

TO: GWRC Hutt Valley Flood Management Subcommittee
 FROM:: "Save Our Hills" team on behalf of petitioners

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Technical Attachment (relating to GWRC's Pinehaven Stream study)

1. Case Studies Reveal Discrepancies between GWRC's calculations and Q100 flood maps

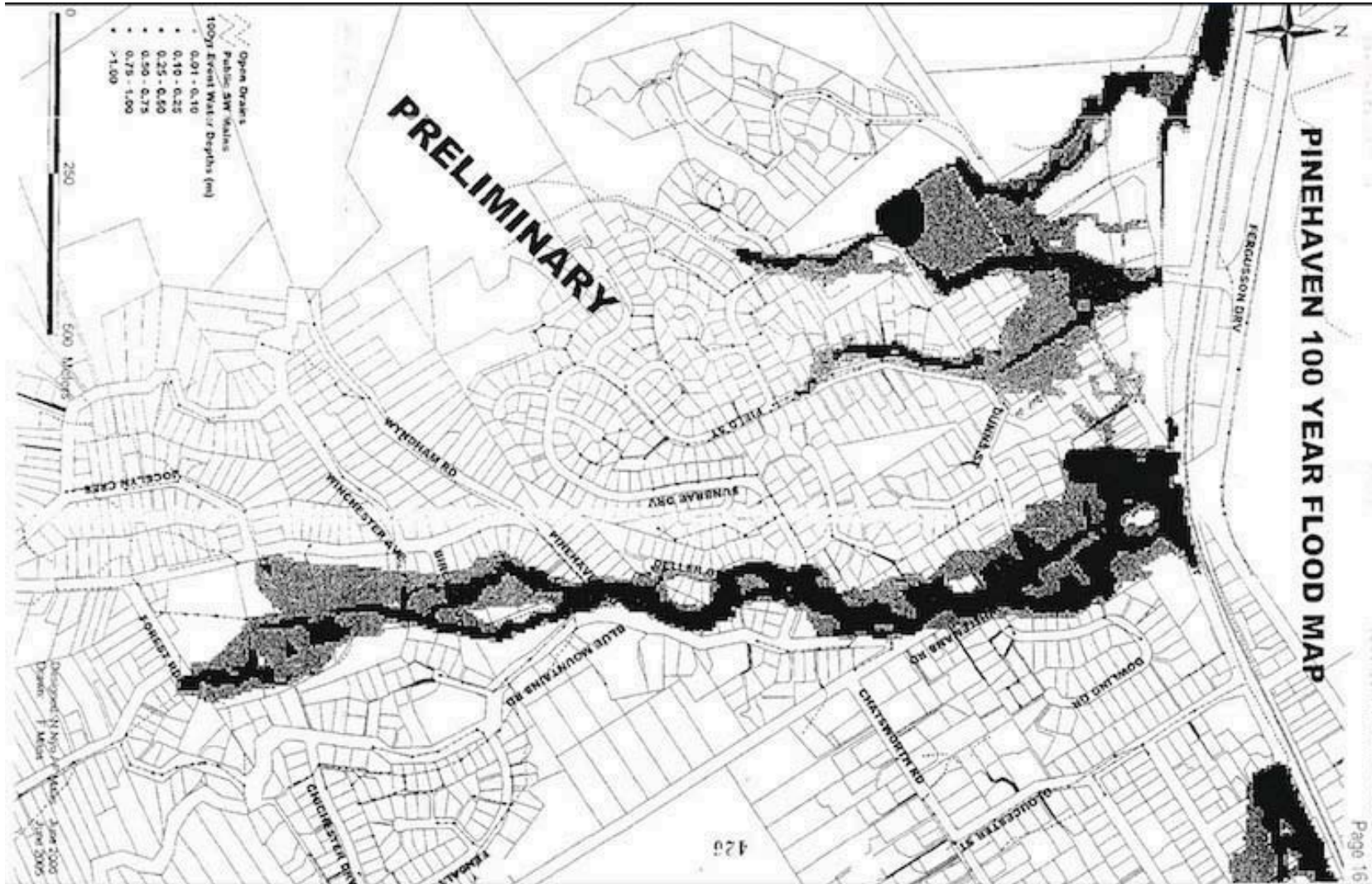
The following table of 4 case studies summarises the discrepancies found between GWRC's calculations and maps.

Case Study No:	Case Study Location	The predicted flow at each location according to MWH/GWRC calculations for a 1-in-100 year storm event (includes an allowance for climate change):	The flow shown on GWRC's Q100 flood maps [derived from cross-sectional area m² of actual floodwater (not including freeboard), based on land surveys carried out at each location, divided by assumed flow velocity of 1.0m/s, giving flow in m³/s]	Discrepancy between flood calculations and flood maps:
1	27 Elmslie Road	Approx. 4.8 m ³ /s	Approx. 15.0 m ³ /s	Map shows 3 times the floodwater predicted by MWH/GWRC calculations
2	Dunns Street - at the bottom of catchment	Approx. 25.0 m ³ /s	Approx. 77.0 m ³ /s	Map shows 3 times the floodwater predicted by MWH/GWRC calculations
3	Pinehaven Reserve – middle of catchment	Approx. 16.0 m ³ /s	Approx. 50.0 m ³ /s	Map shows 3 times the floodwater predicted by MWH/GWRC calculations
4	142 Pinehaven Rd – at top of catchment	Approx. 4.7 m ³ /s	Approx. 18+ m ³ /s	Map shows at least 3 times the floodwater predicted by MWH/GWRC flood calculations

In conclusion, Upper Hutt City Council's preliminary 2005 1-in-100 year flood map (see page A3) appears to us to more accurately show the flows for a 1-in-100 year event predicted by MWH/GWRC's calculations than GWRC's Q100 flood maps produced in 2010. The 2010 flood maps appear to show grossly inflated flood levels, well above GWRC's own calculated flood levels.

There have been contradictions in the information we have been given by UHCC and GWRC about the 2005 flood map, with UHCC initially telling us that the software used for the 2005 flood modelling only had 1D capability (i.e. modelling flow in the channel only) and not having the 2D capability for modelling flow on the flood plain. Yet GWRC later advised us that the software for the 2005 map had both 1D (MIKE 11) and 2D (MIKE 21) capability, and MIKE FLOOD (to stitch the 1D and 2D modelling together). In other words, the 2005 mapping used the same modelling software as the 2010 mapping. When we asked for more information on the 2005 modelling and mapping (eg assumptions, inputs, outputs and calculations) we were told this information has all been lost.

There have also been contradictions in the flood data we have been given by GWRC for 27 Elmslie Road, including one lot of data predicting that the 100 year inflow at 27 Elmslie Rd will be 4.8m³/s, and another lot of data saying it will be 9.6m³/s, and further advice telling us that both these answers are correct for 27 Elmslie Road, depending on the rainfall data used. This seems like nonsense to us.



2. Lack of information on Baselines for Stormwater Neutrality

GWRC has evaded all our specific requests for information on baselines for assessing stormwater neutrality of future development on the hills. These attempts began with a 2.5 hour meeting with GWRC / SKM on 17.6.14, followed by a public meeting on 18.6.14 where we asked Graeme Campbell to respond to just one question – what are the baselines for assessing stormwater neutrality. Graeme Campbell evaded the question at the public meeting. We then asked a whole raft of questions relating to the baselines for stormwater neutrality in a formal OIA request, and GWRC evaded all these questions by saying this information doesn't exist. We made a further attempt in another OIA request (of 32 questions) and all the questions relating to baselines for assessing stormwater neutrality of future developments were likewise evaded by GWRC.

3. Lack of Clarification about GWRC's Future Case Scenario for hypothetical major development of some hill sub-catchments:

As for Item 2 above, GWRC has been completely evasive in GWRC's responses to our many questions about this future case scenario. No evidence has been provided to substantiate GWRC's claim that such major development will only have a "minor" impact on the Pinehaven Stream catchment. This needs to be independently investigated.

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Pp SAVE OUR HILLS

14.1.15