

**Before Independent Hearings Commissioners
At Wellington**

Under the Resource Management Act 1991

In the matter of Applications for resource consents, and a Notice of Requirement for Designation by Wellington Water Limited on behalf of Upper Hutt City Council, for the construction, operation and maintenance of the structural flood mitigation works identified as the Pinehaven Stream Improvements Project

**Statement of evidence for Benjamin Hugh Fountain for
Wellington Water Limited (Project Sponsor)**

Dated 20 July 2020

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Statement of evidence of Ben Fountain

1 Qualifications and experience

- 1.1 My full name is Benjamin Hugh Fountain.
- 1.2 I am Chief Advisor: Stormwater at Wellington Water Limited ('**WWL**') and have been in this role for over 2 years. My role is to shape and align the strategic direction of Wellington Water as it delivers on its service goals relating to stormwater. I engage with our client councils, our communities and the industry to connect the needs of the region with what we deliver. I support the technical capability of my organisation and its suppliers.
- 1.3 I am a Chartered Professional Engineer with 20 years' experience across the three waters. Much of my career has focused on integrated floodplain management with a focus on risk management, planning controls, water quality, hydraulic modelling, community engagement and stormwater infrastructure. A key area of my professional experience includes assessing the impacts of construction and development on floodplains. I have previously worked for local authorities and have over 10 years' experience working for a multinational engineering consultancy.
- 1.4 In 2009, while working for Jacobs Ltd, I was part of the team that modelled the flood risk within the Pinehaven Catchment. The hydraulic modelling tool was also used to develop concepts of potential upgrades to improve the flood protection in this catchment that subsequently lead to the current Project. I have also worked on many similar projects to the one proposed in Pinehaven, including flood protection works in Flockton Basin in Christchurch and Wharemauku Stream upgrades in Kapiti.
- 1.5 I have a Bachelor of Engineering - Natural Resources (Honours) from the University of Canterbury. I am a Chartered Professional Engineer.
- 1.6 My evidence relates to a Notice of Requirement ('**NOR**') for Designation and associated resource consent applications for the construction, operation and maintenance of the structural flood mitigation works identified as the Pinehaven Stream Improvements Project ('**the Project**'). WWL has lodged the resource consent applications and NOR on behalf of Upper Hutt City Council ('**UHCC**').
- 1.7 I am familiar with the area the Project covers through my involvement in the studies to quantify the flooding risks and assisting in the development of the FMP, which began in 2009. More recently, over the last 2 years as this Project has

transitioned to detailed design, I have been involved in the governance of the Project in my role as Project Sponsor.

2 Scope of evidence

2.1 The evidence addresses the following matters:

- a Introduction to Wellington Water Limited;
- b Project description and history, including alternative designs considered;
- c Project objectives;
- d Anticipated benefits from the Project;
- e Property owner and community consultation;
- f Responses to issues in submissions;
- g Response to section 42A report.

3 Executive summary

3.1 The Project has been collaboratively developed and jointly funded by the UHCC and GWRC, with WWL acting as project manager. The UHCC is the requiring authority for the designation as it will be the owner and operator of the instream assets once completed (with WWL carrying out this service on behalf of UHCC).

3.2 Pinehaven Stream has a history of flooding. The flood of 1976 is considered one of the most significant in living memory within the community. This flood prompted major upgrades to protect Silverstream but frequent flooding has continued to threaten and damage the properties upstream of these works. Many properties adjacent to the stream experience regular flooding that can have significant impacts on parts of the community's quality of life, health and ability to access insurance while deep and fast flowing water is also a threat to life and safety.

3.3 In 2009 GWRC commissioned a project to help quantify the flooding hazards in the Pinehaven catchment. A hydraulic model was constructed and flood hazard maps were developed which confirmed the experience of those living near the stream; that the flooding was hazardous and frequent, particularly those properties downstream of Pinehaven Reserve.

- 3.4 A Floodplain Management Plan has been developed and is the result of a flood management planning process undertaken collaboratively by the UHCC and the GWRC. This process incorporated quantification of the flood hazard and key contributing factors, identification of broad management options, and extensive public consultation.
- 3.5 The FMP identified three tranches of work needed to improve the management of flooding in the catchment. One of which is physical works designed to improve the management of flood risk associated with the stream channel, such as increasing the capacity of the stream, reducing blockages and managing flows on the floodplain. These physical works are the Pinehaven Stream Improvements Project which is the subject of the current resource consent applications and NOR.
- 3.6 The Project area is in the lower catchment of the Pinehaven Stream and includes the bed and banks of the Pinehaven Stream for a length of approximately 1,200 metres between the Pinehaven Reserve (at the upstream or southern end) to the inlet from which the Pinehaven Stream is piped under Silverstream to the Hulls Creek confluence (at the downstream or northern end).
- 3.7 The applications and NOR are seeking approval for the physical works necessary to reduce the risks associated with flooding in the Pinehaven catchment.
- 3.8 The Project works have been designed to generally increase the capacity of the main channel, downstream of Pinehaven Reserve, to a 4% AEP/1-in-25 year return period flood event¹.
- 3.9 The works required to widen the channel will be extensive as they will require dismantling many informal attempts by individual landowners to improve flood conveyance of the stream on their properties and to replace them with a wider, more stable and consistent capacity channel.
- 3.10 The structural upgrade options set out in the FMP were selected following a multi-criteria analysis and community consultation process. This Project then further evaluated the options for managing flood risk through a preliminary and detailed design and early contractor review process. In addition to the preferred option that now comprises the Project, the main alternatives considered included

¹ Consistent with the Upper Hutt City Council flood protection policy as stated in the Infrastructure Strategy contained in the Upper Hutt City Council Long Term Plan 2018 – 2028 <<https://www.upperhuttcity.com/Your-Council/Plans-policies-bylaws-and-reports/Long-Term-Plan>> pg 119.

stopbanks, detention storage in the upper catchment, managed retreat and alternative bank/channel designs.

- 3.11 UHCC and WWL consider that the Project is the most appropriate way to achieve the Project objectives. The Project has been designed to reduce the hazard and frequency of flooding to the city wide accepted level. The design of the Project facilitates achievement of the Project objectives.
- 3.12 The Project works in the catchment have been designed to provide capacity in the channel for a 4% AEP/ 1-in-25 year return period flood event.² The principal benefits or positive effects resulting from the Project can be summarised as follows:
- a less frequent flooding;
 - b reduced severity of flooding when it does occur; and
 - c reduced exposure of people and property to the flood hazard.
- 3.13 Refinements to design post-lodgement mean that WWL now asks that the Commissioners recommend modifications to the requirement so that the designation area will be reduced overall, with an increase in the designation footprint for one property. In addition, once construction is complete the designation will be partially withdrawn so that it only includes the land that is required for the long-term operation, maintenance and mitigation of effects of the Project.

4 Introduction to Wellington Water Limited

- 4.1 WWL is a shared-service council-controlled organisation jointly owned by the following Councils:
- a Greater Wellington Regional Council ('**GWRC**');
 - b UHCC;
 - c Hutt City Council;
 - d Wellington City Council;
 - e Porirua City Council; and

² AEE, pg 15.

f South Wairarapa District Council;

- 4.2 WWL manages drinking water, wastewater, and stormwater services on behalf of these six councils.
- 4.3 UHCC and GWRC jointly manage Pinehaven Stream and its surrounding catchment for flood management. WWL manages the stormwater services for the UHCC and GWRC.
- 4.4 The Project has been collaboratively developed and jointly funded by the UHCC and GWRC, with WWL acting as project manager. The UHCC will have financial responsibility for the Project for the purposes of section 168A of the Resource Management Act 1991 ('RMA'). The UHCC is the requiring authority for the designation as it will be the owner and operator of the instream assets once completed (with WWL carrying out this service on behalf of UHCC).
- 4.5 The Pinehaven Stream Project is identified within the UHCC Long Term Plan ('LTP') as a key 'business as usual' infrastructure initiative.³ The Project is associated with the Stormwater activity area under the LTP, with a total cost, at preliminary design stage, of \$18.2 million. The overall level of service for the stormwater activity area for UHCC is, "*We will effectively manage stormwater to minimise the risk of property damage and preserve public safety and health*".⁴ The performance measure of the level of service includes the number of flooding events and the number of habitable floors affected for each flooding event.

5 Project history and description including consideration of alternative designs

- 5.1 The Pinehaven catchment is located on the eastern hills of Upper Hutt City, with the Pinehaven Stream flowing down from the upper catchment through the urban areas of Pinehaven and Silverstream, and discharging to Hulls Creek. Many of the original dwellings in Pinehaven were baches as this was a popular holiday location. While the baches have long since been replaced with residential dwellings the legacy of informal development is still present within the catchment such as culverts built out of 44 gallon drums, low blockage prone driveway crossings, ad hoc retained stream banks, and dwellings built in close proximity to the stream.

³ UHCC "Long Term Plan 2018-2028" <<https://www.upperhuttcity.com/Your-Council/Plans-policies-bylaws-and-reports/Long-Term-Plan>> pg 19.

⁴ UHCC "Long Term Plan 2018-2028" <<https://www.upperhuttcity.com/Your-Council/Plans-policies-bylaws-and-reports/Long-Term-Plan>> pg 99.

5.2 Pinehaven Stream has a history of flooding. The event of 1976 is considered one of the most significant in living memory within the community. Severe flooding was experienced in Pinehaven and neighbouring Silverstream in December 1976 as a result of a storm widely considered to be in excess of a 100-year rainfall event. The approximate extent of the flooding was recorded in a report prepared by the Wellington Regional Water Board, shown to the left in **Figure 1**, below, along with photos of the flooding experienced in the lower Pinehaven catchment.

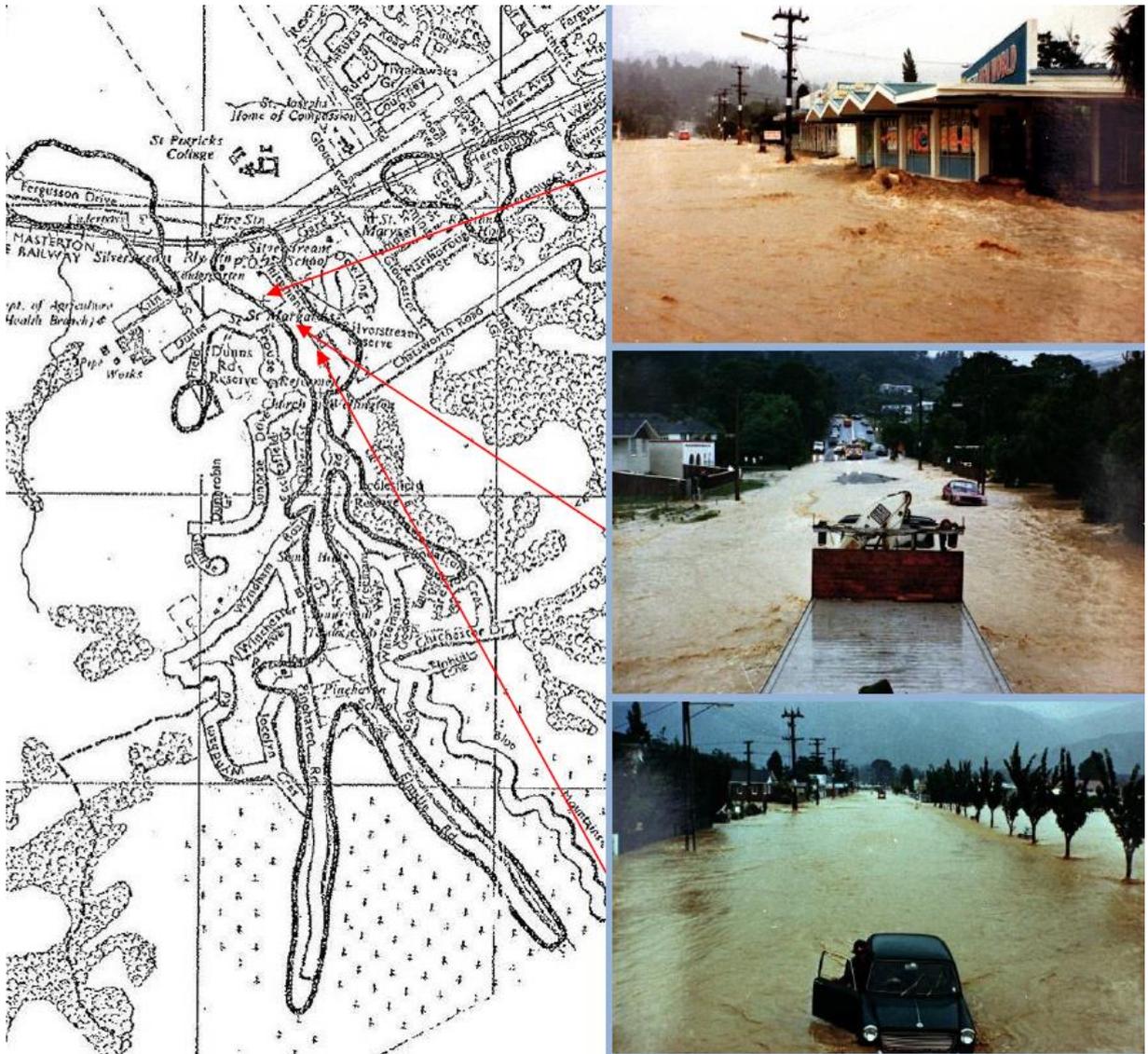


Figure 1: Extent of Flooding in Pinehaven December 1976

5.3 This event caused widespread damage throughout the Pinehaven catchment. Many homes and businesses were inundated. Witnesses described blockages of the many culverts and bridges by flood borne debris as a major contributor to the flooding.

- 5.4 In response to the 1976 event, a large pipe bypass was constructed under Whitemans Road to lift the level of protection to the lower catchment and particularly the Silverstream shopping area (downstream of Pinehaven). Work was also undertaken on Hulls Creek, into which the Pinehaven stream discharges, including the construction of a large detention basin upstream of the Pinehaven/Hulls Creek confluence which controls the Hulls Creek water level. The benefits of these works were considerable for the lower parts of the catchment but did little to address the flooding hazards in the other parts of the catchment such as the area which will benefit from the current Project.
- 5.5 While Pinehaven has not recently experienced a flood of the magnitude of the 1976 event, there has been repeated flooding in the catchment from smaller scale downpours. In the last 20 years damaging flooding in the catchment has occurred in February 2004, January 2005, July 2009 and more recently in December 2019. This is considered regular flooding that can have significant impacts on parts of the community's quality of life, health and ability to access insurance.
- 5.6 In 2009 GWRC commissioned a project to help quantify the flooding hazards in the Pinehaven catchment. A hydraulic model was constructed and flood hazard maps were developed which confirmed the experience of those living near the stream; that the flooding was hazardous and frequent. Shortly after the flood in 2009 the team, which I was a member of, invited the Pinehaven community to view the draft maps and share their knowledge of the flooding hazards. Over 150 residents attended the meeting. The majority of those residents provided their clear expectation to the council which was to 'hurry up and fix the flooding'.

Pinehaven Stream Floodplain Management Plan

- 5.7 In 2009, Greater Wellington started working with the community to address flooding from Pinehaven Stream. The first step was to develop the Pinehaven Stream Floodplain Management Plan ('**FMP**'). The FMP is the result of a flood management planning process undertaken collaboratively by the UHCC and the GWRC. This process incorporated quantification of the flood hazard and key contributing factors, identification of broad management options, and extensive public consultation. This process is documented in the FMP which was endorsed by the two Councils in June 2016.
- 5.8 The FMP identified that there were three tranches of work needed to manage flooding, being:

- a Structural - Physical works designed to manage flood risk associated with the stream channel, such as increasing the capacity of the stream, reducing blockages and managing flows on the floodplain. For clarity, these physical works are the Pinehaven Stream Improvements Project which is the subject of the current resource consent applications and NOR;
- b Non-structural - Planning controls for development in the catchment, community awareness and preparedness, and emergency procedures; and
- c River management - Maintenance of the stream to avoid blockages, maintain capacity and minimise erosion. This work is on-going and is currently managed by GWRC. Once the physical works are complete, responsibility will be handed over to UHCC.

5.9 The non-structural and river management methods recommended in the FMP are being progressed separately and are not part of this Project. For example, planning controls on development in the catchment were introduced by Plan Change 42 to the Upper Hutt District Plan.

December 2019 flood event

5.10 Ten years later in December 2019 another flood occurred in Pinehaven affecting the same areas of Birch Grove, Blue Mountains Road and Sunbrae Drive. The flood was preceded by another significant rainfall event.⁵ Three sections of the Stream and surrounding properties have been identified as being the most affected by the flood.⁶ These sections are:⁷

- a Birch Grove to Pinehaven Road, including the properties at 11 and 12 Birch Grove;
- b Between 26 and 36 Blue Mountains Road;
- c Between Sunbrae Drive and Willow Park (including the properties at 10, 12 and 14 Blue Mountains Road.

5.11 This recent flood event serves as a reminder that the flooding in these areas is hazardous and frequent. Deep and fast flowing water over driveways and properties is a threat to life and safety, while sewage contaminated flood waters that enters homes and sleep outs is financially costly as well as a threat to health.

⁵ Section 92 response to GWRC dated 26 February, 2020, Appendix B, Kinley EIC, para 11.4.

⁶ Section 92 response to GWRC dated 26 February, 2020.

⁷ Section 92 response to GWRC dated 26 February, 2020.



Figure 2: Flooding at a Blue Mountains Road Property (Dec 2019)

Project works and extent

- 5.12 The Project area is in the lower catchment of the Pinehaven Stream and includes the bed and banks of the Pinehaven Stream for a length of approximately 1,200 metres between the Pinehaven Reserve (at the upstream or southern end) to the inlet from which the Pinehaven Stream is piped to the Hulls Creek confluence (at the downstream or northern end). The area to which the notice of requirement relates is shown in detail on the plans attached to the Assessment of Environmental Effects ('AEE') at Appendix C.
- 5.13 However, WWL is now asking the Commissioners to modify the requirement so that the designation area will be reduced overall, with an increase in the designation footprint for one property. The proposed designation footprint is shown in the Updated Designation Plans appended to the letter to UHCC dated 1 May 2020. That letter also appends a table which shows which properties the designation would apply to (and the changes in designation area over that property if the modifications are made). In addition, WWL has also identified that the designation area can be reduced over 11 Birch Grove. This is explained in the evidence of **Ms Helen Anderson**.

- 5.14 Once construction is complete the designation will be partially withdrawn so that it only includes the land that is required for the long-term operation, maintenance and mitigation of effects of the Project.
- 5.15 The applications and NOR are seeking approval for the physical works necessary to reduce the risks associated with flooding in the Pinehaven catchment. Much of the current Pinehaven Stream channel has less than a 5-year flow capacity, meaning that overtopping is likely to occur in any rainfall event greater than the 1-in-5 year level.⁸ Existing bridges and culverts are significant contributors to flooding as they constrain the stream. There is also high potential for blockages in the narrow vegetated stream channel or in the intakes of culverts or under private bridges.
- 5.16 The Project works have been designed to generally increase the capacity of the main channel, downstream of Pinehaven Reserve, to a 4% AEP/1-in-25 year return period flood event⁹, and in doing so to reduce the risk of blockages and increase the number of homes that achieve the regional target of having floor levels above the 1% AEP/1-in-100 year flood.
- 5.17 This design has been developed to reduce both the hazard and the frequency of flooding from the watercourse in the most vulnerable areas of the catchment. The design will not eliminate flooding but it will reduce the risk to life and the frequency of damaging flood events.
- 5.18 The works required to widen the channel will be extensive as they will require dismantling many informal attempts by individual landowners to improve flood conveyance of the stream on their properties and to replace them with a wider, more stable and consistent capacity channel. It will also require removal of blockage prone culverts and drive crossings and will replace these with code complying crossings that maintain the channel capacity and reduce the risk of blockage.

Designing the physical works – alternatives considered

- 5.19 The structural upgrade options set out in the FMP were selected following a multi-criteria analysis and community consultation process. This Project then further evaluated the options for managing flood risk through a preliminary and detailed design and early contractor review process.

⁸ SKM report, Pinehaven Stream Flood Hazard Assessment: Flood Hazard Investigation Report: Volume 1, May 2010.

⁹ Consistent with the Upper Hutt City Council flood protection policy as stated in the Infrastructure Strategy contained in the Upper Hutt City Council Long Term Plan 2018 – 2028 <<https://www.upperhuttcity.com/Your-Council/Plans-policies-by-laws-and-reports/Long-Term-Plan>> pg 119.

- 5.20 In addition to the preferred option that now comprises the Project, the main alternatives considered included:¹⁰
- a Stopbanks;
 - b Detention storage in the upper catchment;
 - c Managed retreat – removal of the at risk buildings from the floodplain; and
 - d Alternative bank/channel designs.

5.21 I briefly describe each of these alternative options below.

Stopbanks/flood defences

5.22 Stopbanks or flood walls running adjacent to the watercourse would have the environmental benefit (relative to the preferred option) of reducing the works in the bed of the stream. However, this option was discounted because the stopbanks would create a barrier to flood flows trying to enter the stream, resulting in increased flood risk to many properties on the stream banks.

Detention storage

5.23 The creation of detention storage in the upper catchment would also reduce the works in the bed of the stream as well as minimising the disruption to properties along the water course. However, this option was investigated and discounted for two reasons:

- a Firstly, the steep upper catchment does not lend itself to storing the large volumes of flood flows, to achieve the targeted flood risk reduction, without a very high and costly dam (with associated construction effects).
- b Secondly, the risk of dam failure above a residential area, which would almost certainly result in significant loss of life if it were to occur.

Managed retreat

5.24 Managed retreat is always an important option to consider, as it has the potential to eliminate the flood risk to many properties through removal of the dwelling and retirement of the land. If targeted at the most flood prone dwellings to achieve the objectives of reducing the risk to life and protection of property, approximately 20 properties would require purchase, demolition and retirement. There are a further

¹⁰ AEE, at 8.1.2.3.

3 properties, where the dwelling has low risk but whose access during a flood is unsafe, that would also be considered for purchase under this option.

- 5.25 In assessing this option it was also found that there would still need to be extensive instream works to remove the blockage-prone crossings, and repair and maintain the many informal attempts at retaining walls and bank protection. With this consideration as well as the disruption that this option would have for individuals and the community, managed retreat was not the preferred option for addressing the flood risk in the catchment.
- 5.26 It is worth noting that selective voluntary managed retreat has been undertaken on a number of properties as part of the enabling works of the Project. 48 Blue Mountains Road is an example of this, where the dwelling was originally built straddling the stream in a location of eroding stream banks and blocking overland flows.

Different stream treatments / Stream banks and channel hierarchy

- 5.27 The other main group of options considered were effectively different approaches to the proposed physical works, such as alternative channel shapes, bank types, and conveyance capacities. Like all capacity-driven infrastructure projects there is a trade-off between increased level of service, cost, disruption and construction effects.
- 5.28 There is potential for improved environmental outcomes and reduced costs if naturalised banks are utilised throughout the Project area instead of vertical sided retained banks. A combination of the two was ultimately chosen, as in many locations naturalised banks would require a significantly wider footprint, triple the width in some areas. Exclusive use of naturalised banks would have resulted in the need to remove an additional 7 existing dwellings, as well as the significant loss of yard and garden space and the removal of established trees and vegetation for many properties adjacent to the stream. Furthermore, in most of the locations proposed for vertical sided retained banks there are already retained banks.
- 5.29 A reduced increase in channel conveyance was also considered during the FMP phase as an alternative to the planned 4% AEP channel capacity, in order to assess whether the cost savings and reduced disruption outweighed the loss of flood protection. It was found that there would be little or no reduction in the level of disruption by installing a reduced channel conveyance, as much of the scope and footprint of the works would remain the same. Similarly, there were only

marginal cost savings associated with the reduced earthworks as much of the more costly components of the work would not change, such as the retained vertical sided banks and the removal and replacement of the structures. The reduced level of conveyance would also be less effective in reducing the risks of injury or harm from fast or deep flowing flood waters, and in that respect would not achieve the Project Objectives (which specifically contemplate a 4% AEP capacity).

5.30 The final design for the proposed works is set out in the updated set of General Arrangement Plans dated 11 June 2020. At a high level the design includes:

- a Widening of the stream along much of its length within the Project area;
- b Vertical retaining walls in some constrained areas to achieve the channel design channel capacity while accommodating existing land use;
- c Naturalised banks along other widened sections;
- d Replacement of structures to improve flood capacity, including private bridges and culverts; and
- e Removal of obstacles to maintain overland flow paths.

5.31 The works will be focused on key flooding areas around Blue Mountains Road, Sunbrae Drive, Whitemans Road, Pinehaven Road, Birch Grove and Pinehaven Reserve.

6 Project objectives

6.1 The Project has been designed to reduce the hazard and frequency of flooding to the city wide accepted level.

Objective 1: To provide improved capacity and effective and efficient functioning stormwater infrastructure in the stream and its tributaries to a 4% AEP (1 in 25 year return period) flood event level, which will also contribute to the management of flood risk to habitable floor levels up to the predicted peak 100 year flood level.

Objective 2: To reduce the risk of injury or harm from fast or deep flowing water in Pinehaven Stream and its tributaries;

Objective 3: To integrate overland flow paths into the wider stormwater network; and

Objective 4: To enable efficient and effective construction and ongoing maintenance of all structures and stream improvements.

Objective 1

- 6.2 Objective 1 recognises that the purpose of the works is to provide capacity in the stream for a 1 in 25 year return period flood event. At this probability of occurrence the flooding is no longer considered frequent. It is important to be clear that while this will also contribute to a reduction in the risk of flooding of floor levels in a 1 in 100 year return period flood event, the risk of flooding in a 1 in 100 year event will not be eliminated for all properties.
- 6.3 The design standard of 1:25 year flood event aligns with the Infrastructure Strategy contained within the UHCC LTP. This states that where there is a secondary flow path a protection to a design standard 1:25 year flood event is to be achieved.¹¹ Secondary flow paths will be secured through the Project, and the wider Pinehaven Stream Improvements structural works.
- 6.4 The design will achieve this objective in the Project area, with some limited exceptions associated with land owner requests, by the widening of the channel and the removing of obstacles so that the flows in a 1 in 25 year event are contained within the stream channel within the Project area.¹²

Objective 2

- 6.5 Objective 2 seeks to reduce the physical harm that people might experience in a flood event.
- 6.6 The design will achieve this objective by reducing the frequency of flooding out of the main channel, reducing the likelihood of people coming into contact with deep or fast flowing water and reducing the likelihood of sewage contaminated flood waters entering people's homes. The widening of the watercourse will reduce the depth of flood flows in the channel for frequent floods. This means that driveways and pedestrian crossings will have greatly reduced frequency of inundation, making them safer to use during a flood event. Increased channel capacity also means that less water will spill over the banks and run overland, through properties on the floodplain, in any given flood event. This reduces the frequency of hazard that flooding poses to those properties.

Objective 3

¹¹ UHCC "Long Term Plan 2018-2028" <<https://www.upperhuttcity.com/Your-Council/Plans-policies-bylaws-and-reports/Long-Term-Plan>> pg 119.

¹² There are exceptions to this, due to landowner requests, see my evidence below at para 8.3.

- 6.7 Objective 3 seeks to ensure that the overland flow paths in the Project vicinity are protected. This is important because the proposed works will reduce the frequency of flooding but will not eliminate the hazard (particularly in flood events greater than the 1-in-25 year level). Securing overland flow paths will help manage the residual flood risk that remains post construction.
- 6.8 Within the construction corridor many of the existing overland flowpaths will be enhanced through the removal of obstacles and the shaping of the surrounding land form. In two locations properties containing overland flow paths have been purchased and the dwellings will be removed as part of this project.¹³ Even where no physical works are proposed (e.g. 11 Birch Grove), the designation will operate as a planning restriction on the building of structures or carrying out of works which would obstruct the overland flowpaths.

Objective 4

- 6.9 Finally, Objective 4 addresses both the construction phase of the Project and the on-going maintenance. Both GWRC and UHCC have a duty to their communities to be efficient and effective with rates. The Project team is also acutely aware that the physical works will impact individual landowners and it is important to minimise this disruption. In terms of the on-going maintenance, setting the Project up for easy maintenance in the long term will help ensure that the capacity of the stream remains at 1:25 flood events.
- 6.10 Examples of where the Project will enable efficient and effective construction and maintenance include the replacement of the many blockage prone crossings. Within the Project area the many informal attempts by adjacent land owners at improving channel capacity by constructing retained banks of varying quality will be replaced with uniform and high quality structures.
- 6.11 UHCC and WWL consider that the Project is the most appropriate way to achieve these objectives.

7 Anticipated benefits (positive effects)

- 7.1 As explained earlier in my evidence at paragraph 5.2, there is a history of significant floods in the Pinehaven catchment, with much of the stream channel having a capacity of less than that required for a 1-in-5 year flow. This is exacerbated by potential for blockages.

¹³ Skowron EIC, paras 5.18 and 5.21.

7.2 The Project works in the catchment have been designed to provide capacity in the channel for a 4% AEP/ 1-in-25 year return period flood event.¹⁴ The principal benefits or positive effects resulting from the Project can be summarised as follows:

- a less frequent flooding;
- b reduced severity of flooding when it does occur; and
- c reduced exposure of people and property to the flood hazard.

7.3 These benefits are further detailed in the evidence of **Mr Kinley**.

8 Property owner and community consultation

8.1 Consultation on the Project has been undertaken over a number of years since the Pinehaven Stream flood modelling work was initiated in 2009. Since that time significant consultation processes have been undertaken in relation to the development of the Pinehaven Stream Flood Management Plan ('FMP').

8.2 Initial consultation included a letter drop, drop-in sessions and an open day during development of FMP. Public submissions were lodged on the FMP and a public hearing was held to consider these. The FMP consultation resulted in the following key principles which were used in developing the proposed structural works:

- a Minimise impact to private property from any proposed stream widening works;
- b The character of the stream following restoration work should match or enhance the existing character;
- c Significant trees are to be retained where practicable;
- d Protection of habitable floor levels to the 1-in-100 year flood event;
- e Low walls and stop banks should be avoided to reduce the risk of cutting off overland flow paths and limiting access to the stream;
- f Access to and on private property is to be retained where possible.

¹⁴ AEE, pg 15.

8.3 Project-specific consultation commenced in 2018, and focussed on landowner engagement and Iwi consultation. The engagement is described in section 9 of, and Appendix H to, the AEE. Engagement with land owners is still ongoing. At the time of preparing this statement of evidence, 37 landowners (out of 50) have signed property access agreements, which allow WWL access to their properties to carry out the Project works.

9 Responses to issues in submissions

9.1 I have reviewed the submissions lodged in relation to the resource consent applications for the Project. Where I am able to respond to the matters raised, I do this below.

9.2 Karyn Mills has raised a number of concerns , including in relation to:

- a Removal of trees in the past, apparently without permission, and associated erosion;
- b The reasons for the physical works in Pinehaven Stream.

9.3 My evidence describes the reasons for the physical works, including issues created by the constrained stream capacity and the benefits that will arise from the physical works. In terms of Ms Mills' previous issues with Councils, passed these concerns on to the WWL communications manager to investigate.

9.4 Lloyd May has submitted in support of the Project, calling it a 'Well planned common sense approach to a long term issue.'¹⁵ He further notes that while the works will impact him he still wants the Project to proceed. This is indicative of the general support for the proposal in the community.

9.5 Jayne Roberts¹⁶ has also lodged a supportive submission. Ms Roberts' dwelling has been flooded three times in the last 13 years and has been subject to several close calls. She further notes that surrounding properties had water and silt through them again during the floods of December 2019. Ms Roberts concludes that the proposed improvements will only enhance what is already a beautiful area to live in.

9.6 Deborah Anne Griffiths¹⁷ is was initially supportive, but now opposes the proposal overall. Ms Griffiths' submission raises some concerns about trees being

¹⁵ Submission 2 (Lloyd May).

¹⁶ Address: 10a Blue Mountains Road.

¹⁷ Address: 14 Blue Mountains Road.

removed. I understand that both **Dr Forbes** and **Mr Compton-Moen** will address this in their evidence.

- 9.7 Graeme Dean McCarthy¹⁸ is also supportive of the proposal. In his submission, Mr McCarthy explains that there have been two significant flood events since 2015 that have caused major disruption to people and property, including loss and damage of business equipment resulting in insurance claims. On top of physical damage, the submission discusses the emotional impact of the floods. This is exacerbated by the number of close calls experienced each year, when residents have to start evacuating vehicles (even if flooding of their properties does not eventuate).
- 9.8 Steve and Kate Hunt have been affected by two flood events in the last ten years and have been waiting for the works to commence. They consider that the process to date has been positive with a collaborative solution reached for their property with there being significant impact on their property, but they consider that this is necessary to mitigate the flood risk. The submission concludes that the work is necessary for the safety of people, property and the community.
- 9.9 Sharlene Olsen¹⁹ has also lodged a supportive submission, noting that the stress caused by flooding is 'harsh and unnecessary'. She was looking to lodge insurance claims for substantial damage to her property at the time of writing the submission.
- 9.10 Elaine Alsop²⁰ supports the application because she experienced the flooding in the 1970's and never wants to experience it again. She notes that her neighbours are also supportive of the proposal.
- 9.11 Robyn Hickson²¹ states in her submission that her property has been flooded twice in the last three years, and in some places the water over her property has been thigh deep. This has damaged the heat pumps and the contents of her garage have been ruined by mud and water. This results in stressful insurance claims and other clean up work. The submission concludes that the "council has an obligation to protect our properties which is not being met".²²
- 9.12 Brian Powell²³ is also supportive of the proposal, noting that he understands why it has to be done.

¹⁸ Address: 36 Blue Mountains Road.

¹⁹ Address: 36 Blue Mountains Road.

²⁰ Address: 17 Deller Grove.

²¹ Address: 10 Blue Mountains Road.

²² Submission 14 (Robyn Hickson).

²³ Address: 11 Deller Grove.

9.13 Overall the submissions indicate that there is a high level of support in the community most immediately affected by the proposed works.

10 Response to section 42A report

10.1 I have read the GWRC and UHCC Section 42A Reports and am pleased that they both recommend that the Project proceed. I agree with the description of the FMP process outlined in the UHCC Section 42A Report.²⁴

10.2 The UHCC Section 42A Report addresses consideration of alternative sites, routes or methods.²⁵ I generally agree with this section.

11 Conclusions

11.1 UHCC and WWL consider that the Project is necessary to achieve the Project objectives. The Project has been designed to reduce the hazard and frequency of flooding to the city wide accepted level. The design of the Project facilitates achievement of the Project objectives.

11.2 The Project works in the catchment have been designed to provide capacity in the channel for a 4% AEP/ 1-in-25 year return period flood event.²⁶ The principal benefits or positive effects resulting from the Project are:

- a less frequent flooding;
- b reduced severity of flooding when it does occur; and
- c reduced exposure of people and property to the flood hazard.

11.3 UHCC and WWL seek confirmation of RMA approvals, so that this important community project can proceed.

Benjamin Hugh Fountain

20 July 2020

²⁴ Section 5.

²⁵ Section 11.

²⁶ AEE, pg 15.