

Ongoing maintenance

Revegetation and tree planting may be supported by the Project for up to 3 years for each property, after which time property owners would be responsible for maintaining and sustaining revegetation. However

technical support would continue to be provided to property owners on request. Ongoing maintenance of weed and pest plant control would continue to be to the responsibility of property owners.

How many and what type of trees would be removed?

All of the eight flood mitigation options considered for Part B Works involve the selective removal of unsuitable trees in the creek bed or banks. The number of trees likely to be impacted in the watercourse channel is about the same for all options, as trees would need to be removed either for creek capacity upgrade works or creek rehabilitation works.

In rehabilitating the creek:

- As many trees as possible would be preserved. In particular, every effort would be made to retain prominent trees, including those classified as significant, regulated or heritage listed.

- The intention is to only remove trees and vegetation growing in the creek bed or side banks which would impede high flows and contribute to flooding risk. Currently the majority of this vegetation is exotic, weed or non-local native species including: ash, cedar, palm, berry, boxthorn, bamboo, willow, wattle, stone fruit, olive, fig, poplar, prickly pear, pine, casuarina and grevillea.
- Where trees and vegetation are removed from the creek channel, the nearby area would be revegetated with local native plant species to improve creek conditions and biodiversity, whilst

considering property owners' requirements. Trees would be replanted on the top of banks.

Replacement trees

More information about suitable native trees and vegetation for planting can be obtained by entering a suburb name at the 'plant selector' on the Natural Resources and Management website:

<http://plantselector.naturalresources.sa.gov.au/>

For more information

This information sheet provides an explanation of creek rehabilitation works, as proposed in the BHKC Part B Report. Additional information sheets explain 'Creek Capacity Upgrade works' and 'Legal Arrangements with Property Owners' (only applicable where creek capacity upgrade works are required). The full report is available at the Project website: www.bhkcstormwater.com.au

Who is responsible for creek rehabilitation?

Under the Natural Resources Management (NRM) Act 2004 there are statutory requirements and duties on private landowners in respect of creeks and watercourse on their land. Section 131 enables the 'relevant authority' (principally the relevant regional Natural Resources Management Board) to serve notice on the owner of land on which there is a watercourse, directing the owner to take action specified to maintain the watercourse in 'good condition'.

The Adelaide and Mount Lofty Ranges Natural Resources Management Board (AMLRNRMB) is preparing a guide to assist property owners understand and carry out their responsibilities to keep the creek in good condition. An earlier brochure 'Urban Creeks - A Property Owners Guide to Managing Healthy Urban Creeks' produced by the AMLRNRMB is available at the Project website; www.bhkcstormwater.com.au

CREEK REHABILITATION WORKS

The **Part B Report**, prepared by the Brown Hill Keswick Creek (BHKC) Stormwater Project, identifies eight flood mitigation options aimed at improving flood protection for homes and properties across the catchment.

All options involve two types of work along upper Brown Hill Creek to reduce the risk of flooding during high stormwater flows:

- 1 Creek capacity upgrade works** in critical sections (which vary for the eight options) – to increase the capacity of the creek so it can carry more water; and
- 2 Creek rehabilitation works** along its full length – to assist the flow of water along the creek and improve its biodiversity.

This information sheet provides details about creek rehabilitation works.

What do we mean by creek rehabilitation works?

Urban creeks are important to our environment and are a critical component of our stormwater drainage network, receiving runoff from our streets and reducing flooding potential.

Creek rehabilitation works aim to reduce the risk of flooding by ensuring the watercourse channel (creek bed and side banks) is clear of obstructions so that water can flow unimpeded along the full length of the creek. This is particularly important during times of high stormwater flows.

Ensuring the watercourse channel is clear of obstructions requires:

- Clearing invasive vegetation (native and non-native) from the creek bed and side banks
- Removing trees and branches that may have fallen into the channel
- Removing rubbish such as discarded household items which have the potential to contribute to flooding problems

- Raising bridge structures (or removing them if agreed to by the owners) that are too low and do not provide sufficient clearance for the passage of floodwaters

As well as the obvious benefits of ensuring the unimpeded flow of water, creek rehabilitation works seek to reinstate native vegetation along the upper Brown Hill Creek corridor thereby improving the biodiversity of the creek environs.

What is proposed?

All of the eight options investigated by the BHKC Stormwater Project involve creek rehabilitation works.

As explained on the back page, creek property owners are responsible for maintaining the creek in 'good condition'. However, it is recognised that clearing major debris and vegetation, which has built up over many years may be beyond the means of private property owners.

To ensure a consistent level of maintenance, it is proposed that the Project undertakes 'one off' extraordinary creek maintenance to assist in rehabilitating the creek. This could be followed by maintenance, undertaken periodically which could include erosion controls, bank stabilisation and clearance of major obstructive material.

'One off' maintenance works would be undertaken at the cost of the Project working in close consultation with creek property owners.

Creek owners would still be responsible for undertaking:

- Regular general site maintenance such as pruning vegetation, weed spraying and removing rubbish, litter and leaf build-up from within the creek
- Unplanned maintenance such as removal of fallen timber and large 'foreign' objects which might cause blockages and consequent local flooding.

The exact nature of creek rehabilitation works would depend on the current condition of the creek and property owners' individual requirements. However, to illustrate the process, an example is depicted over the page showing before, during and after images of creek rehabilitation works.

EXISTING SITUATION



How would the proposed 'one off' extraordinary creek maintenance be undertaken?

It is proposed that the 'one off' extraordinary creek maintenance be undertaken in a gradual manner, probably staged over several years so as to not denude the creek environment. Essentially this approach looks to selectively remove invasive vegetation concurrent with a replanting program.

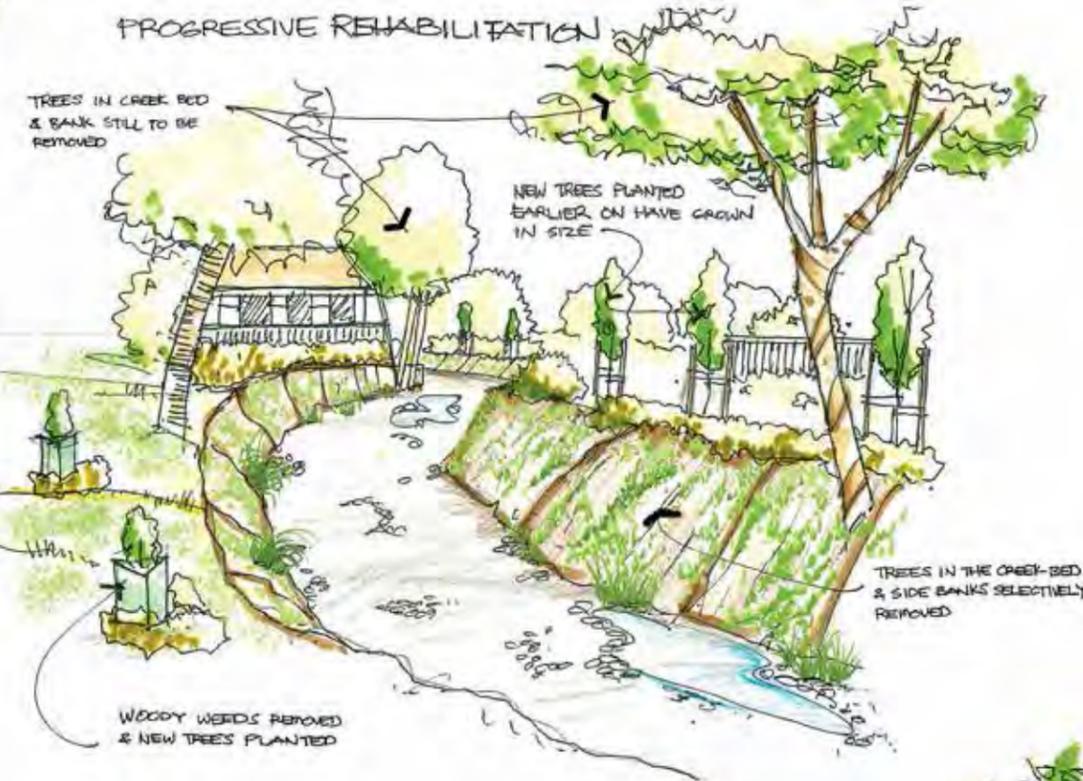
To minimise the impact of the works on the local environment and amenity of properties, works would be planned around the following stages in consultation with the property owner:

Stage 1 – Removal of major obstructions and blockages.

Trees located in the creek bed and side banks would be selectively removed together with other vegetation and material that would present risks during high flows. Removal of vegetation would typically take place during late spring and summer to avoid working at times when there is likely to be water flowing in the creek.

Stage 2 – Planting of new trees.

Where trees have been (or are planned to be) removed from the creek bed and side banks, new trees would be planted on the top of the creek banks in consultation with property owners - if the property owner wants new trees to be planted. This could occur in advance of removing vegetation from the channel to minimise any visual impacts of removing vegetation. Replacement trees would be native species such as South Australian Blue Gums, River Red Gums, Grey Box and Cup, Pink and Manna Gums. This work would typically take place during winter months.



Stage 3 – Removal of further trees, exotic plants and weeds.

It is likely that the removal of trees in stage 1 would result in the growth of understorey weeds. Weeds and exotic plants can quickly regenerate and therefore would be removed from the creek beds and side banks during this stage and in subsequent years. Removal of further trees in the creek bed and banks may also be required – for instance where they were retained during stage 1 so as not to denude the area until regrowth of trees on the tree banks occurred in stage 2.

Stage 4 – Further works

This stage would involve replacing revegetation which has not survived, again in consultation with the property owner. If it is agreed with the property owner, native riparian plants such as grasses, sedges and

rushes may be planted along the creek bed and side banks. These would restore greenery and prevent erosion. Importantly, during floods, such plants lay flat and allow water to flow freely. This stage may involve follow up weed treatment.

Stage 5 – Replacement of any revegetation which has not survived

The Project would assist with plant aftercare for up to 12 months after planting. This would include replacement of any revegetation which has not survived.

Overall, the above approach could take up to several years working along upper Brown Hill Creek. Ideally, works would be undertaken in a downstream direction. The Project would seek to co-ordinate works on neighbouring properties to minimise disruption.

