

**BEFORE THE ENVIRONMENT COURT  
AT WELLINGTON**

**I MUA I TE KŌTI TAIAO  
TE WHANGANUI-A-TARA ROHE**

**ENV-2023-WLG-000005**

**IN THE MATTER** of the direct referral for applications for resource consents  
for activities associated with the Otaki to North Levin State  
Highway Project

**BETWEEN** **Waka Kotahi New Zealand Transport Authority**

Applicant / Requiring Authority

**A N D** **Manawatu-Wanganui Regional Council, Horowhenua  
District Council, Kāpiti Coast District Council and  
Greater Wellington Regional Council**

Respondent

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**STATEMENT OF PRIMARY EVIDENCE OF PHIL JAGGARD ON BEHALF  
OF KĀINGA ORA-HOMES AND COMMUNITIES (SECTION 274 PARTY)**

**STORMWATER AND FLOODING**

**12 September 2023**

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## **STATEMENT OF EVIDENCE OF PHILIP JAGGARD ON BEHALF OF KĀINGA ORA-HOMES AND COMMUNITIES**

### **1. Summary**

- 1.1 The Kāinga Ora Properties are located in an existing rural environment adjacent to the alignment of the proposed O2NL highway.
- 1.2 My understanding of the suite of proposed conditions circulated to the Court and parties on 4 September 2023 (version: Draft Conditions: Mediation (clean)) do not make provision for any design standards for managing flood effects and risks.
- 1.3 In the absence of a suitable regime of flooding and stormwater conditions there is uncertainty as to the implications of the project on adjacent properties, including the Kāinga Ora Properties.
- 1.4 Therefore, I support the inclusion of consent conditions that might be adopted to ensure that buildings and people are appropriately protected from changes to stormwater and flooding arising from the construction and operation of the proposed road.

### **2. Introduction**

- 2.1 My full name is Philip Thomas Jaggard. I am a Director/Infrastructure Specialist consultant at MPS Limited providing expert and technical advice, and direction on three waters infrastructure including managing and mitigating stormwater effects and flood hazard risks.
- 2.2 I hold a Bachelor of Science from the University of Auckland and have over 20 years' experience in the water sector, with the past nearly 7 years as a consultant at MPS Limited.
- 2.3 My experience includes providing infrastructure advice, support and expert evidence on water, wastewater and stormwater servicing for brownfield and greenfield development Projects for both public and private entities. The following experience is particularly relevant to this appeal:
  - (a) Provided primary stormwater and flooding evidence on behalf of Kāinga Ora in relation to the Airport to Botany Rapid Transit Notices of Requirement (“**NoRs**”) applied for by Waka Kotahi and Auckland Transport (“**AT**”).

- (b) Provided advice to a private individual on the stormwater and flooding effects of the proposed Northwest Rapid Transit NoRs applied for by Waka Kotahi and AT.

2.4 Full details of my qualifications and relevant experience are at **Attachment A** to this evidence.

2.5 I have read the Code of Conduct for Expert Witnesses in the Environment Court Practice Note 2023. I have complied with the Code of Conduct in preparing this statement of evidence and confirm that I will do so in presenting my evidence to the Court. Unless I state otherwise, this evidence is within my area of expertise, and I have not omitted to consider material facts known to me that might alter or detract from the opinions I express.

2.6 My evidence addresses the adequacy of conditions governing potential stormwater and flooding effects of the O2NL project, with particular reference to two Kāinga Ora Properties located within or adjacent to the proposed designation boundary.

### **3. Scope of Evidence**

3.1 I have been engaged by Kāinga Ora – Homes and Communities (“**Kāinga Ora**”) to provide evidence on stormwater and flood hazard risks in respect of its properties at 242 Muhunoa East Road and 96 and 98 Arapaepae Road, Levin (“**the Kāinga Ora Properties**”) arising from the NoRs and resource consent applications relating to Ōtaki to North Levin (“**O2NL**”) State Highway Project (“**Project**”).

3.2 This evidence will address the following topics:

- (a) Consent conditions that might be adopted to ensure the stormwater and flooding effects of the Project remain within acceptable limits on adjacent properties.
- (b) Stormwater and flooding in relation to the Kāinga Ora Properties.
- (c) A consent condition that should be adopted to ensure that groundwater related flooding effects of the Project are addressed appropriately through the design and construction phase.

#### 4. Lack of Flood Hazard Conditions

- 4.1 The Kāinga Ora Properties are located in an existing rural environment adjacent to the alignment of the proposed O2NL highway.
- 4.2 I have reviewed the suite of proposed conditions circulated to the Court and parties on 4 September 2023 (version: Draft Conditions: Mediation (clean)) and note my understanding that the proposed conditions do not make provision for any design standards for managing flood effects and risks.
- 4.3 In my experience and opinion, it is highly unusual for a project of this scale and effect to have no conditions in relation to flooding, either within the designation conditions or the regional discharge consent. Such conditions provide landowners and occupiers with confidence that, while implementation of a project may involve changes to ground levels, stormwater flows and flooding characteristics, it will not do so in a way that will adversely affect the safety, security and amenity of nearby properties and dwellings.
- 4.4 In the absence of a suitable regime of flooding and stormwater conditions there may be both uncertainties as to the implications of the project and an inability for the territorial authority to predict and monitor the consequences of the project and to take suitable measures to prevent adverse outcomes arising from rainfall events.
- 4.5 The absence of conditions relating to managing flood effects and risks was noted in the Hydrology and Flooding Joint Witness Statement (“**JWS**”), that I was a signatory to. The Hydrology and Flooding JWS stated:
- (a) *“All agree that the conditions currently don't provide any provision for design standards for flood effects and these standards should be added to the conditions.”*
- (b) *“All agree that a condition relating to habitable floor levels would be appropriate.”*
- 4.6 As no design standards for flood effects or habitable floors have been included in the latest set of conditions proposed by Waka Kotahi, there is a risk that the flood effects and risk to habitable floors are greater than those shown by the modelling undertaken to date.

- 4.7 In my opinion there are insufficient controls to ensure that buildings and people are appropriately protected from changes to flood hazards arising from the construction and operation of the proposed road.
- 4.8 Therefore, I recommend that clauses to the following effect be added to the conditions for the Project:

**Flood Hazard**

- (a) *The Project shall be designed to achieve the following flood risk outcomes:*
- (i) *No increase in flood levels in a 1% AEP event for existing authorised habitable floors that are already subject to flooding or have a freeboard less than 150mm;*
  - (ii) *No more than a 10% reduction in freeboard in a 1% AEP event for existing authorised habitable floors with a freeboard of over 150mm;*
  - (iii) *No increase in 1% AEP flood levels for existing authorised community, commercial and industrial building floors that are already subject to flooding;*
  - (iv) *No more than a 10% reduction in freeboard in a 1% AEP event for existing authorised community, commercial and industrial building floors;*
  - (v) *No increase of more than 50mm in flood level in a 1% AEP event on land zoned for urban or future urban development;*
  - (vi) *No increase in 10% AEP flood levels for existing authorised habitable floors that are at risk of flooding;*
  - (vii) *No new flood prone areas; and*
  - (viii) *No more than a 10% increase in flood hazard (defined as flow depth times velocity) for main access to existing authorised habitable floor where depth is greater than 0.5m or velocity is greater than 2.0 m/s or the product of velocity and depth is greater than 0.5m<sup>2</sup>/s.*
- (b) *Compliance with this condition shall be demonstrated in the Outline Plan, which shall include flood modelling of the pre-Project and post-Project 10% and 1% AEP flood levels (for Maximum Probable Development land use and including climate change).*

- (c) *Where the above outcomes can be achieved through alternative measures outside of the designation such as flood stop banks, flood walls, raising existing authorised habitable floor level and new overland flow paths or varied through agreement with the relevant landowner, the Outline Plan shall include confirmation that any necessary landowner and statutory approvals have been obtained for that work or alternative outcome.*

4.9 In that regard:

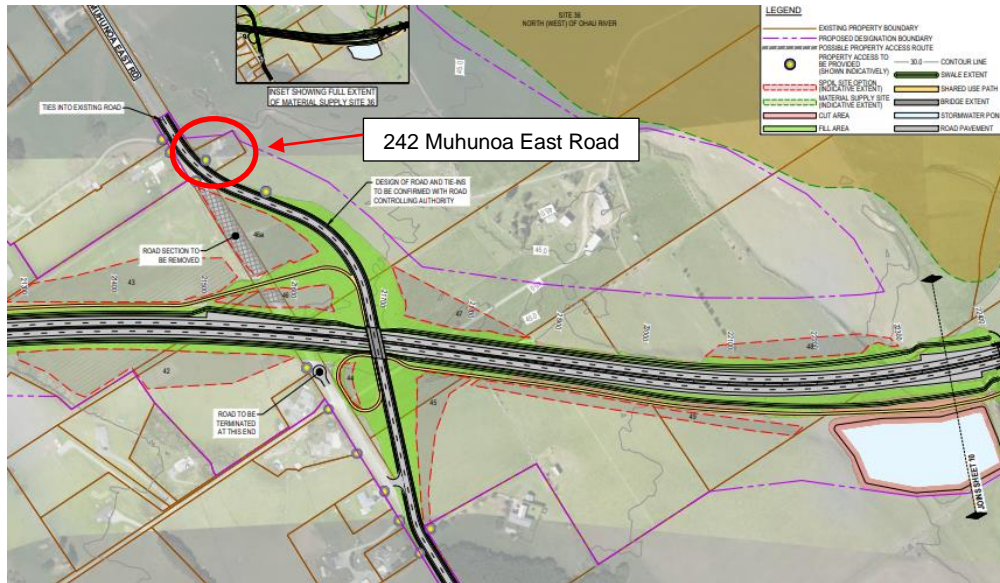
- (a) These conditions are similar to the most recent set of conditions proposed by Waka Kotahi and AT for the Airport to Botany Rapid Transit NoRs (on which the Council hearing finished on 6 September 2023).
- (b) The conditions are also similar in effect to those currently proposed by Waka Kotahi and AT for the Northwest Rapid Transit Corridor NoRs (for which the Council hearing commences on 18 September 2023) and those approved for the SH22 (Drury-Pukekohe) Urbanisation designation for Waka Kotahi.
- (c) I have not reviewed the flooding and stormwater issues along the full length of the Project and acknowledge that any conditions addressing these matters in the context of the Project may well require or benefit from refinements to take account of site-specific issues.

## 5. 242 Muhunua East Road

- 5.1 The property located at 242 Muhunua East Road (“**Muhunua Site**”) is within the proposed designation boundary of the project and is expected to be acquired by Waka Kotahi. The flood modelling results for the Muhunua Site are included in **Attachment B** for reference.
- 5.2 I understand that the sale process for the Muhunua Site between Kāinga Ora and Waka Kotahi has not yet been completed. As such, I have been asked to consider flooding issues in respect of that land. These issues will be relevant in the event that the Muhunua Site is ultimately excluded from the Project, the land is not acquired by Waka Kotahi, and the Project is implemented on adjacent land.

5.3 While this outcome is not proposed by Waka Kotahi, the Muhunua Site is located on the periphery of the Project so there is a risk that plans will change. By way of explanation:

- (a) As shown in Figure 1 below, the Muhunua Site is expected to be acquired to allow for the construction of the proposed realigned Muhunua East Road over the proposed highway.



**Figure 1:** General Arrangements and 242 Muhunua East Road

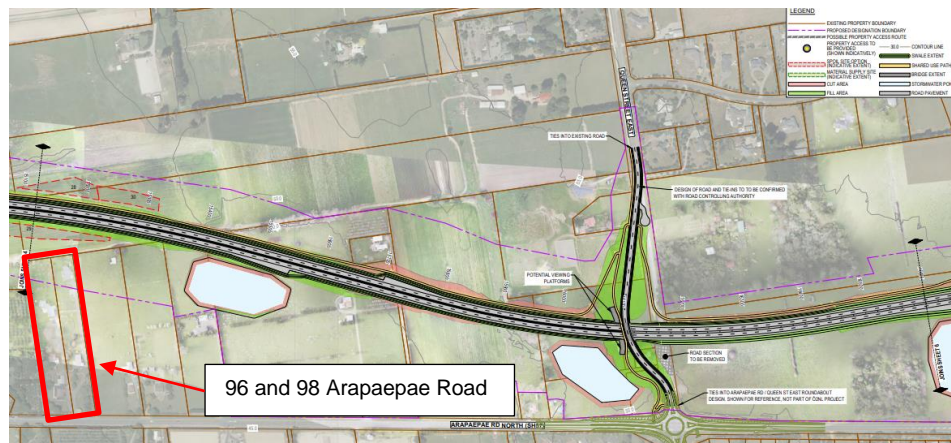
- (b) It is noted on the General Arrangement drawings (as shown in Figure 1 above) that the design of the road and tie-ins are still to be confirmed with the road controlling authority (i.e., the District Council). This suggests that the design of the realigned road and overpass is still within the early stages of the design process and could be subject to change through the design and value engineering process prior to construction.
- (c) In addition, Figure 1 indicates that property access to the Muhunua Site is to be provided.
- (d) Therefore, it is not outside the realms of possibility that, post approval of the designation, a revised, scaled down or updated design of the overpass road and tie-ins avoids the Muhunua Site altogether and its purchase is not required.

5.4 On this basis, I consider it prudent that, for the purposes of drafting stormwater and flood hazard conditions, regard is taken of the possibility that the Muhunoa Site may not be acquired or required for the Project.

5.5 If the property is not acquired by Waka Kotahi in its entirety and design changes result in increased flood hazard effects to the building, this would be an area of concern for the owner and occupier. In that context, the flood hazard conditions set out in paragraph 4.8 above would ensure sufficient protection to the Muhunoa Site (e.g., by imposing standards for habitable floors).

**6. 96 and 98 Arapaepae Road**

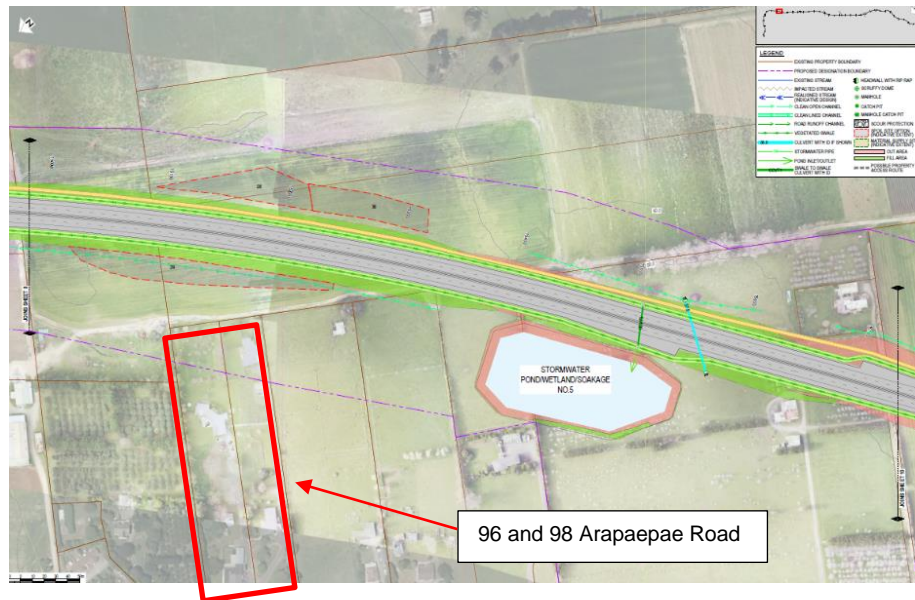
6.1 The eastern corner of the properties located at 96 and 98 Arapaepae Road ("the Arapaepae Site") was initially included within the designation boundary of the project (refer to Figure 2 below). However, it is understood that Waka Kotahi has realigned the designation boundary to remove it from the Arapaepae Site.



**Figure 2:** General Arrangements and 96 and 98 Arapaepae Road

6.2 As shown in Figure 3 below, it is proposed to establish a large stormwater treatment wetland and infiltration/soakage device a short distance to the south of the Arapaepae Site.





**Figure 3: Stormwater Infrastructure and 96 and 98 Arapaepae Road**

6.1 My review of the flood modelling results (refer plans included in **Attachment C**) indicate that the Arapaepae Site will experience minor changes in flood depth. Flood levels on the site are predicted by the model to change between -0.01m (a decrease in flood depth) to 0.05m (an increase in flood depth) as shown in Figure 10 in **Attachment C**.

6.2 The changes in flood depth on the site cover an area where an existing building is located. Therefore, as part of the detailed design process it will be prudent to assess any change in flood depth against the existing floor level of this building to determine if the effect of the project will be more than minor.

6.3 The proposed Flood Hazard conditions in paragraph 4.8 should provide comfort that any changes to flood levels on the Arapaepae Site will be appropriately assessed. Assuming the conditions are complied with, the effects would be no more than minor to the existing habitable floor levels, occupants and building access.

**7. Lack of Conditions addressing Groundwater contribution to Flooding**

7.1 During my review of the application and Council's reports, I noted that Mr Jonathan Williamson had raised concerns surrounding the risk of flooding from the soakage and infiltration devices and this issue was added to the Hydrogeology and Groundwater caucusing.

7.2 It was agreed by Mr Williamson and Jack McConchie in the Hydrogeology and Groundwater JWS to amend RSW1 and insert the following condition:

*“the dedicated stormwater management devices required by clause (a) must be designed, located and operated in a manner that will not cause or exacerbate groundwater related flooding“.*

7.3 My understanding is that the recommended condition has not been included in the latest set of conditions circulated to the Court and parties on 4 September 2023 (version: Draft Conditions: Mediation (clean)).

7.4 I understand from reading the Planning JWS that reservations were raised by Grant Eccles (Waka Kotahi Planner) about the enforceability of the condition in terms of being able to prove causation or exacerbation. The absence of that condition may reflect a conclusion on the part of Waka Kotahi that it is inappropriate.

7.5 I support the inclusion of the proposed condition and note the following:

- (a) I understand that Mr Williamson’s initial concerns were in response to the fact that, in some instances, it would have been preferable to have more site-specific data to assess the likely effects. However, it is understood that property access has been a major constraint for Waka Kotahi and has prevented such site-specific data being obtained at this stage.
- (b) I accept that, in the absence of such site-specific data, it is not possible at this stage to specify the design of the stormwater management devices. That design exercise will need to be undertaken at the time of construction and implementation of the designation and related consents.
- (c) The proposed condition has been recommended by the experts to ensure further scrutiny at the design stage and to ensure that a potential adverse effect, being groundwater related flooding, is not exacerbated by the works. That is an important outcome where groundwater is relatively close to the surface and earthworks and changes in finished levels have the potential to increase the contribution to flooding made by groundwater conditions.

(d) In my opinion, provided adequate testing and analysis is undertaken on a site-specific basis, the individuals and organisations implementing the Project should be able to identify whether there is a material risk of the works exacerbating groundwater-based flooding. Having reached that level of understanding, decisions can be made as to the design and capacity of stormwater management devices to address the apparent risk.

7.6 On this basis, I support the inclusion of the proposed condition agreed by Mr Williamson and Mr McConchie, as significant design and investigation is still to be undertaken in regard to the infiltration/ soakage devices.

## **8. Conclusion**

8.1 The proposed conditions circulated to the Court and parties on 4 September 2023 (version: Draft Conditions: Mediation (clean)) do not make provision for any design standards for managing flood effects and risks.

8.2 In the absence of a suitable regime of flooding and stormwater conditions there is uncertainty as to the implications of the project on adjacent properties regarding those effects.

8.3 Therefore, I support the inclusion of additional consent conditions that might be adopted to ensure that buildings and people are appropriately protected from changes to stormwater and flooding arising from the construction and operation of the proposed road.

8.4 I acknowledge that any conditions addressing these matters in the context of the Project may well require, or benefit from, refinements to take account of site-specific issues as I have not reviewed the flooding and stormwater issues along the full length of the Project.

**Phil Jaggard**

**Dated: 12 September 2023**



## Experience Summary

- **MPS Limited:** Director/Project Management/Infrastructure Planning, 2016 to present.
- **St Francis Primary School:** Board of Trustees – Parent Representative, June 2019 to present; Co-Chair 2022 to present.
- **Auckland Council:** Stormwater Strategy and Resilience Manager, 2013 to 2016.
- **Te Motu a Hiaroa Governance Trust (Governance Trust) and Te Motu a Hiaroa Charitable Trust (Island Trust):** Trustee and Secretary, 2011 – 2014
- **Watercare Services Limited:** Wastewater Planning Manager, 2008 to 2014.
- **North Shore City Council:** Wastewater Network Planner, 2006 to 2008
- **Sinclair Knight Merz (SKM):** Project Engineer / Hydraulic Modeller, Hydrogeologist, 2000 to 2006 (excluding September 2004 – January 2005)
- **Connell Wagner:** Water Engineer September 2004 – January 2005

## Education and Qualifications

- **Bachelor of Science,** Geography and Geology, University of Auckland.
- **Post Graduate Diploma of Science,** (Partially complete), University of Auckland.
- **Engineering Technology Papers,** Open Polytechnic
- **Better Business Cases – Foundation – APMG International**
- **People Leaders – Auckland Council**
- **Strategic Planning, Motivation and Leadership – University of Auckland Short Courses**
- **Project Management Level 1 & 2 - SKM**
- **Understanding NZS3910 Conditions of Contract**
- **Urban Drainage Modelling**

## Personal Details

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I am a highly motivated and outcomes focused individual with a proven track record in leading and developing teams, to successfully deliver asset management programmes and infrastructure projects, within the public and private sector. My leadership and communication skills, infrastructure expertise and knowledge, financial and risk acumen, ability to problem solve, think strategically, and bring new ideas is invaluable to organisation's seeking to deliver high quality infrastructure programmes and projects on time and within budget.

My experience extends from strategic planning and preparing business cases through to project set up, delivery and implementation. I have technical expertise and knowledge that provides me with a unique insight into ensuring projects are scoped and delivered successfully. In addition, I have provided expert witness evidence on water, wastewater and stormwater servicing for brownfield and greenfield development proposals for public and private entities. Prior to joining MPS, I was the Stormwater Strategy and Resilience Manager at Auckland Council and spent six years as the Wastewater Planning Manager at Watercare.

## Recent Professional Experience

### **Carrington Development: Ministry of Housing and Urban Development – Infrastructure Advisor – MPS Limited**

Land within the Wairaka Precinct, Auckland was transferred via legislation to the Crown in 2018 and is now under the control of the Ministry of Housing and Urban Development (HUD). The Crown, through HUD, in partnership with Ngā Mana Whenua o Tāmaki Makaurau, propose to develop an inclusive sustainable community on the Crown land. The site is a significant brownfield residential development (approximately



## Curriculum Vitae of Phil Jaggard

63 Ha) with up to 6,000 residential dwellings proposed. MPS has been providing infrastructure advice and support to HUD on development plans, infrastructure upgrade requirements, shovel-ready projects, fast track consenting, resource consents, design, and engineering approvals. In addition, MPS prepared 4eh Stormwater Management Plan for the Wairaka Precinct and assisted HUD tender and appoint the lead designer for the proposed Backbone Infrastructure works including identifying the shovel ready projects that are underway.

### **Wellington Water Limited – Seconded Engineer – MPS Limited**

Providing expert technical engineering and infrastructure advice to Wellington Water's Network Engineering Team. Projects include review of the Very High Critical Asset Renewal Programme, Identification, and investigation of critical projects for implementation, Stormwater Prioritisation, and preparation of Activity Briefs for project implementation.

### **State Highway 22 Urbanisation: Waka Kotahi - Stormwater Design Lead – Subconsultant to Aecom /Beca**

The upgrade of State Highway 22 (SH22) is being advanced as part of the New Zealand Upgrade Programme (NZUP) South Auckland package to improve safety and support growth in Drury West, South Auckland. It will provide growing communities with more travel options that help people get where they want to go safely. graded road will consist of four lanes of traffic (2 in each direction), cycle lanes on both sides, pedestrian footpaths, and upgraded traffic intersections. Phil is currently the Stormwater Design Lead on the Pre-implementation phase of the project that includes confirming the concept design, design standards and staging and timing of construction. In addition, it includes understanding how major land-use development project will interface with the corridor.

### **Land Development Projects: Multiple clients – Infrastructure Specialist – MPS Limited**

Provided expert technical three waters infrastructure advice on multiple large scale land development projects for a variety of public and private developer clients. Developments included commercial, industrial, and residential developments in both greenfield and brownfield areas across Auckland. Projects include working alongside Auckland Council's Development Project Office to identify three water upgrade projects and assisting in the preparation of Precinct Infrastructure Master Plans. In addition, Phil has provided technical input into applications for fast-track consenting, Infrastructure Acceleration Funding, developer agreements, resource consents and engineering approvals. On multiple projects, I was appointed to resolve infrastructure, resource consent and engineering issues for clients with Auckland Council and/or Watercare to unlock stalled projects.

### **Te Auaunga/Oakley Creek Framework Stormwater Management Plan (SMP): Kāinga Ora/Piratahi – Subconsultant to Piratahi**

Phil was appointed to lead the Green Infrastructure Workstream of the Te Auaunga/Oakley Creek Framework SMP project. Phil's role was to provide expert stormwater technical advice and co-ordinate outputs from the ecology, hydrogeology, water quality, Iwi, and stakeholder engagement teams to develop the Best Practical Option (BPO) for stormwater management within the Te Auaunga/Oakley Creek catchment that included Kāinga Ora's Roskill Precinct.

### **Takapuna Beach Water Quality Improvement Project: Auckland Council - Project Manager and Technical Expert**

Through Auckland Council's Safeswim programme and website, the public is informed about health risks and beach water quality ratings associated with contact recreation at Takapuna Beach. The overall objective of the Takapuna Beach Water Quality Improvement Programme was to investigate and identify the source/s of recreational water quality issues at Takapuna Beach and evaluate and recommend solutions to improve water quality. My role was the Project Manager for the overall programme of work, and the technical expert responsible for preparing the Options Report.

### **Rapaki Decommissioning and Heritage Recovery Project: Regional Facilities Limited, New Zealand Maritime Museum (NZMM) and Panuku – Project Manager**

I was appointed to find a solution to relocate the Rapaki and project manage the relocation project to allow the Americas' Cup Hobson Wharf extension construction works to proceed in a timely manner. I undertook a review of all existing documentation and information on the Rapaki and developed an assessment of options, information documents for the relevant Board and senior management teams. In addition, I completed the business case for approval for the preferred option to decommission the ship and recover



## Curriculum Vitae of Phil Jaggard

heritage items for preservation. Due to the tight timeframes for the America's Cup works to begin (weeks), I worked collaboratively with the limited number of available suppliers to develop a suitable contract and safety plans to decommission the Rapaki and recover the heritage items during December and over the Christmas break.

Due to the condition of the Rapaki, there were several significant risks that required oversight and careful management particularly due to the evidence of significant corrosion. Key risks identified were asbestos removal; failure of the crane superstructure; hull breach or failure; failure of propellers seals and failure to recover heritage items for preservation.

### **Weiti Villages Plan Change Variation: Williams Land (Weiti Development LP) – Project Manager**

The 860ha Weiti site is situated on the coast between Okura and Stillwater just north of Auckland. The initial focus is the delivery of the 150-lot (Sub-precinct A) private residential development of Weiti Bay, with later stages being the development of two Villages (Sub Precinct B) including some mixed use. The Weiti Sub-Precinct B - Village area is zoned for a maximum of 400 residential lots and 100,000 m<sup>2</sup> Gross Floor Area (GFA) mixed use in the Auckland Unitary Plan's Weiti Precinct provisions. Auckland Council has agreed to accept a public notification of a Private Plan Change application to enable up to 1,200 dwellings in total in Weiti Sub-precincts A (150 lots) and B (1,050), including a minor amendment to the boundary of Sub-precinct B.

My role was the project manager for the Plan Change variation, including managing various consultants and contractors, in preparing the application and supporting technical documentation.

### **Weiti Subdivision: Williams Land (Weiti Development LP) – Design Manager**

I was the design manager for the \$10 million civil contract works for the construction of over 120,000m<sup>3</sup> cut and fill, 1.3 km of new public access road along the Penlink designation, including an upgraded intersection with East Coast Road. My role for the project was managing various consultants, adjacent landowners, and contractors, including the design, consents, and construction, managing service relocations, clearance of unexploded ordnances from a historic World War 2 firing range and all farm improvement works required as part of the Auckland Transport's agreement with the Hugh Green Group.

Close liaison with Auckland Council on the resource consents was required, given the tight timeframes, consents were obtained on time to allow construction and the sediment control works to begin prior to the earth work season. In addition, I managed the preparation and submission of all 223 and 224c documentation, lodgement of easements and issuing of titles for the 150-lot development.

### **Project CANOPY and Western Isthmus Water Quality Improvement Programme: Auckland Council – Project Manager and Technical Expert.**

Project CANOPY was initiated in January 2017 in response to long-standing concerns about the ongoing water quality issues in the western part of Auckland's inner city. CANOPY stands for Central Auckland Network Optimisation Programme and was undertaken jointly by Watercare Services (Watercare) and Auckland Council Healthy Waters (Healthy Waters). These projects were to develop an affordable, timely and integrated infrastructure programme for stormwater and wastewater services.

I was responsible for the project management of numerous consultants to deliver 11 catchment reports, provided expert technical advice and collaborated with others on the Strategic and Summary reports to the Project Governance Group. Upon completion of Project CANOPY, I undertook the development of the Western Isthmus Water Quality Improvement Programme for inclusion in the 2018 Long Term Plan and subsequent investigation requirements.

### **Unitec Carrington Campus Re-development: Unitec/Wairaka Land Company – Infrastructure Technical Expert**

Unitec planned to consolidate some 177 existing buildings spread over 53 hectares into a purpose-built education core on only 10 to 15 hectares, releasing some 40 hectares for residential and commercial development. I was involved in reviewing and updating the three waters master plan for the whole site. In updating the Master Plan, I undertook consultation with Auckland Council and Watercare Services Limited, prepared a gap analysis, assessed stormwater and wastewater capacities, managed the CCTV contractor, surveyor and consultants developing the water supply model for the site. In addition, I undertook the additional tasks and investigations:



- Project Management of the Stormwater Management Plan and Modelling
- Infrastructure Report for Boundary Rationalisation Subdivision Consent
- Infrastructure Servicing Report for the proposed Business Park Redevelopment.

### **Stormwater Strategy and Resilience Manager: Auckland Council.**

Responsible for the strategic vision and direction of stormwater services at Auckland Council, reporting directly to the Stormwater Manager. Responsibilities include: preparing the Asset Management Plan, financial reporting of the Business unit, preparation of annual \$75 million capital works budget, review and approval of business cases, programming and prioritisation of the 30-year capital works programme, resource management team, resource consents, development of infrastructure funding agreements with developers, communication with stakeholders, Local Boards and Councillors, provide governance on difficult and complex projects and technical issues, and management and development of nineteen staff members, including four managers. I also filled the role as Acting Stormwater Manager during the absence of the Stormwater Manager.

I have a good understanding of stormwater technical issues as well as strong working relationship with key people within Auckland Council. In addition, I was appointed to lead the Takapuna Spatial Priority Area project within Council, and I coordinated the LGNZ Three Waters data and survey information for the Auckland and Northland regions. As the Takapuna Spatial Priority Area lead, I was able to identify and obtain funding approval for the first Spatial Priority Area project within Council.

### **Te Motu a Hiaroa Governance Trust (Governance Trust) and Te Motu a Hiaroa Charitable Trust (Island Trust): Trustee and Secretary: Trustee and Secretary, 2011-2014.**

Managed the formation of the two Puketutu Island (Te Motu a Hiaroa) charitable trusts as part of the settlement agreement between Watercare Services Limited, Auckland Council and three iwi entities, being Waikato Tainui, Te Kawerau and Makaurau Marae. In addition, I served as inaugural trustee and secretary on both trusts.

### **Wastewater Planning Manager: Watercare Services Limited.**

Overall responsibility for the planning of Auckland's wastewater infrastructure to meet the operational and strategic needs of the company. Responsibilities include preparation of the annual \$100+ million and 20 year \$2.5+ billion capital works Asset Management Plan, management of the \$4 million planning budget, renewal, growth and demand planning, preparation of business cases including risk and financial evaluations for new capital projects, internal and external communication with stakeholders, expert engineering input to ensure project deliverables/objectives are met, management and development of seven staff members.

Highlights include obtaining Board and/or Management approval for over 300 capital works projects with a combined value of more than \$2.0 billion; integration and reprioritisation of Auckland's wastewater planning and capital works programme in 2010, with identified savings of approximately \$1 billion (25% saving) over 20 years; successful negotiation and conclusion of the Puketutu Island Rehabilitation Settlement Agreements. I have an excellent understanding of wastewater technical issues as well as strong working relationship with key people within Watercare.

### **Wastewater Network Planner: North Shore City Council.**

As Wastewater Network Planner I was responsible for the Wastewater Strategy and Policy to meet the long-term objectives of Council, division objectives and legal requirements. Responsibilities included: strategic and catchment management planning, setting annual budgets, development of the 10-year Improvement Work Programme for inclusion in the Long-Term Plan, manage external consultants and internal resources, project management, and technical input to ensure project deliverables/objectives are met.

### **Sinclair Knight Merz and Connell Wagner: Project Engineer / Hydraulic Modeller, Hydrogeologist / Water Engineer.**

Prior working experience consists of a variety of consultant roles that have helped me build my experience in project management, engineering, water, wastewater, stormwater, and ground water. I prepared reports, working collaboratively within interdisciplinary teams on a range of projects including landfills, groundwater investigations and modelling, data analysis and manipulation, geotechnical investigations, farmland and drainage improvements, wastewater and stormwater network upgrades and system performance modelling.

### Attachment B: 242 Muhunua East Road Flood Maps

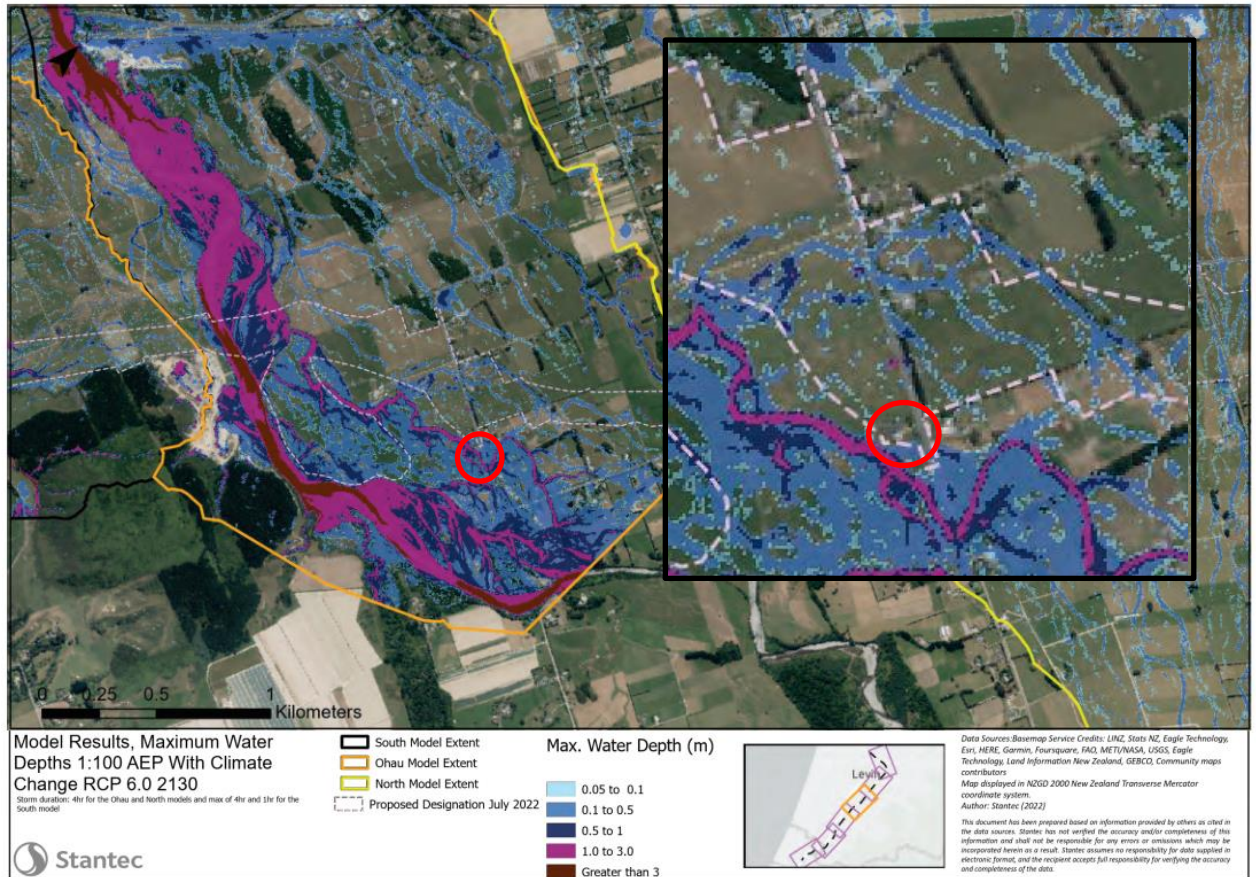


Figure 4: 242 Muhunua East Road – Existing 1:100 AEP Flood Plain<sup>1</sup>

<sup>1</sup> Volume 4 - Technical Assessments: Assessment F Hydrology and Flooding updated 23 Dec 2022



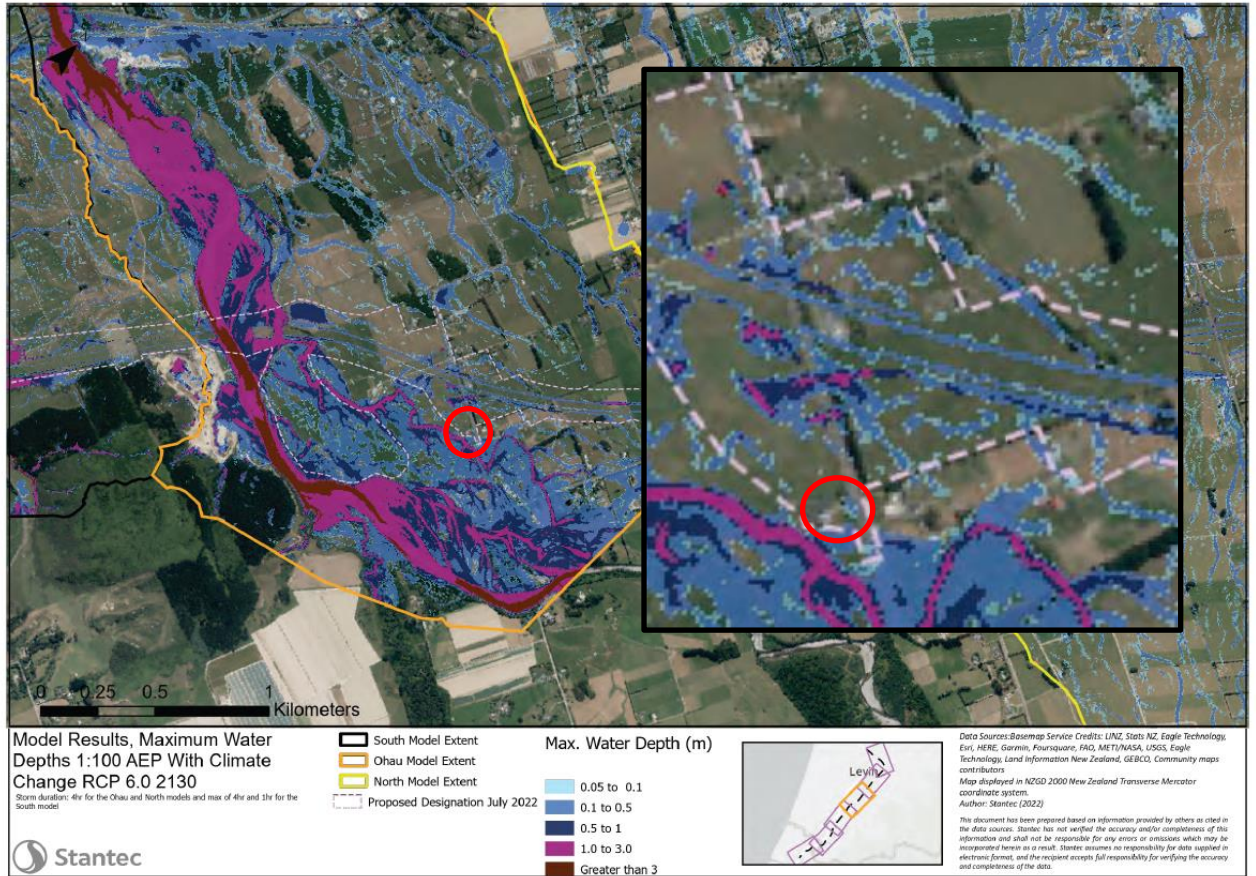


Figure 5: 242 Muhunua East Road – Future 1:100 AEP Flood Plain<sup>1</sup>

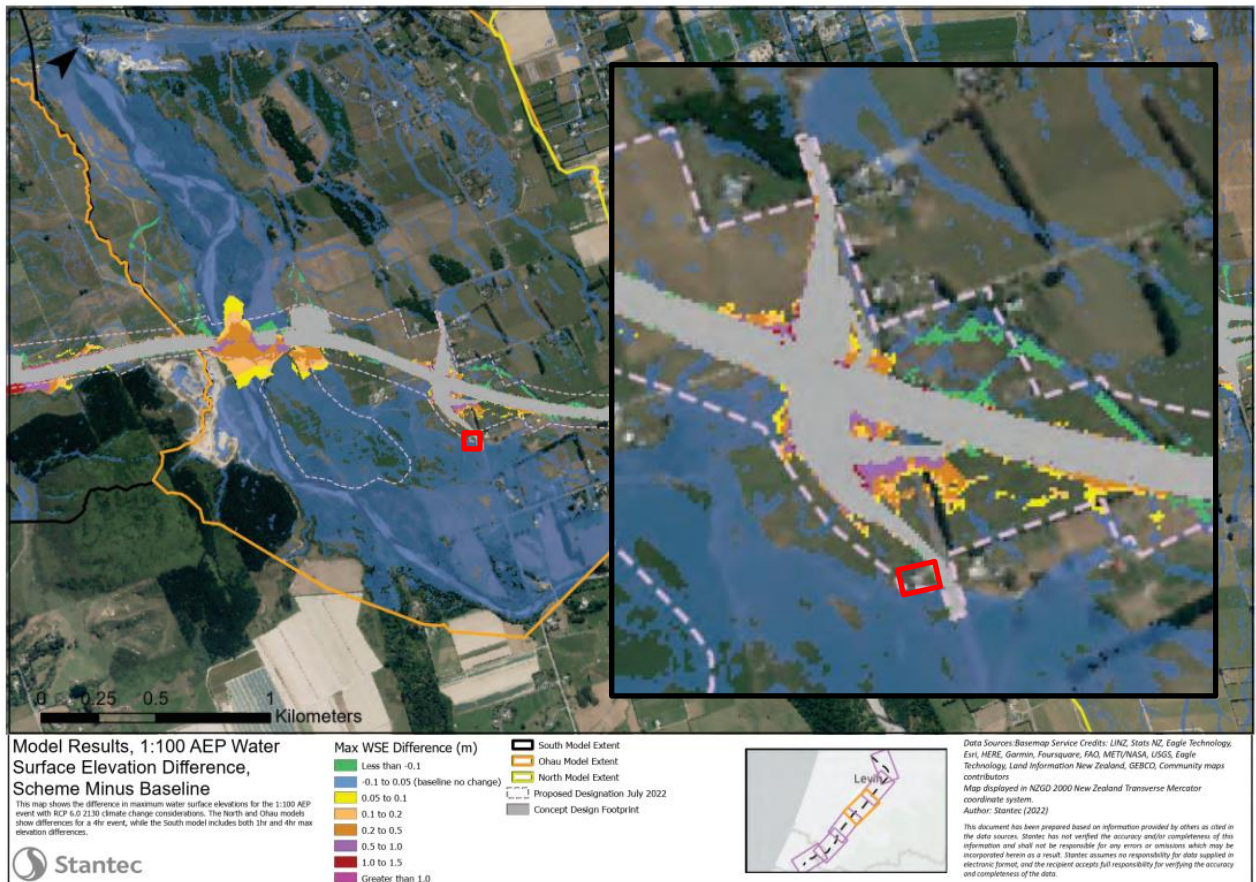


Figure 6: 242 Muhunua East Road – Depth Difference 1:100 AEP Flood Plain<sup>1</sup>

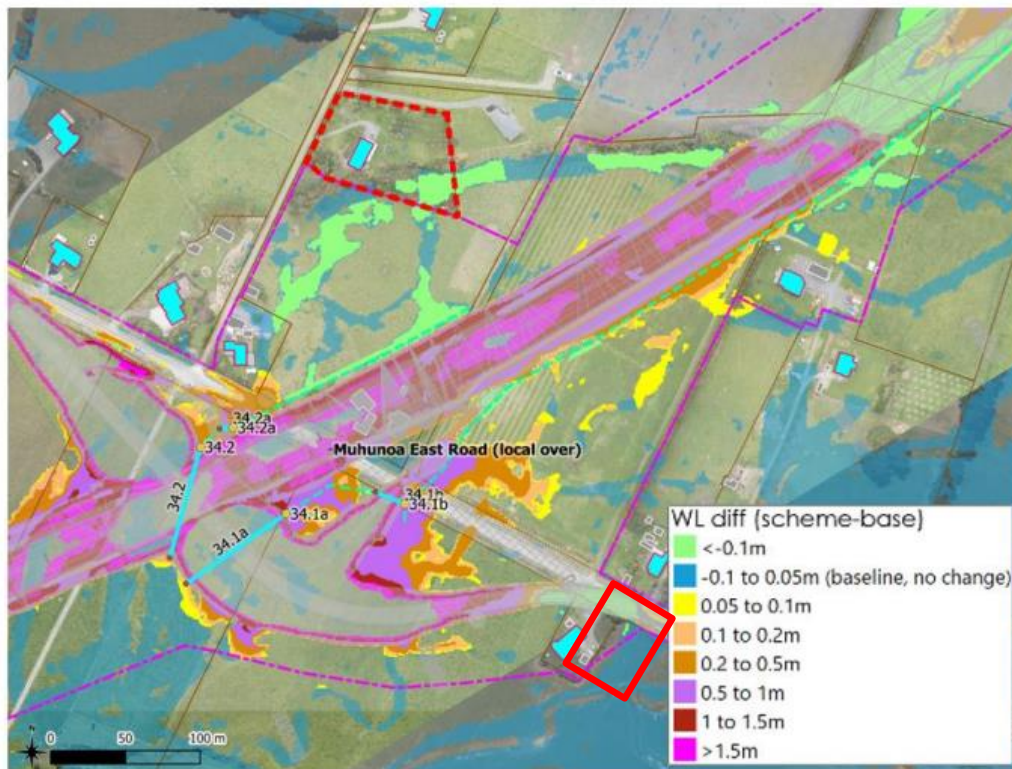


Figure 1: Location of Submitter 11's property relative to the Project and the effect of the Project on the flood hazard during the 1% AEP design event.

Figure 7: 242 Muhunua East Road – Depth Difference 1:100 AEP Flood Plain<sup>2</sup>

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<sup>2</sup> Statement of Evidence of Dr John (Jack) Allen McConchie on behalf of Waka Kotahi NZ Transport Agency – Hydrology, Flooding, Hydrogeology and Groundwater dated 4 July 2023 - Plan provided in response to submission Adam & Joanne McCallum, 213a Muhunua East Road, Ohau

### Attachment C: 96 and 98 Arapaepae Road Flood Maps

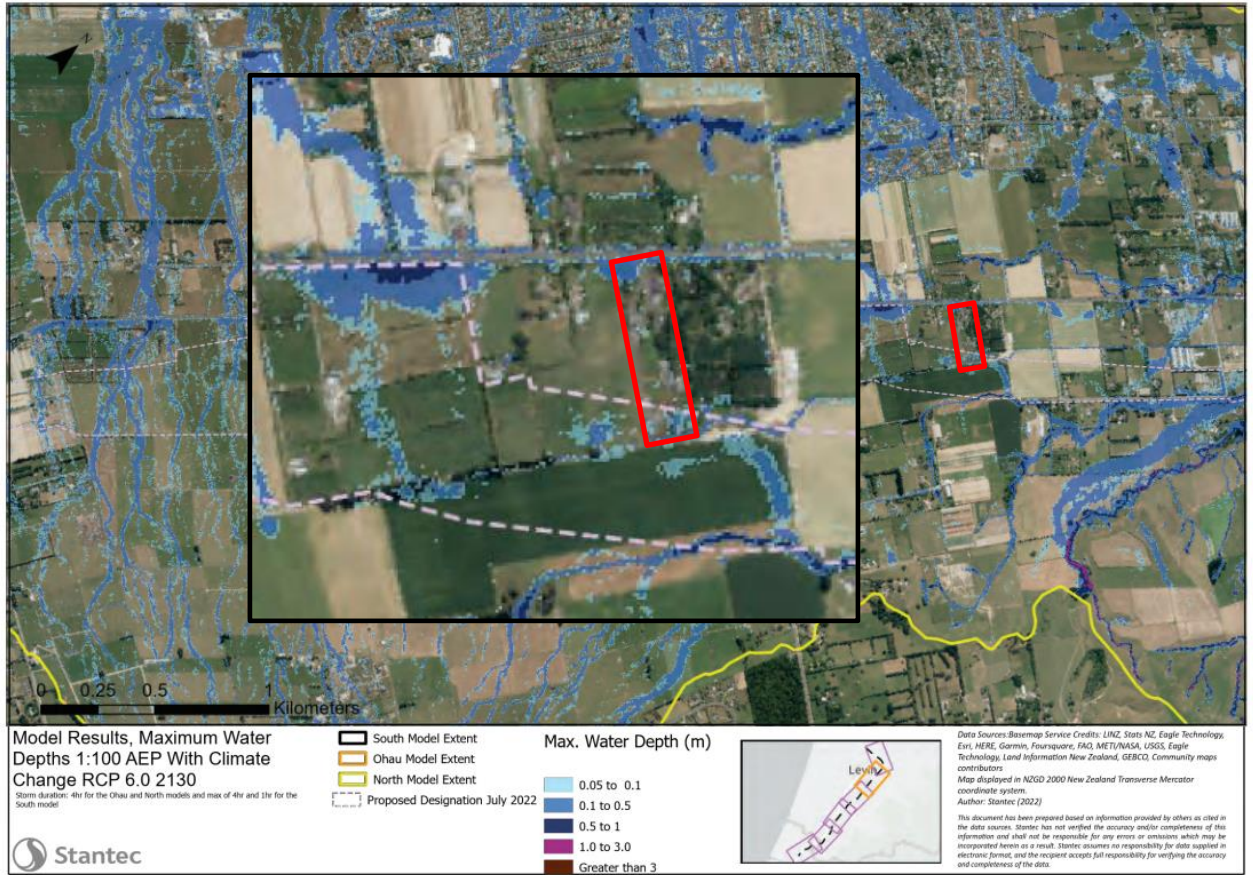


Figure 8: 96/98 Arapaepae Road – Existing 1:100 AEP Flood Plain<sup>1</sup>

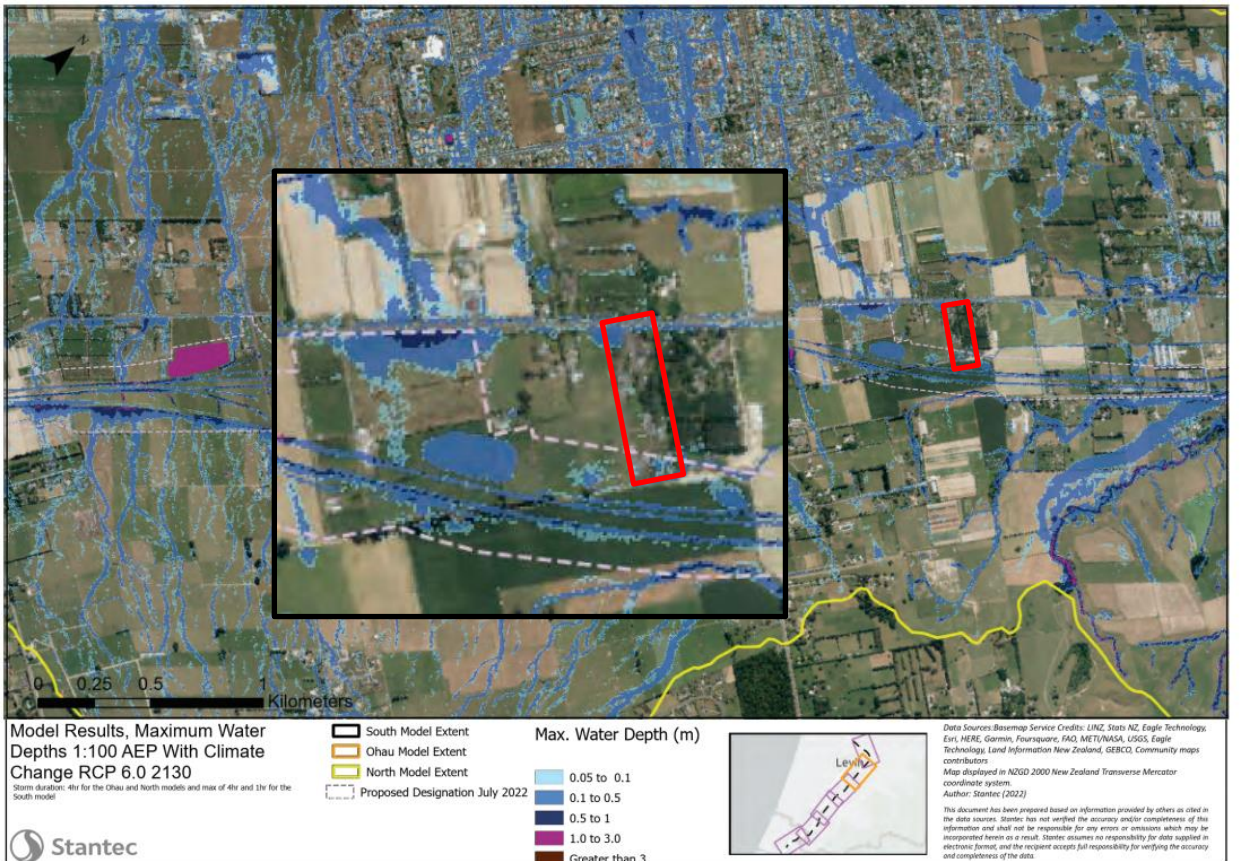


Figure 9: 96/98 Arapaepae Road – Future 1:100 AEP Flood Plain<sup>1</sup>

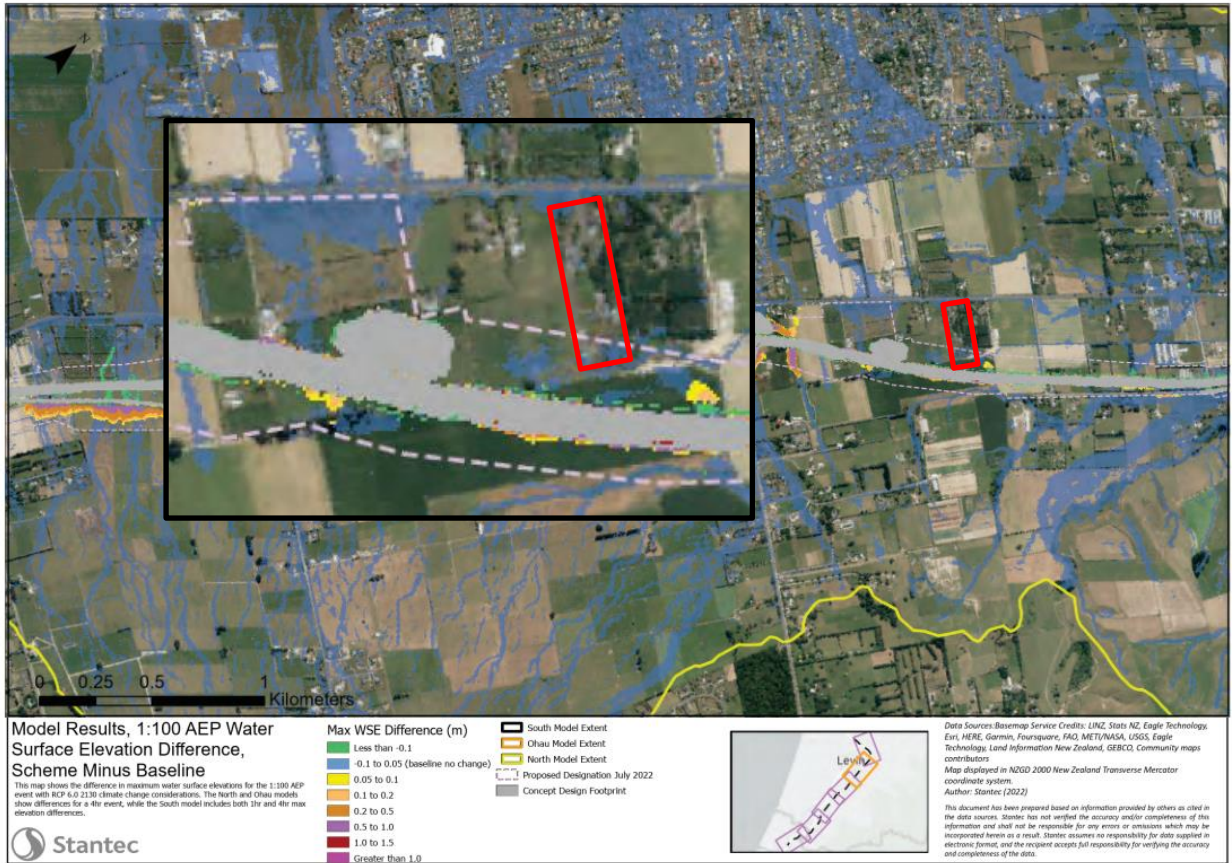


Figure 10: 96/98 Arapaepae Road – Depth Difference 1:100 AEP Flood Plain<sup>1</sup>