, and the construction of artificial banks where necessary. This Commission of Sewers had sixteen members, four of whom represented the City, whilst the counties of Hertfordshire, Essex and Middlesex also had four members each. The remaining records, however, do not suggest that the City dominated, or even played an important role, in the work of this Commission.

The City authorities, however, must have been very pleased with the final outcome, for the improvers were successful, and there was a rapid increase in the amount of malt and meal brought to the capital down the Lea valley. Thus the City's original intentions had been achieved, but without any nominal charge to themselves, for the cost of the improvements were borne by the riparian landowners, not by the municipality.

By an extraordinary act of municipal and official forgetfulness, the City were later to benefit from the mistaken impression that they had built a navigation cut during the Tudor period, work which in fact had never been carried out. Much confusion was to arise because the City began to claim that the course of the Lea below Temple Bridge was an artificial channel which they had built as a result of the 1571 act. This claim was recognised in 1739 when an Act of Parliament, designed to carry out further improvements to the Lea,<sup>21</sup> awarded the city jurisdiction over the river below Temple Bridge, and this jurisdiction was not relinquished till a further act for improving the Lea was passed in 1767.<sup>22</sup> The course of the Lea below Temple Bridge, however, was not an artificial cut, but was in fact the traditional river channel. A Commission of Sewers in 1551 found that "from the Locke bridge to Temple Bridge, and from Temple bridge to the Bullivannte and from thence to Clobbs Hill and from thence to Oldforde and from Oldforde to Bowe bridge and from Bowe bridge to the Laye mouth is the Kinges high Streame called the water of Laye',<sup>23</sup> and this course was confirmed shortly after the Tudor improvers had completed their work,<sup>24</sup> and was to remain as the main navigable channel until the Hackney cut was made as a result of the 1767 act.

The first reference in the city records to such a claim is in 1654,<sup>25</sup> when reference is made to the 'Newcutt'. However it was not till the 1690s that the City began to take serious steps to establish such a claim in law. Then, in the aftermath of the scandal over the Orphans Fund, the city tried to establish a legal right of jurisdiction, with the hope that the profits from the groundsoil and fishing would help to increase the City's income. With this in mind the city let the river below Temple Bridge to William Savage for a peppercorn rent, on the understanding that he would take the necessary steps to establish the City's legal rights, and that they would then share the resulting profits.<sup>26</sup> Savage in fact does not seem to have made any effort towards establishing such rights, and arguments were to continue until the City's claim was finally recognised in 1739.

#### NOTES

1. **Public Record Office map room, MPF 282.** This plan is dated as 1578 in the catalogue, and there is evidence to show that it was, in fact, presented around this



time. In October 1577 Thomas Fanshawe wrote to Lord Burghley that `Mr Chamberlayne of London write me that there is considerance had of a newe cutt to be made to bring the passage to Moregate and prayed me to signifie so mouche to your Lord and that there is especial liking and hope it wilbe done and that he ment to bring a platt of the ground and debyt to your L. (Landsdowne MS 25 no.12) This comment, however, is the only evidence to suggest that plans to build the city's cut were still under consideration at this late date. By 1577 the Commissioners of Sewers were already carrying out improvements to the river, but since the 1571 act implied that such work should only be done once the cut had been completed, they may well have found it expedient to pay lip service, and encourage the city authorities to present their plans once more. The city may well have been serious in their intentions in 1577, but there is no other evidence of this. Whatever the explanation, however, it seems unlikely that the City would go to the trouble of obtaining fresh plans once more, so I think it is fair to assume that the aldermen re-presented their original plans.

2. State Papers Elizabeth, Domestic Series, Vol 15 no. 11.
3. For details of Tudor river improvements, see W. T. Jackman *The Development of Transportation in Modern England* (1916).
4. Philip Chilwell De La Garde, `Memoir of the Canal of Exeter 1563-1724' *Proceedings of the Institution of Civil Engineers* IV, 90-102.
5. T. S. Willan, *River Navigation in England 1600-1750* (1936) and Jackman op. cit.
6. City of London, Repertories 14, f. 365.
7. Ibid 14, f. 367b.
8. Ibid 14, f. 381 & f. 493.
9. Calendar of Patent Rolls, 1569-72 no. 1860.
10. City of London, Repertories 16, f. 186b.
11. Ibid 17, f. 141b.
12. Members of the Commons' committee were: Mr Chancellor of the Duchy, Mr Willson, Master of Requests, Sir Henry Gate, Sir John White, Mr Moore, Mr Holstocke, Mr Grymston, Mr Bashe, Mr Robert Wroth, Mr Henry Cock, Mr Dacre, Mr Norton, Mr Humberston and Mr Bowyer.
13. State Papers Elizabeth, Domestic Series, Vol 77 no. 79.
14. City of London, Repertories 17, f. 456.
15. Ibid 17, f. 464.
16. **Public Record Office map room, MPB 31.** In the catalogue this map is described as a map of Stepney and Poplar in the time of James I. However, the map's purpose is to show plans for new navigation cuts, and it is not a general map of the area. Such ambitious schemes were being considered during the 1560s and 1570s, but there is no evidence to show that they were still being considered during James I's reign. Furthermore the scope of the map falls exactly within the instructions given to Trapper in 1573, so I think that there can be little doubt but that this map was drawn up by Trapper on the instructions of the city in 1573. Much of the confusion which has arisen over the previous dating of this map must be ascribed to the document which has been attached to the map. This document is of the time of James I, but it has nothing whatsoever to do with the map. It is rather part of the instructions issued to a Commission of Sewers set up to

investigate disputes over the right to collect tolls at a lock in Waltham, most probably in or around the year of 1613.

17. Hatfield House, CP166147•
18. For a full summary of the improvements made, and of the ensuing problems, see an essay I have deposited with Stratford Reference Library entitled 'The River Lee: A Tudor Experiment in Improving a River Navigation'.
19. John Norden's Description of Middlesex, British Library Harleian MS 570
20. See n. 1 above.
21. 12 Geo II c. 32.
22. 7 Geo III c. 51.
23. 'Proceedings in the Star Chamber'. A manuscript book compiled about 1595 by William Harte, and now deposited in the Guildhall Record Office. Fos 169-70 provide evidence collected by the 1551 Commission of Sewers.
24. British Library, Lansdowne 60 no. 35.
25. City of London, Repertories 63 f. 89b.
26. Details of these negotiations and the lease are to be found in 'A Book of Extracts from the records relating to the River Lee and the New River', Guildhall Library MS 2194.

