

Summary:

I request that the Council Hearings Panel require that

- baseline 1-in-100 year flood levels and extents for all subcatchments of the site as it stands in its current situation ($Q_{existing}$ i.e. pre-development flows) be identified now and included in the Wallaceville Stormwater Management Principles, and that
- Council review and confirm the accuracy of these baseline levels, and that
- Council ensure that the means proposed by WDL for achieving stormwater neutrality are sound, and that the development will not worsen the current situation identified by the baseline levels/extents in a 1-in-100 year flood event, and that
- this baseline information be made publicly available, including
 - a map of the whole catchment (206ha) including contours
 - a map of all sub-catchments including contours
 - a statement and description of the method used for calculating the baseline 1-in-100 year flows for the site in its current situation
 - all assumptions and input data, calculations and results

Mr Alan Boyd, Harrison Grierson's stormwater expert, has said in his statement of evidence:

1.5 - *"The SMP [Stormwater Management Plan] demonstrates how hydraulic neutrality will be achieved."*

As yet, no baselines have been identified against which hydraulic neutrality will be assessed.

1.7 - *"Hydraulic neutrality will be achieved on site in that all flood flows for events up to and including the 1% AEP event will be attenuated on site to ensure that any overland flow discharging from the site is no greater than currently discharges (i.e. the post-development flow will be equal to or less than the pre-development flow)."*

Hydraulic neutrality is unverifiable without baselines that quantify the pre-development flow.

1.10 - *"... a number of ... storage basins ... will be designed to cater for runoff from all storms up to the 1% AEP (1 in 100 year) event and attenuate this flow so that any runoff leaving the site is no greater than what currently leaves."*

For the community to be able to have confidence that this is actually being achieved in any proposed development, pre-development baseline runoff (what currently leaves the site) must be identified, and this information must be made publicly available.

The calculations have already been done by HG. All Council has to do is ask for it.

It is perfectly reasonable to ask Council and WDL for baseline pre-development flow calculations and information to be made publicly available now, because

- baselines clarify for the developer the amount of increased runoff that must be attenuated to achieve hydraulic neutrality;
- baselines protect the wider community by letting the community know there is a limit to runoff from new development, and letting the community know what that limit is.

Introduction

Thank you for this opportunity to speak about my submission today.

My name is Stephen Pattinson. I am a registered architect. I have a Bachelor of Architecture Degree from Auckland University, and a Master of Architecture Degree from Victoria University of Wellington. I have over 20 years professional practice experience relating to a wide variety of building types. My Masters research thesis was on medium density housing, and my external examiner, from whom I received very helpful feedback about my research thesis, is an urban designer with Harrison Grierson (HG).

I congratulate Mr Gillies for putting forward this proposal for Wallaceville. Mr Gillies has produced some high quality developments in Upper Hutt such as Riverstone and Mt Marua. I particularly like the medium density development Mr Gillies built in Pinehill Crescent. I visited over 200 medium density housing developments in Auckland, Wellington, Christchurch and Melbourne as part of my thesis research, and Pinehill Crescent stands out as an exceptional example of community and privacy in a medium density development. It consists of patio terrace houses arranged around three sides of a common outdoor area. I interviewed most of the residents there and they all commented on the sense of spaciousness, and privacy. One retired couple said they enjoyed the privacy in their patio terrace house at Pinehill Crescent, commenting that they found it more private in this medium density development than they did in the detached suburban home they had moved from in Johnsonville. I think that says something fairly special about the success of the Pinehill Crescent development.

I am taking a neutral position on this proposed development at Wallaceville, saying neither whether I am for or against it. This is because I have not been able as yet to study this large proposal in depth. Overall, my first impression is that it is a very exciting proposal. I commend Mr Gillies and Harrison Grierson for the extensive work they have done to bring it to this point. I have no intention of holding up progress on this Wallaceville proposal with my submission.

Stormwater

My submission relates to stormwater management. I made two main points in my written submission:

- I requested that Council require the Applicant, Wallaceville Developments Limited (WDL), to identify baseline 1-in-100 year flood levels and extents for the site as it stands in its current situation, and that Council review and confirm the accuracy of these baseline levels, and
- I requested that Council ensure that the proposed means for achieving stormwater neutrality are sound, and that the development will not worsen the current situation identified by the baseline flows/levels/extents in a 1-in-100 year flood event.

I would like to clarify what my submission is not about. A comment by Council relating to my submission recommending that Council reject a request to reinstate wetlands implies I had asked for wetlands in my submission. I didn't. I am not advocating for attenuation wetlands. I was merely noting in my submission that the Applicant had included attenuation wetlands as one means among others of achieving hydraulic neutrality.

Nor is my submission asking to know the area of attenuation wetlands in the proposed development. This seems to have been the interpretation by the Applicant's stormwater expert, and why in his expert evidence (p.11 item 5.8) he has referred me to Vol. 3 App. C.

My submission is about baselines for assessing stormwater neutrality. And I can't find anything in the Application addressing baselines for assessing stormwater neutrality.

Background to this Submission – Pinehaven Stream Flood Maps

I live in Pinehaven, and have familiarised myself in some detail with GWRC/UHCC's 1-in-100 year flood hazard maps and draft Floodplain Management Plan (FMP) for the Pinehaven Stream. For about a year I have been talking with GWRC & UHCC about the flood maps and

draft FMP. We made submissions which resulted in GWRC commissioning an audit of GWRC's Pinehaven Stream Flood Hazard Maps and draft FMP. I understand the results of this audit will be publicly available soon.

We have sought from GWRC and UHCC clarification about one simple thing – how they are defining “the current situation”, the baseline levels/extent of a 1-in-100 year flood in the Pinehaven Stream catchment as it stands today. After a year of very lengthy meetings and detailed discussions GWRC will still not identify the baseline flow rates against which hydraulic neutrality of future developments will be assessed. GWRC's draft FMP simply gives hydraulic neutrality as an objective.

We have been advised by GWRC/UHCC that the appropriate time to look at baselines for assessing stormwater neutrality is if/when an application comes into UHCC for a Plan Change.

We disagree. We see no reason why baseline flood levels/extents should not be included in the FMP, against which any future development will be assessed for hydraulic neutrality.

Wallaceville

This Application for a development at Wallaceville provides UHCC with an opportunity to demonstrate what Council means when it says it will address baselines for stormwater neutrality at Plan Change application time.

It is stated in the “Council Hearing Report” (pp 28,29) for the Wallaceville proposal that *“the proposed stormwater management system ... remains an unresolved issue at the time of writing”* (17 June 2015). The report recommends *“Council and WDL continue to discuss the proposed approach to stormwater management with a view to reaching resolution prior to the hearing”, and “Depending on the agreement reached ... changes be recommended to the Wallaceville Stormwater Management Principles ...”* (p29).

It seems agreements have been reached, and the Wallaceville Stormwater Management Principles have been updated, but there is still nothing in the Principles about requiring the Applicant (WDL) to identify existing baseline stormwater runoffs in a 1-in-100 year event.

The only comments that come close to the topic of baselines in the updated Wallaceville Stormwater Management Principles (I am referring to the version of the Principles with MS Word ‘track changes’ copy that is attached to Mr Alan Blyde’s expert evidence that Mr Blyde read from at the hearing earlier today) are:

- *“for flow attenuation for the increased runoff resulting from development of the site for all storms up to the 1% AEP event including allowance for climate change effects”*

This is repeated in Mr Blyde’s statement of expert evidence (4.16). It acknowledges that there will be increased runoff from development of the site, but gives no indication how the amount of increase will be assessed. Any assessment demands a baseline to measure the increase against.

There follows in the Principles a list of 13 or so agreements reached between Council and WDL, but nothing about identifying baseline flow rates for the current situation in a 1% AEP storm event.

In Council’s recommendations concerning my submission (Submitter 19) it is recommended that my submission be accepted in part, but doesn’t state which part. It seems to me that the main part of my submission, the part requesting that baseline flood levels and extents for the current situation be identified, has not been accepted and included in Council’s agreement with WDL of stormwater management principles for the Wallaceville site.

To find out what has been agreed by Council with WDL I have turned to Mr Blyde’s statement of expert evidence on stormwater management for Wallaceville. There I find the following:

1.4 - *"The Stormwater Management Principles have been incorporated into the Structure Plan to ensure that future subdivision and development of the Wallaceville Structure Plan Area will be required to be assessed against these principles."* (Repeated in 4.2)

My submission requests that Council require that baseline 1-in-100 year flow rates, flood levels and extents for the current situation for each sub-catchment be identified and included **in the Wallaceville Stormwater Management Principles** for future development to be assessed against.

1.5 - *"The SMP [Stormwater Management Plan] demonstrates how hydraulic neutrality will be achieved."*

That's good, but neutrality as assessed against what? As yet, no baselines have been identified against which increased runoff from future development will be assessed.

1.7 - *"Hydraulic neutrality will be achieved on site in that all flood flows for events up to and including the 1% AEP event will be attenuated on site to ensure that any overland flow discharging from the site is no greater than currently discharges (i.e. the post-development flow will be equal to or less than the pre-development flow)."*

An excellent objective, but completely unverifiable without baselines that quantify the pre-development flow.

1.10 - *"... a number of ... storage basins ... will be designed to cater for runoff from all storms up to the 1% AEP (1 in 100 year) event and attenuate this flow so that any runoff leaving the site is no greater than what currently leaves."*

Again, this is stating what we all want, but for the community to be able to have confidence that it is actually being achieved in any proposed development, baseline runoff (what currently leaves the site) must be identified, and this information must be made publicly available.

Instead it seems that Council have already agreed with WDL that baseline information will not be required until much later, at detailed design stage:

5.8 - *"... subdivision and development design stage more detailed flood attenuation modelling and storage sizing be undertaken."*

Even at this later stage of more detailed modelling there is no indication given of any intention to make baseline (pre-development) flow information available to the public. This simply is not acceptable.

At morning tea break today at the hearing at UHCC I had the opportunity to talk with Mr Alan Blyde (HG Stormwater expert) and Mr Andrew Jackson (HG Infrastructure expert). I clarified what my submission is about (viz. current situation baselines against which increased runoff from future development can be assessed for calculating stormwater neutrality).

I asked Mr Blyde about Stormwater Appendix C in Volume 3 (Technical Reports) and Mr Blyde confirmed that the data in Appendix C is only post-development data; Appendix C does not include pre-development data.

I mentioned to Mr Blyde that I could find no maps in the Application that show the 206ha catchment area referred to in Appendix C, and no maps showing the 3 sub-catchments A, B & C which are referred to in Appendix C. Mr Blyde confirmed that none of these maps have been provided in the Application documentation.

Mr Blyde mentioned that he has already calculated pre-development flows for a 1 in 100 year storm event for the existing situation for the Wallaceville site. He referred to this as the Q_{existing} flow. He mentioned that the method he followed for calculating the Q_{existing} flow is

available in a design guide by Christchurch City Council and said it includes such things as defining the catchment area, rainfall intensity, ground surface conditions etc.

I asked Mr Blyde if HG would be able to make his pre-development flow calculations and information publicly available. Mr Blyde expressed some reservation about making the pre-development flow information publicly available. He explained that when HG do more detailed surveying, analysis and design at a later stage, the new data may supersede current preliminary data and results. I commented that I don't see this as needing to prevent the public release of preliminary results for pre-development flows now. The issue is transparency. People understand that new or improved data generally supersedes earlier preliminary results. The public has a right to be able to access information as it evolves.

It will facilitate public confidence in the stormwater design and management process if information is made available to the public as it comes to hand. I see no reason why preliminary pre-development flow calculations and information should not be made publicly available now. The calculations have already been done. All Council has to do is ask for it.

I recently spoke with a Civil Engineer who has training in hydrology and experience in hydraulic engineering design. His opinion is that it is perfectly reasonable to ask for baseline pre-development flow calculations and information to be made publicly available now. He commented that making baseline information publicly available achieves two things:

- baselines clarify for the developer the amount of increased runoff that must be attenuated to achieve hydraulic neutrality;
- baselines protect the wider community by letting the community know there is a limit to runoff from new development, and letting the community know what that limit is.

I believe that before approving Plan Change 40, the Hearings Panel has a civic responsibility to require that the identification of baseline pre-development runoff for a 1 in 100 year storm event be included in the **Wallaceville Stormwater Management Principles**. Transparency about baselines is fundamental. Without baselines, hydraulic neutrality cannot be verified. Future subdivision and development of the Wallaceville Structure Plan Area must be required by the Hearings Panel to be assessed against this fundamental principle.

Stephen Pattinson
09 July 2015

