RHONDDA CYNON TAF COUNTY BOROUGH COUNCIL

POLICY REGARDING CULVERTS

POLICY STATEMENT AND EXPLANATION OF POLICY

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STRONG HERITAGE | STRONG FUTURE
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Policy Regarding Culverts

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1.0 Purpose

This leaflet provides a detailed explanation of Rhondda Cynon Taf County Borough Councils (RCTCBC) policy with regard to culverts. It is intended for use by RCTCBC, landowners and developers.

2.0 Introduction

Watercourses fulfill many roles in today's environment. They provide drainage for developed and agricultural land and are vital water resources, while some also have important recreational value. They are important features of the landscape and provide habitats for a wide variety of wildlife. It is therefore important that watercourses and their associated habitats are protected and enhanced for the benefit of present and future generations.

RCTCBC considers it beneficial for watercourses to remain in an open state for both flood risk management and environmental purposes. Conserving open watercourses is one of RCTCBC's major aims and, where possible, RCTCBC will encourage and promote the removal of culverts in order to restore a more natural watercourse environment.

In considering new development proposals RCTCBC's objective is to retain open watercourses with a corridor of open land on both sides. This maintains a flood channel and creates a valuable environmental feature which can enhance the site. RCTCBC will encourage developers to incorporate open watercourses within their site design. Such features are of particular importance to wildlife by providing valuable open land in developed areas.

Culverting can exacerbate the risk of flooding and increase the maintenance requirements for a watercourse. It also destroys wildlife habitats, damages a natural amenity and interrupts the continuity of the linear habitat of a watercourse.

Culverting should not be considered until other options have been thoroughly explored, for example:

- clear open span bridges with existing banks and bed retained;
- revision of site layout to incorporate an open watercourse;
- diversion of the watercourse in an environmentally sympathetic channel and corridor.

It is recognised there are various reasons why in some instances landowners, developers and local authorities believe that open watercourses should be culverted. However, RCTCBC considers any benefits are usually outweighed by the potential problems in managing the system, the loss of habitats and difficulty in pollution detection.

Nevertheless, there may be cases where culverting may in practice be unavoidable for example, short lengths for access purposes or where highways cross watercourses. In such cases the length involved should be restricted to a minimum, the hydraulic and environmental design fully assessed and appropriate mitigating enhancements to the surrounding environment included in the proposal.

3.0 Rhondda Cynon Taf County Borough Council Policy

RCTCBC is in general opposed to the culverting of watercourses because of the adverse ecological, flood risk and other effects that are likely to arise.
RCTCBC will therefore only approve an application to culvert a watercourse if there is no reasonably practicable alternative or if the detrimental effects of culverting would be so minor that they would not justify a more costly alternative. In all cases where it is appropriate to do so adequate mitigation must be provided for damage caused.

Wherever practical RCTCBC will seek to have culverted watercourses restored to open channels.

4.0 Reasons for the Policy

The Land Drainage Act 1991 as amended by the Flood & Water Management Act 2010 places both general and specific duties on RCTCBC regarding the consenting and enforcement of structures within an ordinary watercourse. RCTCBC must be mindful of these duties in discharging all its functions, including those relating to flood risk management and land drainage. Consequently, RCTCBC is in general opposed to the culverting of watercourses because of the detrimental effects that are likely to arise. Such effects may be:

- loss of and adverse effects on environmental features and wildlife habitat;
- increased likelihood of flooding due to blockage;
- increased impact of flooding;
- loss of floodwater storage;
- increased difficulties in providing for drainage connections;
- difficulties in the repair, maintenance and replacement of culverts;
- increased health and safety hazards;
- reduced groundwater recharge;
- increased difficulty in detecting the origins of pollution and in monitoring water quality.

4.1 Loss of environmental features

Culverting watercourses has a detrimental impact on the environment. There is a complete loss of environmental features associated with that section of watercourse. The continuity of the watercourse corridor is broken, adversely affecting the landscape and ecological value of the watercourse and inhibiting the migration of some species. An existing or potential amenity is lost for present and future generations.

Culverting results in the removal of species and watercourse features such as pools, riffles, gravel, cobble, sand, silt, marginal/aquatic vegetation, earth banks with associated vegetation, invertebrate communities and fish. Even seasonally dry watercourses provide valuable habitats for many species, such as amphibians and invertebrates.

Culverting is therefore contrary to RCTCBC's responsibility to further conservation in relation to its flood risk management responsibilities and its aim of contributing to sustainable development.

4.2 Increased likelihood of blockages

Compared with an open watercourse there is an increased risk of blockage once a culvert is installed. If the blockage is within the culvert, there is much greater difficulty in removing it. For these reasons many culverts have screens installed at their upstream end. These screens themselves are often prone to blockage and require frequent clearance and robust emergency procedures to ensure that they do not in themselves cause flooding.

It is sometimes argued that culverting will reduce the problem of open watercourses subject to rubbish deposition. RCTCBC considers that in most cases such short-term advantages are outweighed by the overall disadvantages of culverting and that alternative means should be pursued to address the rubbish problem.

4.3 Increased impact of flooding

The effect of the overland flooding that will occur when a culvert cannot cope with all the flow reaching it is often more serious than flooding from an open watercourse.

4.4 Loss of floodwater storage

Open watercourses generally provide more storage capacity than a culvert and the detriment will be more significant in relation to longer culverts.

4.5 Increased difficulties in providing for drainage connections

Drainage can be provided more easily with open watercourses into which drain connections can readily be made and the performance of drainage systems visually monitored. Outfalls within culverts are prone to blockage or, in the case of flapped outfalls, can seize up. Maintenance of these outfalls is considerably easier in open channels.

4.6 Difficulties in the repair, maintenance and replacement of culverts

Culverts conceal the presence of a watercourse and can lead to development or unacceptable land-use above or near them. In many urban areas buildings have been constructed above or adjacent to culverts. This means that improving standards of flood protection or accommodating run-off from future developments could be impossible or uneconomic due to the cost of replacing or enlarging existing culverts. There have recently been cases of serious flooding caused by culverts collapsing due to large amounts of materials stockpiled above them.

In urban areas consideration must be given to the need to provide alternative means to deal with flood water over and above that which can be accommodated by the culvert under design conditions. This will also provide contingency arrangements in the event of blockage of the culvert, thereby minimising the risks of flooding to property.

The responsibility for the condition and maintenance of a culvert lies with the landowner or the owner of the culvert unless other agreements are in place. The responsible party must therefore ensure that the culvert and any screens remain in good condition and free from obstructions. Failure to do so could result in liability for any damage caused by flooding.

Access to culverts is generally safe only with the use of special procedures and equipment, making inspection and maintenance both difficult and costly.

4.7 Health and safety hazards

There are dangers associated with natural open watercourses but culverted watercourses can be equally dangerous. Culverting does not remove the risk of drowning or injury. There have been many cases in the past where children have died or suffered injury after entering culverts and they therefore represent a considerable safety hazard. Water levels can rise suddenly and without notice, and there can be a lack of oxygen or build-up of potentially toxic or explosive gases in culverts.

All these hazards are a danger both to the public and to operatives when maintenance is required.

4.8 Effect on recharge to groundwater

Culverting creates an impermeable bed to a watercourse and increases the speed of water flow, so reducing recharge to groundwater which can be particularly serious in large developments or areas of permeable geology.

4.9 Pollution and effect on water quality

Culverting a watercourse makes the early detection and tracing of pollution sources more difficult, resulting in the adverse impacts being more serious.

There is further impact on water quality due to the loss of the biological processes which are essential for river purification, and there is normally a reduction in oxygenation of water passing through a culvert. Culverting may also result in stagnant water problems, particularly if culvert levels are badly planned or constructed.

(Note: RCTCBC is not empowered under land drainage legislation to refuse consent purely on the grounds that it makes the detection of pollution more difficult).

5.0 Exceptions

There are cases where culverting may in practice be unavoidable, such as short lengths for access purposes or where highways cross watercourses. In such cases alternatives such as open span bridges or diversion of the watercourse must have been rigorously considered, the length restricted to the minimum necessary to meet the applicant's objective, and appropriate mitigating environmental enhancements included in the proposal.

Before installing a culvert it is recommended that a risk assessment of the likelihood and consequences of blockage should be carried out and proposals implemented to reduce the risk to acceptable levels.

6.0 Legal requirements and the need for consent

6.1 Ordinary Watercourse Consent

Any culverting of a watercourse, or the alteration of an existing culvert, requires Ordinary Watercourse Consent from RCTCBC under Section 23 of the Land Drainage Act 1991. On main rivers consent from the Environment Agency (EA) is required.

If a culvert is constructed (or altered) on a watercourse without consent, RCTCBC may serve an abatement notice on the person having the power to remove it. If the notice is not complied with, the person responsible may be prosecuted and RCTCBC is entitled to carry out the necessary works and recover reasonable costs incurred in doing so.

6.2 Other permissions

Works either within or which would affect a designated site (ie, a Site of Special Scientific Interest - SSSI) as a result of changes in flow regimes or water levels, require the approval of the Countryside Council for Wales, as appropriate.

Applicants should also check with RCTCBC whether their culverting proposals require planning permission under the Town and Country Planning Act 1990 and/or consent under the Public Health Act 1936.

7.0 Consent Procedures

Landowners and developers should seek RCTCBC's advice as early as possible on any proposal, allowing sufficient time before work is to start. Identifying and resolving possible problems before plans reach an advanced stage will minimise costs to all parties and will reduce the time taken by RCTCBC when the consent application is received. In addition, opportunities for environmental enhancements can be identified, which may not necessarily entail significant expenditure by the developers.

After preliminary details have been agreed, an application must be completed and submitted to RCTCBC, along with the appropriate fee, for formal consent. On receipt of a complete and valid application, RCTCBC has two months in which to determine it.

Each application will be treated on its merits in accordance with RCTCBC's duties and responsibilities under the Land Drainage Act 1991 and the Flood & Water Management Act 2010, including the impact on the environment. RCTCBC acknowledges that the establishment of its policy regarding culverts is not in itself sufficient grounds for refusal of an application for consent to culvert a watercourse.

8.0 Definitions

Ordinary Watercourse

The term *Ordinary Watercourse*, as defined in the LDA1991 is a watercourse that does not form part of a main river, and includes all rivers and streams and all ditches, drains, cuts, culverts, dikes, sluices, sewers (other than public sewers within the meaning of the Water Industry Act 1991) and passages, through which water flows. RCTCBC has regulatory powers in respect of *Ordinary Watercourses* within its boundaries.

Bridge

An open span structure that carries a road, footpath, railway etc over a watercourse.

Culvert

A covered channel or pipeline which is used to continue a watercourse or drainage path under an artificial obstruction.

Main river

Main Rivers are designated as such on maps held by the Department for the Environment, Food and Rural Affairs (DEFRA) and by the Environment Agency. Works in or near Main Rivers require the consent of the Environment Agency. More information on main rivers can be obtained from local EA offices.

Sustainable Development

Development that meets the needs of the present without compromising the ability of future generations to meet their own needs.

9.0 Contacts

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www.environment-agency.gov.uk
www.environment-agency.wales.gov.uk

10.0 References

Land Drainage Act (1991). Available from The Stationary Office Limited.

Flood & Water Management Act (2010). Available from The Stationary Office Limited.

Town and Country Planning Act (1990). Available from The Stationary Office Limited.

Public Health Act (1936). Available from The Stationary Office Limited.