IN THE MATTER OF: **Notice of Requirement for the Designation of Pinehaven Stream (UHC-92).**

STATEMENT OF EVIDENCE

James Gary Beban

1.0 QUALIFICATIONS AND EXPERIENCE

1.1 My name is James Gary Beban. I am a Director at Urban Edge Planning Limited. I have over 16 years experience as a Resource Management Planner. I have extensive experience with the preparation of numerous plan changes within the Wellington Region, including Plan Change 42 which introduced the flood layer and associated District Plan provisions for the Pinehaven Stream and Mangaroa River.

1.2 I hold a Bachelor of Science Degree (*Hons*) from Victoria University, Wellington, which I completed in 2002.

1.3 I have read, and am familiar with, the Code of Conduct for Expert Witnesses in the Environment Court of New Zealand Practice Note 2014. Unless where stated within my report, the evidence which I present is within my area of expertise.

2.0 PROCEDURAL MATTER

2.1 Prior to describing the proposal and providing an assessment of the Notice of Requirement application, I wish to make the Commissioners aware of a procedural matter that requires consideration through the matter of the hearing. In February 2020, the applicant provided a written response to a further information request. As part of this response, the applicant advised that the size of the designation has changed from what was notified. For the following properties there was a reduction in the size of the designation sought:

Property	Notified Area (m^2)	Revised Area (m^2)	Reduction Area (m^2)
48 – 50 Whitemans Road	458	212	246
54 Whitemans Road	101	15	86
56 Whitemans Road	300	0	300
4 Blue Mountains Road	2114	880	1234
15 Clinker Grove	560	453	107

2.2 The reduction in the size of the designation does not present a procedural matter that requires consideration as the effects and scope of the designation are less than what was notified. However, the applicant also advised that the size of the designation of 30 Blue Mountains Road has increased from 292m^2 to 393m^2. For this property, this represents a change in scope from what was notified and came about as a result of more detailed engineering design.

2.3 The Commissioners can make the following decisions with regard to this increase in designation. They can recommend to:

- *confirm the requirement;*
- *modify the requirement;*
- *impose conditions; or*
- *withdraw the requirement.*

2.4 The applicant has obtained the written approval of the owners of 30 Blue Mountain Road to this increase in the designation boundary (See Appendix 1). It is my view that given this written approval, the Commissioners, as part of their recommendation, could modify the original notified Notice of Requirement to allow for the increase in footprint in the designation over 30 Blue Mountains Road.

3.0 THE PROPOSAL

3.1 The proposal is described in detail in the application prepared by Jacobs dated September 2019 and I do not propose to repeat in detail the description of the application. However, the key points are described below.

Overview

3.2 The applicant is seeking approval to establish a designation in accordance with Section 168A of the Resource Management Act 1991 over the lower reaches of the Pinehaven Stream from Pinehaven Reserve (Pioneer Park) in the south to Whitemans Road to the north. The purpose of the designation is to undertake stream improvement works to increase the channel capacity to a 1:25 year level of flood protection. This Notice of Requirement is being processed concurrently with GWRC for the associated in-stream works that require resource consent under the regional plans and the Proposed Natural Resources Plan. For the purposes of this designation (and due to the jurisdictional boundaries of UHCC and GWRC respectively), UHCC is only considering the effects landward from the top of the existing stream channel bank, whereas GWRC are considering the effects of the work on the inside of these existing stream banks.

3.3 The proposed designation and physical works are part of the implementation of the Pinehaven Flood Management Plan (2016). Operative Plan Change 42 to the UHCC District Plan represented the main non-structural element of the implementation of the Pinehaven Flood Management Plan. This plan change sought to manage and control development within the Pinehaven Catchment and the flood hazard area for the Pinehaven Stream. This is so the flood hazard is not increased as a result of future development within the Pinehaven catchment. The designation and associated physical works represent the physical intervention componentary of the Pinehaven Flood Management Plan.

3.4 The proposed designation boundaries cover the following areas:

- The extent needed for the physical works to increase the in-stream capacity and associated future maintenance
- The area needed for access to the stream, including private access to residential properties, where these need to be amended for the duration of the works.

3.5 Once the physical works are completed, the applicant intends to reduce the extent of the designation to what is required for future maintenance works. Under s181 (3) such reduction in the designation does not need to be undertaken through a future NoR process.

3.6 The proposed physical works associated with the project include:

- Creation of a naturalised channel in sections with riparian planting;
- Construction of vertically lined streams;
- Securing secondary flow paths;
- Replace, remove and construct private vehicle crossings;
- Reducing blockages on inlet structures;
- Construction of a 0.3m high wall along the southern boundary of Willow Park, with a 1.8m high fence on top;
- Construction of a private access to 28, 30, and 32 Blue Mountains Road and 34 and 36 Blue Mountains Road;
- The removal of dwellings (4 Sunbrae Drive, 28 Blue Mountains Road, 48 Blue Mountains Road) and accessory buildings;
- Upgrade debris screens at inlet structures;
- Installation of bank stabilisation works; and
- Relocation of utilities that cross the stream channel.

3.7 The proposed physical works will require the following to implement:

- Earthworks to increase stream channel and secondary flow path widths and capacity;
- The removal of some of the vegetation along the edges of the stream to facilitate the proposed works;
- Stream diversion;
- The removal of private bridges and the construction of new bridges;
- The removal of dwellings (4 Sunbrae Drive, 28 Blue Mountains Road, 48 Blue Mountains Road) and accessory buildings;
- The construction of retaining walls and fences and installation of riprap.
- Undertaking landscaping and replanting of vegetation.

3.8 The applicant proposes a variety of conditions for the Notice of Requirement to manage any potential effects from the proposed flood management works. These conditions cover the following matters:

- General Conditions;
- Designation boundaries;
- Management Plans;
- Work hours;
- Construction noise;
- Construction traffic;
- Landscaping Plan;
- Stakeholder and communication process;
- Complains process;
- Accidental Discovery Protocol; and
- Terrestrial Ecology.

3.9 The detailed wording of these conditions can be found in Section 11 of the application and the conditions are considered to form part of the Notice of Requirement application.

3.10 The applicant is seeking a waiver to the Outline Plan requirement due to the level of detail presented within the Notice of Requirement application.

3.11 The applicant has also sought two resource consents for the installation of two culverts under Pinehaven Road and Sunbrae Drive. These applications have been granted resource consent and are attached in Appendix 2. The resource consents are not covered by the Notice of Requirement. While the installation of these works would occur under the resource consent process, the on-going maintenance would be covered by the designation (but only for the portions covered by the designation).

Detailed Description

3.12 This section outlines the proposed works within the following three reaches:

- Reach 1 – 48 Whitemans Road to Sunbrae Drive
- Reach 2 – Sunbrae Drive to Pinehaven Road
- Reach 3 – Pinehaven Road to Pinehaven Reserve,

Reach 1

3.13 The stream channel from 48 Whitemans Road to 15 Clinker Grove will be maintained. One willow tree will be removed from 15 Clinker Grove and some minor raising of the left hand bank at 15 Clinker Grove will occur. The three bridges at 50 and 52 Whitesman Road and 15 Clinker Grove will be retained.

3.14 One bridge at 4 Blue Mountains Road will be removed and replaced and the two bridges at 56 Whitemans Road and 15 Clinker Road will be retained.

3.15 The naturalised channel will be maintained up to 4 Blue Mountains Road. Along 4 and 8 Blue Mountains Road new vertical wall channels will be created and riprap will be installed. The existing bridge to 4 Blue Mountains Road will be removed and replaced at a higher level. From 8 Blue Mountains Road to Sunbrae Drive, the stream channel will be widened where it passes through the reserve. A new bridge is proposed to be constructed from 4 Sunbrae Drive (which will have its respective dwelling demolished) which will connect it to the existing reserve. Several Kowhai Trees and a Black Beech Trees will be removed where the stream meets Sunbrae Drive.

Reach 2

3.16 The stream channel will be widened on both sides from Sunbrae Drive to 24 Blue Mountains Road. The stream edges will be naturalised and widened through this section, with retaining walls provided at the top of the slopes to provide a stable slope of 2H : 1V.

3.17 At 26 Blue Mountains Road, the stream channel will be realigned through 28 Blue Mountains Road to remove the existing right angle in the stream channel, with the removal of the structures (including the dwelling) at 28 Blue Mountains Road. The stream edges will be

naturalised and widened through this section, with retaining walls provided at the top of the slopes to provide a stope of 2H : 1V.

3.18 New vehicular access to 28, 30 and 32 Blue Mountains Road is proposed to be constructed. This would be primarly achieved via a new vehicular access bridge over 28 Blue Mountains Road. The existing bridges that provide access to 30 and 32 Blue Mountains Road would be removed.

3.19 A new bridge is proposed to be constructed to provide vehcular access to 34 and 36 Blue Mountains Road.

3.20 The stream channel from 32 Blue Mountains Road through to Pinehaven Road is proposed to be widened and riprap on the channel to the north of Pinehaven Road is proposed to be installed.

3.21 The proposed culvet under Pinehaven Stream is part of a separate Resource Consent application which has been approved (Appendix 2).

Reach 3

3.22 The stream channel will be widened through 48 Blue Mountains Road and the existing dwelling on this property would be removed. The stream edges will be naturalised. A lowered overland flow path would be created through 48 Blue Mountains Road.

3.23 The existing stream channel through 50 Blue Mountains Road would be largely retained in its existing form. Retaining walls are proposed to be constructed on the outside edges of the channel. The existing crossings over Pinehaven Stream would be retained.

3.24 The stream channel through 8, 10, 11 and 12 Birch Grove would be widened and a verticle wall channel would be created until the intersection of the channel with the Pinehaven Reserve. These works would involve the existing garage on 12 Birch Grove being relocated and the existing private footbridge being replaced.

3.25 The existing culvert that provides access to 10A, 10B and 10C Birch Grove would be removed and replaced with a bridge.

4.0 THE SITE

4.1 The subject site has been correctly described in the application which should be read in conjunction with this report. I will not outline the site in detail, but will provide a summary below.

4.2 The site comprises of 1.2km of the Pinehaven Stream from Pinehaven Reserve in the south through to 48 Whitemans Road in the north. Along this length, the Pinehaven Stream passess through a number of private and public properties and well as being culverted under Pinehaven Road and Sunbrae Drive.

4.3 Along this stream length, the Pinehaven Stream is a modified urban stream, with a number of structures located alongside and within its banks. The stream banks are comprised of a mixure of vegetation including stands of indigenous trees, residential amenity plantings, grass and pest species of plant.

4.4 A portion of the proposed stream subject ot this application has been identified in a draft Significant Natural Area (SNA) (see Figure 1). Non-statutory public consultation around SNA's is due to commence soon and there is currently no objective, policy or rule framework pertaining to SNA's in the UHCC District Plan.

Figure 1 – Extent of the Significant Natural Area affecting Pinehaven Stream

4.5 The stream regularly floods and impacts private properties and has been subject to previous engineering interventions in the 1980's following the large flood event in 1976.

4.6 Pinehaven Stream is a Statutory Acknowledgement Area for Ngāti Toa under the Ngāti Toa Rangatira Claims Settlement Act 2014. This is due to the stream being a tributary of the Hutt River.

5.0 BACKGROUND

5.1 The Notice of Requirement is the third stage of the process associated with addessing the flood hazard risk for the Pinehaven Stream. The previous two stages are outlined below to provide context to this current application.

Stage 1

5.2 Following a period of flood events in 2004, 2005 and 2009 when streets and properties alongside the Pinehaven Stream were flooded, UHCC and GWRC formed a partnership and began engaging with the community as part of a process to understand the issue and its causes, and to work through options to address the flood hazard.

5.3 A Floodplain Planning Process was commenced to address the flood risk issues within Pinehaven and incorporated three distinct phases, culminating in the final Floodplain Management Plan.

- The first phase clarified the importance of defining and establishing the scale and significance of the flood risk to the community, and involved collecting information to determine the scale of the issue.
- The second phase involved identifying and selecting the management options, which were compared and assessed against each other. Phase two involved a series of engagements with the community and stakeholders and technical workshops involving a Project Steering Group made up of representatives from UHCC and GWRC.
- The third phase culminated in the Pinehaven FMP which established the Flood Hazard Extent through flood maps. The FMP recommended a number of structural and non-structural options to cumulatively address the flood hazard and achieve the overall purpose of reducing the risk to the community from future flood events.

5.4 The Project Steering Group selected the following objectives and target levels of service to guide the development of the Floodplain Management Plan:

- Objective 1 - An integrated long-term upgrade option to meet the UHCC target level of service for streams: provision of a 25 year channel capacity combined with the protection of building floor levels from inundation in the 100-year storm event (including the predicted mid-range impacts of climate change);
- Objective 2 - Preventing blockages and introducing non-structural planning controls to help prevent increases in flood risk from further development in the catchment. These include
    - Identify flood zonings;
    - Zone and control important secondary overflow paths;
    - Hydraulic neutrality or reduction in runoff requirements for new development;
    - Source control measures for new buildings such as attenuation of peak flows in the catchment using onsite rainwater tanks; and

- Enforcement of private stream crossings to address associated flooding.

5.5 Hydraulic modelling was undertaken to establish the Flood Hazard Extent, inundation depths and features such as overflow paths associated with a 1 in 100-year flood event. The modelling also incorporated the effects of climate change (as forecast to 2090), blockage of structures across the stream and freeboard allocation. The identified flood extent of a 1 in 100-year event encompasses 546 residential zoned properties and 25 commercial business zone properties within Pinehaven.

5.6 The hydraulic modelling results confirmed that much of the Pinehaven Stream channel has less than a 1 in 5-year flood flow capacity. The numerous bridges and culverts further constrain the stream and are significant contributors to flooding. Furthermore there is a high potential for blockages in the narrow vegetated stream channel and the intakes of culverts or bridges. The modelling showed that, in places, blockages significantly increased the extent of flooding. In addition, the modelling identified that changes in the upper sub-catchment area (predominantly undeveloped rural zoned land) would increase the flood risk to the downstream community.

5.7 The FMP identified that some of the existing flood risk in Pinehaven can be managed through structural upgrades, maintenance and emergency response measures. However physical works are only able to manage part of the flood risk in the catchment. The planned channel upgrades are to a 1 in 25 year flood event. This is well below GWRC's desired level of protection where residential floor levels would be above the 1 in 100-year flood event.

5.8 The Project Steering Group's preferred option was a combination of structural upgrades and non-structural or regulatory measures. This approach would see improvements to the capacity of the existing stream channel together with a plan change to address the flood risk area within the operative District Plan. This option was selected in 2012 after drawing on technical investigations, the multi-criteria analysis, and feedback from the Pinehaven community and affected private property owners in the area. The preferred option was then updated in 2013 to allow for an improved construction methodology for channel improvements that would reduce the impact on the stream channel.

5.9 The Pinehaven Stream Floodplain Management Plan (Pinehaven Stream FMP) was formally adopted on 29 June 2016 following a process of notification, submissions, independent expert reviews, and hearings.

<u>Stage 2</u>

5.10 Stage 2 was Plan Change 42 which introduced the Pinehaven and Mangaroa River Flood Hazard Overlays to the District Plan. This plan change was notified on 8 May 2017 and the hearing was held on 27 – 29 September 2017. The recommendation of the Commissioner

was adopted by the Council on 27 March 2018. The decision was subsequently appealed to the Environment Court, but the appeals were either resolved or withdrawn prior to their being a hearing. The plan change became operative on 12 September 2019.

5.11 The key matter of contention raised in the submissions was the flood modelling used to inform the flood hazard maps and how the hazard was expressed through mapping. This matter was considered in detailed within the hearing and the Commissioner accepted the findings of the Council flooding experts that the flood model and associated flood maps are fit for purpose, with the Commissioner also recommending that a Flood Hazard User Guide be produced to assit lay persons technical interpretation. A guide was released following the Plan Change 42 taking legal effect.

5.12 Plan Change 42 was the principal tool to achieve Objective 2 of the Pinehaven Floodplain Management Plan (2015). This plan change introduced a variety of non-structural planning provisions to control development and activities in order to avoid, remedy, or mitigate flood risk to people and property within the identified Flood Hazard Extent (which is shown on the District Plan maps).

5.13 The key provisions that were introduced included:

- Objectives and policies around the development within the areas identified to be at risk of flooding from the Pinehaven Stream. These objectives and policies sought to avoid development in the high hazard areas (being the Stream Corridors and Overland Flowpaths) and managing development within the low hazard area (being the Ponding Area).
- A comprehensive rule framework was introduced to address the various development typologies within the Pinehaven Flood Hazard Overlays (Figure 2). This rule framework takes a risk-based approach to the management of flood risk, with developments that have higher risk, having to go through a higher consent assessment than those with lower risk;
- The Pinehaven Catchment Overlay (PCO) was introduced. The PCO applies to the Pinehaven Hills, incorperating those areas that influence Pinehaven Stream flooding, and requires new buildings to achieve hydraulic neutrality (the activity status is set at Restricted Discretionary for new buildings in the PCO so that Council can assess how developments are acheiveing hydraulic neutrality). The requirements for what constitues hydraulic neutrality are setout in Chapter 1.8.11 of the District Plan and requires applicants to provide:

Either;

- A full catchment hydrological and hydraulic analysis using the GWRC baseline information to demonstrate hydraulic neutrality for the 1 in 10 year and 1 in 100 year flood event including climate change. This would include:
    - Existing pre-development situation calibrated to GWRC baseline information;
    - Design of mitigation infrastructure; and
    - Future development scenario model with mitigation infrastructure to demonstrate no increase in downstream flood flows at any point in the catchment.

Or;

- A Site Based Assessment, which would include:
    - Hydrological analysis for existing pre-development scenario; and
    - Post-development scenario to mitigate design flows to 80% of pre-development flows for 1 in 10 and 1 in 100 year event including climate change.

The first option provides a pathway for larger developments where catchment wide analysis is an appropiate level to consider the effects of stormwater generation from the site. The second option is for smaller developments, where site specific assessments are more appropiate.

5.14 The hydraulic neutrality ensure that development in the Pinehaven Stream catchment does not increase the downstream flood hazard and reduce the effectiveness of any physical mitigation works undertaken to reduce the flood risk to the local community

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Plan Change 42 – Rules Matrix

ACTIVITY STATUS:	Permitted	Controlled	Restricted Discretionary	Discretionary	Non-Complying
KEY:					

Pinehaven Flood Hazard Extent		TYPE OF ACTIVITY									
		Access construction, Bridge	Fence Construction	Building Extension		Establish Dwelling or Building	Subdivision	Network Utilities		Earthworks	
FLOOD HAZARD EXTENT	Ponding Area			Note 3 <20m²	Note 3 >20m²			Note 10	Note 11	Note 3 <20m²	Note 3 >20m²
	Overflow Path								Note 11		
	Stream Corridor	Note 9							Note 11		
	Pinehaven Catchment Overlay	*No Specific Rules*	*No Specific Rules*						Note 11	Note 3	

Note 3 – All residential works must relate to are directly related to a building platform. Any earthworks for flood mitigation works conducted by GWRC is a Permitted Activity in ANY Pinehaven flood hazard extent.

Note 4 – Must be contained to road reserve.

Note 9 – This only applies to bridges crossing the Pinehaven Stream.

Note 10 – When located above 1:100 year level or underground.

Note 11 – The type of activity status is based on the status of the network utility work in Chapter 30.

Figure 2 – PC 42 rule framework for the Pinehaven Stream Flood Overlay

6.0 THE DISTRICT PLAN

6.1 Due to the length of the proposed designations, it passes through several District Plan zones and overlays, including:

- Residential Zone;
- Residential Conservation Sub Zone;
- Open Space Zone;
- Urban Tree Groups (99, and 101);
- Council Designations UHCC61 and UHCC89 (Recreation) and UHCC73 (Local Purpose Drainage); and
- Pinehaven Stream Flood Hazard Overlay.

6.2 The proposal does not comply with the following rules of the District Plan:

Rule	**Status**	**Comment**
Table 23.1 - Earthworks associated with the flood mitigation works within the Pinehaven Flood Hazard Extent	Permitted	The earthworks associated with the proposal are being undertaken within the Pinehaven Flood Hazard extent and are for the purposes of flood mitigation works
Table 23.1 - Earthworks on a site identified in Schedule 26.8 or affecting a tree identified in Schedule 27.7 or 27A.14	Discretionary	The proposal involves earthworks in the drip line of Urban Tree Groups 99, 101, and 102. Note – It is not clear how the earthworks associated with the Flood Mitigation Works (which are permitted) and the works under a Urban Tree Group interact. For the purposes of this assessment, it has been assumed that the rule pertaining to Urban Tree Group still apply as they are an overlay within the Pinehaven Flood Hazard Area and Plan Change 42 did not amended the earthworks provisions pertaining to Urban Tree Groups.
Table 27A.1 - The trimming or removal of any non-indigenous tree (including roots) from an Urban Tree Group listed in Schedule 27A.14) where the identified individual tree	Permitted	The proposal will involve the removal of vegetation from Urban Tree Groups 99, and 102 that meet this definition.

species has a diameter of 0.2m or less, when measured in any direction at 1.5m above ground level.		
Table 27A - The trimming, removal, or any activity within the dripline of an identified tree(s) within an Urban Tree Group listed in Schedule 27A.14, which is not a Permitted Activity, or does not meet the standards specified in Rules 27A.3 to 27A.8.	Discretionary	The proposal will result in works within the driplines of Urban Tree Groups 99, and 102 that do not comply with the Rules 27A.3 – 27A.8. It is recognised that the removal of the vegetation from Urban Tree Group 102 was approved by the resource consent 1910165.
Table 29.1 - New buildings and structures (except underground cables and lines) within 20m of the bank of any water body with an average width of 3m or more.	Discretionary	The proposal will result in new structures with 20m of the Pinehaven Stream
Table 32.1 Any activity (except temporary events, activities occurring in the Speedway Area, and an Organised Fireworks Display at Trentham Memorial Park) which does not comply with the noise and vibration standards in rules 32.3 to 32.6	Non-Complying	The proposal will not comply with the Construction Noise standards.
Driveways and bridges over the Pinehaven Stream	Controlled	The proposal will result in bridges being replaced over the Pinehaven Stream.

6.3 If the proposal was assessed as a resource consent application, it would have been determined to be a Non-Complying Activity due to all the activities being intrinsically linked to the structural works to improve the level of flood protection for the Pinehaven Stream. However, it is important to note the proposed Notice of Requirement does not have an activity status that is derived from the District Plan non-compliances. The processes for assessment Notice of Requirements are set out in Section 168 (a) of the Act as outlined in Section 6 of this report.

7.0 Submissions

7.1 The submission period for the Notice of Requirement application closed on 31 January 2020. At the close of the submission period, 10 submissions in support and 5 submissions in opposition to the proposal were received from the following parties:

Support	Opposition
Lloyd May	Karyn Mills
Jayne Roberts	Peter and Rosalyn Ross
Deborah Griffiths	David Kyle
Graeme McCarthy	Alexander Ross
Steve and Kate Hunt	Save Our Hills
Sharlene Olson	
Elaine Alsop	
Bob (surname unknown)	
Robyn Hickson	
Bryan Powell	

7.2 A summary of the submissions and the points raised is provided in Appendix 3 of this report.

7.3 Section 10 of my evidence will address the matters raised within the submissions as well as the environmental effects associated with the proposal.

8.0 Pre-hearing meeting

8.1 A prehearing meeting was held on the 20th April 2020. This was a joint Notice of Requirement/ Greater Wellington Regional Council resource consent prehearing meeting. A number of maters were discussed within the prehearing meeting, but no resolution on any of the issues were reached between the parties. A copy of the prehearing meeting minutes are attached in Appendix 4.

9.0 Process under the Resource Management Act 1991

9.1 Section 168A of the Act outlines the process for the consideration of a Notice of Requirement. This is outlined below:

(1) This section applies if a territorial authority decides to issue a notice of requirement for a designation—

(a) for a public work within its district and for which it has financial responsibility; or

(b) in respect of any land, water, subsoil, or airspace where a restriction is necessary for the safe or efficient functioning or operation of a public work.

(1A) The territorial authority must decide whether to notify the notice of requirement under—

(a) subsection (1AA); or

(b) sections 149ZCB(1) to (4), 149ZCC(1) to (4), 149ZCE, and 149ZCF, which apply with all necessary modifications and as if—

(i) a reference to an application or notice were a reference to the notice of requirement; and

(ii) a reference to an applicant, the Minister, or the EPA were a reference to the territorial authority; and

(iii) a reference to an activity were a reference to the designation.

(1AA) Despite section 149ZCB(1), a territorial authority must publicly notify the notice if—

(a) it has not already decided whether to give public or limited notification of the notice; and

(b) either—

(i) further information is requested from the territorial authority under section 92(1), but the territorial authority—

(A) does not provide the information before the deadline concerned; or

(B) refuses to provide the information; or

(ii) the territorial authority is notified under section 92(2)(b) in relation to the commissioning of a report, but the territorial authority—

(A) does not respond before the deadline concerned; or

(B) refuses to agree to the commissioning of the report.

(1AB) Subsection (1AA) applies despite any rule or national environmental standard that precludes public or limited notification of the notice of requirement.

(1B) Section 168 applies to the notice of requirement with all necessary modifications.

(2) Sections 96, 97, and 99 to 103 apply to the notice of requirement with all necessary modifications and as if—

(a) a reference to a resource consent were a reference to the requirement; and

(b) a reference to an applicant or a consent authority were a reference to the territorial authority; and

(c) a reference to an application for a resource consent were a reference to the notice of requirement; and

(d) a reference to an activity were a reference to the designation.

(2AA) However, section 101(2) does not apply to the notice of requirement, and the date for the commencement of the hearing is as follows:

(a) if the notice of requirement was not notified, the date must be within 25 working days after the date the notice of requirement was given by the territorial authority:

(b) if the notice of requirement was notified and the territorial authority gives a direction under section 41B, the date must be within 40 working days after the closing date for submissions on the notice of requirement:

(c) if the notice of requirement was notified and the territorial authority does not give a direction under section 41B, the date must be within 25 working days after the closing date for submissions on the notice of requirement.

(2A) When considering a requirement and any submissions received, a territorial authority must not have regard to trade competition or the effects of trade competition.

(3) When considering a requirement and any submissions received, a territorial authority must, subject to Part 2, consider the effects on the environment of allowing the requirement, having particular regard to—

(a) any relevant provisions of—

(i) a national policy statement:

(ii) a New Zealand coastal policy statement:

(iii) a regional policy statement or proposed regional policy statement:

(iv) a plan or proposed plan; and

(b) whether adequate consideration has been given to alternative sites, routes, or methods of undertaking the work if—

(i) the requiring authority does not have an interest in the land sufficient for undertaking the work; or

(ii) it is likely that the work will have a significant adverse effect on the environment; and

(iii) whether the work and designation are reasonably necessary for achieving the objectives of the requiring authority for which the designation is sought; and

(c) any other matter the territorial authority considers reasonably necessary in order to make a decision on the requirement.

(3A) The effects to be considered under subsection (3) may include any positive effects on the environment to offset or compensate for any adverse effects on the environment

that will or may result from the activity enabled by the requirement, as long as those effects result from measures proposed or agreed to by the requiring authority.

(4) The territorial authority may decide to—

(a) confirm the requirement:

(b) modify the requirement:

(c) impose conditions:

(d) withdraw the requirement.

(5) Sections 173, 174, and 175 apply, with all necessary modifications, in respect of a decision made under subsection (4).

9.2 My evidence will address the following:

- Environmental effects associated with the Notice of Requirement
- Consideration of alternative sites, routes or methods
- Matters raised in the submissions not covered by the environmental effect assessment or consideration of alternative sites, routes or methods
- Relevant objectives and policies of the District Plan, RPS and any higher order documents
- Part II of the Act.

10.0 ASSESSMENT OF ENVIRONMENTAL EFFECTS

10.1 The assessment of the environmental effects outlined in the consent application addresses a wide variety of environmental effects. For the purposes of the hearing, my evidence will concentrate on the key environmental effects associated with the proposal, being:

- Temporary construction effects;
- Visual effects;
- Ecology effects;
- Natural Hazards effects;
- Traffic safety effects;
- Earthworks effects;
- Recreational effect;
- Historical and Cultural effects; and
- Positive effects.

Temporary Construction Effects;

10.2 The works associated with the construction of the Pinehaven Stream upgrades will generate construction effects. The construction effects include:

- Additional traffic movements associated with construction movements;
- Noise from construction activities;
- Vibration effects; and
- Dust from construction activities.

10.3 The construction works will occur between the hours of 7:00am to 7.00pm Monday to Saturday (excluding public holidays). The proposed works would be undertaken in stages, with up to 12 stages proposed.

10.4 Due to the nature of Pinehaven Stream within an urban environment, there will be a number of residential properties impacted by the construction effects, with the main effects being experienced by those properties either located within, or adjacent to the proposed designation. To address the construction effects associated with the proposal, the applicant proposes a number of conditions to be imposed on the designation. These conditions are outlined in the application and cover the following matters:

- Management Plans
- Work hours
- Construction Noise and Vibration
- Construction traffic

10.5 The conditions proffered by the applicant for the designation to address the construction effects are detailed and cover the construction effects associated with the works. I consider these to be appropriate to be included as conditions on the designation (see Appendix 5 for a full list of the recommended conditions for the designation). The exceptions are as follows:

10.6 Condition 7 states: "*Submitted management plans will be deemed to be certified if no correspondence from the CMO has been received on the specific management plan within 15 Working Days.".* This condition is inappropriate as it conditions Council in its role as a regulator as opposed to the Requiring Authority, and does not seek to manage an environmental effect. As such, it is proposed that this condition is not imposed as a condition of the designation.

10.7 It is my view that given the scale of the proposed construction works, and the mitigation measures required by the suggested conditions, any potential construction effects associated with the proposal are appropriately mitigated.

Visual Amenity and Landscape Effects

10.8 The proposed works will result in a number of changes to the stream channel and the immediately surrounding areas. The majority of the proposed works will be undertaken to the rear of private properties and therefore would be largely screened from the wider environment by the existing development form within the local area. The most visible aspects of the work are where they will be undertaken close to, or within public spaces. This includes the southern area of Pioneer Park and Willow Park. The applicant has had a landscape and visual assessment prepared which considers the resulting effects of the proposed development. Due to the limited visibility of the works from the wider environment and that Pinehaven Stream is not located within an identified Outstanding Natural Feature or Landscape or within a Special Amenity Landscape, I will be relying on the findings of that assessment.

10.9 In regards to the effects on the landscape values the applicant's assessment makes the following findings:

Prior to mitigation the effects on Landscape Character will be minor overall resulting from localised vegetation clearance, earthworks and removal of three dwellings. However, the (short term) effects on vegetation will be more than minor, reducing to less than minor with the proposed planting.

Overall, the stream works are considered to have less than minor effects after mitigation on the existing landscape character and landscape elements along the alignment. The quality of the receiving environment is mixed with areas of well-established native vegetation but also areas where there is a high level of modification and infestation of weed species. The proposed landscape works combined with the engineering works will improve the amenity of the corridor over time but there will be short term adverse effects when vegetation is initially removed, and before new plantings become established. Refer to Section 5 below for details on the proposed mitigation measures.

10.10 In relation to the effects on visual amenity values, the applicant's assessment makes the following conclusion:

In terms of visual effects, the proposal will have the greatest visual effects on the residents of 26 and 28 Blue Mountains Road and 10-12 Birch Grove who will all experience significant adverse effects during construction with the loss of vegetation and significant encroachment on to their properties. With mitigation, the residual effects will reduce to minor once vegetation is established after approximately 5 years, but there will still be some loss of flat land which cannot be mitigated. All other residual visual effects are minor or less than minor.

10.11 To mitigate the visual amenity and landscape values associated with the flood management works, the applicant has proposed the following conditions for the Designation:

A Landscape Plan ('LP') shall be prepared by a suitably qualified and experienced person and shall be submitted to the CMO for certification that it meets the requirements of these conditions at least 15 Working Days prior to Commencement of Construction. The purpose of the LP is to outline the requirements for the Project's permanent landscape mitigation works.

The Requiring Authority shall undertake mitigation and enhancement planting in general accordance with the LP. The LP shall include details of proposed mitigation planting including as follows:

(a) Identification of vegetation to be retained, protection measures, and planting to be established along cleared edges, the riparian zone and new floodplain areas;

(b) Proposed planting including plant species, plant/grass mixes, spacing/densities, sizes (at the time of planting) and layout and planting methods;

(c) The proposed staging of planting in relation to the construction programme, including provision for planting within each planting season following completion of works in each stage of the Project and detailed specifications relating to (but not limited to) the following:

i. Weed control and clearance;

ii. Pest animal management;

iii. Ground preparation (topsoiling and decompaction);

iv. Mulching;

v. Plant sourcing and planting, including hydroseeding and grassing;

vi. Successional/replacement planting; and

vii. Details of a proposed maintenance and monitoring programme.

The LP shall include a Reserve Reinstatement Plan for Willow Park. The Reserve Reinstatement Plan shall be prepared in consultation with Council and shall include the following details (as appropriate):

a) Removal of structures, plant and materials associated with construction;

b) Replacement of any boundary fences that require removal;

c) Reinstatement of grassed areas;

d) Replacement of trees and other planting;

e) *Any structures proposed to be constructed; and*

f) *Details of way finding interpretation signage within and adjacent to the reserve.*

The Requiring Authority shall maintain and monitor the mitigation and enhancement planting for a minimum of 5 years following the planting being undertaken.

10.12 In considering the visual amenity and landscape effects associated with the proposal, I acknowledge that the flood management works would result in modification to the local environment and this is an inevitable outcome that needs to be balanced against the positive effects that are derived from the development.

10.13 I am also of the view that the majority of the works are located to the rear of private properties and therefore the works are not visually prominent when viewed from the wider environment. While there are short and mid-term visual and amenity effects on private property owners, these are also the owners who are deriving the most benefit from the proposed flood mitigation works. For the majority of the property owners the effects are the greatest at the time of construction, and immediately after, with the level of effect diminishing with time as the proposed landscaping matures and becomes more prominent. This demonstrates the importance the landscaping and planting has in mitigating the long term visual and landscape effects associated with this proposal. As such, I considered the conditions proposed by the applicant to address the visual amenity and landscape effects associated with the proposal are appropriate.

10.14 I accept that some of the properties will lose flat land from their respective properties (26 and 28 Blue Mountains Road and 10-12 Birch Grove*)*. I understand this land will be acquired under the Public Works Act (if it has not already been acquired) and therefore appropriate compensation will be paid. Regardless of this (as this is a non RMA matter), I also make the following findings in relation to the landscape and visual effects on these properties:

- 26 Blue Mountains Road – The flat land is predominantly on the western side of the stream and would have had little utilisation by this property as it was separated from the dwelling by the stream channel. This property will also regain some land as a result of the diversion of the stream through this area.
- 28 Blue Mountain Road – Was purchased by GWRC for the purposes of this project and therefore the loss of flood prone land is accepted by the landowner. Furthermore, a large area of flat land will remain to the west of the works, that could potentially accommodate a dwelling in the future if the landowner desired.
- 10 and 12 Birch Grove – Both of these properties are losing areas of flat land towards the rear of these respective sites. These are not as large as the areas that are being lost of 26 and 28 Blue Mountains Road. These properties still retain a large amount

of flat land on their property, so the overall percentage of flat land lost, when considered against each property is relatively small.

10.15 The applicant has also advised that the works will be undertaken in stages, and while two stages may be operational at any one time, the whole site will not be worked on at once. This staging ensures that the extent of the site opened at any one time is reduced, thereby reducing the potential visual impact of the physical works on the site.

10.16 In considering the potential visual effects from vegetation removal, I also recognise that resource consent has been granted that allows for the removal of Tree 22 and Tree 23 which are an Oak and a Black Beech (located to the immediate south of Pinehaven Road) and Kowhai 01, 02, - 08. As such, the resulting visual amenity and landscape effects from this vegetation removal has already been considered and cannot be relitigated within this process.

10.17 In terms of the other taller trees and vegetation that is proposed to be removed, the removal of this vegetation would be a permitted activity under the District Plan (if resource consent was sought for these works as opposed to a Notice of Requirement). As such, while there are resulting visual amenity effects associated with the removal of the vegetation, these effects are not inconsistent with the District Plan expectation for the removal of vegetation within the urban environment. I also recognise that if this vegetation was removed as a permitted activity under the District Plan, there would be no need for landscaping or replanting to offset the resulting visual effects. However, in the case of this proposal the applicant has proposed to undertake extensive landscaping and replanting of vegetation which ensures the result visual amenity effects from the vegetation removal would overall be less than the District Plan expectations.

10.18 Overall, it is my viewed that while there will be some short to mid-term visual amenity and landscape effects associated with the proposal, these are acceptable given the urban nature of the local environment and the proposed conditions proffered for the designation.

Natural Hazards

10.19 The core purpose of the proposed works are associated with flood hazard mitigation works and to increase the capacity of the Pinehaven Stream so that it can accommodate flood flows up to a 1:25 year event.

10.20 The applicant submitted a flood hazard assessment with the proposal and this assessment identified the areas of highest flood risk in the Pinehaven Stream catchment was in the lower reaches of the Pinehaven Stream from Pinehaven Reserve (Willow Park) in the south to Whitemans Road to the north. As a result, a number of engineering interventions were

proposed to address this flood risk. This flood hazard assessment considered the flood risk to the surrounding properties from the proposed works and made a number of findings.

10.21 The original Flood Hazard Assessment was peer reviewed by Mr Michael Law and was found to be fit for purpose and the Notice of Requirement and GWRC resource consent application was notified (Appendix 6 contains Mr Laws assessment).

10.22 However, through the notification process, the applicant made some changes to the project, and some clarifications on the flood modelling (which was identified in Mr Law's review) was sought, which had impacts on the result of on the flood model and associated flood hazard assessment. These changes/clarification included:

- Increasing the climate change rainfall from 15% to 20%;
- Altering the roughness of the culvert; and
- Retaining or removing bridges from several properties.

10.23 Michael Law, who has been advising GWRC and UHCC as a peer reviewer through the Notice of Requirement and GWRC resource consenting process advised that the flood model should be re-run to show the output from these changes. Prior to the notification of the application, the applicant provided written responses to the first two bullet points, and demonstrated through writing that the impacts of these changes did not materially change the flood model to any significant extent. However, this written response provided by the applicant did not address the issue of retaining and removing different bridges from what was present in the original model run. As a result the applicant re-ran the flood model and updated the Flood Hazard Assessment (dated 15 June 2020). The assessment of the effects from the proposal has been based upon the findings in the updated Flood Hazard Assessment.

10.24 The applicant modelled the outputs from the proposed engineering measures and has made the following findings for the various reaches for a 1:25 year flood flow:

- Reach 1 – The proposed flood flows are contained entirely within the Stream and flooding of properties and Sunbrae Drive is avoided. The report notes that the flood flows downstream of the flow diversion structure are increased by 0.06m. However, these additional heights do not increase the risk to neighbouring properties as they are below the adjacent ground levels.
- Reach 2 – The flood flow is entirely contained within the stream and the flooding of the properties and Pinehaven Road is prevented. The proposed flood water levels would be 0.62m lower as a result of the proposed works.
- Reach 3 – The proposal would result in the increase in flood depths at 48 and 50 Blue Mountains Road and 2A Freemans Way. 48 Blue Mountains Road has been

purchased by Greater Wellington Regional Council to allow for the proposed works. The key with this property is that the increased flood depths would be contained within this site and would not result in the risk to neighbouring properties increasing.

The applicant explains that the proposed flood flows have increased at 2A Freemans Ways and 50 Blue Mountain Road as a result of the enlargement of the stream channel upstream. The flood flows increase by an average of 0.02m. The maximum increase is 0.26m for 2A Freemans Way. There is a net increase of 12m^2 to the floodplain on 2a Freemans Way as a result of this proposal.

The floodplain for 50 Blue Mountains increases by 184m^2 as a result of the proposed works (it is recognised that there is a long length of stream through this site).

10.25 The updated Flood Hazard Assessment was reviewed by Mr Law and he found that the flood model was fit for purpose. As part of his assessment, GWRC and UHCC requested that some commentary was provided around the changes in the flood levels of individual properties. This was to determine whether any individual private property owner was paying a significant private price (in terms of increased flood risk), relative to the public benefit that would be derived from the proposed works. The findings of Mr Law in terms of changes of flood depths on properties is explained in detailed on pages 41 and 42 of his assessment and are summarised below:

Address	**Implications**
2 Pinehaven Road 4 Pinehaven Road 40 Blue Mountains Road 38A Blue Mountains Road 38B Blue Mountains Road 36 Blue Mountains Road 34 Blue Mountains Road 32 Blue Mountains Road	Flood levels decrease so works provide net benefit.
48 Blue Mountains Road	Increase in flood risk to the site and property, but property is owned by GWRC, so negative impact of works accepted.
2A Freemans Way	Increase in flood levels/extent is a negative impact of the works, but habitable floors reported as not affected in the 1% AEP event.

50 Blue Mountains Road	Increase in flood levels/extent on southern part of the property is a negative impact of the works, but habitable floors reported as not affected in the 1% AEP event.
7 Pinehaven Road 9 Birch Grove	Despite a small part of the site seeing an increase in flood levels and extent post-works, flood levels remain below habitable levels. Overall the implications of the works are beneficial.
Pinehaven Road at culvert	Depth of flooding reduced due to works, so benefit to road usability. Road owned by UHCC.
54 Whitemans Road 56 Whitemans Road	Though minor increase in flood levels, habitable floors are not affected (though it is recognised that 56 Whitemans Road is vacant).

10.26 These findings show that for several properties there are increases in the flood depths as a result of the proposed works. In terms of the acceptability of this change in the flooding hazard by the proposed work I am guided by higher order documentation and guidance, namely Section 6(h) of the Act and the Regional Policy Statement.

10.27 Both Section 6(h) and the Regional Policy Statement require the consideration of natural hazard risk. Risk is typically expressed as a function of the consequences from a natural hazard event combined with the likelihood of the event occurring. As the change in flood depths has the potential to alter the consequence side of the equation, my assessment has concentrated of the acceptability of the changes in the flood depths.

10.28 The changes in the flood depths on private property are typically low. The greatest flood depth change that occurs on a private property is 0.26m at 2A Freemans Way. However on this property the channel is contained within steep banks and the increased depth moves the water further up the bank, but does not result in any further inundation of the main living areas of this property.

10.29 I also recognise that the changes in the flood depths on the private properties is not at a level that results in habitable floors being inundated. Current land use planning practice in relation to flooding is to ensure that dwellings have their finish floor level located above the 1:100 year flood event. This is in recognition that on a residential property, the dwelling (and the people and content within) are recognised as representing the greatest consequences if damaged/harmed as a result of a flood event. I place significant weight on this current

practice, as it directly speaks to the consequence component of the risk equation. As the proposed flood works do not result in a situation where private residences are being inundated as a result of the proposed works, I am of the view that the flood effects on those properties that experience an increase in flood depths resulting from the proposal are acceptable.

10.30 In coming to this view I am mindful that the increased flood depths on the private properties may result in greater impacts on gardens and outdoor living areas. However, the consequences of the impacts on the limited number of private outdoor living areas, also need to be balanced in the context of the wider positive effects that result from a large number of properties experiencing reduced inundation as a result of the proposed works. In this regard, the significant positive flood hazard risk reduction to the wider community is considered to be greater than the small increased in the flood depths experienced by a limited number of private properties. In this regard, I consider that the flood hazard impacts on the individual property owners that experience greater flood depths arising from the proposal to be acceptable.

10.31 The applicant has not proposed any conditions as part of the Notice of Requirement process in relation to flood modelling. However, the applicant has proffered the following resource consent conditions for Greater Wellington Regional Council:

At least 15 working days prior to the work commenting, the Consent Holder shall submit a final detailed hydraulic design to GWRC. The purpose of this final detailed hydraulic design and to confirm compliance and consistency with the information provide with the application and the conditions of consent. The final hydraulic design shall be prepared by a suitably qualified hydrologist or hydraulic modelling specialist to ensure the Q25 flows are contained with the designed stream channel and flood hazard depths and velocities are maintained for Q100 design events.

No construction works shall commence until the hydraulic design has been certified in writing by the manager.

10.32 This condition ensures that the outcomes presented in the flood model are achieved (albeit this condition is not in Upper Hutt City Council's control). Upper Hutt City Council considers that it is appropriate that the certification of the final hydraulic model remains with Greater Wellington Regional Council and does not want to duplicate the certification process. However, it is appropriate that Upper Hutt City Council retains a copy of the certified model for the purposes of completion of its records (in case any further changes are made to the instream works) and due to the potential impacts on future plan changes. As such, the following condition is proposed for the designation:

Prior to the commencement of works on the site, the Requiring Authority shall provide the Team Leader Policy a copy of the hydraulic model that has been certified by Greater Wellington Regional Council for their records. If during the construction period any changes are made to the certified hydraulic model that requires the recertification by Greater Wellington Regional Council, then a copy of the revised certified model shall be provided to the Team Leader Policy within 5 working days of receiving confirmation of the recertification.

10.33 Within the community there have been some parties who have long term concerns around the flood maps that formed the basis of Plan Change 42 and these flood mitigation works. These concerns principally are based around the view that the flood maps show an elevated level of flooding than what would be expected from a 1:100 year flood event. This means that if the Guildford Development proceeds, then the community would be at an increased risk from flooding as the base level maps which would form the basis of the assessment of the impacts from the Guildford Development would mask the flood impact due to their elevated nature.

10.34 When considering these concerns there are two important matters than require consideration. The flood maps that formed the basis of Plan Change 42 have been examined within a public forum, where the evidence from the various parties were presented. The maps were found to be fit for purpose.

10.35 The second matter is that the Guildford Development does not exist in a manner that can be considered within a Resource Management context. The 2016 Land Use Strategy identifies the southern and western portions of the Pinehaven Hills as being a growth area that could accommodate future residential housing. This area is called the Southern Growth Area or the Guildford Block. Over the years there have been several discussions with Council around this development, including a potential land swap. However at the time of hearing this development has not proceeded in any way. There is no resource consent before council for consideration and no plan changes to rezone the land for residential development have been lodged. As such, for Resource Management Act purposes, this potential development does not form part of the existing environment.

10.36 If a residential development is proposed to be undertaken in the future on the Southern Growth Area, it will require a plan change, which is a public process. This would be the appropriate forum to consider the potential impacts of potential flooding events from any resulting development. I would note that Plan Change 42 introduced a hydraulic neutrality rule for the Pinehaven Catchment (which includes the Pinehaven Hills including areas of the Southern Growth Area). These provisions have been outlined in detail in Section 5 of this report and I will not repeat these hear, other than to say that the portions of the Southern Growth Area that could influence the Pinehaven Stream are within this Overlay.

10.37 For the purposes of completeness, in terms of the development the District Plan allows for on the Guildford Block as a permitted activity, this is limited to 1 dwelling per site (as two dwellings on each site in the Rural Hill Zone is a Non-Complying Activity). The Guildford Block is comprised of 32 sites, so 32 dwellings are permitted.

10.38 It is my view that given the findings of Mr Law, and the resulting reduced flood risk from the proposed work, the overall outcome in terms of effects from a natural hazard perspective are positive.

Ecological Effects

10.39 The ecological assessment undertaken as part of the Notice of Requirement is limited to the terrestrial ecological effects associated with the proposal. The aquatic effects are addressed in Ms Burrows' assessment as part of the GWRC resource consent applications.

10.40 The proposal involves approximately 0.6 hectares of vegetation clearance along the length of the proposed works. The vegetation to be removed involves a mix of native, exotic and weed species of plant. The applicant has undertaken an assessment of a the ecological effects associated with the proposal and proposed a number of conditions to address these effects including:

- Replanting of the disturbed areas;
- Replacing the larger native vegetation to be removed with multiple trees of the same species;
- Maintenance of the planting;
- Lizard Surveys;
- Bat surveys; and
- Timing of tree removal around bird nesting seasons.

10.41 The proposal has been assessed by Council's Ecologists, Ms Frances Forsyth and Ms Keely Palmer (Appendix 7 contains their peer review findings). Within the initial assessment, several queries and questions around the ecological effects of the proposal were raised. The applicant provided a response to these concerns and the subsequent review by Ms Palmer confirmed that the ecological effects associated with the proposal were appropriately addressed subject to conditions of the designation. This includes additional conditions pertaining to the following:

- Replanting ratios to compensate for the loss of the vegetation that has removed; and
- Height of trees in relation to residential dwellings.

These conditions are in addition to those proposed by the applicant.

10.42 The replanting ratio proposed by Council's ecologist within their assessment is 3:1. This replanting ratio is conservative and is due to the uncertainty associated with the quality of the vegetation to removed. As such, this ratio assumes that all the vegetation to be removed is of a high quality.

10.43 A site visit was undertaken with the ecologist on Friday 10 July 2020. Following this site visit, the ecologist was going to reconsider the replanting ratio required for this project (with it potentially being lowered). At the time of preparing this report, the revised ratio has not been provided. At the time of the hearing the replanting ratio will be finalised and the Commissioners will be advised.. The condition currently requires a 3:1 ratio, based on the advice to date. However, this may prove to be conservative as it assume the removal of high quality vegetation along the length of the stream.

10.44 Council's ecologist has advised that trees that are over 15m in height should not be planted within 10m of a residential dwelling. This is due to the potential impacts that large trees can have on residential amenity and as a result can be removed by future owners in order to restore residential amenity.

10.45 On face value this does not appear to be a matter that the ecologist should be commenting on, and is more of a landscape matter. However, I am of the view that if vegetation is being planted to offset ecological impacts from the removal of larger trees, then there needs to be an element of the planting being enduring, otherwise, the ecological benefits are somewhat temporary. This is particularly relevant in this proposal, where the replanting will be on private property and therefore will not be in the on-going control of the applicant.

10.46 I am therefore of the view that a condition on the designation is appropriate that requires an updated landscaping plan to be provided which shows that vegetation that has the potential to grow over 15m in height is not planted within 10m of a residential dwelling. While I acknowledge that this is somewhat of a fringe issue, I also am of the view that this condition will assist with ensuring that the ecological mitigation associated with this proposal is more enduring in the longer term. This condition wording is provided in Appendix 5.

10.47 Further to the findings of the ecologists, I am also mindful of the following when determining the overall acceptability of the terrestrial ecological effects associated with the proposal:

- Upper Hutt City Council has identified the most significant ecologically important vegetation in the City through Urban Tree Groups and draft Significant Natural Area maps. The proposed works largely avoid the Urban Tree Groups and draft SNA (the works within these areas are largely limited to bank stabilisation works and scour

protection, most of which is within the streambanks and therefore are not in UHCC jurisdiction for consideration);

- Where there is a significant stand of native vegetation that is not located within either an SNA or a Urban Tree Group (namely the vegetation on 50 Blue Mountains Road), the applicant has largely avoided work within this area; and
- The majority of the vegetation to be removed could be removed as a permitted activity under the District Plan, and therefore the resulting ecological effects associated with the proposal are largely anticipated by the District Plan.

10.48 Given the above and the proposed conditions for the designation, I am of the view that any potential terrestrial ecological effects associated with this proposal are acceptable.

Traffic Effects

10.49 The potential traffic safety effects associated within the Notice of Requirement have been assessed by Ms Harriet Fraser, Traffic Engineer (attached as Appendix 8). Within her assessment, Ms Fraser considers the potential traffic safety effects arising from the construction works associated within the Notice of Requirement. The assessment also considers the appropriateness and effectiveness of the conditions that have been proposed by the applicant to manage the construction effects.

10.50 Within her assessment of the conditions, Ms Fraser makes the following comments:

- *Condition 1.b. includes the note that 'the final driveway and private bridge to provide for access and parking at each property from 30-38 Blue Mountains Road will be completed in consultation with each respective land owner'.*

  This condition should usefully apply to any new or modified vehicle access and should include the need for compliance with the Council's Code of Practice for Civil Engineering Works. Compliance with the Code should be confirmed by Council officers.

- *Condition 5.a. requires a Construction Traffic Management Plan to be submitted to Council for certification.*

- *Condition 14.b. restricts heavy vehicle movements on public roads to between 9am and 6pm on Monday to Fridays (excluding public holidays). Some further restriction may be needed for instance ensuring safe pedestrian passage during the period immediately after the end of the school day. The need or not for such a restriction will likely be identified as the CTMP for individual stages is developed.*

- *Conditions 20, 21 and 22 set out the purpose and requirements for the CTMP. Condition 22 should be expanded to include measures to mitigate any adverse effects on parking both within private properties and along the kerbside.*

10.51 Ms Fraser goes on to state: "*With the above matters addressed through conditions I am comfortable that the traffic effects associated with the Notice of Requirement can be appropriately managed, ensuring safe and efficient access for both the affected property owners and for the wider local community who travel through the local road network."*

10.52 I have considered the changes recommended by Ms Fraser and I believe that they can be best addressed by adding a new condition to address the bridge access for 30 – 38 Blue Mountains road and changing Conditions 21 and 22. The proposed new condition and changes to conditions 21 and 22 are underlined below:

New Condition:

At least 15 working days prior to the construction of the new accesses to 30 – 38 Blue Mountains Road, the Requiring Authority shall provide the Team Leader Policy for certification plans for the proposed new access arrangements for these properties and confirm compliance with the design standards of the Council's Code of Practice.

Condition 21:

The purpose of the CTMP is to avoid or mitigate adverse effects on traffic safety and efficiency resulting from the construction works, in order to:

a) Protect public safety, including the safe passage of pedestrians and cyclists;

b) Minimise delays to road users, pedestrians and cyclists, and particularly public transport at all times, especially bus travel times at peak traffic periods during weekdays (06:30 to 09:30 and 15:00 to 19:00); and

c) Inform the public about any potential impacts on the road network.

Condition 22

The CTMP shall describe the methods for avoiding, remedying or mitigating the local and network wide transportation effects resulting from the Project works, and shall address the following matters:

a) Methods to avoid, remedy or mitigate the local and network wide effects of the construction of individual elements of the Project;

b) Methods to manage the effects of the delivery of construction material, plant and machinery (including oversized trucks);

c) The numbers, frequencies, routes and timing of construction traffic movements;

d) Traffic management measures to address and maintain traffic capacity and minimise adverse effects, ;

e) Measures to maintain existing vehicle access to private properties, or where the existing property access is to be replaced, measures to provide alternative access arrangements in consultation the affected landowner;

f) Measures to maintain pedestrian and cycle access with thoroughfare to be maintained on all roads and footpaths adjacent to the construction works, (e.g. unless provision of such access is severed by the works or such access will become unsafe as a result of the construction works). Such access shall be safe, clearly identifiable, provide permanent surfacing and seek to minimise significant detours; ~~and~~

g) Include measures to avoid road closures, and the restriction of vehicle, cycle and pedestrian movements; and

h) Include measures to maintain traffic safety as a result of construction vehicles parking on the local road or within private properties

10.53 It is my view that given the findings of Ms Fraser and the proposed conditions on the Designation, any resulting traffic effects from the physical works enabled by the Notice of Requirement will be acceptable.

Earthwork Effects

10.54 The proposal involves extensive earthworks to allow for the modification of the Pinehaven Stream to enable the proposed flood mitigation works. The visual and landscape effects of the proposed works (including the earthworks) have been considered under the visual amenity and landscape effects heading and I will not repeat the assessment here. However, I recognise that the proposed earthworks will not result in the creation of any permanently exposed surfaces, with all areas subject to earthworks either being grassed, landscaped or covered by the proposed engineering solutions.

10.55 The conditions as proposed by the application do not cover erosion and sediment control, which is one of the key effects arising from the proposed earthworks.

10.56 It has been agreed between GWRC and UHCC that erosion and sediment control will be managed by GWRC and UHCC will not seek to duplicate these conditions or impose its own specific requirements, as GWRC has greater expertise in this field. However, it is appropriate that the following condition is imposed in the instance that UHCC receives complaints about the activities on the site to be able to determine that the appropriate erosion and sediment control measures have been installed on the site:

New Condition:

Prior to the commencement of works on the site, the Requiring Authority shall provide the Team Leader, Resource Consents a copy of the erosion and sediment control plan certified by Greater Wellington Regional Council for their records. If during the construction period any changes are made to the certified plan that requires the recertification of Greater Wellington Regional Council, then a copy of the revised certified plan shall be provided to the Team Leader Resource Consents within 5 working days of receiving confirmation of the recertification.

10.57 Overall, it is my view that given the extensive replanting that is proposed, and that erosion and sediment control measures will be installed for the duration of the works (as managed under the GWRC resource consent), the resulting earthworks effects from this proposal will be acceptable.

Recreational Effects

10.58 The proposed designation would cover the following four areas of public space:

- Pioneer Grove Park (designation UHC62)
- Small pocket reserve on the Corner of Pinehaven Road and Blue Mountains Road (designation UHC61)
- Reserve to the east of 1, 5, 7, 9 , 11 and 13 Deller Drive (designation UHC 73)
- Willow Park adjacent to 8, 10 and 10a Blue Mountains Road (designation UHC 89)

10.59 The portion of Pinehaven Reserve affected by the proposal is very small and is limited to the northern extent of the site. This area does not form part of the main recreational space of the park and the proposed works will not impact on the main recreational space. As such, it is considered that the ability for Pinehaven Reserve to continue to accommodate recreational activities and be one of the main recreational spaces within the Pinehaven Community will not be impacted in any significant way as a result of this proposal.

10.60 The small pocket of reserve land on the corner of Blue Mountain Road and Pinehaven Road does not have a significant recreational use beyond providing an amenity backdrop to the street corner. The works within this reserve include the replacement of a box culvert and this has been approved via resource consent (Appendix 2), in which the relevant effects on this reserve have been assessed and determined to be acceptable.

10.61 The reserve to the east of 1, 5, 7, 9 , 11 and 13 Deller Drive is an unusual finger of land that is designated for the purpose of drainage reserve. This area of land is not readily accessible to the public and has little public use. The proposed works result in a loss in the western side of the reserve. The eastern portion of the reserve is only marginally impacted by the works. However, as these works are associated with improving the drainage of Pinehaven Stream, they are not inconsistent with the intentions of the existing designation. Furthermore, given the limited recreational use of this land, any resulting recreation effects from the upgrade works are considered to be acceptable.

10.62 The proposal also impacts Willow Park, due to the widening of the stream channel along this length of the Pinehaven Stream. Currently, the principal use of Willow Park is as a pedestrian connection between Tapestry Grove and Blue Mountains Road. It is proposed to close the pedestrian link onto Tapestry Grove and create a new pedestrian link onto Sunbrae Drive. This new link is possible as a result of the acquisition of 4 Sunbrae Drive and the demolition of the existing dwelling on this property. The closure of the Tapestry Grove pedestrian link would add approximately 70m to the walking distance for residents of this street to access Willow Park. Based on the average walking time for an adult, the alternative route adds approximately 20 seconds travel time when compared to the existing situation. This additional walking time is considered to not be significant.

10.63 I also accept the applicant's view that the proposed pedestrian access through Sunbrae Drive would have enhanced urban design outcomes as the walkway is more open and is accessed via the illuminated roads, as opposed to being down an enclosed walkway as is the case with the existing pedestrian access link.

10.64 While the proposal will retain the pedestrian link through Willow Park, this pathway will be at a lower elevation than the existing connection. This means that as a result of these works, this pedestrian connection is likely to be inundated more during the more frequent flood events than the existing situation. This pedestrian link is approximately 156m long. The alternative walking route along Sunbrae Drive and down Blue Mountains Road is 265m long or 109m longer than the pedestrian access through Willow Park. Based on the average walking time for an adult the alternative route (if the pathway is inundated) is 31 seconds longer than the pedestrian path through Willow Park. This additional walking time is considered to not be hugely significant and as such the resulting effects from the more frequent inundation of the pedestrian link are considered to be acceptable.

10.65 I acknowledge that Willow Park does provide opportunity of other forms of informal recreation activities such as admiring the surrounding amenity, feeding the ducks or kicking a ball. The proposed works will allow for many of these informal activities to continue, and in some instances be enhanced as a result of the additional land that will be available for recreational

activities as a result of the dwelling on 4 Sunbrae Drive being removed. The main impact from the works would be on the more active forms on informal recreation (such as kicking a ball), due to the extent of land where these activities can occur narrowing as a result of the average flow channel being made wider. However, this is also offset by the additional land that the proposal makes available to the public for recreational activities as a result of the removal of the dwelling on 4 Sunbrae Drive.

10.66 A limited number of these recreational opportunities within Willow Park would be impacted by the proposed works (namely those involving active recreation). This is principally due to the average flow channel being made wider than the existing situation, which will mean there will be at times less recreational space for some of these informal activities to occur. I also recognise that within the wider area there are a number of parks that provide the opportunity for many of these informal recreational activities to occur. This includes Dunns Park, which is located 105m to the west of the site and is accessed via Sunbrae Drive. As such, there are other recreational opportunities within the immediate area if wider areas of reserve land are required for informal recreational activities.

10.67 It is also recognised that the Parks and Reserves Department at Upper Hutt City Council is aware of the proposed works and do not oppose the loss of the recreational space within Willow Park.

10.68 Overall, it is considered that given the above factors, any potential recreational effects arising from the Notice of Requirement and associated flood management works are acceptable.

Historical and Cultural Effects

10.69 Pinehaven Stream is identified as a Statutory Acknowledgement Area for Ngāti Toa under Ngāti Toa Rangatira Claims Settlement Act 2014. When considering the Historical and Cultural Effects associated with the Notice of Requirement, I have relied on GWRC's assessment for those works that fall within their respective resource consent jurisdiction. My consideration of the historical and cultural effects relates to those works landward of the stream bank.

10.70 The applicant outlines the consultation they have undertaken as part of the proposal. This includes on-going consultation with Te Atiawa Taranaki Whānui, as representatives for the Port Nicholson Block Trust. As part of this consultation a number of mana whenua considerations were developed as these are outlined on pages 105 and 106 of the application.

10.71 Within the application however there appears to be no pre-lodgement consultation with Ngāti Toa who are the iwi with the Statutory Acknowledgement over the Pinehaven Stream.

10.72 UHCC has made several attempts to contact Ngāti Toa in relation to this proposal, including sending copies of the applicant for comment prior to notification as well as direct notification of the application. No response has been received from Ngāti Toa on the application to any of the attempts to contact them.

10.73 In considering the historical and cultural effects I am mindful that under the District Plan there are no specific cultural or historical sites within the area of the proposed works. I also note the findings of the Archaeological Assessment that was provided with the application which concludes: *There is no reasonable cause to suspect that archaeological sites exist in the Pinehaven Stream in the areas.*

10.74 The applicant has proposed the following condition for the Notice of Requirement:

At least 15 Working Days prior to Commencement of Construction the Requiring Authority shall, in consultation with Port Nicholson Block Trust and Te Runanga o Toa Rangatira Inc, prepare an accidental discovery protocol and provide a copy to the CMO and GWRC for information. The protocol shall be implemented in the event of accidental discovery of cultural or archaeological artefacts or features during construction of the Project. The protocol shall include, but not be limited to:

a) Identification of parties to be notified in the event of an accidental discovery, who shall include, but need not be limited to Port Nicholson Block Trust, Te Runanga o Toa Rangatira Inc, HNZ, UHCC, GWRC, and, if koiwi are discovered, the New Zealand Police;

b) Setting out of procedures to be undertaken in the event of an accidental discovery (these shall include immediate ceasing of all construction in the vicinity of the discovery until authorised to proceed); and

c) Training procedures for all contractors regarding the possible presence of cultural or archaeological sites or material, what these sites or material may look like, and the relevant procedures if any sites or material are discovered.

10.75 The applicant has also proposed a suite of conditions under the GWRC consent to address the cultural effects with the instream works, and I have not sought to duplicate these within the Notice of Requirement consideration. The purpose of identifying these conditions within this report is to recognise that the condition proffered by the applicant for the Notice of Requirement is not the only condition that is being proposed to address the historical and cultural effects associated with the proposal. However, I consider that given the jurisdictional boundaries that apply to UHCC, the condition proffered by the applicant is the most

appropriate to ensure that any potential historical or cultural effects arising from the proposal are acceptable.

Positive Effects

10.76 The purpose of the proposed designation is to allow for works to be undertaken to reduce the flood risk from the Pinehaven Stream in accordance with the flood management plan. These works have the obvious benefit of increasing the capacity of the Pinehaven Stream to:

- Increase the capacity of the channel to accommodate a 1:25 year flood flow; and
- Reduce the number of properties that are flooded in a 1:100 year.

10.77 As evident by the submissions received, the high intensity rainfall events and flooding events are causing residents stress and are resulting in property continuously being damaged. This is disrupting people's lives, with having consequential economic impacts. The works associated with the proposed designation and the associated reduction in damage from flood events will have significant economic, social and well-being outcomes for those residents that are affected by flooding along the Pinehaven Stream.

Conclusion

10.78 In conclusion, given the proposed conditions of the designation, the positive effects arising from the works enabled by the designation, and the design of the development, it is considered that the effects associated with the proposal are acceptable.

11.0 CONSIDERATION OF ALTERNATIVE SITES, ROUTES OR METHODS

11.1 Section 168A requires the consideration of alternative sites, routes and methods. The applicant has identified a variety of options within Section 8 of their application and the process that was used to select the proposed preferred option. This included the use of multi assessment criteria, that was informed and refined through public consultation. The use of multi-assessment criteria for the consideration of alternative sites, routes or methods is an accepted robust planning methodology.

11.2 I have relied on the applicant's detailed assessment of the various options within my evidence. My reasons for doing this are as follows:

- The assessment of the alternatives is detailed and has involved the input of a number of specialists who are able to advise on the pros and cons of various design parameters;
- The assessment has heavily involved the public and the outcomes of consultation have fed into the final design put forward;

- The assessment of alternatives undertaken by the applicant has broken the project up into pieces (called reaches), which then has allowed for a more fine grained stretch by stretch assessment of the alternatives for each reach to be considered; and
- The applicant has used a robust and detailed methodology to assess the various alternatives.

11.3 In addition to the detailed assessment that the applicant has undertaken, I have also considered four broad scenarios/options to help inform my view as to whether the proposed Notice of Requirement and associated works are the most appropriate approach. These scenarios are as follows:

- Do nothing;
- Non-structural approach;
- Enhanced structural approach to provide a greater level of flood mitigation protection; or
- Apply for resource consent.

11.4 My assessment is not to the detailed level that the applicant has undertaken and does not involve a multi criteria assessment. Rather, it is more of an assessment of the implications of these four scenarios to be able to determine whether the Notice of Requirement and the associated flood management works is the most appropriate mechanism to achieve the outcomes sought.

Do nothing

11.5 One approach is to do nothing and allow for the existing situation to continue. As shown in the submissions, there are significant stress and impacts in the local community from the constant flooding of the properties along the lower reaches of the Pinehaven Stream. Doing nothing would not improve the situation and a number of properties would continue to experience inappropriate levels of flooding during small regular flood events (which are also likely to become more frequent due to climate change). The social and economic outcomes for this option for the property owners that are impacted by these events are not acceptable and do not meet the objective and therefore this is not a valid option.

Non-Structural Approach

11.6 There are a range of non-structural interventions possible including

- The existing planning controls
- Removal of private property obstructions
- Maintenance measures
- Managed retreat; and
- Civil Defence Emergency Management options.

11.7 The District Plan already contains planning provisions to ensure the risk to future development from flooding is avoided or mitigated. These planning controls only affect new development and do not improve the situation for the existing buildings that are impacted by flood events.

11.8 As I understand it the removal of private property obstructions and improving maintenance would have some minor improvements on the flood flows. However, the level of protection achieved through these measures alone are relatively modest and do not result in the 1:25 year flood protection that the Flood Management Plan for the Pinehaven Stream is seeking to achieve. As such, a number of properties would still be flooded in the more frequent and modest flood events.

11.9 Managed retreat is still very conceptual within the context of the Resource Management Act 1991 and existing use rights, and the financial compensation required to be paid to affected property owners. As far as I am aware, the main test case for managed retreat and the cancellation of existing use rights has been associated with the Matata Debris Flow and this has just concluded the council hearing with the decision recently released. It needs to be noted that this decision has not yet been tested in the Courts and the financial compensation that was paid was partially funded by Central Government. As such, this is still a very problematic option, that while of face value would solve the issue completely, the mechanics associated within makes it impracticable.

11.10 The Civil Defence Emergency Management options largely relate to the response and recovery during, and after the event. While this option helps preserve life safety, it does not assist with reducing the severity of the flood flows or the resulting damage.

11.11 It is my view that while there is a role for non-structural options in not increasing the risk as a result of future development and preserving life safety, they have limited impact of reducing the severity or the extent of flood flows. As such, it is my view that a non-structural approach is not the appropriate mechanism for achieving the outcomes of the Pinehaven Flood Management Plan.

Enhanced structural approach to provide a greater level of flood mitigation protection

11.12 There is an option where an enhanced level of structural works could be provided to improve flood protection above and beyond what is sought in the Pinehaven Flood Management Plan. These works could include:

- Stopbanks;
- Flood walls; and/or
- More intensive in stream works.

11.13 These works by their nature would be more expensive and would likely require the acquisition of more private land, which would have greater impacts on the local community, and potentially the loss of more residential dwellings. This option would also have greater impacts on the stream itself. These works themselves would likely still be required to go through the Notice of Requirement process. While the flooding effects from this option would be reduced, the costs associated with this approach would be greater, thereby making it less of an efficient and realistic option.

Apply for a Resource Consent

11.14 The other realistic method to determine whether the Notice of Requirement is the most appropriate approach is to consider whether the works should be assessed as a resource consent application.

11.15 Under the Upper Hutt District Plan, the proposed flood management works would be a non-complying activity. This means that the resource consent would need to pass the gateway test under Section 104D to be approved. While I have not undertaken a detailed notification analysis, it is my view that the consent application would have been publicly notified and would have been considered in a hearing. It is also likely, that the consent application could have passed one of the gateway tests. However, any future maintenance works associated with the flood management works, or any additional works that will reduce the flood risks would all be subject to future resource consent applications (as opposed to outline plans). This makes these future works considerably less efficient and could result in multiple notified applications, which could frustrate the ability for the applicant to undertake these works. As such, the mid to longer term outcomes resulting from a resource consent process would be considerably less efficient than what would result from a Notice of Requirement.

12.0 REASONABLY NECESSARY

12.1 Section 168A(3)(c)(iii) of the Act requires Territorial Authorities to consider whether the work and designation are reasonably necessary for achieving the objectives of the requiring authority for which the designation is sought.

12.2 The application objectives are outlined in the Pinehaven Flood Management Plan and are seeking to reduce the flood risk to the local community by providing capacity in the Pinehaven Stream for a 4%AEP / 1 in 25 year return period flood event.

12.3 The proposed designation and works are considered to be reasonably necessary for the following reasons:

- They enable the structural works required to achieve this objective, especially given the number of private properties that the Pinehaven Stream passes through. The flood mitigation objective could not be achieved without structural works being undertaken;
- The Designation allows for the ongoing maintenance of enabled works, thereby allowing for the structural components to remain efficient towards providing he required flood mitigation outcomes sought;
- The Designation is a more efficient process for the Requiring Authority in the long-term as it provides greater certainty around the enabling of the works and on-going maintenance that the resource consent process;

13.0 NON-PLANNING MATTERS

13.1 A couple of matters were raised in the submissions which are non-planning matters. For the purposes of completion, I will address these now.

13.2 Ms Hickton has identified that she supports the work due, in part, to the benefit to her property value. Property values is not a matter that can be considered within the context of the RMA. As such, while there may be a change in value to her property from the proposed works (either positive or negative), these cannot form part of the consideration of this application.

13.3 Ms Mills has requested the Council signs a document that prevents development in the Pinehaven Hills. This request is beyond the scope of this application. If development proceeds as part of the Southern Growth Area then this will be subject to its own separate process under the Resource Management Act 1991 and the relevant effects will be assessed and considered within this process.

14.0 NATIONAL PLANNING STANDARDS

14.1 The proposal would result in the insertion of a new designation into the existing designations chapter. While the format of this chapter does not currently conform with the National Planning Standards, this will be addressed through a rolling review of the District Plan.

14.2 There are no other aspects of the National Planning Standards that would affect this proposal.

15.0 NATIONAL POLICY STATEMENTS

15.1 The National Policy Statement for Freshwater Management 2014 (amended 2017) (NPSFM) is a relevant consideration pertaining to the proposal. The functions for implementing the NPSFM sits with the Regional Council. Ms Burrows has undertaken as assessment of the proposal against the NPSFM within her assessment and I will rely on her findings in relation to this higher order document.

16.0 REGIONAL POLICY STATEMENT

16.1 For the instream works and the works that require resource consent from the Greater Wellington Regional Council, I defer the relevant assessment of the Regional Policy Statement to the findings of Ms Burrows. My assessment of the Regional Policy Statement will concentrate on the consistency of the proposal with the relevant objectives and policies for those works within the jurisdiction of Upper Hutt City Council.

16.2 The relevant objectives and policies from the Greater Wellington Regional Policy Statement that are applicable to this application are considered to be:

Objective 19

The risks and consequences to people, communities, their businesses, property and infrastructure from natural hazards and climate change effects are reduced.

Objective 20

Hazard mitigation measures, structural works and other activities do not increase the risk and consequences of natural hazard events.

Objective 21

Communities are more resilient to natural hazards, including the impacts of climate change, and people are better prepared for the consequences of natural hazard events.

Policy 29

Avoiding inappropriate subdivision and development in areas at high risk from natural

hazards – district and regional plans.

Policy 51

Minimising the risks and consequences of natural hazards – consideration

Policy 52

Minimising adverse effects of hazard mitigation measures – consideration

16.3 The proposal is consistent with the objectives and policies of the Regional Policy Statement pertaining to natural hazards. The Regional Policy Statement takes a risk-based approach to natural hazards. Risk is comprised of two elements, likelihood and consequences. The proposal addresses the consequences side of the equation by increasing the capacity of the stream network to provide protection from flood events up to a 1 in 25 year flood event. The works have added benefit in that they also reduce the number of properties that are flooded in larger events by up to 67 properties (for the 1:100 year flood event).

16.4 The proposed structural works are required to reduce the risk to the community from flooding. While there are instances where these works result in small increases in flood water depths on some individual properties, these increases do not impact existing buildings or structures and as such there is no significant increase in risk to individual people and property by these works.

Objective 16

Indigenous ecosystems and habitats with significant biodiversity values are maintained and restored to a healthy functioning state.

Policy 24:

Protecting indigenous ecosystems and habitats with significant indigenous biodiversity values – district and regional plans.

Policy 47:

Managing effects on indigenous ecosystems and habitats with significant indigenous biodiversity values – consideration.

16.5 The proposal is consistent with the objectives and policies of the Regional Policy Statement pertaining to Significant Natural Areas. The proposed works do not involve the removal of any of the vegetation from the draft Significant Natural Area. As such, the proposal is considered to maintain the biodiversity and ecological values of the draft Significant Natural Area.

17.0 DISTRICT PLAN OBJECTIVES AND POLICIES

17.1 There are a number of objectives and policies within the District Plan that are applicable to this proposal. These are as follows:

Natural Hazards

Objective 14.3.1- The avoidance, remedying or mitigation of the adverse effects of natural hazards on the environment.

Objective 14.3.2 - Identify Flood Hazard Extents and Erosion Hazard Areas in order to avoid or mitigate the risk to people and property and provide for the function of the floodplain.

Policy 14.4.2 - In areas of known susceptibility to natural hazards, activities and buildings are to be designed and located to avoid, remedy, or mitigate, where practicable, adverse effects of natural hazards on people, property and the environment.

Policy 14.4.3 - Avoid development within high hazard areas of identified Flood Hazard Extents and Erosion Hazard Areas.

Policy 14.4.4 - To control development (including buildings) within the lower hazard areas of identified Flood Hazard Extents and Erosion Hazard Areas by requiring mitigation to minimise the risk to people and property.

Policy 14.4.5 - Enable planned flood mitigation works within identified Flood Hazard Extents that decrease the flood risk to people and property or maintain the function of the floodplain.

Policy 14.4.6 - Within the Pinehaven Flood Hazard Extent, reduce blockage potential from fences, buildings and driveways in high hazard areas through design controls on development.

17.2 The proposal is consistent with the objectives and policies of the District Plan. The proposed works are intended to reduce the risk of flooding from the Pinehaven Stream. It achieves this in a number of ways including:

- Removing bridges, dwellings and other obstacles that are impeding flood flows;
- Widening the stream channel to increase the capacity of the stream to convey flood waters;
- Installing flood control measures (debris screens and flood walls);
- Increasing the size of culverts (subject to previous resource consents); and
- Realigning the stream channel.

17.3 While some of these works are occurring in the high hazard area, the nature of the works means that they are appropriate and are not resulting in an overall increase in risk from flooding to the local community.

Landscape and Ecology

Objective 12.3.1 - The protection and enhancement of significant indigenous ecosystems and biological diversity.

Objective 12.3.4 - Control development and vegetation removal within identified Urban Tree Groups to ensure their respective high amenity, landscape and/or ecological values are protected.

Policy 12.4.10 - Identify Urban Tree Groups that contribute to the amenity values, landscape values and ecological values of the Upper Hutt townscape.

Policy 12.4.11 - New development, buildings and works within the dripline of a tree(s) identified as being within an Urban Tree Group shall be undertaken in a manner that ensures their respective high amenity values, landscape values, and]/or ecological values identified for the Urban Tree Group are protected.

17.4 The proposal is considered to be consistent with the above objectives and policies of the District Plan. The majority of the proposed works are not being undertaken within the identified Urban Tree Groups. The exception is a very small amount of work within the dripline of the Urban Tree Group at the southern edge of 50 Blue Mountains Road. The proposal is considered to maintain the amenity values and ecological integrity of this Urban Tree Group for the following reasons:

- The proposed works do not involve the removal of any trees from the Urban Tree Group.
- The extent of the works within the Urban Tree Group are small; and
- Council's Consultant Ecological has not raised any concerns around the ecological impacts from these works.

17.5 It is recognized that the proposal also involves work within the Urban Tree Group to the south of Pinehaven Road. However, the impacts of these works on this Urban Tree Group were considered and assessed within the Resource Consent Decision 1910165 (Appendix 2).

Subdivision and Earthworks

Objective 9.3.3 - To control earthworks within identified Flood Hazard Extents and Erosion Hazard Areas to ensure that the function of the floodplain is not reduced and unacceptable flood risk to people and property is avoided or mitigated.

Objective 9.4.1 - To ensure that earthworks are designed and engineered in a manner compatible with natural landforms, significant areas of indigenous vegetation and habitats of indigenous fauna, the amenity of an area, and the mitigation of natural hazards.

Policy 9.4.6 - Limit earthworks in the high hazard areas within identified Flood Hazard Extents and Erosion Hazard Areas to avoid an increase in risk from flood hazards to people and property.

Policy 9.4.7 - To manage earthworks in the low hazard areas within identified Flood Hazard Extents and Erosion Hazard Areas to reduce the flood risk to people and property.

Policy 9.4.8 - Require earthworks within identified Flood Hazard Extents and Erosion Hazard Area to be designed to minimise erosion and loss of sediment from the area of work to streams and rivers.

Policy 9.4.9 - Enable earthworks within identified Flood Hazard Extents and Erosion Hazard Areas that are directly associated with specific and planned flood mitigation works or floodplain management that are designed to reduce the flood risk to people and property or maintain the function of the floodplain.

17.6 The proposal is consistent with the above objectives and policies of the District Plan. The proposal involves substantial earthworks along the 1.2km length of stream channel subject to this Notice of Requirement Application. These earthworks are for the express purpose of reducing the flood risk to the local community and therefore are directly supported by the earthworks policy framework.

17.7 Greater Wellington Regional Council has addressed the erosion and sediment control measures within this assessment of the proposal and have recommended a number of conditions be imposed on the consent to ensure that appropriate outcomes in relation to erosion and sediment control are achieved through the duration of the works. As previously identified, Upper Hutt City Council has delegated the responsibility for addressing this issue to Greater Wellington Regional Council. It is my view that given the findings of Ms Burrows, and her suggested conditions of consent, the proposal is consistent with Policy 9.4.7.

17.8 The applicant has proposed a number of mitigation measures as conditions of the designation to ensure that the visual and on-going stability effects associated with the proposed works (including the earthworks) are addressed. These conditions have been accepted and have been recommended to be imposed on the Designation. It is considered that these conditions ensure that the effects associated with the proposed earthworks are appropriately addressed.

Environmental Quality

Objective 15.3.1 The promotion of a high level of environmental quality in the City by protecting amenity values.

Policy 15.4.4 To manage noise emissions to levels acceptable to the community.

17.9 The applicant has proposed a number of mitigation measures as conditions of the designation to ensure that the noise effects associated with the proposal are appropriately addressed. It is also recognised that the noise effects associated with the proposal arise from the construction activities and once established, the works themselves will not create any additional noise. As such, the noise generated by the proposal is temporary in nature. Given the above factors, the noise generated by the proposal is considered to not detract from the amenity values of the local community.

Residential

Objective 4.3.1 - The promotion of a high-quality residential environment which maintains and enhances the physical character of the residential areas, provides a choice of living styles and a high level of residential amenity.

Objective 4.3.2 - The maintenance and enhancement of the special landscape and natural values of the Conservation and Hill Areas.

Policy 4.4.2 - To ensure that the scale, appearance and siting of buildings, structures and activities are compatible with the character and desired amenity values of the area.

Policy 4.4.4 - To ensure that the location and design of buildings and earthworks do not significantly detract from the residential amenity of the area.

Policy 4.4.6 - To mitigate the adverse effects of noise within residential areas to a level consistent with a predominantly residential environment.

Policy 4.4.9 - To protect trees and vegetation which contribute to the amenity values, landscape values, character, ecological, historical and cultural values of the Conservation and Hill Areas.

17.10 The proposal is considered to be consistent with the above objectives and policies of the District Plan for the following reasons:

- The proposed structures associated with the proposal are relatively modest in size and will not be visually prominent when viewed from the wider environment. As such, the proposal structures are considered to maintain the residential amenity values of the local environment.

- The proposed earthworks will be largely screened from sight by the proposed landscaping, replanting and engineering structures which form part of the application. These measures ensure that there are no permanently exposed surfaces resulting from the earthworks that would affect this proposal.
- While the construction works do not comply with the noise requirements of the District Plan, a number of conditions have been proffered by the applicant to mitigate the resulting effects. This ensures that the noise from the construction works will maintain the residential amenity of the local environment.
- This proposal does not result in the removal of any protected trees from an identified Urban Tree Group (though it is noted that a previous resource consent has allowed for vegetation removal from Urban Tree Group 102). Furthermore, the proposal involves replanting of the stream banks. Given these factors, the vegetation in the local area contribute to the amenity values, landscape values, character, ecological, historical and cultural values of the local area will be maintained and enhanced through the proposed replanting.

Open Space Zone

Objective 7.3.1 - The promotion of a range of open spaces, maintained and enhanced to meet the present and future recreation, conservation, visual amenity and hazard management needs of the City.

Objective 7.3.2 - The protection of the life supporting capacity of the environment and amenity values by avoiding, remedying or mitigating the adverse effects of activities in the City's open spaces.

Policy 7.4.2 - To recognise and protect the amenity values of open space areas.

Policy 7.4.3 To enable a range of activities to be undertaken in open spaces that will not adversely affect the character and function of the open space.

Policy 7.4.4 To manage activities in open spaces to ensure that adjoining land uses receive adequate daylight and sunlight and maintain visual and aural amenity.

17.11 The proposal is considered to be consistent with the above objectives and policies of the District Plan for the following reasons:

- The proposal will not prevent a range of recreational opportunities from being undertaken within either Willow Park or the Pinehaven Reserve;
- The proposed replanting within Willow Park will assist with maintaining and improving the amenity values of this park, when compared to the existing situation; and

- The proposal will maintain the open nature of the parks, where the proposed works are being undertaken.

18.0 Non-Statutory Plans

18.1 The proposed works are the third step to addressing the flood risk associated with the Pinehaven Stream. The first step was the development of the Pinehaven Flood Management Plan (PFMP), which was adopted by the Council in 2016. The PFMP, sets the goals and objectives for the Pinehaven catchments. The PFMP proposes a range of methods to manage flooding within the catchment. These include a range of non-structural and structural works. One of the key non-structural elements was Plan Change 42 which introduced Objectives, Polices and Rules to manage the risk to future development within the Pinehaven Catchment. The Notice of Requirement and associated flood management works, represent the structural approach outlined in the PFMP. In accordance with the PFMP the structural works are designed to provide capacity in the stream for a 4%AEP / 1 in 25 year return period flood event. It is therefore considered that the proposed Notice of Requirement and associated flood management works are consistent with the PFMP.

19.0 Other Matters

19.1 There is one additional matter than requires consideration. The proposed designation would intersect with the following Upper Hutt City Council designations:

- UHC - 89 – Willow Park
- UHC - 73 – Drainage Reserve
- UHC - 62 - Pinehaven Reserve
- UHC - 61 – Pickerills Reserve

19.2 While this overlap does not create any procedural issues in terms of being able to assess this Notice of Requirement, it does mean that if this application is approved, there will be overlapping designations on the site. These overlaps will mean that while the proposed works would be consistent with the proposed designation, they would be inconsistent with the underlying existing designation, means that either:

- The written approval of the requiring authority will be required for the proposed works; or
- If the written approval could not be obtained, resource consent for the works will be required.

19.3 To address this issue, the applicant proposes the following approach:

- Obtain the approval of the Requiring Authority (UHCC Parks and Gardens Team) for the work within Willow Park (UHC-89);
- Removal the designations for UHC – 73 and UHC-61 once the new designation has been approved; and
- Amend the boundary of the designation for UHC-62 so that it no longer overlaps with the proposed Notice of Requirement Designation boundary.

19.4 Upper Hutt Parks and Reserves Department has agreed to the above approach and this will ensure that the existing designations do not frustrate the works proposed under this Notice of Requirement application currently being considered.

19.5 It is noted that cancellation and amendment of the existing designations will need to be undertaken by the Parks and Gardens Team, as they are the Requiring Authority. As such, this process needs to be undertaken by a third party and therefore does not form a condition of the proposed designation.

19.6 I consider that there are no other matters that require consideration as part of this proposal.

20.0 Part II of the Act

20.1 Section 5 seeks to promote the sustainable management of the natural and physical resources, enabling people and communities to provide for their social, economic, and cultural wellbeing and for their health and safety.

20.2 The proposed designation allows for the flood management works associated with the Pinehaven Stream to occur. These works increase the capacity of the stream, thereby reducing the potential flood susceptibility of the surrounding properties, particularly in relation to the more frequent flood events. It is recognised that these works will generate visual amenity, ecological and construction effects. However, these effects need to be balanced against the positive economic and social well-being outcomes that will be achieved from the flood mitigation works. It is my view that the proposed conditions of the designation ensure that this balance is achieved and that the proposed designation represents the sustainable management of the Pinehaven Stream and therefore the proposal is consistent with Section 5 of the Act.

20.3 There are Matters of National Importance that require consideration for this application. These are addressed below:

20.4 Section 6(a) seeks to maintain the natural character of the margins of rivers and to protect them from inappropriate subdivision use and development. The Pinehaven Stream is a

heavily modified urban stream that has little of its original natural character remaining. Along the length of the proposed works, the length of the stream that arguably has the highest natural values is through 50 Blue Mountains Road and no proposed works are occurring along this stretch. For the remainder of the length of the stream subject to this application, the natural character is low and the proposed works will not significantly reduce this character further, given the proposed mitigation planting. It is therefore considered that the proposal is consistent with Section 6(a) of the Act.

20.5 Section 6(c) seeks to protects areas of significant indigenous vegetation and significant habitats of indigenous fauna. Within the urban areas of the Upper Hutt District Plan, the areas significant indigenous vegetation and significant habitats of indigenous fauna are identified through Urban Tree Groups and the draft SNA maps. The proposal does not seek the removal of any significant vegetation from the Urban Tree Groups or the draft SNA. Furthermore, the applicant proposes to undertake extensive replanting as part of the proposal and has proposed a number of ecology conditions to be imposed on the designation. Where appropriate these conditions have been amended in accordance with the findings of Council's Ecologist, and have been recommended to be imposed on the designation. Given these findings, the proposal is considered to be consistent with Section 6(c) of the Act.

20.6 Section 6(d) of the Act seeks to maintain public access to and along rivers. Pinehaven Stream largely passes through private properties and therefore public access to this stream is limited. Access to Pinehaven Stream is principally through the park network that exists along its length, with Willow Park and Pioneer Park being the main areas within the local area where access is gained. The proposal maintains this existing access through these parks and in the instance of Willow Park improves this through the inclusion of 4 Sunbrae Drive into the park network. It is therefore considered that the proposal is consistent with Section 6(d) of the Act.

20.7 Section 6(e) of the Act identifies the relationship of Maori and their culture and traditions with their ancestral lands, water, sites, waahi tapu, and other taonga as a matter of national importance. The applicant has also proposed a number of conditions within the GWRC application and an accidental discovery protocol condition for the Notice of Requirement. When considered as a collective suite of measures, I consider that the proposal is consistent with Section 6(e) of the Act.

20.8 Section 6(h) of the Act requires the management of significant risks from natural hazards. Pinehaven Stream already presents a significant flooding risk to the surrounding properties. The proposed designation and associated flood management works will reduce this existing significant risk to ensure a level of flood protection for a 1 in 25 year flood event is achieved. While there will still be residual risk for flood events beyond the 1:25 year event, the impact of these will also be reduced by the proposed works. In this regard, the proposal is considered

to represent a structure management option to address the risks from flooding and as such the proposal is consistent with Section 6(h) of the Act.

20.9 Overall, I consider the proposal to be consistent with Section 6 of the Act.

20.10 There are Other Matters under Section 7 of the Act that require consideration. These are addressed below:

20.11 The proposed is considered to be consistent with Section 7(b) of the RMA. While the proposed works will modify Pinehaven Stream, this is already a modified urban stream and therefore has little of its original natural character. Further modification of this water body to reduce the flood risk to the surrounding community is therefore considered to represent an efficient use of resources.

20.12 Section 7(c) requires the maintenance and enhancement of amenity values. The proposal is considered to maintain and enhance the amenity values of the local environment in the following way:

- The applicant proposes to undertake replanting of the stream banks to ensure that there are no permanently exposed surfaces resulting from the proposed works;
- The proposal retains the vegetation that is located within the Urban Tree Group 99 (which is largely located on 50 Blue Mountains Road); and
- The proposal involves the upgrading of Willow Park which will improve the amenity outcomes with this area.

20.13 Section 7(d) seeks to maintain the intrinsic values of ecosystems. The proposed works are largely located outside of the Urban Tree Groups, which are the stands of vegetation that have been identified as having the most significant ecological values within the local environment. The proposal has been assessed by Council's Ecologist and subject to the suggested conditions for the designation, the resulting terrestrial ecological effects are considered to be appropriately addressed. The proposal is therefore considered to be consistent with Section 7(d) of the Act.

20.14 The proposal is considered to be consistent with Section 7(f) of the Act. The proposal includes a number of mitigation measures which ensure the quality of the local environment is maintained and enhanced. These measures include:

- Reducing the flood risk to the surrounding properties;
- Replanting the stream banks with indigenous vegetation; and
- Improving the pedestrian connection and amenity outcomes associated with Willow Park.

20.15 Section 7(i) requires the consideration of the effects of climate change. The flood model includes the effects of climate change and these effects have been taken into account when designing the proposed flood management works. The proposal is therefore consistent with Section 7(i) of the Act.

20.16 Due regard has been had to Section 8 of the Resource Management Act 1991 and it is considered that the Principles of the Treaty of Waitangi have been adhered to.

20.17 Overall, I consider that the proposal is consistent with the purpose and principles of Part II of the Resource Management Act.

21.0 Outline Plan Waiver

21.1 The applicant has applied for a waiver of the outline plan concurrently with the Notice of Requirement.

21.2 The outline plan waiver can only be assessed once the designation is present within the District Plan. As such, this request will be considered and determined once the Notice of Requirement process has concluded and if the designation is approved by the Council to be present within the District Plan.

22.0 Conclusion

22.1 The applicant has applied for a Notice of Requirement to allow for the creation of a designation to enable the Pinehaven Stream Flood Management works. Once these flood management works have been completed, the footprint of the designation will be reduced to allow for the on-going maintenance works of these works.

22.2 The applicant has proposed a number of conditions for the designation to address the effects associated with the proposed works. The majority of these conditions have been accepted and have been recommended to be imposed on the designation.

22.3 Additional conditions pertaining to the ecological and flood hazard effects associated with the proposal have also been recommended to be imposed on the designation.

22.4 Having considered the Notice of Requirement Application and the submission received it is considered that:

- The proposal is consistent with Part II of the Act;
- The proposal is consistent with the Regional Policy Statement;
- The proposal is consistent with the outcomes sought for the District Plan; and
- The environmental effects associated with the proposal are acceptable subject to the recommended conditions for the designation.

22.5 I have also considered a range of alternatives and methods and the reasonably necessity of the works to achieve the objectives of the requiring authority. I consider that the proposal represents the most appropriate approach to ensure that the objective of the Requiring Authority is achieved and is the most appropriate planning approach to addressing the flood risk within the local community.

22.6 I therefore recommend that the Notice of Requirement is supported by the Commissioners, subject to the suggested conditions of consent for the Designation.

APPENDIX 1 – Written Approval

UPPER HUTT CITY COUNCIL

Written approval form

Under Section 95E of the Resource Management Act 1991

Send your application to:

Resource Consents and Compliance
Upper Hutt City Council
Private Bag 907, Upper Hutt 5140

For enquiries:

Telephone: (04) 527 2169
Email: askus@uhcc.govt.nz

Applicant details (applicant to complete)

Full name:	Wellington Water
Address of proposed activity:	Pinehaven Stream (30 Blue Mountains Road)
Brief description of proposed activity:	Increase in designated area on the site by approximately 103m2. Designation boundary has moved closer to the house to provide for construction of the embankment of the driveway. The design and construction footprint of the driveway has not changed.

Affected persons details (affected persons to complete)

Full name(s):	Dale Ronald Beeson and Drusilla Roberta Reid
Address of affected property:	30 Blue Mountains Road, Pinehaven
Electronic address for Service:	
Postal address:	

~~I am~~/we are the OWNER(S)/~~OCCUPIER~~(S) (delete one) of the property.

I have authority to sign on behalf of all the other OWNERS/~~OCCUPIERS~~ (delete one) of the property. STET.

In most cases the Council will require the approval of the legal owners and the occupiers of the affected property.

You should only sign below if you support or have no opposition to approval of the application for resource consent you have been asked to consider.

- I/We have been given details of the full and final proposal, including a copy of the application form, assessment of the environmental effects and plans, and plans to which I/we are giving approval.
- I/We agree that we have signed the resource consent application and each page of the plans shown to us relating to this application.
- I/We understand that by giving my/our written approval, the Council cannot take account of any actual or potential effects of the activity on my/our property when considering the application. The fact that any such effects may occur shall not be relevant grounds on which the Council may refuse to grant its consent to the application.
- Further, I/we understand that at any time before the application is finalised, I/we may give notice in writing to the Council that this approval is withdrawn, under S104(4) of the Resource Management Act 1991.
- If the consent authority determines that the activity is a deemed permitted boundary activity under section 87BA of the Act, your written approval cannot be withdrawn if this process is followed instead.

Signature of property owner(s) (or those authorized to sign on behalf)

Name: DRUSILLA REID	Signed:	Date: 24-4-20
Name: DALE BEESON	Signed:	Date: 24-4-20

APPENDIX 2 – Resource Consent Approvals

Upper Hutt City Council
838-842 Fergusson Drive
Private Bag 907
Upper Hutt 5140

T (04) 527 2169
F (04) 528 2652
E askus@uhcc.govt.nz
W www.upperhuttcity.com

Wellington Water Ltd
C/- Jacobs
Level 8
1 Grey Street
Wellington, 6011

ATTN: Helen Anderson

Date: 20/12/2019

File: 355/62/310

MagiQ No: 1910165

NOTICE OF DECISION FOR RESOURCE CONSENT APPLICATION

Undertake improvements to the culvert for flood management improvement at road reserve at the corner of Pinehaven and Blue Mountains Roads

Dear Helen,

I write to inform you that your application for resource consent to undertake improvements to the culvert for flood management improvement at the corner of Pinehaven and Blue Mountains Roads was granted (our ref. 1910165) on 20 December 2019. The decision and the consent conditions, which are outlined at the end of the decision report (Part B), are attached.

Please review the conditions in the attached report as you will be required to comply with these. It is very important that you understand and undertake the necessary actions or work to comply with all the conditions of your consent.

If you have any questions or concerns about any aspect of your consent or its conditions, I would be happy to discuss them with you.

Please also refer to the following general information for consent holders:

1. You may commence your activity immediately, unless you lodge an objection to this decision with the Upper Hutt City Council. Your commencement date will then be the date on which the decision on the objection is determined.

2. This Resource Consent will expire five years after the date of commencement of consent unless:

a. it is given effect to before the end of that period; or

b. upon an application made before the consent lapses for an extension of consent. The statutory considerations, which apply to extensions, are set out in Section 125(1)(b) of the Resource Management Act 1991.

3. If you are dissatisfied with any aspect of the decision on your consent application, you have the right to lodge an objection with the Council under section 357 of the Resource Management Act 1991. You have 15 working days from the date you receive this letter of notification within which to lodge your objection to the decision. Your objection should contain a statement as to what part of the consent you object to and should clearly explain the reasons for your objection. On receiving an

objection in writing, the Council shall hear the objection and may uphold the objection wholly or partly.

4. The applicant needs to obtain all other necessary consents and permits, including those under the Building Act 2004, and comply with all relevant Council Bylaws.

Please feel free to contact me on 527 2175 or by email at helen.ellams@uhcc.govt.nz if you have any questions or concerns.

Yours sincerely

Helen Ellams
Planning Administrator

Copies attached:

- Delegated Authority Decision Report
- Approved plans and details

PART A – RECORD OF DISCRETION NOTIFICATION DECISION

APPLICANT	Wellington Water Ltd
LOCATION	Road reserve, near corner of Blue Mountains Road and Pinehaven Road
LEGAL DESCRIPTION	N/A

FILE No	355/62/310
NCS No	1910165

DISTRICT PLAN ZONE	Road reserve, with underlying zoning of Residential and Residential Conservation
ACTIVITY STATUS	Discretionary Activity

PROPOSAL

Resource consent is sought to upgrade the Pinehaven Road culvert to provide for higher hydraulic flows and reduce the risk of the road and residential properties being inundated in a flood event. The culvert upgrade is part of a wider project being undertaken by Wellington Water to improve stream channels along Pinehaven Stream (a Notice of Requirement for the other works associated with this upgrade works is currently being processed by UHCC and GWRC).

The applicant proposes to remove the existing culvert that crosses Pinehaven Road (near the intersection with Blue Mountains Road) and replace with a new 4m wide and 2.5m deep single cell box culvert. Overall the culvert will have an area of 30m^2. The culvert underneath Pinehaven Road will have scour protection installed to the bed of the stream with plantings and riverine gravels proposed.

The applicant has proposed a construction management plan to manage site works as traffic diversions and road closures will be required. The full road closure will take approximately seven weeks. Bus routes within the area of diversion will be re-routed during this time. De-watering pumps will be operational throughout the duration of the works, including overnight.

Vegetation clearance is proposed, which includes the removal of specimen trees that is listed in tree group 102 of chapter 27A of the District Plan. Restoration planting is proposed and the application includes a terrestrial ecology report, and a landscape and visual impact assessment report.

The proposal also requires consent from Greater Wellington Regional Council which is being processed concurrently. At the time of writing this report, the GWRC applications were on hold for further information.

SITE DESCRIPTION

The subject site has been correctly described in the application and should be read in conjunction with this report. An image of the subject site from the application is provided below.

In summary the site comprises of road reserve, near the intersection of Pinehaven Road and Blue Mountains Road. The road reserve spans the stream and accommodates a culvert that has a north-south orientation, crossing under Pinehaven Road. The surrounding environment is predominately residential in character. A large community sign 'welcome to pinehaven' is located on the southern corner of the intersection.

The underlying zoning of the road reserve is Residential to the north and Residential Conservation to the south and east. Designation UHC61 is adjacent to the area of works which is Pickerills Reserve and designated for recreation purposes. The application site encompasses Urban Tree Group 102 which is a cluster of 7-10 trees, predominately exotic species.

This portion of Pinehaven Road is within a ponding area and overland flow path for the Pinehaven Stream as identified on Planning Map 24.

Figure 1: Aerial image of subject site, excerpt from the application

ACTIVITY STATUS

The proposed activity has the following statuses in the District Plan:

- Permitted in accordance with Rule 33.1 as flood mitigation works undertaken or approved by a local authority; and
- Restricted Discretionary in accordance with Rule 30.1, as the culvert upgrade does not comply with the permitted activity standards for maximum size and diameter of network utilities (Rule 30.5) as the network utility structure will be greater than 1.4m^2 within road reserve, and 15m^2 outside of the road reserve; and
- Discretionary in accordance with Rule 27A.1 where the removal of, or activity within, the dripline of an identified tree within an Urban Tree Group listed in Schedule 27A.14 which is not a Permitted Activity. Black beech trees within Urban Tree Group 102 are proposed to be removed.

Rule 27A.12 identifies the matters that may be relevant in the consideration of any resource consent for the removal of identified trees:

- The contribution that the tree(s) make to their respective high landscape, amenity, and/or ecological values identified for the Urban Tree Group and the effect on the overall integrity of the tree group resulting from the trimming/removal of the tree(s).
- The health and state of the tree(s) to be removed.
- The visual prominence of the tree (s) when viewed from the local environment
- Whether the work would be likely to damage the form of the tree or affect the long-term health and survivability of the tree.
- The extent of the works/activity within the dripline of the Urban Tree Groups.
- The necessity for the works.
- Whether there are alternative methods that maintain the health and form of the tree(s) in the Urban Tree Group while still meeting the objectives of the applicant.
- The extent to which any suggested mitigation planting will ensure the maintenance or enhancement of their respective high landscape, amenity and/or ecological values identified for the Urban Tree Group.
- The effect of the tree(s) in the Urban Tree Group on the amenity of the occupants of any residential property and their reasonable use of their property.
- Whether the trees present any unreasonable limitations to the use of existing driveways onto property.

Rule 30.11 identifies the matters in which Council's discretion is restricted to for utilities that do not meet the permitted activity standards which includes:

- The degree, extent and effects of the non-compliance with the Permitted Activity Standards.
- The extent to which there are difficult ground conditions, technical or financial constraints that

make compliance impracticable/ unreasonable.
- Earthworks and erosion and sediment control.
- Any adverse effects on an identified heritage site or an area of native vegetation.

Status of Application

Clause 2.2.7 of the District Plan stipulates that an application for resource consent proposing an activity which falls into two (or more) application categories shall be considered and determined according to the more restrictive category. In this case the application is for an activity which has elements that are Restricted Discretionary and Discretionary. In accordance with Clause 2.2.7 the proposal must therefore be assessed as a Discretionary Activity.

SUMMARY OF NOTIFICATION DECISION	TICK OR CROSS
Public notification	
Step 1 – public notification is <u>mandatory</u> in the following circumstances (s95A(3)(a)to(c)): a) The applicant has requested the application be notified; b) Notification is required under section 95C; c) Joint application to exchange recreation reserve land under Reserves Act 1977.	X
Step 2 – public notification is <u>precluded</u> in the following circumstances (s95A(5)(a)&(b)): a) A District Plan rule or National Environmental Standard expressly precludes public notification; b) The application is for one or more of the following, but no other, activities: *i. a controlled activity:* *ii. a restricted discretionary or discretionary activity, but only if the activity is a subdivision of land or a residential activity (as defined in s95A(6)) :* *iii. a restricted discretionary, discretionary, or non-complying activity, but only if the activity is a boundary activity:* *iv. a prescribed activity(s360H(1)(a)(i)).*	X
Step 3 – public notification is <u>required</u> in the following circumstances (s95A(8)(a)&(b)): a) A District Plan rule or National Environmental Standard expressly requires public notification; b) The adverse effects of the activity on the environment will be more than minor (s95D).	X
Step 4 – <u>special</u> circumstances exist that warrant public notification (s95A(9))	X
Limited notification	
Step 1 – limited notification is <u>mandatory</u> in the following circumstances (s95B(2)&(3)): a) affected protected customary rights groups; b) affected customary marine title groups; c) The proposed activity is on, adjacent to, or affects land subject to a statutory acknowledgment (Schedule 11 of the Act) and whether the acknowledgment is made to a person affected under section 95E.	X
Step 2 – limited notification is <u>precluded</u> in the following circumstances (s95B(6)(a)&(b)): a) A District Plan rule or National Environmental Standard expressly precludes limited notification; b) The application is for either or both of the following (but no other) activities: *i. a controlled activity under a District Plan rule (other than a subdivision of land);* *ii. a prescribed activity (s360H(1)(a)(ii)).*	X
Step 3 – limited notification is <u>required</u> in the following circumstances (s95B(7)&(8)): a) For a boundary activity, the landowner of an allotment with an infringed boundary and determined affected under S95E; b) For a prescribed activity *(s360H(1)(b)), a person prescribed and determined* affected under S95E; c) For any other activity, determined affected persons under S95E.	X
Step 4 – <u>special</u> circumstances exist that warrant limited notification (s95A(10))	X

REASON FOR NOTIFICATION DECISION

Public notification assessment
The applicant has not requested notification and there is no rule or national environmental standard requiring notification. Therefore, public notification is not required under Step 1. The application is for a Discretionary Activity which is not a subdivision or residential activity. Therefore, the application is not precluded from public notification under Step 2 and the test for public notification continues at Step 3.

The effects on the environment are considered to be less than minor for the reasons outlined below.

Rule 30.11 identifies the matters in which Council's discretion is restricted to for utilities that do not meet the permitted activity standards. While overall the application has a Discretionary status because of the proposed tree removal, the relevant matters for assessing utilities provide guidance in assessing the effects of the culvert upgrade. The relevant assessment matters are assessed accordingly:

The degree, extent and effects of the non-compliance with the Permitted Activity Standards

The proposed culvert replacement is considered to be a network utility structure that does not comply with the maximum area requirements; however, the structures will be below road level and therefore, do not result in building bulk effects that would detract from the local character. Furthermore, the culverts, while larger, are replacing existing utility structures whereby the existing environment already provides for structures comparable is scope to the proposed culvert. Upon completion, the amenity of the surrounding residential environment will be largely retained, and improved through replanting and proposed landscaping.

The extent to which there are difficult ground conditions, technical or financial constraints that make compliance impracticable/ unreasonable

While the proposal does not comply with the relevant standards for utilities, the resulting culvert will be comparable to the existing environment.

Earthworks and erosion and sediment control

The works will take place within the Pinehaven Stream and its banks, where erosion and sediment control measures are vital to ensuring there is no runoff into water bodies. As works take place within the stream bed, the proposal also requires resource consent from Greater Wellington Regional Council. It is considered that GWRC has particular expertise in managing these effects and in consultation with processing officers at GWRC, it is considered more appropriate that they manage the erosion and sediment control measures throughout site works. The applicant has proposed conditions for the regional consent relating to erosion and sediment control.

Any adverse effects on an identified heritage site or an area of native vegetation

There no identified heritage sites within the area of site works, and the applicant has engaged an archaeologist who advises that an archaeological authority is not required from Heritage New Zealand. Effects on vegetation are assessed below, whereby overall, the trees proposed to be removed are considered to have minor effects on the environment.

The stream is a Statutory Acknowledgement Area listed in the District Plan. The applicant has proffered conditions of consent in the event of accidental discovery whereby iwi will be consulted prior to site works commencing where a protocol shall be implemented in the event of accidental discovery of cultural or archaeological artefacts. Furthermore, the applicant has provided an archaeological assessment (appendix J) which considers that there is little risk of there being archaeological sites within the stream. Given these measures proposed by the applicant, the effects on the area of statutory acknowledgement will be less than minor.

Rule 27A.12 identifies the matters that may be relevant in the consideration of any resource consent for the removal of trees. The relevant matters are assessed as follows.

The contribution that the tree(s) make to their respective high landscape, amenity, and/or ecological

values identified for the Urban Tree Group and the effect on the overall integrity of the tree group resulting from the trimming/removal of the tree(s)
The health and state of the tree(s) to be removed
The visual prominence of the tree (s) when viewed from the local environment

The Beech trees in particular are prominent when viewed from the local environment, as they are located near the head of the intersection of Pinehaven and Blue Mountains Roads. In the Landscape and Visual Impact Assessment (appendix H) provided with the application, it is noted that the removal of the trees may have adverse effects on the natural appearance of the waterway however well-established vegetation behind these trees will be retained to help mitigate any significant effects. I agree with this assessment and consider the visual prominence effects will suitably mitigated.

The trees are considered to be in good health, however their location near the culvert works make it difficult to retain. The applicant has proposed offset planting to mitigate the effects of the removal.

The necessity for the works

Whether there are alternative methods that maintain the health and form of the tree(s) in the Urban Tree Group while still meeting the objectives of the applicant

The extent to which any suggested mitigation planting will ensure the maintenance or enhancement of their respective high landscape, amenity and/or ecological values identified for the Urban Tree Group

The culvert upgrade works form part of a larger project to reduce flood risk to residential properties in the Pinehaven Stream catchment. The applicant's terrestrial ecology notes that it may be possible to retain the trees but it is likely they will need to be removed. In the context of the local environment where there is existing vegetation in the road reserve and along the stream that will be retained, on balance the effects will be mitigated.

The effect of the tree(s) in the Urban Tree Group on the amenity of the occupants of any residential property and their reasonable use of their property

The trees are considered to generally contribute to the amenity of the local environment and residential properties, but are well separated from any residential property due to their location in the road reserve (noting that 1 Pinehaven Road has given approval and is the nearest neighbour). The removal of the trees are not considered to fundamentally affect any person's use of their property and overall, offset planting will mitigate the visual amenity effects of the removed trees.

For the above reasons, the tree removal effects are considered to be less than minor.

Conclusion
Public notification is not required under Step 3 and the test for public notification continues at Step 4. No special circumstances exist in relation to the application that necessitates public notification. It is considered that the proposal is not unusual or exceptional, and is anticipated by the District Plan as utilities works. Having regard to the four steps outlined within s95A, public notification is not required.

Limited notification assessment
The application is not considered to affect any of the parties outlined within Step 1. The application takes place within a statutory acknowledgement area, and the effects of this are assessed below and are considered to be less than minor. Therefore, limited notification is not required at Step 1, and the test for limited notification continues at Step 2. The application is not precluded from limited notification under Step 2. Therefore, the test for limited notification continues at Step 3.

The applicant has obtained the written approval of the owners of the following properties:

- 38A Blue Mountains Road
- 38B Blue Mountains Road
- 40 Blue Mountains Road
- 1 Pinehaven Road

The effects on these persons and properties cannot be taken into account in determining if there are any affected persons.

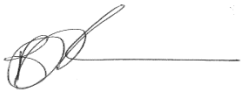
It is considered that any effects arising from the proposal on any other person in accordance with section 95E are less than minor for the following reasons:

- The construction period is limited in duration and while the proposal does result in road closures at the intersection of Pinehaven Road and Blue Mountains Road, a detour will be in place diverting traffic up Blue Mountains Road towards Forest Road and Pinehaven Road at Pinehaven School. The diversion is on a short-term basis (approximately seven weeks) and is estimated to add only three minutes to journeys for properties affected for the short period of time.
- The applicant has identified mitigation measures to ensure that the evening pumping activities proposed to divert water will comply with overnight noise levels (Leq45dBA from 7pm to 7am, Monday to Saturday, Sundays and public holidays). The applicant has proposed a noise management plan (condition 14, page 37 of the application) prepared by an acoustic engineer which demonstrates how noise nuisance will be managed and proposes to undertake noise mitigation measures, including the use of an acoustic shroud around the pumps which will reduce noise levels to a compliant degree. Overall the noise effects on any person are temporary in nature and less than minor.
- The applicant seeks consent to remove trees within Urban Tree Group 102, which are three Black Beeches near the corner of Pinehaven and Blue Mountains Roads. While it is not possible avoid these effects given the necessity of the upgrade, the applicant proposes to undertake replacement plantings at recommended ratios as per the terrestrial ecology report prepared by Forbes Ecology (appendix F). The applicant has proffered that replanting is undertaken as per the recommended ratios, and will also undertake comprehensive landscaping along the stream. The magnitude and level of adverse effects of the tree's removal is considered to be low. The proposal has also been reviewed by Council's horticultural officer and has not raised concerns with the removals, but requests that the trees are removed by a qualified and competent arborist. In this respect, the removal of the trees within the tree group are not considered to have wider effects on the environment, or adversely affect any person who has not given their approval.
- The resulting culvert structures will be below road level and will not result in any discernible change to visual amenity in the wider environment. Improvements and planting along the stream beds will enable the area of works to assimilate with the local character once established.
- Sediment and erosion control measures will be in place during works, noting that most properties are elevated above the area of works such that runoff could not occur. The earthworks proposed are small in scale and will be supported throughout such that no person's property will be destabilised.
- Bus operators and road users will be given notice of road closures with alternative routes mapped in consultation with relevant services i.e. school buses. While a disruption to services may occur, this disruption is short in duration being up to two months and once works are complete, routes will return to regular service. The effects on users of the roading network are considered to be less than minor.
- Relevant iwi authorities were notified of the application given that works take place within a statutory acknowledgement area. It is noted that Ngati Toa provided feedback to Greater Wellington Regional Council on 4 November 2019 stating that they had no concerns or questions in relation to the proposal. Port Nicholson Block Settlement Trust has provided feedback to the applicant directly advising of no concerns or questions with the culvert upgrade project. Attempts have been made to verify this feedback for the purposes of this resource consent but at the time of writing this report, a response hadn't been received from PNBST. In considering the effects on the cultural values on statutory acknowledgement areas, the applicant has proffered conditions of consent in the event of accidental discovery whereby iwi will be consulted prior to site works commencing where a protocol shall be implemented in the event of accidental discovery of cultural or archaeological artefacts. Furthermore, the applicant has provided an archaeological assessment (appendix J) which considers that there is little risk of there being archaeological sites within the stream. Given these measures proposed by the applicant, the effects on the area of statutory acknowledgement will be less than minor.
- Noting that the works are part of an overall programme of flood improvement, the is potential for these culverts to be upgraded and the remainder of the programme is not continued. This presents a risk that the enlarged culverts could result in increased risk of downstream flooding. The concurrent application being processed by Greater Wellington Regional Council are considering these risks and it is considered best managed through the regional consenting process.

Special Circumstances
If there are special circumstances in respect of the proposal, then Council must decide whether to publicly notify (section 95A(9)) or limit notify (section 95B(10)) the application. Special circumstances are circumstances that are unusual or exceptional, but may be less than extraordinary or unique. Given that utility upgrades are anticipated by the District Plan, and the reasonably small scale of the works, it is considered there are no special circumstances that require notification.

Conclusion on notification

For the reasons outlined above, the proposal will be processed on a non-notified basis.

Prepared by:		Baylee Pakau **SENIOR PLANNER (CONSULTANT)**	**Date:**	18/12/2019
Reviewed & Approved by:		Bridget Herries **RESOURCE CONSENTS AND COMPLIANCE MANAGER**	**Date:**	20/12/2019

PART B – ASSESSMENT RESOURCE CONSENT APPLICATION

APPLICANT	Wellington Water Ltd
LOCATION	Road reserve, near corner of Blue Mountains Road and Pinehaven Road
LEGAL DESCRIPTION	N/A

FILE No	1910165
NCS No	355/62/310

EXPERTS CONSULTED

Environmental Health Officer
The Environmental Health Officer supports the proposal and recommended no conditions as per their email of 10 December 2019.

Horticultural Officer
The Horticultural Officer reviewed the proposal, and recommended conditions of consent that trees are removed by qualified and competent arborist and/or company as per their email of 25 October 2019.

ASSESSMENT OF RESOURCE CONSENT APPLICATION

When considering an application for resource consent, the Council must consider the matters set out in section 104 of the RMA. Of particular importance is section 104(1) which states:

(1) When considering an application for a resource consent and any submissions received, the consent authority must, subject to Part 2, have regard to–

(a) any actual and potential effects on the environment of allowing the activity; and
(b) any relevant provisions of—
(i) a national environmental standard:
(ii) other regulations:
(iii) a national policy statement:
(iv) a New Zealand coastal policy statement:
(v) a regional policy statement or proposed regional policy statement:
(vi) a plan or proposed plan; and
(c) any other matter the consent authority considers relevant and reasonably necessary to determine the application.

Section 104(1)(a):

The environmental effects of the proposal have been discussed previously within the Part A Record of Discretion report. The matters discussed and the conclusions reached are also applicable to section 104(1)(a) considerations, and it is considered that overall, the proposal will have less than minor adverse environmental effects. In addition to this assessment, the following matters are also considered for the purpose of completeness and to ensure all environmental effects associated with the proposal are considered.

In addition to the assessment within the Part A report and above, it is also relevant to consider the positive effects of the proposal. I agree with and adopt the applicant's assessment of positive effects under section 7.10 of the assessment of environmental effects in that the works will have both short-term and long-term positive effects when considered in isolation and the overall stream improvement project as it will enable better flood management, and convey larger flows of water through the culvert. The works will result in an increase in flood conveyance *from 4% AEP to 20% AEP) and a corresponding reduction in natural hazard risk.

The applicant has requested a 10-year timeframe to give effect to the consent pursuant to section 125

in the event that funding for the programme is not immediately available or gets delayed. It is considered acceptable to approve this length of duration on the grounds that the works themselves, once begun, will be short in duration and provide for local and regional flood management improvements.

The applicant has proposed conditions in section 10.3 of the assessment of environmental effects. These conditions encompass compliance with plans, submitting and complying with traffic management and construction plans, submitting and enacting landscaping plan, limiting work and construction hours (with the exception of pumps that will operate overnight), establishing a complaints procedure, an accidental discovery protocol. These proposed conditions are considered appropriate pursuant to section 108 and will mitigate, remedy and avoid adverse environmental effects of the proposal.

Section 104(1)(b):

The consent authority must have regard to any relevant provisions of any national policy statement, a New Zealand Coastal Policy Statement, a Regional Coastal Policy Statement, a Regional Policy Statement and a plan or proposed plan.

The following documents are considered to be relevant:

- Regional Policy Statement for the Wellington Region
- Upper Hutt District Plan
- Proposed Natural Resources Plan
- Regional Freshwater Plan
- National Policy Statement for Freshwater Management

The applicant has undertaken an assessment against the Regional Policy Statement for the Wellington Region, the Proposed Natural Resources Plan, Regional Freshwater Plan and National Policy Statement for Freshwater Management in section 9.3 of the application. I agree with and adopt these assessments.

In respect of the Upper Hutt District Plan, the following objectives and policies are considered relevant:

- Objective 16.3.3: To recognise and provide for the sustainable, secure and efficient use, operation, maintenance and upgrading and development of network utilities within the City.

- Objective 16.3.4: To manage any adverse effects on the environment resulting from the design, location, construction, operation, upgrading and maintenance of network utilities.

- Objective 16.3.5: To ensure the continued operation of network utilities, and the development and operation of new network utilities, in flood hazard extents and to maintain the function of the floodplain to convey flood waters.

- Policy 16.4.8: To recognise and provide for the:
    - need for new and the maintenance and upgrading of existing network utilities; and
    - technical and operational requirements and constraints of network utilities in assessing their location, design, development, construction and appearance; and
    - benefits that network utilities provide to the economic, social and cultural functioning of the City, Region and Nation.

- Policy 16.4.9: Enable the efficient construction, installation, operation, and upgrading and maintenance of network utilities.

- Policy 16.4.10: Ensure that the provision and operation of utilities that cross jurisdictional boundaries is managed in an integrated manner.

- Policy 16.4.12: Ensure that network utilities are designed, developed, constructed, located, upgraded, operated and maintained to avoid, remedy or mitigate any actual or potential adverse effects on the environment.

- Policy 16.4.16 Encourage the use of roads as network utility corridors in accordance with the National Code of Practice for Utility Operators' Access to Transport Corridors.

- Policy 16.4.17: Encourage network utility providers to consult with local communities on the appropriate placement, location and design of new network utilities.

- Policy 16.4.18: Network utility structures crossing streams within identified Flood Hazard Extents must be installed in a way to avoid contributing to blockages or restricting flood flows or compromising flood mitigation works.

- Policy 16.4.19: To manage the design and location of network utilities in identified Flood Hazard Extents to ensure their resilience to the effects of flood events.

The proposal is considered to be consistent with the relevant objectives and policies of the Upper Hutt District Plan. The proposal will enable upgrades to network utilities that will reduce flood risk by providing greater capacity in the stream. The proposal will reduce the risk to nearby residential properties and thereby improve the resilience of the community. The long-term effects of the operation of the works are considered to be positive, particularly in relation to mitigating flood hazard. The visual effects of the works, once completed, will be largely comparable to the existing situation with the culverts being located under roads primarily, with improvements through planting alongside the stream banks.

In considering the objectives and policies relevant to the tree removal within the Urban Tree Group, the following are relevant:

- Objective 12.3.1: The protection and enhancement of significant indigenous ecosystems and biological diversity.

- Objective 12.3.2 The protection, maintenance or enhancement of essential natural landscape elements that determine Upper Hutt's landscape and geological structure and identity and contribute to the amenity values of the City.

- Objective 12.3.4 Control development and vegetation removal within identified Urban Tree Groups to ensure their respective high amenity, landscape and/or ecological values are protected.

- Policy 12.4.1 To protect and enhance significant natural areas of indigenous vegetation and fauna habitats from the adverse effects of activities that would reduce indigenous biological diversity and/or the life supporting capacity of ecosystems.

- Policy 12.4.7 To protect trees of ecological, biophysical, historic, cultural or botanic value, or significant visual amenity value in both public and private ownership from activities which may result in adverse effects on these trees.

- Policy 12.4.12 Tree trimming and removal shall be undertaken in a manner that ensures their respective high amenity values, landscape values and/or ecological values identified for the Urban Tree Group are protected.

- Policy 12.4.15 To support the trimming of trees (including root pruning) and their removal to maintain the safe operation of network utilities.

Despite the proposal requiring removal of trees within an Urban Tree Group, it is considered that on balance, the proposal will not be inconsistent with the above objectives and policies.

The applicant has identified additional objectives and policies in their assessment (section 9.3.3 of the application) which are agreed with and adopted. Further, it is acknowledged that Plan Change 42 also introduced the following policy:

- Policy 14.4.5: Enable planned flood mitigation works within identified Flood Hazard Extents that decrease the flood risk to people and property or maintain the function of the floodplain.

The proposed works are the result of the preferred structural flood mitigation options as set out in the Pinehaven Stream Floodplain Management Plan by Greater Wellington Regional Council which these project works seek to implement. Therefore Policy 14.4.5 provides a clear policy directive to enable the works where consent is sought.

Section 104(1)(c) – Other Matters:

There are no other matters considered relevant pursuant to section 104(1)(c).

Part 2 assessment

Part 2 (sections 5, 6 and 7) of the Act sets out the purpose and principles of the legislation, which as stated in section 5, is *"Avoiding, remedying, or mitigating any adverse effects of activities on the environment"*, section 7(c) *"The maintenance and enhancement of amenity values" and section 7(f) "The maintenance and enhancement of the quality of the environment"*.

In addition, Part 2 of the Act requires the Council to recognise and provide for matters of national importance (section 6); have particular regard to other matters (section 7); and to take into account the principles of the Treaty of Waitangi (section 8).

In respect of the above, the following sections of Part 2 are considered of particular relevance:

- Section 6(e) identifies that the relationship of Maori and their culture and traditions with their ancestral lands, water, sites waahi tapu and other taonga of is a matter of national importance.
- Section 6(h) the management of significant risks from natural hazards

In respect of section 6(e), the application takes place within a statutory acknowledgement identified in the Upper Hutt District Plan. The applicant proposes to establish an accidental discovery protocol that will require consultation with iwi. Accordingly, it is considered that section 6(e) considerations are met.

The proposal is considered to assist with the management of significant risks from natural hazards (section 6(h)) as the upgrade to this culvert as part of a wider project will enable larger flows to reduce flooding of residential properties in Pinehaven.

For the reasons outlined in this report, it is considered that the proposal meets the relevant sections of Part 2 of the Act.

CONCLUSION AND REASONS FOR DECISION

In accordance with the applicant's AEE and in light of the above assessment, and the assessment undertaken in respect of notification, it is considered that, subject to conditions, the environmental effects of the proposal will not be more than minor. The proposal is also considered consistent with the relevant objectives and policies in the Upper Hutt District Plan 2004, Regional Policy Statement for the Wellington Region, Proposed Natural Resources Plan, Regional Freshwater Plan, National Policy Statement for Freshwater Management, and Part 2 of the RMA.

DECISION

THAT pursuant to section 104B of the Resource Management Act 1991, Council **GRANT** consent on a non-notified basis in respect of road reserve near the corner of Pinehaven and Blue Mountains Roads to undertake improvements to the culvert for flood management improvement subject to the following conditions:

1.0 General and duration of consent

1.1 The proposal shall proceed in general accordance with all conditions specified below and the plans and details submitted including:

- Application and AEE submitted by Jacobs, dated 7 October 2019.
- Site and Proposed Plans IZ089000-300-CH-DRG-2110 rev A, IZ089000-300-CH-DRG-2111 rev B, IZ089000-300-JS-DRG-1111 rev A, IZ089000-300-GN-DRG-0111 rev A, dated 7 October 2019
- Construction Methodology (Sheets 1-5), prepared by Downer, dated October 2019
- Flood Hazard Assessment Report, prepared by Jacobs, dated 7 October 2019
- Erosion and Sediment Control Plan, prepared by Jacobs, dated 4 October 2019
- Terrestrial Ecology Assessment, prepared by Forbes Ecology, dated September 2019
- Pinehaven Stream improvements Project – Assessments of Freshwater Ecological Effects Report, prepared by EOS Ecology, dated October 2019
- Landscape and Visual Impact Assessment, prepared by DCM Urban, dated 3 October 2019

Note: where any conditions of consent as set out below are inconsistent with the plans and/or information approved in condition 1.1, the conditions of consent which follow will prevail.

1.2 Pursuant to section 125 of the Act the consent shall lapse if not given effect to within 10 years from the date of commencement of the resource consent pursuant to section 116 (1A)(b) of the Act.

2.0 Management plans certification

2.1 The following management plans shall be submitted to Resource Consents and Compliance Manager at Upper Hutt City Council for certification at least 15 working days prior to the commencement of works:

a. Construction Traffic Management Plan (CTMP);
b. Construction Noise and Vibration Management Plan (CNVMP); and

2.2 Works must not commence until certification of the management plans is received in writing from the Resource Consents and Compliance Manager at Upper Hutt City Council.

2.3 The Project shall be carried out in general accordance with the certified management plans required by these conditions.

2.4 During the construction period, a copy of all certified management plans shall be kept on site at all times and be made available upon request.

2.5 The certified management plans may be amended if necessary, to reflect any changes in design, construction methods, or management of effects. Any amendments are to be discussed with and submitted to the Council for information without the need for a further certification process, unless Council considers that they would result in materially different effects to those described in the original management plans. If the amendments once implemented would result in materially different effects to that described in the original management plans, the amended plans must be re-submitted for certification.

3.0 Traffic Management

3.1 A CTMP shall be prepared by a suitably qualified and experienced person and shall be submitted to Upper Hutt City Council's monitoring team for approval. The purpose of the CTMP is to avoid or mitigate adverse effects on traffic safety and efficiency resulting from the construction works, in order to:

a. Protect public safety, including the safe passage of pedestrians and cyclists;
b. Minimise delays to road users, pedestrians and cyclists, and particularly public transport at all

times, especially bus travel times at peak traffic periods during weekdays (06:30 to 09:30 and 16:00 to 19:00); and

c. Inform the public about any potential impacts on the road network.

3.2 The CTMP shall describe the methods for avoiding, remedying or mitigating the local and network wide transportation effects resulting from the Project works, and shall address the following matters:

d. Methods to avoid, remedy or mitigate the local and network wide effects of the construction of individual elements of the Project;
e. Methods to manage the effects of the delivery of construction material, plant and machinery (including oversized trucks);
f. The numbers, frequencies, routes and timing of construction traffic movements;
g. Traffic management measures to address and maintain traffic capacity and minimise adverse effects;
h. Measures to maintain existing vehicle access to private properties, or where the existing property access is to be replaced, measures to provide alternative access arrangements in consultation the affected landowner;
i. Measures to maintain pedestrian and cycle access with thoroughfare to be maintained on all roads and footpaths adjacent to the construction works, (e.g. unless provision of such access is severed by the works or such access will become unsafe as a result of the construction works). Such access shall be safe, clearly identifiable, provide permanent surfacing and seek to minimise significant detours; and
j. Include measures to avoid road closures, and the restriction of vehicle, cycle and pedestrian movements.

4.0 Construction Noise and Vibration

4.1 A CNVMP shall be prepared by a suitably qualified acoustic specialist and shall be submitted to the Council for certification as being consistent with NZS 6803:1999 at least 15 working days prior to commencement of construction. The purpose of the CNVMP is to provide a framework for the development and implementation of the Best Practicable Option ('BPO') for the management of all construction noise effects, and additionally to define the procedures to be followed when the noise standards in NZS 6803:1999 are not met following the adoption of the BPO. The CNVMP shall be prepared in accordance with the requirements of Annex E2 of NZS 6803:1999 and shall address the following matters as a minimum:

a. Description of the works, anticipated equipment/processes and their scheduled durations;
b. Hours of operation and duration for the construction activities;
c. The construction noise and vibration standards for the Project as set out in NZS 6803:1999 Acoustics - Construction Noise and Table 3 of DIN 4150-3: 1999;
d. Identification of affected occupied buildings and any other sensitive receivers;
e. Management and mitigation options to be adopted for all works during the Project (which shall include prohibition of tonal reverse alarms), including best practicable options to minimise the effects of construction noise on neighbours where there is potential for NZS 6803:1999 to not be met;
f. Minimum separation distances from receivers for plant and machinery where compliance with the construction noise standards are met;
g. Methods and frequency for monitoring and reporting on construction noise;
h. Procedures for engaging with stakeholders, notification of proposed construction activities and responding to noise complaints consistent with conditions; and
i. Contact details for the Project Manager (or nominee) and the Consent Authority's Project Liaison Person (phone and email addresses).

4.2 The vibration criteria set out in Table 3 of DIN 4150-3: 1999 shall be met, where practicable. Where it is not practicable to achieve those criteria, a suitably qualified expert shall be engaged to assess and manage construction vibration during the activity that exceeds the criteria.

4.3 Noise arising from construction activities shall be measured and assessed in accordance with New Zealand Standard NZS 6803:1999 'Acoustics – Construction Noise' (NZS 6803:1999).

4.4 The consent holder shall ensure all development and construction work complies with the provisions of NZS 6803:1999 Acoustics - Construction noise, with the exception of the work hours

detailed in condition 5.1 below.

4.5 Where on-site construction works and/or heavy vehicle movements need to be undertaken outside of normal working hours (as defined in condition 5.1), night time work (8:00pm – 6:30am) shall be avoided, where practicable. Where avoidance is not practicable, the best practicable option shall be adopted as per the approved CNVMP to minimise or mitigate noise and vibration effects.

5.0 Work hours

5.1 Normal working hours, shall be:

a. For on-site construction activities, excluding over pumping activities: 7:00am to 7.00pm Monday to Saturday (excluding public holidays)
b. For heavy vehicle movements on public roads: 9:00am - 6:00pm Monday to Friday (excluding public holidays).

6.0 **Complaints process**

6.1 The Consent Holder shall appoint a community liaison person for the duration of the construction phase of the Project to be the main point of contact for persons affected by the Project.

6.2 At all times during construction work, the Consent Holder shall maintain a permanent register of any complaints received relating to the construction works, including the full details of the complainant and the nature of the complaint. The complaints register shall contain the following information:

a. The details of the complainant;
b. The nature of the complaint;
c. The investigations undertaken into the complaint; and
d. Any remedial actions undertaken to address the complaint.

6.3 The Consent Holder shall respond to any complaint within 24 hours of receipt of the complaint, except where an immediate hazard is present or where the complaint relates to construction noise, in which case the Consent Authority shall use its best endeavours to respond immediately. A formal written response shall be provided to the complainant and the Council within 10 days of complaint receipt.

6.4 The Consent Holder shall keep a copy of the complaints register on site and shall provide a copy to the Council upon request.

7.0 Earthworks

7.1 The consent holder shall comply with the approved Erosion Sediment Control Plan and all conditions managing earthworks effects approved by Greater Wellington Regional Council.

Note: as the works require resource consent from both UHCC and GWRC for works that are primarily within a waterbody, it has been agreed by all parties that GWRC will manage and monitor earthworks in association with this project.

8.0 Landscaping

8.1 Final landscape plan to be submitted and approved.

8.2 The approved landscape plan must be implemented in the next planting season following approval by Council. The planting shall be maintained by the consent holder for two years following installation, including the removal of weeds and the replacement of any plants that die within this period.

8.3 Should the wider proposed Pinehaven Stream Improvements Project not commence within two years of the completion of the culvert works construction, an amended landscape plan shall be submitted for the approval of Council's Parks Manager. The purpose of the landscape plan is to soften the visual impact and form of the banks of the culvert and provide a permanent erosion protection over the temporary soil nail and coconut matting treatment so that the works blends

into the surrounding landscape. The landscape plan shall be to scale and show the species, both scientific and common names, location and PB size of proposed plants and any minor earthworks required to achieve the landscaping.

9.0 Terrestrial Ecology

9.1 Where significant trees have been identified and are proposed to be removed as per the plans contained within Attachment A of the report prepared by Forbes Ecology titled 'Pinehaven Stream Improvements – Assessment of Terrestrial Ecology' submitted with the application, the following planting mitigation ratios will be used:

a. Kowhai replacement ratio of 3:1
b. Black beech replacement ratio of 10:1
c. Kahikatea replacement ratio of 5:1

9.2 Seedlings used for replacement plantings shall be sourced from the same Ecological District where practicable.

9.3 All seedlings for replacement planting should be of an advanced grade (>60cm height at planting) and planted into appropriate soil and microclimate conditions.

Note: Planting locations should be as close to the point of loss as practicable. Group plantings at Willow Park or Pinehaven Reserve would also be appropriate.

9.4 A procedure shall be provided prior to construction commencing for the management or relocation of any native birds found nesting within the construction areas during the construction period. Removal of trees shall be undertaken outside of nesting season, with suitable times of year to be advised by an appropriately qualified and experienced ecologist.

9.5 A suitably qualified and experienced council approved arborist shall be engaged by the consent holder at the start of the project to undertake the removal of trees.

Note: It shall be the consent holder's responsibility to ensure that all persons engaged or otherwise to work on the site are made aware of the conditions of the consent, and that those conditions are adhered to at all times.

10.0 Accidental Discovery

10.1 At least 15 working days prior to commencement of construction the Consent Holder shall, in consultation with Port Nicholson Block Trust and Te Rūnanga o Toa Rangātira Inc, prepare an accidental discovery protocol and provide a copy to the Council for information. The protocol shall be implemented in the event of accidental discovery of cultural or archaeological artefacts or features during construction. The protocol shall include, but not be limited to:

a. Identification of parties to be notified in the event of an accidental discovery, who shall include, but need not be limited to Port Nicholson Block Trust, Te Rūnanga o Toa Rangātira Inc, HNZ, UHCC, GWRC, and, if koiwi are discovered, the New Zealand Police;
b. Setting out of procedures to be undertaken in the event of an accidental discovery (these shall include immediate ceasing of all construction in the vicinity of the discovery until authorised to proceed); and
c. Training procedures for all contractors regarding the possible presence of cultural or archaeological sites or material, what these sites or material may look like, and the relevant procedures if any sites or material are discovered.

The reasons for this decision are:

1. The environmental effects of the proposal will be less than minor.

2. The proposal is consistent with the overall objectives and policies of the District Plan.

3. The proposal is considered to be consistent with Part II of the Act.

Prepared by:		Baylee Pakau **SENIOR PLANNER (CONSULTANT)**	**Date:**	20/12/2019
Reviewed & Approved by:		Bridget Herries **RESOURCE CONSENTS AND COMPLIANCE MANAGER**	**Date:**	20.12.19

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Wellington Water Ltd
C/- Jacobs
Level 8
1 Grey Street
Wellington, 6011

ATTN: Helen Anderson

Date: 20/12/2019

File: 355/62/310

MagiQ No: 1910164

NOTICE OF DECISION FOR RESOURCE CONSENT APPLICATION

Undertake Improvements to the Culvert for Flood Management Improvement at road reserve on Sunbrae Drive and 4 Sunbrae Drive, Pinehaven

Dear Helen,

I write to inform you that your application for resource consent to undertake improvements to the culvert for flood management improvement was granted (our ref. 1910164) on 20 December 2019. The decision and the consent conditions, which are outlined at the end of the decision report (Part B), are attached.

Please review the conditions in the attached report as you will be required to comply with these. It is very important that you understand and undertake the necessary actions or work to comply with all the conditions of your consent.

If you have any questions or concerns about any aspect of your consent or its conditions, I would be happy to discuss them with you.

Please also refer to the following general information for consent holders:

1. You may commence your activity immediately, unless you lodge an objection to this decision with the Upper Hutt City Council. Your commencement date will then be the date on which the decision on the objection is determined.

2. This Resource Consent will expire five years after the date of commencement of consent unless:

a. it is given effect to before the end of that period; or

b. upon an application made before the consent lapses for an extension of consent. The statutory considerations, which apply to extensions, are set out in Section 125(1)(b) of the Resource Management Act 1991.

3. If you are dissatisfied with any aspect of the decision on your consent application, you have the right to lodge an objection with the Council under section 357 of the Resource Management Act 1991. You have 15 working days from the date you receive this letter of notification within which to lodge your objection to the decision. Your objection should contain a statement as to what part of the consent you object to and should clearly explain the reasons for your objection. On receiving an objection in writing, the Council shall hear the objection and may uphold the objection wholly or partly.

4. The applicant needs to obtain all other necessary consents and permits, including those under the Building Act 2004, and comply with all relevant Council Bylaws.

Please feel free to contact me on 527 2175 or by email at helen.ellams@uhcc.govt.nz if you have any questions or concerns.

Yours sincerely

Helen Ellams
Planning Administrator

Copies attached:

- Delegated Authority Decision Report
- Approved plans and details

PART A – RECORD OF DISCRETION NOTIFICATION DECISION

APPLICANT	Wellington Water Ltd
LOCATION	Road reserve on Sunbrae Drive and 4 Sunbrae Drive, Pinehaven
LEGAL DESCRIPTION	4 Sunbrae Drive is legally described as Lot 1 DP 29885

FILE No	355/62/310
NCS No	1910164

DISTRICT PLAN ZONE	Road reserve and 4 Sunbrae Drive have underlying zoning of Residential
ACTIVITY STATUS	Non-Complying Activity

PROPOSAL

Resource consent is sought to upgrade the Sunbrae Drive culvert to provide for higher hydraulic flows and reduce the risk of the road and residential properties being inundated in a flood event. The culvert upgrade is part of a wider project being undertaken by Wellington Water to improve stream channel capacity along Pinehaven Stream.

The applicant proposes to remove the existing culvert that crosses Sunbrae Drive (near the frontages of 4 and 5 Sunbrae Drive) and replace with a new 6m wide single cell box culvert. The culvert will have an area of 30m^2. The culvert underneath Sunbrae Drive will have scour protection installed to the bed of the stream with plantings and riverine gravels proposed.

The applicant has proposed a construction management plan to manage site works as traffic diversions and road closures will be required. The works are estimate to take four to seven weeks. During this time there will be a one-week period whereby the public will need to be excluded from the works site. Road closures for the duration of the works are proposed from the T-intersection with Blue Mountains Road and the intersection of Sunbrae and Deller Grove with diversions requiring an additional three minutes of travel time for property owners subject to road closure. Pedestrian access will be through Willow Park.

Bus stops near the site will need to be closed that services public and school bus routes.

Throughout the construction period, de-watering pumps will be operational throughout the duration of the works, including overnight. Details of the location of these pumps are outlined in Appendix E of the application. Due to the proximity of houses nearby, the applicant has advised that the pumps will result in noise levels of up to 67dB measured from the dwelling at 3 Sunbrae Drive.

The proposal also requires consent from Greater Wellington Regional Council which is being processed concurrently. At the time of writing this report, the GWRC applications were on hold for further information.

SITE DESCRIPTION

The subject site has been correctly described in the application and should be read in conjunction with this report. An image of the subject site from the application is provided below.

In summary the site comprises of road reserve along Sunbrae Drive, in between Deller Grove and Blue Mountains Road. The site also includes 4 Sunbrae Drive which is owned by Wellington Regional Council. The road reserve spans the stream and accommodates a culvert that has a north-south orientation, crossing under Sunbrae Drive. The surrounding environment is predominately residential in character.

The underlying zoning of the road reserve is Residential to the north and Residential Conservation to the south and east. Designation UHC73 is adjacent to the area of works which is designated for recreation purposes. This portion of Sunbrae Drive is within a ponding area and overland flow path for the Pinehaven Stream as identified on Planning Map 24.

Figure 1: Aerial image of subject site, excerpt from application (Appendix B)

ACTIVITY STATUS

The proposed activity has the following statuses in the District Plan:

- Permitted in accordance with Rule 33.1 as flood mitigation works undertaken or approved by a local authority;
- Restricted Discretionary in accordance with Rule 30.1, as the culvert upgrade does not comply with the permitted activity standards for maximum size and diameter of network utilities (Rule 30.5) as the network utility structure will be greater than 1.4m^2 within road reserve, and 15m^2 outside of the road reserve; and
- Non-Complying Activity in accordance with Rule 32.1 whereby the activity does not meet the noise and vibration standards under Rule 32.3. The dewatering pumps will have a dB of 62-67 when measured from the nearest residential dwelling, which does not comply with the LeqdBA of 45 from 7am to 7pm Monday to Saturday.

Rule 30.11 identifies the matters in which Council's discretion is restricted to for utilities that do not meet the permitted activity standards which includes:

- The degree, extent and effects of the non-compliance with the Permitted Activity Standards
- The extent to which there are difficult ground conditions, technical or financial constraints that make compliance impracticable/ unreasonable
- Earthworks and erosion and sediment control
- Any adverse effects on an identified heritage site or an area of native vegetation.

Rule 32.7 identifies matters that may be relevant for consideration. The matters under the following headings are considered relevant to this application –

- The length of time, and the level by which, the standards will be exceeded, particularly at night, and the likely disturbance that may be caused.
- The nature and location of nearby activities and the effects they may experience.
- The topography of the site, and the neighbouring areas, and any influence this may have on noise or vibration transmission.
- The effects on residential activities, particularly night time effects.
- Any opportunities to avoid, remedy or mitigate the noise or vibration.
- The effectiveness of, and in particular the certainty provided by, any conditions or controls that

might be imposed on the activity.

Status of Application

Clause 2.2.7 of the District Plan stipulates that an application for resource consent proposing an activity which falls into two (or more) application categories shall be considered and determined according to the more restrictive category. In this case the application is for an activity which has elements that are Restricted Discretionary and Non-Complying. In accordance with Clause 2.2.7 the proposal must therefore be assessed as a Non-Complying Activity.

SUMMARY OF NOTIFICATION DECISION	TICK OR CROSS
Public notification	
Step 1 – public notification is mandatory in the following circumstances (s95A(3)(a)to(c)): a) The applicant has requested the application be notified; b) Notification is required under section 95C; c) Joint application to exchange recreation reserve land under Reserves Act 1977.	X
Step 2 – public notification is precluded in the following circumstances (s95A(5)(a)&(b)): a) A District Plan rule or National Environmental Standard expressly precludes public notification; b) The application is for one or more of the following, but no other, activities: *i. a controlled activity:* *ii. a restricted discretionary or discretionary activity, but only if the activity is a subdivision of land or a residential activity (as defined in s95A(6)) :* *iii. a restricted discretionary, discretionary, or non-complying activity, but only if the activity is a boundary activity:* *iv. a prescribed activity(s360H(1)(a)(i)).*	X
Step 3 – public notification is required in the following circumstances (s95A(8)(a)&(b)): a) A District Plan rule or National Environmental Standard expressly requires public notification; b) The adverse effects of the activity on the environment will be more than minor (s95D).	X
Step 4 – special circumstances exist that warrant public notification (s95A(9))	X
Limited notification	
Step 1 – limited notification is mandatory in the following circumstances (s95B(2)&(3)): a) affected protected customary rights groups; b) affected customary marine title groups; c) The proposed activity is on, adjacent to, or affects land subject to a statutory acknowledgment (Schedule 11 of the Act) and whether the acknowledgment is made to a person affected under section 95E.	X
Step 2 – limited notification is precluded in the following circumstances (s95B(6)(a)&(b)): a) A District Plan rule or National Environmental Standard expressly precludes limited notification; b) The application is for either or both of the following (but no other) activities: *i. a controlled activity under a District Plan rule (other than a subdivision of land);* *ii. a prescribed activity (s360H(1)(a)(ii)).*	X
Step 3 – limited notification is required in the following circumstances (s95B(7)&(8)): a) For a boundary activity, the landowner of an allotment with an infringed boundary and determined affected under S95E; b) For a prescribed activity *(s360H(1)(b)), a person prescribed and determined* affected under S95E; c) For any other activity, determined affected persons under S95E.	X
Step 4 – special circumstances exist that warrant limited notification (s95A(10))	X

REASON FOR NOTIFICATION DECISION

Public notification assessment

The applicant has not requested notification and there is no rule or national environmental standard requiring notification. Therefore, public notification is not required under Step 1. The application is for a Non-Complying Activity which is not a subdivision or residential activity. Therefore, the application is not precluded from public notification under Step 2 and the test for public notification continues at Step 3.

The effects on the environment are considered to be less than minor for the reasons outlined below.
Rule 30.11 identifies the matters in which Council's discretion is restricted to for utilities that do not meet the permitted activity standards. While overall the application has a Non-Comply Activity status because of the noise non-compliance the relevant matters for assessing utilities provide guidance in assessing the effects of the culvert upgrade. The relevant assessment matters are assessed accordingly:

The degree, extent and effects of the non-compliance with the Permitted Activity Standards

The proposed culvert replacement is considered to be a network utility structure that does not comply with the maximum area requirements; however, the structures will be below road level and therefore, do not result in building bulk effects that would detract from the local character. Furthermore, the culverts, while larger, are replacing existing utility structures whereby the existing environment already provides for structures comparable is scope to the proposed culvert. Upon completion, the amenity of the surrounding residential environment will be largely retained, and improved through replanting and proposed landscaping.

The extent to which there are difficult ground conditions, technical or financial constraints that make compliance impracticable/ unreasonable

While the proposal does not comply with the relevant standards for utilities, the resulting culvert will be comparable to the existing environment.

Earthworks and erosion and sediment control

The works will take place within the Pinehaven Stream and its banks, where erosion and sediment control measures are vital to ensuring there is no runoff into water bodies. As works take place within the stream bed, the proposal also requires resource consent from Greater Wellington Regional Council. It is considered that GWRC has particular expertise in managing these effects and in consultation with processing officers at GWRC, it is considered more appropriate that they manage the erosion and sediment control measures throughout site works. The applicant has proposed conditions for the regional consent relating to erosion and sediment control.

Any adverse effects on an identified heritage site or an area of native vegetation

There no identified heritage sites within the area of site works, and the applicant has engaged an archaeologist who advises that an archaeological authority is not required from Heritage New Zealand. Native vegetation will be removed for the culvert upgrades, with mitigation and improvement planting proposed along the banks of the stream.

The stream is a Statutory Acknowledgement Area listed in the District Plan. the applicant has proffered conditions of consent in the event of accidental discovery whereby iwi will be consulted prior to site works commencing where a protocol shall be implemented in the event of accidental discovery of cultural or archaeological artefacts. Furthermore, the applicant has provided an archaeological assessment (appendix J) which considers that there is little risk of there being archaeological sites within the stream. Given these measures proposed by the applicant, the effects on the area of statutory acknowledgement will be less than minor.

Rule 32.7 identifies matters that may be relevant for consideration for consents where noise breaches take place. The matters under the following headings are considered relevant to this application –

The length of time, and the level by which, the standards will be exceeded, particularly at night, and the likely disturbance that may be cause

The applicant has provided the approval of the neighbours where the proposal does not comply with night time noise levels. Additional mitigation measures will be in place to ensure that noise levels are

compliant for all other properties, with a management plan prepared by a suitably qualified acoustic expert to be submitted to Council for certification.

The nature and location of nearby activities and the effects they may experience

Nearby activities are predominately residential. The proffered noise management plan to be prepared by an acoustic engineer will take into account the sensitive nature of nearby activities.

The topography of the site, and the neighbouring areas, and any influence this may have on noise or vibration transmission.

The effects on residential activities, particularly night time effects.

Mitigation measures can be implemented to manage night time noise, including an acoustic shroud over the pumps to minimise noise. This will be actively managed through the construction period.

Any opportunities to avoid, remedy or mitigate the noise or vibration.

The effectiveness of, and in particular the certainty provided by, any conditions or controls that might be imposed on the activity.

Conditions of consent proposed by the applicant (and can therefore be relied upon for s95 assessment purposes) will require a construction noise management plan to be submitted and approved by the Council before the commencement of site works. This plan will address mitigation measures required and best practicable options. The conditions are considered to be effective and appropriate for the scale of the works.

Conclusion

Public notification is not required under Step 3 and the test for public notification continues at Step 4. No special circumstances exist in relation to the application that necessitates public notification. It is considered that the proposal is not unusual or exceptional, and is anticipated by the District Plan as utilities works. Having regard to the four steps outlined within s95A, public notification is not required.

Limited notification assessment

The application is not considered to affect any of the parties outlined within Step 1. The application takes place within a statutory acknowledgement area, and the effects of this are assessed below and are considered to be less than minor. Therefore, limited notification is not required at Step 1, and the test for limited notification continues at Step 2. The application is not precluded from limited notification under Step 2. Therefore, the test for limited notification continues at Step 3.

The applicant has obtained the written approval of the owners of the following properties:

- 3 Sunbrae Drive
- 5 Sunbrae Drive
- 14 Blue Mountains Road

The application takes place on 4 Sunbrae Drive such that the approval of this owner (Wellington Regional Council) is implicit for the works to proceed.

The effects on these persons and properties cannot be taken into account in determining if there are any affected persons.

It is considered that any effects arising from the proposal on any other person in accordance with section 95E are less than minor for the following reasons:

- The construction period is limited in duration and while the proposal does result in diversions for some properties along Sunbrae Grove, this is on a short-term basis and is estimated to add only three minutes to journeys for properties affected. No property owner who hasn't given approval to the consent will lose access to their property during construction works. Notably, 1 and 1A Sunbrae Drive, which are within the area of road that will be closed, will have alternative parking and/or access provided.

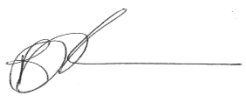
- The noise effects of the pumps that breach the noise standards in the evenings are considered to be limited to people who have given approval. In particular, the noise levels generated by the pumps are demonstrated to reduce to complying levels beyond the boundaries of 3 and 5 Sunbrae Drive. Furthermore, the applicant has proposed a noise management plan which demonstrates how noise nuisance will be managed and proposes to undertake noise mitigation measures, including the use of an acoustic shroud around the pumps which will reduce noise levels to a compliant degree. Overall the noise effects on any person are temporary in nature and less than minor.
- The resulting culvert structures will be below road level and will not result in any discernible change to visual amenity in the wider environment. Improvements and planting along the stream beds will enable the area of works to assimilate with the local character once established.
- Sediment and erosion control measures will be in place during works, noting that most properties are elevated above the area of works such that runoff could not occur. The earthworks proposed are small in scale and will be supported throughout such that no person's property will be destabilised.
- Bus operators and road users will be given notice of road closures with alternative routes mapped in consultation with relevant services i.e. school buses. While a disruption to services may occur, this disruption is short in duration being up to two months and once works are complete, routes will return to regular service. The effects on users of the roading network are considered to be less than minor.
- Relevant iwi authorities were notified of the application given that works take place within a statutory acknowledgement area. It is noted that Ngati Toa provided feedback to Greater Wellington Regional Council on 4 November 2019 stating that they had no concerns or questions in relation to the proposal. Port Nicholson Block Settlement Trust has provided feedback to the applicant directly advising of no concerns or questions. Attempts have been made to verify this feedback for the purposes of this resource consent but at the time of writing this report, a response hadn't been received from PNBST. In considering the effects on the cultural values on statutory acknowledgement areas, the applicant has proffered conditions of consent in the event of accidental discovery whereby iwi will be consulted prior to site works commencing where a protocol shall be implemented in the event of accidental discovery of cultural or archaeological artefacts. Given these measures proposed by the applicant, the effects on the area of statutory acknowledgement will be less than minor.
- Noting that the works are part of an overall programme of flood improvement, there is potential for these culverts to be upgraded and the remainder of the programme is not continued. This presents a risk that the enlarged culverts could result in increased risk of downstream flooding. The concurrent application being processed by Greater Wellington Regional Council are considering these risks and it is considered best managed through the regional consenting process.

Special Circumstances

If there are special circumstances in respect of the proposal, then Council must decide whether to publicly notify (section 95A(9)) or limit notify (section 95B(10)) the application. Special circumstances are circumstances that are unusual or exceptional, but may be less than extraordinary or unique. Given that utility upgrades are anticipated by the District Plan, and the reasonably small scale of the works, it is considered there are no special circumstances that require notification.

Conclusion on notification

For the reasons outlined above, the proposal will be processed on a non-notified basis.

Prepared by:		Baylee Pakau SENIOR PLANNER (CONSULTANT)	Date:	20/12/2019
Reviewed & Approved by:		Bridget Herries RESOURCE CONSENTS AND COMPLIANCE MANAGER	Date:	20.12.19

PART B – ASSESSMENT RESOURCE CONSENT APPLICATION

APPLICANT	Wellington Water Ltd
LOCATION	Road reserve on Sunbrae Drive and 4 Sunbrae Drive, Pinehaven
LEGAL DESCRIPTION	4 Sunbrae Drive is legally described as Lot 1 DP 29885

FILE No	355/62/310
NCS No	1910164

EXPERTS CONSULTED

Environmental Health Officer
The Environmental Health Officer supports the proposal and recommended no conditions as per their email of 10 December 2019.

ASSESSMENT OF RESOURCE CONSENT APPLICATION

When considering an application for resource consent, the Council must consider the matters set out in section 104 of the RMA. Of particular importance is section 104(1) which states:

(1) When considering an application for a resource consent and any submissions received, the consent authority must, subject to Part 2, have regard to–

(a) any actual and potential effects on the environment of allowing the activity; and

(b) any relevant provisions of—

(i) a national environmental standard:

(ii) other regulations:

(iii) a national policy statement:

(iv) a New Zealand coastal policy statement:

(v) a regional policy statement or proposed regional policy statement:

(vi) a plan or proposed plan; and

(c) any other matter the consent authority considers relevant and reasonably necessary to determine the application.

Section 104(1)(a):

The environmental effects of the proposal have been discussed previously within the Part A Record of Discretion report. The matters discussed and the conclusions reached are also applicable to section 104(1)(a) considerations, and it is considered that overall, the proposal will have less than minor adverse environmental effects. In addition to this assessment, the following matters are also considered for the purpose of completeness and to ensure all environmental effects associated with the proposal are considered.

In addition to the assessments above and within the Part A report, it is also relevant to consider the positive effects of the proposal. I agree with and adopt the applicant's assessment of positive effects under section 7.10 of the assessment of environmental effects in that the works will have both short-term and long-term positive effects when considered in isolation and the overall stream improvement project as it will enable better flood management, and convey larger flows of water through the culvert. The works will result in an increase in flood conveyance *from 4% AEP to 20% AEP) and a corresponding reduction in natural hazard risk.

The applicant has requested a 10-year timeframe to give effect to the consent pursuant to section 125 in the event that funding for the programme is not immediately available or gets delayed. It is considered acceptable to approve this length of duration on the grounds that the works themselves, once begun, will be short in duration and provide for local and regional flood management improvements.
The applicant has proposed conditions in section 10.3 of the assessment of environmental effects. These

conditions encompass compliance with plans, submitting and complying with traffic management and construction plans, submitting and enacting landscaping plan, limiting work and construction hours (with the exception of pumps that will operate overnight), establishing a complaints procedure, an accidental discovery protocol. These proposed conditions are considered appropriate pursuant to section 108 and will mitigate, remedy and avoid adverse environmental effects of the proposal.

Section 104(1)(b):

The consent authority must have regard to any relevant provisions of any national policy statement, a New Zealand Coastal Policy Statement, a Regional Coastal Policy Statement, a Regional Policy Statement and a plan or proposed plan.

The following documents are considered to be relevant:

- Regional Policy Statement for the Wellington Region
- Upper Hutt District Plan
- Proposed Natural Resources Plan
- Regional Freshwater Plan
- National Policy Statement for Freshwater Management

The applicant has undertaken an assessment against the Regional Policy Statement for the Wellington Region, the Proposed Natural Resources Plan, Regional Freshwater Plan and National Policy Statement for Freshwater Management in section 9.3 of the application. I agree with and adopt these assessments.

In respect of the Upper Hutt District Plan, the following objectives and policies are considered relevant:

- Objective 16.3.3: To recognise and provide for the sustainable, secure and efficient use, operation, maintenance and upgrading and development of network utilities within the City.

- Objective 16.3.4: To manage any adverse effects on the environment resulting from the design, location, construction, operation, upgrading and maintenance of network utilities.

- Objective 16.3.5: To ensure the continued operation of network utilities, and the development and operation of new network utilities, in flood hazard extents and to maintain the function of the floodplain to convey flood waters.

- Policy 16.4.8: To recognise and provide for the:
  - need for new and the maintenance and upgrading of existing network utilities; and
  - technical and operational requirements and constraints of network utilities in assessing their location, design, development, construction and appearance; and
  - benefits that network utilities provide to the economic, social and cultural functioning of the City, Region and Nation.

- Policy 16.4.9: Enable the efficient construction, installation, operation, and upgrading and maintenance of network utilities.

- Policy 16.4.10: Ensure that the provision and operation of utilities that cross jurisdictional boundaries is managed in an integrated manner.

- Policy 16.4.12: Ensure that network utilities are designed, developed, constructed, located, upgraded, operated and maintained to avoid, remedy or mitigate any actual or potential adverse effects on the environment.

- Policy 16.4.16 Encourage the use of roads as network utility corridors in accordance with the National Code of Practice for Utility Operators' Access to Transport Corridors.

- Policy 16.4.17: Encourage network utility providers to consult with local communities on the appropriate placement, location and design of new network utilities.

- Policy 16.4.18: Network utility structures crossing streams within identified Flood Hazard Extents must be installed in a way to avoid contributing to blockages or restricting flood flows or compromising flood mitigation works.

- Policy 16.4.19: To manage the design and location of network utilities in identified Flood Hazard Extents to ensure their resilience to the effects of flood events.

The proposal is considered to be consistent with the relevant objectives and policies of the Upper Hutt District Plan. The proposal will enable upgrades to network utilities that will reduce flood risk by providing greater capacity in the stream. The proposal will reduce the risk to nearby residential properties and thereby improve the resilience of the community. The long-term effects of the operation of the works are considered to be positive, particularly in relation to flood hazard. The visual effects of the works, once completed, will be largely comparable to the existing situation with the culverts being located under roads primarily, with improvements through planting alongside the stream banks.

The applicant has identified additional objectives and policies in their assessment (section 9.3.3 of the application) which are agreed with and adopted. Further, it is acknowledged that Plan Change 42 also introduced the following policy:

- Policy 14.4.5: Enable planned flood mitigation works within identified Flood Hazard Extents that decrease the flood risk to people and property or maintain the function of the floodplain.

The proposed works are the result of the preferred structural flood mitigation options as set out in the Pinehaven Stream Floodplain Management Plan by Greater Wellington Regional Council which these project works seek to implement. Therefore Policy 14.4.5 provides a clear policy directive to enable the works where consent is sought.

Section 104(1)(c) – Other Matters:

As a Non-Complying Activity, a consent authority may grant a resource consent providing that the gateway test under section 104D(1)((a) and (b) is met whereby the adverse effects will be minor or the application is for an activity that is not contrary to objectives and policies of the relevant plan or proposed plan.

As assessed in the Part A report and the section 104(1)(a) and (1)(b) the effects of the proposal are considered to be minor (or less) and the proposal is not contrary to objectives and policies of a plan or proposed plan. Accordingly, the application meets both tests of section 104D.

There are no other matters considered relevant pursuant to section 104(1)(c).

Part 2 assessment

Part 2 (sections 5, 6 and 7) of the Act sets out the purpose and principles of the legislation, which as stated in section 5, is *"Avoiding, remedying, or mitigating any adverse effects of activities on the environment"*, section 7(c) *"The maintenance and enhancement of amenity values" and section 7(f) "The maintenance and enhancement of the quality of the environment".*

In addition, Part 2 of the Act requires the Council to recognise and provide for matters of national importance (section 6); have particular regard to other matters (section 7); and to take into account the principles of the Treaty of Waitangi (section 8).

In respect of the above, the following sections of Part 2 are considered of particular relevance:

- Section 6(e) identifies that the relationship of Maori and their culture and traditions with their ancestral lands, water, sites waahi tapu and other taonga of is a matter of national importance.
- Section 6(h) the management of significant risks from natural hazards

In respect of section 6(e), the application takes place within a statutory acknowledgement identified in the Upper Hutt District Plan. The applicant proposes to establish an accidental discovery protocol that will require consultation with iwi. Accordingly, it is considered that section 6(e) considerations are met.

The proposal is considered to assist with the management of significant risks from natural hazards (section 6(h)) as the upgrade to this culvert as part of a wider project will enable larger flows to reduce flooding of residential properties in Pinehaven.

For the reasons outlined in this report, it is considered that the proposal meets the relevant sections of Part 2 of the Act.

CONCLUSION AND REASONS FOR DECISION

In accordance with the applicant's AEE and in light of the above assessment, and the assessment undertaken in respect of notification, it is considered that, subject to conditions, the environmental effects of the proposal will not be more than minor. The proposal is also considered consistent with the relevant objectives and policies in the Upper Hutt District Plan 2004, Regional Policy Statement for the Wellington Region, Proposed Natural Resources Plan, Regional Freshwater Plan, National Policy Statement for Freshwater Management, and Part 2 of the RMA.

DECISION

THAT pursuant to section 104D of the Resource Management Act 1991, Council GRANT consent on a non-notified basis in respect of Lot 1 DP 29885 at 4 Sunbrae Drive, and adjoining road reserve to undertake improvements to the culvert for flood management improvement subject to the following conditions:

1.0 General and duration of consent

1.1 The proposal shall proceed in general accordance with all conditions specified below and the plans and details submitted:

- Application and AEE submitted by Jacobs, dated 7 October 2019.
- Site and Proposed Plans IZ089000-300-CH-DRG-2110 rev A, IZ089000-300-CH-DRG-2111 rev B, IZ089000-300-JS-DRG-1111 rev A, IZ089000-300-GN-DRG-0111 rev A, dated 7 October 2019
- Construction Methodology (Sheets 1-5), prepared by Downer, dated October 2019
- Flood Hazard Assessment Report, prepared by Jacobs, dated 7 October 2019
- Erosion and Sediment Control Plan, prepared by Jacobs, dated 4 October 2019
- Terrestrial Ecology Assessment, prepared by Forbes Ecology, dated September 2019
- Pinehaven Stream improvements Project – Assessments of Freshwater Ecological Effects Report, prepared by EOS Ecology, dated October 2019
- Landscape and Visual Impact Assessment, prepared by DCM Urban, dated 3 October 2019

Note: where any conditions of consent as set out below are inconsistent with the plans and/or information approved in condition 1.1, the conditions of consent which follow will prevail.

1.2 Pursuant to section 125 of the Act the consent shall lapse if not given effect to within 10 years from the date of commencement of the resource consent pursuant to section 116 (1A)(b) of the Act.

2.0 Management plans certification

2.1 The following management plans shall be submitted to Resource Consents and Compliance Manager at Upper Hutt City Council for certification at least 15 working days prior to the commencement of works:

a. Construction Traffic Management Plan (CTMP);
b. Construction Noise and Vibration Management Plan (CNVMP); and

2.2 Works must not commence until certification of the management plans is received in writing from the Resource Consents and Compliance Manager at Upper Hutt City Council.

2.3 The Project shall be carried out in general accordance with the certified management plans required by these conditions.

2.4 During the construction period, a copy of all certified management plans shall be kept on site at all times and be made available upon request.

2.5 The certified management plans may be amended if necessary, to reflect any changes in design, construction methods, or management of effects. Any amendments are to be discussed with and submitted to the Council for information without the need for a further certification process, unless Council considers that they would result in materially different effects to those described in the original management plans. If the amendments once implemented would result in materially different effects to that described in the original management plans, the amended plans must be re-submitted for certification.

3.0 Traffic Management

3.1 A CTMP shall be prepared by a suitably qualified and experienced person and shall be submitted to Upper Hutt City Council's monitoring team for approval. The purpose of the CTMP is to avoid or mitigate adverse effects on traffic safety and efficiency resulting from the construction works, in order to:

a. Protect public safety, including the safe passage of pedestrians and cyclists;
b. Minimise delays to road users, pedestrians and cyclists, and particularly public transport at all times, especially bus travel times at peak traffic periods during weekdays (06:30 to 09:30 and 16:00 to 19:00); and
c. Inform the public about any potential impacts on the road network.

3.2 The CTMP shall describe the methods for avoiding, remedying or mitigating the local and network wide transportation effects resulting from the Project works, and shall address the following matters:

d. Methods to avoid, remedy or mitigate the local and network wide effects of the construction of individual elements of the Project;
e. Methods to manage the effects of the delivery of construction material, plant and machinery (including oversized trucks);
f. The numbers, frequencies, routes and timing of construction traffic movements;
g. Traffic management measures to address and maintain traffic capacity and minimise adverse effects;
h. Measures to maintain existing vehicle access to private properties, or where the existing property access is to be replaced, measures to provide alternative access arrangements in consultation the affected landowner;
i. Measures to maintain pedestrian and cycle access with thoroughfare to be maintained on all roads and footpaths adjacent to the construction works, (e.g. unless provision of such access is severed by the works or such access will become unsafe as a result of the construction works). Such access shall be safe, clearly identifiable, provide permanent surfacing and seek to minimise significant detours; and
j. Include measures to avoid road closures, and the restriction of vehicle, cycle and pedestrian movements.

4.0 Construction Noise and Vibration

4.1 A CNVMP shall be prepared by a suitably qualified acoustic specialist and shall be submitted to the Council for certification as being consistent with NZS 6803:1999 at least 15 working days prior to commencement of construction. The purpose of the CNVMP is to provide a framework for the development and implementation of the Best Practicable Option ('BPO') for the management of all construction noise effects, and additionally to define the procedures to be followed when the noise standards in NZS 6803:1999 are not met following the adoption of the BPO. The CNVMP shall be prepared in accordance with the requirements of Annex E2 of NZS 6803:1999 and shall address the following matters as a minimum:

a. Description of the works, anticipated equipment/processes and their scheduled durations;
b. Hours of operation and duration for the construction activities;
c. The construction noise and vibration standards for the Project as set out in NZS 6803:1999

Acoustics - Construction Noise and Table 3 of DIN 4150-3: 1999;

d. Identification of affected occupied buildings and any other sensitive receivers;
e. Management and mitigation options to be adopted for all works during the Project (which shall include prohibition of tonal reverse alarms), including best practicable options to minimise the effects of construction noise on neighbours where there is potential for NZS 6803:1999 to not be met;
f. Minimum separation distances from receivers for plant and machinery where compliance with the construction noise standards are met;
g. Methods and frequency for monitoring and reporting on construction noise;
h. Procedures for engaging with stakeholders, notification of proposed construction activities and responding to noise complaints consistent with conditions; and
i. Contact details for the Project Manager (or nominee) and the Consent Authority's Project Liaison Person (phone and email addresses).

4.2 The vibration criteria set out in Table 3 of DIN 4150-3: 1999 shall be met, where practicable. Where it is not practicable to achieve those criteria, a suitably qualified expert shall be engaged to assess and manage construction vibration during the activity that exceeds the criteria.

4.3 Noise arising from construction activities shall be measured and assessed in accordance with New Zealand Standard NZS 6803:1999 'Acoustics – Construction Noise' (NZS 6803:1999).

4.4 The consent holder shall ensure all development and construction work complies with the provisions of NZS 6803:1999 Acoustics - Construction noise, with the exception of the work hours detailed in condition 5.1 below.

4.5 Where on-site construction works and/or heavy vehicle movements need to be undertaken outside of normal working hours (as defined in condition 5.1), night time work (8:00pm – 6:30am) shall be avoided, where practicable. Where avoidance is not practicable, the best practicable option shall be adopted as per the approved CNVMP to minimise or mitigate noise and vibration effects.

5.0 Work hours

5.1 Normal working hours, shall be:

a. For on-site construction activities, excluding over pumping activities: 7:00am to 7.00pm Monday to Saturday (excluding public holidays)
b. For heavy vehicle movements on public roads: 9:00am - 6:00pm Monday to Friday (excluding public holidays).

6.0 Complaints process

6.1 The Consent Holder shall appoint a community liaison person for the duration of the construction phase of the Project to be the main point of contact for persons affected by the Project.

6.2 At all times during construction work, the Consent Holder shall maintain a permanent register of any complaints received relating to the construction works, including the full details of the complainant and the nature of the complaint. The complaints register shall contain the following information:

a. The details of the complainant;
b. The nature of the complaint;
c. The investigations undertaken into the complaint; and
d. Any remedial actions undertaken to address the complaint.

6.3 The Consent Holder shall respond to any complaint within 24 hours of receipt of the complaint, except where an immediate hazard is present or where the complaint relates to construction noise, in which case the Consent Authority shall use its best endeavours to respond immediately. A formal written response shall be provided to the complainant and the Council within 10 days of complaint receipt.

6.4 The Consent Holder shall keep a copy of the complaints register on site and shall provide a copy to the Council upon request.

7.0 Earthworks

7.1 The consent holder shall comply with the approved Erosion Sediment Control Plan and all conditions managing earthworks effects approved by Greater Wellington Regional Council.

Note: as the works require resource consent from both UHCC and GWRC for works that are primarily within a waterbody, it has been agreed by all parties that GWRC will manage and monitor earthworks in association with this project.

8.0 Landscaping

8.1 Final landscape plan to be submitted and approved.

8.2 The approved landscape plan must be implemented in the next planting season following approval by Council. The planting shall be maintained by the consent holder for two years following installation, including the removal of weeds and the replacement of any plants that die within this period.

8.3 Should the wider proposed Pinehaven Stream Improvements Project not commence within two years of the completion of the culvert works construction, an amended landscape plan shall be submitted for the approval of Council's Parks Manager. The purpose of the landscape plan is to soften the visual impact and form of the banks of the culvert and provide a permanent erosion protection over the temporary soil nail and coconut matting treatment so that the works blends into the surrounding landscape. The landscape plan shall be to scale and show the species, both scientific and common names, location and PB size of proposed plants and any minor earthworks required to achieve the landscaping.

9.0 Terrestrial Ecology

9.1 Where significant trees have been identified and are proposed to be removed as per the plans contained within Attachment A of the report prepared by Forbes Ecology titled 'Pinehaven Stream Improvements – Assessment of Terrestrial Ecology' submitted with the application, the following planting mitigation ratios will be used:

a. Kowhai replacement ratio of 3:1
b. Black beech replacement ratio of 10:1
c. Kahikatea replacement ratio of 5:1

9.2 Seedlings used for replacement plantings shall be sourced from the same Ecological District where practicable.

9.3 All seedlings for replacement planting should be of an advanced grade (>60cm height at planting) and planted into appropriate soil and microclimate conditions.

Note: Planting locations should be as close to the point of loss as practicable. Group plantings at Willow Park or Pinehaven Reserve would also be appropriate.

9.4 A procedure shall be provided prior to construction commencing for the management or relocation of any native birds found nesting within the construction areas during the construction period. Removal of trees shall be undertaken outside of nesting season, with suitable times of year to be advised by an appropriately qualified and experienced ecologist.

10.0 Accidental Discovery

10.1 At least 15 working days prior to commencement of construction the Consent Holder shall, in consultation with Port Nicholson Block Trust and Te Rūnanga o Toa Rangātira Inc, prepare an accidental discovery protocol and provide a copy to the Council for information. The protocol shall be implemented in the event of accidental discovery of cultural or archaeological artefacts or features during construction. The protocol shall include, but not be limited to:

a. Identification of parties to be notified in the event of an accidental discovery, who shall include, but need not be limited to Port Nicholson Block Trust, Te Rūnanga o Toa Rangātira Inc, HNZ, UHCC, GWRC, and, if koiwi are discovered, the New Zealand Police;
b. Setting out of procedures to be undertaken in the event of an accidental discovery (these shall include immediate ceasing of all construction in the vicinity of the discovery until authorised to

proceed); and

c. Training procedures for all contractors regarding the possible presence of cultural or archaeological sites or material, what these sites or material may look like, and the relevant procedures if any sites or material are discovered.

The reasons for this decision are:

1. The environmental effects of the proposal will be less than minor.

2. The proposal is consistent with the overall objectives and policies of the District Plan.

3. The proposal is considered to be consistent with Part II of the Act.

Prepared by:		Baylee Pakau SENIOR PLANNER (CONSULTANT)	Date:	20/12/2019
Reviewed & Approved by:		Bridget Herries RESOURCE CONSENTS AND COMPLIANCE MANAGER	Date:	20.12.19

APPENDIX 3 – Submissions

Robyn Hickson

- Position: Support
- Attend hearing: Yes

Submission summary:

1.1 Property has flooded twice in last three years. Resulted in damage externally and in garage.

1.2 Has observed cracks in foundations and has had two burst water pipes in past three years. Attributes this to movement in the land.

1.3 Insurance is hard to obtain.

1.4 Concern with effects of this on house value. Considers council has an obligation to protect properties and is not meeting this.

1.5 Seeks the application be granted.

Peter and Rosalyn Ross

- Position: Oppose
- Attend hearing: Yes

Submission summary

1.6 Property contains section of Pinehaven Stream. Have drain from Birch Grove across the property. Are aware of Pinehaven Stream flooding.

1.7 Consider that the flood maps created by GWRC are largely exaggerated due to experience of 30 year flood event on 8 December 2019 (details in full submission).

1.8 Consider the model does not take account of the bush in the catchment.

1.9 Consider it will cause more public disruption and considerable additional ratepayer expense than necessary.

1.10 Feel they cannot comment on or agree to something they are not sure of – documentation has details to be confirmed where it relates to their property.

1.11 Request the flood baseline be recalculated and be peer reviewed, and resubmitted for consent/approval. Do not agree with the plans as they stand now.

1.12 Seeks the application be declined.

Alexander Keith Ross

- Position: Oppose
- Attend hearing: Yes

Submission summary

1.13 Consider the flood modelling flawed due to it not taking into account the high infiltration of the forest and bus area of catchment and this leads to overestimation of the 25 year Pinehaven stream works.

1.14 Considers the upper reach of the stream has not been considered for flood protection works.

1.15 Seeks the application be declined.

Steve and Kate Hunt

- Position: Support
- Attend hearing: No

Submission summary

1.16 Owners of 34 Blue Mountain Road. Have experienced two very significant floods at the property in past 10 years (2009 and 2019 (include photo of 2019 event)).

1.17 Flood waters has come close (30cm) from the base of their house, located on a small rise.

1.18 Concerned that a larger flood event will result in damage to house and contents.

1.19 Happy to see the work thus far and concerned that with extreme weather events seeming more likely in the future action is needed now.

1.20 Happy with the consultation process thus far.

1.21 Consider the work proposed by the Pinehaven Streamworks is essential to the safety of people, property and community and strongly support the approval of application.

1.22 Seek the applicated be granted.

Elaine Myra Alsop

- Position: Support
- Attend hearing: No

Submission summary:

1.23 Experienced flooding in the 1970s.

1.24 Stream at rear of property overflowed into carport.

1.25 Concerned it could happen again.

1.26 Does not like the bamboo on banks of stream (blocks sun).

1.27 Supports the project, with hopes it gets completed soon.

1.28 Seeks the application be granted.

Deborah Anne Griffiths

- Position: Support
- Attend hearing: No

Submission summary

1.29 Have experienced minor flooding from stream at rear of property three times since 1950, most recent in December 2019.

1.30 Water has never come close to entering the house, nevertheless agrees that widening of the stream to accommodate any extraordinary flooding is a good idea.

1.31 Has three large trees that were told would have to be removed to accommodate stream widening that have sentimental value. Is not happy that originally all three would have to be removed, then on advice from one arborist the black beech could be retained, then on advice from another arborist it could not as it was unsafe, and has since sought another arborist opinion that it is in good health.

1.32 Would like Wellington Water to revisit their planning to find a way to save the black beech tree.

1.33 Seeks the application be granted.

David Kyle

- Position: Oppose
- Attend hearing: Yes

Submission summary:

1.34 Opposes the dumping of excavations onto the Silverstream Reformed Church property.

1.35 Seeks that there is work done to ensure the stormwater run off from the newly elevated parts of the Reformed Church ground will not affect neighbouring low-lying properties.

1.36 Seeks that all neighbours who border the Reformed Church site have been consulted with regarding the change in land use on the grounds and how this may impact them (carparking. Privacy effects).

1.37 Seeks the application be declined.

Brian Powell

- Address: 11 Deller Grover Silverstream Upper Hutt
- Position: Support
- Attend hearing: No

Submission summary:

1.38 Understands the necessity and has found the engagement team very professional and friendly.

1.39 Seeks the application be granted.

Bob the Builder

- Position: Support
- Attend hearing: No

Submission summary:

1.40 Go ahead and make it so.

1.41 Seeks the application be granted.

Graeme Dean McCarthy

- Position: Support
- Attend hearing: Yes

Submission summary:

1.42 Has experience two significant flood events since 2015 that has caused major disruption to people and property and contents. Has had on average 5 – 6 events each year

1.43 Concern at building materials lost / damaged in events, and with damage to underfloor insulation and floor joists etc.

1.44 Events cause considerable stress.

1.45 Need this project to go ahead and are very motivated to work with Upper Hutt Council and GWRC and Wellington Water.

1.46 Seeks the application be granted.

Jayne Roberts

- Position: Support
- Attend hearing: Yes

Submission summary:

1.47 Fully support the proposed improvements

1.48 Previously lived at 10a Blue Mountains Road which flooded 3 time in 13 years and nearly flooded countless times. Considers the works essential to be done now.

1.49 Considers the situation very stressful. Very appreciative of the understanding from Wellington Water staff.

1.50 Considers Pinehaven and Silverstream beautiful places to live and that the improvements proposed will only enhance that.

1.51 Seeks the application be granted.

Lloyd May

- Position: Support
- Attend hearing: No

Submission summary:

1.52 This is a well planned common sense approach to a long term issue.

1.53 Is located close to the new culvert on Sunbrae and are considerably affected and still support the programme in full.

1.54 Seeks the application be granted.

Sharlene Olsen

- Position: Support
- Attend hearing: Yes

Submission summary:

1.55 Property suffers from severe damage from flooding.

1.56 Has footage of the most recent flood.

1.57 Considers the stress harsh and unnecessary.

1.58 Seeks the flooding on property to cease.

1.59 Seeks the application be granted.

A.K Ross

- Position: Oppose
- Attend hearing:

Submission summary:

1.60 Does not oppose the stream improvements in principle but rather that these improvements have been based on flawed hydrology modelling, as evidenced by the storm on 8 December 2019 and own field tests of infiltration on the forest and bush catchment.

1.61 Considers that the majority of the stream coped with the peak flow, despite the statement in the application (section 1.5).

1.62 Attaches maps in support of position that the modelling is inconsistent. “the 10% AEP map shows considerable inundation, the 4% AEP maps show much less inundation, even though the modelled flood event is greater, and the observed storm map shows less again.”

1.63 Considers the basic hydrology of the existing catchment has been missed.

1.64 Considers this modelling is not accurate enough to determine the response proposed in the project. Considers this is because the modelling ignores the high infiltration capacity

of the forested and bush clad hills reducing the peak flow that the works need to accommodate.

1.65 Considers that if the modelling reflected the existing catchment then the peak flows would be reduced thus enabling the stream works to be reduced in size and savings environmentally and in council funds.

1.66 Cites peer reviews that advise that the modelling is flawed and seeks updating of the model urgently.

1.67 Seeks that GWRC fix the base hydraulic model to incorporate increased infiltration on the forest and bush catchment areas and re-run the model to work out new design flood flows and reassess the need for culvert / bridge upgrades for a 25 year storm.

1.68 Supports the improved capacity where required after the above works has been carried out.

1.69 Flood event of 8 December 2019 resulted in a culvert overtopping at 122 Pinehaven Road and diverting floodwater down Pinehaven Road instead of keeping it in the stream channel. This has happened in the last two flood events. The stream improvement works ignore this problem.

1.70 Requests that the above issue is addressed in the improvement works, with a suitably sized culvert and vegetation clearance in the channel carried out.

Karyn Mills

- Position: Oppose
- Attend hearing: Yes

Submission summary:

1.71 Would like to see Council sign a document where no development takes place on the Pinehaven hill area.

1.72 Considers there is no reason to complete major works.

1.73 The willow park area is beautiful and well used by the community (walks, dog walks, enjoying seeing the goose) as well as good environmentally (fish and eel and trees).

1.74 In 2017 council and Wellington Water staff removed two trees from property and has resulted in erosion and slumping.

1.75 Concern around effect of the project on the walkway, the goose habitat and the fish and eel habitat.

1.76 Seeks that the application be declined.

Save Our Hills

- Position: Oppose
- Attend hearing: Yes

Submission summary:

1.77 Strongly supports the objective in principle (address the unacceptable flood risk to people and communities and their health, safety and wellbeing) however consider the model flawed, as evidenced in the floods on 8 December 2019.

1.78 Save Our Hills oppose this application because the proposed improvements have been assessed wrongly.

1.79 The 1 in 30 year flood extents during the storm in 8/12/2019 were far less than GWRC's 1 in 10 year flood maps – the GWRC Pinehaven flood maps are grossly inflated due to the modelling of the forested hills in the upper catchment as impervious which they are not. The Pinehaven hills have a large infiltration capacity, determined by field tests. The storm on Sunday 8 December 2019 demonstrated that GWRCs flood maps are seriously wrong.

1.80 Considers that as the modelling is the wrong the stream improvements are also wrong and over-engineered.

1.81 Seeks that the model be re done with accurate inputs in particular for the infiltration losses taking into account the hills as they were in 2008, and that these infiltration rates be determined by field testing

1.82 Seeks that the flood maps be redone with the updated modelling.

1.83 Seeks that the stream improvements be reassessed based on the new modelling.

1.84 Seeks that the improvements address the undersized culvert at 122 Pinehaven Road and the problem of the sewer system mixing with the stormwater during flooding, example of the overflowing sewer manhole in Pinehaven Road opposite Pinehaven School.

1.85 Submission includes infiltration test results and peer reviews of modelling.

Appendix 4 – Prehearing Meeting Minutes

FILE NOTE

DATE 20 April 2020

AUTHOR Claire McKevitt

SUBJECT Pinehaven pre-hearing notes

FILE NUMBER WGN200083

On 20 April 2020 at 7pm a virtual pre-hearing meeting for the Pinehaven Streamworks Improvement Resource consent and Notice of Requirement was held.

Attendees:

Lindsay Daysh – Facilitator

Kirsty Van Reenen – Team Leader, Greater Wellington Regional Council
Josie Burrows – Resource Advisor, Greater Wellington Regional Council
Claire McKevitt – Senior Resource Advisor, Greater Wellington Regional Council

James Beban – Consultant Planner for Upper Hutt City Council

Tristan Reynard – Project Director, Wellington Water Ltd
Ben Fountain – Stormwater Advisor, Wellington Water Ltd
Nicky McIndoe – Counsel, Dentons for Wellington Water Ltd
Helen Anderson – Planner, GHD for Wellington Water Ltd

Submitters
Steven and Sue Pattinson
Peter and Rosalyn Ross
Alex Ross
Bob Hall
Robyn Hickson
Darryl Longstaffe

Key Issues discussed

- One submitter whose property is regularly affected by the flooding would like the project to proceed as quickly as possible. The existing flooding is causing undue stress, both due to financial and health implications. In their opinion, over engineering is not necessarily a concern as it is better than no stream works upgrades being undertaken.
- Save Our Hills (SOH) members are concerned that the changes to the hydraulic model that the applicant is about to undertake will not address their issues which are with the hydrological

model. The issue they have with the hydrological model is that the infiltration rate used assumes no infiltration, too much rain and an oversized catchment, resulting in over engineering of the stream upgrades.

- The concern SOH members have with over-engineering of the model is that if future development is to go ahead within the catchment (ie. the Guildford Development), the developers would not be required to undertake additional storm water mitigation as the stream upgrade would already provide enough flow for that development.
- This means by undertaking these works at this scale now the UHCC (funded by the ratepayers), is compensating future private development.
- Further, because no streamworks are proposed for the upper catchment, there is fear that should new development occur higher up in the catchment, this may exacerbate the existing flood issues in the upper catchment. Noting that these aren't currently as bad as the flooding issues in the lower catchment which this project is to target.
- SOH members would like expert conferencing to go ahead, but only if it's multi-disciplinary, including the flood modellers/hydrologists as well as urban design experts to account for infiltration from hypothetical development.

Specific Information requests

- SOH members would like to see modelled stream flows, not just designed AEP's. In particular for a 1 in 25 year flood event.
- Peter and Rosyln Ross would like clarity as to what works are being undertaken on their property, with updated drawings. They also questioned whether the proposed width of the stream through their property was necessary.
- SOH sent Kirsty an email with requests to be included in the scope of the re-run of the hydraulic model. This was provided to the applicant. The applicant will consider these requests and provide a response.
- WWL to provide a response (via GWRC/UHCC) to SOH in regard to their requests about the flood model comparison to the December 2019 flood event.
- Clarification is required from WWL as to what infiltration has been used in the hydrological model, why this is considered appropriate and realistic of the baseline (and not future development).

Recommended Next Steps

- The applicant undertakes the discussed hydraulic model updates
- The updated model results and related flood hazard assessment is shared.
- The pre-hearing meeting for SOH and the flood experts is arranged.
- Expert conferencing is undertaken to clarify matters of contention in the model if any.

Definitions, abbreviations, acronyms and terms

Term	Definition
AEE	Assessment of Environmental Effects for the Pinehaven Stream Improvements Project
CMP	Construction Management Plan
CMO	Upper Hutt City Council Compliance Monitoring Officer
CNVMP	Construction Noise and Vibration Management Plan
CTMP	Construction Traffic Management Plan
Commencement of Construction	The time when the Works or any stage of the Works that are the subject of this designation (including any enabling works, other than removal or demolition of buildings) start
Completion of Construction	Completion of any stage of the stream improvement earthworks, including restoration of that stream site, and completion of planting (not including any further planting that may be required as part of the maintenance and monitoring period)
Enabling works	Works that may be carried out in advance of bulk earthworks that include site establishment, vegetation clearance, relocation of utilities and services, fencing, and installation of accesses and erosion and sediment control measures.
ESCP	Erosion and Sediment Control Plan
FIDOL	Frequency, Intensity, Duration, Offensiveness/Character, Location
FMP	Floodplain Management Plan
GWRC	Greater Wellington Regional Council, including any officer of Greater Wellington Regional Council
HNZ	Heritage New Zealand
LP	Landscape Plan
NoR	Notice of Requirement
PKMS	Pinehaven Kaitiaki Monitoring Strategy
Project	The design, construction, maintenance, and operation of the Pinehaven Stream Improvements as in the AEE and these designation conditions

Requiring Authority	Requiring Authority is Upper Hutt City Council
UHCC	Upper Hutt City Council
Work or Works	The construction, maintenance, or operation of the Project, including where relevant any stage or part thereof
Working day	Has the same meaning as under Section 2 of the Resource Management Act 1991

General

1. Except as modified by the conditions below, the Project shall be undertaken in general accordance with:
    a. The Designation Plans, IZO- 8900 0 SPO – 400 – GN – DRG – 0100 (Rev B), 0101 (Rev D), 0102 (Rev C), 0103 (Rev B), 0104 (Rev B), 0105 (Rev B) and 0106 (Rev B).
    b. The General Arrangement plans, IZ08900-SP3-400-CD-DRG-3100 Rev B, 3101 (Rev B), 3102 (Rev C), 3103 (Rev B), 3104 (Rev B), 3105 (Rev C), 3106 (Rev C);
    c. The design plans of the shared bridge at 28-30 BMR and 34-36 BMR provided to GWRC in Appendix I of the s.92 response, dated 21 February 2020.
    d. The cross-sections IZ089000-300-CD-DRG-2300 (Rev B), 2301 (Rev B), and 2302 (Rev B);
    e. The Site Access and Laydown Scheme plans, IZ089000 – 300-JS-DRG – 1100 (Rev B), 1101 (Rev B), 1102 (Rev B), 1103 (Rev B), 1104 (Rev B), 1105 (Rev B, 1106 (Rev B).
    f. Landscape planting plans DCM Urban Landscape Works, Pinehaven Stream 2017_009/L100 (Rev 7), L101 (Rev 5), L102 (Rev 6), L103 (Rev 6), L104 (Rev 5), L105 (Rev 5), L106 (Rev 6) L107 (Rev 7), and L108 (Rev 7).

1A. As-built plans showing the location of buildings demolished and reinstated within the designation boundary must be provided to the Upper Hutt City Council District Council within 20 working after the construction of the relocated buildings to certify that these buildings comply with Upper Hutt District Council District Plan permitted activity rules or existing use rights.

2. In the event of conflict between the documents listed above and these designation conditions, these conditions prevail.
3. The designation shall lapse if not given effect to within 5 years from the date on which it is included in the Upper Hutt City Council District Plan under section 175 of the RMA.

Designation boundary

4. As soon as reasonably practicable following the Completion of Construction, the Requiring Authority shall:
    a. Review the area designated for the Project;
    b. Identify any areas of designated land that are no longer necessary for the on-going operation or maintenance or for ongoing mitigation measures; and
    c. Give notice to CMO in accordance with section 182 of the RMA seeking the removal of those parts of the designation identified in 4 b) above.

Management Plans

5. The following Management Plans (addressing one or more stages of the Project) shall be submitted to the CMO for certification:
    a. Construction Traffic Management Plan (CTMP) to certify compliance and consistency with conditions 18 to 21 of the designation;
    b. Construction Noise and Vibration Management Plan (CNVMP) to certify compliance and consistency with conditions 13 to 17 of the designation
    c. Site Office Management Plan (SOMP) to certify compliance and consistency with condition 39 of the designation;
    d. Landscape Plan (LP) to certify compliance and consistency with conditions 22 24 of this designation; and
    e. Lizard Management Plan to certify compliance and consistency with condition 38 of the designation;

    Note: The management plans must provide the overarching principles, methodologies, and procedures for managing the effects of the Works to achieve the environmental outcomes and performance standards required by the conditions of the designation.

6. Works must not commence until certification of the management plans for the relevant stage is received in writing.

7. The Project shall be carried out in general accordance with the certified management plans required by these conditions.

8. The management plans may be supplemented by site-specific plans to provide the necessary level of detail to address requirements within each of the Stages.

9. A copy of the certified management plans shall be made publicly accessible on the Requiring Authority's website.

10. During the construction period, a copy of all certified management plans shall be kept on site at all times and be made available to the CMO upon request.

11. The certified management plans may be amended if necessary to reflect any changes in design, construction methods, or management of effects. Any amendments are to be discussed with and submitted to the Council CMO for recertification.

Work hours

12. Normal working hours, except in those circumstances exempted under the CNVMP, shall be:
    a. For on-site construction activities: 7:00am to 7.00pm Monday to Saturday (excluding public holidays)
    b. For heavy vehicle movements on public roads: 9:00am - 6:00pm Monday to Friday (excluding public holidays).

Construction Noise

13. Noise arising from construction activities shall be measured and assessed in accordance with New Zealand Standard NZS 6803:1999 'Acoustics – Construction Noise' (NZS 6803:1999)

14. A CNVMP shall be prepared by a suitably qualified acoustic specialist and certified as per condition 5 as being consistent with NZS 6803:1999 and meeting the requirements of these conditions at least 15 Working Days prior to Commencement of Construction. The purpose of the CNVMP is to provide a framework for the development and implementation of the Best Practicable Option ('BPO') for the management of all construction noise effects, and additionally to define the procedures to be followed when the noise standards in NZS 6803:1999 are not met following the adoption of the BPO. The CNVMP shall be prepared in accordance with the requirements of Annex E2 of NZS 6803:1999 and shall address the following matters as a minimum:

    a. Description of the Works, anticipated equipment/processes and their scheduled durations;
    b. Hours of operation and duration for the construction activities;
    c. The construction noise and vibration standards for the Project as set out in NZS 6803:1999 Acoustics - Construction Noise and Table 3 of DIN 4150-3: 1999;
    d. Identification of affected occupied buildings and any other sensitive receivers;
    e. Management and mitigation options to be adopted for all works during the Project (which shall include prohibition of tonal reverse alarms);
    f. Minimum separation distances from receivers for plant and machinery where compliance with the construction noise standards are met;
    g. Methods and frequency for monitoring and reporting on construction noise;

h. Procedures for engaging with stakeholders, notification of proposed construction activities and responding to noise complaints consistent with conditions; and

i. Contact details for the Project Manager (or nominee) and the Requiring Authority's Project Liaison Person (phone and email addresses).

15. The construction noise, where practicable, shall comply with the following criteria at the nearest residential building or sensitive receiver for the purposes of the CNVMP:

Time of Week	Time period	$L_{Aeq(t)}$	L_{AFmax}
Weekdays	0630-0730	60	75
	0730-1800	75	90
	1800-2000	70	85
	2000-0630	45	75
Saturday	0630-0730	45	75
	0730-1800	75	90
	1800-2000	45	75
	2000-0630	45	75
Sundays and public holidays	0630-0730	45	75
	0730-1800	55	85
	1800-2000	45	75
	2000-0630	45	75

Where it is not practicable to achieve those criteria, the CNVMP must describe alternative strategies to achieve the best practicable option to minimise the effects of construction noise on neighbours.

16. The vibration criteria set out in Table 3 of DIN 4150-3: 1999 shall be met, where practicable. Where it is not practicable to achieve those criteria, a suitably qualified expert shall be engaged to assess and manage construction vibration during the activity that exceeds the criteria.

17. Where on-site construction works and/or heavy vehicle movements need to be undertaken outside of normal working hours (as defined in Condition 13), night time work (7:00pm –7:00am) shall be avoided where practicable. Where avoidance is not practicable, the best practicable option shall be adopted to minimise or mitigate noise and vibration effects.

Construction Traffic

18. A CTMP shall be prepared by a suitably qualified and experienced person and shall be submitted to the CMO for certification that it meets the requirements of these conditions at least 15 Working Days prior to Commencement of Construction.

19. The purpose of the CTMP is to avoid or mitigate adverse effects on traffic safety and efficiency resulting from the construction works, in order to:
    a. Protect public safety, including the safe passage of pedestrians and cyclists;
    b. Minimise delays to road users, pedestrians and cyclists, and particularly public transport at all times, especially bus travel times at peak traffic periods during weekdays (06:30 to 09:30 and 15:00 to 19:00); and
    c. Inform the public about any potential impacts on the road network.

20. The CTMP shall describe the methods for avoiding, remedying or mitigating the local and network wide transportation effects resulting from the Project works, and shall address the following matters:
    a. Methods to avoid, remedy or mitigate the local and network wide effects of the construction of individual elements of the Project;
    b. Methods to manage the effects of the delivery of construction material, plant and machinery (including oversized trucks);
    c. The numbers, frequencies, routes and timing of construction traffic movements;
    d. Traffic management measures to address and maintain traffic capacity and minimise adverse effects;
    e. Measures to maintain existing vehicle access to private properties, or where the existing property access is to be replaced, measures to provide alternative access arrangements in consultation with the affected landowner;
    f. Measures to maintain pedestrian and cycle access with thoroughfare to be maintained on all roads and footpaths adjacent to the construction works, (unless provision of such access is severed by the works or such access will become unsafe as a result of the construction works). Such access shall be safe, clearly identifiable, provide permanent surfacing and seek to minimise significant detours; and

g. Include measures to avoid road closures, and the restriction of vehicle, cycle and pedestrian movements.
h. Include measures to maintain traffic safety as a result of construction vehicles parking on the local road or within private properties.

21. At least 15 working days prior to the construction of the new accesses to 30 – 38 Blue Mountains Road, the Requiring Authority shall provide the Team Leader Policy for certification plans for the proposed new access arrangements for these properties and confirm compliance with the design standards of the Council's Code of Practice.

Landscape Plan

22. A Landscape Plan ('LP') shall be prepared by a suitably qualified and experienced person and shall be submitted to the CMO for certification that it meets the requirements of these conditions at least 15 Working Days prior to Commencement of Construction. The purpose of the LP is to outline the requirements for the Project's permanent landscape mitigation works.

23. The Requiring Authority shall undertake mitigation and enhancement planting in general accordance with the LP. The LP shall include details of proposed mitigation planting including as follows:

    a. Identification of vegetation to be retained, protection measures, and planting to be established along cleared edges, the riparian zone and new floodplain areas;
    b. Proposed planting including plant species, plant/grass mixes, spacing/densities, sizes (at the time of planting) and layout and planting methods;

        i. Planting of species that grow taller than 15 metres in height are not to be planted within 30 metres of any residential buildings

    c. The proposed staging of planting in relation to the construction programme, including provision for planting within each planting season following completion of works in each stage of the Project and detailed specifications relating to (but not limited to) the following:
        i. Weed control and clearance;
        ii. Pest animal management;
        iii. Ground preparation (topsoiling and decompaction);

iv. Mulching;
v. Plant sourcing and planting, including hydroseeding and grassing;
vi. Successional/replacement planting; and
vii. Details of a proposed maintenance and monitoring programme.

24. The LP shall include a Reserve Reinstatement Plan for Willow Park. The Reserve Reinstatement Plan shall be prepared in consultation with Council and shall include the following details (as appropriate):
    a. Removal of structures, plant and materials associated with construction;
    b. Replacement of any boundary fences that require removal;
    c. Reinstatement of grassed areas;
    d. Replacement of trees and other planting;
    e. Any structures proposed to be constructed; and
    f. Details of way finding interpretation signage within and adjacent to the reserve.

25. The Requiring Authority shall maintain and monitor the mitigation and enhancement planting for a minimum of 5 years following the planting being undertaken.

Stakeholder and Communications

26. The Requiring Authority shall appoint a community liaison person for the duration of the construction phase of the Project to be the main point of contact for persons affected by the Project.

27. A community communication strategy will be developed to ensure the key messages about potential temporary construction effects such as noise and traffic, and the project programme timeline, are well understood.

Complaints process

28. At all times during construction work, the Requiring Authority shall maintain a permanent register of any complaints received relating to the construction works, including the full details of the complainant and the nature of the complaint. The complaints register shall contain the following information:
    d. The details of the complainant;
    e. The nature of the complaint;
    f. The investigations undertaken into the complaint; and
    g. Any remedial actions undertaken to address the complaint.

29. The Requiring Authority shall respond to any complaint within 24 hours of receipt of the complaint, except where an immediate hazard is present or where the complaint

relates to construction noise, in which case the Requiring Authority shall use its best endeavours to respond immediately. A formal written response shall be provided to the complainant and the Council within 10 days of complaint receipt.

30. The Requiring Authority shall keep a copy of the complaints register on site and shall provide a copy to the Council upon request.

Accidental discovery

31. At least 15 Working Days prior to Commencement of Construction the Requiring Authority shall, in consultation with Port Nicholson Block Trust and Te Rūnanga o Toa Rangātira Inc, prepare an accidental discovery protocol and provide a copy to the CMO and GWRC for information. The protocol shall be implemented in the event of accidental discovery of cultural or archaeological artefacts or features during construction of the Project. The protocol shall include, but not be limited to:
    a. Identification of parties to be notified in the event of an accidental discovery, who shall include, but need not be limited to Port Nicholson Block Trust, Te Rūnanga o Toa Rangātira Inc, HNZ, UHCC, GWRC, and, if koiwi are discovered, the New Zealand Police;
    b. Setting out of procedures to be undertaken in the event of an accidental discovery (these shall include immediate ceasing of all construction in the vicinity of the discovery until authorised to proceed); and
    c. Training procedures for all contractors regarding the possible presence of cultural or archaeological sites or material, what these sites or material may look like, and the relevant procedures if any sites or material are discovered.

Terrestrial Ecology

32. Where ecologically significant trees have been identified and are proposed to be removed the following planting mitigation ratios will be used:
    a. Kowhai replacement ratio of 3:1
    b. Black beech replacement ratio of 10:1
    c. Kahikatea replacement ratio of 5:1

    All other vegetation types to be removed require compensation planning ratio of 3:1.
33. Seedlings used for compensation and replacement plantings must be sourced from the same Ecological District.

34. All seedlings for replacement planting should be of an advanced grade (>60cm height at planting) and planted into appropriate soil and microclimate conditions.

35. Any replacement or compensation planting undertaken shall be undertaken as close to the vegetation.

36. Prior to the commencement of any vegetation clearance within each construction stage, a suitably qualified ecologist with avifauna experience must inspect the Project site for the presence of any protected indigenous bird species nesting. No vegetation clearance may occur within 4 metres of any identified nest, until the ecologist confirms that nesting is complete.

37. Prior to vegetation clearance, automatic bat monitors shall be deployed for at least 15 consecutive days (as per Department of Conservation guidelines) in suitable weather conditions (during spring and summer months where temperatures are above 10 degrees) targeting larger mature trees including the black beech trees proposed for removal in the Pinehaven Stream corridor. Should monitoring detect the presence of bats then, prior to vegetation clearance, a Department of Conservation accredited ecologist with bat detection experience must survey the clearance area for the presence of bats and large trees for the presence of roosting bats. Should roosting be detected, a pre-tree felling protocol (PTFP) must be prepared by the accredited bat ecologist in consultation with the Department of Conservation for the purpose of avoiding the injury or mortality of roosting bats. Any tree removal within the area identified as potentially containing bats must be undertaken in accordance with the PTFP.

38. A Lizard Management Plan shall be prepared by a suitably qualified and experienced ecologist and shall be submitted to the CMO at least 15 Working Days prior to Commencement of Construction for certification that it meets the requirements of this condition. The purpose of the LMP is to avoid, remedy or mitigate any potential adverse effects of the Project on lizards. The Lizard Management Plan must:
    a. Describe the methodology for survey, salvage, transfer and release, including the identification of potential habitats for survey and planned and opportunistic relocations;
    b. Identify release sites and confirm any works necessary to protect such sites from predation or disturbance; and
    c. Be updated to achieve consistency with any authorisation given by the Director-General of Conservation under section 53 of the Wildlife Act 1953 where any such authorisation is required.

Earthworks Condition

38. Prior to the commencement of works on the site, the Requiring Authority shall provide the Team Leader, Resource Consents a copy of the erosion and sediment control plan certified by Greater Wellington Regional Council for their records. If during the construction period any changes are made to the certified plan that requires the recertification of Greater Wellington Regional Council, then a copy of the revised certified plan shall be provided to the Team Leader Resource Consents within 5 working days of receiving confirmation of the recertification.

Flood Hazard Assessment

39. Prior to the commencement of works on the site, the Requiring Authority shall provide the Team Leader Policy a copy of the hydraulic model that has been certified by Greater Wellington Regional Council for their records. If during the construction period any changes are made to the certified hydraulic model that requires the recertification by Greater Wellington Regional Council, then a copy of the revised certified model shall be provided to the Team Leader Policy within 5 working days of receiving confirmation of the recertification.

Site office establishment and management

40. A Site Office Management Plan (SOMP) shall be prepared and submitted to the CMO at least 15 Working Days prior to the establishment of the site office for certification that it meets the requirements of this condition. The purpose of the SOMP is to outline the requirements for the Project's site office establishment and management and to outline how potential adverse effects will be avoided or mitigated. The SOMP shall address, as a minimum:
    a. The location of the site office;
    b. Proposed working hours;
    c. Traffic movements to and from the site office area;
    d. On-site and off-site parking for site office staff;
    e. The location, nature and height of any security fencing;
    f. Light spill from any security lighting; and
    g. Laydown areas on the property.

Advice Note: All conditions, except for Condition 25, relate to construction only, and will not apply to any works which take place after partial withdrawal of the designation pursuant to condition 4.

Appendix 6 – Michael Law Flood Hazard Peer Review

Pinehaven Structural Works - Technical Review - Flooding

Peer Review

Prepared for Greater Wellington Regional Council
Prepared by Beca Limited

30 June 2020

make everyday better.

Creative people together transforming our world

Contents

Revision History

Revision Nº	Prepared By	Description	Date
1.0	**Michael Law**	Draft for Modeller comment	11 November 2019
2.2	**Michael Law**	Reviewer response to Modeller comments	21 November 2019
3.0	**Michael Law**	Response to further Reviewer and Modeller comments	2 December 2019
4.0	**Elliot Tuck and Michael Law**	Update following additional modelling	30 June 2020

Document Acceptance

Action	Name	Signed	Date
Prepared by	**Elliot Tuck and Michael Law**		30 June 2020
Reviewed by	**Michael Law**		30 June 2020
Approved by	**Michael Law**		30 June 2020
on behalf of	Beca Limited		

1 General information

This document summarises our review of the 2019 flood model for the Pinehaven catchment in Upper Hutt, and subsequent updates in 2020. The review process should not be considered complete until any issues identified have been suitably addressed and closed by the reviewer (See sections 4 to 9). The model may be updated as part of an ongoing process of model use, improvement, and review through the project.

We have also assessed the modelled effects of the proposed works on individual properties; Section 8.

2 The scope of our review

We have been provided a hydraulic model, developed by Jacobs (summary information in Figure 2-1). The hydraulic flood model and associated hydrological model were originally developed by Sinclair Knight Merx and MWH respectively between 2008 and 2010 for Greater Wellington Regional Council's (GWRC) Flood Management Plan for Pinehaven. The models were audited in 2015[1] by Beca for GWRC.

Our scope is to review the current version of the hydraulic flood model and associated information. We have undertaken a review of the model assumptions, the model logic and the results based on the information provided. We have not undertaken a review of the hydrological model used to provide the input hydrographs to the hydraulic model, as this was not part of the scope. The focus has been on the modelling of the stream between Pinehaven Reserve and the Bypass Weir as this is the reach subject to the proposed works. The review has not revisited the hydraulic modelling of catchment upstream of Pinehaven Reserve.

Figure 2-1 Model review information

Job name	**Pinehaven Structural Works - Technical Review - Flooding**
Model description and purpose	The model is a 2-way coupled (MIKE11 and MIKE21) model adapted to represent the proposed stream works in Pinehaven Stream. The model was previously constructed to quantify flood risk in the catchment.
Model developed by	Jacobs
Modeller's name(s)	Peter Kinley and Jarad Sinni
Reviewer's name(s)	Michael Law and Elliot Tuck
Review date	1st review - November 2019 2nd review – June 2020
Model software/platform and file	Hydraulic flood model - MIKE by DHI
Key features	• Pinehaven Stream and instream structures represented in 1D • Floodplain represented in 2D, developed using LiDAR
Model report file name & date	Pinehaven Stream Improvements, Flood Hazard Assessment, written by Jacobs for Wellington Water Ltd. 19 September 2019.

[1] ***Pinehaven Stream – Flood Mapping Audit,*** Beca Ltd for GWRC. 13 July 2015 (Beca 2015)

3 Our review methodology

Our model review rating scheme provides a standardised approach to our review and makes it clear where action is required (Figure 3-1). This also allows us to suggest areas for more general improvement; these can be addressed as part of this work or incorporated into similar models in the future.

Our rating scheme assigns a score of 0-3 for each item reviewed.

- Scores of 0 and 1 are generally for information only and are unlikely to impact the modelling outcomes.
- A score of 2 is classed as a major issue. However, one which could be accepted if addressed or if more detail is provided. The issue may be closed and be considered fit for use for this project, even though an un-resolved issue remains.
- A score of 3 is a fatal flaw that is likely to require a reasonable amount of investigation/rework to be accepted or may invalidate the model findings.

Figure 3-1 Review framework

Description	Review Rating	Fit for use[2]
No issue: The element or parameter being reviewed is modelled acceptably	**0**	**Yes**
Minor issue: There is an issue, but it is unlikely to significantly affect model results.	**1**	**Yes**
Major issue: Failure to resolve the issue compromises the model and should be rectified but may be resolved by explanation or acceptance of model limitations.	**2**	**Yes, No or Review.** *Issue may be closed or remain open*
Fatal flaw: Failure to resolve this issue severely compromises the model and should be rectified before the model is accepted.	**3**	**No**

The review is tabulated in Section 4 and includes room for the Modeller to respond to the Reviewer's comments, and for the Reviewer to close out each issue.

To make it easier to identify comments made, and issues raised, in relation to the review of the updated June 2020 model and Flood Hazard Assessment (FHA) report, background shading of these sections of the report has been used (as here).

In Section 5, we provide a commentary on reports provided with the flood modelling. For the review of the latest (June 2020) version of the Flood Hazard Assessment (FHA) Report, a tabular review format has been adopted to highlight items that should be addressed; and uses a similar traffic light format to the model review.

Section 6 is a check that the June 2020 modelling and reporting meets the scope agreed in April 2020 by Jacobs, GWRC and Beca.

Section 7 contains a summary of the reported effects at affected properties.

[2] The 'fit for use' categorisation refers to the use of the model for the stream works project only, and does not reflect its suitability for other purposes or future modelling.

4 Model review

4.1 Information Received

The following information was also been received from the modeller for the 1st review in November 2019

- Catchment shapefile: Lidar_Catchments_Pinehaven_Backup.shp
- Reports:
  - ***Pinehaven Stream Improvements, Flood Modelling Draft Flood Modelling Report***. Jacobs for Wellington Water Ltd, December 2017 (Jacobs 2017).
  - ***Pinehaven Stream Improvements, Flood Hazard Assessment***. Jacobs for Wellington Water Ltd, September 2019 (Jacobs 2019a).
- Memorandum
  - ***Addendum to the Pinehaven Stream Improvement Works, Pinehaven Road Culvert and Sunbrae Drive Culvert Flood Hazard Assessment Reports.*** From Peter Kinley (Jacobs) to Josie Burrows (GWRC), James Beban (UHCC), and Mike Law (BECA). 27 November 2019. (Jacobs 2019b). *The 14 November draft version of the addendum was reviewed in the 21 November version of this report.*
- Response to draft review culverts; ***Jacobs Response to Beca Modelling Review Draft Report - 13-11-2019.xlsx***, emailed to Josie Burrows (GWRC), James Beban (UHCC), and Mike Law (BECA) by Helen Anderson (Jacobs). 13 November 2019.
- MIKE model files listed in Figure 4-1,

Figure 4-1 Novemeber 2019 Model files

Model	Mike 11	Mike 21	Results
U2_0 Base Case	• Pinehaven_U2_0_Q25_CC.sim • Pinehaven_U2_0_Q100_CC.sim • Pinehaven_U2_HB.hd11 • U2_Q25CC_CC_2hr_HB.bnd11 • U2_Q100CC_2hr_HB.bnd11 • Pinehaven_U2_0.nwk11 • Pinehaven_U2_0.xns11 • Final_Q25_CC_2hr.dfs0 • Final_Q100CC_CE_2hr.dfs0	• Pinehaven_U2_0_Q25_CC.m21 • Pinehaven_U2_0_Q100_CC.m21 • DD_GWRC_TrA_2m_NZMG_Clip4.dfs2 (A number of versions delivered but this appears to be the one used) • InitialDD_GWRC_TrA_2m_NZMG_Clip4.dfs2 (A number of versions delivered but this appears to be the one used) • Pinehaven_NZMGClip_2m_resistance1.dfs2	• Pinehaven_U2_0_SurvBypassWeir_6.4mLength_Q25_CC.dfs2 • Pinehaven_U2_0_SurvBypassWeir_6.4mLength_Q25_CC.re11 • Pinehaven_U2_0_SurvBypassWeir_6.4mLength_Q25_CCHDAdd.res11 • Pinehaven_U2_0_SurvBypassWeir6.4m_Q100_CC.dfs2 • Pinehaven_U2_0_SurvBypassWeir6.4m_Q100_CC.res11 • Pinehaven_U2_0_SurvBypassWeir6.4m_Q100_CCHDAdd.res11

Model	Mike 11	Mike 21	Results
Detailed Design Rev7 (50 BMR Flood wall removed)	• Pinehaven_DetDesign_Iteration7_Q25_CC_0.sim • Pinehaven_DetDesign_Iteration7_Q100_CC_0.sim • Pinehaven_PrelimDesign_PVR04_STAGE2_HB_0.hd11 • UG1_PVR04_STAGE2_Q25CC_CC_2hr_HB.bnd11 • UG1_PVR04_STAGE2_Q100CC_CC_2hr_HB.bnd11 • Pinehaven_DetDesign_Iteration7_0.xns • Pinehaven_DetDesign_Iteration7_0.nwk11 • Final_Q25_CC_2hr.dfs0 • Final_Q100CC_CE_2hr.dfs0	• Pinehaven_DetDesign_Iteration7_Q25_CC_0.m21 • Pinehaven_DetDesign_Iteration7_Q100_CC_0.m21 • Bathy_DetDes_Wall50BlueMtRemoved_2m_NZMG_0.dfs2 • Initial_DetDes_Wall50BlueMtRemoved_2m_NZMG_0.dfs2	• Pinehaven_DetDesign_Iteration7_Q25_CC_0.dfs2 • Pinehaven_DetDesign_Iteration7_Q25_CC_0.res11 • Pinehaven_DetDesign_Iteration7_Q25_CC_0HDAdd.res11 • Pinehaven_DetDesign_Iteration7_Q100_CC_0.dfs2 • Pinehaven_DetDesign_Iteration7_Q100_CC_0res11 • Pinehaven_DetDesign_Iteration7_Q100_CC_0HDAdd.res11

Figure 4-2 shows the model files provided on 29 May and 10 June for the updated June 2020 model.

Figure 4-2 June 2020 Model files

Model	Mike 11	Mike 21	Results
PVR51 - 20% Climate Change Pinehaven_U2_0_Q10_20%CC.couple Pinehaven_U2_0_Q25_20%CC.couple Pinehaven_U2_0_Q100_20%CC.couple	Background_Image dfs0 Pinehaven_U2_0.nwk11 Pinehaven_U2_0.xns11 Pinehaven_U2_0_Q10_20%CC.sim11 Pinehaven_U2_0_Q25_20%CC.sim11 Pinehaven_U2_0_Q100_20%CC.sim11 Pinehaven_U2_HB.hd11 U2_Q10CC_20%CC_2hr_HB.bnd11 U2_Q25CC_20%CC_2hr_HB.bnd11 U2_Q100CC_20%CC_2hr_HB.bnd11 Final_Q10_CE_2hr_20%CC.dfs0 Final_Q25_CC_2hr_20%CC.dfs0 Final_Q100CC_CE_2hr_20%CC.dfs0	Bathy initial Pinehaven_U2_0_Q10_20%CC.m21 Pinehaven_U2_0_Q25_20%CC.m21 Pinehaven_U2_0_Q100_20%CC.m21 DD_GWRC_TrA_2m_NZMG_Clip4.dfs2 DD_GWRC_TrA_2m_NZMG_Clip4.gsf InitialDD_GWRC_TrA_2m_NZMG_Clip4.dfs2 InitialDD_GWRC_TrA_2m_NZMG_Clip4.gsf Pinehaven_NZMGClip_2m_resistance1.dfs2 Pinehaven_NZMGClip_2m_resistance1.gsf	NZMG Pinehaven_U2_PVR51_Q25_20%CC.cfg2 NZMG Pinehaven_U2_PVR51_Q25_20%CC.wrr Pinehaven_U2_PVR51_Q25_20%CC.cfg2 Pinehaven_U2_PVR51_Q25_20%CC.dfs2 Pinehaven_U2_PVR51_Q25_20%CC.res11 Pinehaven_U2_PVR51_Q25_20%CC.wrr Pinehaven_U2_PVR51_Q25_20%CCHDAdd.res11 q25 difference.cfg2 Q25 difference.wrr Pinehaven_U2_PVR51_Q100_20%CC.cfg2 Pinehaven_U2_PVR51_Q100_20%CC.dfs2 Pinehaven_U2_PVR51_Q100_20%CC.res11 Pinehaven_U2_PVR51_Q100_20%CC.wrr Pinehaven_U2_PVR51_Q100_20%CCHDAdd.res11
PVR51 - 20%CC .020 roughness at culverts Pinehaven_DetDesign_Iteration10_Q10_CC_0.couple Pinehaven_DetDesign_Iteration10_Q25_CC_0.couple Pinehaven_DetDesign_Iteration10_Q100_CC_0.couple	Background_Image dfs0 Pinehaven_DetDesign_Iteration10_0.nwk11 Pinehaven_DetDesign_Iteration10_0.xns11 Pinehaven_DetDesign_Iteration10_Q10_CC_0.sim11 Pinehaven_DetDesign_Iteration10_Q25_CC_0.sim11 Pinehaven_DetDesign_Iteration10_Q100_CC_0.sim11 Pinehaven_PrelimDesign_PVR04_STAGE2_HB_0.hd11 UG1_PVR04_STAGE2_Q10CC_20%CC_2hr_HB.bnd11 UG1_PVR04_STAGE2_Q25CC_20%CC_2hr_HB.bnd11 UG1_PVR04_STAGE2_Q100CC_20%CC_2hr_HB.bnd11 Final_Q10_CE_2hr_20%CC.dfs0 Final_Q25_CC_2hr_20%CC.dfs0 Final_Q100CC_CE_2hr_20%CC.dfs0	Bathy initial Pinehaven_DetDesign_Iteration10_Q10_CC_0.m21 Pinehaven_DetDesign_Iteration10_Q25_CC_0.m21 Pinehaven_DetDesign_Iteration10_Q100_CC_0.m21 Bathy_DetDes_Wall50BlueMtRemoved_2m_NZMG_0.dfs2 Bathy_DetDes_Wall50BlueMtRemoved_2m_NZMG_0.gsf Initial_DetDes_Wall50BlueMtRemoved_2m_NZMG_0.dfs2 Initial_DetDes_Wall50BlueMtRemoved_2m_NZMG_0.gsf Pinehaven_NZMGClip_2m_resistanceUG1.dfs2 Pinehaven_NZMGClip_2m_resistanceUG1.gsf	NZMG Pinehaven_DetDesign_Iteration10_Q25_CC_PVR51.cfg2 NZMG Pinehaven_DetDesign_Iteration10_Q25_CC_PVR51.wrr Pinehaven_DetDesign_Iteration10_Q25_CC_PVR51.cfg2 Pinehaven_DetDesign_Iteration10_Q25_CC_PVR51.dfs2 Pinehaven_DetDesign_Iteration10_Q25_CC_PVR51.wrr Pinehaven_DetDesign_Iteration10_Q25CC_PVR51.res11 Pinehaven_DetDesign_Iteration10_Q25CC_PVR51HDAdd.res11 NZMG.cfg2 NZMG.wrr Pinehaven_DetDesign_Iteration10_Q100_CC_PVR51.cfg2 Pinehaven_DetDesign_Iteration10_Q100_CC_PVR51.dfs2 Pinehaven_DetDesign_Iteration10_Q100_CC_PVR51.wrr Pinehaven_DetDesign_Iteration10_Q100CC_PVR51.res11 Pinehaven_DetDesign_Iteration10_Q100CC_PVR51HDAdd.res11

4.2 Hydrological Model

The hydrological modelling for the Pinehaven model was developed outside of Mike by DHI using Hydstra software in 2008[3]. Jacobs informed us that the hydrological model has not changed since the models were reviewed in 2015. Therefore, this section of the review relating to the hydrological modelling underlying the hydraulic flood model review is truncated, and does not differ substantially from the 2015 model and mapping review.

Figure 4-3 Hydrological model review

Item Checked	Findings & Comments	Modeller's response	Reviewer close out comments	Rating	Fit for use
Software	The hydrological modelling was undertaken using Hydstra software. Hydstra is a standard software package that incorporates a catchment runoff model. It was appropriate for this level of analysis at the time of model development. However, the original model files are not available and so the hydrological modelling cannot be updated to reflect updates in rainfall inputs, allowances for climate change and changes in rainfall-runoff modelling techniques. Future hydrological modelling could be undertaken within the MIKE software.	Acknowledged that Hydstra approach appropriate for time of model development. In consultation with Wellington Water, hydrological modelling not revised to retain consistency with previous modelling. The original model files are understood to sit with GWRC, and Jacobs do not know if they can be made available. While future hydrological modelling could be undertaken outside HYDSTRA, this is a decision that would affect future projects and the review suggested is not necessary at this point.	The reviewer's understanding is that the location of the model files is not known. The hydrological modelling should be updated when resources allow, but OK for this project. **CLOSED**	**2**	**Yes**
Rainfall inputs	As noted above, no rainfall files were delivered for review. Therefore, there is no opportunity to update rainfall inputs to reflect data collected over the last ten years. Though probably not likely to result in a major adjustment of design rainfall, it would be prudent to update the rainfall inputs to the hydrological modelling.	For consistency with modelling used to support plan change and public consultation, hydrology used in preliminary modelling not updated for design modelling, in consultation with Wellington Water.		**2**	**Yes**

[3] ***Pinehaven Stream Flood Hydrology***, report prepared by MWH for Greater Wellington Regional Council. 4 November 2008

Item Checked	Findings & Comments	Modeller's response	Reviewer close out comments	Rating	Fit for use
Climate change	As with the rest of the hydrological modelling, the allowance for climate change has not been updated since the models were reviewed in 2015. At that time, the flow hydrograph inputs to the hydraulic flood model were increased by 16% in line with the 2008 guidance from Ministry for Environment (MfE). This was in the model provided to Beca for this review. MfE updated the climate change guidance in 2018, and this update has not been included directly in the modelling being reviewed. However, discussions with Jacobs' modellers propose to update the modelling sing a 20% increase in flows. We have discussed with GWRC and agreed that it is appropriate for this study.	In response to s92 request, 2120 climate change factor of 20% agreed with GWRC and WW. Models have been reassessed with 20% climate change factor and addendum to main works and culvert FHAs is being prepared to summarise differences between 16% and 20% climate change factors.	Jacobs provided an addendum memo dated 27 November that included a summary of the effects of increasing the climate change allowance. The memo has been reviewed. It reports there is no increase in "habitable floor polygons" inundated in the 'with culvert and stream works' modelled scenario when the climate change allowance is increased from +16% to +20%. While the results reported in the addendum are in line with what might be expected, Beca has not reviewed the model run files used to generate the results reported in the addendum. **CLOSED**	**1**	**Yes**
Catchments	Figure 4-4 shows the catchments used in the hydrological modelling. The catchments range from 0.735km² to 0.1397km². Catchments of this size are large for a detailed design model, but given the lack of detail in the hydraulic model (e.g. no stormwater pipe network) these are appropriate. Based on the 2D surface supplied with the model they appear to be delineated appropriately.	Findings and comments on catchment size acknowledged. Agreement with appropriateness of catchment size and delineation, based on resolution and detail of base model.	**CLOSED**	**1**	**Yes**

Item Checked	Findings & Comments	Modeller's response	Reviewer close out comments	Rating	Fit for use
Summary	The issues with the hydrological modelling identified in the 2015 model review persist. The hydrological model has not been updated, and allowances for climate change have been (and are being) made by factoring the output flow hydrographs rather than updating the hydrological model and inputs. Though the hydrographs used as inputs for the hydraulic flood model are still acceptable for the current stream works project, we recommend that the hydrological modelling should be updated either as part of this project or in the next couple of years. This is for the following reasons: • The hydrological modelling is ten years old, and does not account for additional rainfall records, changes in recommended allowances for climate change, and updates to hydrological methods. • The original hydrological model files are not available. • The hydrological modelling could be incorporated within the MIKE hydraulic flood model	Acknowledged that Hydstra approach appropriate for time of model development. In consultation with Wellington Water, hydrological modelling not revised to retain consistency with previous modelling. Support the recommendation to update the hydrological modelling in the next couple of years.	As per previous comments, issue closed but recommendation that the hydrological model is updated when resources allow. **CLOSED**	**2**	**Yes**

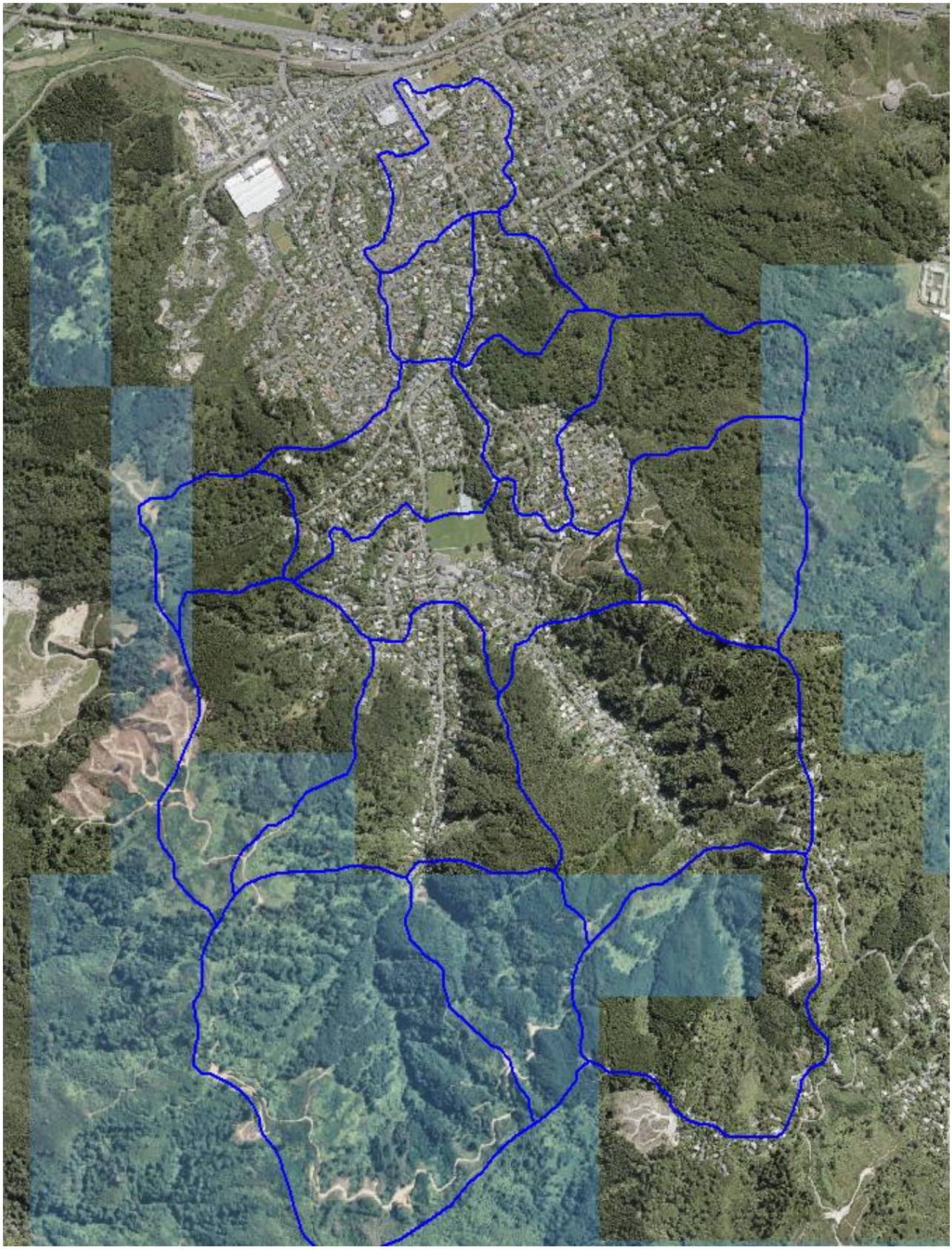


Figure 4-4 Hydrological catchments

4.3 Hydraulic Model

The hydraulic flood model has been built within MIKE by DHI software, with MIKE21 (2D) and MIKE11 (1D) elements. The review considers the MIKE21 elements first, then MIKE11 and finally the results

Item Checked	Findings & Comments	Modeller's response	Reviewer close out comments	Rating	Fit for use
MIKE21					
Grid/Mesh	• Model includes two gridded surfaces; representing Base (pre) and Design (post) proposed stream works • Model updated with 2013 LiDAR • The model uses a grid of 2x2 m. This is an appropriate level of detail, and more refined than the 5x5 m grid reviewed in 2015. • The extent of the grid is such that the flood plain is covered. This is confirmed by the 100-year ARI results showing that that no water is glass-walling at the edges of the grid. • The Pinehaven Stream between Pinehaven Reserve and Whitemans Rd has been blocked out of the grid where M11 is present to prevent double counting. • The blocking out has been increased in areas of stream widening (this matches changes to the M11 cross-sections) as indicated by the red areas in Figure 4-5. • The stream centreline and mesh blockout at 28 Blue Mountains Rd between the Design model and Base model is slightly different.	Agreement with findings and comments noted.	**CLOSED**	**0**	**Yes**

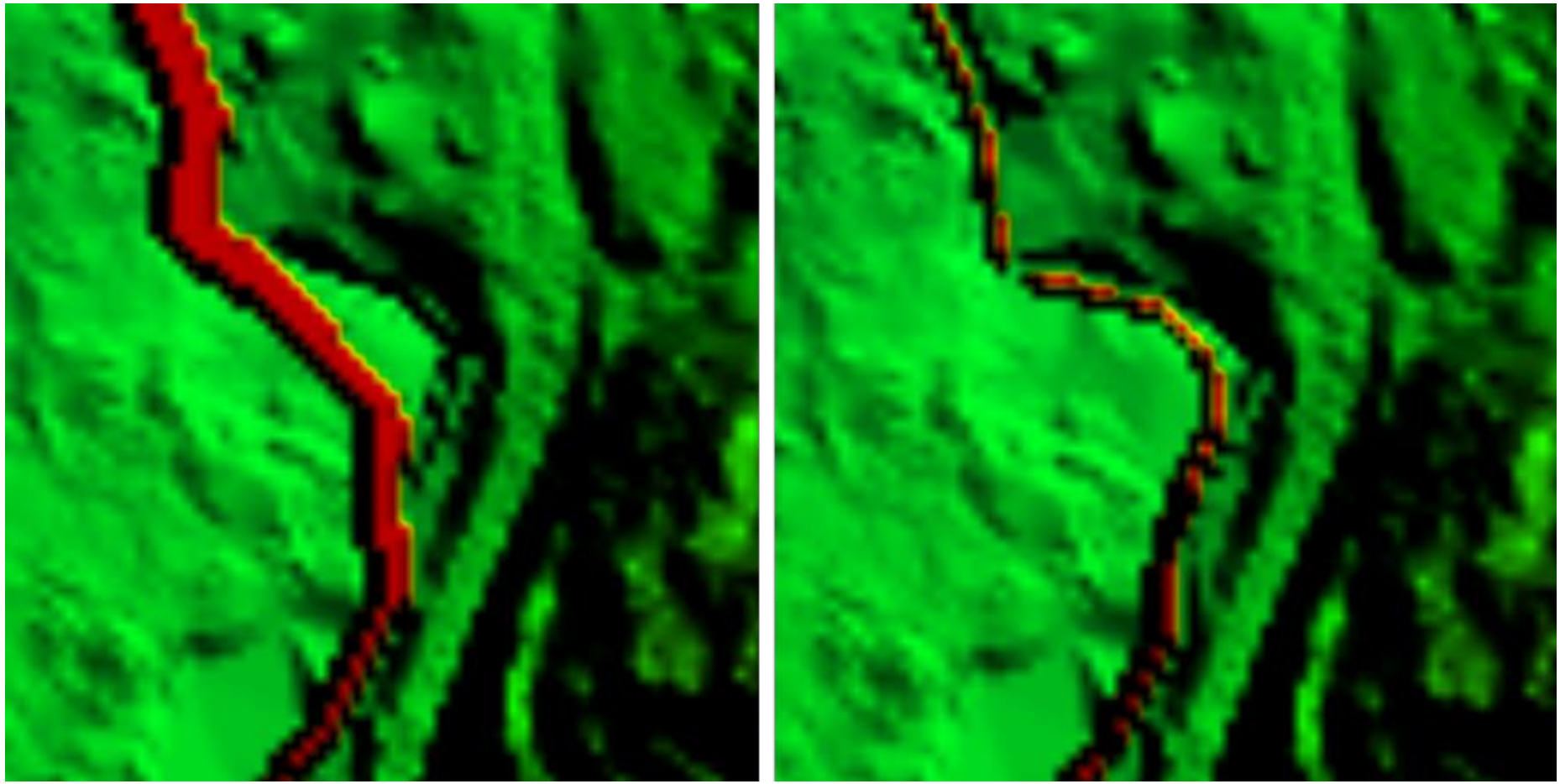


Figure 4-5 Changes to DEM – Design model on the left and Base model on the right

Item Checked	Findings & Comments	Modeller's response	Reviewer close out comments	Rating	Fit for use
MIKE21 (continued)					
Roughness	A resistance map has been used for both models. Roads = 50 / 0.020n Parks = 28.57 /.035n Bush = 6.67 / 0.150n Residential = 10 / 0.100n These resistance values are appropriate	Agreement with findings and comments noted.	**CLOSED**	**0**	**Yes**
Flood/Drying	Drying = 0.01 Flooding = 0.02.	Agreement with findings and comments noted.	**CLOSED**	**0**	**Yes**
Timestep	0.5 second	Agreement with findings and comments noted.	**CLOSED**	**0**	**Yes**
Initial Surface elevation	This looks appropriate, but the origin of the initial surface should be noted.	Agreement with findings and comments noted.	**CLOSED**	1	Yes
MIKE 11					
Runoff input	See review of hydrological inputs above. Catchment runoff hydrographs have been applied directly to the stream (MIKE11) at the locations listed in Figure 4-6. Where appropriate the catchments, or portions of, have been distributed along a length of channel or as a point source. This is standard practice but may not account for network discharges and local topography. Has the proportioning considered overland flow paths and/or pipe network discharges?	See comments on review of hydrology above. Allocation of loads to the network has not been changed from the previous model. The design may have an effect on the allocations, but any effect will not be significant or measurable.	Reviewer agrees that allocation of loads is not likely to have a material effect on the relative effect of the proposed stream works given that the design events are greater than the expected capacity of the stormwater network. **CLOSED**	**1**	**Yes**

Item Checked	Findings & Comments	Modeller's response	Reviewer close out comments	Rating	Fit for use
Other boundary conditions	Downstream boundary conditions have been applied to Hull Creek (at both eastern and western ends). One is a Q/H table and the other a fixed water level (44.22mRl). What event does the fixed water level represent, and please state whether the model results in the stream works reach are sensitive to the downstream boundary conditions.	Due to the steepness of the catchment and distance from the downstream extent to the project reach, the model results within the project reach are not expected to be sensitive to the downstream boundary conditions. The variability of water levels in the Hulls Creek branch was checked and found to vary by up to 5mm for the events studied, with a median value of 2mm. This is within the limits that the software can predict water levels and shows the model is not sensitive to the boundary condition at Hulls Creek.	The reviewer agrees with the modeller's response. CLOSED	**1**	**Yes**

	Boundary Description	Boundary Type	Branch Name	Chainage	Chainage	Gate ID	Boundary ID
1	Open	Q-h	HULL_CREEK	1078	0		Dummy_Boundary
2	Open	Water Level	HULL_CREEK	0	0		Dummy_Boundary
3	Open	Inflow	ELMSLIE_RD	0	0		Catchment_A
4	Distributed Source	Inflow	ELMSLIE_RD	0	853		Catchment_F
5	Point Source	Inflow	ELMSLIE_RD	994	0		1/3_Catchment_H
6	Open	Inflow	JOCELYN_CRES	0	0		Catchment_E
7	Point Source	Inflow	JOCELYN_CRES	334	0		1/3_Catchment_H
8	Point Source	Inflow	JOCELYN_CRES	522	0		1/3_Catchment_H
9	Open	Inflow	WYNDHAM_RD	0	0		Catchment_I
10	Open	Inflow	FENDALTON_CRE	0	0		Catchment_G
11	Distributed Source	Inflow	FENDALTON_CRE	117	296		Catchment_K
12	Distributed Source	Inflow	FENDALTON_CRE	340	680		Catchment_L
13	Open	Inflow	PINEHAVEN	0	0		Catchment_B
14	Open	Inflow	UPPER_PINEHAVE	0	0		Catchment_C
15	Distributed Source	Inflow	PINEHAVEN	135	1029		Catchment_D
16	Distributed Source	Inflow	PINEHAVEN	1365	1866		1/2_Catchment_J
17	Distributed Source	Inflow	PINEHAVEN	1949	2426		Catchment_M
18	Point Source	Inflow	PINEHAVEN	2432	0		Catchment_N
19	Point Source	Inflow	PINEHAVEN	2599	0		1/4_Catchment_O
20	Point Source	Inflow	PINEHAVEN	2734	0		1/4_Catchment_O
21	Point Source	Inflow	LOWER_PINEHAV	64	0		1/4_Catchment_O
22	Point Source	Inflow	LOWER_PINEHAV	268	0		1/4_Catchment_O
23	Distributed Source	Inflow	WYNDHAM_RD	130	771		1/2_Catchment_J

Figure 4-6 Hydrograph input locations

Item Checked	Findings & Comments	Modeller's response	Reviewer close out comments	Rating	Fit for use
Cross-sections	• Design drawings of the proposed cross-section have not been received and therefore we cannot comment on the representation of these in the model. We are limited to comparing the design cross sections to those in the Base case model. • The stream works detailed in the *Pinehaven Stream Improvements* report appear in model chainages Ch 1488 – 1604 inclusive; and Ch 1838 – 2430 inclusive (2017 12d design). An example is shown in Figure 4-7 for cross-section 1496. • The lower ~200mm of channel has been left the same as the Base model representing no modification to this portion of the cross-section • The design cross-sections contain vertical walls (approx1.5m high). Note that if these can't be achieved due to stability etc any changes to the side slopes would need to be re-modelled as it may result in a loss in conveyance.	Additional survey was collected to update the quantity and resolution of stream cross-sections from what was represented in the preliminary models. Proposed cross-sections included reference to updated survey information where applicable. In vertical cross sections, up to a 2-inch per row of blocks may be integrated into the proposed design. Following completion of final design of the block walls, if a batter is proposed, a check will be performed on all cross sections to confirm that the effective flow area is not decreased (it is noted this may extend top of bank extents by a nominal amount).	We agree with the modeller's response. Checks should be made to the final design cross-sections to confirm that the hydraulic performance meets the performance of the reviewed model. **CLOSED**	1	Yes
	June 202 Update • There have been some changes to the design cross-sections (see Figure 4-6). We assume these are the final design cross-sections. Results still show flooding to be reduced (in most places) as a result of the design cross-sections (See FHA for more commentary on results).		**CLOSED**	1	Yes

Item Checked	Findings & Comments	Modeller's response	Reviewer close out comments	Rating	Fit for use
Roughness	• The edges of some design cross-sections have had roughness increased to represent walls, though the material is not stated. Ch1838-1847 has High/low roughness zones, whereas CH.1854-1883 does not. Without a set of drawings/design can't comment if these are appropriate. • 0.035n Global roughness in both models Fresh plains (extensions of the channel below the bank level to accommodate 'fresh flows') / planted benches appear to have been created in some of the design cross-sections, including cross-section 1854 (Figure 4-8). If they are to be planted, then no account has been taken of the change in model roughness. Modeller to confirm whether changes in roughness have been, or need to be, made.	Comments acknowledged. Where roughness was used to represent existing private bridges, walls or other structures in the model, appropriateness of the roughness factors was confirmed with Wellington Water. It is expected that the final planting plan and recommended maintenance practices will be consistent with roughness factors used in the model in 'fresh plains' areas below the proposed top of bank and that changes to roughness represented in the model will not be required. The roughness values used were reviewed internally and with our client to confirm they are appropriate.	The channel roughness factor used are appropriate for the stage of design. The modeller should confirm that the appropriate roughness is used when the "final planting plan and recommended maintenance practices" are confirmed. **CLOSED**	**2**	**Yes**

Item Checked	Findings & Comments	Modeller's response	Reviewer close out comments	Rating	Fit for use
Stream works					
Culverts	• A replacement culvert is included in the design model at Pinehaven Rd 4.05m x 1.81m (existing is 2.96m x 1.54m). Inlet loss applied but we can't confirm if this is correct without inlet details. • A new culvert at Sunbrae Dr has been included as 6 m x 1.5m (existing is 1.785m dia). Again, the appropriateness of the inlet loss is to be confirmed. • If the culverts are to have natural bed materials (to facilitate fish passage) then the roughness should be increased on the base? Modeller to confirm	13/11/19 - The replacement culvert at Pinehaven Road is 4.0m x 2.5m (including 700mm embedment) and the replacement culvert for Sunbrae Drive is 6.0m x 2.0m (including 500mm of embedment). Inlet losses have been adopted from the previous modelling. As the design is likely to improve inlet efficiency the parameter values adopted are likely to be conservative. The roughness values used were reviewed internally and with our client to confirm they are appropriate.	Updated 29/11/19 Noting that the culverts are embedded, the Reviewer questioned whether the culvert roughness used of n=0.015 was too low, and suggested that n=0.025 may be more appropriate if the whole width of the channel was a natural bed. Subsequent discussion with the modeller confirmed that only the middle third of the channel would be natural. It was agreed that a culvert roughness of n=0.020 was appropriate, and that results based on this should be used to inform the consent application. The effects of using n=0.020 could be interpolated from the Iteration 9 and Iteration 10 model runs, which used culvert roughness of n=0.015 and 0.025 respectively. If the latter approach is taken, then the model must be run with the appropriate culvert roughness at the final/detailed design stage of the culvert and stream works to confirm compliance with design criteria. On the bases of these discussions, the issue has been addressed to the Reviewer's satisfaction, and the model considered fit for use once run with a culvert roughness of n=0.020. The issue can be **CLOSED (see June 2020 update)** once that is done. *Note that the Reviewer has not commented on whether a change in water levels (as a result of increasing the culvert roughness) changes whether the proposed design meets freeboard performance criteria in the design events.*	**2**	**Yes**

Item Checked	Findings & Comments	Modeller's response	Reviewer close out comments	Rating	Fit for use
Culverts continued	**Update June 2020** • Culverts in the latest model have had the roughness changed to n=0.02 • Modelled culvert at Pinehaven Rd, 3.2m x 1.8m @5m long then into a 4m x 1.8m cross-section @20m long. The reduced entry to account for the blockage (20%). Similar to Sunbrae Rd Culvert the width has been reduced from 6m to 4.8m		**CLOSED**	**1**	**Yes**
Bridges	Bridges in the model have been modelled as culverts. Given their scale this is appropriate.	Noted; agreement with comment.	**CLOSED**	**0**	**Yes**
Other structures	The modelling of the bypass weir has been updated since 2015 review. In speaking with Jacobs, the weir length has been adjusted to account for actual length and then adjusted for effective length. Doesn't change between Base and Design models	Noted, agreement with comment. No changes have been made to the bypass weir between the (updated) Base and Design models.	**CLOSED**	**0**	**Yes**
Initial water level/flow	Initial water depths remain the same between the two models	Noted; agreement with comment.	**CLOSED**	**0**	**Yes**
MIKE FLOOD					
Lateral coupling	Coupling is the same between base and design models using default setting. A combination of left and right (or both) coupling depending on the location. All seems appropriate.	Noted; agreement with comment.	**CLOSED**	**0**	**Yes**

Item Checked	Findings & Comments	Modeller's response	Reviewer close out comments	Rating	Fit for use
Coupling parameters	Default figures have been used	Noted; agreement with comment.	**CLOSED**	**0**	**Yes**

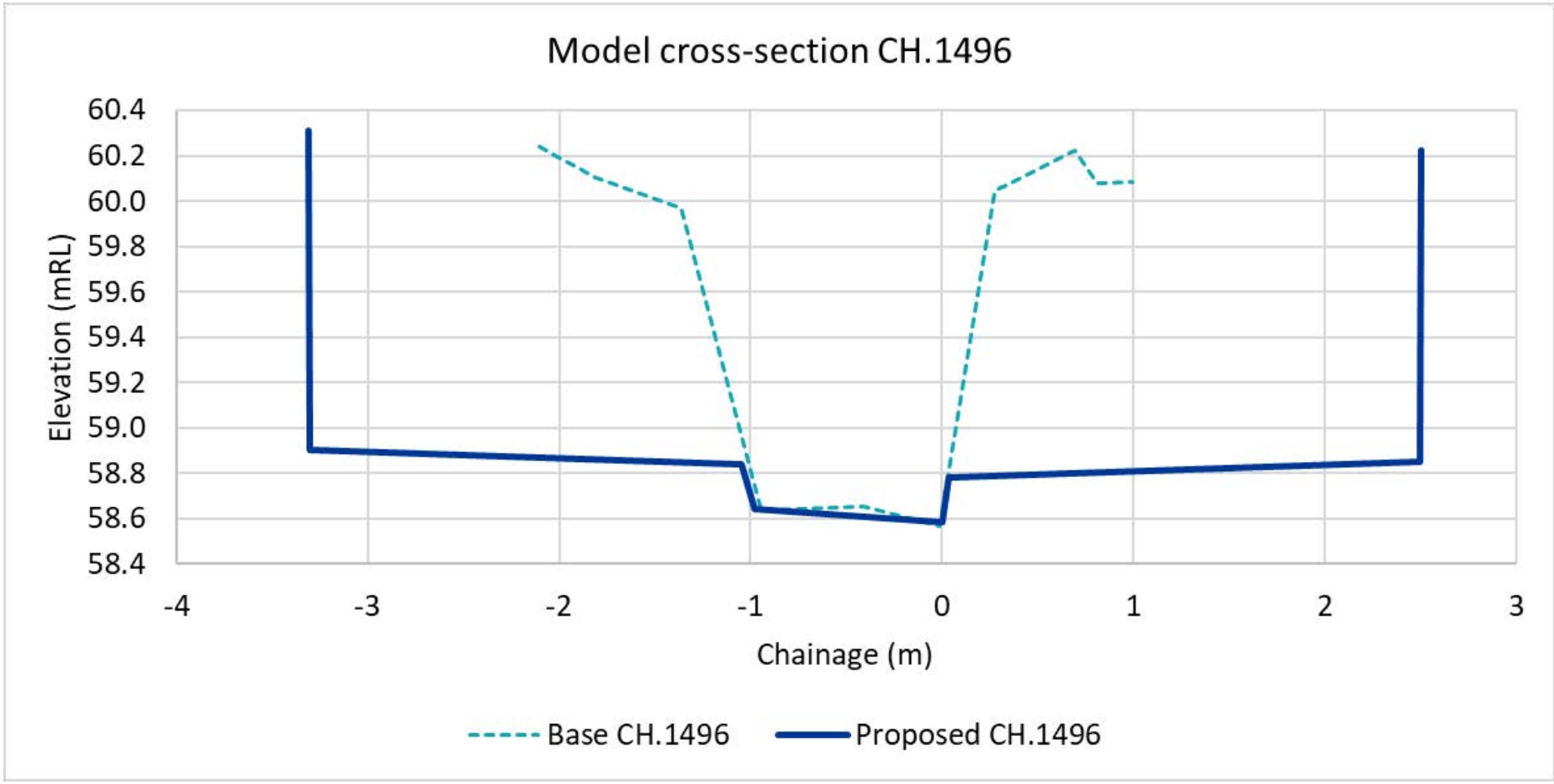


Figure 4-7 Cross-section 1496 (proposed as per June 2020)

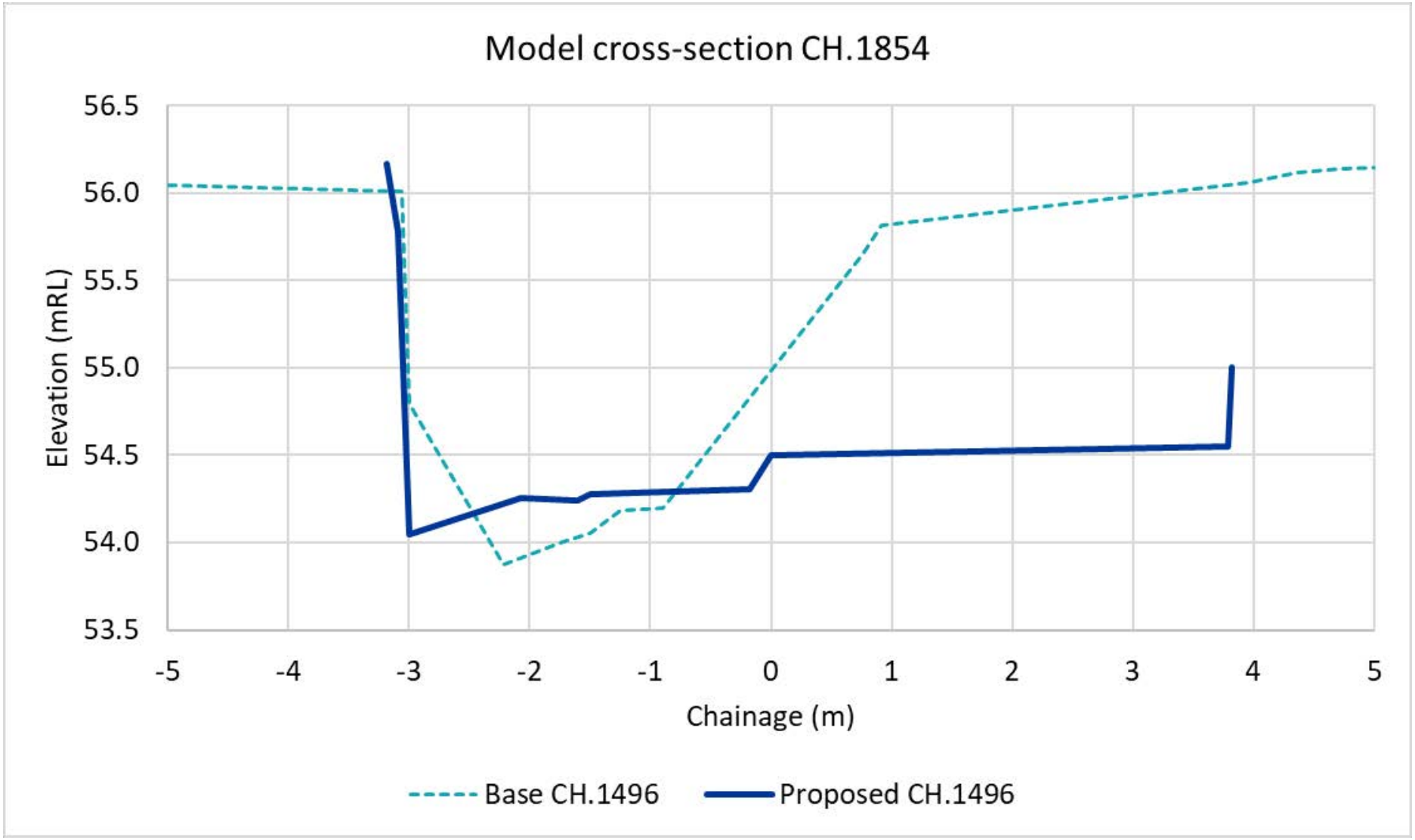


Figure 4-8 Cross-section 1854 (proposed as per June 2020)

4.4 Results

We note that there is a significant reduction in flooding downstream of Pinehaven reserve.

Item Checked	Findings & Comments	Modeller's response	Reviewer close out comments	Rating	Fit for use
Blockage testing	No blockage testing appears to have been undertaken. It would be appropriate to test the sensitivity of the existing Base case culverts/bridges and Design culverts to blockage. This could be done using a method such as developed for ARR that accounts for the availability and mobility of debris, and the size of the culvert in setting an appropriate amount of blockage to model.	Blockage assessments for the base scenario and for the Pinehaven Road and Sunbrae Drive culverts were completed and results can be provided, however there have been changes to the design since this blockage analysis was completed and we have not assessed whether the findings are still valid. A blockage assessment for the design will be provided once it is complete.	This issue is not expected to adversely affect the relative effects of the stream works, and so does not materially affect the 'fit for use' categorisation. However, the Reviewer notes that testing is ongoing and so the issue will remain open until that is completed. **OPEN (see June 2020 update)**	**2**	**Yes**
	Update June 2020 Both culverts (Sunbrae Drive and Pinehaven Road) have had a reduction in width to account for blockage.		**CLOSED**	**0**	**Yes**
MIKE11 Water levels	The HGL plot in Figure 4-9 and Figure 4-10 shows that the 100-year ARI event water levels are reduced in most stretches of the stream due to the stream widening and larger culverts. Two sections have increased in water level. • The piped section in and upstream of Pinehaven Reserve. This is unexpected, as we assumed that there were no changes in this reach and do not expect it to be affected by the stream works. Is the modeller able to explain this? • A short section at Ch.1600. Near 2A Freemans Way (as stated in the executive summary of the Flood Hazard Assessment report) •	The piped section in Pinehaven Reserve was not checked because it is outside the area of main channel works. Differences in water level do not affect containment within the channel (as this is a piped section) or habitable floor flooding (as the area is a reserve). Near 2A Freemans Way there are no channel works proposed. The differences are thought to be due to a combination of channel works upstream directing more flow into this reach instead of entering the Birch Grove area and a slight change in timing of the flood peak.	Uncertainty over the cause of the raised water levels through the reserve is not expected to adversely affect the relative effects of the stream works, and so does not materially affect the 'fit for use' categorisation. However, the Reviewer notes that the issue is not resolved and so the issue will remain open **OPEN (see June 2020 update)**	**2**	**Yes**

Item Checked	Findings & Comments	Modeller's response	Reviewer close out comments	Rating	Fit for use
MIKE11 Water levels continued	**Update June 2020** • Water levels have again increased in the piped section but as agreed not likely to effect water levels in the area for the proposed works The HGL plot shows some minor difference from the last design iteration- Increase in water level at CH.1917, this seems to be the effect of the blockage		**CLOSED**	**1**	**Yes**
MIKE21	Downstream of Pinehaven reserve there is a significant reduction in flood levels. These are replicated in both the M11 water levels and the M21 results (Figure 4-11).	Noted; agreement with comment.	**CLOSED**	**0**	**Yes**
	Update June 2020 Figure 4-11 shows an increase in flood depth (as noted in the Flood Hazard Assessment) around 48-50 Blue Mountain Rd. Other than that, the difference shows a general reduction in flood depth. Dark Blue areas are areas that flood in the current (base) model and don't in the Design model. See comment regarding this issue in the Flood Hazard Assessment review.		**CLOSED**	**1**	**Yes**

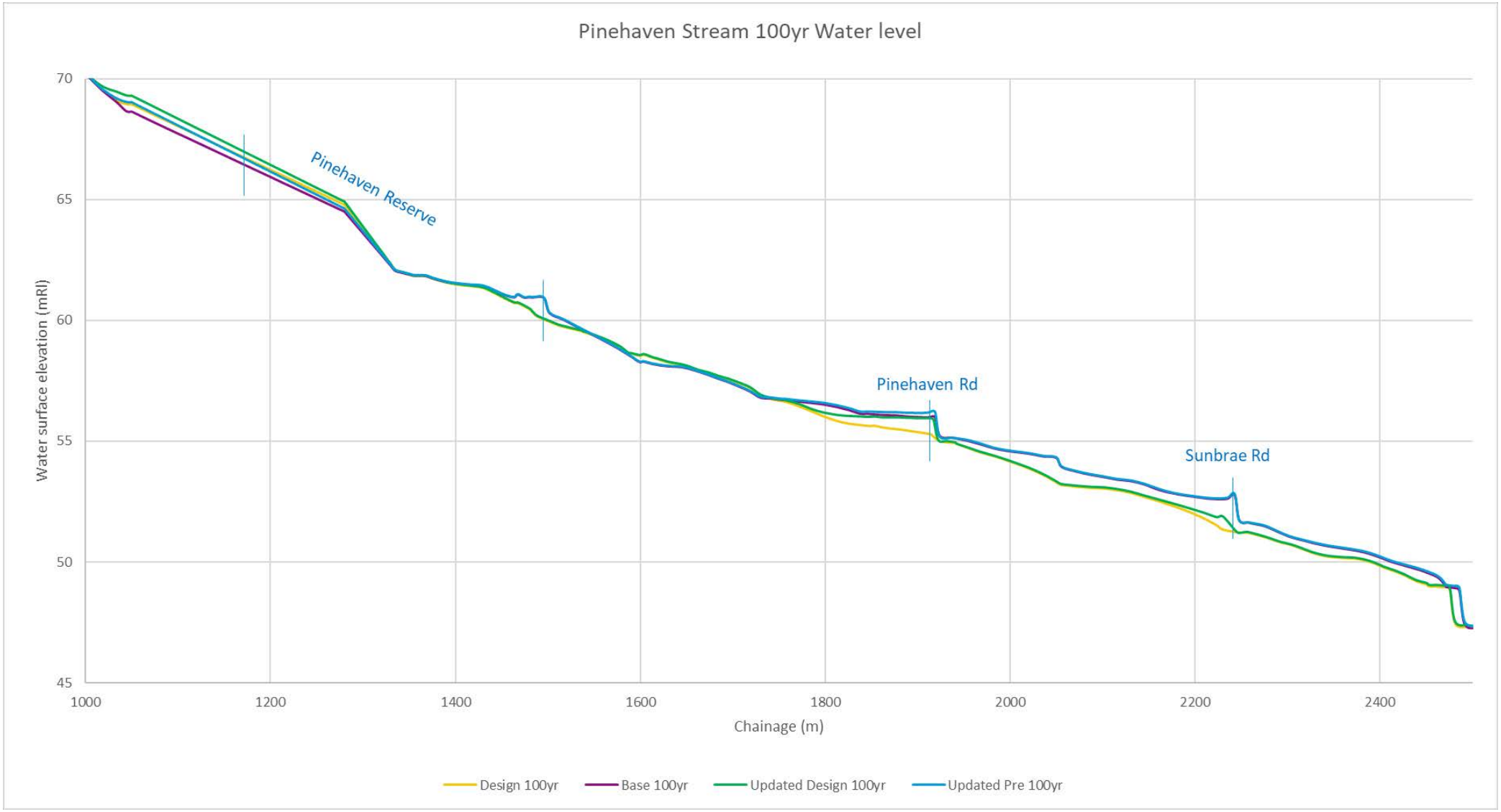


Figure 4-9 100-year ARI long-section

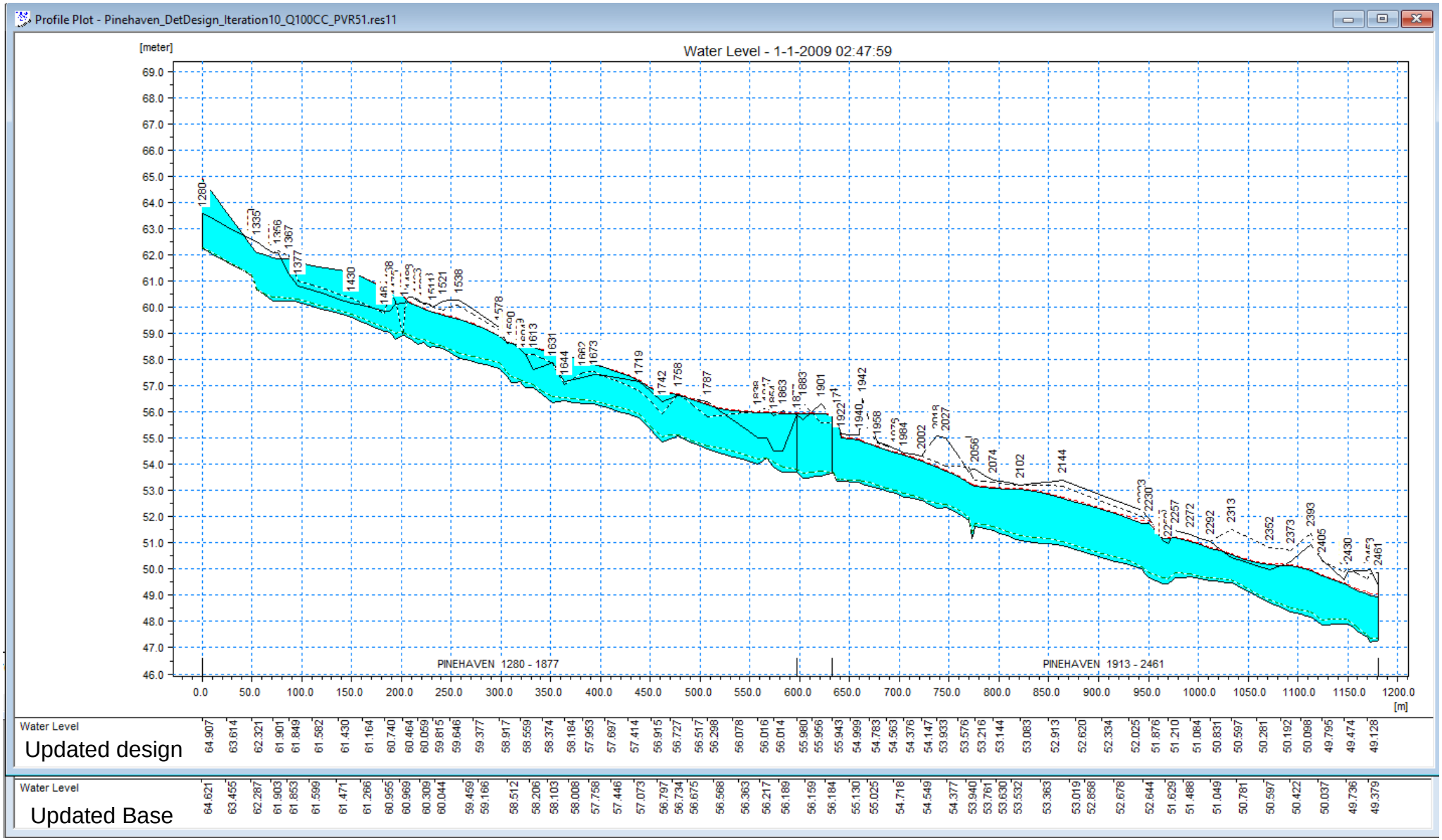


Figure 4-10 100-year ARI hydraulic grade line (Clip from MIKE View)

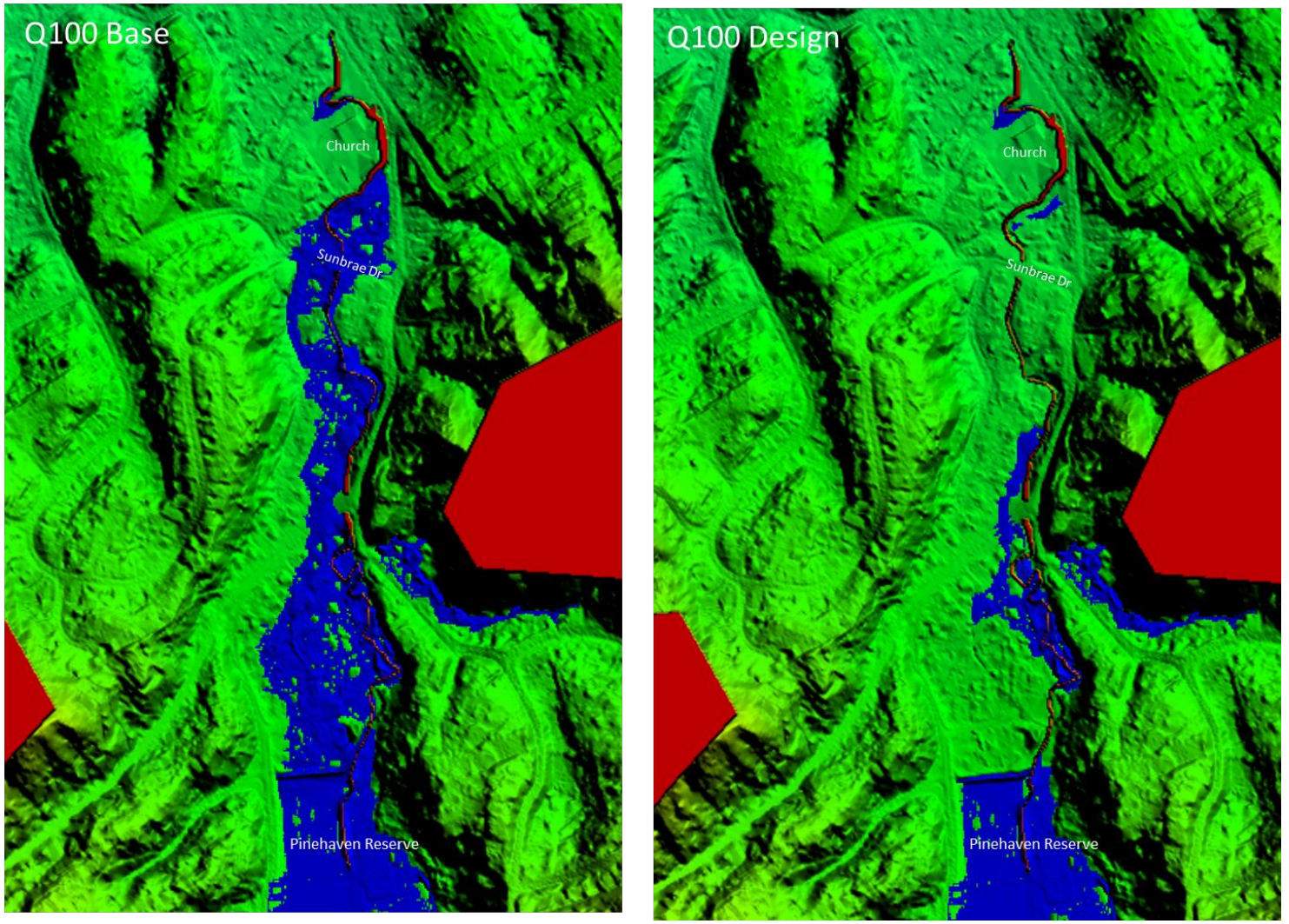


Figure 4-11 100-year ARI MIKE21 (2D) flood extents.

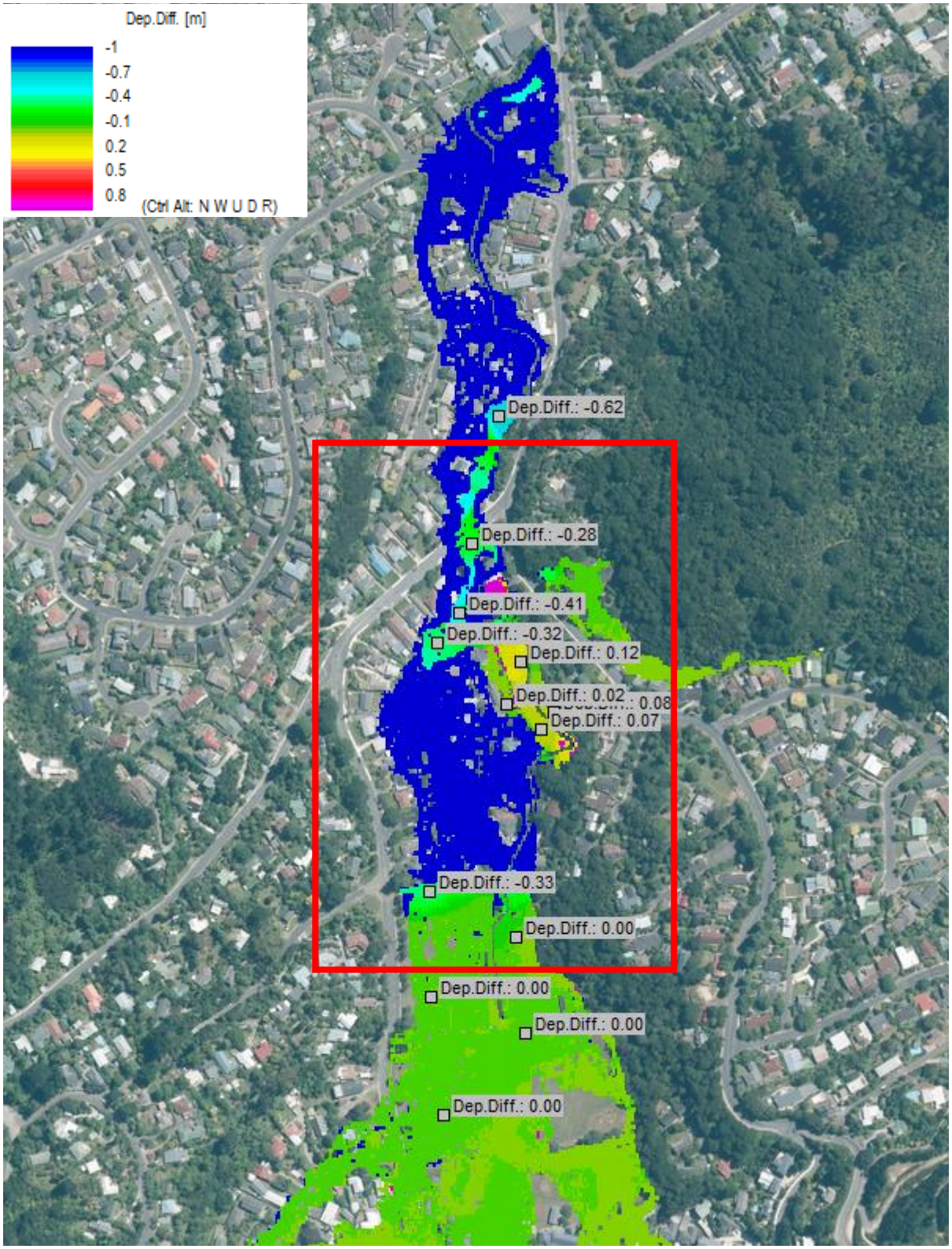


Figure 4-11 Q25 flood depth difference. Negative depths represent a reduction in flood level, Positive values represent an increase in flood depth (zero is no change).

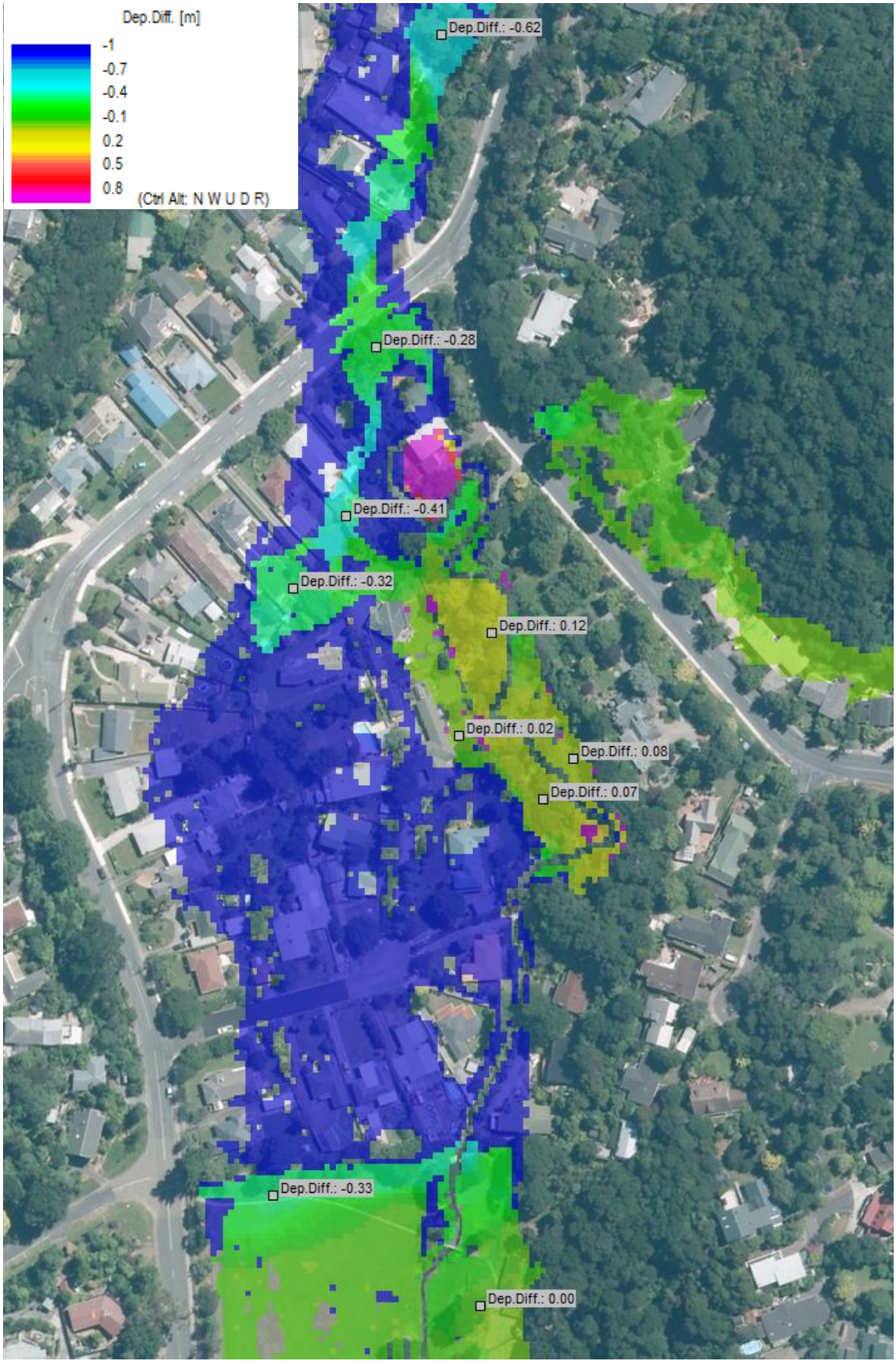


Figure 4-11 Zoom in of Q25 flood depth difference. Negative depths represent a reduction in flood level, Positive values represent an increase in flood depth (zero is no change).

5 Commentary on reports

Prior to the November 2019 review, Beca were provided with three reports to provide background and updated information on the recent flood modelling. Our comments on these three reports are made in Sections 5.1, 5.2 and 5.3. These comments have been retained for completeness, but have been superseded by the comments in Section 5.4, which is the review of the June 2020 update to the Flood Hazard Assessment Report.

5.1 Draft Flood Modelling Report (Jacobs 2017)

This report describes the updates to the 2009/2010 Existing Case Model to incorporate new LiDAR and channel cross-section information, and the modelling of preliminary design options as they were in 2017. We note that the channel cross-sections were only updated for the reach between Pinehaven Reserve and Whitemans Road; the reach that is to be subject to stream widening.

The changes to the Existing Case Model are reported to have generally reduced peak flooding depths and levels (and the number of properties affected by flooding), and explained in Section 5 of the report as:

> *"The difference in flooding depths can be explained by two factors. Firstly, the smaller grid size which means the Updated Existing Case Model incorporates increased definition of both low-lying and raised areas. Secondly, the cross-sections from the 2015 survey provided more channel capacity in some locations which reduced the overland flooding."*

We note that:

- The two improvements to model definition are in line with recommendations made in Beca's 2015 audit of the flood modelling and mapping (Beca 2015).
- The report confirms that the hydrological inputs were unchanged from the 2009/2010 Existing Case Model, which meant that the allowance for climate change was based on MfE's 2008 guidance.
- An assessment of freeboard was not included in the report, though it is noted that this is to be carried out at detailed design stage.
- The 2017 preliminary designs for the Pinehaven Road and Sunbrae Drive culverts described in the report are different from the culvert designs presented in 2019.
- The Preliminary Design of channel widening, and replacement road culverts, reduces the number of properties affected by flooding. The modelling described does not consider the effect of modelling the culvert upgrades in isolation.
- Though two years old, the report is flagged as Draft. We assume that a Final version of the report has not been produced.

Though we have not reviewed the 2017 model, the report provides a fair reflection of the updates noted in the 2019 version of the Existing Case Model. We did not note any obvious errors in the report.

June 2020 update – An updated version of the Flood Modelling Report has not been provided for review.

5.2 Flood Hazard Assessment Report (Jacobs 2019a)

The Flood Hazard Assessment Report does not describe the changes in the modelling that are described in Jacob 2017. Rather, the report summarises the objectives of the Pinehaven Stream Improvements Project, the proposed works, the results (in terms of flood levels and properties affected by flooding) and an assessment of the effects. This is appropriate for the target audience of the report, but does require the report to reference a current version of the Flood Modelling Report.

We note that the results and effects reported are for the stream improvements including both the channel widening and replacement of road culverts. However, the road culverts are being consented separately,

which could result in different effects to the combined works. We raised this with Jacobs at a meeting to kick-off this review process, and it is partially addressed in the Section 5.3.

We did not note any obvious errors in the report.

5.3 Memorandum - Addendum to the Flood Hazard Assessment Report (Jacobs 2019b)

In response to a question raised (during the initial November 2019 phase of this model review) about the ongoing use of hydrology incorporating MfE's 2008 guidance on allowances for climate change, Jacobs provided an addendum to the Flood Hazard Assessment report on 27 November 2019[4]. This related to increasing the catchment flows by +20% rather than +16% to allow for climate change to represent MfE's 2018 updated guidance[5] on climate change. Separately, the addendum also summarises the effects of only upgrading the two road culverts (and not the associated channel improvements), given that these are subject to a separate consent application.

5.3.1 Increase allowance for climate change

A summary of the reported difference in water levels is provided by the following two bullet points from Page 2 of the addendum.

- *"For the 25-year flood event (4% AEP) the maximum increase in water level is 0.3 m and the median increase is 0.02 m. The highest increases in peak water level occur immediately upstream of Pinehaven Road. The maximum increase in velocity is 0.07m/s and the median increase is 0.02m/s.*
- *For the 100-year flood event (1% AEP) the maximum increase in water level is 0.11 m and the median increase is 0.03 m. The highest increases in peak water level occur at the lower end of the works, from about 20m upstream of the Bypass Inlet and downstream in the Lower Pinehaven Stream reach. The maximum increase in water level occurs at the inlet to the main Pinehaven Stream culvert in Whitemans Road. The maximum increase in velocity is 0.07m/s and the median increase is 0.03m/s."*

While those show the effect of increasing the flows on water levels and velocities, Table 2-1 on page 3 of the addendum shows that there is no increase in "habitable floor polygons" inundated in the 'with culvert and stream works' modelled scenario when the climate change allowance is increased from +16% to +20%.

While the results reported in the addendum are in line with what might be expected, Beca has not reviewed the model run files used to generate the results reported in the addendum, and the reported results pre-date the agreement on appropriate culvert roughness (n=0.020) described on page 16 of this report.

5.3.2 Installation of culvert only (no stream works)

Tables 2-2 and 2-3 on pages four and five of the addendum summarise the change in water levels due to installation of the culverts only. Water levels generally increase and at the end of page 10 of the addendum it is acknowledged that the freeboard required for the Sunbrae Drive culvert is not met in the interim (culvert only, no stream works) scenarios. Mitigation for this is proposed in the third bullet point on page 8 of the addendum.

- *"We note that there are several methods for mitigating the increased water levels downstream. For the Sunbrae Drive culvert we propose to restrict the flow into the culvert to pre-upgrade rates by installing a temporary steel plate across part of the inlet. This steel plate would be removed once the channel*

[4] A draft of the addendum had been provided on 14 November 2019, and commented on in the 21 November 2019 version of this report.

[5] ***Climate Change Projections for New Zealand – 2nd Edition***, MfE reference 1385. September 2018. https://www.mfe.govt.nz/publications/climate-change/climate-change-projections-new-zealand

upgrades downstream were in place. We request that conditions around the design of the steel plate, its maintenance and the timing of its removal are included in the consent. "

As with the updated climate change scenarios, Beca has not reviewed the model run files informing these results and the model runs do not account for the revised culvert roughness.

June 2020 update – The installation of the 'culverts only' has not been considered in the June 2020 version of the Flood Hazard Assessment (FHA) Report, and so the relative effects described above are the most recent explanation provided. Model files and results for this option have not been reviewed as part of the June 2020 update to this report.

5.4 Flood Hazard Assessment Report (Jacobs 2020)

The table below contains Beca review comments on the June 2020 version of the Flood Hazard Assessment (FHA) Report prepared by Jacobs, and notes any responses to comments raised regarding the 2019 reports. A similar rating system to that for the model review is used, with a column a column titled 'Action' indicating what response is required for the item to be closed. In some cases that will require changes to the report, while in others (especially where differences between the November 2019 and June 2019 reports are noted) it might be appropriate to provide an explanation that is included in the **Modeller's response** column below, and not in the FHA report.

Report item or section	Findings & Comments	Modeller's response	Reviewer close out comments	Rating	Action
Page 5 Executive summary and Table 2 Section 6	Why are there fewer affected habitable floors for the base case model run reported in the June 2020 FHA report than in the November 2019 Addendum. The changes in the design results are explained, but not why there is a change in base case.			2	Explain
Pages 9 Figure 1	The image is poor quality and too small to be read clearly			1	Improve
1.5	Climate change. The report states that the modelling included allowances for climate change based on MfE's 2018 ***Climate Change Projections for New Zealand*** report, whereas it was agreed that flows should be increased by 20%, which is more in line with Wellington Water Limited's 2019 ***Reference Guide for Storm Hydrology***. This should be corrected in the text.			2	Update
Pages 11 Figure 2	The image is poor quality and too small to be read clearly			1	Improve
Page 12 Section 2.1.2	▪ Typo - Replace "with" with "within" in first paragraph.			1	Correct
	▪ The water level at Sunbrae Drive is referred to. Is that upstream or downstream of the culvert?			1	Confirm

Report item or section	Findings & Comments	Modeller's response	Reviewer close out comments	Rating	Action
Page 12 Section 2.3.1	Note that since the November 2019 report, that the text has been altered to report that the flood extents are reduced, rather than that the 4% AEP flow is contained in the channel. Is this due to a change in the model parameters, a correction of the text, or a change in the design modelled?			1	Confirm
Page 12 Section 2.3.2	1st paragraph. Checking model results confirms that this occurs in the base and design cases but flooding is less in the design case. Therefore, comment required on how this meets (or not) the statement on page 9 (below Figure 1) about the *"increasing the size of the river channel to convey the 4% AEP flood entirely within the stream…".*			2	Clarify
Section 2.3.2 and Section 4	We note that Table 1 in Section 2.3.2 from the November 2019 report has been removed. This table summarised changes in flood depths and area at two properties. To some extent, it has been replaced by a new Table 1 in Section 4 that summarises changes in water levels between the current and previous modelling. However, it is not directly possible to compare the changes between baseline and design cases			1	Include
Pages 14-16 Section 3	The onus of the explanation in this section is on inundation of habitable floors, rather than changes in flood depth, extent or level. As with the previous comment, it would be useful to see a comparative table of flood levels.			1	Include
Page 17 Section 4	It is unclear whether all the changes in model performance are the differences between the baseline and design cases or between previous and current design cases. Simple clarification needed.			1	Clarify

Report item or section	Findings & Comments	Modeller's response	Reviewer close out comments	Rating	Action
Page 18 Section 5	The explanation for, and results of, modelling the 10% AEP event do not add anything to the report. Beca's understanding of the purpose of modelling the 10% AEP event was to compare the model performance against the 8 December 2019 flood event. No evidence is provided to confirm the performance of the model. Unless this section is expanded, it should be removed, and explanation provided by the modeller at the Hearing.			3	Expand or remove
Page 19 Section 6	Last bullet point of commentary on 4% AEP results ends with "…" suggesting an unfinished sentence or section. Needs to be checked.			1	Check
	Table 2 is split across two pages. For clarity it should be contained on one page.			2	Edit
Page 20 Section 6	In the 3rd bullet point, it is reported that it is acceptable for flood levels to increase at 50 Blue Mountains Road and 2A Freemans Way as no additional habitable floors are flooded. Is the acceptability of this a decision for planners rather than modellers?			1	Check
Section 6	Either in Section 6, or elsewhere in the report, it would be useful to have a table (similar to Table 1) summarising the change in water levels between the baseline and design cases.			1	Consider
Other item	The November 2019 Addendum report included an assessment of the effects on flood risk if the culverts were upgraded in isolation of the stream works. This is not included in the updated FHA report. Is this still required?			2	Include, if required

The review raises some questions that need resolving, and suggestions to improve the readability or presentation of information. With the exception of the inadequate section on the 10% AEP model run and comparisons to the 8 December 2019 flood, the report is a fair reflection of the outcomes of the flood modelling undertaken to inform the proposed Pinehaven Stream works. See the following section for a review as to whether the June 2020 modelling and FHA report met the scope defined in April 2020.

6 Review against 'Flood Model Re-run Scope

In agreement with GWRC and Beca, Jacobs confirmed the scope of the June 2020 modelling on 22 April 2020.

The model re-run scope items are listed in the table below, along with a colour-coded indication of whether the scope item was completed; green for done, and amber for items not included or incomplete.

Scope item	Review comments
The Pinehaven flood model will be re-run as follows:	
1) The "with project" model should include:	
a) The removal/addition/replacement of local access bridges proposed (as described in 25 March 2020 letter to the Councils)	Representation of bridges not changed between 2019 and 2020 models. Difference expected.
b) Bank works at 54 and 56 Whitemans Road (if proposed);	No explicit explanation provided of proposed changes.
c) Culvert roughness of n=0.020;	Done
d) Climate change allowance of 20% increase in extreme rainfall events;	Done
e) 20% blockage;	Done
f) No allowance for freeboard. i.e. the reported results are the modelled water levels and flood extents, and dynamic freeboard has not been applied	Done
2) The "without project" model should include:	
a) No physical works or changes to the stream environment;	Done
b) Culvert roughness values from the FMP model;	Done
c) Climate change allowance of 20% increase in extreme rainfall event;	Done
d) 20% blockage;	Done
e) No allowance for freeboard.	Done
3) The "with project" and "without project" models should both be run for the:	
a) 1:10 year ARI event; and	Model and results not provided or reported
b) 1:25 year ARI event; and	Done
c) 1:100 year ARI event.	Done

Scope item	Review comments
Output from the Flood Model re-run:	
As per the email from James Beban dated 15 April 2020, the output from the Flood Model re-run will be as follows:	
4) An updated flood hazard assessment which:	
a) Describes the changes to the flood model, including how the removal, addition, or replacement of local access bridges is undertaken as this is a change in modelling approach reflecting the property-scale (rather than catchment-wide) nature of this use of the Pinehaven model.	No description included in the updated FHA report of how the local access bridges have been modelled to represent how the effect on flood risk of changes in the number of bridges can be quantified.
b) Addresses the effects of the changes to the flood model (including maps showing flood levels and extents and assessment of the level of effects on all properties where there is an increase or decrease in flood level/extent) for the 1:25 year and 1:100 year ARI events. Where there is an increase in flood water depths, clarification on where on the properties this flooding occurs. If the increased in flood depths occurs around any respective dwelling, then property floor levels relative to flood depths should be provided to allow for the impacts on these dwellings to be determined.	▪ Flood maps are at too small a scale to allow property-specific effects to be assessed. ▪ No table provided of habitable floor levels and flood levels to allow assessment of site-specific effects.
Provision of the information described in 1 to 4 above, will provide the basis to be able to provide clarification to the following enquiries.	
5) Confirmation on where the increased flood depths on 9 Birch Grove and 7 Pinehaven Road are occurring (for example, in the river channel or on the property) in the 1:100 year event and whether these increased depths affect the dwellings on these properties. If so, what are the resulting effects on the dwellings?	Written description provided (FHA page 13), but no site-specific mapped output or annotation of overland flow paths.
6) Clarification on where the increased flood depths on 54 and 56 Whitemans Road are occurring in the 1:100 year event and whether these increased depths affect the dwellings on these properties. Clarify what works at the top of these banks is occurring to protect these properties as reference in the flood hazard assessment. Will these have downstream effects? Do these require resource consent? Should they be included in the flood model?	Increase in level reported (FHA page 15), but not in comparison to habitable floor level.
7) If the modelling indicates increased flooding occurring on any other properties, the extent and depth of flooding will be reported, as will whether these increased depths affect the dwellings on these properties.	As per item 5), the FHA provides written descriptions of flood increases, but no site-specific mapped output or annotation of overland flow paths, or comparison to habitable floor levels.
8) Present the 1:100 year flood information in the same table format as is the case for the 1:25 year event, namely flood levels. This allows for comparison between the events to be made. It would also allow for some explanation on what the increased flood depths occurring in the 1:100 year flood event are acceptable.	Table 1 (4% AEP flood depths) removed in June 2020 FHA report. No equivalent table provided for flood levels for either the 4% or 1% AEP in the 2020 FHA report.

Scope item	Review comments
9) Comment on the results of the 1:10 year (including climate change) flood modelling in comparison to observed flooding resulting from the December 2019 flood event.	FHA Section 5 makes passing reference to the 10% AEP event and makes two high level statements about performance. The opportunity has not been taken to compare model results against photographs and observations taken during the event (including those provided by Submitters).
10) Confirmation on whether any discussions have occurred with the owners of 9 Birch Grove or 7 Pinehaven Road regarding their increased flood depths and what their comments were.	There is no reference to any discussions or conversations with property owners reported in the FHA report.

7 Our findings

1. The model represents a build that was common (and still is in some situations) when the model was built ten years ago. It is a standard grid type model, with reasonably large catchments and no pipe network. If a model were built of the catchment today it would likely have model detail included outside of the stream, including the piped stormwater network. However, that does not mean that the model is not fit for purpose.
2. The stream now has a reasonable amount of detail and has been surveyed in critical locations. Changes have been made to the Design model but without the design drawings we cannot say if they have been represented and modelled correctly, and whether sufficient freeboard has been provided to the top of the stream bank. It is appropriate that the model results are reported without the addition of freeboard.
3. The changes to the model do represent a reduction in flood levels within the catchment but only if the design matches that represented by the model.
4. We note that the model results do not include freeboard. This is noted in the draft modelling report (Jacobs 2017) and should be recorded on outputs to minimise the risk of confusion with other flood extent maps and water levels for the Pinehaven catchment.
5. The modeller has provided acceptable responses to the issues raised by the two draft versions of the review (circulated on 11 and 21 November 2019, and combined into the December version of this review document). While some issues remain categorised as level 2, they do not prevent the model for being used for this project.
6. The one issue that prevented the model being considered fit for purpose after the 21 November issue was the roughness value used in the two culverts. Subsequent discussions between Jacobs modeller and the Reviewer resulted in agreement that a roughness value of n=0.020 should be used, and that results based on this should be used to inform the consent application. Increasing the culvert roughness value would be expected to increase water levels, and so checks would be required to confirm whether water level design criteria have been met.

   We have reviewed this issue in the June 2020 version of the flood model, and are satisfied that the culverts are modelled appropriately.
7. The Draft Flood Modelling Report (Jacobs 2017) and Flood Hazard Assessment Report (Jacobs 2019a) provided good descriptions of the modelling undertaken and flooding results. Beyond the issues raised in the model review (Section 4) there are no significant issues raised by the reports.

   However, the review of the June 2020 updated Flood Hazard Assessment Report raise some questions that need resolving, and suggestions to improve the readability or presentation of information.
8. The Addendum to the Flood Hazard Assessment Report (Jacobs 2019b) addresses an interim solution to accommodating MfE's 2018 guidance on climate change. However, we recommend that the model hydrology is updated when resources allow. Information provided in the addendum acknowledges that the two road culverts are to be consented separately from the other stream works, and describes the effects of upgrading the culverts in isolation. The results presented in the addendum pre-date the agreement to revise the culvert roughness (Item 6).

   The June 2020 updated Flood Hazard Assessment Report supersedes the Addendum to the Flood Hazard Assessment Report (Jacobs 2019b). However, no commentary is provided on the effects of the culvert works being undertaken in isolation, and so the explanation provided in the Addendum is the latest information on this issue.
9. The review of the June 2020 information provided against the April 2020 scope (Section 6) shows that while the modelling generally meets the scope, the RFA report does not include all the information required by the April 2020 scope; changes in how access bridges are modelled and reported is not included, and the reporting of the 10% AEP is inadequate. See Section 6 for more information.

8 Property scale flood assessment

Below is a summary of the effects of the proposed works at each property, gleaned from the information provided in the June 2020 FHA report. Given the modelling and reporting scope agreed in April 2020, we would have expected the FHA report to contain a similar summary to this.

Property	Flood	Effects of the proposed works (from updated FHA).	Implications
▪ 2 Pinehaven Road ▪ 4 Pinehaven Road ▪ 40 Blue Mountains Road ▪ 38A Blue Mountains Road ▪ 38B Blue Mountains Road ▪ 36 Blue Mountains Road ▪ 34 Blue Mountains Road ▪ 32 Blue Mountains Road	4% AEP (25-year ARI)	Currently, flooding of properties occurs due to a spill over Pinehaven Road at a low point immediately to the west of the Pinehaven Road culvert. The FHA Section 2.2.2 advises that there will be a 0.62 m decrease in flood levels but does not report where in the reach this occurs or the effect on flood extents on these properties, though from the small scale flood maps there is a reduction in area. FHA maps show some residual flooding on these properties after the works, which is close to building footprints.	Flood levels decrease so works provide net benefit.
	1% AEP (100-year ARI)		
▪ 48 Blue Mountains Road	4% AEP (25-year ARI)	Ground levels will be reduced which will result in increased depth and extent of water.	Increase in flood risk to the site and property, but property is owned by GWRC, so negative impact of works accepted.
	1% AEP (100-year ARI)	Increase in flood depth at the habitable floor	
▪ 2A Freemans Way	4% AEP (25-year ARI)	Floodplain area net increase of 12 m^2. Maximum increase in water levels of 0.26 m. FHA section 2.3.2 reports flood levels to be below building level	Increase in flood levels/extent is a negative impact of the works, but habitable floors reported as not affected in the 1% AEP event.
	1% AEP (100-year ARI)	No commentary in the FHA on the effects in this event.	
▪ 50 Blue Mountains Road	4% AEP (25-year ARI)	Increase in flood extent and water levels at south of site and reduction at north. Floodplain net increase of 184m^2. Long (100 m) frontage on to the river, so 184 m^2 increase in flood extent, equates to <2 m increase in floodplain width. Flood water levels are higher by an average of 0.02m.	Increase in flood levels/extent on southern part of the property is a negative impact of the works, but habitable floors reported as not affected in the 1% AEP event.
	1% AEP (100-year ARI)	Changes in levels and flood extents not reported in the FHA	

Property	Flood	Effects of the proposed works (from updated FHA).	Implications
▪ 7 Pinehaven Road	4% AEP (25-year ARI) and 1% AEP (100-year ARI)	First part of FHA section 3.3.2 is confusingly worded, but the interpretation is that the proposed works will reduce depth and extent of flooding overall in both the 4% and 1% AEP events. However, 8 m^2 (in the 45 AEP) and 12 m^2 (1% AEP) of land near boundary of 50 BMR will have an increase in peak water level of up to 0.10 m. Elsewhere on the site, the flood levels and extents will reduce. Floor levels have been surveyed and survey results show that floor levels will be 0.7 m above peak water level once the proposed works are completed so there is no effect on habitable floor flooding.	Despite a small part of the site seeing an increase in flood levels and extent post-works, flood levels remain below habitable levels. Overall the implications of the works are beneficial.
▪ 9 Birch Grove	4% AEP (25-year ARI) and 1% AEP (100-year ARI)	Overall, the proposed works will reduce depth and extent of flooding except 20m^2 of land will have an increase in peak water level of up to 0.14m (near 50 BMR). Design water levels are higher than baseline for the habitable floor at this property by up to 0.06m in a small area (4m^2) of new flooding. Floor levels have been surveyed and survey results show that floor levels will be 0.55m above peak water level once the proposed works are completed so there is no effect on habitable floor flooding.	
▪ Pinehaven Road at culvert	4% AEP (25-year ARI) and 1% AEP (100-year ARI)	Flooding of Pinehaven Road due to the spill from the upstream side of the culvert will be up to 0.05 m (4% AEP) and 0.12 m (1% AEP) deep at the crown of the road in the post-works case. For both events this is a reduction of 0.21 m compared to the base case. The length of the road that will be flooded is 26m in the 4% AEP event.	Depth of flooding reduced due to works, so benefit to road usability. Road owned by UHCC.
▪ 54 Whitemans Road ▪ 56 Whitemans Road	4% AEP (25-year ARI) and 1% AEP (100-year ARI)	Flood level increases of 0.03 m at No.54 and 0.04 m at No.56 in the 4% AEPO event, but flow remains in channel. Habitable floor levels not affected. Habitable floor levels of properties not flagged in FHA report as being flooded in the 1% AEP event, and flood extent map indicates that flow remains the channel.	Though minor increase in flood levels, habitable floors are not affected.

9 Conclusion

The model is considered generally fit for use to describe the changes in flood level and confirm a reduction in the number of properties affected by flooding. However, the model and information provided in the Flood Hazard Assessment (FHA) report do not fully meet the scope of the modelling and reporting agreed in April 2020.

The effect of the limited of information provided in the FHA report is that information on the effects of the works on individual properties has been extracted directly from the model results in some cases. However, as reported in Section 8, the effects of the works on individual properties is generally positive with no indication that any additional habitable floors will be affected by flooding. The onus is on the applicant to confirm this.

10 Use of this report

This report has been prepared by Beca on the specific instructions of our Client. It is solely for our Client's use for the purpose for which it is intended in accordance with the agreed scope of work. Any use or reliance by any person contrary to the above, to which Beca has not given its prior written consent, is at that person's own risk.

Should you be in any doubt as to the applicability of this report and/or its recommendations for the proposed development as described herein, and/or encounter materials on site that differ from those described herein, it is essential that you discuss these issues with the authors before proceeding with any work based on this document.

Appendix 7 – Wildlands Ecological Peer Review

PINEHAVEN STREAM IMPROVEMENTS - REVIEW OF TERRESTRIAL ECOLOGY SECTION

Keely Paler and Nick Goldwater
June 2020

INTRODUCTION

A review of terrestrial ecological effects and mitigation proposed for improvements to be undertaken along Pinehaven Stream, Upper Hutt, was undertaken by Wildland Consultants in October 2019. Questions resulting from that review were included in a Section 92 request to the applicant's consultants: Forbes Ecology, Aristos Consultants, and Jacobs NZ. A subsequent review of the Section 92 response was provided by Wildland Consultants in April 2020. All remaining ecological concerns are addressed in this report.

TERRESTRIAL VEGETATION

Clearance of vegetation

Initial concerns within the original Wildlands review focused on the lack of vegetation descriptions within the clearance footprint (outside of the 13 significant indigenous trees identified) and a lack of information regarding the quantum of each vegetation type to be removed.

The Section 92 response report prepared by Jacobs (hereby known as the Jacobs response report) included a description of existing vegetation (prepared by Dr Paul Blaschke). These vegetation descriptions are divided into the three reaches of the stream and within each reach, there is a range of indigenous and exotic plant species, with varying degrees of ecological significance. The map provided in Appendix G of the Jacobs response report does not provide any further clarity as to what vegetation types are present along the stream.

Since the original Wildlands review, Alison Davies has clarified that "*approx. 0.6ha of vegetation will be disturbed and replanted*". Whilst this resolves some of the uncertainty in regards to the quantity of vegetation removal which is proposed, there is still a lack of clarity in regards to exactly what is being removed and it remains unclear if the 0.6 hectares of vegetation to be disturbed and replanted comprises primarily exotic shrubberies, grassland, indigenous trees, revegetation plantings, or some other vegetation type entirely. Due to this lack of certainty, we must assume that the vegetation to be removed is primarily indigenous, as this comprises a so-called 'worse-case scenario'. Calculation of mitigation ratios must therefore reflect this assumption.

Measures to address adverse ecological effects

Initial concerns raised in the original Wildland Consultants review (2019) focused on the methodology used to calculate the amount of mitigation planting required, and the suitability of the plant species selected for the locations in which they will be planted.

As the significant indigenous trees are relatively discrete across the works footprint, they are therefore unlikely to include a typical forest structure. On the basis of this, it is appropriate to

use replacement planting ratios for the loss of individual trees, acknowledging the fact that offset ratios are normally calculated using the total area to be removed. The proposed replacement planting ratios are adequate to address the adverse ecological impact of removing the identified significant trees.

To compensate for the loss of 0.6 hectares of 'other riparian vegetation', it is appropriate to include a consent condition requiring a minimum compensation ratio of 3:1. We consider that this ratio would be sufficient to compensate for the loss of all of the described vegetation types.

Dave Compton-Moen has clarified that "*The mitigation planting is all to offset the loss of planting."* Whilst it is unclear exactly what this means, we are led to believe that the 62 trees required for replacement planting, due to the removal of black beech, kōwhai and kahikatea, are in addition to the 0.618 hectare to be replanted along the riparian margin of the Pinehaven stream following the works.

All replacement and compensation planting should be included within and guided by a Landscape Plan ('LP'). This plan shall be prepared by a suitably qualified and experienced person and needs to be required as a condition of consent. It is also appropriate to include a consent condition that limits the planting of taller tree species in close proximity to houses, as these species are likely to become undesirable to future owners of these properties.

FAUNA

Lizards

The following consent condition is to be included:

"*A Lizard Management Plan shall be prepared by a suitably qualified and experienced ecologist and shall be submitted to the CMO at least 15 Working Days prior to Commencement of Construction for certification that it meets the requirements of this condition. The purpose of the LMP is to avoid, remedy or mitigate any potential adverse effects of the Project on lizards. The Lizard Management Plan must:*

a) Describe the methodology for survey, salvage, transfer and release, including the identification of potential habitats for survey and planned and opportunistic relocations;
b) Identify release sites and confirm any works necessary to protect such sites from predation or disturbance; and
c) Be updated to achieve consistency with any authorisation given by the Director General of Conservation under section 53 of the Wildlife Act 1953 where any such authorisation is required."

We consider that this proposed consent condition is appropriate to ensure there are no further outstanding ecological issues in regards to lizards.

Bats

The following consent condition is to be included:

"*Prior to vegetation clearance, automatic bat monitoring devices shall be deployed for at ~~least~~ 15 consecutive days~~a month~~ in suitable weather conditions (during spring and summer months*

where temperatures are above 10 degrees) targeting larger mature trees, including the black beech trees proposed for removal in the Pinehaven Stream corridor. Should monitoring detect the presence of bats then, prior to vegetation clearance, a ~~CEnvP~~ Department of Conservation a~~A~~ccredited ecologist with bat detection experience must survey the clearance area for the presence of bats and large trees for the presence of roosting bats. Should roosting be detected, a pre-tree felling protocol (PTFP) must be prepared by the accredited bat ecologist in consultation with the Department of Conservation for the purpose of avoiding the injury or mortality of roosting bats. Any tree removal within the area identified as potentially containing bats must be undertaken in accordance with the PTFP."

We consider that this proposed consent condition is appropriate to ensure there are no further outstanding ecological issues in regards to lizards.

Birds

Concerns were raised in the initial review that vegetation removal would impact breeding indigenous birds, and would provide a temporary but significant loss of bird habitat in the local area.

To avoid any negative impact of vegetation removal on breeding birds, the follow should be included as a condition of consent: "*Prior to the commencement of any vegetation clearance within each construction stage, a ~~CEnvP Accredited~~suitably qualified ecologist with avifauna experience must inspect the Project site for the presence of any protected indigenous bird species nesting. No vegetation clearance may occur within 4 metres of any identified nest, until the ecologist confirms that chicks have fledged."*

The following information has been provided by Alison Davies in regards to concerns regarding the loss of bird habitat in the works footprint.

"*The area of disturbed vegetation represents 0.06% of potentially available habitat within the 2km radius.*"

"*Insectivorous bird species including grey warbler, fantail, morepork and silvereye (also forage on fruit and nectar) are dependent on more localised sources of food, timing breeding when insect numbers are higher in the warmer summer months. During the non-breeding season grey warbler, fantail and silvereye will form flocks moving relatively short distances in search of food. Taking a 200m buffer around the area of stream works, approx. 0.7ha of indigenous vegetation is available as habitat for these species, and a further estimated 13ha of garden vegetation which is utilised by fantail and silvereye, and to a lesser extent by the other bird species. The disturbance to the estimated 0.6ha of vegetation within the area of stream works represent 4.4% of available habitat within the 200m buffer.*

In my view loss of foraging habitat for kereru and tui, as well as indigenous insectivorous bird population would have insignificant effects, as there is adequate habitat in the locality for resident populations of these species to adjust to the temporary disturbance of a relatively small area of habitat."

In light of evidence indicating there is sufficient habitat and food sources in the area adjacent to the works, we are satisfied that the removal of *c*.0.6 hectares of vegetation along the

Pinehaven Stream would have no more than minor ecological impacts on local avifauna populations, subject to the proposed condition of consent.

PROPOSED CONDITIONS OF CONSENT

We propose that the following consent conditions should be included:

Landscape Plan

- A Landscape Plan ('LP') shall be prepared by a suitably qualified and experienced person and shall be submitted to the CMO for certification that it meets the requirements of these conditions at least 15 Working Days prior to Commencement of Construction. The purpose of the LP is to outline the requirements for the Project's permanent landscape mitigation works.

- The Requiring Authority shall undertake mitigation and enhancement planting in general accordance with the LP. The LP shall include details of proposed mitigation planting including as follows:

    a. Identification of vegetation to be retained, protection measures, and planting to be established along cleared edges, the riparian zone and new floodplain areas;
    b. Proposed planting including plant species, plant/grass mixes, spacing/densities, sizes (at the time of planting) and layout and planting methods;
        i. Planting of species that grow taller than 15 metres in height are not to be planted within 30 metres of any residential buildings
    c. The proposed staging of planting in relation to the construction programme, including provision for planting within each planting season following completion of works in each stage of the Project and detailed specifications relating to (but not limited to) the following:
    d.
        i. Weed control and clearance;
        ii. Pest animal management;
        iii. Ground preparation (topsoiling and decompaction);
        iv. Mulching;
        v. Plant sourcing and planting, including hydroseeding and grassing;
        vi. Successional/replacement planting; and
        vii. Details of a proposed maintenance and monitoring programme.

- The LP shall include a Reserve Reinstatement Plan for Willow Park. The Reserve Reinstatement Plan shall be prepared in consultation with Council and shall include the following details (as appropriate):

    a. Removal of structures, plant and materials associated with construction;
    b. Replacement of any boundary fences that require removal;
    c. Reinstatement of grassed areas;
    d. Replacement of trees and other planting;

e. Any structures proposed to be constructed; and
f. Details of way finding interpretation signage within and adjacent to the reserve.

- The Requiring Authority shall maintain and monitor the mitigation and enhancement planting for a minimum of 5 years following the planting being undertaken.

Terrestrial Ecology

- Where ecologically significant trees have been identified and are proposed to be removed the following replacement planting ratios will be used:

  a. Kowhai replacement ratio of 3:1

  b. Black beech replacement ratio of 10:1

  c. Kahikatea replacement ratio of 5:1

- All other vegetation types to be removed require a compensation planting ratio of 3:1.

- Seedlings used for replacement and compensation plantings must be sourced from the Wellington Ecological District.

- All seedlings for replacement planting should be of an advanced grade (>60cm height at planting) and planted into appropriate soil and microclimate conditions.

- Planting locations should be as close to the point of loss as practicable. Group plantings at Willow Park or Pinehaven Reserve would also be appropriate.

- Prior to the commencement of any vegetation clearance within each construction stage, a ~~CEnvP Accredited~~suitably qualified ecologist with avifauna experience must inspect the Project site for the presence of any protected indigenous bird species nesting. No vegetation clearance may occur within four metres of any identified nest, until the ecologist confirms that chicks have fledged.

- Prior to vegetation clearance, automatic bat monitoring devices shall be deployed for ~~at least a month~~15 consecutive days (as per Department of Conservation guidelines) in suitable weather conditions (during spring and summer months where temperatures are above 10 degrees) targeting larger mature trees including the black beech trees proposed for removal in the Pinehaven Stream corridor. Should monitoring detect the presence of bats then, prior to vegetation clearance, a ~~CEnvP~~ Department of Conservation a~~A~~ccredited ecologist with bat detection experience must survey the clearance area for the presence of bats and large trees for the presence of roosting bats. Should roosting be detected, a pre-tree felling protocol (PTFP) must be prepared by the accredited bat ecologist in consultation with the Department of Conservation for the purpose of avoiding the injury or mortality of roosting bats. Any tree removal within

the area identified as potentially containing bats must be undertaken in accordance with the PTFP.

- A Lizard Management Plan shall be prepared by a suitably qualified and experienced ecologist and shall be submitted to the CMO at least 15 Working Days prior to Commencement of Construction for certification that it meets the requirements of this condition. The purpose of the LMP is to avoid, remedy or mitigate any potential adverse effects of the Project on lizards. The Lizard Management Plan must:

    a. Describe the methodology for survey, salvage, transfer and release, including the identification of potential habitats for survey and planned and opportunistic relocations;
    b. Identify release sites and confirm any works necessary to protect such sites from predation or disturbance; and
    c. Be updated to achieve consistency with any authorisation given by the Director-General of Conservation under section 53 of the Wildlife Act 1953 where any such authorisation is required.

Appendix 8 – Traffic Assessment

Harriet Fraser Traffic Engineering & Transportation Planning

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18 November 2019

James Beban
Urban Edge Planning

Via email: **james@urbanedgeplanning.co.nz**

Dear James

Pinehaven Stream Improvements – Notice of Requirement
Review of Transportation Matters

Further to your request, I am pleased to provide below a review of the transportation matters arising from the Notice of Requirement for the Pinehaven Stream Improvements in Upper Hutt. I have made a site visit to the various access points and read the Pinehaven Stream Improvements Resource Consent Application and Notice of Requirement dated September 2019.

I understand that the project to which the Notice of Requirement (NOR) and resource consent application are for, addresses many of the physical works recommended in the Pinehaven Stream Floodplain Management Plan. The overview of the application included in the NOR report includes the following transportation related elements:

- a project objective *'to enable efficient and effective construction and ongoing maintenance of all structures and stream improvements'*;
- replacing a number of vehicle crossings;
- construction of a private road access to 30, 32, 34 and 36 Blue Mountains Road;
- replacement of the road crossing culverts is not included in the project; and
- the need for mitigation with regard to construction traffic is identified with the implementation of the Construction Management Plan seeking to minimise any adverse construction traffic effects.

Traffic effects with regard to ongoing maintenance activities have not been identified.

1. Existing Traffic Environment

Section 5.9 of the NOR describes the Land Transport existing environment. The road hierarchy and local traffic volumes are described. The report recognises that the area to the south of the Sunbrae Drive intersection with Blue Mountains Road has access to the north via Blue Mountains Road only. This section of road is a Primary Collector and carries approximately 5,631 vehicles per day. The report includes that the northbound lane of Blue Mountains Road adjacent to the Silverstream Reformed Church site will be required for construction purposes and a partial road closure will be required with property access maintained throughout the works.

The assessment does not include any analysis of the local road safety record, the local speed environment, the availability of footpaths and the forward sight lines along the main route.

Figure 1 shows reported crashes on the local road network for the most recent five year period.

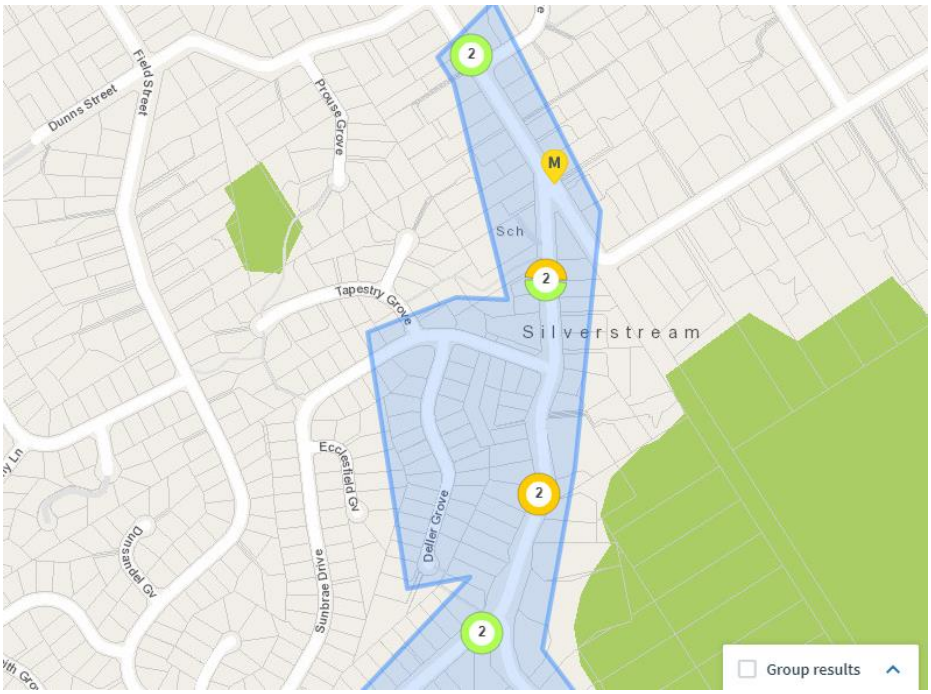


Figure 1: Reported Crashes from NZTA Crash Database

Four of these crashes involved single vehicle incidents with loss of control either as a result of turning or being positioned too far left. Crash factors for three of the other crashes included cutting corner on the bend, speed entering corner/ curve and too far left. The CTMP will need to include allowance for further restrictions to forward sight lines as a result of construction related obstructions either within or adjacent to the carriageway.

I note that some sections of local road network only have footpaths along one side of the road. The CTMP will need ensure that safe provision is made for pedestrians throughout the local road network including adequate sightlines to vehicular traffic if required to cross the road to access an alternative footpath.

Impacts of construction and maintenance activities on carriageway widths and functions including kerbside parking has not been discussed for construction access points other than adjacent to the Silverstream Reformed Church site. The CTMP should usefully identify and address any effects on kerbside parking and traffic flow in each location which is likely to be affected by construction vehicles, plant, site offices and staff vehicles.

2. Description of Project

Section 6 of the NOR report provides a description of the project. Transportation and traffic related matters include:

- the replacement of private access (vehicle and pedestrian) bridges across the stream in the lower catchment;
- likely removal of the garage and sleepout at 1 Tapestry Grove and reinstatement of the garage elsewhere in the property;
- removal of the dwelling at 4 Sunbrae Drive;
- new private accesses to 30 and 36 Blue Mountains Road with exact location subject to ongoing consultation with the property owners;
- removal of the dwelling at 48 Blue Mountains Road;
- removal of the garage at 12 Birch Grove and a new garage placed elsewhere on the property;

- offsite construction being used for some elements, including the private vehicle crossings to minimising the duration of any disruption;
- a Construction Traffic Management Plan will be developed to sit within the Construction Management Plan and will be subject to approval from GWRC prior to construction starting;
- construction will occur in stages and the whole project is expected to take 70 weeks to 2 years to complete:
    - likely first stages with access from Birch Grove;
    - stage 3 access from the west of 50 Blue Mountains Road;
    - stage 4 access through 48 Blue Mountains Road;
    - stage 5 access from yet to be confirmed access point from 40 through 34 Blue Mountains Road. Resident vehicle access will be restricted during construction;
    - stages 6 and 7, access from Blue Mountains Road and 28 Blue Mountains Road;
    - stage 8, access from 28 and 21A Blue Mountains Road;
    - stage 9, access from 4 Sunbrae Drive;
    - stage 10, access from Blue Mountains Road access to Willow Park and from 4 Sunbrae Drive;
    - stage 11, access from Blue Mountains Road by Silverstream Reformed Church; and
    - stage 12, access from individual properties between 50 and 56 Whitemans Road for pedestrian bridge replacement.
- potential for site offices to be located within the road reserve if other options are not viable;
- fencing will be maintained so all visitors and truck movements to the site are controlled and monitored; and
- each private bridge is expected to take two to three weeks to construct. The bridges will be lifted into place by crane and the platform may need to be within the road reserve. Residents could be without vehicle access during this period so temporary pedestrian access may be needed or temporary relocation in some instances. Two to three weeks is also expected to be needed to construct timber pedestrian bridges.

3. Planning Assessment

Section 7 of the NOR report sets out the planning assessment for the NOR. The Upper Hutt City District Plan requirements are analysed in Appendix P of the NOR report. The access matters have been correctly identified and the comment made that *'the proposed private way serving 30 to 36 Blue Mountains Road would meet these standards'*.

The District Plan access standards make reference to the Council's Code of Practice for Civil Engineering Works. An assessment against the particular requirements of this Code of Practice has not been included in the planning assessment. With the detail of the changes to the various accesses still subject to discussion with the individual property owners, a requirement for compliance with the Code of Practice should be conditioned. Such a condition should apply to any new or modified access.

4. Assessment of Alternatives

Section 8 of the NOR report includes consideration of alternatives. It is noted in Section 8.3 with regard to access to 30 to 36 Blue Mountains Road that *'consultation with each property owner is ongoing and as a result the access configuration to the site may change during the processing of this notice of requirement application'*. As referred to above, any new or modified access will need to be assessed against the Council's Code of Practice for Civil Engineering Works.

Section 8.4 of the NOR report describes construction methodology alternatives with the two main options being whether construction occurs from outside or within the stream. The assessment identifies that '*the primary difference between the two construction methodologies in terms of social impacts is the access requirements over private land and reduction in impacts on riparian vegetation habitat, which is much reduced with the instream methodology'*. With regard to social impacts on the

wider community the assessment goes on to say ‘there will be some reduction in the impact on roading infrastructure from the proposed in-stream construction methodology, for those areas where the stream is adjacent to the road, as construction equipment may not be required to be located on the road’.

It is agreed that the proposed in-stream construction methodology is likely to have reduced impact in terms of traffic effects for property access and on users of the local road network than the outside stream construction methodology.

5. Assessment of Environmental Effects

Section 10.10 of the NOR report includes an assessment of the traffic and transport effects of the project. The report identifies that traffic and transport effects will be limited to the construction phase with effects including increased traffic flow, vehicle movements to and from construction sites and the use of road space for construction vehicles or equipment. It is proposed to mitigate these effects through traffic management procedures to be included in the CMP through a Traffic Management Plan to be developed for the proposed works.

The report identifies that access will be required from:

- Whitemans Road: the properties at 50 Whitemans Road
- Clinker Grove: the property at 15 Clinker Grove
- Blue Mountains Road: the properties at 8,20,28,38,48 Blue Mountains Road and Willow Park
- Sunbrae Drive: the property at 4 Sunbrae Drive; and
- Birch Grove: the properties at 10A and 12 Birch Grove.

It is proposed to control adverse traffic effects associated with construction vehicles through the Traffic Management Plan required as part of the CMP which is to be provided as a condition of consent. The Traffic Management Plan will detail actual numbers, frequencies, routes and timing of construction traffic movements. This approach is considered appropriate.

The report identifies that road space will be utilised for the channel works for the area adjacent to Blue Mountains Road within the property at 4 and 8 Blue Mountains Road. It would also seem likely that road space will also be used in many other locations for parking of staff vehicles, construction vehicles and equipment. Given the busy traffic flows on some parts of the local road network, limited forward sight lines along some sections of road and single footpaths in places, the management of all and any use of the road space for construction activity or associated vehicles will need to be carefully managed.

Ongoing traffic effects associated with maintenance activities have not been assessed. Such effects are likely to be infrequent and of much shorter duration than the construction activities. Any effects on the local road network can reasonably be expected to be managed through the implementation of temporary traffic management plans.

The NOR report concludes at 10.10.3 that:

‘*The traffic and transport effects of the proposed works are considered to be consistent with small scale civil construction works, and while they may pose* some inconvenience to residents during the construction period, the effects will generally *be considered acceptable given the necessity of the works and the implementation of traffic management practices to minimise effects as far as practicable and to maintain access to private properties.’*

It is agreed that through the implementation of a construction traffic management plan, the adverse traffic effects can be minimised to ensure ongoing access along with the safe operation of the local road network for all local road users.

6. Proposed Conditions

Section 11.2 of the NOR report sets out the proposed NOR conditions. The traffic-related conditions are discussed in turn below.

Condition 1.b. includes the note that *'the final driveway and private bridge to provide for access and parking at each property from 30-38 Blue Mountains Road will be completed in consultation with each respective land owner'*.

This condition should usefully apply to any new or modified vehicle access and should include the need for compliance with the Council's Code of Practice for Civil Engineering Works. Compliance with the Code should be confirmed by Council officers.

Condition 5.a. requires a Construction Traffic Management Plan to be submitted to Council for certification.

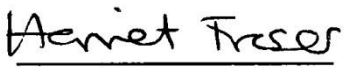
Condition 14.b. restricts heavy vehicle movements on public roads to between 9am and 6pm on Monday to Fridays (excluding public holidays). Some further restriction may be needed for instance ensuring safe pedestrian passage during the period immediately after the end of the school day. The need or not for such a restriction will likely be identified as the CTMP for individual stages is developed.

Conditions 20, 21 and 22 set out the purpose and requirements for the CTMP. Condition 22 should be expanded to include measures to mitigate any adverse effects on parking both within private properties and along the kerbside.

With the above matters addressed through conditions I am comfortable that the traffic effects associated with the Notice of Requirement can be appropriately managed, ensuring safe and efficient access for both the affected property owners and for the wider local community who travel through the local road network.

Please do not hesitate to be in touch should you require clarification of any of the above.

Yours faithfully



Harriet Fraser

RE: UHCC Section 92 Response - Pinehaven Stream Improvements

Joe Harriet <joe.harriet@xtra.co.nz>
Tue 3/17/2020 5:12 PM

To: James Beban <james@urbanedgeplanning.co.nz>

Hi James,

I have had a look through the documents that you sent through. My previous comments on the proposed conditions remain as stated and I am glad to see the addition of Condition 38 with the aim to address adverse effects associated with the location of site offices.

Please continue to be in touch as needed.

Kind regards

Harriet

From: James Beban [mailto:james@urbanedgeplanning.co.nz]
Sent: Monday, 16 March 2020 9:36 AM
To: Frances Forsyth; Joe Harriet
Subject: Fw: UHCC Section 92 Response - Pinehaven Stream Improvements

Hi

Please find attached the response to the Pinehaven Notice of Requirement further information request. Can you please both review this and let me know if you are happy with the response?

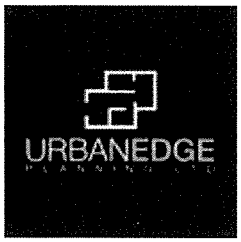
We are going to a hearing in mid May. At this stage i am going to require ecological evidence from you Frances, which i will need by around 13 April 2020. Is this possible? I understand Owen has sent you a copy of the submissions that was received.

Harriet, at this stage it is unlikely I will need evidence for the hearing. I am still working out whether I will need you to attend or not?

If you have any questions, please let me know?

Kind Regards

James Beban
Director / Planner
022 659 1996
james@uep.co.nz



Suite 1, Level 1, 5 Bouverie St, Petone

PO Box 39071, Wellington Mail Centre, Lower Hutt 5045

Appendix 9 – Designation Chapter Wording

36 SCHEDULE OF DESIGNATIONS

Index of Requiring Authorities:

Broadcast Communications Limited

Ref No	Map No	Designation title	Location
BCL1	R27	Broadcasting and Telecommunications	North east of North Climie No.1 trig at Mt Climie (1000m² site)

Hutt City Council

Ref No	Map No	Designation title	Location
HCC1	*U2 R19*	Cemetery purposes	Akatarawa Road
HCC2	U39 U40	Excess wastewater flow storage facility	Eastern Hutt Road

Minister for Primary Industries

Minister for Primary Industries – MPI1 Designation		
Unique identifier and map identifier	MPI1, U36 U37	
Purpose of designation	Laboratories and Research (Biosecurity and Disease), Offices	
Site identifier	Ward Street, Wallaceville	
Conditions	**Access and Car Parking**	
	NOR1.1	All accessways and manoeuvring areas shall be formed and surfaced in accordance with the Upper Hutt City Council Code of Practice for Civil Engineering Works. Exemption - the requirement for accessways serving sites solely occupied by unstaffed utilities shall be that the accessway shall be surfaced with permanent all weather surfacing for a minimum length of 5m from the edge of the road carriageway seal.
	NOR1.2	There shall be practical vehicle access to car parking and loading spaces, in accordance with the Upper Hutt City Council Code of Practice for Civil Engineering Works.
	NOR1.3	There shall be sufficient car parking (marked and unmarked) to cater for 80 staff on the premises during the day and in addition not less than 4 additional visitor parking spaces and 2 disabled parking spaces shall be available.
	Artificial Light	
	NOR1.4	Lighting shall be to a level which is sufficient for security and operations and designed, as much as is reasonably practical, to prevent the intrusion of direct light into adjacent properties.
	Screening	
	NOR1.5	Outdoor storage areas shall be screened by a close-boarded fence, a solid wall or dense planting of vegetation. The screening shall be no less than 1.8m in height.
	Signs	
	NOR1.6	Any sign shall be removed when the activity to which it relates has ceased.
	NOR1.7	Any sign shall be located so that it does not obstruct any official traffic sign.
	NOR1.8	Any sign must not be flashing, animated or continuously differ in form or detail.

Conditions *(continued)*

Site Coverage

NOR1.9	The coverage by buildings on a site shall not exceed 40% of the net site area.

Setbacks from Boundaries

NOR1.10 The setback distance for buildings constructed on the site after 1 May 2014 shall not be less than:

Boundary	**Minimum setback**
Front boundary	6m
Side and rear boundaries	3m
Boundaries directly adjoining a Residential Zone	3m + 0.5m for every 1m the building is over 5m in height

Noise

NOR1.11 Noise from construction or demolition activities, measured at or within the boundary of any site (other than the source site) in the Residential Zones, shall not exceed the following levels:

Mon to Sat **7:00am – 7:00pm**		**All other times,** **Sunday & public holidays**	
L_{eq}dBA	L_{max}dBA	L_{eq}dBA	L_{max}dBA
75	90	45	75

Noise levels shall be measured in accordance with the requirements of NZS 6803: 1999 Acoustics - Construction Noise.

The definitions of dBA, L_{eq} and L_{max} are those found in NZS 6803:1999.

Minister of Corrections

Ref No	Map No	Designation title	Location
COR1	U42 U43 U47	Rimutaka Prison	Freyberg Road Extension

Minister of Defence

Ref No	Map No	Designation title	Location
DEF1	U34 U35 ***U43 U44***	Defence purposes	Trentham Military Camp, Messines Avenue & Alexander Road

Minister of Education

Ref No	Map No	Designation title	Location
ED1	U1 U7	Birchville Primary	Gemstone Drive
ED3	U26	Fraser Crescent Primary	Redwood Street
ED4	U25 U36	Heretaunga College	Ward Street
ED5	U26	Maidstone Intermediate	Redwood Street
ED6	R26	Mangaroa Primary	Flux Road
ED7	U27 U28	Oxford Crescent School	Oxford Crescent
ED8	U46	Pinehaven Primary	Pinehaven Road
ED9	U11	Plateau Primary	Molloys Road
ED10	*U18*	Totara Park Primary	California Drive
ED11	U41	Silverstream Primary	Whitemans Road
ED12	U23 U24	Upper Hutt College	Moonshine Road
ED13	U26 U27	Upper Hutt Primary	Martin Street
ED15	U23 U24	Fergusson Intermediate	Hikurangi Street
ED16	U20	Maoribank Primary	Hillside Drive
ED17	U24 U35	Trentham Primary	Moonshine Road
ED18	U34 U43 R24	Hutt International Boys School	Granville Street

Minister of Police

Ref No	Map No	Designation title	Location
POL1	*U27*	Police station	863 - 873 Fergusson Drive
POL3	U44	Dog Training	Dante Road

The New Zealand Railways Corporation

Ref No	Map No	Designation title	Location
TZR1		Railway corridor purposes	Wellington to Woodville Railway including tunnel 1 and 2

Radio Network of New Zealand

Ref No	Map No	Designation title	Location
RNZ1	*R23*	Radio Communication, telecommunication and ancillary purposes	East of Mt Cecil Road

Telecom New Zealand Limited

Ref No	Map No	Designation title	Location
TEL1	*U20*	Telecommunication, Radio communication and ancillary purposes	1288 Fergusson Drive
TEL2	R26 R27	Telecommunication, Radio communication and ancillary purposes	Mount Climie
TEL3	U35	Telecommunication, Radio communication and ancillary purposes	584-586 Fergusson Drive

New Zealand Transport Agency

Ref No	Map No	Designation title	Location

NZTA1	U3 U7 U8 U10 U11 U14 U15 U16 U17 U18 U19 U20 U22 U23 U24 U25 U31 U32 U33 U39 U40 R19 R20 R21 R23 R28	State Highway purpose	State Highway 2
NZTA2	R8	Transmission Gully Main Alignment	Transmission Gully

<table>
<tr><th colspan="3">New Zealand Transport Agency – NZTA3 Designation</th></tr>
<tr><td>Unique identifier and map identifier</td><td colspan="2">NZTA3, R23</td></tr>
<tr><td>Purpose of designation</td><td colspan="2">State Highway purposes</td></tr>
<tr><td>Site identifier</td><td colspan="2">State Highway 58</td></tr>
<tr><td>Lapse Date</td><td colspan="2">15 June 2027</td></tr>
<tr><td>Conditions</td><td colspan="2">
<table>
<tr><td>NOR1.1</td><td>Submission of Information on Final Designs</td></tr>
<tr><td></td><td>Prior to the commencement of any on site work, the Requiring Authority shall submit information, including plans, detailing final designs in general accordance with the Notice of Requirement as submitted and notified to the reasonable satisfaction of the Roading Manager, Upper Hutt City Council.

The final designs shall show the following information:

(a) The location of the proposed State highway carriageway in relation to designation boundaries.
(b) The location and design of all intersections, overpasses and underpasses, in particular the reconstruction of intersections and local roads.
(c) The location and design of all fencing, bunds, and barriers.
(d) The design of lighting at intersections.
(e) Landscape and ecological mitigation works.</td></tr>
<tr><td>NOR1.2</td><td>Construction Management</td></tr>
<tr><td></td><td>Prior to the commencement of the construction works, the requiring authority shall submit a Dust Management Plan to Upper Hutt City Council’s Resource Consents and Compliance Manager for certification. The Dust Management Plan shall be prepared by person(s) suitably qualified to determine effective dust management having regard to the activities carried out on adjoining properties, and shall be implemented as certified by the Upper Hutt City Council upon the commencement of the construction works. In particular, the Dust Management Plan:

(a) Shall seek to prevent or minimise any dust emission causing a dust nuisance to adjoining properties;</td></tr>
</table>
</td></tr>
</table>

Conditions *(continued)*		(b) Shall detail the specific measures to be undertaken to control dust emission beyond the boundaries of the designation ('dust control measures'), in order to avoid and mitigate dust nuisance to adjoining properties; (c) Shall specify monitoring measures, including in relation to dust control measures, and on-site generation and off site deposition of dust; (d) Shall specify contingency measures to avoid, remedy or mitigate any dust nuisance effects on adjoining properties arising from any failure of the dust control measures; (e) May include provision to enable immaterial departures from the Dust Management Plan; and (f) May specify obligations required to be implemented prior to the commencement of the construction works. The Requiring Authority shall implement an Erosion Sediment Control Plan in general accordance with that provided in Appendix B of the Flood Hazard and water Quality Assessment included as part of the Notice of Requirement to alter this designation, submitted 1 October 2018.
	NOR1.3	**Protocol for Dealing with Koiwi or Taonga Unearthed During Development**
		The following procedure shall be adopted in the event that koiwi, taonga, or other archaeological material is unearthed or is reasonably suspected to have been unearthed during the Project works: (a) All activity within a 10m radius of the discovery shall cease; (b) The plant operator will shut down all machinery or activity immediately, leave the area and advise his or her Supervisor of the occurrence; (c) The works contractor shall immediately notify Upper Hutt City Council and the Project Archaeologist; (d) The Project Archaeologist shall inspect the site within 24 hours of notification. If the material is confirmed as koiwi tangata, the Project Archaeologist will inform the necessary bodies as outlined in

Conditions *(continued)*		Heritage New Zealand's "Guidelines for koiwi tangata/human remains (AGS8)"; and (e) If the Project Archaeologist confirms that the taonga or other archaeological material is of Maori origin, the Requiring Authority shall notify Taranaki Whānui (Port Nicholson Block Settlement Trust) and Ngati Toa (Te Runanga o Toa Rangatira Inc) as soon as possible but within 24 hours. The Requiring Authority shall ensure that iwi are given the opportunity to undertake karakia and such other religious or cultural ceremonies and activities at the site as may be considered appropriate in accordance with tikanga Maori (Maori custom and protocol). **Note:** An Archaeological Authority (ref# 11013-060 and 11013-029) has also been obtained by NZTA under the Heritage New Zealand Pouhere Taonga Act 2014. The authority establishes a protocol for archaeological works, a management plan, and communication with iwi authorities.
	NOR1.4	**Audit and Monitoring**
		The Requiring Authority shall undertake an independent pre and post safety audit carried out on the final alignment of SH 58 with particular attention being given to the service road intersections. The Requiring Authority shall keep a record of safety audits, which shall be made available to the Upper Hutt City Council upon request.
	NOR1.5	**Geotechnical Monitoring**
		Following the commencement of on-site works, at regular intervals of not less than once every ten working days, all cuttings that have been worked since the immediately preceding inspection shall be inspected during construction by a qualified and experienced geologist/geotechnical engineer for the purpose of enabling adjustments to be made to slope profiles, or for slope protection/support/ stabilisation measures to be incorporated where appropriate. The Requiring Authority shall keep a record of such inspections

Conditions (continued)		which shall be made available to the Upper Hutt City Council upon request.
	NOR1.6	**Ecological Mitigation Plan**
		The Requiring Authority shall prepare an Ecological Mitigation Plan (EMP) to demonstrate how it will monitor, manage, and mitigate the adverse effects of the construction activities on terrestrial vegetation values, including associated biodiversity values. The EMP shall include, but not be limited to: (a) Maps, prepared as part of detailed design, which clearly show the location and extent of the required clearance of indigenous forest and scrub which is required to facilitate the works. (b) A calculation of the quantum (m2) of vegetation to be cleared in each of the following categories: i. Indigenous forest (Type B) ii. Indigenous scrub (Type C) (c) Based on the above, a calculation of the quantum of mitigation required (areas, coverage and species type) based on the following Environmental Compensation Ratios (ECRs): i. Indigenous forest: Type B: 1:4 ii. Indigenous scrub: Type C: 1:2 (d) A description of the measures to be adopted to minimise the extent of clearance of and indigenous scrub in the designation. (e) A description of the measures to be undertaken within the designation to mitigate the adverse effects of removal of indigenous vegetation including, but not limited to, any proposed ecological planting. (f) Where removal of pines and other exotic vegetation within the existing indigenous vegetation matrix is proposed as a compensation measure, a description of the control methods (e.g. felling or in situ poisoning), extent, and period of control. Where, having regard to the proposed mitigation/compensation outlined above, offset mitigation is required to address any residual effects, a description of how and where this is to be will be provided. Should this offset mitigation

Conditions (continued)		involve land that is not owned by the Requiring Authority, the approval in principle of the landowner must be provided. This EMP shall be submitted to Upper Hutt City Council's Resource Consents and Compliance Manager for certification, no less than 20 working days prior to the commencement of works. **Notes:** • As the works in the Hutt Valley will traverse both Hutt City and Upper Hutt's jurisdiction, where practicable, this EMP should cover both jurisdictions. The EMP would be simultaneously submitted to Upper Hutt City and the Hutt City Council for their respective approval. • Ecological mitigation will also be a requirement of any regional consent for these works. The mitigation attaching to the regional consent may also be detailed in this EMP, in which case Upper Hutt City Council's approval will only be required for those matters falling within its jurisdiction.
	NOR1.7	**Revegetation Plan**
		The Requiring Authority shall develop a detailed Revegetation Plan and specifications demonstrating how it will implement revegetation in general accordance with the Landscape Concept Plan attached as 'Appendix A' to the Urban and Landscape Design Framework, and the plant communities and lists in section 4.7 of the Urban and Landscape Design Framework, included as part of the Notice of Requirements to alter this designation, submitted 1 October 2018. The Landscape Concept Plan will be subject to final design and to any modifications required to comply with any other conditions of this designation. It will be submitted for certification by the Upper Hutt City Council's Resource Consents and Compliance Manager at least 20 working days prior to the commencement of works. The Requiring Authority shall implement plans certified by the Upper Hutt City Council. **Note:**

Conditions (continued)		As the works in the Hutt Valley will traverse both Hutt City Council and Upper Hutt City Council's jurisdiction, where practicable, the Revegetation Plan will be simultaneously submitted to the Upper Hutt City Council and the Hutt City Council for their respective approval.
	NOR1.8	**Landscape Treatments**
		In the final design of the road, the Requiring Authority shall make provision for: (a) Landscape treatments to remedy or mitigate adverse effects of the road through the use of the following techniques: landform shaping; soil conservation and enhancement; vegetation conservation; and, re-grassing and replanting of trees and shrubs. (b) The shaping and cutting of fill batters shall be designed and constructed in such a way as to resemble as far as possible the existing natural landforms of the area. (c) Earthworks shall be designed to integrate the alignment into the surrounding landscape i.e. rounding edges of cut faces where practicable. (d) Plants shall be eco-sourced, where possible, in accordance with section 4.7 of the Urban and Landscape Design Framework, and shall be certified as free from plant pests and diseases. In completing landscape treatments, the Requiring Authority shall undertake the following specific measures: (e) Hydroseeding of cuts shall comply with NZTA P39 Specification, section 2.1 'Hydro-seed composition' and the hydroseed composition shall be selected following advice from either a hydroseeding or slope stabilisation specialist. (f) All replanting areas will need to meet the following specifications: i. When planting of PB8 grade and up refer to NZTA P39 Section F to ensure there will be adequate topsoil management for sufficient root structure to ensure survival. Section G

		of the NZTA P39 will need to be read in conjunction with Section F; ii. For planting palettes regarding hydro-seeding refer to NZTA P39 Section I. All other planting palettes must follow NZTA P39 Section G; and iii. Planting of the buffer area shall achieve an 80% canopy coverage off the ground post completion of the works.
Conditions (continued)	**NOR1.9**	**Watermain Infrastructure**
		(a) The Requiring Authority shall provide Wellington Regional Council with a physical and legal access to any watermains owned by Wellington Regional Council currently located within road reserve that will not be located within such reserve once the Project has been completed. (b) The Requiring Authority shall ensure that all Wellington Regional Council watermains, which will be below ground level once the Project has been completed, will be not less than 1m and not more than 2m below the completed ground surface of the Project, unless Wellington Regional Council's Asset Manager (Wellington Water Limited, or equivalent) agrees in writing.
	NOR1.10	**Lapsing Of Designation**
		Pursuant to section 184(1)(c) of the Resource Management Act 1991 the lapsing period for this designation is ten years.
	NOR1.11	**Operational Management Matters**

		(a) The Requiring Authority shall establish Traffic Management Plans at the varying stages of the project progress to demonstrate that traffic will be managed during the construction phase of the project in accordance with the most recent NZTA Code of Practice for Temporary Traffic Management at the time of works. (b) The Requiring Authority shall maintain a permanent record of any complaints alleging adverse effects from its operations within the designation or any breach of these conditions or other comments received. The record shall include the name and address (as far as practicable) of the person who made the complaint or comment, and where a complaint is made, identification of the nature of the matter complained about, date and time of the complaint and of the alleged event, weather conditions at the time of the alleged event (as far as practicable) and any remedial action taken. This record shall be made available to Upper Hutt City Council on request.

Trans Power NZ Limited

Ref No	Map No	Designation title	Location
TRP1	*U7*	Electricity Substation	Corner of Pokaka Street and Akatarawa Road

Wellington Electricity Lines Limited

Ref No	Map No	Designation title	Location
WELL1	U7	Brown Owl Zone substation	Akatarawa Road
WELL2	U27	Maidstone Zone substation	Blenheim Street
WELL3	U34	Trentham Zone substation	20 Sutherland Avenue

Upper Hutt City Council - Reserves & community facilities

Ref No	Map No	Designation title	Location
UHC1	U22 U32 U33	Proposed Amenity Reserve	River Road / Haywards
UHC2	U13 U22 U23	Proposed Amenity Reserve	Moonshine Road / Haywards
UHC3	U37 U38	Proposed Scenic Reserve	Southern Hills ridgeline, Wallaceville Road
UHC4	U7 U8	Proposed Amenity Reserve	Emerald Hill
UHC5	U20 U28 U29 U30 R25	Proposed Amenity Reserve	Southern Hills ridgeline, near Gorrie Road
UHC6	U2 R19	Proposed Recreation or Sports Reserve (2 sites)	Adjacent to Hutt River off Gillespies Road
UHC7	U10 R19	Proposed Recreation or Sports Reserve	Adjacent to Hutt River near State Highway 2, Te Marua
UHC8	U9 U21 R19	Proposed Amenity Reserve	Southern Hills ridgeline near Gentian Street, off Mangaroa Hill Road and near Maymorn Road
UHC9	***U27***	Civic Centre / civic purposes	Fergusson Drive
UHC10	U27	Leisure Centre	Fergusson Drive
UHC11	U1 U2	Cemetery purposes (Akatarawa Cemetery)	Akatarawa Road

Ref No	Map No	Designation title	Location
UHC12	U46	Civic purposes - Pinehaven Library and Reserve (Local Purpose)	Pinehaven Road / Jocelyn Crescent
UHC13	U6 U7	Holiday Park (Harcourt Holiday Park)	Akatarawa Road
UHC14	U27	Civic purposes	Fergusson Drive
UHC15	U8	Civic purposes - Benge Hall and Reserve (Recreation and Local Purpose)	Main Road North
UHC16	U28	Civic purposes – Depot	Park Street
UHC17	***R26***	Civic purposes - Pound	Mangaroa Hill Road
UHC18	U1 U2 R19	Local Purpose (Esplanade) and Recreation	Akatarawa Road, (Akatarawa River)
UHC19	U50	Local Purpose (Community)	Avian Crescent (Avian Crescent Reserve)
UHC20	U50	Recreation	Avro Road (Avian Crescent Reserve)
UHC21	U18 U19	Recreation	Rosina Street, Benge Crescent, Clouston Park Road (Benge Park)
UHC22	U8 U9	Recreation and Local Purpose (Community)	Between State Highway 2 and Emerald Hill Drive (Birchville Park)
UHC23	U8	Recreation	Near Gemstone Drive (Birchville Beech Reserve)
UHC24	U1 U2 R19	Local Purpose (Esplanade)	Gemstone Drive (Birchville Esplanade Reserve)
UHC25	U1 U6 U7	Local Purpose (Esplanade) and Recreation	Black Beech Street / Bridge Road, Waimarama / Whangakoko & Edmund Lomas Grove
UHC26	U7 U8	Recreation	State Highway 2 (Brown Owl Park)
UHC27	U6 U19	Recreation	California Drive / Larchmont Grove (California Park)
UHC28	R11	Recreation, Local Purpose (Esplanade)	Akatarawa Road (Clouston Park, Cloustonville)
UHC29	U26	Recreation	Fraser Crescent / Clyma Crescent (Clyma Park)
UHC30	U11	Recreation	Plateau Road (Collins Creek Reserve)
UHC31	U23 U24	Recreation	Moonshine Hill Road (Craigs Flat Reserve)
UHC32	U18	Local Purpose (Community)	Denver Grove (Totara Park Kindergarten)

Ref No	Map No	Designation title	Location
UHC33	U19	Recreation, Local Purpose (Community)	1122 Fergusson Drive (Doris Nicholson Kindergarten)
UHC34	U45	Recreation	Duncraig Street, Penny Lane (Duncraig Park)
UHC35	***U41***	Recreation	Dunns Street / Prouse Grove / Tapestry Grove (Dunns Park)
UHC36	U7	Recreation	Off Alleyne Court (Emerald Hill Reserve)
UHC37	U46	Recreation	Fendalton Crescent (Fendalton Scenic Reserve)
UHC38	U8 U21	Recreation	Gentian Street, Timberlea (Gentian Park)
UHC39	U6 U7	Recreation, Local Purpose (Esplanade)	Akatarawa Road / Norbert Street (Harcourt Park)
UHC40	U32 U41	Recreation, Local Purpose (Esplanade and Utility)	Kiwi Street (Heretaunga Park) / Mawaihakona Stream
UHC41	U24	Drainage Reserve	Hikurangi Street
UHC42	U6	Recreation	Black Beech Street (Hoggard Park)
UHC43	R20	Scenic	State Highway 2 (Kaitoke Hill)
UHC44	R19	Recreation, Local Purpose (Esplanade)	Akatarawa Road (Karapoti Park)
UHC45	U31 U39 R23	Scenic	River Road / State Highway 58 (Keith George and Silverstream Scenic Reserve)
UHC46	U40	Recreation	Kurth Crescent / Dunns Street (Kurth Crescent Reserve)
UHC47	U6 U19 U20	Local Purpose (Esplanade)	Larchmont Grove / Wyoming Grove (Larchmont Esplanade Reserve)
UHC48	U15 U16	Recreation	McLeod Street (McLeod Park)
UHC49	U25	Recreation	McLeod Street (McLeod Street Play Area)
UHC50	U27 U28 R25	Recreation and Local Purpose (Community)	Park Street / Railway Ave / Seymour Grove (Maidstone Park)
UHC51	U10 U11 R19 R25 R26	Recreation, Local Purpose (Esplanade)	Plateau Road / Maymorn Road / Parkes Line Road / Mangaroa Hill Road / Whitemans Valley Road (Mangaroa River Esplanade Reserve)
UHC52	U34	Local Purpose (Esplanade)	Barton Avenue (Mawaihakona Stream)
UHC53	***U11***	Recreation	Maymorn Road, Te Marua

Ref No	Map No	Designation title	Location
UHC54	U23	Recreation	Moehau Grove / Holdsworth Ave (Moehau Park)
UHC55	U19 U20	Recreation and Local Purpose (Esplanade)	Michigan Crescent / Baltimore Crescent (Ngati-Tama Park)
UHC56	U21	Local Purpose	Timberlea (Norana Road Reserve)
UHC57	U29	Recreation	Oaklands Grove (Reserve)
UHC58	U27	Recreation	Oxford Crescent / Kowhai Avenue (Oxford Park)
UHC59	R21	Recreation	State Highway 2 / Marchant Road (Pakuratahi Reserve)
UHC60	R21	Local Purpose (Esplanade)	Gilbert Road, Kaitoke (Pakuratahi River esplanade reserve)
UHC61	U46	Recreation	Pinehaven Road / Blue Mountains Intersection (Pickerills Reserve)
UHC62	***U46***	Recreation	Pinehaven Road (Pinehaven Reserve)
UHC63	U40 U45	Recreation	Pioneer Grove / Kurth Crescent (Pioneer Grove Park)
UHC64	U11	Recreation	Plateau Road (Plateau Road Play Area)
UHC65	U39 U40	Local Purpose (Community)	Fergusson Drive, Silverstream Straight (site of Pumpkin Cottage)
UHC66	U1 U7	Recreation	Amber Grove / Rata Street (Rata Park)
UHC67	***R21***	Recreation	State Highway 2 (Rimutaka Hill)
UHC68	U27	Recreation and Local Purpose (Community)	Savage Crescent / McParland Street (Savage Park)
UHC69	U41	Recreation	Whitemans Road (Silverstream Park)
UHC70	R24 R25	Local Purpose (Amenity)	Sierra Way / Seymour Grove (Southern Hills Ridgeline)
UHC71	U8	Recreation	Speargrass Grove / Blueberry Grove (Speargrass Park)
UHC72	U21	Local Purpose	Speargrass Grove / Aniseed Grove (Speargrass Access Reserve)
UHC73	U41	Local Purpose (Drainage Reserve)	Sunbrae Drive
UHC74	U41	Recreation	Tapestry Grove / Field Street (Tapestry Park)
UHC75	U35	Recreation	Tawai Street (Park)

Ref No	Map No	Designation title	Location
UHC76	U20	Recreation, Local Purpose (Esplanade)	Fergusson Drive / Norbert Road (Te Haukaretu)
UHC77	***U3***	Scenic	State Highway 2 (Te Marua Hill)
UHC78	U21	Recreation	Norana Road (Timberlea)
UHC79	U17 U18	Local Purpose (Drainage)	Hartford Crescent (Totara Park Drainage Reserve)
UHC80	U33 U34	Recreation	Trentham Memorial Park
UHC81	U18	Recreation	California Drive (Tulsa Grove)
UHC82	U18	Recreation, Local Purpose (Community)	Turon Crescent (Park)
UHC83	U12	Recreation	Plateau Road (Upper Plateau Recreation)
UHC84	U12 R20	Scenic	Plateau Road (Upper Plateau Scenic)
UHC85	U36 U37	Local Purpose (Community)	Ward Street / Miro Street (Ward / Miro Green Area)
UHC86	U24 U25	Local Purpose (Amenity)	Longfellow Street / Tennyson Street (Whakatiki Buffer Reserve)
UHC87	U15 U25	Recreation	Masefield Street / Whakatiki Street
UHC88	R25	Recreation	Whitemans Valley Road (Reserve)
UHC89	U41	Recreation	Blue Mountains Road / Tapestry Grove (Willow Park)
UHC90	U45	Recreation	Wyndham Road (Reserve)
UHC91	U40 U45	***Recreation***	Sylvan Way

<table>
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<tr><td>Purpose of designation</td><td>Flood Protection</td></tr>
<tr><td>Site identifier</td><td>UHC-92</td></tr>
<tr><td>Lapse Date</td><td>15 June 2027</td></tr>
<tr><td>Conditions</td><td>
<table>
<tr><th>NOR1.1</th><th>General</th></tr>
<tr><td></td><td>(a) Except as modified by the conditions below, the Project shall be undertaken in general accordance with:
i. The Designation Plans, IZO-8900 0 SPO – 400 – GN – DRG – 0100 (Rev B), 0101 (Rev D),</td></tr>
</table>
</td></tr>
</table>

Conditions *(continued)*		0102 (Rev C), 0103 (Rev B), 0104 (Rev B), 0105 (Rev B) and 0106 (Rev B). ii. The General Arrangement plans, IZ08900-SP3-400-CD-DRG-3100 Rev B, 3101 (Rev B), 3102 (Rev C), 3103 (Rev B), 3104 (Rev B), 3105 (Rev C), 3106 (Rev C); iii. The design plans of the shared bridge at 28-30 BMR and 34-36 BMR provided to GWRC in Appendix I of the s.92 response, dated 21 February 2020. iv. The cross-sections IZ089000-300-CD-DRG-2300 (Rev B), 2301 (Rev B), and 2302 (Rev B); v. The Site Access and Laydown Scheme plans, IZ089000 – 300-JS-DRG – 1100 (Rev B), 1101 (Rev B), 1102 (Rev B), 1103 (Rev B), 1104 (Rev B), 1105 (Rev B, 1106 (Rev B). vi. Landscape planting plans DCM Urban Landscape Works, Pinehaven Stream 2017_009/L100 (Rev 7), L101 (Rev 5), L102 (Rev 6), L103 (Rev 6), L104 (Rev 5), L105 (Rev 5), L106 (Rev 6) L107 (Rev 7), and L108 (Rev 7).
		(c) As-built plans showing the location of buildings demolished and reinstated within the designation boundary must be provided to the Upper Hutt City Council District Council within 20 working after the construction of the relocated buildings to certify that these buildings comply with Upper Hutt District Council District Plan permitted activity rules or existing use rights.
		(d) In the event of conflict between the documents listed above and these designation conditions, these conditions prevail.
		(e) The designation shall lapse if not given effect to within 5 years from the date on which it is included in the Upper Hutt City

Conditions *(continued)*		Council District Plan under section 175 of the RMA.
	NOR1.2	**Designation boundary**
		(a) As soon as reasonably practicable following the Completion of Construction, the Requiring Authority shall: I. Review the area designated for the Project; II. Identify any areas of designated land that are no longer necessary for the on-going operation or maintenance or for ongoing mitigation measures; and III. Give notice to CMO in accordance with section 182 of the RMA seeking the removal of those parts of the designation identified in 4 b) above.
	NOR1.3	**Management Plans**
		(a) The following Management Plans (addressing one or more stages of the Project) shall be submitted to the CMO for certification: I. Construction Traffic Management Plan (CTMP) to certify compliance and consistency with conditions NOR 1.6(a) – (1.6(d); II. Construction Noise and Vibration Management Plan (CNVMP) to certify compliance and consistency with conditions NOR 1.5(a) – 1.5(e) of the designation III. Site Office Management Plan (SOMP) to certify compliance and consistency with condition NOR 1.7 of the designation; IV. Landscape Plan (LP) to certify compliance and consistency with conditions NOR 1.7(a) 1.7(d) of this designation; and V. Lizard Management Plan to certify compliance and consistency with condition NOR 1.11(a) of the designation; Note: The management plans must provide the overarching principles, methodologies, and procedures for managing the effects of the Works to achieve the environmental outcomes and performance standards required by the conditions of the designation.

	(b) Works must not commence until certification of the management plans for the relevant stage is received in writing.
	(c) The Project shall be carried out in general accordance with the certified management plans required by these conditions.
	(d) The management plans may be supplemented by site-specific plans to provide the necessary level of detail to address requirements within each of the Stages.
	(e) A copy of the certified management plans shall be made publicly accessible on the Requiring Authority's website.
	(f) During the construction period, a copy of all certified management plans shall be kept on site at all times and be made available to the CMO upon request.
	(g) The certified management plans may be amended if necessary to reflect any changes in design, construction methods, or management of effects. Any amendments are to be discussed with and submitted to the Council CMO for recertification.
NOR1.4	**Work hours**
	(a) Normal working hours, except in those circumstances exempted under the CNVMP, shall be: i. For on-site construction activities: 7:00am to 7.00pm Monday to Saturday (excluding public holidays) ii. For heavy vehicle movements on public roads: 9:00am - 6:00pm Monday to Friday (excluding public holidays).
NOR1.5	**Construction Noise**
	(a) Noise arising from construction activities shall be measured and assessed in accordance with New Zealand Standard NZS 6803:1999 'Acoustics – Construction Noise' (NZS 6803:1999)

Conditions (continued)		(b) A CNVMP shall be prepared by a suitably qualified acoustic specialist and certified as per condition NOR-1.3 (a) as being consistent with NZS 6803:1999 and meeting the requirements of these conditions at least 15 Working Days prior to Commencement of Construction. The purpose of the CNVMP is to provide a framework for the development and implementation of the Best Practicable Option ('BPO') for the management of all construction noise effects, and additionally to define the procedures to be followed when the noise standards in NZS 6803:1999 are not met following the adoption of the BPO. The CNVMP shall be prepared in accordance with the requirements of Annex E2 of NZS 6803:1999 and shall address the following matters as a minimum: i. Description of the Works, anticipated equipment/processes and their scheduled durations; ii. Hours of operation and duration for the construction activities; iii. The construction noise and vibration standards for the Project as set out in NZS 6803:1999 Acoustics - Construction Noise and Table 3 of DIN 4150-3: 1999; iv. Identification of affected occupied buildings and any other sensitive receivers; v. Management and mitigation options to be adopted for all works during the Project (which shall include prohibition of tonal reverse alarms); vi. Minimum separation distances from receivers for plant and machinery where compliance with the construction noise standards are met; vii. Methods and frequency for monitoring and reporting on construction noise; viii. Procedures for engaging with stakeholders, notification of proposed construction activities and responding to noise complaints consistent with conditions; and

<table>
<tr><td rowspan="8">Conditions (continued)</td><td></td><td>ix. Contact details for the Project Manager (or nominee) and the Requiring Authority's Project Liaison Person (phone and email addresses).</td></tr>
<tr><td></td><td>(c) The construction noise, where practicable, shall comply with the following criteria at the nearest residential building or sensitive receiver for the purposes of the CNVMP:
<table>
<tr><th>Time of the week</th><th>Time period</th><th>$L_{Aeq(t)}$</th><th>L_{AFmax}</th></tr>
<tr><td rowspan="4">Weekdays</td><td>0630-0730</td><td>60</td><td>75</td></tr>
<tr><td>0730-1800</td><td>75</td><td>90</td></tr>
<tr><td>1800-2000</td><td>70</td><td>85</td></tr>
<tr><td>2000-0630</td><td>45</td><td>75</td></tr>
<tr><td rowspan="4">Saturday</td><td>0630-0730</td><td>45</td><td>75</td></tr>
<tr><td>0730-1800</td><td>75</td><td>90</td></tr>
<tr><td>1800-2000</td><td>45</td><td>75</td></tr>
<tr><td>2000-0630</td><td>45</td><td>75</td></tr>
<tr><td rowspan="4">Sundays and public holidays</td><td>0630-0730</td><td>45</td><td>75</td></tr>
<tr><td>0730-1800</td><td>55</td><td>85</td></tr>
<tr><td>1800-2000</td><td>45</td><td>75</td></tr>
<tr><td>2000-0630</td><td>45</td><td>75</td></tr>
</table>
Where it is not practicable to achieve those criteria, the CNVMP must describe alternative strategies to achieve the best practicable option to minimise the effects of construction noise on neighbours.</td></tr>
<tr><td></td><td>(d) The vibration criteria set out in Table 3 of DIN 4150-3: 1999 shall be met, where practicable. Where it is not practicable to achieve those criteria, a suitably qualified expert shall be engaged to assess and manage construction vibration during the activity that exceeds the criteria.</td></tr>
<tr><td></td><td>(e) Where on-site construction works and/or heavy vehicle movements need to be undertaken outside of normal working hours (as defined in Condition NOR1.5(a), night time work (7:00pm –7:00am) shall be avoided where practicable. Where avoidance is not practicable, the best practicable option shall be adopted to minimise or mitigate noise and vibration effects.</td></tr>
<tr><td>NOR1.6</td><td>Construction traffic</td></tr>
<tr><td></td><td>(a) A CTMP shall be prepared by a suitably qualified and experienced person and shall be submitted to the CMO for certification that it meets the requirements of these conditions at least 15 Working Days prior to Commencement of Construction.</td></tr>
</table>

Conditions (continued)		(b) The purpose of the CTMP is to avoid or mitigate adverse effects on traffic safety and efficiency resulting from the construction works, in order to: i. Protect public safety, including the safe passage of pedestrians and cyclists; ii. Minimise delays to road users, pedestrians and cyclists, and particularly public transport at all times, especially bus travel times at peak traffic periods during weekdays (06:30 to 09:30 and 15:00 to 19:00); and iii. Inform the public about any potential impacts on the road network.
		(c) The CTMP shall describe the methods for avoiding, remedying or mitigating the local and network wide transportation effects resulting from the Project works, and shall address the following matters: i. Methods to avoid, remedy or mitigate the local and network wide effects of the construction of individual elements of the Project; ii. Methods to manage the effects of the delivery of construction material, plant and machinery (including oversized trucks); iii. The numbers, frequencies, routes and timing of construction traffic movements; iv. Traffic management measures to address and maintain traffic capacity and minimise adverse effects; v. Measures to maintain existing vehicle access to private properties, or where the existing property access is to be replaced, measures to provide alternative access arrangements in consultation with the affected landowner; vi. Measures to maintain pedestrian and cycle access with thoroughfare to be maintained on all roads and footpaths adjacent to the construction works, (unless provision of such access is severed by the works or such access will

Conditions (continued)		become unsafe as a result of the construction works). Such access shall be safe, clearly identifiable, provide permanent surfacing and seek to minimise significant detours; and vii. Include measures to avoid road closures, and the restriction of vehicle, cycle and pedestrian movements. viii. Include measures to maintain traffic safety as a result of construction vehicles parking on the local road or within private properties.
		(d) At least 15 working days prior to the construction of the new accesses to 30 – 38 Blue Mountains Road, the Requiring Authority shall provide the Team Leader Policy for certification plans for the proposed new access arrangements for these properties and confirm compliance with the design standards of the Council's Code of Practice.
	NOR1.7	**Landscape Plan**
		(a) A Landscape Plan ('LP') shall be prepared by a suitably qualified and experienced person and shall be submitted to the CMO for certification that it meets the requirements of these conditions at least 15 Working Days prior to Commencement of Construction. The purpose of the LP is to outline the requirements for the Project's permanent landscape mitigation works.
		i. The Requiring Authority shall undertake mitigation and enhancement planting in general accordance with the LP. The LP shall include details of proposed mitigation planting including as follows: ii. Identification of vegetation to be retained, protection measures, and planting to be established along cleared edges, the riparian zone and new floodplain areas; iii. Proposed planting including plant species, plant/grass mixes, spacing/densities, sizes (at the time of planting) and layout and planting methods;

		i. Planting of species that grow taller than 15 metres in height are not to be planted within 30 metres of any residential buildings iv. The proposed staging of planting in relation to the construction programme, including provision for planting within each planting season following completion of works in each stage of the Project and detailed specifications relating to (but not limited to) the following: i. Weed control and clearance; ii. Pest animal management; iii. Ground preparation (topsoiling and decompaction); iv. Mulching; v. Plant sourcing and planting, including hydroseeding and grassing; vi. Successional/replacement planting; and vii. Details of a proposed maintenance and monitoring programme.
		(b) The LP shall include a Reserve Reinstatement Plan for Willow Park. The Reserve Reinstatement Plan shall be prepared in consultation with Council and shall include the following details (as appropriate): i. Removal of structures, plant and materials associated with construction; ii. Replacement of any boundary fences that require removal; iii. Reinstatement of grassed areas; iv. Replacement of trees and other planting; v. Any structures proposed to be constructed; and vi. Details of way finding interpretation signage within and adjacent to the reserve.

		(c) The Requiring Authority shall maintain and monitor the mitigation and enhancement planting for a minimum of 5 years following the planting being undertaken.
	NOR1.8	**Stakeholder and Communications**
		(a) The Requiring Authority shall appoint a community liaison person for the duration of the construction phase of the Project to be the main point of contact for persons affected by the Project
		(b) A community communication strategy will be developed to ensure the key messages about potential temporary construction effects such as noise and traffic, and the project programme timeline, are well understood.
	NOR1.9	**Complaints process**
		(a) At all times during construction work, the Requiring Authority shall maintain a permanent register of any complaints received relating to the construction works, including the full details of the complainant and the nature of the complaint. The complaints register shall contain the following information: i. The details of the complainant; ii. The nature of the complaint; iii. The investigations undertaken into the complaint; and iv. Any remedial actions undertaken to address the complaint.
		(b) The Requiring Authority shall respond to any complaint within 24 hours of receipt of the complaint, except where an immediate hazard is present or where the complaint relates to construction noise, in which case the Requiring Authority shall use its best endeavours to respond immediately. A formal written response shall be provided to the complainant and the Council within 10 days of complaint receipt.
		(c) The Requiring Authority shall keep a copy of the complaints register on site and shall provide a copy to the Council upon request.
	NOR1.10	**Accidental discovery**
		(a) At least 15 Working Days prior to Commencement of Construction the Requiring Authority shall, in consultation with Port Nicholson Block Trust and Te Rūnanga o Toa Rangātira Inc, prepare an accidental discovery protocol and provide a

		copy to the CMO and GWRC for information. The protocol shall be implemented in the event of accidental discovery of cultural or archaeological artefacts or features during construction of the Project. The protocol shall include, but not be limited to: i. Identification of parties to be notified in the event of an accidental discovery, who shall include, but need not be limited to Port Nicholson Block Trust, Te Rūnanga o Toa Rangātira Inc, HNZ, UHCC, GWRC, and, if koiwi are discovered, the New Zealand Police; ii. Setting out of procedures to be undertaken in the event of an accidental discovery (these shall include immediate ceasing of all construction in the vicinity of the discovery until authorised to proceed); and iii. Training procedures for all contractors regarding the possible presence of cultural or archaeological sites or material, what these sites or material may look like, and the relevant procedures if any sites or material are discovered.
	NOR1.11	**Terrestrial Ecology**
		(a) Where ecologically significant trees have been identified and are proposed to be removed the following planting mitigation ratios will be used: i. Kowhai replacement ratio of 3:1 ii. Black beech replacement ratio of 10:1 iii. Kahikatea replacement ratio of 5:1 All other vegetation types to be removed require compensation planning ratio of 3:1.
		(b) Seedlings used for compensation and replacement plantings must be sourced from the same Ecological District.
		(c) All seedlings for replacement planting should be of an advanced grade (>60cm height at planting) and planted into appropriate soil and microclimate conditions.

		(d) Any replacement or compensation planting undertaken shall be undertaken as close to the vegetation
		(e) Prior to the commencement of any vegetation clearance within each construction stage, a suitably qualified ecologist with avifauna experience must inspect the Project site for the presence of any protected indigenous bird species nesting. No vegetation clearance may occur within 4 metres of any identified nest, until the ecologist confirms that nesting is complete.
		(f) Prior to vegetation clearance, automatic bat monitors shall be deployed for at least 15 consecutive days (as per Department of Conservation guidelines) in suitable weather conditions (during spring and summer months where temperatures are above 10 degrees) targeting larger mature trees including the black beech trees proposed for removal in the Pinehaven Stream corridor. Should monitoring detect the presence of bats then, prior to vegetation clearance, a Department of Conservation accredited ecologist with bat detection experience must survey the clearance area for the presence of bats and large trees for the presence of roosting bats. Should roosting be detected, a pre-tree felling protocol (PTFP) must be prepared by the accredited bat ecologist in consultation with the Department of Conservation for the purpose of avoiding the injury or mortality of roosting bats. Any tree removal within the area identified as potentially containing bats must be undertaken in accordance with the PTFP.
		(g) A Lizard Management Plan shall be prepared by a suitably qualified and experienced ecologist and shall be submitted to the CMO at least 15 Working Days prior to Commencement of Construction for certification that it meets the requirements of this condition. The purpose of the LMP is to avoid, remedy or mitigate any potential adverse effects of the Project on lizards. The Lizard Management Plan must: i. Describe the methodology for survey, salvage, transfer and release, including the identification

		of potential habitats for survey and planned and opportunistic relocations; ii. Identify release sites and confirm any works necessary to protect such sites from predation or disturbance; and iii. Be updated to achieve consistency with any authorisation given by the Director-General of Conservation under section 53 of the Wildlife Act 1953 where any such authorisation is required.
	NOR1.12	**Earthworks**
		(a) Prior to the commencement of works on the site, the Requiring Authority shall provide the Team Leader, Resource Consents a copy of the erosion and sediment control plan certified by Greater Wellington Regional Council for their records. If during the construction period any changes are made to the certified plan that requires the recertification of Greater Wellington Regional Council, then a copy of the revised certified plan shall be provided to the Team Leader Resource Consents within 5 working days of receiving confirmation of the recertification.
	NOR1.13	**Flood Hazard Assessment**
		(a) Prior to the commencement of works on the site, the Requiring Authority shall provide the Team Leader Policy a copy of the hydraulic model that has been certified by Greater Wellington Regional Council for their records. If during the construction period any changes are made to the certified hydraulic model that requires the recertification by Greater Wellington Regional Council, then a copy of the revised certified model shall be provided to the Team Leader Policy within 5 working days of receiving confirmation of the recertification.
	NOR1.14	**Site office establishment and management**
		(a) A Site Office Management Plan (SOMP) shall be prepared and submitted to the CMO at least 15 Working Days prior to the establishment of the site office for certification that it meets the requirements of this condition. The purpose of the SOMP

		is to outline the requirements for the Project's site office establishment and management and to outline how potential adverse effects will be avoided or mitigated. The SOMP shall address, as a minimum: i. The location of the site office; ii. Proposed working hours; iii. Traffic movements to and from the site office area; iv. On-site and off-site parking for site office staff; v. The location, nature and height of any security fencing; vi. Light spill from any security lighting; and vii. Laydown areas on the property.
	Advice Note: All conditions, except for condition NOR 1.7 (d), relate to construction only, and will not apply to any works which take place after partial withdrawal of the designation pursuant to condition NOR1.2(a).	

Upper Hutt City Council - Utilities

Note: All utilities are shown on the Planning Maps by a ★ symbol.

Ref No	Map No	Designation title	Location
1	***U12***	Water storage	236 Plateau Road
2	U7	Water storage	Alleyne Court
3	U9	Water storage	Sundew Grove
4	U28	Water storage & pump station	King Charles Drive
5	U28	Water storage	Seymour Grove
6	U43	Water storage	Pinehill Crescent
7	U42	Water storage	Raynham Way (off Arundel Grove)
8	U45	Water storage	Duncraig Street
9	U14	Water storage & pump station	Kirton Drive
10	U4	Water storage	Grace Nicholls Grove
11	U7	Wastewater pump station	12 Black Beech Street
12	***U7***	Wastewater pump station	65 Bridge Road
13	U7	Wastewater pump station	49 Bridge Road
14	U1	Wastewater pump station	Akatarawa Bridge
15	U10	Wastewater pump station	621 Main Road North
16	U12	Wastewater pump station	245 Plateau Road
17	U12	Wastewater pump station	191 Plateau Road
18	U11	Wastewater pump station	Maymorn Road
19	**R19**	Wastewater pump station	Maymorn Treatment Plant
20	U41	Stormwater pump station	Perry Street
21	U40	Stormwater pump station	Field Street
22	U27	Stormwater pump station	Gibbons Street
23	U25	Stormwater pump station	Hildreth Street
24	U25	Stormwater pump station	Argyle Grove
25	U43	Stormwater pump station	Heretaunga Retention Dam
26	U24	Water pump station	Moonshine Park
27	U42	Water pump station	Chatsworth Road
28	U11	Water pump station	Plateau Road
29	U40	Pump station	Sylvan Way
30	U45	Reservoir	Sylvan Way
31	U10	Water storage & pump station	Mount Marua
32	U11	Wastewater pump station	63 Plateau Road

Note - status of Council roads

Council roads are not designated. For the purposes of clarity, formed Council roads have also been shown without zoning colours on the Planning Maps (ie – they are white). However, activities which take place within them are still subject to the relevant zone rules which pertain to the area in which the road is situated, as well as the City-wide rules. Where a road separates different zones on opposite sides of the road, the centre line of the road defines the boundary of the two zones.

Wellington Regional Council

Ref No	Map No	Designation title	Location
WRC1	R12 R13 R20 R21	Regional Park	Kaitoke Regional Park, State Highway 2
WRC2	U12 R21 R22 R28	Forestry Protection/ Recreation	Pakuratahi River catchment following dividing ridgeline between Hutt River and Pakuratahi River catchments
WRC3	R19 R20	Proposed Water Catchment	Part of Pakuratahi Water Catchment lying within the Mangaroa River Catchment
WRC4	R20-R21 R26-R28 R31-R33	Proposed Water Catchment	Pakuratahi River Catchment
WRC5	R3 R17	Water Catchment	Whakatiki Water Catchment lying within Whakatiki River catchment and Akatarawa River catchment
WRC6	R1-R3 R8-R11 R17-R19	Proposed Water Catchment	Akatarawa and Whakatiki Water Catchment
WRC7	R4-R7 R12-R15 R20-R22	Water Catchment	Hutt Water Catchment
WRC8	R10 R18	Forestry	Akatarawa River West