

# Control of water pollution from linear construction projects

## *Site guide*

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*sharing knowledge*  
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Efforts are being made at all levels within the construction industry to improve environmental performance. Everyone involved in the construction and maintenance of infrastructure developments needs to be aware of their environmental obligations and the benefits that best practice will bring to a construction project. You are responsible for ensuring your work and the work of those you manage does not pollute the water environment. Using the good practice advice in this guide you will be able to identify appropriate methods of protecting the water environment while carrying out your activities on site.

This guide is relevant to all construction personnel, and particularly to those working on linear projects (highways, railways, pipelines, cables and inland waterways), which have the following challenges:

- site activities move along a “corridor”
- routes cross varied ground conditions, soil types and water environments
- sites have numerous access points, site compounds and haul routes
- land take may be restricted
- routes can have a variety of neighbours and regulatory controls.

The guide has been written specifically for on-site use by:

- site engineers and construction managers
- site foremen and site supervisors.

To accompany this guide, CIRIA has also produced technical guidance (publication C648), which is aimed at clients, designers, regulators, environmental consultants, construction managers and site environmental managers in both the design and construction phases of a project.

This guide provides good practice advice and is intended to supplement any contractual requirements, consultation with regulators or company procedures rather than replace them.

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## Research project

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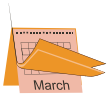
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# 1 Site planning and programming

Planning linear construction projects is similar to any other project but with the additional need to take into account remote working areas, varying phases of construction and differing requirements along the route. Start by identifying the risks to surface water and groundwater. Focusing on high-risk areas will assist in the overall planning of the site layout, compounds and highlight the need for pollution prevention and control measures.

Put in place appropriate project environmental plans, procedures and method statements to manage the works effectively.



Careful planning and programming of construction works can greatly reduce the risks of watercourse pollution and delays in construction.



## Risk assessment and control

- 1 Identify the location of all rivers, ponds, streams, aquifers, boreholes, field drains, fisheries, ecologically sensitive sites, surface and foul drainage systems on site and off site or downstream.
- 2 Mark these water bodies on a site plan to help plan the site set-up (eg storage areas, refuelling points, haul routes and washout areas).
- 3 Establish the baseline status of water features (flow, water quality etc).
- 4 Identify construction activities and sources of pollution that may affect the water bodies identified such as piling, dewatering, runoff, river crossings, fuel storage and concrete use.
- 5 Evaluate the risk of the construction activities causing pollution.
- 6 Remove or reduce the risks by:
  - using a different construction method or less hazardous materials
  - controlling the construction method, providing adequate bunding of fuel and other storage areas, installing measures such as diversion ditches and/or silt fences to control runoff
  - providing protection of the water body such as hardstanding for storage areas over sensitive groundwater, leaving grass unstripped along a river bank to filter runoff, and/or obtaining necessary permissions from environmental regulators.

## Site management

Define the environmental responsibilities of site staff and subcontractors. Make site staff aware of particularly sensitive areas, high-risk activities, the implications of pollution and their roles and responsibilities. Provide site training in the form of site inductions, method statement briefings or toolbox talks for all staff and subcontractors. Subcontractors are strictly liable for any pollution they cause, but main contractors can also be prosecuted for allowing it.

## Communication

Contact the environmental regulator and other regulatory authorities as early as possible to discuss the project and advise them of the activities taking place. There are several environmental regulators, each dealing with a different aspect of the water environment (see Table 1). Other stakeholders, such as landowners and water users downstream, should also be consulted at an early stage.

## Seasonal constraints

Rainfall is far higher in northern and western parts of the UK than in the southern and eastern areas. You will need to consider seasonal weather variations in the works programme to minimise delays and pollution risks from heavy rainfall. Some activities, such as river crossings, may have to be postponed until the summer months, although where the watercourse has high amenity value restrictions may also be imposed on work during peak holiday periods.

Temporary works, on-site water treatment methods (ie settlement ponds) and other pollution prevention measures need to be designed at the outset to accommodate seasonal and local variations in rainfall and a worst-case flood scenario (a 1 in 10-year event is recommended).

Certain plant, animal and bird species that live in the water environment are legally protected. Formal consent is required for works in water and works affecting protected species and habitats. Restrictions may be placed on the timing of survey and construction works, eg to avoid breeding seasons.