

Works Within a Watercourse

Erosion and Sediment Controls

What are works within a watercourse?

'Works within a watercourse' can include any use, disturbance, installation of structures, reclamation, introduction of plants, deposition or damage of any *perennial*¹ stream, lake or river. This definition also extends to the same activities carried out within the flood plain of a stream.

This factsheet outlines the erosion and sediment controls necessary that may be required as part of the above activities. In planning and undertaking any work in or near streams, precautions must be taken to ensure their complete protection against sediment discharges and erosion. *Note, this factsheet does not constitute ARC approval; other consents and mitigative strategies may be required. The proponent is advised to contact all other appropriate regulatory agencies such as the local or district council.*

Sediment-laden water can arise during streamworks from dewatering excavations, exposed ground and stockpiles located close to the stream and disturbance of streambed.

What are the issues?

The streams and estuaries of the Auckland Region contain many native species and form highly diverse habitats. The overall management approach undertaken by ARC for streams/lakes is to maintain, and where practicable, enhance water quality for the health of the natural ecosystems and for amenity values.



Photo 1: Banded Kokopu – this native fish often frequents small streams within the Auckland region and is sensitive to sediment discharges.

Photo: Stephen Moore

Undertaking works directly within a watercourse can lead to a discharge of sediment and the degradation of streams. Sediment discharges into such environments can destroy entire communities of aquatic biota. Studies have shown that streams in the Auckland Region can take years to recover from damage caused by in-stream works, including that caused by the release of sediment.

Elevated suspended solids levels, heavy deposition events and ongoing accelerated sedimentation place at risk a significant proportion of Auckland's aquatic environments particularly streams as a result of short-term effects and estuaries as a result of long-term effects.

Refer to Factsheet X for information on what a perennial stream is.

How do you prevent damage from sediment discharges?

There are a number of methods to eliminate or minimise sediment discharges from works within streams/lakes. By designing and planning a careful works methodology a stream can retain a natural level of sediment and its ecological characteristics can be maintained.

Whether streamworks are undertaken as a Permitted Activity or via a Resource Consent (refer Fact Sheet X for information on this), to minimise the amount of sediment discharge the works must be undertaken in accordance with the Auckland Regional Council **Technical Publication No. 90 *Erosion and Sediment Control Guidelines for Land Disturbing Activities in the Auckland Region*** (TP90).



Photo 2: Uncontrolled works resulting in gross sediment discharge into stream.

Most pollution incidents, including those resulting from sediment discharges, are avoidable. Careful planning can reduce the risk of sediment discharges into streams and estuaries. Whilst erosion and sediment controls do add to the cost of a project, costs can be reduced if they are included at the planning stage. In contrast, the costs of cleaning up a stream following an incident can be high. There are also serious consequences including abatement notices, environmental infringement notices or prosecution for environmental offences.

Careful streamworks methods involve a number of key factors based around minimising the damage to the stream. This can include minimising the risk of sediment discharge likely to come from a site, working in dry weather, in appropriate locations, correct sizing and by complying with any requirements set out by local agencies and the Auckland Regional Council. Specific erosion and sediment controls for streamworks, as outlined in more detail in TP90, include the following:

- **A bridge, ford or temporary structure** - These provide a means for construction vehicles to cross watercourses without moving sediment into the watercourse, damaging the bed or channel, or causing flooding during the construction, maintenance or removal of the structure.
- **Temporary watercourse diversion** - These enable watercourse works to be undertaken without working in wet conditions and without moving sediment into the watercourse (refer Fact Sheet X for further details).
- **Rock outlet protection** - The purpose of this is to break up concentrated flows, to reduce the velocity of flows to non-erosive rates and to stabilise the outfall point.

Further Information

The Auckland Regional Council has a series of fact sheets relating to works in watercourses. These fact sheets give more detailed information on differing types of works in a watercourse and how to successfully undertake streamworks without causing damage to streams/lakes. The factsheets are available on the Auckland Regional Council website <http://www.arc.govt.nz> or for further information contact Enviroline or the Sediment Management Team on 3662000.