

# Reduce erosion caused by land drainage

## Project Summary

**Title:** Outfalls to Brook Dyke Wath

**Location:** Wath Manvers, South Yorkshire, England

**Technique:** Structural modifications to outfall

**Cost of technique:** £££

**Overall cost of scheme:** £££

**Benefits:** ££

**Dates:** 2007

## Mitigation Measure(s)

Reduce erosion caused by land drainage

## How it was delivered

Delivered by: Next

Partners: Danvm Drainage Commissioners (DDC) as Land Drainage Authority



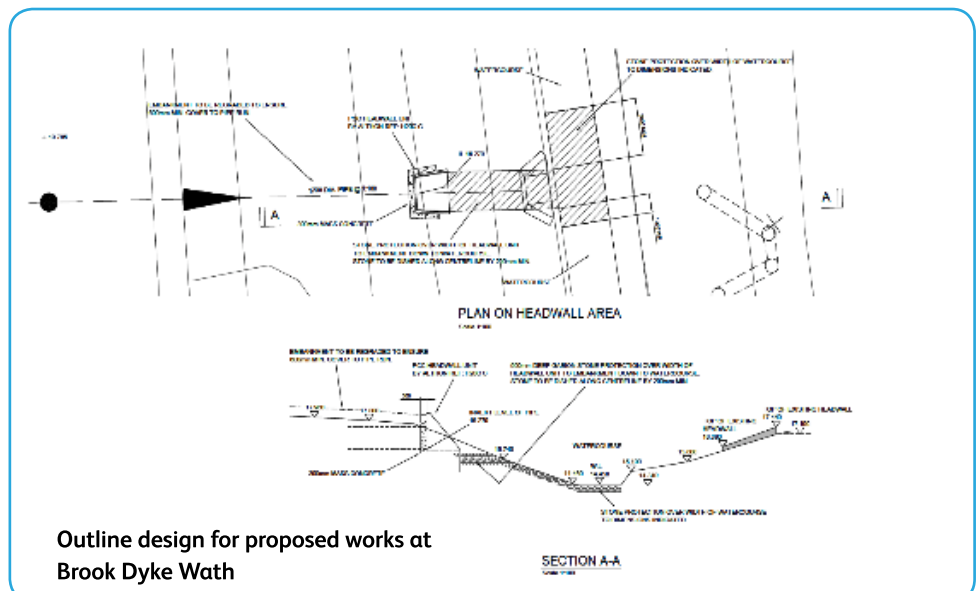
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## Background / Issues

Brook Dyke is a heavily altered watercourse serving a rural catchment upstream of Wath, South Yorkshire, and a significant part of the town. The watercourse also drains surface water from the Manvers development.

This development, which was promoted by Rotherham Metropolitan Borough Council, included the regeneration of a former colliery, gas ovens and railway sidings. Runoff is drained out of the Manvers development and goes into Brook Dyke through an outfall. The watercourse is particularly deep in this area and any erosion of the bed and banks would result in instability and increase the probability of bank slips. DDC was required to reduce the risk of erosion

at the outfall exit point to a minimum while not reducing the conveyance capacity of the Manvers watercourse and ensuring access would be retained for maintenance.



## Step-by-step

To achieve the desired standard of erosion protection at the outfall, works have included:

- Regrading of the bank where the outfall is located.
- Installation of a new headwall unit at the outfall.
- The level of outfall pipe has been decreased to reduce the drop between the outfall and apron.
- Over-pumping of flows to facilitate construction.
- Installation of stone gabions to increase bank protection between outfall and water body.
- Reinforcement of river bed for an extent of approximately 7 m downstream using stone gabions.



1) View of outfall before works



2) Reinforcement with stone gabions

## Benefits

- Removal of the risk of scour of the bed and banks of the watercourse due to high velocity flow from the outfall.
- Removal of the risk of bed material resulting from scour being deposited downstream, reducing conveyance capacity and disturbing ecology of the watercourse bed.
- Minimal environmental impacts for engineering constraint works.



## Lessons Learnt

- Ensure that proposals for scour protection are included in the initial design of a new development and drainage scheme.
- Ensure that adequate measures are taken to allow flood flows to pass during construction.

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