



# The Peninsula Project

**Working together to protect our people, property and environment**

*Kia mau ki te mauri o te taiao o Hauraki*



## Flood protection works for Graham's Creek



Earlier this year a newsletter was sent to you outlining the flood protection works proposed by Environment Waikato to reduce the impact of flooding in your community.

The proposed works, which were based on discussions Environment Waikato and Thames-Coromandel District Council have had with your community over the last two years, were included in Environment Waikato's Draft Long-Term Council Community Plan (LTCCP) 2006-2016 for consideration by the wider community.

Environment Waikato was pleased to receive more than 80 submissions from people in your community. Many expressed a love for the stream and said that they appreciate its aesthetic and recreational value. It was also evident that there is a strong community commitment to this stream. However, a number of common concerns were raised in the submissions.

The following information is provided by Environment Waikato in response to the concerns raised. The works that will proceed and the expected costs are also outlined.

### The flooding problems

Hydraulic modelling of Graham's Creek and technical assessments of its flooding characteristics have been undertaken. These show that the current stream channel and associated floodplain are not effective for carrying a range of flood flows, especially larger 50 and 100-year flows.

Most of the residential properties that adjoin the floodplain experience flooding, although the extent of their flooding varies. Further to this, the flood risks are expected to increase in this area due to potential development in the catchment and the long-term effects of climate change.

Three key scenarios have been considered to address the current and future flood problems:

- do nothing and retain the status quo
- undertake a full engineering design solution
- identify an intermediary option which reduces the risks to an acceptable level, and is affordable to the community.

The proposals Environment Waikato put forward for the LTCCP consultation process were based on the third scenario. This scenario involves an integrated approach that includes upper catchment management, stream maintenance, engineering works and planning controls for future management, the details of which are outlined on the following pages.



## Improving the discharge of water into the harbour

The stream outlet into the harbour is restricted by an undersized bridge and causeway. There was strong support (76 per cent of submissions) for increasing the capacity of the bridge under the causeway.

Increasing the capacity of the bridge by adding culverts, or lowering the causeway to act as a spillway, would reduce 100-year flood levels at the causeway by approximately 300 mm. This lowering in flood level decreases gradually as the flood profile level moves upstream. This means there would be no benefits to people and property situated approximately 800 m upstream of the causeway.

The causeway is a Thames-Coromandel District Council responsibility. Environment Waikato made a submission on their 2006-2016 Long-Term Council Community Plan in May requesting that funding be made available to upgrade it. This matter will be pursued over the coming year.

## Catchment management

Catchment management involves planting and erosion protection works in the upper catchment, to improve stream bank and land stability. Improved stream bank and land stability helps prevent erosion and land slips, reducing the amount of sediment deposited in the floodplain and lower channel. These works should also be accompanied by appropriate planning controls over development and land use, to ensure the effects of activities such as earthworks and roading are addressed without exacerbating flooding in the lower areas.

The run-off from the subdivision above Ocean Beach Road is a concern and Environment Waikato will work with Thames-Coromandel District Council to address this problem.

## Stream maintenance

Stream maintenance aims to ensure that water flows freely through the stream channel. Approximately 83 per cent of submitters supported the proposal to undertake regular maintenance of the stream.

This type of work generally involves removing blockages, obstructions and silt, and minor erosion control work. This work can improve the effectiveness of the channel when the amount of water flowing through it is low. However, it is inadequate for flood conditions. To ensure maintenance works are effective and improve access to the stream, any structures and vegetation blocking the stream system must be removed.

## Increasing the ability of the floodway to store water

A large number of submitters (65 per cent) were concerned about the proposal to divert part of the stream behind Ocean Beach Road. Ideally the stream would be shifted to run along the backyard boundaries of the properties and a new stream channel designed to satisfy community desires regarding aesthetics, recreation and flood capacity. However, it is now proposed that an alternative option be considered.

The alternative option involves retaining the main flow in the present channel and constructing an overflow spillway behind the properties to take flood flows in high rainfall events. Further technical investigation and consultation with the community will be needed on this option.

Consideration has also been given to increasing the floodway storage capacity by dredging the accumulated silt and sand in the lower floodplain just above the causeway. Generally, reduction in flood levels/depth is directly proportional and equal to the depth of excavation or dredging undertaken. However, our technical assessment suggests extremely large volumes would have to be excavated to make a significant difference to the flood levels. In addition, this work would adversely affect the ecological values of the estuary, be unlikely to be authorised and require ongoing and expensive maintenance. This type of work is therefore technically and economically unfeasible.

## Stopbanking

Flood modelling has shown that to fully address flooding issues in the Graham's Creek area, stopbanks or similar structures that retain flood flows within the floodway, would be necessary on both sides of the stream. This option was not put forward for consultation as it is very expensive and both Environment Waikato and the community working party were concerned about your community's ability to pay for it.

The proposal to raise the right stopbank upstream of the bridge and along the foreshore of Manaia Road was put forward to provide protection to the residential area along the right bank of the stream. This proposal would have no effect on flooding of Ocean Beach Road properties, especially when undertaken in conjunction with the proposed stream channel improvements and increased bridge discharge capacity by way of culverts through the causeway.

## Planning controls

Planning controls to maintain the capacity of the floodway need to be implemented. Such controls would include prohibiting and/or restricting infilling and development within the floodplain, building floor level requirements and appropriate set back distances for housing from the floodway.

A key concern raised in the submissions was infilling of the floodplain – past, present and future. Currently, some of these activities are consented. Others take place under Environment Waikato's permitted activity rules. In the future, Environment Waikato will seek resource consent from any applicant wishing to carry out activities such as these in this catchment.

Further restrictions may be required in terms of protecting the existing floodplain and will be investigated in association with Thames-Coromandel District Council.

## Works that will proceed

Having considered the submissions received, general feedback from the community, advice and recommendations from the Graham's Creek working party and the need to provide sufficient protection from flooding, Environment Waikato has decided to proceed with the following works:

- upper catchment management
- stream channel maintenance and improvement
- increasing the causeway bridge discharge capacity
- development of appropriate planning controls to maintain the floodway capacity.

## Funding

Given the work that was carried out last year, it is likely that only minimal stream maintenance work will be required in the coming year. This minor work can be funded through the Peninsula Project river management budget. However, to ensure that ongoing and regular maintenance on the stream is carried out in the future, Environment Waikato will need to establish a community rate. Similarly, any future capital flood protection works would be funded largely through the local community, with contributions from the wider peninsula and regional rates. A rating classification will therefore be carried out to determine who should contribute to the work locally, and how much.

Rating classifications are usually based on an area of benefit classification. This means that those who benefit the most pay the most. However, in some cases communities prefer to run with a flat rate across all properties. Further consultation will be carried out with your community before any rate is established.



## Where to from here?

The components of the flood proposals that were strongly supported will be implemented. Those that were not supported will be investigated in consultation with the community working party. Once all investigations have been completed, a public meeting will be held to update your community.

Any further flood protection proposals for Graham's Creek will be included in Environment Waikato's 2007/08 Annual Plan.

Environment Waikato looks forward to continuing to work with your community to ensure the aesthetic, environmental and flooding issues are collectively addressed. The time and involvement Graham's Creek residents and ratepayers have contributed to the process so far has been greatly appreciated.

If you have any enquiries regarding the information in this newsletter please call **0800 800 401**.

