

Report 04.217
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Committee Landcare
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Hayward Terrace

1. Purpose

- To update the Committee on the investigation into the feasibility of improving the flood protection to the properties in the lower end of Hayward Terrace, Lower Hutt.
- To recommend that the Hayward Terrace investigations be incorporated into the wider study of the Waiwhetu Stream and that the residents of the area be advised of this.

2. Background

The lower end of Hayward Terrace is immediately adjacent to the Waiwhetu Stream. At the end of this culdesac the Waiwhetu Stream does a sharp turn to the right and passes along the rear boundary of the Griffin's factory. A small side stream from the eastern hills also passes through this area before it enters the Waiwhetu Stream at the bend. The area has a history of flooding and was badly affected by the 1976 flooding. At some point in the past, a low bund has been constructed beside the stream to contain small nuisance floods, but is probably ineffective against anything larger than a two-year event.

Current stream management relies principally on a good maintenance programme to maximise the flood carrying capacity of the existing stream channel. No capital improvement works are currently planned for the Waiwhetu Stream, though some of the residents in the area have been actively pursuing a higher standard of flood protection for their properties

Flood of 22 November 2001

The flood of 22 November 2001 caused extensive flooding in the lower end of Hayward Terrace. Flood waters entered several garages and one car was severely damaged. The flooding prompted the residents of the area to approach Council for an increased level of protection. Residents were informed that no capital works were planned for the Waiwhetu Stream in the foreseeable future.

However, in an effort to meet some of their concerns and to improve the passage of floodwaters through this reach, the overgrown area immediately downstream of Hayward Terrace was cleared of vegetation and sown in grass at a cost of \$30,000. This work was funded from the maintenance budget and while the residents agreed that the work improved the situation they did not believe that it provided the level of protection they desired. Several meetings were subsequently held with the residents and considerable correspondence generated.

Following a presentation to the Landcare Committee by the residents last year, an investigation was commenced into the feasibility of extending the existing bund to improve the level of protection. Given that there is currently some uncertainty about flood flow data for the Waiwhetu Stream, it was agreed with the residents that the design standard for any protection works would be that which protected them from a flood of similar size to the 22 November 2001 event.

3. Investigation results

Engineering consultant, Phil Wallace, was engaged to determine the design flood levels at Hayward Terrace and to produce a preliminary design for the protection of the area. His report revealed that the lower end of Hayward Terrace could be protected from the design flood in the Waiwhetu Stream by extending the bund and raising it approximately one metre, and that this work would be simple and relatively inexpensive.

However, in this flood scenario, the small side stream that passes through the area would be prevented from exiting into the flooded Waiwhetu stream. Unable to escape, and trapped behind the stopbank, the side stream would eventually flood the area to the same level as the Waiwhetu Stream. While perhaps a little slower to do so, the effect would be similar to the present problems.

The Consultant's report was presented and discussed at a meeting with the residents in mid December 2003. A number of alternatives were also discussed for dealing with the side stream, such as pumping or re-routing, but these are likely to be expensive, and would require further investigation. Two of the residents have questioned the report's conclusions and arrangements were in train to peer review the report when the flood of 16 February 2004 arrived.

4. Flood of 16 February 2004

The flood event of 16 February 2004 caused extensive flooding throughout the Waiwhetu Stream, particularly in the lower reaches. In Hayward Terrace, floodwaters entered two homes, numerous garages, and a number of vehicles were damaged.

The severity of flooding in the catchment and the consequent damage has highlighted that Hayward Terrace is not alone in its vulnerability to flooding from the Waiwhetu Stream. There are other areas that are significantly at risk from flooding from the stream, including houses in Riverside Drive south, the Hutt Park motorcamp, and industrial/commercial properties adjacent to the stream in Gracefield.

Anecdotal evidence suggests that the bed levels have risen over time and it is also suspected that peak flows may be slowly increasing due to the amount of infill housing. The Waiwhetu Stream channel is also the principal stormwater disposal system for the eastern side of the lower Hutt Valley.

5. Where to from here

The recent flood has highlighted that problems exist along the length of the stream so any investigation into flood mitigation options should take a comprehensive approach. Dealing with individual sites on a one-off basis could result in varying levels of protection being provided with possibly inappropriate expenditure. Opportunities to reduce peak flows or provide retention systems could also be missed. A comprehensive approach may also provide the opportunity for suitable non-structural measures to be considered for flood mitigation.

As stated in the 2004 Flood Damages report (04.149) it is important that we look carefully at our options and consult with the community before any decision is made on the best way of assisting people who have houses in flood prone areas.

At the meeting on 23 March 2004, the Landcare Committee requested that: “ *a report be prepared on the investigations required to look at options for reducing the flood impacts from the Waiwhetu Stream for subsequent consideration by the Committee.*”

Our intent is to incorporate the Hayward Terrace investigation in to the wider study that covers the whole Waiwhetu Stream. The design work already commenced for Hayward Terrace will be useful in developing the overall approach, but in the interim will be put on hold.

6. Communication

The approach has been discussed informally with several of the Hayward Terrace residents. Following this meeting we will write to all the residents in the lower Hayward Terrace area to formally advise them of the Council's intentions, and that their concerns will be considered in any investigations that may follow.

7. Recommendations

That the Committee:

1. **Receive** the report.
2. **Note** the contents of the report.
3. **Note** that the Hayward Terrace investigation will be incorporated into the larger Waiwhetu flood investigation.

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