

**APPENDIX 3.1 EXTRACT FROM FEASIBILITY STUDY BY SCOTT WILSON
KIRKPATRICK & CO LTD: FINAL REPORT, 1998**

The Melksham Link
Extract from Feasibility Study
Scott Wilson Kirkpatrick & Co Ltd
Final Report January 1998

route options we realised that in terms of overall benefits to Melksham (and recognising as discussed later that restoration of the Canal on or near the original alignment through the Town should now be considered very doubtful), an alternative route option which would still allow navigation through the Town but along the Avon would probably be preferred to any new route option around the outside of the Town. Such an internal route would, however, be potentially more problematic and controversial than an external route.

Between the K&A and the River Avon south of the Town, all routes would need to pass through Terrace Gravels requiring lining, and Alluvium in the flood plain.

The eastern route options we developed were in fact the main focus of 'The Melksham Project' (Allen & Harris, 1994). The favoured option from that Report corresponds quite closely with Route E herein. Once clear of the urban constraints of Melksham, there is considerable freedom in route planning between the K&A and the original alignment which can be recovered south of Lacock. We have presented one of many possible variations on a basic theme, as route option G. These options pass mainly through Oxford Clay, hence lining requirements are minimised.

The option of an alternative route around the west side of Melksham was considered but was found to be unsatisfactory since it would suffer the same principal drawback as an eastern option, namely bypassing and sidelining the town, and additionally would be far more costly and complex as it would need two major crossings of the Avon and two railway crossings. This option was not therefore pursued further.

2.3.3 Route Description

2.3.3.1 *Original Route Through Melksham*

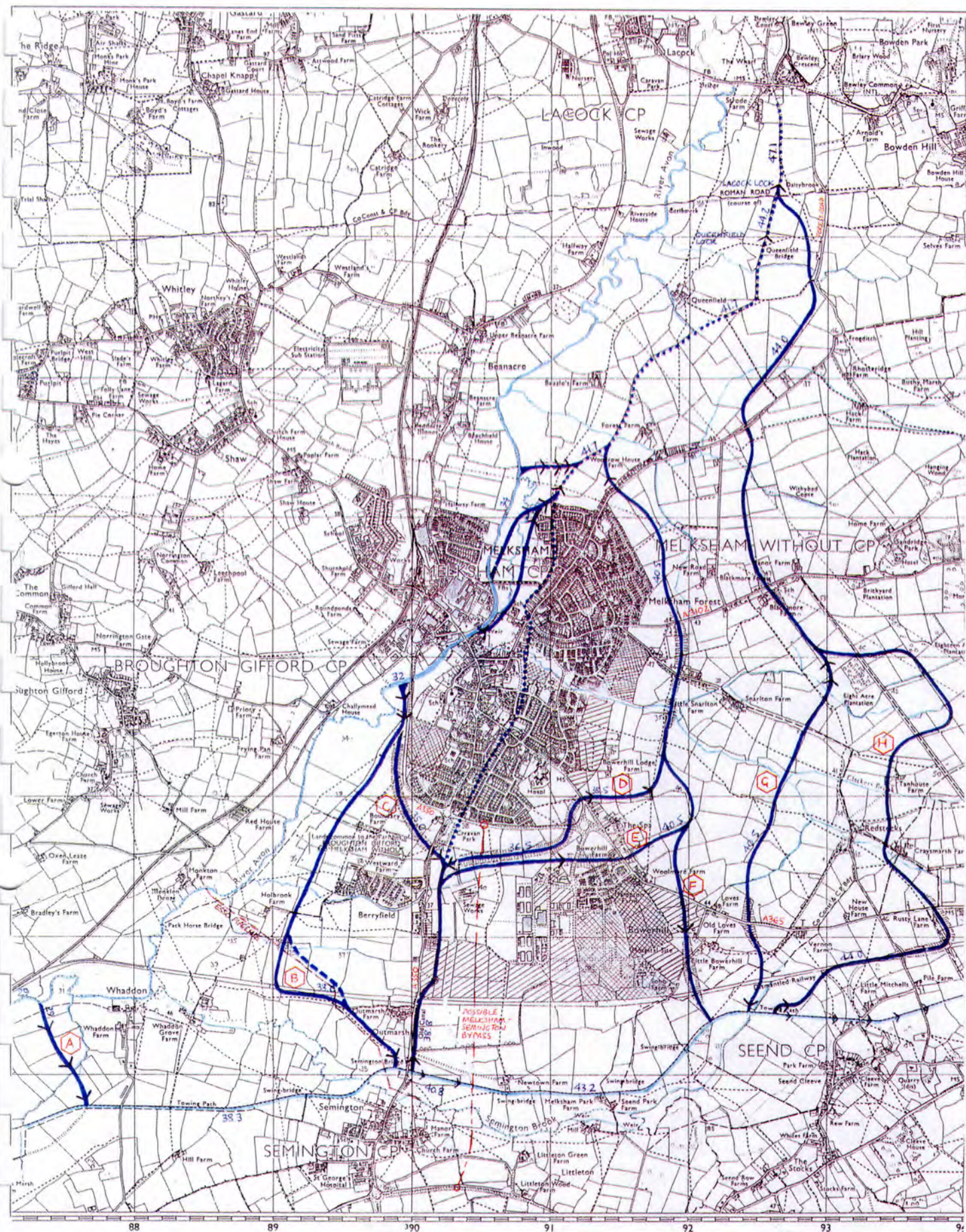
Length:	7.2 km
Locks:	3
Cost:	£8.3M + £33k pa

The problems of restoration from Junction Lock to the A350 south of the Town are common to other routes and are described elsewhere. From the A350 through to the northern limit of the Town, the original route is now heavily developed, mainly with gardens (perhaps 2km in total), but with some properties on the line, and in many cases the construction impact and land take in gardens would make further property acquisition necessary.

2.3.3.2 *Alternative Route A*

This route would require a new, short, link canal between the K&A and the River Avon at Whaddon. The River Avon would then be used for navigation through Melksham, and another new, short, link canal would be provided to the north of the Town to rejoin the original line.

There would be considerable engineering works required to make the River Avon navigable between Whaddon and Melksham Town Weir: the Polytechnic study concluded that dredging to maintain navigable depth would be impracticable, and that



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0 1km

RESTORATION OF THE WILTS & BERKS CANAL FEASIBILITY STUDY Possible Route Options Melksham

FIGURE 2.1

Scale at A3 : 1:25000

Drm	EMF	Appr	Revised
Chk		Date	Date
			16/7/97



three or four long (70m or more) control weirs (or shorter weirs with flood gates as at Melksham) and locks would be required. Notwithstanding the considerable cost of the engineering works, the environmental impact would probably give rise to serious objections. This option is therefore not considered satisfactory but is included in the present study only for completeness.

The northern part of this route does appear practicable however and is further discussed as part of what is considered to be the first viable route, Route B.

2.3.3.3 *Alternative Route B*

Length: 8.8km comprising: 3.5km (K&A to R.Avon); 2.1km (R.Avon); 0.5km (R.Avon to W&B); 2.7km (restored W&B to Lacock Lock)
Locks: 8
Cost: £5.9M + £48k pa

This route is designed to avoid the ongoing development on and around the original route to the south of Melksham. It would leave the K&A west of Semington Bridge (close to the original junction point) via a regulating lock and pass around the west of Berryfield until it reached the A350. From this point the route would descend via two locks into the River Avon just downstream of the A350 bridge. Some dredging work would be required to make the river navigable between here and the Town Weir some 0.7km upstream. A low weir might be required to ensure navigable depth, but a more detailed study would need to be carried out to confirm this. At Town Weir, a lock would be required, for which there is space on the east bank adjacent to the weir.

Upstream of Town Weir, almost certainly as far as the northernmost of the three new link canal options indicated on **Figure 2.1**, the River Avon should be navigable by canal boats without any dredging work, and is indeed presently being used for navigation. This northernmost link (which is the costed option) has the advantage of being the most straightforward in engineering terms, the least costly, and likely to require the minimum of construction within the flood plain. It would utilise about 1.2km of the river upstream of the weir. The southernmost link would minimise the use of the river, eliminating use of the river upstream of the weir, but at a cost premium of perhaps £0.4M. In between these points, the middle link canal would also have to cross the local parallel channel. Any of the three link canals would probably require 3 locks to overcome level differences.

The Avon bridges over the reach proposed for navigation all have ample clearance. The river over this reach is wide and generally sluggish (at least in summer), being very much in the nature of a canal in appearance. It would be necessary to design works in the flood plain in such a manner that neither discharge nor storage capacity were reduced, and in consequence such works would need to be designed to be submerged in a flood. This would render the route un-navigable in a flood, and river velocities in winter might also render the reach un-navigable during this period.

Pumping facilities would be required at each lock or flight for water conservation purposes (this is common to all options), and special measures might be required to limit mixing of Canal water and Avon water, depending on water source.

The original Canal route is recoverable from the immediate northern outskirts of Melksham, and for the purposes of route comparison this option is costed through to the District boundary south of Lacock Lock.

2.3.3.4 *Alternative Route C*

Length: 8.2km comprising 1.5km restored W&B and 1.4km new canal (K&A to R.Avon); 2.1km R.Avon; 0.5km new canal, R.Avon to W&B; 2.7km restored W&B to Lacock Lock.
Locks: 8
Cost: £6.6M + £52k pa

This route differs from Route B only over its southern section, and is designed to maximise recovery of the original alignment south of Melksham. The original alignment would be followed to a point north of the sewage works. Here a lock would need to be provided to allow the Canal to pass under the existing A350, and to continue in cutting (up to about 3m deep to towpath level) to rejoin Route B at the locks descending into the Avon south of the A350 bridge.

At the K&A junction at Semington, there is currently a slaughterhouse on the original line. However, even if the original line could not be recovered at this point, a relatively minor diversion would be possible. A regulating lock would be required at the junction.

Of more concern are the proposed site developments in this area. The land to the north of the old railway is earmarked for business development in the Local Plan, and the plot including the Canal is currently up for sale. The Council would therefore need to move rapidly to protect this route if this option is preferred. The presence of a restored canal could make this a more attractive development site. At Shails Lane, which forms the northern boundary of the development site, there is a property built on the original line but a minor diversion to the east is feasible.

Another factor affecting this route option is the possible Melksham-Semington Bypass, for which a corridor is reserved through the earmarked Business Development Area, although no precise route has yet been finalised. Although the described canal route option should not affect any proposals for the bypass, the close proximity of such a new road may make this option less attractive to boaters and other users when compared to option B.

2.3.3.5 *Route D*

Length: 8.3km comprising 1.5km restored W&B (K&A to Melksham); 4.4km new canal; 2.4km restored W&B Melksham to Lacock Lock.
Locks: 6
Cost: £7.2M + £37k pa

The southern and northern reaches of this route option are common with Route C, but instead of diverting west and using the River Avon, the route diverts to the eastern outskirts of the Town, keeping as close as practicable given the topography and current known development proposals. As the route turns east from the original

alignment south of Melksham, a lock would need to be provided to allow for crossing under the proposed A350 bypass. This drop to a lower level should also enable roads to be crossed at the A365 Bowerhill roundabout: the Canal would need to be in cutting between these points up to about 3.5m deep to towpath level.

Once beyond the A365, another two locks would be needed to lift the Canal to a more suitable level to traverse the eastern outskirts, crossing under Snarlton Lane, the A3102 and Forest Road; then through one further lock to rejoin the original alignment north of the Town. This part of the route would feature cuttings up to about 4.5m deep and an embankment up to 6m high (across Clackers Brook). The presence of a sump pound is an undesirable feature, but overflows from the sump pound between the A350 and A365 could be taken to the Berryfield Brook

At both the Snarlton Lane and Forest Road crossings, land take from gardens would be required, but, other than these and the property already referred to for Route C, no other property would be affected

2.3.3.6 Alternative Route E

Length: 8.6km comprising 1.5km restored W&B (K&A to Melksham); 4.7km new canal; 2.4km restored W&B Melksham to Lacock Lock.
Locks: 4
Cost: £6.4M + £31k pa

This route is essentially the same as Route D, but crosses roads south of Bowerhill roundabout, which would avoid the need for a sump pound and thereby eliminates two locks. The disadvantage would be the possible impact on the A350 bypass, which would need to be raised to cross the Canal (and thus might raise a strong or overriding objection), and the impact on Bowerhill Farm.

2.3.3.7 Alternative Route F

Length: 6.7km comprising 4.3km new canal (K&A to north of Melksham); 2.4km restored W&B Melksham to Lacock Lock.
Locks: 3
Cost: £4.9M + £23k pa

This route is essentially the same as Route E east and north of Melksham, but would commence from the K&A immediately to the south east of Bowerhill. It would run north through the planned development area, with associated enhancement potential for the site and would descend via a lock to cross under the A365, to join Route E. The route would avoid all existing property disturbance south of Melksham, and any conflict with the proposed bypass, and should in consequence be significantly cheaper than Routes D or E. It would however result in the creation of a sump pound.

2.3.3.8 *Alternative Route G*

Length: 6.5km comprising 6.5km new canal to Lacock Lock
Locks: 3
Cost: £4.9M + £21k pa

This route is one of several feasible routes well to the east of Melksham. It would drop from the K&A through a single lock to cross the A365 and the valley of the Clackers Brook, then rise through 2 locks (one might suffice) and follows close to the 44m contour to Lacock Lock. This route has the advantage over Route F of not encroaching on gardens, and would thus be less contentious, but would again require a sump pound.

2.3.3.9 *Alternative Route H*

Length: 8.5km comprising 8.5km new canal to Lacock Lock
Locks: 1
Cost: £5.6M + £20k pa

This would essentially be a contour canal; the route being adjusted to suit field and land ownership boundaries as required. Only one lock should be required, at the K&A junction. The main advantage of this route over Route G (and all other routes) is its simplicity: a single lock should makes navigation easier. However, its remoteness from Melksham means there would be little direct or significant benefit to the Town.

2.3.4 Discussion on Melksham Routes

The original alignment and all of the developed route options were fully discussed at the workshop and as a result a number were considered as unlikely to be feasible. The historic interest of the original route through Melskham was recognised and it was noted that the Amenity Group had recently published a pamphlet entitled 'A walk along the lost waterway of Melksham'. It was also recognised, however, that restoration to navigable standards would probably not be practicable given the nature and extent of development on the original alignment in the years since the Canal had ceased to operate.

Route A, which would require use of a considerable length of the River Avon, could find little support due to its potential impact on the river environment: neither did it appear to offer any cost benefits, reference the earlier Oxford Polytechnic study.

In respect of the proposed routes from Semington to the southern edge of Melksham (Routes C, D and E), north of the old railway line, these would pass through land now allocated for business development, for which planning consent has been granted. To protect the route now would be very difficult. The old Canal bed here is also a habitat for the Great Crested Newt, a protected species.

The proposed A350 Semington-Melksham Bypass follows a line some 250m east of the original Canal route. This is Wiltshire County Council's highest priority scheme, but construction is likely to be in the medium term.

The just published (August 1997) local plan review document 'Housing Growth Options to 2011' indicates additional areas of land allocated for housing which would impinge directly on Routes C, D, E and F. There was no consensus at the workshop as to the possible benefit of integrating a canal with proposed business or housing development.

Route D would pass through a recent infill housing development north-west of the Bowerhill roundabout. All variants of this route would require some garden (or possibly property) acquisition, and this was seen as a potential major drawback.

Thus options C, D, E and F were considered to have significant problems in relation to existing planning allocations, and the consensus was to set these options aside in favour of the more viable alternatives.

2.3.5 Preferred Routes for Melksham

The remaining route options were considered in more detail by the workshop and this resulted in a choice between using the River Avon (Route B) through the centre of Melksham or bypassing Melksham entirely with a route well to the east (G or H).

The workshop attendees indicated a strong preference for the River Avon option, with the exception of the Environment Agency, because this route would bring significant benefit to the Town. The Agency expressed concerns on several issues, which would not apply to an eastern route. These included the impact of existing navigation, conservation and fisheries interests, the need for dredging, and the possible need for another weir to maintain water depth for navigation downstream of Town Bridge. The environmental issues are discussed further in Chapter 5 of this report. Town Bridge is a listed structure, but there would be ample clearance for navigation.

Flood defence would also be a concern. This would need to be studied in detail, but in practice the proposed canal works should not make the present situation worse. With careful design the situation could even be improved.

Melksham Gate (a float operated flood gate adjacent to the weir) has some problems and moorings upstream of this could be at risk from careless operation. Hence any day moorings would best be situated downstream. There could be mutual benefit, if navigation were to be permitted, by rebuilding this structure entirely as a combined long fixed weir and lock structure. Avon Rubber has a licensed abstraction point just upstream of the weir which would need to be maintained.

North of Town Weir, because of the impact of route options which cross the subsidiary channel (which is in fact the original river channel), the preferred option is the most northerly of the three routes considered and shown on **Figure 2.1**. Since this reach of the river should be navigable without any dredging work, this would also be the least cost option.

In view of the complex relationship between river flows and canalised sections of the River Avon options, close co-operation would be required between the Environment Agency and the Canal authority to ensure that all interests were effectively dealt with.

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In respect of the eastern route options there appears to be some freedom for precise route selection but the key issue on these routes is likely to be highway crossings.

For the purposes of the present Study, the River Avon (Route B) has been selected as the preferred route, but, noting and addressing the Environment Agency's significant concerns, an eastern route option has been retained as a fall-back .