

REDDITCH BOROUGH COUNCIL – June 2009
DRAFT DREDGING (LAND DRAINAGE) MAINTENANCE POLICY

General

The maintenance responsibilities for riparian land owners are set out in law. In addition, there may be other specific requirements in accordance with the Land Drainage Acts 1991 and 1994. Following the July 2007 floods and publication of Sir Michael Pitt's review into the circumstances thereof, the Draft "Flood and Water Bill" was published on 21 April 2009. This attempts to unify various pieces of drainage legislation and therefore any references below, refers to documents currently in force.

In this regard, a 'river' could either be a named river (e.g. River Severn, River Avon, River Arrow, etc) or any other named or un-named watercourse, ditch, roadside ditch and the like. The basic criteria to be considered is: - Does it convey flow for more than 50% of the year, irrespective of rainfall? Some channels are designated 'main rivers' (by the Environment Agency (EA)) and this confers additional powers upon the EA to act, in combination with the Local Drainage Authorities on associated matters.

Clearly, there were mixed codes of practice adopted by the various drainage authorities pre-2007, whereby Blanket Policies: -

- Which dictate that all channels "should be dredged", and also
- Which dictate that all channels "should not be dredged"

have now been found to be unacceptable. A range of criteria should be considered and if the 'test' suggests that actions are required, this should be enforced and if necessary rigorously, by means of formal actions by the appropriate LDA(s) in accordance with the Worcestershire Land Drainage Protocol (as adopted by Redditch Borough Council (RBC)).

One common misconception has in the past been, that if in clearing one section of channel it may cause flooding downstream, it should not be done. This may be due to inadequate capacity downstream in which case the argument is valid. If however, it is due to one or several downstream landowners also requiring taking appropriate actions it is not. Obviously, it is better to commence downstream improvements first, but if this is not possible, other actions should not be unreasonably delayed as a consequence – two wrongs do not make a right.

The commonest cause of obstruction is due to natural processes such as migration and deposition of silt and/or former minor vegetation reaching maturity, has been allowed to encroach into the bed and/or channel of the river or watercourse. Also, where 'old' structures have been in place for many years, they may now be acting as throttles due to inappropriate developments in the vicinity and/or climatic effects.

This policy is not to be confused with any requirements for navigation purposes which may in those instances, override the usual Land Drainage Criteria. However, there are no navigable river waters within the RBC area, which fall within the remit of the Land Drainage Acts 1991 and 1994.
Intervention Matrix (between fixed structures or other reference points)

Effect(s)		Test - 1		Test - 2		Test - 3
	Y/N	Action	Y/N	Action	Y/N	Action
During high rainfall, is silt or standing water present at high-level?	Yes	Throughout an entire reach?	Yes	Does this extend to next reach?	Yes	Clear culvert or other obstructions.
	No	No action.	No	Remove localised obstructions.	No	Review only.
During high rainfall, are there any significant steps in water level?	Yes	Fixed Assets, culverts, bridges?	Yes	Seek EA approval to alter structure.	Yes	Remove or re-build structure.
	No	No action.	No	Remove localised obstructions.	No	N/a
During low rainfall, is silt or standing water present at high-level?	Yes	Throughout an entire reach?	Yes	Dredge reach completely.	Yes	Clear culvert or other obstructions.
	No	No action.	No	Remove localised obstructions.	No	Review only.

Hierarchy – Channels

- C1 Main River – River Arrow
The Wharrage, Wixon, Swan’s and Bow Brooks
- C2 Ordinary Watercourse – An open channel which conveys flow for more than 50% of the time.
- C3 Arterial Ditch – An open channel which serves and receives flows from other ditches, prior to discharge to a main river or ordinary watercourse. These normally flow during wet weather only.
- C4 Ditch - An open channel which may or may not serve or receive flows from other ditches, prior to discharge to an arterial ditch. These normally flow during wet weather only.
- C5 Roadside Ditch – These are adjacent to highways (public or private) and may either wholly serve the highway or drain it in combination with other land. These normally flow during wet weather only. In terms of access, Ordinary Watercourses which abut the highway are in effect roadside ditches. They can eventually discharge to a variety of outlets.
- C6 Culverted watercourses are pipes or other conduits comprising of several such contiguous lengths which convey flows from an open channel ordinary watercourse to either a lake or pond, public surface water sewer, or another open channel (irrespective of the latter's status).

L1 – Woodland

By their very nature, densely planted wooded areas can have a serious impact upon open channel performance. Clear zones must be maintained on either side although localised deviations around mature trees are acceptable, provided that the specified zone is contiguous throughout. Where a channel is adjacent to a boundary, then the clearance zone should be doubled from the boundary, providing enhanced access on one side only.

Clearly, the presence of trees near channel banks at bends can have a positive benefit. However, if allowed to self-set unchecked, there is a danger that the entire channel edge becomes vegetated on both sides. This is unacceptable as not only is access impaired, often leading to serious maintenance problems as well as denuding light from the river corridor. Trees are also a major source of nuisance from leaf and other debris and their close proximity to an open channel is therefore mostly deleterious.

A matrix needs to be developed to identify suitable species, and the permissible size and spacing of trees – the larger the tree, the larger the space between similar examples is required. (This item will be jointly developed by Landscape and Asset Maintenance officers).

Where such an area adjoins a highway (Foxlydiate Wood/Bromsgrove Road), situations can arise whereby trees can become unsafe and ultimately may fail, and partially obstruct the highway as well as any open channels. Consideration needs to be given to also create zones either for clearance, selective retention and/or improved inspection regimes.

L2 – General Land

Clear zones must be maintained on either side although localised deviations around mature trees or other features are acceptable, provided that the specified zone is contiguous throughout. Where a channel is adjacent to a boundary, then the clearance zone should be doubled from the boundary, providing enhanced access on one side only.

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A matrix, as set out in 'L1' above, needs to be developed. There should be no formal access track within 2m (pedestrians) of the banks edge, assuming that the top of banks are relatively level. Where these requirements are not possible and the stability of the track is not in question, then either mature planting and/or safety barriers must be present or provided.

L3 – Highway Areas

Working in or adjacent to a highway may require appropriate Notices and warning signs to be deployed. Typically, access is only possible from the made highway surface(s) and usually the space requirements set out elsewhere are normally satisfied.

In addition to land drainage requirements, there may be issues of highways visibility which can have an impact upon management practices of trees, hedges and the like.

C1 - Main Rivers

The EA has certain powers in respect of Main Rivers, however the responsibility for maintenance of the channel beds and banks remains with the riparian owner(s) and they should be relatively free from any obstructions and provided with a minimum clear zone of 5m on either side, or equivalent thereof. Hard structures within this zone, whether in or adjacent to the channel or not, may require the formal consent of the EA and/or approval of the LDA.

C2 – Ordinary Watercourses

The channel beds and banks are the responsibility of the riparian land owner and should be relatively free from any obstructions and provided with a minimum clear zone of 5m on either side, or equivalent thereof. Hard structures within 5m of the bank, whether in or adjacent to the channel or not, may require the formal consent of the EA and/or approval of the LDA.

C3 – Arterial Ditch

The channel beds and banks are the responsibility of the riparian land owner and should be relatively free from any obstructions and provided with a minimum clear zone of 3m on either side, or equivalent thereof. Hard structures within 5m of the bank, whether in or adjacent to the channel or not, may require the formal consent of the EA and/or approval of the LDA.

C4 – Ditch

The channel beds and banks are the responsibility of the riparian land owner and should be relatively free from any obstructions and provided with a minimum clear zone of 2m on either side, or equivalent thereof. Hard structures within 5m of the bank, whether in or adjacent to the channel or not, may require the formal consent of the EA and/or approval of the LDA.

C5 – Roadside Ditch

The channel beds and banks are the responsibility of the riparian land owner and if adopted, WCC the highway authority, on a shared basis. The latter only has obligations insofar as S80 of the Highways Act applies. They should be relatively free from any obstructions and any hard structures within 5m of the bank, whether in or adjacent to the channel or not, may require the formal consent of the EA and/or approval of the LDA.

Summary

In clearing watercourses, it is presumed that normal dredgings can be deposited within the range of the excavator's boom, i.e. effective operating circle from the bank. Other loose materials such as from forestry management in close proximity to any open channel, potentially has severe consequences from a flood risk perspective. In the Council's view a range of distances applies, and where the land in question is publicly accessible, these distances are to be doubled.

Thus the nominal distances are: -

- Main Rivers 15m (30m)
- Ordinary Watercourses 10m (20m)
- Ditches 5m (10m)

In the case of roadside ditches, such materials cannot normally be stored within the accessible land as these distances cannot be achieved and would in any event be within the dedicated highway zones.

For other areas, the disposal or treatment of vegetation is to be as follows: -

- Minor vegetation Shredded and deposited on suitable adjacent flat areas.
- Logging Secured (within critical zones) by means of pegs and wires (regularly checked by persons placing them).
- Burning Where it is not practicable to shred brush and the like, then limited burning is to be carried out to reduce the debris safely. This must be in accordance with any other Council policies on such matters and is a last resort.

Normally, the Council's Land Drainage Term Contractor regularly removes debris from the channels and temporarily deposits on adjacent banks to dry. As soon as is reasonably practicable, this is then removed by them to the Contractor's tip. In some instances, the removal is not possible due to problems of remote or unsafe access. In these instances, Landscape Services need to be advised for disposal as above, probably by burning.

A common problem associated with 'river' maintenance is the presence of self-set trees and shrubs. Over time, they can mature and the root and trunk systems can eventually obstruct the normal flow of the channel. This is technically an obstruction and acts in the same way as if it were artificial hard material or structure.

The need for taking action is when there is clear evidence of afflux. This is where the water levels in the channel either side of the tree or other obstruction are markedly different. This may in low flows be only a few centimetres, but during storm conditions, this can be greatly magnified. If there are several such obstructions present, it is possible for considerable false depths of flow to accumulate over relatively short distances which can have a serious, deleterious impact upstream.

This can have a marked detrimental impact upon flood management. Firstly, there is less below ground storage (volumes) within the channel itself and thus flooding situations can occur quite quickly. Secondly, the performance of any on-line channel structures (culverts and the like) will also suffer leading to a significantly reduced capacity for flows. The final and major consequence is that with normally low velocities, siltation of the channel will take place at an ever increasing rate, thereby greatly exacerbating both reductions of storage and flow capacities.

Happily the need for taking significant actions is relatively infrequent, and when such works are required, provided a sensible, minimal annual maintenance regime is put in place, the benefits will last for between 10 and 20 years in most instances.