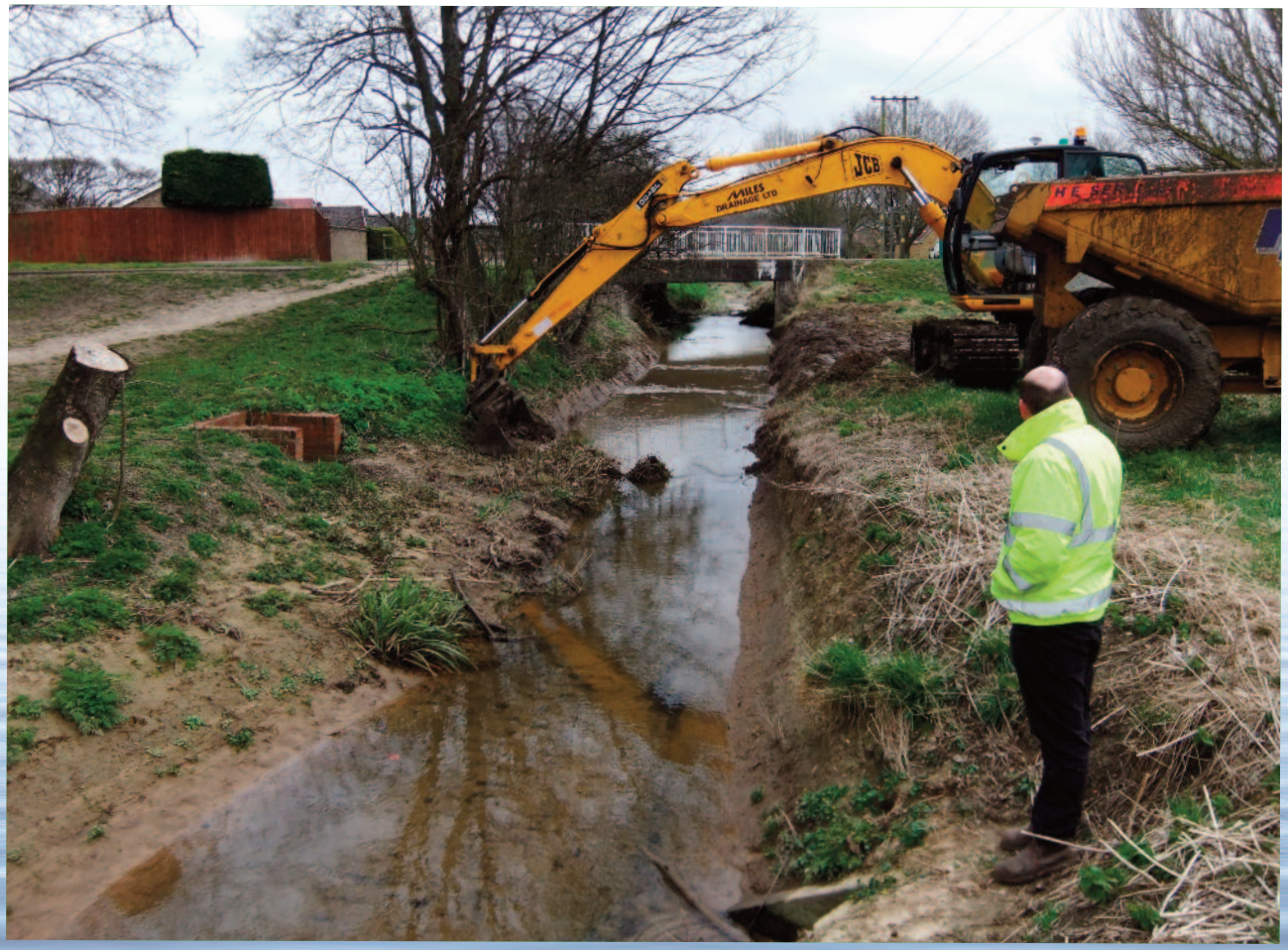
Suffolk Flood Risk Management Partnership

Policy for working on Watercourses in Suffolk Policy

Appendix B to the Suffolk Flood Risk Management Strategy



March 2018

CONTENT

1 Background

As defined under the Flood and Water Management Act 2010, Suffolk County Council (SCC) is the Lead Local Flood Authority. We lead a partnership of other flood risk authorities, the Suffolk Flood Risk Management Partnership (SFRMP), and have produced a local Flood Risk Management Strategy[1] that defines how we will manage flood risk in the county.

Under Section 23 of the Land Drainage Act 1991, as amended by the Flood and Water Management Act, as of the 6th April 2012, the County Council is responsible for managing flood risk from ordinary watercourses and regulating works affecting them – except in areas where an Internal Drainage Board (IDB) exists.

The Environment Agency remains responsible for regulating activities affecting the coast and main rivers.

2 Purpose

The Suffolk Flood Risk Management Strategy clearly states that the SFRMP's approach will be to minimise flood risk and adverse environmental effects from works on or near watercourses. Current practice is to resist the piping or culverting of watercourses in order to preserve capacity and conveyanceof natural flows and to remove such features to restore open watercourses, wherever possible.

This policy paper is designed for use by local planning authorities, landowners, agents and developers and aims to provide clarification of the policy towards works affecting a watercourse, particularly culverting.

3 Introduction

If you are planning to undertake works within a watercourse within the UK, you need permission to do so by law. It is essential that anyone who intends to carry out works in, over, under or near a watercourse, that they contact the relevant flood risk management authority to obtain the necessary consent before starting the work.

For ordinary watercourses in Suffolk, outside an IDB area, the relevant authority is SCC. The consent granted by Suffolk County Council for working on a watercourse is known as "Land Drainage Consent".

For Main Rivers the consenting body is the Environment Agency

Some ordinary watercourses are under the jurisdiction of IDB, and the IDB will be the consenting body for these watercourses.

Therefore, if you are planning to do works to an ordinary watercourse in Suffolk, you need to apply for consent from SCC.

The reason for the consenting process this is to ensure that any works do not endanger life or property by increasing the risk of flooding nor cause harm to the water environment.

1.http://www.greensuffolk.org/assets/Greenest-County/Water--Coast/Suffolk-Flood-Partnership/19431A-Flood-Risk-Management-Strategy-v12.pdf

4 Legal Provisions

In relation to works on an ordinary watercourse. The legal provisions are as follows:-

Land Drainage Act 1991 as amended by the Flood and Water Management Act 2010 (FMWA10)

Section 23(1) of the Land Drainage Act 1991 (LDA91) states:- "No person shall:

(a) erect any mill dam, weir or other like obstruction to the flow of any ordinary watercourse or raise or otherwise alter any such obstruction; or

(b) erect a culvert in an ordinary watercourse, or

(c) alter a culvert in a manner that would be likely to affect the flow of an ordinary watercourse,

without the consent in writing of the drainage board concerned.

Without the consent, in writing , of the drainage boar concerned

Under the Land Drainage Act 1991 if works are executed without first obtaining a formal written consent from Suffolk County Council, we have the power to serve a notice under Section 24(1) requiring you to abate the nuisance within a specified time. Failure to comply with the notice is a criminal offence. Steps may also be taken to abate the nuisance and recover expenses incurred by the County Council.

5 Reason for Policy

Suffolk County Council, supported by the SFRMP, seeks to control works to watercourses to avoid adverse effects on flood risk, human safety, ecology and aesthetics, as well as other effects as a result of excessive alterations to watercourses which are likely to arise as described in this document.

We will consider each application to work on a watercourse on its own merits, but it is our preference to keep watercourses as open channels without obstructions to flow wherever is reasonably possible. Therefore, we will not permit culverting of a watercourse where there is no genuine need, or where the inclusion of a culvert would lead to an increase in flood risk in the area. In all cases, where it is appropriate to do so, applicants must provide adequate mitigation measures.

Any proposed structure, feature, or alteration to a watercourse which may affect the flow of water must have prior consent from SSC before works can begin. Unnecessary blockages or obstructions in watercourses should be avoided as they may increase flood risk and damage the environment. The application must demonstrate that the proposed works will not increase flood risk or damage the water environment in the area.

Where culverting is proposed as part of a scheme to build over a watercourse, we would generally be opposed to the proposal for the following reasons:-

- Increased risk of flooding due to blockages
- Loss of floodwater storage
- Loss of wildlife habitat and watercourse features
- Increased maintenance costs
- Health and safety considerations associated with maintenance,

and because this could preclude future options to restore the watercourse

Some of the alternatives the Environment Agency suggests to culverting watercourse are:-

- Construction of a bridge – much lower impact on the watercourse hydraulics and ecology
- Constructing the infrastructure elsewhere – often not a practical option
- Diverting the watercourse – this has its own
- disadvantages but also some opportunities for environmental and hydraulic improvement
- For small streams, constructing a ford.

6 The Consenting Policy

6.1 The Consenting Process

If you wish to place or construct anything, such as a dam, weir, headwall or culvert, which may affect the flow in a watercourse, even on a temporary basis, you must obtain the written consent of SCC or the appropriate IDB. This is in addition to any other consents or approvals you may need. If you are unsure about whether consent is needed, then please contact us at floods@suffolk.gov.uk[2]

The consent application will be judged on the following criteria:-

- Flood risk and local drainage
- Channel morphology, ecological and water quality impacts
- Health and safety considerations

The applicant will need to provide suitable evidence that the proposal is of suitable design, will not cause increased flood risk and is compliant with the Water Framework Directive[3].

The consent will control the impact of the works to up and downstream flows and assess the water quality and ecology impact. It catalogs details of the structure and those responsible for future reference.

Current practice is to resist the culverting of watercourses and, instead to remove culvert and pipes to restore open watercourses wherever possible. The consideration of an application will also take into account the fact that, while a pipe may allow the flow of water, it is not able to provide the storage capacity of an open ditch in times of heavy rain and may be more difficult to maintain. Watercourses also provide valuable wildlife habitats.

6.2 Design Guidance

Some of the most commonly proposed works to watercourses involve culverting, installation of headwalls, and diversion of watercourses. This guidance will assist applicants in understanding which important factors should be considered in designing their works before applying.

Culverts

Culverts are to be designed in accordance with CIRIA Culvert Design & Operation Guide[4] (C689)

Here are some of the things you should consider:

- Minimum aperture size should be 600mm where practical, or the largest possible diameter for said channel
- Propose the shortest length possible
- Avoid sharp bends
- Single pipes are preferable to multiple smaller pipes
- Trash & security screens should be avoided if possible
- Proposals which include long lengths of piping must also include access points for maintenance. In general, inspection chambers are required every 22.5m

Headwalls

Headwalls should be designed similar to Sewers for Adoption 7th Edition5 - Figure C.[5]

- Headwall and wingwalls should be encompassed into the bank – there should be no protruding elements
- A railing should only be installed on top of the headwall – no railings along wingwall

Diverting Watercourses

Diverting watercourses should only be done as a last resort. Any new river section will need to be recreated to a reference reach upstream of the works providing a corridor with enhanced in-river and bankside habitats. Channel dimensions and hydraulic gradient should be recreated as per the original channel.

2.floods@suffolk.gov.uk

3.http://jncc.defra.gov.uk/page-1375

4. http://www.ciria.org/Resources/Free_publications/Culvert_design_and_operation_guide.aspx

5. http://sfa.wrcplc.co.uk/

Weirs, dams, gates including Natural Flood Management (NFM) structures (i.e. Porous woody debris)

Any in-situ control device installed within the channel to alter flows will need an appropriate crest height that allows for safe exceedance in-channel during flood flows. This is to prevent any residual increases in flood risk. Where a control device is being used to divert flow towards another feature (i.e. offline storage) then this can be relaxed.

6.3 Environmental Impact & Consideration

With all applications, we are required to consider any effect that the proposals may have on the built, historic or natural environment. We seek to reduce any negative impacts to the environment, and provide mitigation for development wherever reasonably possible.

Installing a culvert can result in a number of detrimental impacts upon the riparian environment and may compromise or frustrate the aims of The Water Environment (Water Framework Directive) (England and Wales) Regulations 2003 which include protecting and improving the ecological and chemical quality of watercourses:

Ecology: Culverts can often act as barriers to animals including important mammals such as Otters as well as fish. They can also result in the loss of important bank-side habitat and remove daylight from long stretches of water.

Otters and Water Voles are generally reluctant to swim through culverts and will (unless a mammal pass is installed) leave the watercourse to cross roads, often resulting in fatalities.

Similarly, fish migration can be severely compromised by the installation of culverts, they may swim through short lengths, but longer lengths can reduce the availability of habitat for spawning with consequent impacts upon both fish numbers and those species reliant upon fish as a food source.

The loss of bank-side habitat can have detrimental impacts upon existing vegetation (including complete removal) and those species reliant upon such features including birds and bats.

These impacts are exacerbated if a watercourse has a number of culverts and the strength, resilience and potential of the watercourse as an ecological corridor can be seriously damaged.

Pollution: Especially in urban areas, a watercourse which has been culverted can suffer from misconnected sewers, overflows from blocked sewers and drains and from the discharge of contaminated surface water.

Morphology: Culverting watercourses can create or exacerbate erosion or, conversely, result in the deposition of sediment thus impacting upon water velocities and the natural functions of the watercourse. The consequences can include the depletion of oxygen levels in the water or in biological hazards such as high concentrations of pollutants being released.

Future Restoration: Installing culverts, especially in urban areas, can frustrate attempts to restore the watercourse to a more natural state, thus defeating one the key aims of the Water Framework Directive.

Landscape and Amenity: This can be particularly damaging in urban areas leading to the loss or degradation of landscape components such as trees and river banks with the consequent loss of accessible green space and riverside pastimes such as fishing, walking, or boating.

Hedgerow and Tree Removal: While "double hedging" of watercourses (where hedgerows or trees are planted on both banks of a watercourse) is not recommended due to the fact that it can make efficient maintenance almost impossible, hedgerows and trees should not be removed when working on watercourses. If there is a need to remove hedgerows or trees, you must first find out whether you need permission to do so, and you will be expected to replace any vegetation which is removed.

7 Planning Considerations

Land Drainage Act consent to work on a watercourse is independent to any other permission you may have been granted, and consent approval does not negate the need for you to obtain planning permission or other permissions.

Suffolk County Council would normally advise planning authorities against issuing planning consent when the application contains details to culvert watercourses on conservation grounds where there are reasonable alternatives. Such alternative solutions might include a revised site layout, single span bridge or an ecologically acceptable diversion of an open channel.

Buildings should not be sited over the top of new or existing culverts. Building regulations (Approved Document H) stipulate the distance from which a watercourse or sewer should be laid from new foundations.

SCC ould normally advise planning authority against planning consent for any building wholly or partly over a culvert as the culvert may, in the future, need to be repaired, replaced or up-rated if conditions in the catchment area change. There is also the need to maintain an overland flow route if the culvert is blocked or its capacity exceeded. Consent is also required for development within a specified distance of either side of a Main River in accordance with Environment Agency Byelaws.

8 Glossary of Terms

- **Watercourse** includes all rivers and streams and all ditches drains, cuts, culverts, dikes, sewers other than public sewers within the meaning of the Water Industry Act 1991) and passages, through which water flows.
- **Main rivers** are normally the principle or arterial watercourses in an area and are designated by Main River maps[6] held by the Department for Environment, Food and Rural Affairs and the Environment Agency. The term also includes any structures in the bed or bank for controlling or regulating the flow of these watercourses. The Environment Agency has permissive (not mandatory) powers to carry out maintenance and improvement works on Main Rivers.
- **Ordinary watercourses** are watercourses which do not form part of a main river.
- **Internal Drainage Board** is a local public authority established in areas of special drainage need in England and Wales. Each Board has permissive powers to manage water levels within their respective drainage districts. They also undertake works to help reduce flood risk to people and property, whilst managing water levels to meet local demand.
- **Consenting** is the process of obtaining permission to add/amend structures in/near a watercourse or flood defence structure.
- **Culvert** means a covered channel or pipe which prevents the obstruction of a watercourse or drainage path by an artificial construction (e.g. road).

6. https://environment.maps.arcgis.com/apps/webappviewer/index.html?id=17cd53dfc524433980cc333726a56386

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