



Culverting watercourses

Policy 85_10

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Policy statement

We are generally opposed to the culverting of watercourses because of the adverse ecological, flood risk, human safety and aesthetic impacts. Watercourses are important linear features of the landscape and should be maintained as continuous corridors to maximise their benefits to society.

We will consider each application to culvert a watercourse on its own merits and in accordance with our risk-based approach to permitting. We will only approve a culvert if there is no reasonably practicable alternative, or if we think the detrimental effects would be so minor that a more costly alternative would not be justified. In all cases where it is appropriate to do so, applicants must provide adequate mitigation measures, accept sole ownership and responsibility for future maintenance.

We will normally object to proposals to build over existing culverts because of health and safety considerations, increased maintenance costs, and because this would preclude future options to restore the watercourse.

We will actively pursue the restoration of culverted watercourses to open channels.



Document details



References



Feedback

Objectives

This policy will help us to:

- provide clarity on our position with respect to culverting in a single statement for both internal and external use;
- demonstrate how we will take action to protect the continuity and integrity of watercourses;
- recommend this approach to all drainage authorities in England and Wales, and provide guidance for developers and landowners;
- make all staff aware of our policy and ensure a nationally consistent approach to culverting.

Contact for queries

Ann
SKinner

Policy authorisation

Policy sponsors:

David Rooke, Head of Strategy and Engagement, Flood and Coastal Risk Management

Pam Gilder, Head of Land and Natural Environment:
authority for approval delegated to Paul Raven, Head of Conservation and Ecology

Explanatory note

Background: why do we need this policy?

Watercourses are valuable features of the landscape for people and wildlife. We have legal duties under the Environment Act 1995 and the Water Framework Directive 2000 to ensure that they are protected and enhanced for the benefit of present and future generations. They provide vital water resources and recreational assets for people, help drain agricultural and urban land and support a diversity of wildlife.

For the purposes of this policy, a culvert is defined as an enclosed artificial channel or pipe that is used to continue a watercourse beneath the ground or a structure. The forthcoming Flood and Water Management Bill will define a culvert as “a covered channel or pipe which prevents the obstruction of a watercourse or drainage path by an artificial construction”. Culverting can exacerbate the risks of flooding, and increase maintenance requirements and costs. It also destroys wildlife habitats, damages an attractive natural amenity and interrupts the continuity of the linear corridor of a watercourse. Detrimental effects are likely to include:

- increased likelihood of flooding due to obstruction of flow and risk of blockages, and loss of floodwater storage leading to increased impact of flooding;
- loss of and adverse effects on natural morphology, fisheries and wildlife habitat including substrate;
- the creation of barriers to fish passage through increased water velocities, shallow depths and eroded culvert entrances;
- increased river bank and bed erosion downstream of culverted sections;
- greater difficulties in providing for drainage connections;
- increased liabilities and costs due to the need to maintain, repair and replace culverts;
- increased health and safety hazards, notably for workers clearing blockages and for children in urban areas;
- locally reduced groundwater recharge;
- increased difficulty in detecting the origins of pollution and in monitoring water quality.

We will promote this policy to planners and developers, and use it to inform our response to applications to culvert watercourses. We will encourage and promote the removal of culverts where possible to restore a more natural river environment in both urban and rural settings.

Legal requirements

Any culverting of a watercourse, or the alteration of an existing culvert, requires a flood defence consent:

- on main rivers, our prior written consent is required under Section 109 of the Water Resources Act 1991. Conditions can be imposed.
- on all other watercourses, except within the district of an internal drainage board (IDB), our consent is required under Section 23 of the Land Drainage Act 1991. This will change when the Flood and Water Management Bill is enacted into law
- in an IDB district, the consent of the IDB is required under the Land

Drainage Act 1991.

- Highway authorities are required under Section 339 of the Highways Act 1980 to seek the consent of the drainage authority before carrying out any works affecting a watercourse.
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Exceptions

We recognise there are situations where culverting may be unavoidable in practice, such as short lengths for access purposes or where highways cross watercourses. In these cases, open span bridges or diversion of the watercourse must be considered first as alternatives to culverts.

Applicants will be required to prove why culverting is both necessary and the only reasonable and practicable alternative, and to provide information to show that it will not have a detrimental effect on flood risk and the habitat(s) and species present, or that mitigation measures can be put in place to reduce these effects.

Where a culvert is deemed to be acceptable, the design should follow the principles in the associated technical guidance:

<http://intranet.ea.gov/static/documents/Policy/CulvertsTechnicalGuidance.pdf>

The length of any culvert should be restricted to the minimum necessary to meet the applicant's objective. The proposal must include appropriate assessment of flood risk and environmental impact. The applicant should take into account the possible effects of climate change and future development in the catchment on the watercourse when calculating the capacity of the culvert. Mitigation measures such as mammal ledges must be incorporated within the design, and the work must be carried out using best working practice to minimise environmental impact.

Desired outcomes

We will achieve the aims of this policy by:

- using it in our daily **regulatory, advisory and operational activities**, including advice on planning consultations and flood defence consents;
- **promoting** the policy to ensure that losses due to culverting are kept to a minimum, and that culverts are used only where absolutely necessary and where the impacts are judged to be low;
- developing an operational instruction giving **technical guidance** to assist with determining consent applications and advising engineers and consultants on best practice where culverts are unavoidable;
- seeking the **restoration of culverted watercourses to open channels** at every opportunity.

The implementation of this policy will enable us to:

- fulfil our international, national and local obligations towards the conservation of watercourses and dependent species;
 - reduce flood risk;
 - reduce our flood risk management costs, maintenance requirements and the need for remedial works;
 - reduce liabilities and health and safety risks associated with culverts.
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Audience

This document is primarily for internal use and promotion to all Environment Agency staff. It also sets out our policy position for explanation to a range of other organisations, including:

- IDBs and other drainage authorities;
 - regional planning bodies and local authorities;
 - consultants, highways engineers and the Highways Authority;
 - developers, farmers and landowners;
 - local communities and the general public.
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References

This section describes the policy drivers.

Nature conservation

EU Habitats ([Council Directive 92/43/EEC](#)) and Water Framework Directives (WFD 2000/60/EC)

We are a competent authority involved with the implementation of the above Directives, which seek to protect water bodies and conserve and enhance habitats and species dependent on water. **Article 10** of the **Habitats Directive**, Paragraph 12 of **Planning Policy Statement 9** and paragraphs 3.2.2 and 5.5.3 of **Technical Advice Note 5** (Welsh and English Government policy on biodiversity) encourage the protection and enhancement of natural corridors as they can link habitats and provide routes for the migration, dispersal and genetic exchange of species in the wider environment. The WFD requires us to restore watercourses to good ecological status or good ecological potential and to prevent their deterioration; the maintenance of sediment transport and morphological variability is a key component of this.

We and others should aim to **maintain networks of linked habitats** by avoiding or repairing fragmentation, protecting corridors from development, and, where possible, strengthening or integrating them within it. This will help wildlife to adapt to the inevitable effects of climate change.

Under the **Environment Act (1995)**, **Wildlife and Countryside Act (1981)** and the **Natural Environment and Rural Communities Act (2006)** we have statutory duties to further and promote the conservation and enhancement of flora and fauna dependent on the aquatic environment.

Conservation of Biological Diversity

The UK is a signatory to the Rio Convention on the Conservation of Biological Diversity, which contains commitments towards the conservation of watercourses. Under the **UK Biodiversity Action Plan (UK BAP)**, rivers are a priority habitat and we have lead responsibility for the water and wetlands workstream (England Biodiversity Strategy); and for delivering relevant actions in the Wales Environment Strategy.

Flood risk

Planning Policy Statement (PPS) 25 Development and Flood Risk

We are actively promoting the Government's policy on Development and Flood Risk in England which states that land use planning decisions should be "*using opportunities offered by new development to reduce the causes and impacts of flooding eg ...making the most of the benefits of green infrastructure for flood storage, conveyance and SUDS; re-creating functional floodplain; and setting back defences*".

The Welsh Assembly Government's **Planning Policy Wales Technical Advice Note (TAN) 15** Development and Flood Risk states that new development should use flood resistant design, should not increase the risk of flooding elsewhere, and that re-development should reduce run-off where

possible.

The maintenance and enhancement of open river corridors is a key requirement for achieving the aims of the above legislation and policy commitments such as Defra's Making Space for Water, 2005.

Policy implementation plan

Who are the target audiences?

All Environment Agency staff, particularly in Planning Liaison and Development and Flood Risk; Flood and Coastal Erosion Risk Management; NEAS and NCPMS; Fisheries, Recreation and Biodiversity.

They should promote the essence of the policy to local planning authorities, drainage and highways authorities, developers, consultants, landowners and the general public. External guidance literature should also be produced.

Do they require awareness training or education?

All staff need to be aware of the policy.

What do they need to know?

The essence of the policy and its implications for their daily work.

When do they need to know it?

As soon as the policy is approved, to enable them to do their day job effectively.

How will they be told?

Through workshops and training courses. Publishing policy on Easinet.

Who will tell them?

Communications, FCRM and Conservation Policy staff.

Monitoring of progress

Methods

Planning Liaison reports and Flood Defence consenting results:

Success criteria	Date completed
Number of applications involving culverts declines	
Number of new culverts approved declines	
Number of culverts removed increases	

Comments
