If calling, please ask for Democratic Services

Te Awa Kairangi/Hutt River Valley Subcommittee

Tuesday 13 May 2025, 2.00pm

Upper Hutt City Council, Council Chamber, 838 Fergusson Drive, Upper Hutt

Quorum: *Two Regional Councillors, one Hutt City Council member and One Upper Hutt City Council member*

Members

Ros Connelly, Councillor (Chair)	Greater Wellington Regional Council
Quentin Duthie, Councillor (Deputy Chair)	Greater Wellington Regional Council
Simon Edwards, Councillor	Hutt City Council
Wayne Guppy, Mayor	Upper Hutt City Council
Bill Hammond, Councillor	Upper Hutt City Council
Ken Laban, Councillor	Greater Wellington Regional Council
David Lee, Councillor	Greater Wellington Regional Council
Tui Lewis, Deputy Mayor	Hutt City Council
Caleb Ware	Te Rūnanga o Toa Rangatira Inc
Benjamin Wynyard-Terry	Port Nicholson Settlement Block Trust

Recommendations in reports are not to be construed as Council policy until adopted by Council

Te Awa Kairangi / Hutt River Valley Subcommittee (A subcommittee of the Environment Committee)

1 Purposes

1.1 Oversee development, implementation and review of floodplain management plans (FMPs) for the Te Awa Kairangi / Hutt River floodplain

1.2 Consider potential arrangements for a catchment-based governance approach for the Hutt Valley, and recommend to Council (as appropriate).

2 Specific responsibilities

2.1 Oversee the development and review of FMPs for the Te Awa Kairangi / Hutt River floodplain, for consideration of those FMPs by the Environment Committee.

2.2 Oversee the public involvement process during development or review of FMPs for the Te Awa Kairangi / Hutt River floodplain.

2.3 Review and monitor periodically the effectiveness of implementation and delivery of:

a Riverlink

b FMPs for the Te Awa Kairangi / Hutt River floodplain.

3 Members

3.1 Four Councillors.

3.2 Six members, appointed by Council, as follows:

a Two elected members of Hutt City Council, nominated by that council

b Two elected members of Upper Hutt City Council, nominated by that council

c Two members, appointed for each person's skills, attributes, or knowledge that will assist the work of the Subcommittee, being:

i One member, nominated by the Port Nicholson Block Settlement Trust

ii One member, nominated by the Toa Rangatira Trust.

3.3 Such other members, appointed by the Environment Committee (on the Subcommittee's nomination) for each person's skills, attributes, or knowledge that will assist the work of the Subcommittee.

4 Chair

Council appoints the Chair from the four Councillor members**.**

5 Quorum

Two Councillors, one Hutt City Council member, and one Upper Hutt City Council member.

6 Voting entitlement

6.1 All members have equal speaking and voting rights.

6.2 The Chair has a deliberative vote; and, in the case of an equality of votes, has a casting vote.

7 Servicing and Standing Orders

7.1 The Subcommittee is serviced by Greater Wellington.

7.2 Council's Standing Orders apply to the Subcommittee, with no provision for alternate members.

8 Remuneration and expenses

8.1 Elected members' remuneration and expenses are met by the council they represent.

8.2 Non-elected members (who are not otherwise remunerated) may claim Greater Wellington's standard daily meeting attendance allowances and expenses.

9 Meeting frequency and dissolution

9.1 The Subcommittee meets as required.

9.2 The Subcommittee may recommend its dissolution to the Environment Committee.

Te Awa Kairangi / Hutt River Valley Subcommittee

Tuesday, 13 May 2025, 2.00pm

Upper Hutt City Council, Council Chamber, 838 Fergusson Drive, Upper Hutt

Public Business

Please note these minutes remain unconfirmed until the Te Awa Kairangi/Hutt River Valley Subcommittee meeting on 13 May 2025.

Report 24.575

Public minutes of the Te Awa Kairangi/Hutt River Valley Subcommittee meeting on Tuesday 22 October 2024

Council Chamber, Hutt City Council
30 Laings Road, Lower Hutt at 2.03pm.

Members Present

Councillor Connelly (Chair)	Greater Wellington Regional Council
Councillor Duthie (Deputy Chair)	Greater Wellington Regional Council
Councillor Edwards	Hutt City Council
Mayor Guppy (until 4.17pm)	Upper Hutt City Council
Councillor Hammond	Upper Hutt City Council
Councillor Laban	Greater Wellington Regional Council
Councillor Lee (until 4.12pm)	Greater Wellington Regional Council
Deputy Mayor Lewis	Hutt City Council
Benjamin Wynyard-Terry (from 2.29pm)	Port Nicholson Settlement Block Trust

Deputy Mayor Tui Lewis participated at this meeting remotely via Microsoft Teams and counted for the purposes of quorum in accordance with clause 25A of Schedule 7 to the Local Government Act 2002.

Benjamin Wynyard-Terry participated at this meeting remotely via Microsoft Teams from 2.29pm until 2.52pm, and in person from 2.52pm.

Karakia timatanga

The Subcommittee Chair opened the meeting with a karakia timatanga.

Public Business

1 Apologies

Moved: Cr Duthie / Cr Edwards

That the Subcommittee accepts the apology for lateness from Benjamin Wynyard-Terry.

The motion was **carried**.

2 Declarations of conflicts of interest

There were no declarations of conflicts of interest.

3 Public participation

Dr David Tripp – Hutt Cycle Network, spoke to agenda item 9 - RiverLink Project Update and agenda item 11 – Te Awa Kairangi Hutt River Trail Update. Dr Tripp advised the Subcommittee that active transport is a key part of the objectives of the RiverLink Project, and that the river trails need to be part of a connected network.

4 Confirmation of the Public minutes of the Te Awa Kairangi / Hutt River Valley meeting of 6 August 2024 – Report 24.418

Moved: Cr Duthie / Cr Lee

That the Subcommittee confirms the public minutes of the Te Awa Kairangi / Hutt River Valley Subcommittee meeting of 6 August 2024 – Report 24.418

The motion was **carried**.

5 Update on the Progress of Action Items from Previous Te Awa Kairangi/Hutt River Valley Subcommittee Meetings – October 2024 – Report 24.428 [For Information]

The Subcommittee Chair accorded precedence to agenda item 11 – Te Awa Kairangi Hutt River Trail Update – Report 24.572 in accordance with Standing Order 3.5.2. The Subcommittee Chair moved agenda item 6 – Use of Willows and Native Plants for Erosion Control Purposes on Te Awa Kairangi / Hutt River – Report 24.550 to the end of the agenda.

6 Te Awa Kairangi Hutt River Trail Update – Report 24.572 [For Information]

Myfanwy Hill, Manager Environment Operations, spoke to the report.

Noted: The Subcommittee requested that staff continue to collaborate with officers from Upper Hutt City Council and Hutt City Council on transport planning, including linkages from city streets to the River Trail.

Benjamin Wynyard-Terry joined the meeting via Microsoft Teams at 2.29pm during the above item.

7 Wainuiomata Freshwater (Including Flood Risk) Management – Report 24.570 [For Information]

Andy Brown, Knowledge Risk Management and Resilience Lead spoke to the report and tabled a presentation.

Benjamin Wynyard-Terry arrived in person at the meeting in person at 2.52pm.

8 Te Awa Kairangi / Hutt River Valley Annual Asset Management Condition Report – Report 24.360

George Bowman, Team Leader Assets and Performance, spoke to the report.

Moved: Cr Duthie / Cr Edwards

That the Subcommittee:

1 Notes that identified issues are being addressed through maintenance and improvement work programmes.

2 Recommends to the Environment Committee that it is satisfied that Flood protection and erosion control infrastructure assets have been managed satisfactorily to the agreed Level of Service (LoS).

3 Notes that the 2024-34 Long Term Plan provides an increased level of funding for capital works and operational resources over the next 10 years.

The motion was **carried**.

9 RiverLink Project Update – Report 24.544 [For Information]

Tracy Berghan, Manager, RiverLink, and Sharyn Westlake, Principal Engineer Construction RiverLink spoke to the report.

The meeting adjourned at 3.42pm and resumed at 3.49pm.

10 Hutt Valley Flood Risk Management Update – October 2024 – Report 24.460 [For Information]

Hamish Fenwick, Team Leader Flood Operations Delivery, spoke to the report.

Noted: The Subcommittee requested officers liaise with Wellington Water Limited to provide an update on the Taitā rock erosion site.

11 Use of Willows and Native Plants for Erosion Control Purposes on Te Awa Kairangi / Hutt River – Report 24.550 [For Information]

Hamish Fenwick, Team Leader Flood Operations Delivery and Matt Richardson, Concerto Consulting spoke to the report.

Councillor Lee left the meeting at 4.12pm during the above item and did not return.

Mayor Guppy left the meeting at 4.17pm during the above item and did not return.

Karakia whakamutunga

The Subcommittee Chair closed the meeting with a karakia whakamutunga.

The meeting closed at 4.28pm.

Councillor R. Connelly

Chair

Date:

Te Awa Kairangi / Hutt River Valley Subcommittee
13 May 2025
Report 25.203

For Information

UPDATE ON THE PROGRESS OF ACTION ITEMS FROM PREVIOUS TE AWA KAIRANGI / HUTT RIVER VALLEY SUBCOMMITTEE MEETINGS

Te take mō te pūrongo
Purpose

1. To update the Te Awa Kairangi/Hutt River Valley Subcommittee (the Subcommittee) on the progress of action items arising from previous Subcommittee meetings.

Te horopaki
Context

2. Items raised at Subcommittee meetings that require actions from staff are listed in the table of actions from previous Subcommittee meetings (**Attachment 1** – Action items from previous Te Awa Kairangi / Hutt River Valley Subcommittee meetings – May 2025). All action items include an outline of the current status and a brief comment.

Ngā hua ahumoni
Financial implications

3. There are no financial implications arising from this report, but any implications arising from specific action items will be discussed in the brief comment in **Attachment 1**.

Ngā tūāoma e whai ake nei
Next steps

4. Completed items will be removed from the action items table for the next report.
5. Items not completed will be added to the table following this Committee meeting and circulated to the relevant business group(s) and functions for action.

Ngā āpitihanga
Attachments

Number	Title
1	Action items from previous Te Awa Kairangi / Hutt River Valley Subcommittee meetings – February 2025

Ngā kaiwaitohu
Signatories

Approvers	Jack Mace – Director Delivery Lian Butcher – Kaiwhakahaere Matua, Taiao – Group Manager Environment

He whakarāpopoto i ngā huritaonga **Summary of considerations**
Fit with Council's roles or with Committee's terms of reference The action items are of an administrative nature and support the functioning of the Subcommittee.
Contribution to Annual Plan / Long Term Plan / Other key strategies and policies Action items contribute to Council's or Greater Wellington's related strategies, policies and plans to the extent identified in **Attachment 1**.
Internal consultation There was no additional internal consultation in preparing this report and updating the action items.
Risks and impacts - legal / health and safety etc. There are no known risks or impacts.

Attachment 1 to Report 25.203

Action items from previous Te Awa Kairangi/Hutt River Valley Subcommittee

Date	Action item	Status and comment
6 August 2024	**Pinehaven Flood Management Plan Implementation – Project Update Report – Report 24.365** **Noted:** The Subcommittee requested that, as part of the review, that the terms of reference for the project include regular reporting to the Subcommittee on the progress and challenges in delivering the Pinehaven Floodplain Management Plan implementation.	**Status: Complete** **Comment:** Report on the agenda for the meeting on 13 May 2025.
6 August 2024	**Pinehaven Flood Management Plan Implementation – Project Update Report – Report 24.365** **Noted:** The Subcommittee requested information on the removal and potential reinstatement of the water flow meter on the Pinehaven Stream.	**Status:** Ongoing **Comment:** A feasibility study has been conducted on suitable sites for the re-establishment of the flow gauge for both flood hazard modelling and flood warning. This is currently being commissioned within the Knowledge & Insights function and consideration of funding and resourcing against the wider network is being assessed. Implementation is planned for the 2025/26 FY.
22 October 2024	**Update on the Progress of Action Items from Previous Te Awa Kairangi/Hutt River Valley Subcommittee Meetings – October 2024 – Report 24.428** [For Information] **Noted:** The Subcommittee requested that staff continue to collaborate with officers from Upper Hutt City	**Status:** Ongoing **Comment:** Greater Wellington Ops staff have met with Hutt City Council (HCC) planning officers both at Waione Street Bridge for the Hikoikoi Landing Project and at Fraser Park/Harcourt Werry Drive as part of Beltway linkage continuing the Hutt River Trails network. Property licence terms are being sought

Action items from previous Te Awa Kairangi/Hutt River Valley Subcommittee

	Council and Hutt City Council on transport planning, including linkages from city streets to the River Trail.	between HCC and Greater Wellington for Waione Street and to support sustainable transport growth plans at Fraser Park, plans have been shared for the Taita beltway cycleway as a guideline to be used for example that used at Taita Rock.
22 October 2024	**Hutt Valley Flood Risk Management Update – October 2024 – Report 24.460** [For Information] **Noted:** The Subcommittee requested officers liaise with Wellington Water Limited to provide an update on the Taitā rock erosion site.	**Status:** Ongoing **Comment:** Contact has been made with Wellington Water Limited (WWL) and have confirmed that WWL is only monitoring the site and have not undertaken any technical site investigation or looking to resolve the issue. An initial site visit by Greater Wellington's Operations Engineer witnessed what appeared to be a concentration of ground water seepage that could be the cause of the bank erosion rather than river erosion. Greater Wellington is initiating a further detailed investigation into the cause of bank erosion so it can be referred to the appropriate organisation to progress.

Te Awa Kairangi/Hutt River Valley Subcommittee
13 May 2025
Report 25.143

For Information

WAIWHETŪ INTEGRATED CATCHMENT PROJECT OVERVIEW

Te take mō te pūrongo
Purpose

1. To provide an overview to the Te Awa Kairangi / Hutt River Valley Subcommittee (the Subcommittee) on progress with the Waiwhetū Integrated Catchment Project (the project).

Te tāhū kōrero
Background

2. Through its recently established Catchment function, Greater Wellington Regional Council (Greater Wellington) is seeking opportunities to collaborate with other agencies, partners and communities where there are benefits to integrating work programmes.
3. The range of interrelated work occurring in or proposed to be undertaken in the Waiwhetū catchment by Greater Wellington, Hutt City Council (HCC), Wellington Water Ltd (WWL), mana whenua and the community, provides strong justification for integration.
4. Development of a Waiwhetū Floodplain Management Plan (FMP) has been on hold due to other priorities and the recognition of the need for a broader multi hazard response. Although remedial work in 2009/10 to remove contaminated material and reduce flood risk in the lower reaches improved the level of flood protection service to a 2.5% annual exceedance probability (AEP) flood event, this is lower than the Greater Wellington's policy of a 1% AEP.

Figure 1. Hutt Park, 2004.

Figure 2. Wyndrum Ave, 2016

5. To build resilience, the FMP needs to be developed in conjunction with, or indeed as part of, the preparation of a climate adaptation plan, including nature-based solutions and continuing upgrades to the stormwater network.
6. Adaptation planning is highlighted in the HCC's Rautaki Whakatipu Sustainable Growth Strategy 2025-2055.
7. Community efforts have improved stream habitat, amenity and health, but water quality in the stream is still poor, below national bottom-lines, and assessed as wai

kino (polluted, dangerous) by mana whenua (see Watercourses Agreement Whaitua and Waiwhetū Stream History – Report 24.89).

8. New water quality targets to be set in 2026 in the Natural Resources Plan for the Wellington Region (plan change currently in hearings) will require coordinated programming of work, which can be supported by flood protection measures and climate change responses.

Project overview/Summary to date

9. Greater Wellington discussions with Taranaki Whānui ki Te Upoko o Te Ika (Taranaki Whānui) in 2024 identified that resolving the flooding and water quality issues that have plagued Waiwhetū for decades would require a different approach with the collaboration of all relevant parties.

10. A meeting at Owhiti Urupā in April 2024, as part of Greater Wellington's engagement on recently completed flood hazard modelling, brought up concerns with groundwater levels affecting burials. Other issues raised were wider flooding in the catchment, impacts on the aquifer and water supply, sea-level rise, storm surges, water quality, and odour and discharges to the Waiwhetū Stream from the Seaview Wastewater Treatment Plant.

11. Since that meeting, Greater Wellington has taken steps to coordinate its work programmes, particularly with respect to its responsibilities for a FMP and Freshwater Action Plan for Waiwhetū.

12. Meetings with HCC and WWL have discussed information held and work underway or programmed to start in the Waiwhetū catchment. A schedule of key meetings is provided in **Table 1**.

Meeting	**Date**
Waiwhetū flood maps hui at Owhiti Urupā with Taranaki Whānui leadership, councillors, and GW management	April 2024
Taranaki Whānui confirm with Greater Wellington that Waiwhetū is a priority catchment	August 2024
Greater Wellington staff present to Friends of Waiwhetū AGM and receive positive support for integrating work	November 2024
Greater Wellington collates information held, current and planned work programmes, and resourcing	November 2024 - February 2025
Greater Wellington, HCC and WWL staff confirm interest in collaboration	December 2024
Greater Wellington, HCC and WWL staff discuss potential projects and available resources for inclusion	March 2025
Greater Wellington, HCC and WWL staff present each agency's respective information and work programmes	April 2025
Taranaki Whānui to host Waiwhetū wānanga	TBC June 2025

Regular Friends of Waiwhetū meetings	Monthly

Table 1. Schedule of meetings for the Waiwhetū Integrated Catchment Project

13. The area under consideration is the entire Waiwhetū Freshwater Management Unit (FMU) upstream of the Seaview Wastewater Treatment Plant (**Figure 3**).[1]

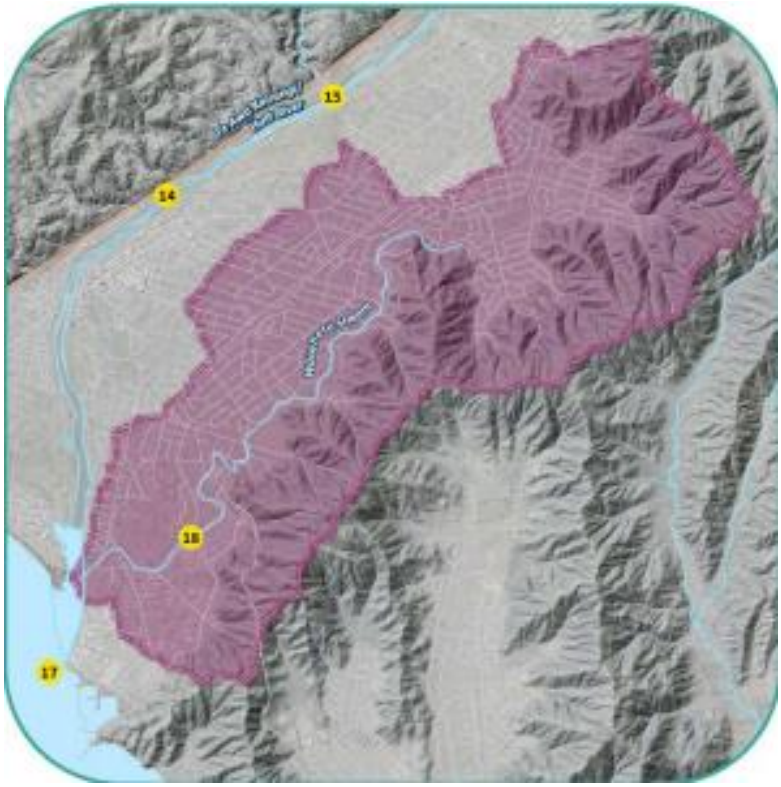

Figure 3. Waiwhetū catchment (numbered locations are sites of significance for mana whenua)

14. Work programmes identified for consideration in the Waiwhetū Integrated Catchment Project are provided in Table 2.

Project	**Lead agency**
Waiwhetū Floodplain Management Plan	Greater Wellington
Waiwhetū Freshwater Action Plan	Greater Wellington
Waiwhetū Masterplan	HCC
Naenae Biodiversity Strategy	HCC
Lower Hutt climate adaptation planning	HCC

[1] The Seaview Wastewater Treatment Plant has not been considered for inclusion in this project as it is being addressed through the Seaview Rōpū.

Mouri Tupu - Planting for the future	HCC
Offsetting opportunities	Te Wai Takamori o Te Awa Kairangi (Riverlink)
Lower Hutt stormwater management and wastewater network programmes	WWL
Mana whenua direction in Te Mahere Wai and the Whaitua Implementation Programme	Taranaki Whānui and Ngāti Toa
Friends of Waiwhetū work programme and vision for the future	Friends of Waiwhetū
Local businesses streambank restoration	Local businesses
Community, school planting work	Community and schools

15. The status quo approach is to run these programmes separately with adhoc coordination. By bringing some or all of them together under an umbrella programme, we may be able to deliver better outcomes, more efficiently, with the potential for cost savings, particularly if this is done at the outset of the programme design.

16. A well-designed programme can meet multiple outcomes. Flood protection, for example, will require management of stormwater, which can include treatment through wetlands. This can in turn improve habitat, biodiversity and water quality, and increase resilience to climate change.

17. An indicative timeline to June 2027 is presented in **Figure 4**. This is dependent on the parties agreeing to this type of scope and next steps and is presented only to show what could be possible. It is subject to change following the step to form a group and establish a terms of reference.

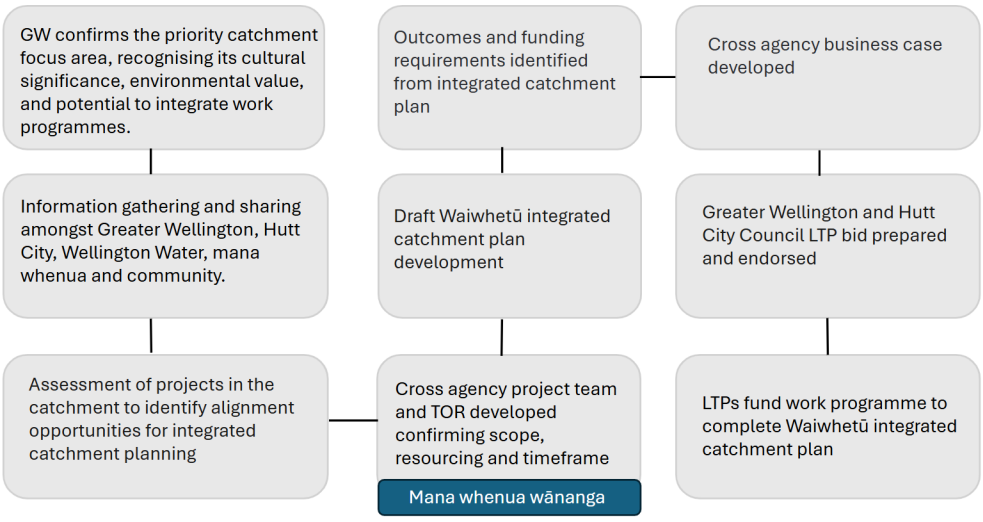

Figure 4: LTP Funding Timeline

Ngā hua ahumoni
Financial implications

18. There are no financial implications arising from this report.

19. Existing Greater Wellington and HCC budgets will fund the project until 30 June 2026. The Subcommittee may wish to recommend funding to continue the project beyond that date.

Ngā Take e hāngai ana te iwi Māori
Implications for Māori

20. The Waiwhetū Stream is identified as Ngā Taonga Nui a Kiwa in Schedule B of the Natural Resources Plan (NRP) for Taranaki Whānui ki Te Upoko o Te Ika and Te Rūnanga o Toa Rangatira. Wāhi tapu sites are at Waiwhetū Pā (Ōwhiti), and Te Ngohengohe and Pūhara-keke-tapu.

21. As noted in the body of the report, mana whenua have raised concerns with the health and mauri of the Waiwhetū Stream and the wider catchment for decades and these concerns continue.

22. Taranaki Whānui have identified the Waiwhetū as a priority in their rohe.

Te huritao ki te huringa o te āhuarangi
Consideration of climate change

23. The project proposal in this report seeks to develop a unique and collaborative response to the impacts of climate change in the Lower Hutt area, particularly with respect to increasing flood risk, sea-level rise and storm intensity.

Te whakatūtakitaki
Engagement

24. Taranaki Whānui, HCC, WWL and the Friends of the Waiwhetū are involved in this project and are aware of the report being presented to the Subcommittee.

Ngā tūāoma e whai ake nei
Next steps

25. Taranaki Whānui to host a wānanga in June 2025.

26. Regular meetings scheduled with HCC, WWL, and the Friends of Waiwhetū.

27. Offer to provide an update to HCC and WWL leadership teams.

Ngā kaiwaitohu
Signatories

Writers	Tim Sharp – Catchment Manager, Te Whanganui-a-Tara Mikaila Ceelen – Advisor Catchment, Te Whanganui-a-Tara
Approvers	Nicola Patrick – Director Catchment Lian Butcher – Kaiwhakahaere Matua Taiao | Group Manager Environment

He whakarāpopoto i ngā huritaonga **Summary of considerations**
Fit with Council's roles or with Committee's terms of reference The Subcommittee's specific responsibilities include to oversee development, implementation and review of floodplain management plans (FMPs) for the Te Awa Kairangi/Hutt River floodplain. This report relates to the development of the FMP within a wider programme of work.
Contribution to Annual Plan / Long Term Plan / Other key strategies and policies The project proposed in this report supports the delivery of Greater Wellington and HCC's Long Term Plan objectives, including the priority area of te tū pakari a te rohe/regional resilience and the understanding of climate change.
Internal consultation Collaboration between Greater Wellington, HCC and WWL staff contributed to this report.
Risks and impacts - legal / health and safety etc. There are no health and safety risks. A key purpose of the project proposed in this report is to reduce the risk to communities and improve the region's resilience.

Te Awa Kairangi / Hutt River Valley Subcommittee
13 May 2025
Report 25.183

For Decision

WAIWHETŪ STREAM FLOOD HAZARD MAPS

Te take mō te pūrongo
Purpose

1. To advise the Te Awa Kairangi/Hutt River Valley Subcommittee of the final Waiwhetū Stream flood hazard maps to the Te Awa Kairangi / Hutt River Valley Subcommittee.

He tūtohu
Recommendations

That the Subcommittee:

1 **Notes** that the flood hazard maps have been developed in accordance with Greater Wellington's Flood Hazard Modelling Standard.

2 **Recommends** that the Environment Committee endorse the Waiwhetū Stream Flood Hazard Maps..

Te horopaki
Context

2. Flooding is a significant hazard in the Wellington Region that poses a risk to both life and property. Flooding is commonly experienced from three main sources: rivers, coastal inundation, and stormwater flooding.

3. Despite generally being a small, slow-flowing stream, the Waiwhetū Stream has a long history of flooding. A major flood event in 2004 caused major flooding to residential properties along Riverside Drive, the Hutt Park raceway and the industrial area in Gracefield.

4. Updating the flood risk modelling for the Waiwhetū Stream is key for understanding the probability and likely extent of flooding for the current and predicted future climate. This information can then be used to understand the issues from flooding that need to be managed.

Greater Wellington's Flood Hazard Modelling Standard

5. Flood hazard modelling is the process carried out by Greater Wellington to understand flood risk from significant water courses in the Wellington Region. It consists of three key elements: collection of survey information; hydrological

modelling; and hydraulic modelling. The flood hazard modelling outputs are the flood maps that are included in district plans, which provide the basis of structural works and river management decision making, and inform civil defence and emergency management actions.

6. Greater Wellington developed the Flood Hazard Modelling Standard (FHMS) in May 2021 to outline the protocols to be followed by any person working on Greater Wellington flood hazard modelling projects. The protocols in the FHMS have been developed to ensure that flood hazard modelling projects are undertaken in a robust and consistent way that is in line with accepted industry practice. They are designed to still allow for flexibility in approach and recognise that the optimal approach may be dependent on catchment or project specific factors. The protocols require that every stage of the process is well documented in reports or spreadsheet logs and registers.

7. Figure 1 provides an overview of the FHMS.[1]

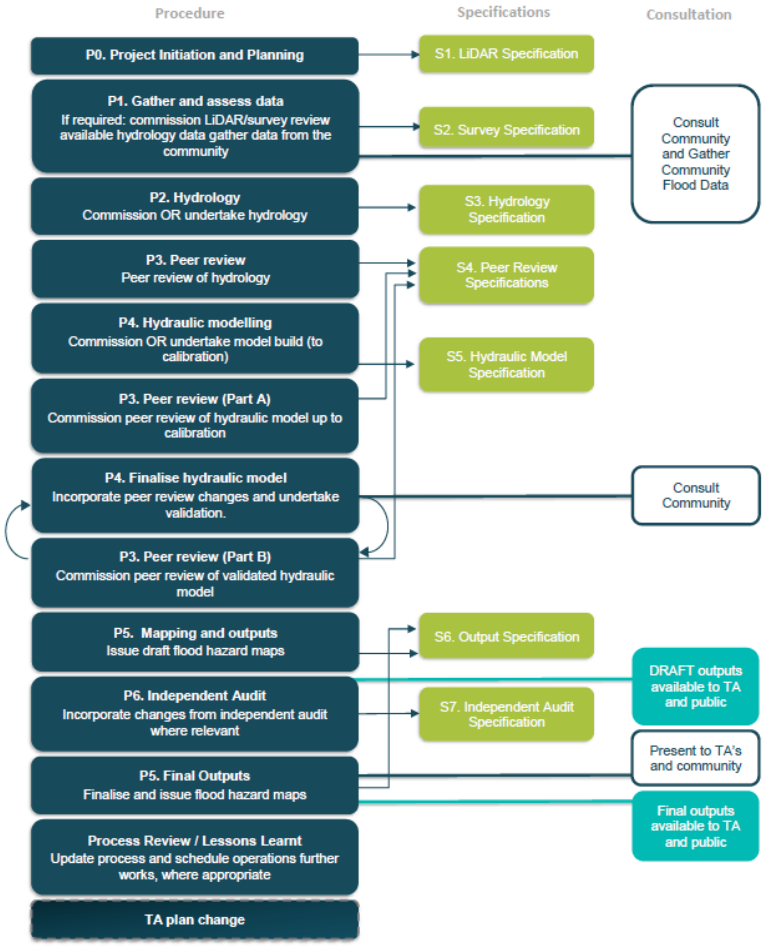

Figure 1: Flood Hazard Modelling Standard overview

[1] https://www.gw.govt.nz/assets/GWRC-Flood-Hazard-Modelling-Standard-R1-May-2021.pdf

Model development

8. In 2019, Wellington Water Limited (WWL) approached Greater Wellington indicating that they were going to undertake stormwater modelling in the Waiwhetū Stream urban catchment. Greater Wellington and WWL agreed to undertake a joint venture to update the existing Waiwhetū Stream (fluvial) model and combine it with a stormwater model for the urban catchment.

9. Combining the stormwater and fluvial model for the Waiwhetū catchment was a complicated process. Stantec was engaged to complete the integrated 1D-2D model of Eastern Lower Hutt that met the WWL stormwater modelling specifications as well as the Greater Wellington FHMS. This included all known stormwater assets as well as the Waiwhetū Stream.

10. The model was validated and calibrated against the 2004 and 2016 flood events in the Waiwhetū Stream.

11. The WWL modelling specification includes a set of specific parameters, including a nested storm hydrological approach. This approach is appropriate for stormwater modelling; however, it is difficult to use with a water body the size of the Waiwhetū Stream.

12. To meet Greater Wellington's FHMS requirements, a different hydrological approach was required using NIWA's temporal design storm methodology to produce a standard rainfall profile.

13. As different hydrological inputs are required, outputs generated for Greater Wellington and WWL differ. However, the model that is used to generate both sets of outputs is the same.

Community engagement

14. As specified in the FHMS, an engagement process was undertaken to present the draft flood hazard maps to the community. The purpose of the engagement was to:

    - Consult the community on the draft flood hazard maps for the Waiwhetū Stream; and
    - Build awareness of the flood hazard maps within the affected community.

15. Two maps were presented during this engagement process. These were:

    - The 1% AEP flood for the current climate (not including climate change); and
    - The 1% AEP flood for predicted future climate, including an allowance for climate change.

16. The official engagement period was from Monday 11 March 2024 to Sunday 31 March 2024, although attendance at meetings/events continued until 17 April 2024.

17. The flood hazard maps, information about the maps, and a feedback form were available both on the Greater Wellington website and as handouts at various in person events. Feedback from the Te Awa Kairangi / Hutt River Valley Subcommittee was incorporated into the engagement process, including additional meetings and providing train station handouts.

18. The engagement activities included:

    - Presentation to the Friends of the Waiwhetū Stream (11 March 2024)
    - Waiwhetū Flood Hazard Modelling – Report 24.88 presented at the Te Awa Kairangi / Hutt River Valley Subcommittee meeting on 12 March 2024
    - Discussion at the Waiwhetū Stream walkover (13 March 2024)
    - Drop-in stall at the Riverbank Markets (16 and 23 March 2024)
    - Drop-in stall at the Naenae Oranga Festival (23 March 2024)
    - Advertisements in the Hutt News (14 and 21 March 2024)
    - Handing out information at the Waterloo and Naenae train stations (21 and 25 March 2024 respectively)
    - Social media posts (6, 11-23 and 24-31 March 2024)
    - Meeting with Taranaki Whānui/Port Nicholson Block Settlement Trust (8 April 2024)
    - Attendance at Waiwhetū co-op event (17 April 2024)

19. A summary report of the engagement process was previously presented to the Te Awa Kairangi / Hutt River Valley Subcommittee at the 6 June 2024 meeting (Waiwhetū Flood Modelling Update – Report 24.254).

20. No significant concerns or potential errors in the modelling were raised from the community or Taranaki Whānui during this process. Therefore, the next stage of the FHMS, Independent Audit, was undertaken.

Te tātaritanga
Analysis

Finalisation of the Waiwhetū Stream flood hazard maps

21. Development of the Waiwhetū Stream flood hazard maps has aligned with Greater Wellington's FHMS. The hazard maps were finalised following an independent audit undertaken by Pattle Delamore Partners. The independent audit is provided as **Attachment 1**.

22. The independent audit concluded that the model output is fit for purpose to support relevant planning processes. However, it was recommended that Greater Wellington review the downstream boundary condition over a three to five year timeframe. Greater Wellington has begun this process and is liaising with WWL.

23. Peak flood depth and flood hazard maps have been produced for a range of design flood events for the Waiwhetū Stream. The design events are assessed based on a probability of occurring in any given year and described as having an annual exceedance probability (AEP). The design flood events that have been modelled are:

    - 39% AEP (also known as the mean annual flood)
    - 20% AEP (sometimes referred to as a 5-year flood)

- 10% AEP (sometimes referred to as a 10-year flood)
- 5% AEP (sometimes referred to as a 20-year flood)
- 2% AEP (sometimes referred to as a 50-year flood)
- 1% AEP (sometimes referred to as a 100-year flood)

24. Each of these sized events were modelled for both the current climate (using historic climate data) and for a future climate using predicted impacts of climate change with a Representative Concentration Pathway (RCP) 6.0 scenario.

25. Modelling for the 1% AEP and 2% AEP events also included a series of uncertainty runs to represent possible scenarios that are not included in the base modelling. This includes scenarios such as different channel roughness or bridge blockages which could affect the nature of the flood hazard.

26. As outlined in the Flood Hazard Modelling Standard and Greater Wellington procedure, allowance for these uncertainties (as well as climate change) have been included in the flood hazard mapping overlays for Hutt City Council.

27. A copy of the flood depth maps for each of the design flood events is provided in **Attachment 2**.

28. A copy of the flood hazard maps for the 1% AEP design flood events is provided in **Attachment 3**.

Hutt City Council District Plan flood hazard overlays

29. Land use planning, through district plans, is one of the available tools for managing flood risk. It plays a vital role in ensuring that use and development within areas susceptible to flooding is appropriate.

30. Flood hazard is a function of the depth and velocity of flood waters at a particular location. It informs the likely risk to people and property as a result of flooding. Flood hazard is typically low in shallow, slow-moving waters, and increases as the depth and velocity of flood waters increase.

31. Greater Wellington has recommended an approach for HCC where flood hazard is categorised in the following three areas for the 1% AEP event (including climate change and allowance for uncertainties) in their district plan:

    - Low Hazard Areas, where flow is typically slow, and flooding is shallow. The Low Hazard Areas include Inundation Areas as well as Residual Flood Hazard Areas.
    - Moderate Hazard Areas, where flow is deeper, or faster moving, or development is likely to increase flood impacts nearby. The Moderate Hazard Areas include Overland Flowpaths and Erosion Hazard Areas, where there is the potential for future development to be affected by fluvial erosion.
    - High Hazard Areas, where flow is deep or fast, including River / Stream Corridors.

32. Finalised flood hazard overlays using 'low', 'moderate' and 'high' hazard categorisations for the Waiwhetū Stream have been provided to HCC. These maps will inform the development of the City of Lower Hutt District Plan, which at the time of writing is at the 'proposed' stage.

Ngā hua ahumoni
Financial implications

33. The project identified and described in this report is included in Greater Wellington's Long Term Plan.
34. The Waiwhetū flood risk management process will identify options for managing flood risk from the Waiwhetū Stream and will include an evaluation of the financial implications of any options selected by in the short term but also over long term planning horizons.

Ngā Take e hāngai ana te iwi Māori
Implications for Māori

35. Waiwhetū Marae property is sitting within the flood hazard area. The building itself is sitting above the flood hazard in the updated modelling. The Owhiti Urupā also sits within the flood hazard area and is particularly susceptible to sea level rise.
36. Approximately 20% of the population of the Waiwhetū statistical area is Māori.

Te huritao ki te huringa o te āhuarangi
Consideration of climate change

37. Climate change is considered as part of the Flood Hazard Modelling Standard process. Climate projections are modelled as part of the hydrology and sea level rise inputs allowing Greater Wellington to consider increased hazard impacts.

Ngā tikanga whakatau
Decision-making process

38. The matters requiring decision in this report were considered by officers against the decision-making requirements of Part 6 of the Local Government Act 2002.

Te hiranga
Significance

39. Officers considered the significance (as defined by Part 6 of the Local Government Act 2002) of the matters for decision, taking into consideration Council's *Significance and Engagement Policy* and Greater Wellington's *Decision-making Guidelines*. Officers consider that the matter is of low significance due to the administrative nature of the decision. The matters do not impact on Council's capability and capacity, and it is consistent with existing Council policy and practice.

Te whakatūtakitaki
Engagement

40. Two stages of community engagement were undertaken.

41. In August 2021, a three-week flood hazard map engagement process was undertaken to collect data from the community regarding past flood events of 2004 and 2016. This fulfils the requirement to gather community flood data for the FHMS.

42. In March 2024, a three-week flood hazard map engagement process was undertaken to present the final draft flood hazard maps to the community. This fulfils the requirement to consult the community on the draft outputs for the FHMS. A summary of this engagement is noted in paragraphs 14 to 20 of this report.

Ngā tūāoma e whai ake nei
Next steps

43. Staff will speak to the Waiwhetū Flood Hazard Modelling presentation (**Attachment 4**) at the Subcommittee meeting on 13 May 2024.

44. These flood hazard maps will be presented to the Environment Committee for endorsement.

45. The independent audit recommended that a review of the downstream boundary of the model is undertaken over the next three to five years. Greater Wellington has begun this process and is liaising with WWL.

46. Waiwhetū Stream flood risk management options will be considered. It is expected that this will occur using a holistic catchment approach which considers aspects such as climate adaptation (and specifically sea level rise), existing stormwater and wastewater infrastructure, contaminated land and water quality.

Ngā āpitihanga
Attachments

Number	Title
1	Waiwhetū Stream flood hazard assessment independent audit
2	Flood depth maps for the Waiwhetū Stream
3	Flood hazard maps for the Waiwhetū Stream
4	Waiwhetū Flood Hazard Modelling presentation

Ngā kaiwaitohu
Signatories

Writers	Ella Boam – Senior Project Manager – Investigations, Knowledge Water Resilience
Approvers	Francie Morrow – Team Leader Knowledge Water Resilience Evan Harrison – Manager Knowledge David Hipkins – Kaiwhakahaere Matua Taiao | Acting Group Manager Environment

He whakarāpopoto i ngā huritaonga **Summary of considerations**
Fit with Council's roles or with Committee's terms of reference The Subcommittee's specific responsibilities include to oversee development, implementation and review of floodplain management plans (FMPs) for the Te Awa Kairangi/Hutt River floodplain. This report relates to the development of flood hazard modelling in the Waiwhetū Stream.
Contribution to Annual Plan / Long Term Plan / Other key strategies and policies The project described in the report support the delivery of Greater Wellington's Long Term Plan objectives. This project specifically supports the priority area of te tū pakari a te rohe/regional resilience and the understanding of climate change.
Internal consultation Internal consultation on the flood hazard modelling has been undertaken with: • The Marketing and Comms team regarding the engagement process. • Te Hunga Whiriwhiri regarding the engagement process. • The Catchment Function regarding alignment with work being undertaken in the catchment.The Delivery Function regarding flood hazard mapping and engagement.
Risks and impacts - legal / health and safety etc. There are no health and safety risks. The production of flood hazard mapping is a risk for Greater Wellington, and this has been mitigated through the development and adoption of the FHMS. The purpose of flood risk management planning is to reduce the risk to communities and improve the region's resilience.

Attachment 1 to Report 25.183

PATTLE DELAMORE PARTNERS LTD
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Christchurch Central, Christchurch 8011
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Web www.pdp.co.nz

solutions for your environment

11 September 2024

Andy Brown
Team Leader – Knowledge Water, Knowledge & Insights
Greater Wellington Regional Council
PO Box 11646,
Manners St,
WELLINGTON 6142

Dear Andy

INDEPENDENT AUDIT, WAIWHETŪ FLOOD HAZARD ASSESSMENT

1.0 Purpose

This letter summarises the independent audit that Pattle Delamore Partners Limited (PDP) has undertaken of the flood hazard assessment for the Waiwhetū Stream in eastern Lower Hutt. The audit is in accordance with the Greater Wellington Regional Council (GW) Flood Hazard Modelling Standard dated May 2021 (FHMS or the Standard).

2.0 Background

The Waiwhetū Stream encompasses much of Lower Hutt – in essence the alluvially derived plain southeast of the Hutt River with the catchment including the hills between the Hutt valley and Wainuiomata/ Stokes Valley. The floodplain is intensively developed and, in some cases, very low-lying, largely protected (to varying degrees) by stopbanking. Understandably the high hazard areas are concentrated toward the lower, southern end of the catchment, a function of both the nature of the catchment, ground levels and the influence of the Hutt River/ Wellington Harbour – the Waiwhetū Stream mouth is a matter of a few hundred metres from the Hutt River mouth.

The project originated from work commissioned by Wellington Water Limited (WWL) related to the eastern Lower Hutt (ELH) stormwater network. The project encompasses (in its latter stages) fluvial flood hazard as it relates to the Waiwhetū Stream, which is the principal focus for both GW and this audit. Stantec (NZ) Limited (Stantec) built the model which is, understandably given the scope (replicating the stormwater network for a significant portion of Lower Hutt), very large and complex.

The project was originally commenced in 2017 with the GW scope change occurring in 2021. It appears to have had (referencing the revision schedule contained in the September 2023 Stantec report) a greater than desirable change in Stantec personnel as the project has progressed. The current Stantec personnel (who have remained consistent through the 'GW' phase of the work) have clearly lived and breathed this project (the in-person workshop held with GW and Stantec at GW Cuba Street offices on 14 February 2024).

Principal documents referred to as part of the audit are the Stantec Eastern Lower Hutt Stormwater Model Build report dated September 2023, the Stantec memo to GW Project Manager Francie Morrow dated 10 October 2023 and the peer review reports (principally those associated with the 'GW phase' of the project - the focus on Waiwhetū Stream flood hazard). This project does not have the conventional hydrology/ hydraulics split, attributable to its urban stormwater management origins (the two are intertwined to some degree). Three reviews of the hydrology have been undertaken – the first by WSP for WWL and the following two by SLR. The WSP review is somewhat brief, noting "no concerns". The SLR reviews contain a more extensive commentary on the hydrological component of the project and a comprehensive list of issues that were discussed with Stantec.

3.0 PDP review comments

We reviewed the original work by Stantec and the review findings by WSP and SLR. In our opinion, the credentials of the SLR reviewer and the quality of the review are a high - it does appear to stray a little into the modelling space but given the nature of the project and the urban stormwater focus there is an inevitability to that. It is in our opinion a comprehensive, robust and constructive peer review that meets all the FHMS requirements. The SLR peer review arguably exposes some limitations with the model hydrology but we are of the view that those are not material to GW's primary interests (hazard mapping/ fluvial flood hazard assessment).

WSP reviewed the hydraulic model and, in our view, this has more limitations to it, important given the high consequence environment. The review tends to focus on model schematisation (which clearly is important) but less so on aspects such as the boundary conditions. There are clearly (at face value) limitations in adapting a stormwater model to assess fluvial flood hazard which the review also doesn't appear to consider.

The downstream boundary condition is of particular importance with this modelling; the complexities related to the combination of Waiwhetū Stream flow, Hutt River and Wellington Harbour level that underpins the model outputs (flood depths/ extents/ durations). The impression with the Stantec report is that those considerations have been somewhat cursory and largely based on direction from GW.

That matter was the subject of a workshop with Stantec on 26 June 2024 (modellers/ report authors Ben Caldwell and Andrew Sherson) attended by both Francie Morrow (senior Project Manager) and Susan Borrer (Engineer/ Hydraulic Modeller) and PDP. That workshop essentially confirmed that limited rigour had been applied to that downstream boundary condition; while tools such as the sea rise project have been applied in quantifying climate change effects, a Wellington Harbour-specific assessment is somewhat dated (GW noted that NIWA had done some work in the '1990s'). The Hutt River state assumed was a static 10-year ARI (Average Recurrence Interval) flood level.

GW noted some of the drivers for this work, including District Plan review timelines, also noting that the general approach taken by GW was to use 'the best data we have available at the time'. This is one of the key conundrums with any hydraulic model – at what point is it 'good enough' to produce flood maps for use in a formal planning context. Ideally this project would have been underpinned by a parallel work stream to refresh the extreme value analysis for Wellington Harbour in combination with statistical analysis to substantiate the approach taken. This work would involve determining the combination of the three input datasets – Waiwhetū Stream flow, Hutt River and Wellington Harbour level – that the lower reach of the Waiwhetū Stream and adjoining floodplain is most susceptible to without being overly conservative. Stantec has addressed this to some degree with the sensitivity analysis that accompanied the modelling but the general impression (in the context of a 'sensibility check' – Section 2, Procedure 6 of the FHMS) is that this lacks the finesse of something more statistically-based.

4.0 PDP audit findings

Ultimately the key audit consideration (bullet point 7, Section 2, Procedure 6, FHMS) is whether "the modelling and peer reviews are robust and defensible". In our view the answer to that question is in two parts:

- the model schematisation and
- the boundary conditions.

The model schematisation is in our view robust and defensible but our confidence in the model output is coloured by the apparent lack of rigour in determining the downstream boundary condition. It does not mean the assumptions made are wrong but, in our opinion, further analysis is desirable to demonstrate the efficacy of the approach taken, given the consequential impacts.

The model output is, in our opinion, fit for purpose to support the relevant planning processes. However, we recommend GW robustly confirms or otherwise the adequacy of the downstream boundary condition within say a three-to-five-year timeframe. There are risks with this approach – for example, planning decisions could be made in the interim that are not appropriate if the downstream boundary condition used with the initial modelling is found to be inadequate. There is also the risk that interim arrangements will become permanent. Equally we also appreciate GW's sentiment that potentially incomplete information is better than no information; accordingly this decision ultimately rests with GW.

As a final note, the community engagement with this project is noticeably lighter than that undertaken for the previous two projects audited, likely to be a function of both the urban context and the earlier WWL stages of the project (and noting the overt District Plan driver for the work – the community engagement work presumably lead by Hutt City Council in that regard). I noted at the 26 June 2024 workshop the excellent publication GW had previously produced informing Silverstream and Mangaroa Valley residents specifically about the updated flood hazard assessment work undertaken for those areas; although the nature of the flood hazard for those areas (particularly Pinehaven/Silverstream) is particularly acute it also arguably sets the bar in regard to informing/ building understanding in a Hutt Valley context.

5.0 Closure

Please contact me if you have any questions or clarifications.

This report has been prepared by Pattle Delamore Partners Limited (PDP) on the basis of information provided by Greater Wellington Regional Council, Stantec, SLR Consulting and WSP (not directly contracted by PDP for the work). PDP has not independently verified the provided information and has relied upon it being accurate and sufficient for use by PDP in preparing the report. PDP accepts no responsibility for errors or omissions in, or the currency or sufficiency of, the provided information.

This report has been prepared by PDP on the specific instructions of Greater Wellington Regional Council for the limited purposes described in the report. PDP accepts no liability if the report is used for a different purpose or if it is used or relied on by any other person. Any such use or reliance will be solely at their own risk.

Yours faithfully

PATTLE DELAMORE PARTNERS LIMITED

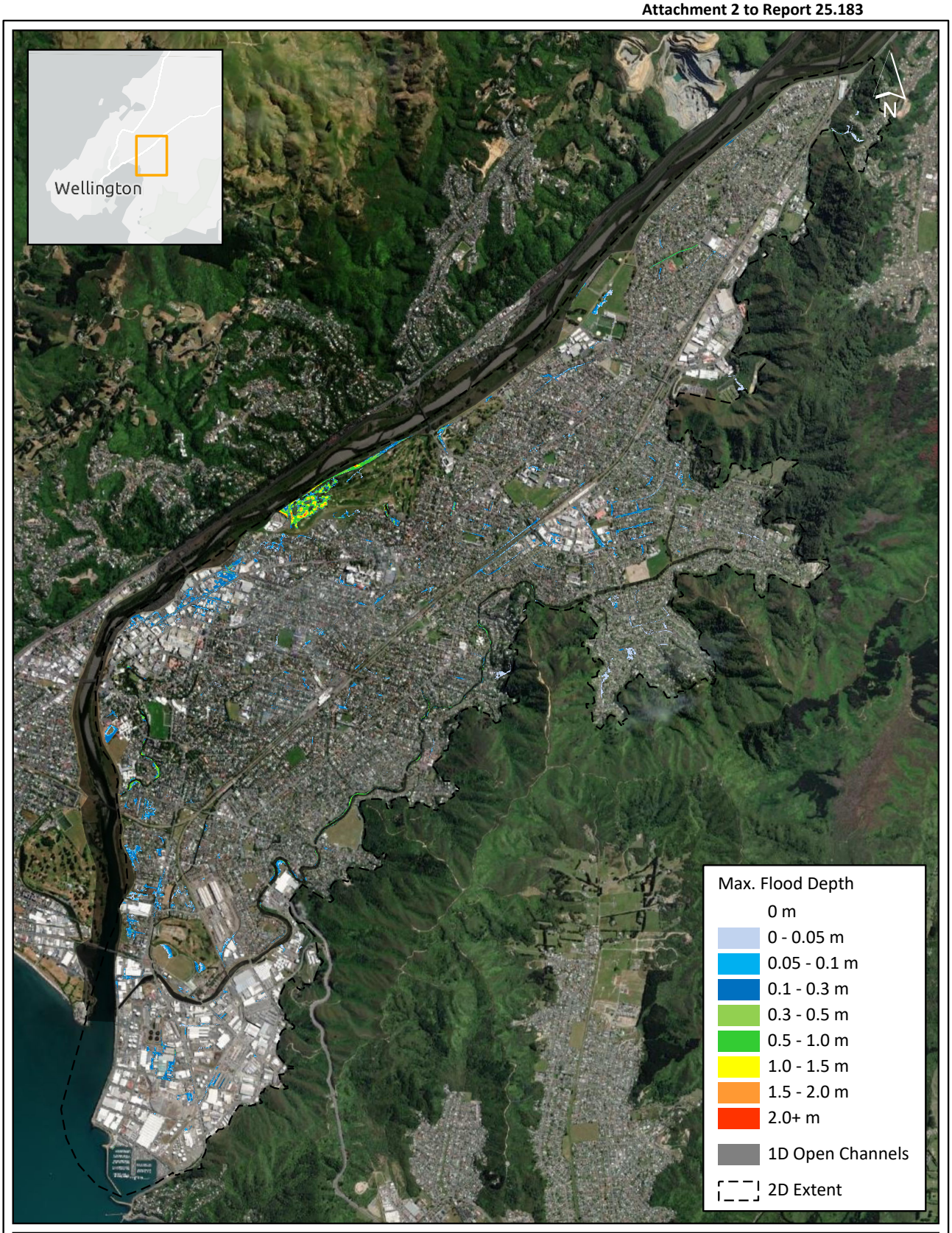
Ramon Strong

Technical Director Water Resources

Greater Wellington
Te Pane Matua Taiao

ATTACHMENT 2 – Flood depth maps for the Waiwhetū Stream

Attachment 2 to Report 25.183



39% AEP (1 in 2-year ARI) flood depths for existing climate, 6-hour storm

Basemap Service Credits: LINZ
Map displayed in NZGD 2000 New Zealand Transverse Mercator coordinate system.
Author: Ben Caldwell, Stantec (2023)

0 0.5 1 2 Kilometres

Stantec

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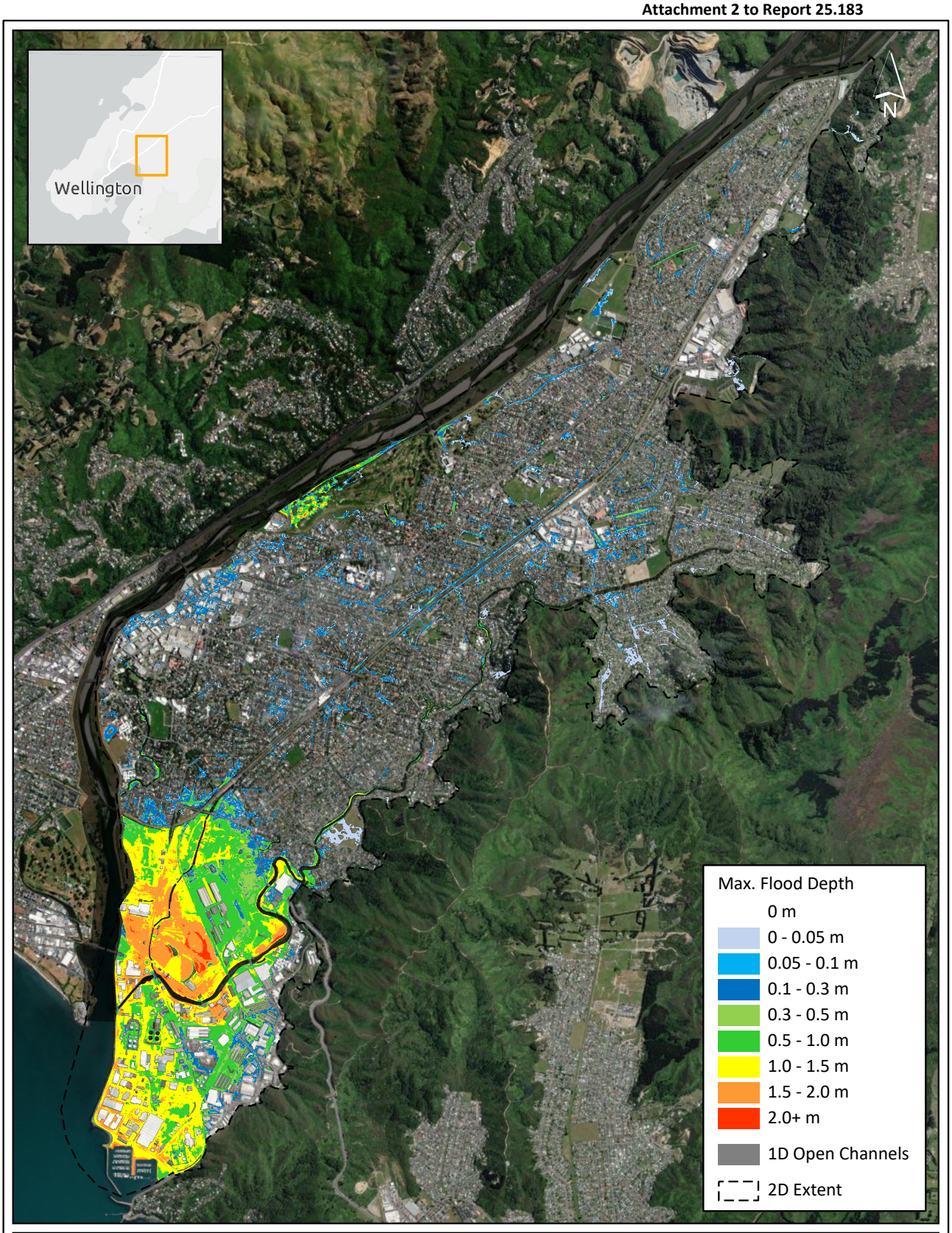

39% AEP (1 in 2-year ARI) flood depths for RCP 8.5 2101-2120, 6-hour storm

Basemap Service Credits: LINZ
Map displayed in NZGD 2000 New Zealand Transverse Mercator coordinate system.
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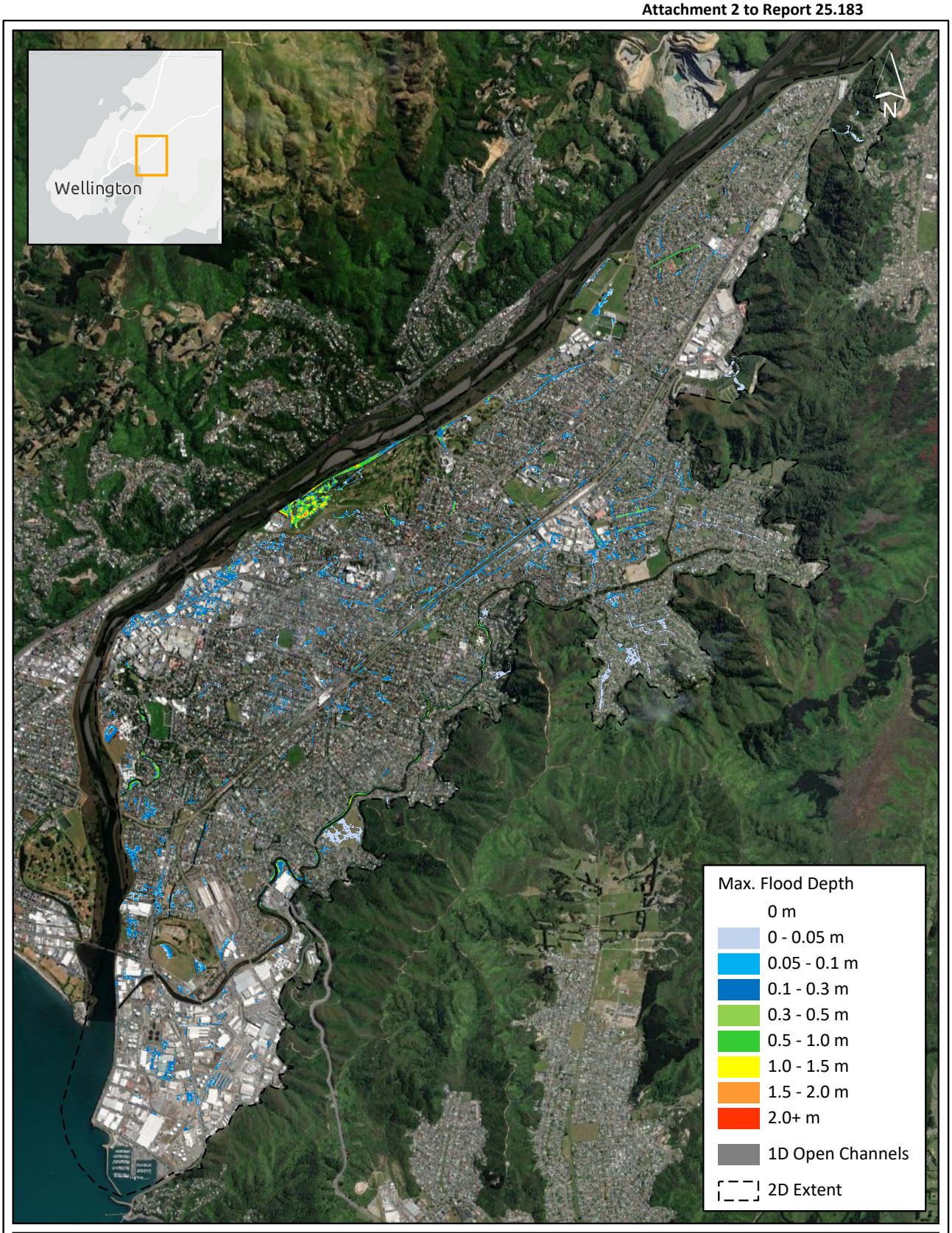

20% AEP (1 in 5-year ARI) flood depths for existing climate, 6-hour storm

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Map displayed in NZGD 2000 New Zealand Transverse Mercator coordinate system.
Author: Ben Caldwell, Stantec (2023)

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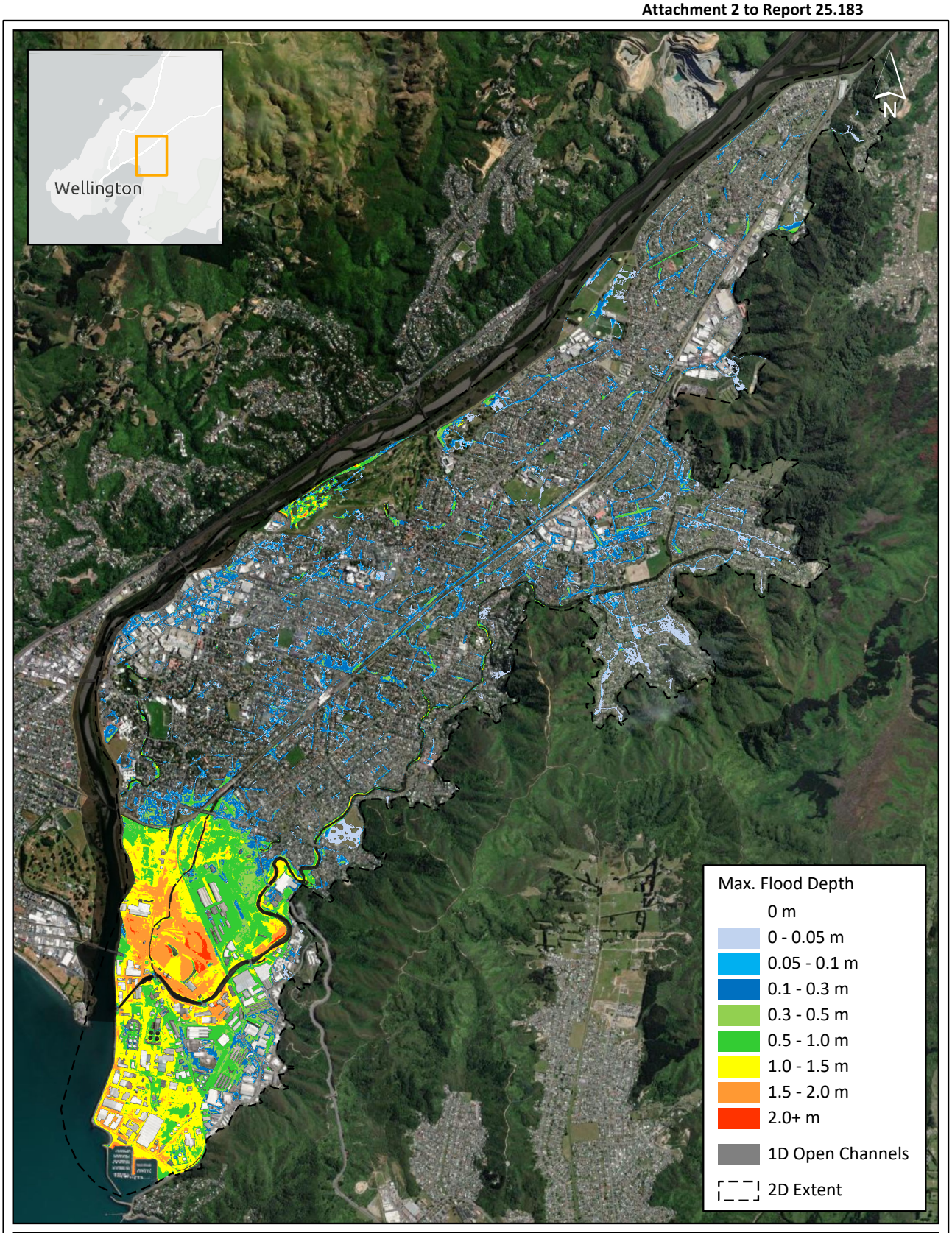

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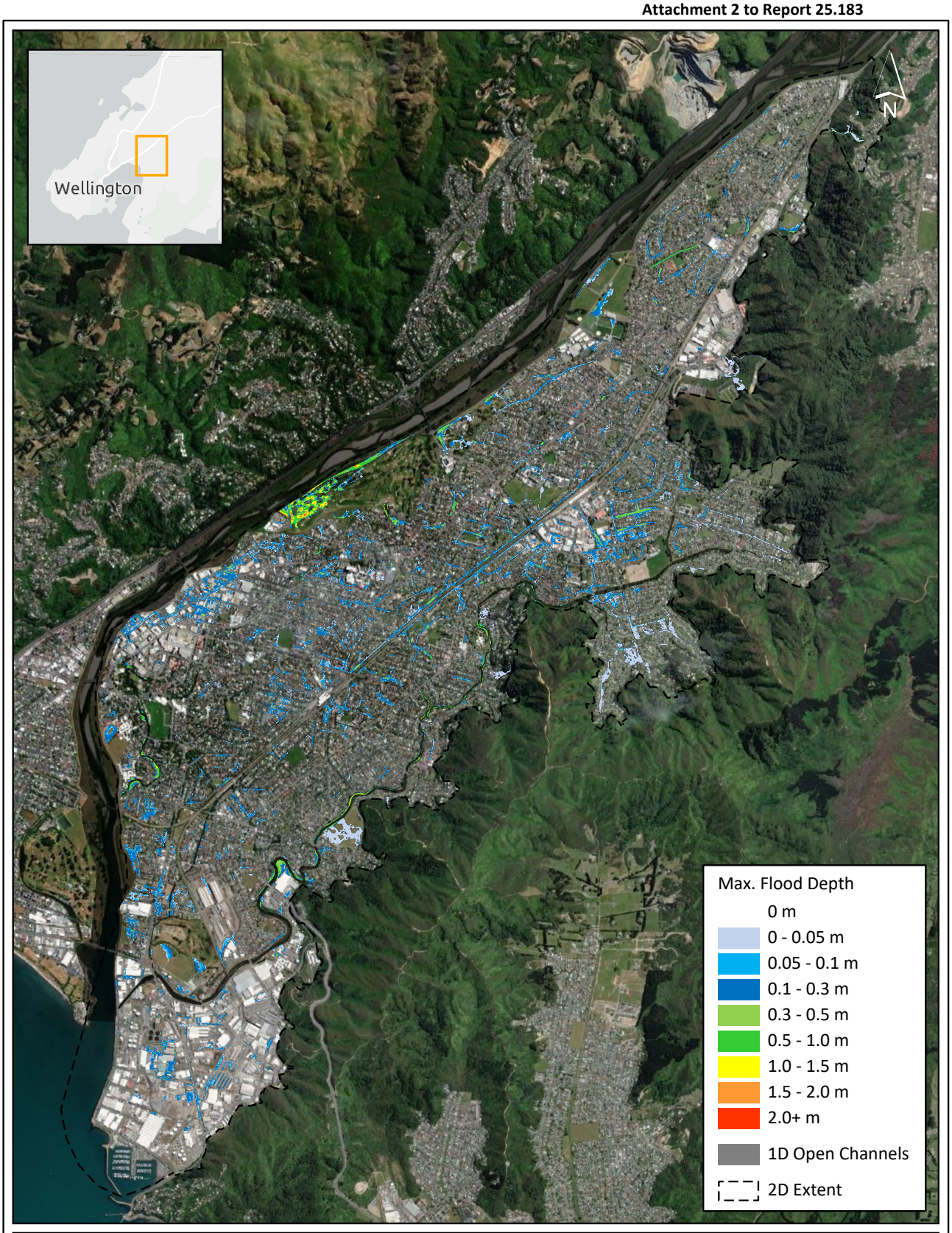

10% AEP (1 in 10-year ARI) flood depths for existing climate, 6-hour storm

Basemap Service Credits: LINZ
Map displayed in NZGD 2000 New Zealand Transverse Mercator coordinate system.
Author: Ben Caldwell, Stantec (2023)

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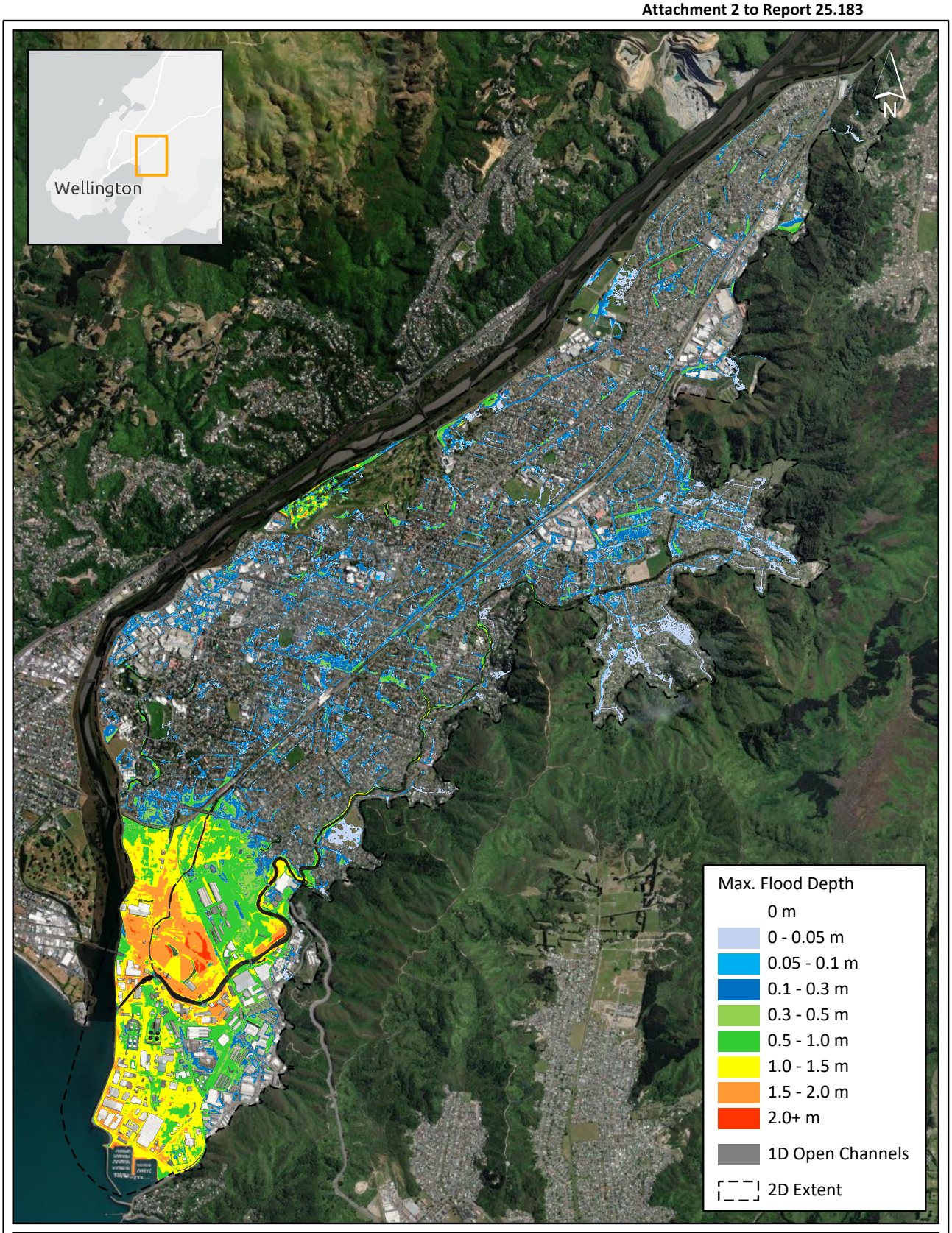

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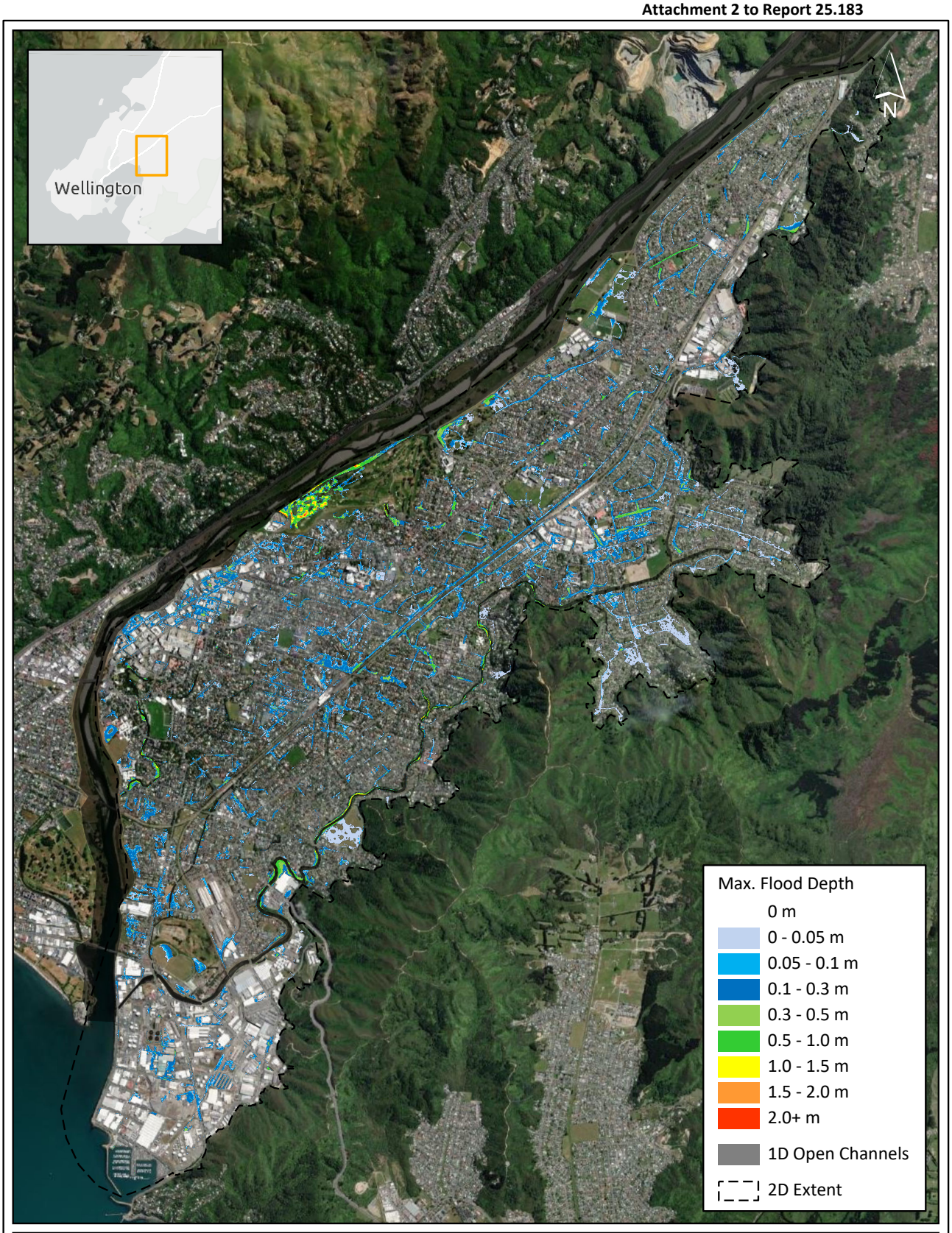

5% AEP (1 in 20-year ARI) flood depths for existing climate, 6-hour storm

Basemap Service Credits: LINZ
Map displayed in NZGD 2000 New Zealand Transverse Mercator coordinate system.
Author: Ben Caldwell, Stantec (2023)

0 0.5 1 2 Kilometres

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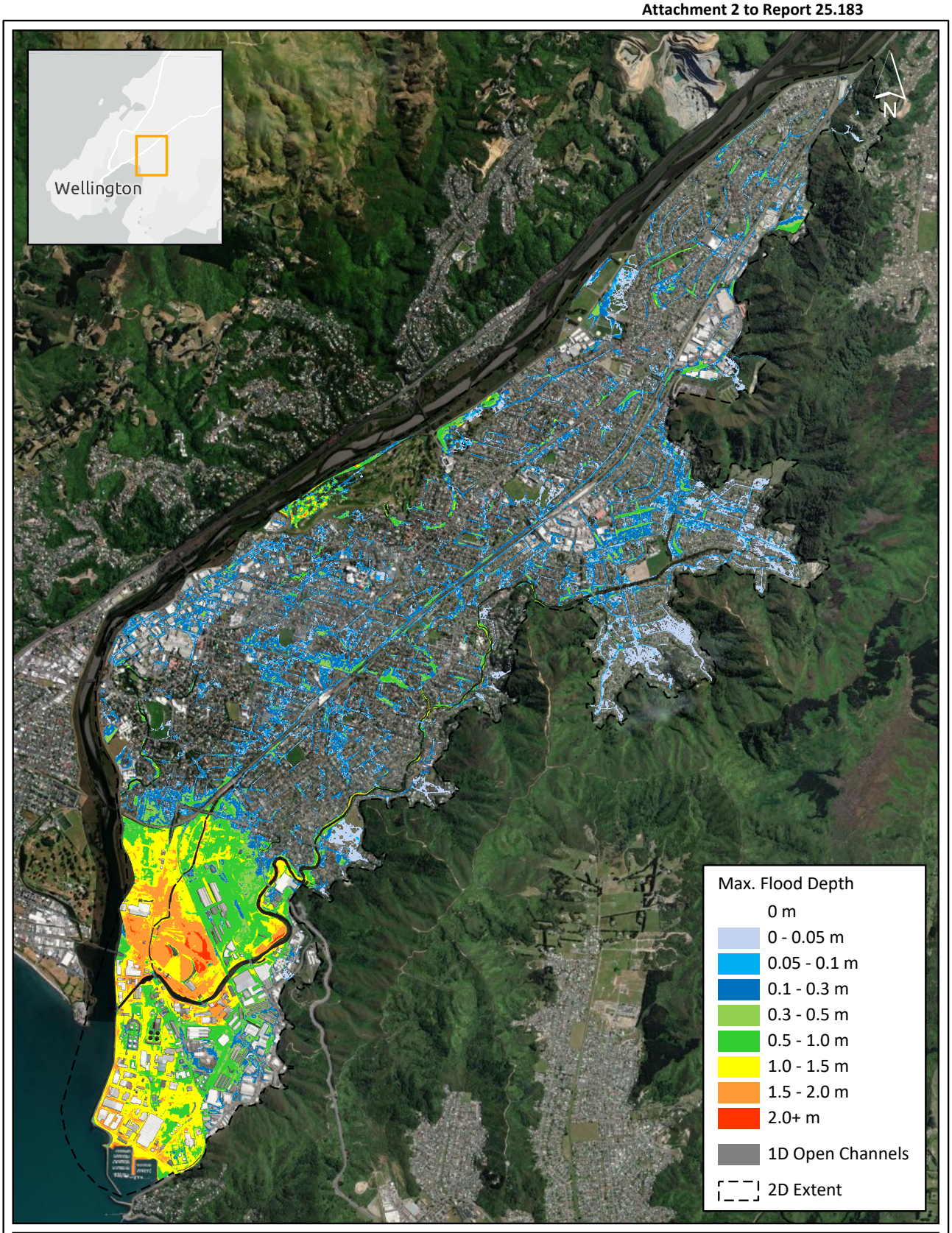

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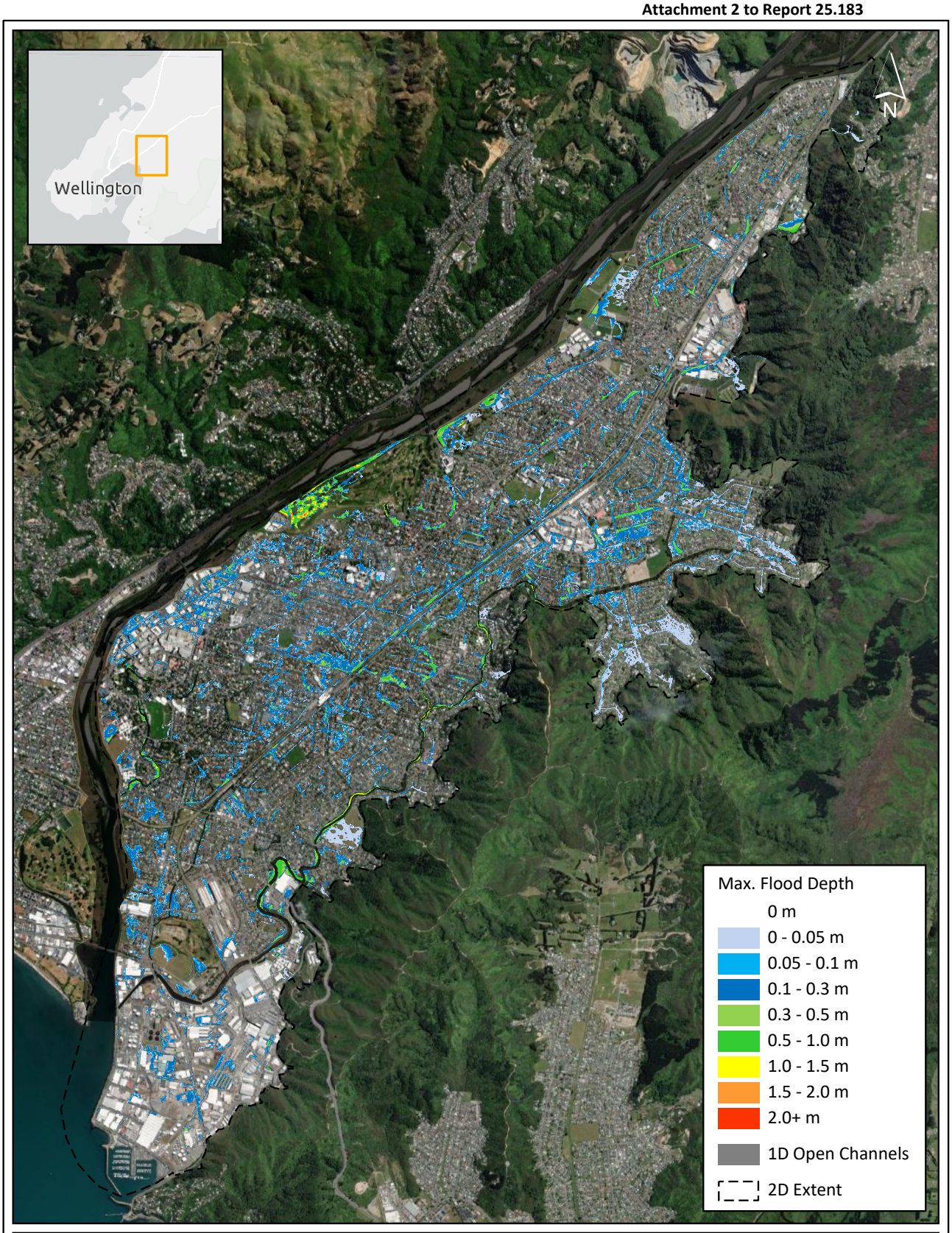

2% AEP (1 in 50-year ARI) flood depths for existing climate, 6-hour storm

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Author: Ben Caldwell, Stantec (2023)

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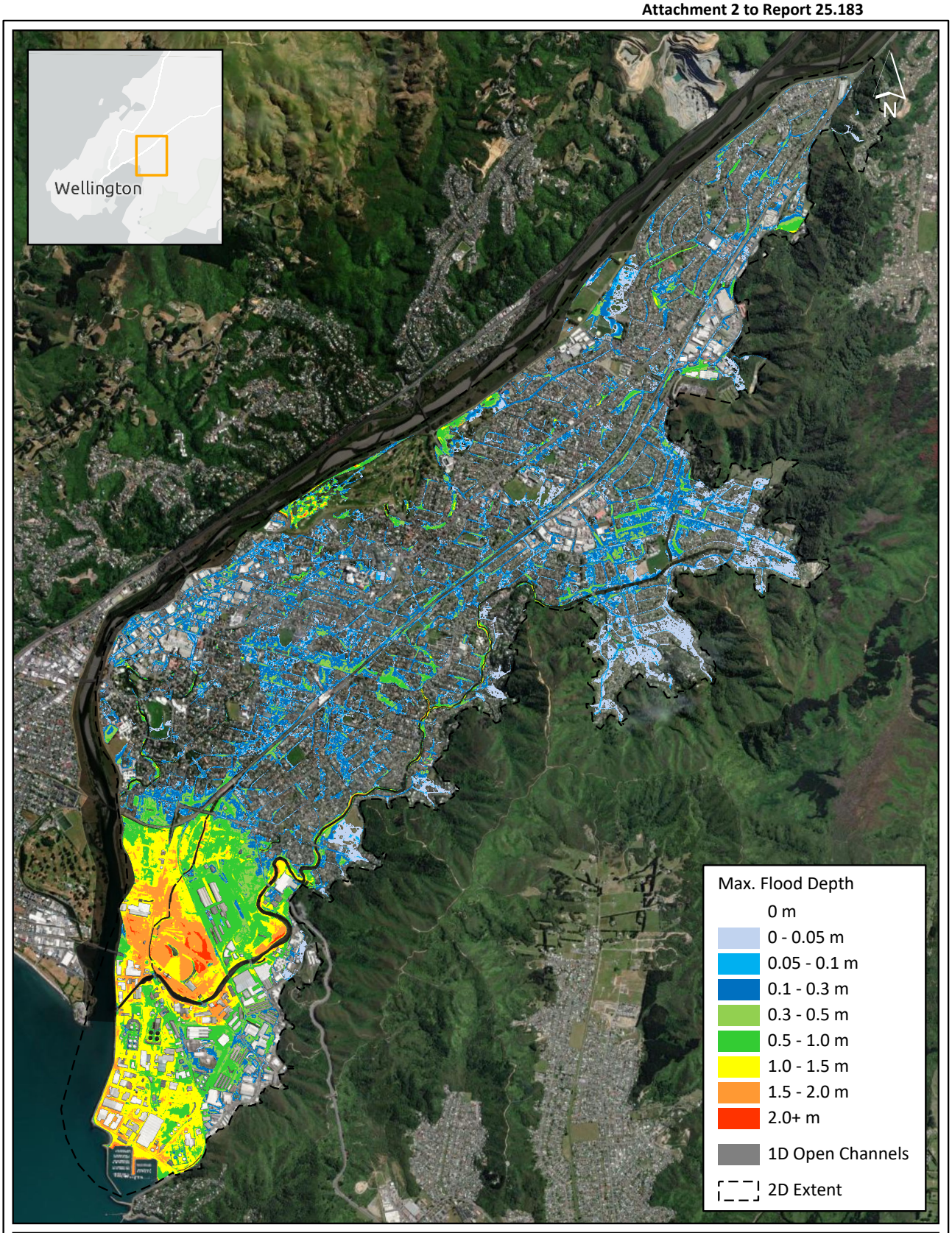

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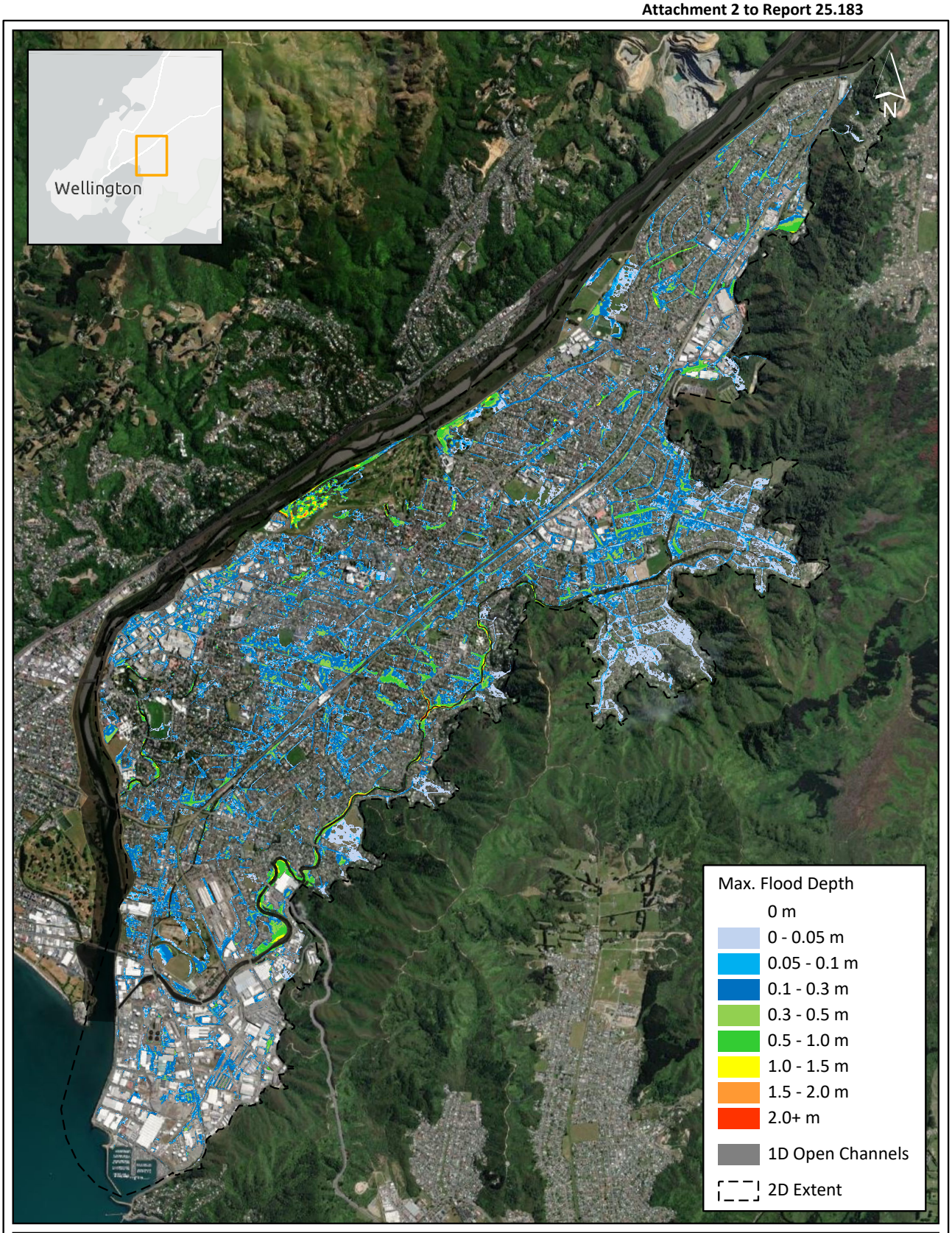

2% AEP (1 in 50-year ARI) maximum uncertainty flood depths for existing climate, 6-hour storm

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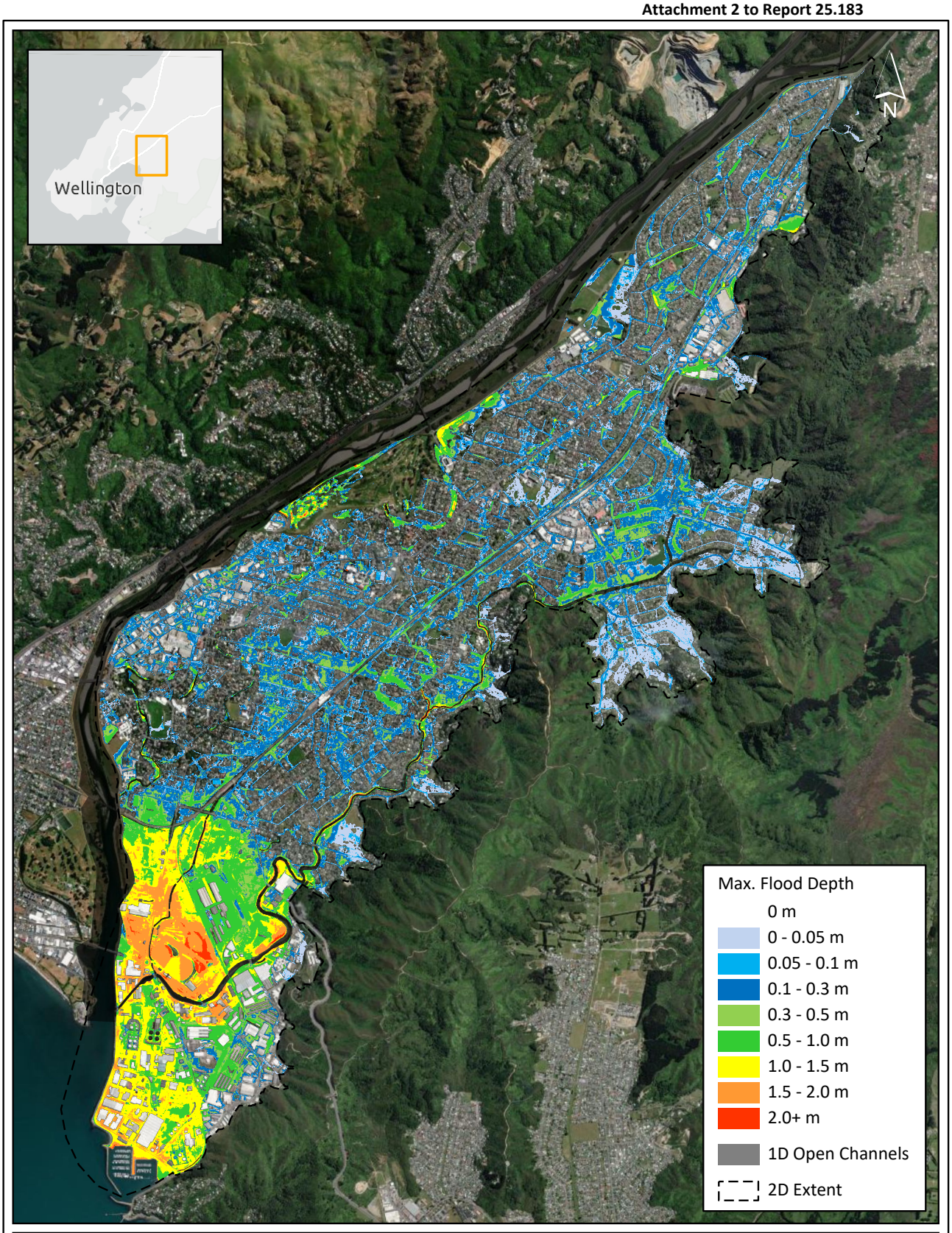

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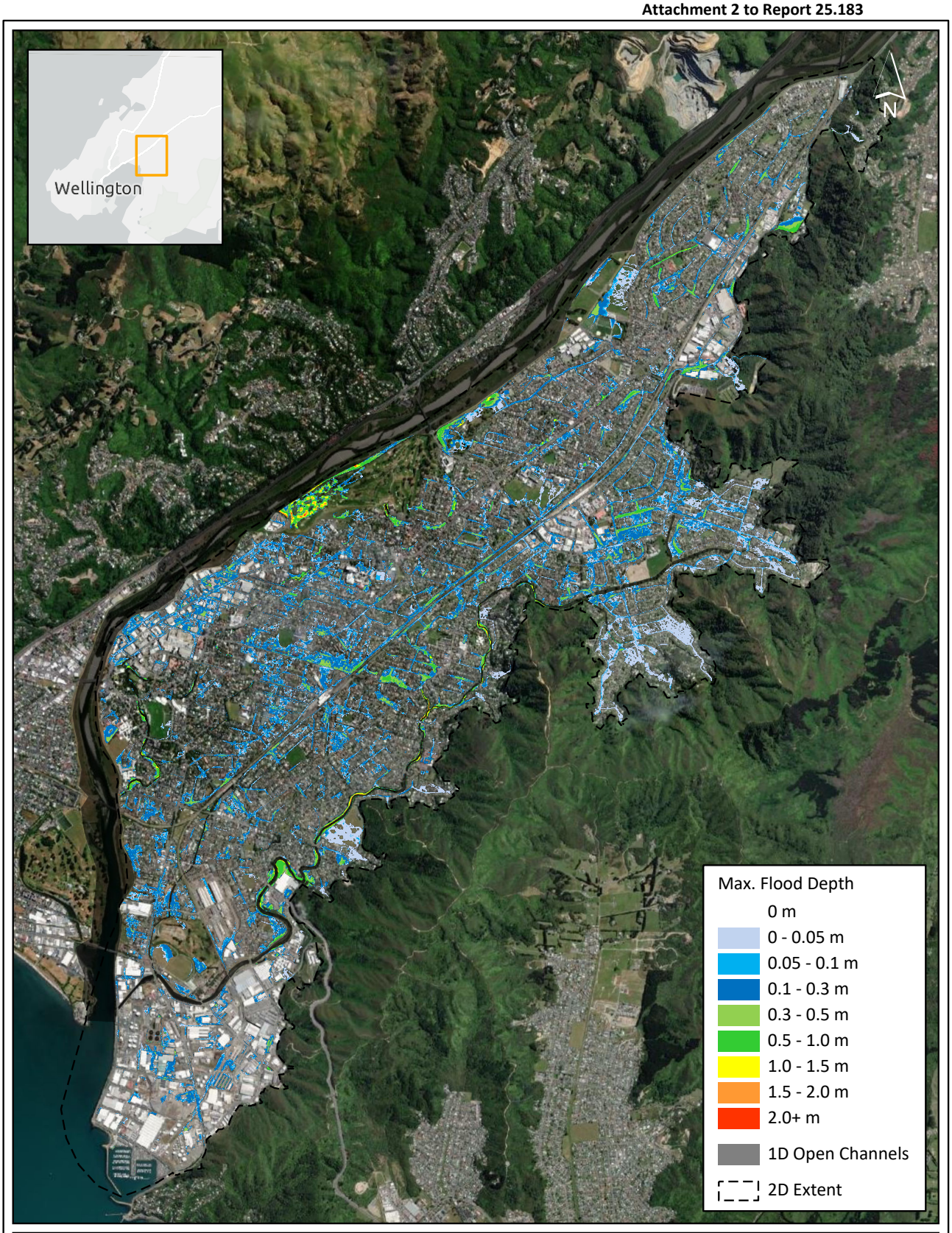

1% AEP (1 in 100-year ARI) flood depths for existing climate, 6-hour storm

Basemap Service Credits: LINZ
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Author: Ben Caldwell, Stantec (2023)

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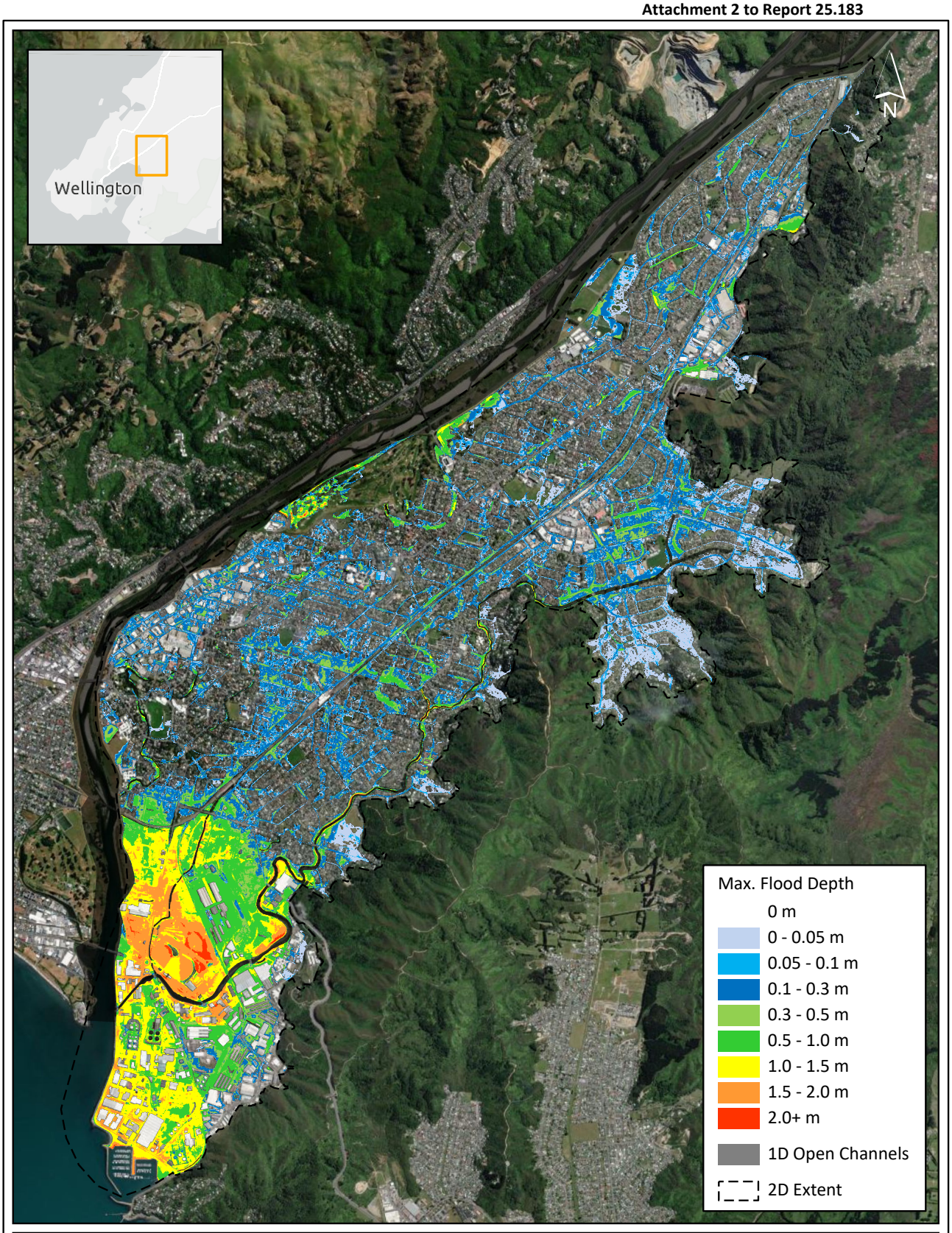

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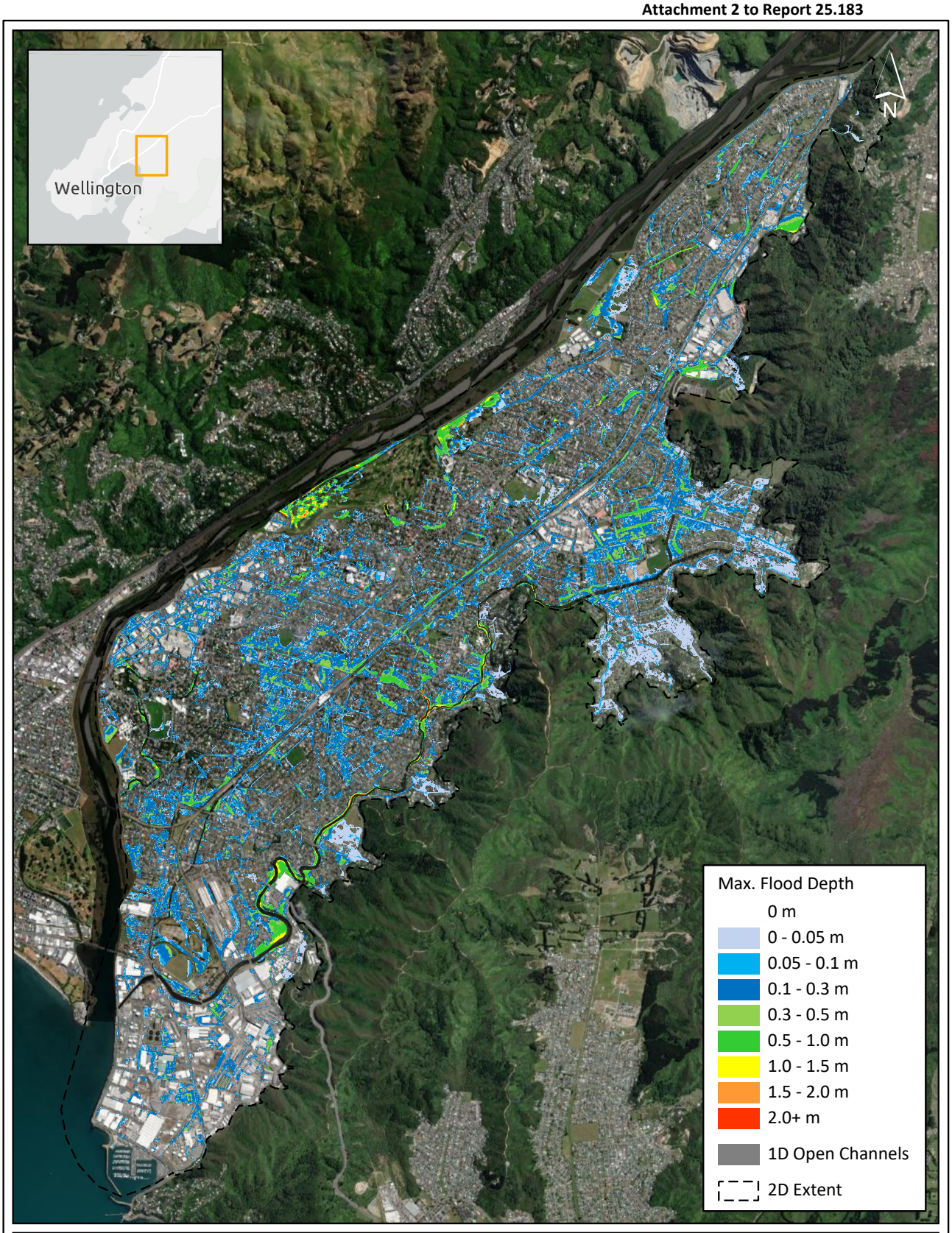

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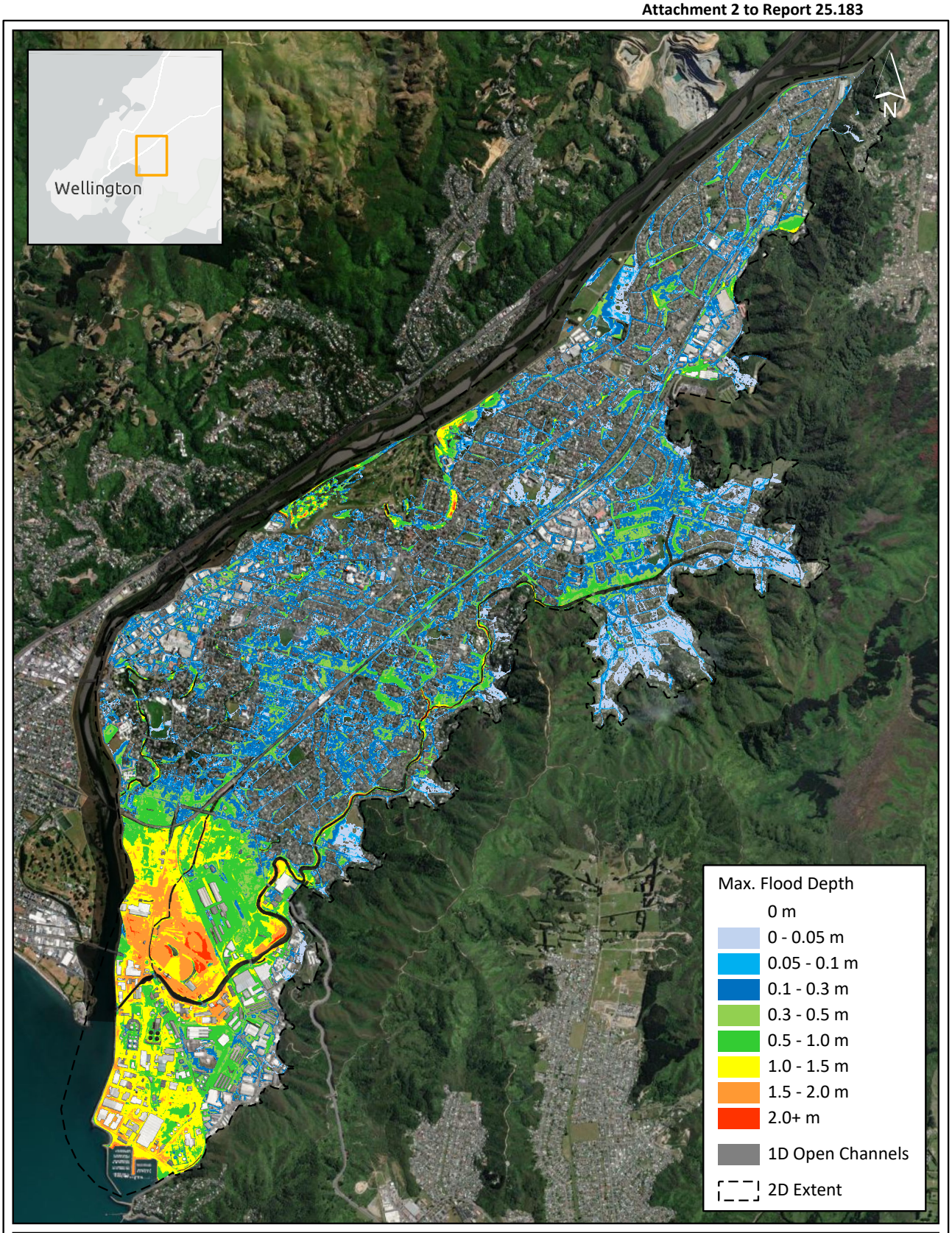

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Stantec

Greater Wellington
Te Pane Matua Taiao

ATTACHMENT 3 – Flood hazard maps for the Waiwhetū Stream

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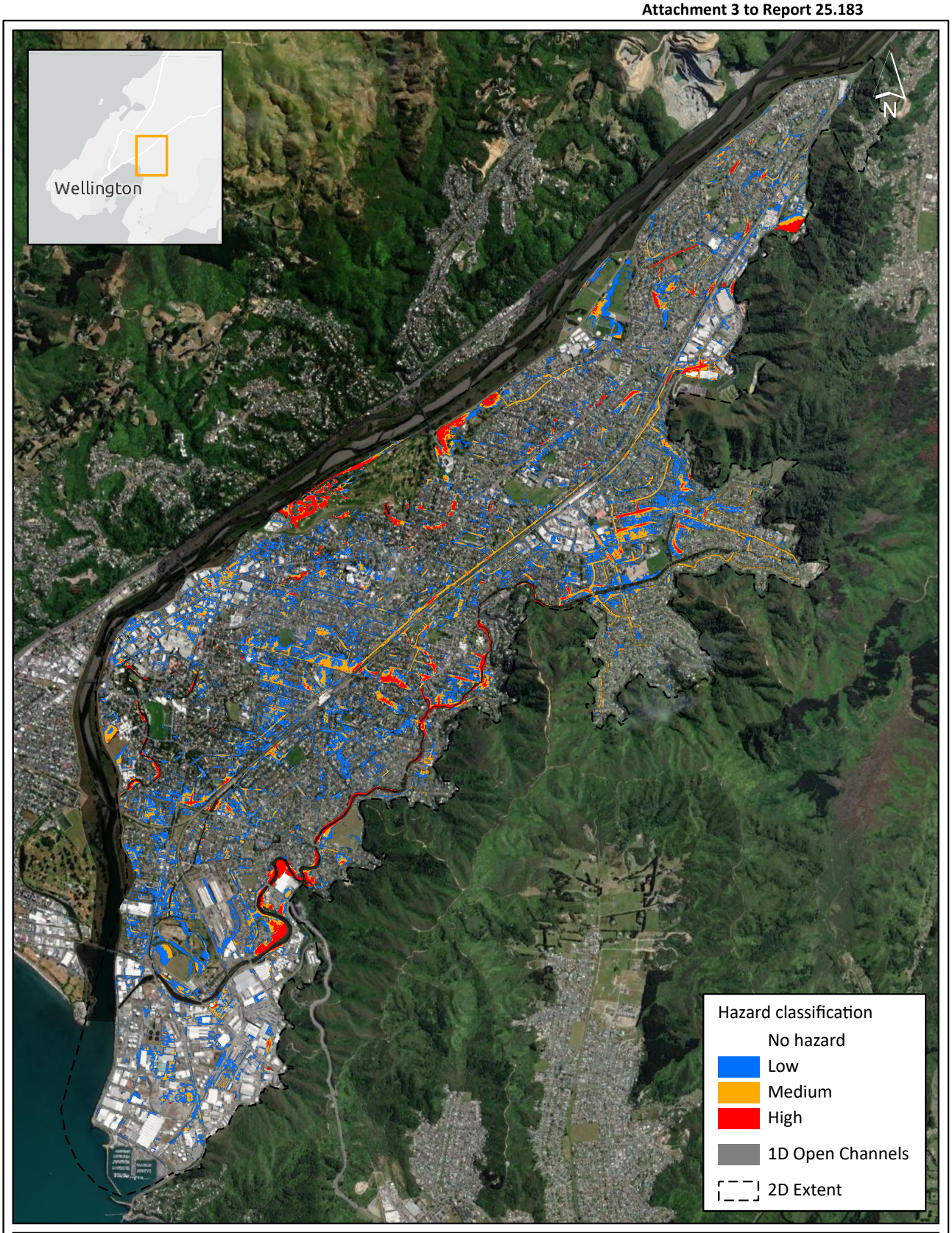

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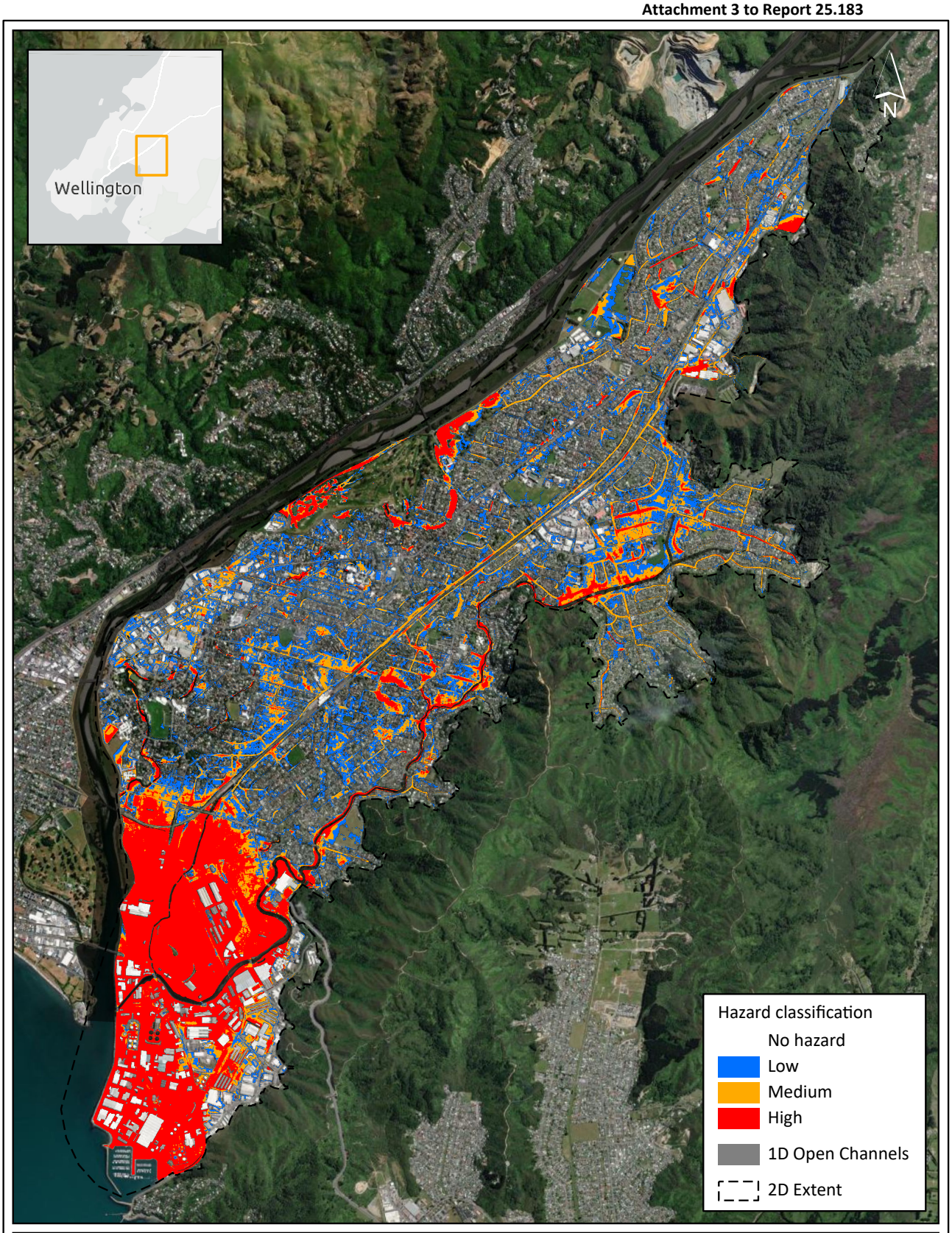

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Author: Ben Caldwell, Stantec (2023)

0 0.5 1 2 Kilometres

Stantec

Attachment 4 to Report 25.183

WAIWHETŪ STREAM FLOOD HAZARD MAPS

Te Awa Kairangi / Hutt River Valley Subcommittee

13 May 2025

Ella Boam – Senior Project Manager, Investigations

Francie Morrow – Team Leader, Knowledge Water Resilience

Greater Wellington
Te Pane Matua Taiao

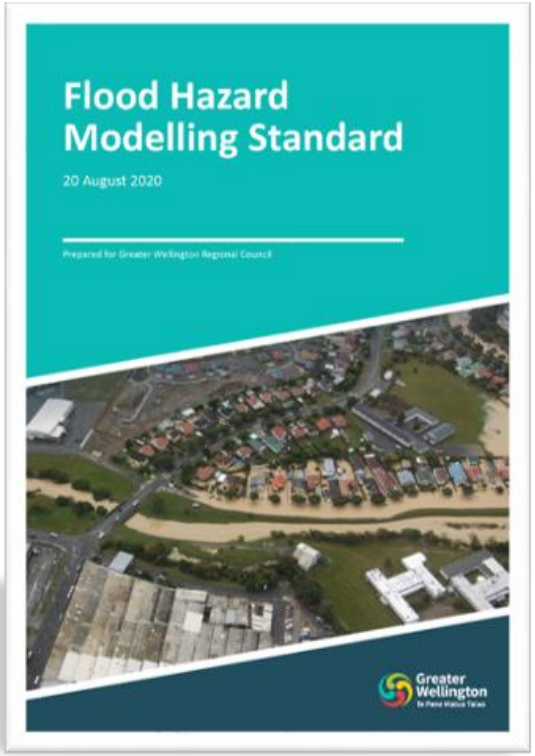
Structure

Purpose: *To present the final Waiwhetū Stream flood hazard maps to the Te Awa Kairangi / Hutt River Valley Subcommittee.*

- Flood risk
- Flood hazard modelling – the process
- Waiwhetū flood hazard maps
- District Plan flood hazard overlays
- Managing the risk

Attachment 4 to Report 25.183

Flood Hazard Modelling – GW's Process



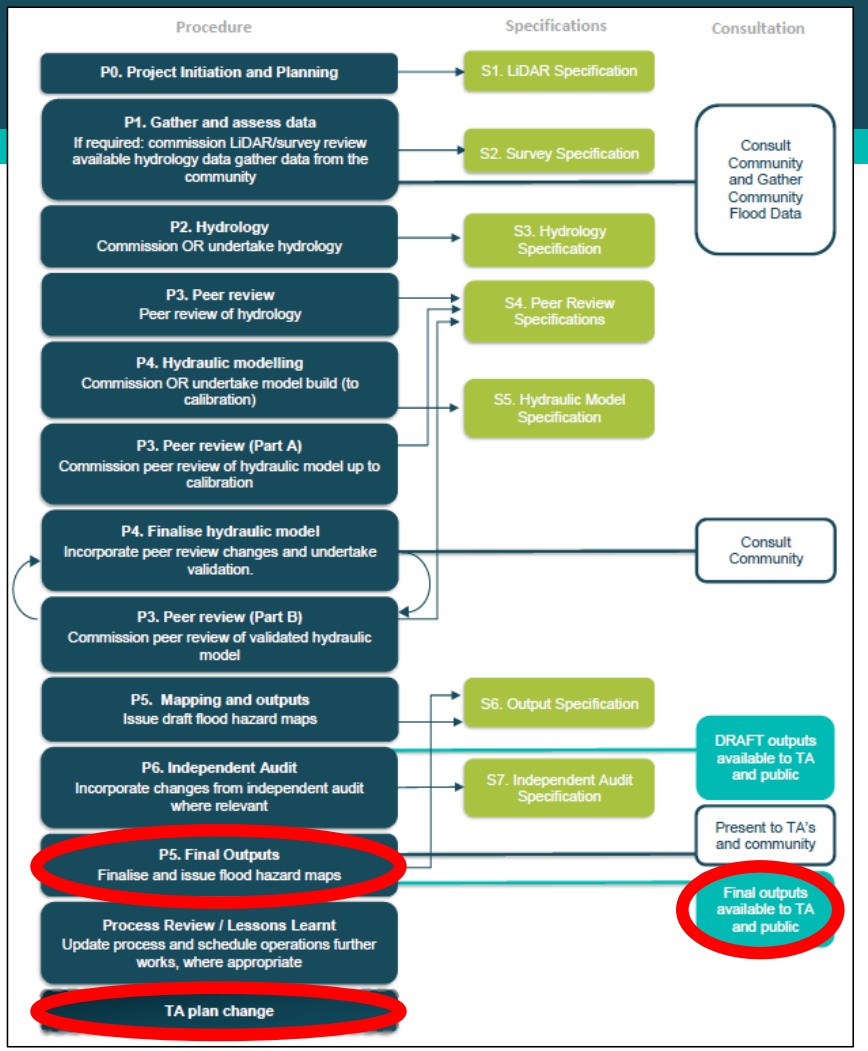
- End to end process for use on all GW modelling
- Be available for communities, partners and suppliers
- Based on lessons learnt and national & international good practice.
- Embed peer review and independent audit
- Promote community involvement
- 'Living process' that can be continually improved.

Not a golden bullet but will be an aid to communicate the process we follow and clearly articulate our scope expectations.

Waiwhetū Flood Modelling Process

- WWL and GW combined process
- One model, two hydrological inputs
- Community engagement & independent audit
- In final stages of process

Attachment 4 to Report 25.183

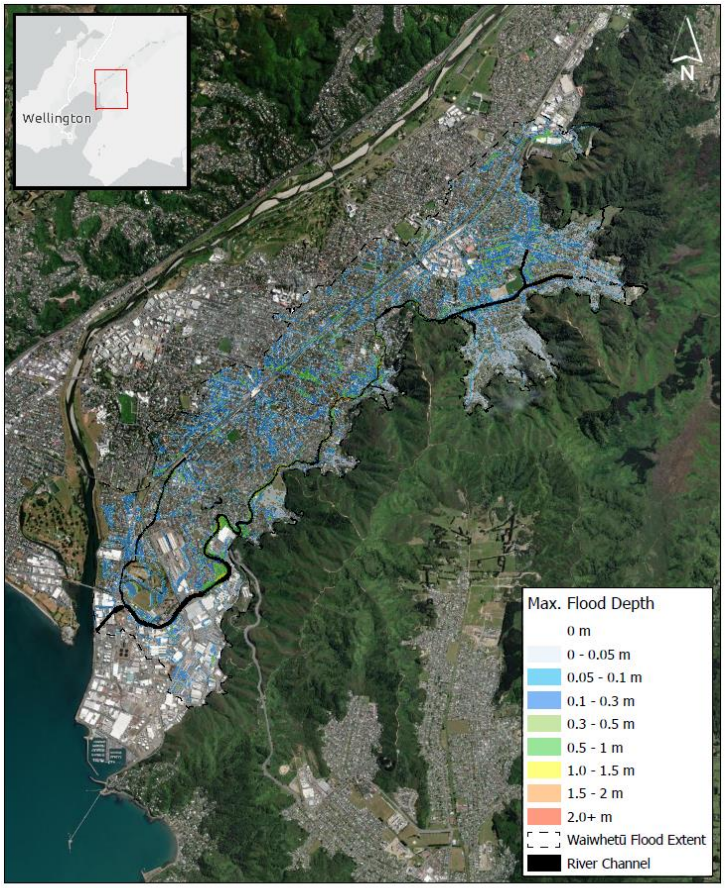


Attachment 4 to Report 25.183

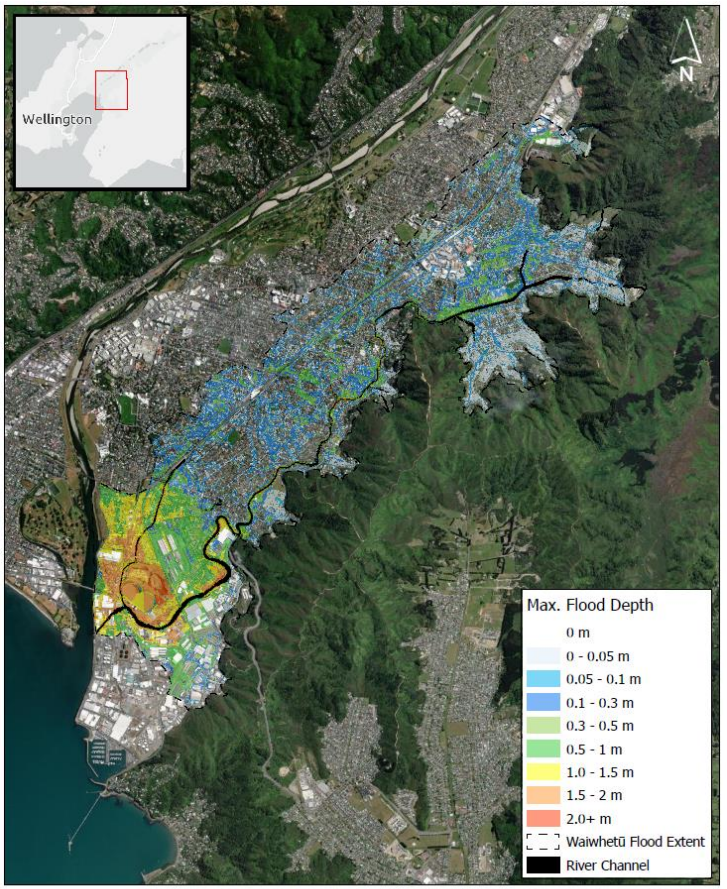
Waiwhetū Stream Flood Depth Maps

- Multiple design events modelled

- 39% AEP (mean annual flood)
- 20% AEP
- 10% AEP
- 5% AEP
- 2% AEP
- 1% AEP



1% AEP (1 in 100-year ARI) flood depths for the current climate

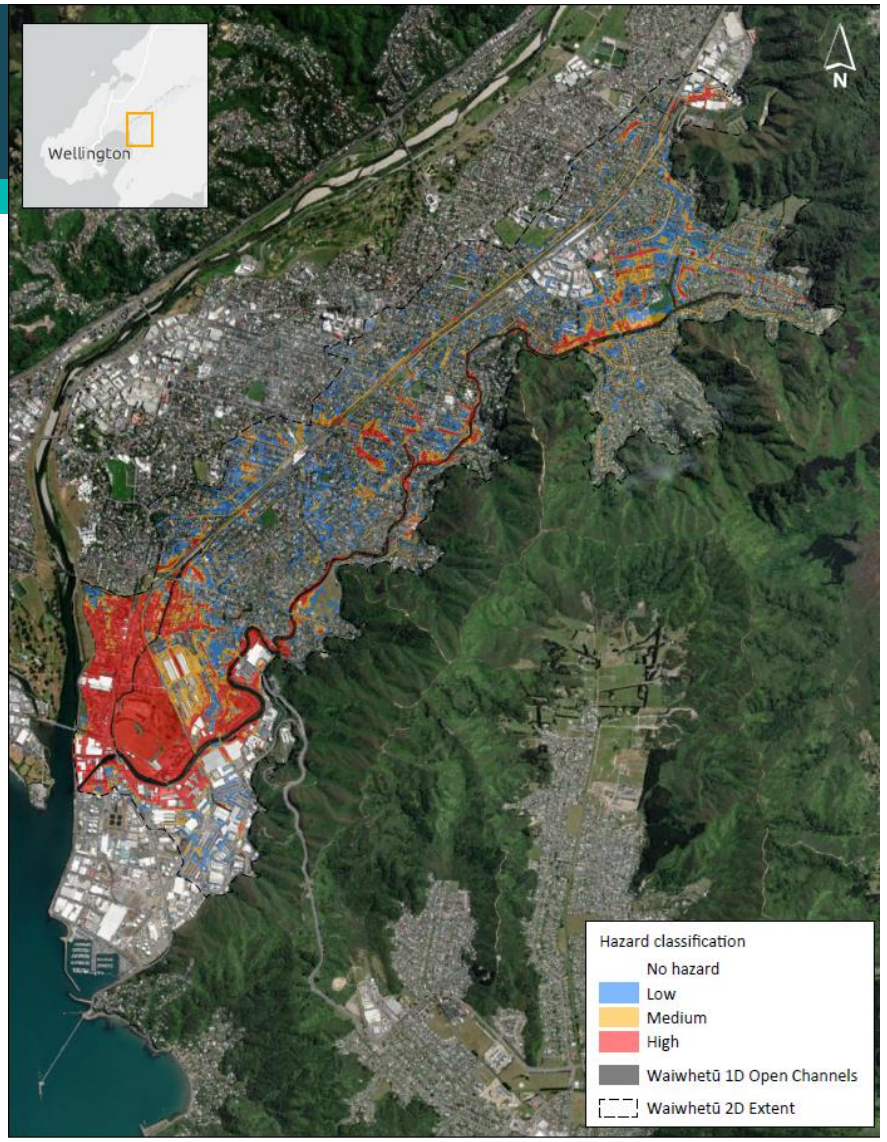


1% AEP (1 in 100-year ARI) flood depths for predicted future climate

Attachment 4 to Report 25.183

Waiwhetū Stream Flood Hazard Map

- 1% AEP (1 in 100-year ARI) maximum uncertainty flood hazard for RCP 8.5 2101-2120, 1.59m SLR, 6-hour storm
- Provided to Hutt City Council for the district plan



Te Awa Kairangi / Hutt River Valley Subcommittee
13 May 2025
Report 25.186

For Decision

PINEHAVEN FLOODPLAIN MANAGEMENT PLAN STRUCTURAL WORKS IMPLEMENTATION - REVIEW

Te take mō te pūrongo
Purpose

1. To update the Te Awa Kairangi / Hutt River Valley Subcommittee (the Subcommittee) on the Pinehaven Floodplain Management Plan (FMP) structural works implementation.

He tūtohu
Recommendations

That the Subcommittee:

1 **Recommends** to the Greater Wellington Regional Council Environment Committee and the Upper Hutt City Services Committee (the respective council committees) that construction of Stages 3-5 of the Pinehaven FMP structural works remain on hold.

2 **Recommends** to the respective council committees that alternative options for Stages 3, 4 and 5 of the Pinehaven FMP structural works are developed over the next 12 months.

3 **Notes** the appointments to the Pinehaven Steering Group.

Te tāhū kōrero
Background

2. A workshop was held with the Subcommittee on 11 February 2025 for the purpose of explaining why the construction of the structural works for the Pinehaven FMP were currently on hold and to propose an alternative way of achieving the FMP outcomes.
3. In summary, the structural works are currently on hold due to the significant cost escalation. These costs are discussed in the Financial Implication section of this report.
4. The remaining works in Stages 3, 4 and 5 are largely on private property and include a number of private driveway bridges as well as lengths of concrete walled channel.
5. An alternative option involving a more natural channel form with less structures could offer a viable alternative to what is currently proposed.

6. This is a joint project between Greater Wellington Regional Council (Greater Wellington) and Upper Hutt City Council with terms of the agreement agreed in a memorandum of understanding[1].

7. As well as the agreement to 50/50 cost sharing between the two parties, a Pinehaven Steering Group was to be set up for managing the delivery of the project and reporting to this Subcommittee on progress of the FMP. This steering group met frequently during the early stages of floodplain management plan implementation but as project delivery through Wellington Water gathered pace the group met infrequently and had limited direct oversight of the project. In addition, a number of staff and structure changes have occurred since the adoption of the Pinehaven FMP and the memorandum of understanding established. It is timely to refresh the Pinehaven Steering Group membership.

8. The Pinehaven Steering Group has been re-established and is currently meeting monthly and will report to scheduled meetings of this Subcommittee.

9. The Pinehaven Steering Group membership is:

   a Group Manager Operations (Upper Hutt City Council) – Tim Harty

   b Director Delivery (Greater Wellington) – Jack Mace

   c Project Manager (Independent) – Kyle Christensen

   These members are supported by advisors or delegates as required.

Te tātaritanga
Analysis

10. As delivery of the works evolved from the concept design conceived in the FMP, significant cost escalations have occurred. This is due to increasing scope and complexity as detailed design was completed and the full scale of the works became apparent, as well as construction costs generally increasing over this period.

11. Notwithstanding the above, Stages 1 and 2 of the project have been completed for a cost of $22.5m. These stages included the works on the main public infrastructure including the Sunbrae and Pinehaven Road culvert crossings as well as a channel upgrade through Willow Park.

12. The more detailed modelling completed as part of the structural works design identified 70 buildings at risk of inundation in a 1% annual exceedance probability (AEP) plus climate change flood event. This was significantly greater than the 33 buildings identified as being at risk in the FMP.

13. The completed Stage 1 and 2 works have reduced the flood risk to 13 buildings with 57 remaining at risk. The works currently proposed for Stages 3, 4 and 5 reduce the flood risk to a further 28 buildings taking the total number of buildings relieved of

[1] Pinehaven Stream Floodplain Management Plan Implemenation Project – Agreement between Greater Wellington Regional Council and Upper Hutt City Council. 14 September 2016.

flood hazard in the modelled 1% AEP plus climate change flood event to 41 buildings.

14. At the completion of the currently proposed FMP structural works, 29 buildings will remain at risk of inundation in the 1% AEP plus climate change flood event.

15. In August 2024, Wellington Water were instructed to pause any further construction work on Stages 3, 4 and 5 in light of the significant cost increases and the Subcommittee requested a review of the project, this review is included as **Attachment 1** to this report**.**

16. This review has identified the following:
    a Costs have increased from $10.9 million when the Pinehaven FMP was developed to $58.6 million.
    b Remaining work for Stages 3 to 5 of the project are estimated to cost $36.1 million.
    c Benefits after completion of Stage 2 are that 13 habitable floors are relieved from flooding from a modelled 1% AEP plus climate change flood event.
    d It is an opportune time to take stock of the benefits achieved from the first two stages, document the learnings from the work to date, and consider more cost-effective delivery options for Stages 3 to 5 that still meet the objectives of the FMP.
    e Consideration is needed of options for future stages and how they will be funded including longer term maintenance.
    f A review of governance and project management arrangements is required.
    g Consideration should be given to asset ownership and maintenance, including responsibilities for river management.
    h Project timescales need to be revised.

17. Following on from this review, the Pinehaven Steering Group now consider that the structural works proposed in the FMP should be re-evaluated and alternative, more cost-effective options be developed.

Nga kōwhiringa
Options

18. Three options are to be analysed so that an informed decision can be made as to the scope of the remaining FMP structural works:
    a Option 1 – Proceed with works as currently proposed
    b Option 2 – More naturalised channel enlargement with minimal structures
    c Option 3 – Do no further structural works but enhance maintenance and emergency management provisions to manage flood risk

19. To enable these options to be evaluated, modelling and design work is required to develop realistic cost estimates. This would then be used as the basis for a cost benefit analysis to help inform which option provides the best overall outcome.

Ngā hua ahumoni
Financial implications

20. The FMP was originally forecast to cost $10.9 million. In 2017 this estimate was revised to $18.2 million and work started on Stage 1. In 2020, the cost increased to an estimated range of $37 million to $45 million. The current estimate to complete is $58.6 million total. $22.5 million has been spent to date leaving $36.1 million remaining to be spent.

21. Greater Wellington has allocated approximately $18 million in their 2024-2027 Long Term Plan.

22. Upper Hutt City Council has a total capital budget of $6.53m in their 2024-2027 Long Term Plan. This amount represents the total cost, with 50% of the revenue budget expected to come from Greater Wellington. Consequently, the net budget amounts to $3.27 million. Assuming a 50:50 cost share, this leaves a shortfall of $14.83 million.

23. The recommended option will require some expenditure to undertake redesign work but is expected to reduce overall project costs, realising savings back to both councils.

Ngā Take e hāngai ana te iwi Māori
Implications for Māori

24. The more naturalised option (Option 2) would generally be considered to be more aligned with the principles of Te Mana o Te Wai and it would also be positive for Māori that live in any of the houses that are to benefit in terms of reduced flood hazard.

Ngā tikanga whakatau
Decision-making process

25. The matters requiring decision in this report have been considered by officers against the requirements of Part 6 of the Local Government Act 2002.

Te hiranga
Significance

26. Officers considered the significance (as defined by Part 6 of the Local Government Act 2002) of this matter, taking into account Council's *Significance and Engagement Policy and* Greater Wellington's *Decision-making Guidelines*. Officers recommend that this matter is of low significance.

Te whakatūtakitaki
Engagement

27. The Pinehaven community shall be informed that the structural works are on hold for at least the next 12 months while alternative options are being considered. A

communications plan is being developed by the Pinehaven Steering Group and is to be led by Upper Hutt City Council.

Ngā tūāoma e whai ake nei
Next steps

28. Modelling and design of alternative options over the next six months followed by cost benefit analysis and reporting to present a business case for the preferred option.

Ngā āpitihanga
Attachments

Number	Title
1	Pinehaven Stream Improvements Review Summary

Ngā kaiwaitohu
Signatories

Writers	Kyle Christensen – Project Manager
Approvers	Jack Mace – Director Operations Tim Harty – Group Manager Operations (UHCC)

He whakarāpopoto i ngā huritaonga **Summary of considerations**
Fit with Council's roles or with Committee's terms of reference Management of flood risk and provision of flood risk infrastructure are fundamental responsibilities of both GWRC and UHCC.
Contribution to Annual Plan / Long Term Plan / Other key strategies and policies The purpose is the cost-effective delivery of outcomes agreed in the Pinehaven FMP.
Internal consultation Pinehaven Steering Group membership provides internal representation. Internal consultation has also been undertaken with the Knowledge and Insights Function of the Environment Group.
Risks and impacts - legal / health and safety etc. The risk of investing too much in a structural works that benefit relatively few properties is considered greater than the risk of delaying structural flood risk improvements to Pinehaven Stream.

Attachment 1 to Report 25.186

Te Kaunihera o
Te Awa Kairangi ki Uta
Upper Hutt City Council

Report

Pinehaven Stream Improvements Review Summary

PREPARED BY SUZEANNE RUSHMERE | PRINCIPAL ADVISOR

26 March 2025

Purpose of this report

The purpose of this update is to advise on the outcomes of the review of the Pinehaven Floodplain Management Plan Implementation Project and provide recommendations on the next steps for the future of the project.

Summary of Review

The Pinehaven Floodplain Management Plan Implementation Project was developed to address flooding in Pinehaven following the development of a Floodplain Management Plan (FMP) for the Pinehaven Catchment.

Wellington Water, on behalf of Greater Wellington and Upper Hutt City Council, was to undertake a phased programme of works to upgrade and increase the capacity of the Pinehaven Stream to reduce flood risk to the surrounding area.

This work was to take place in five phases and be implemented alongside other management measures including river management (day to day management of the stream) and changes to the Upper Hutt City District Plan.

At the end of phase five it was anticipated that capacity would be increased in the stream channel to convey a 1 in 25 year return period flood event, and 41 habitable floors of 70 habitable floors at risk would relieved from flooding in a 1-in-100 year flood event.

To date responsibility and level of service for river management for this project has not been clearly defined, but a plan change was adopted by Upper Hutt City Council on 12 September 2019, and the first two phases of the programme of works have been completed.

However, the costs of the programme of works have increased significantly since the Pinehaven Floodplain Management Plan Implementation Project was developed. Consequently, In August 2024, the Te Awa Kairangi Hutt Valley Sub Committee (TAKHVSC) endorsed a review of the Pinehaven Stream Floodplain Management Plan Implementation project.

This review has identified the following:

- Costs have increased from $10.9m when the Flood Management Plan for Pinehaven Stream was developed to $58.6M.
- Remaining work for phases three to five of the project are estimated to cost $36.1m.
- Benefits after completion of phase two are that 13 habitable floors are relieved from flooding
- It is an opportune time to take stock of the benefits achieved from the first two phases, document the learnings from the work to date and consider more cost effective delivery options for phases three to five that still meet the objectives of the Flood Management Plan.
- Consideration is needed of options for future phases and how they will be funded including longer term maintenance
- A review of governance and project management arrangements

- Consideration of asset ownership and maintenance including responsibilities for river management
- Project timescales

Next steps will include:

- Agreeing an approach for the three methods of management (river management, structural, non-structural) in the FMP with GWRC and UHCC and confirm roles and responsibilities between the funding partners as well as the nominated delivery agent..
- Determination of the benefits of the work to date and the residual gap between benefit realised and desired outcomes of the FMP.
- Consideration of more cost effective delivery options for phases three to five that still meet the objectives of the Flood Management Plan;
- Identifying scope of any consultation and engagement required with stakeholders.
- Consultation on delivery options
- Adoption of a preferred option
- Implementation of the value reviewed scope, initially by thorough planning and resetting of the funding for the remainder of the project.

Background

Project purpose

The Floodplain Management Plan (FMP) for the Pinehaven Catchment was adopted in 2016 to address causes and issues associated with flooding.

The FMP identifies three methods to support Pinehaven flood management;

1. River management (day-to-day maintenance of the stream to avoid blockages, maintain capacity and minimise erosion).
2. Non-structural (planning controls)
3. Structural methodologies (physical works).

Wellington Water, on behalf of Greater Wellington and Upper Hutt City Council, was to implement structural measures identified in the FMP (The Pinehaven Floodplain Management Plan Implementation Project).

The project commenced in September 2016 to address the risk of flooding by delivering against two of the primary objectives of the FMP:

- Providing in-channel capacity to accommodate a 1-in-25-year return period flood event; and
- Protecting habitable homes within the catchment from flooding up to a 1-in-100-year return period event.

Project arrangements

Funding has been provided through a joint funding arrangement between Greater Wellington Regional Council (GWRC) and UHCC, with an additional contribution from the New Zealand Transport Agency.

A memorandum of understanding formalised the partnership arrangement between Upper Hutt City Council (UHCC) and Greater Wellington Regional Council (GWRC), and Wellington Water Limited (WWL) was appointed as delivery agent to implement structural measures on behalf of both Councils. This included the design, procurement and consenting processes.

Structural works

Flooding was attributed to a number of factors including:

- Past development restricted room for the stream with property built immediately adjacent to, or in one case over the stream (48 Blue Mountains Road, 28 Blue Mountains Road and 4 Sunbrae Drive)
- Two major culverts were undersize and prone to blockage in high flows
- Other sections of the stream are prone to blockages
- A variety of private structures in the upper catchment act to divert floodwaters away from the main channel during high flows or because of blockages.

The structural works are proposed over a length of approximately 1,200m in five phases, between the Pinehaven Reserve and Whitemans Road and include:

- increased culvert capacity;
- measures to reduce blockages;
- flood walls;
- new bridges; and
- stream bank widening.

Anticipated benefits

The detailed modelling undertaken to support the project identified that 70 habitable floors were at risk from flooding in a 1 in 100 year flood event.

Anticipated benefits of the Pinehaven Flood Management Plan Implementation Project are:

- capacity in the stream channel to convey a 1 in 25 year return period flood event;
- 41 habitable floors relieved from flooding in a 1-in-100 year flood event after completion of phase five;
- a reduction in risk of injury or harm from fast or deep flowing water;
- avoidance of potential flooding from obstructions; and
- amenity improvements

Progress to Date

River management

At this point in time responsibility and level of service for river management for this project has not been clearly defined.

Non structural

UHCC initiated a plan change to address the risk of flooding in the Mangaroa and Pinehaven Stream catchments, Plan Change 42, which became operative on 12 September 2019. This included provisions that seek to reduce blockage potential, manage development so that stormwater runoff does not exacerbate the impact of flooding, and ensure that the peak stormwater runoff, during both a 1 in 10-year and 1 in 100-year event is at a rate no greater than when compared to the pre-development situation

Structural

To date construction has been focused on phases one and two of the project. This has included enabling works (removing three properties built immediately adjacent or over the stream), construction of upsized culverts at Sunbrae Drive and Pinehaven Road, and upgrade of stream capacity at Willow Park reserve. The extent of the project and completed works are shown in Figure 1, below.

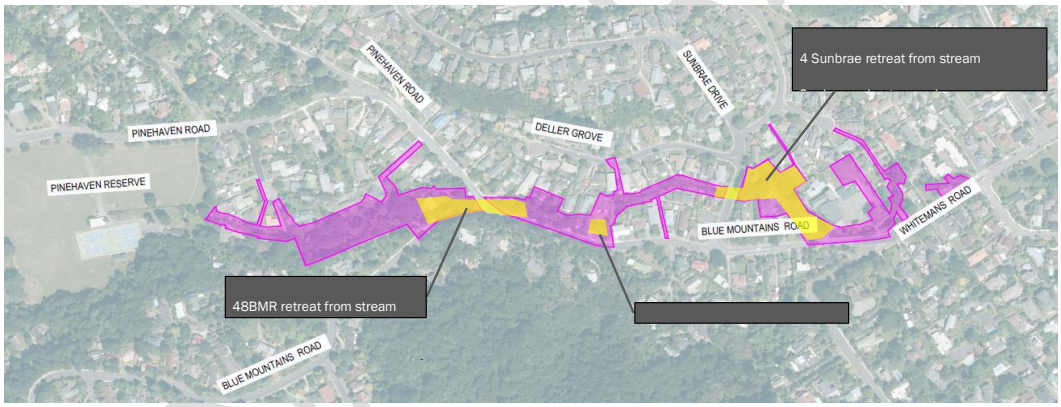


Figure 1 Pinehaven Stream and proposed areas of work (areas in yellow show where construction is complete)

Removal of the house at 28 Blue Mountains Road was brought forward from phase 3 following a fire and associated safety concerns.

Whilst structural work on phases one and two is complete there are some minor outstanding matters including asset ownership discussions, fully reopening Willow Park, and remedial actions for the removal of 28 Blue Mountains.

Project Review

In August 2024, the Te Awa Kairangi Hutt Valley Sub Committee (TAKHVSC) endorsed a review of the Pinehaven Stream Floodplain Management Plan (FMP) Implementation project. The review was forward focused with the intent to interrogate the significant cost escalation and explore alternative options for future project phases, to mitigate flood risk and achieve the objectives of the Pinehaven FMP.

The review was undertaken by an independent consultant (the reviewer) engaged through Upper Hutt City Council (UHCC). The following is a summary of the draft review outcomes, findings and recommended next steps.

Review methodology

The methodology consisted of a review of documentation relevant to the project and formal interviews, facilitated by the reviewer. Interviews were held with representatives of the key organisations involved in the project to date. Interviewees were provided with written questions ahead of the interview (Appendix One).

WWL prepared a 'Review Response' document (Appendix Two) which provided their comments for consideration in the review.

Review findings

Project cost escalations overview

The implementation project has increased significantly in cost since it was first initiated leading to concerns about the affordability of the remaining phases of the project.

- When the FMP was developed, the agreed budget for the project was $10.9M.
- In 2017, an estimate of $18.2M was provided to UHCC and GW.
- In 2020, the cost increased to an estimated range of $37M to $45M.

In response to the 2020 cost increase, Wellington Water Limited was instructed to continue works within a budget of $19.25M ($18.2M 50% UHCC and 50% GW plus an additional $1.05M NZTA).

A revised project estimate for the full scope of works is $58.6M The remaining work for phases three to five of the project is estimated to cost $36.1m.

Figure 2 below shows changing costs over time.

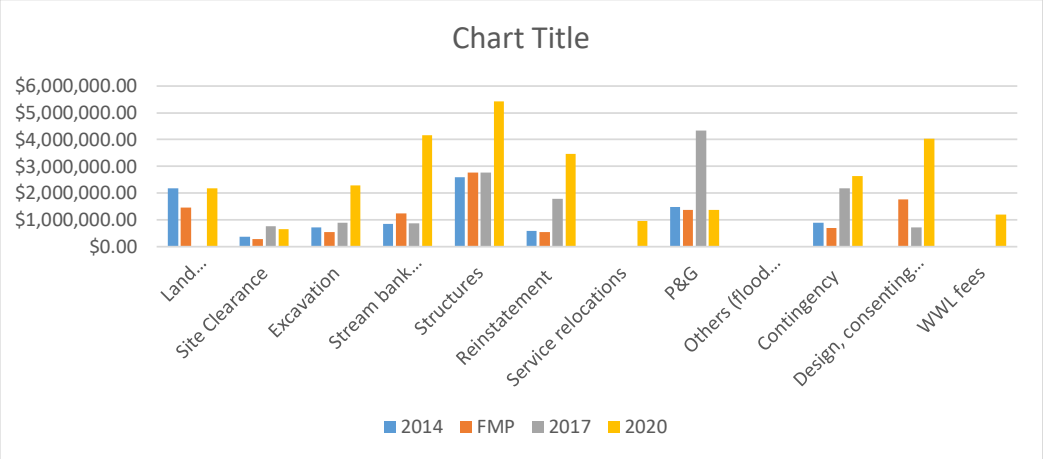


Figure 2: Cost changes over time

The costs used in the FMP did not factor in detailed design estimates or make allowances for inflation, changing market conditions, or project scope changes. The full understanding of the budget shortfall was realised at the completion of the detailed design.

In May 2020, GW noted that the project forecast costs had continued to increase at each redesign stage revision with physical works estimates being above $30 million (excluding contingency). This was based on the 2020 detailed design, which was independently priced.

As an example of the escalations and costs increases from concept to detailed design, the total cost of the culvert upgrades increased from the original FMP estimate of $1.6million to $4.36 million. This was due to:

- The bridge and driveway connections could not be configured by the design team to accommodate a 1-in-100 year return period flood event;
- The private driveway access connections between the bridge and private property restricting overland overflow paths;
- The weight capacity (loading) requirements changed to meet requirements for heavier electric vehicles, including buses;
- The long-term maintenance of a single as opposed to a double culvert arrangement was viewed as more sustainable and would operate with much greater reliability.

It was acknowledged that by upgrading the culverts there would be a significant reduction in flooding through sections of Pinehaven, giving residents a higher level of protection by reducing flow constrictions and the culverts proceeded.

There is not a complete picture of the reasons for some cost escalations including why costs have increased for site clearance, excavation stream stabilisation or reinstatement. However, the significant escalation in labour and material costs over recent years has compounded the issue.

Given the investment to date, funding constraints from both parties (UHCC currently identified a contribution of approximately$5m), now is an opportune time to take stock of the benefits achieved from the first two phases, document the learnings from the work to date (including the data from recent storm events) and refresh the opportunities previously identified to determine the more cost-effective delivery of further phases for residents and ratepayers and to achieve the outcomes of the FMP.

<u>Benefits of phases one and two</u>

At the end of phase two the benefits realised are that 13 of the 70 habitable floors at risk of flooding are protected; however, it is noted that the project was initially staged to deliver the bulk of the benefits in the final phase.

Anticipated benefit per phase is shown in table one below:

Phase	Habitable floor relieved from flooding	Cost
Phase one – Road culvert upgrades	1/41	$15.3m (Completed 2023)
Phase two – Willow Park	13/41	$7.2m (Completed 2024)
Phases three and four – Driveways / channel works up to Pinehaven culvert	15/41	$17.1m
Phase five – Driveways / channel works up to Pinehaven reserve	41/41	$19m

Table One: Anticipated benefits at the end of each phase

On 26 August 2024 a large rainfall event where more than 75 mm of rain fell within six hours (most of it between 5 am and 7 am). The rain event happened after the completion of the two new road culverts and flood walls within Willow Park (location identified on Figure 1). The assets performed well with spare capacity and neither WWL or UHCC received any reports of habitable floor flooding in this area.

Figure 2 Looking downstream from the new pedestrian bridge in Willow Park.

Figure 3 Vehicle bridge along Blue Mountains Road showing debris collected from flood waters overtopping bridge during the storm on 26 August 2024

Figure 4 Flood water shown downstream of the Pinehaven culvert just after the peak of the 26 August 2024 storm event

A more detailed analysis of the data would provide useful insights to inform how the Pinehaven project area coped with a heavy rain event and therefore the benefits of the investments to date.

Next steps

It is noted that there will still be 29 habitable floors left unprotected at the end of phase five, should phases three to five progress as originally anticipated.

As identified, above given escalating costs and flood constraints, now is an opportune time to review the project to determine whether there are alternative delivery options that would still meet the primary objectives of the Flood Management Plan.

Considerations include:

- Further analysis of the benefits of phases one and two
- How future phases will be funded, including long term maintenance
- Governance and project management arrangements
- Asset ownership and maintenance including responsibilities for river management
- Project timescales

Recommendations

Recommendations for future work include:

Complete the review and incorporate the findings into the delivery approach.

Agree an approach for the three methods of management (river management, structural, non-structural) in the FMP with GWRC and UHCC and confirm roles and responsibilities between the

funding partners as well as the nominated delivery agent. From the findings of this review, this could include but is not limited to:

- Determining the most appropriate delivery agent once the scope of the remaining works has been confirmed;
- completing any outstanding actions relating to phases one and two of the project;
- developing/reviewing terms of reference for approved delivery agent; and
- Both Councils to receive all information held by Wellington Water for the project.

Determine the benefits of the work to date and the residual gap between benefit realised and desired outcomes of the FMP.

- Undertake a more detailed assessment of the information from the August storm event as well as identifying any pressing maintenance matters or issues related to the project scope for phases three to five;
- project partners GW determine how effective the completed phases of work have been in reaching the high-level objectives contained within the FMP via a value engineering exercise and structural works survey; and
- Determine any residual gap between the benefits realised to date and the requirements of the FMP

Undertake a value review process to determine the most appropriate priorities to maximise the flood mitigation and outcomes of the project.

Conduct a value engineering exercise to quantify outcomes and determine the optimal delivery of remaining works through consultation with project partners and tangata whenua. This should also include:

- Assessment of the project assumptions and exploring alternative approaches to achieve the FMP objectives cost-effectively; such as alternative stormwater management solutions, materials and stream bank treatments;
- Report be prepared for consideration by the Te Awa Kairangi/Hutt River Valley Subcommittee following value engineering exercise.
- Determination any updates to the FMP document based on the learnings and work to date.

Implementation of the value reviewed scope, initially by thorough planning and resetting of the funding for the remainder of the project.

This will include:

- Identifying scope of any consultation and engagement required with stakeholders.

Appendix One – Questions to stakeholders

These questions informed the formal interviews

Achieving FMP Objectives

- *To what extent have FMP objectives been met against design criteria?*
- *How many residential homes no longer have floor level flooding risk? Which ones are they?*
- *What is the hydrological outcome of the two new culverts in place. What is the volume increase of water within Pinehaven Stream?*
- *What is the flooding risk to the community after the completion of Stage 2 – why?*
- *What is the progress against the FMP Flood Protection Objectives?*
- *Report against expected impact of a 1 in 100 year return period flood event at end of Stage 2.*

Project cost escalations

- *Why have project costs escalated so significantly? Was this foreseen?*
- *What commercial tension has been applied to the delivery of this project with project partners?*
- *What strategic action did WWL take when available funding was not aligned with budget forecasts in 2021?*
- *How was project delivery adjusted by WWL considering project funding availability?*
- *How were project cost escalations reported back to the UHCC and GW and the Subcommittee?*

Options for project Stages 3-5

- *Has the project team considered alternative options for achieving FMP outcomes? If so, what are they?*
- *What is WWL's advice for the completion of stages 3-5 within the current funding envelope?*
- *What are the risks associated with the above advice?*

Return on investment

- *What ROI is associated with current forecast project costs to the end of Stage 5?*
- *What is the ROI for Stage 1 and Stage 2?*
- *What commercial tension has been applied to the revised project estimate for the full scope of works*

Delivery agent - WWL

- *As the delivery agent for UHCC, outline how WWL has ensured the UHCC has been advised of all relevant project delivery matters.*
- *How have funding decisions been made within the project in the absence of Steering Committee meetings?*

- *What has been the frequency of the Steering Group Committee?*
- *How has the UHCC Project Manager been formally advised of project progress/risks?*
- *Has WWL used the Steering Group Committee process as per the MOU between UHCC and GW, and if not, why?*
- *Advise how and why project underspend has occurred and the impact of this on the project*
- *Advise how the current project team acquainted itself with the project consenting information and held information ahead of furthering the project.*
- *Comment on how governance and oversight has been managed to date.*

Appendix Two – Wellington Water Review Response

Our water, our future. Wellington Water

Pinehaven Stream Improvements Project

Review Response

Purpose

1. The purpose of this paper is to provide Wellington Water Limited's comments on the Pinehaven Stream Improvements Project (**Project**) for consideration in the review recommended by Upper Hutt City Council (**UHCC**) and Greater Wellington Regional Council (**GWRC**) (UHCC and GWRC are together referred to as **Councils**) and endorsed by the Te Awa Kairangi / Hutt River Valley Subcommittee, previously called Hutt Valley Flood Management Subcommittee (**Subcommittee**) on 6 August 2024.
2. The Subcommittee endorsed "*a review of the three remaining phases of the Pinehaven Flood Management Plan (FMP) with delivery agent Wellington Water Limited to interrogate the significant cost escalation and explore alternative options to mitigate flood risk and achieve the objectives of the Pinehaven FMP*."
3. The outcome of the review is intended to be reported back, by UHCC, to the Subcommittee on the 22 October 2024, with the draft available for approval by Friday 4 October 2024.
4. In particular, this paper provides context about Wellington Water's role in the Project and the history of the Project that Wellington Water considers is important for the review to consider.
5. This paper seeks to provide a summary to be read in conjunction with the more detailed documentation provided. The paper has selected some examples to help illustrate a point, but it does not include all such examples.

Summary

6. Wellington Water agrees that it is prudent for the Subcommittee and the Councils to have a look at the Project's future including objectives, investment case, and scope before committing to further investment. Wellington Water welcomes the opportunity to input into this review.
7. Unlike the many other council capital projects that Wellington Water delivers in the region, Wellington Water has been tasked with certain aspects of delivery for the project instead of managing the project end-to-end.
8. Wellington Water's work on the Project has at all times been under the direction and oversight of the Pinehaven FMP Implementation Project Steering Group (Steering Group), and both GWRC and UHCC. Project and progress updates on the aspects of the project that Wellington Water are responsible for have been provided to the Steering Group and Councils throughout the course of the Project.
9. Wellington Water's view is that the Project has not been set up or managed to deliver the best outcomes. There have been many challenges and factors that have contributed to the issues the Project is now facing around scope creep and costs increases. These include:
    - The Project has not been managed in a way to allow delivery to be cost effective or efficient. For example, projects of this size and complexity generally have multi-year funding committed to and provided by councils who own the assets. In this case, funding for the Project and for the aspect of delivery that Wellington Water is responsible for has been

confirmed on an annual basis, which did not allow for forward planning or being able to strategically plan for delivery or resources.

- Unclear role clarity and areas of accountability - Wellington Water is currently acting as the delivery agent, on behalf of UHCC, for the delivery of the structural elements. However Wellington Water has never formally been appointed to this role in the usual way involving formal documentation or otherwise had this role defined for it and there is accordingly no clarity around Wellington Water's role in the Project.
- The Project budget was based on initial estimates from preferred options report that was developed around a decade ago in 2014 and this did not factor in any allowance for inflation, changing market conditions, or changes to the Project's scope. Additionally, the initial estimate did not factor in any detailed design work, which is common practice in large scale projects as it provide more certainty on cost and the scope of work.

10. This document sets out the project background, Wellington Water's Role, the Scope, reporting, project challenges, timeline of decisions.

Background

11. The Pinehaven catchment has a long history of flooding events.
12. In 2017 GWRC and UHCC agreed to work together to implement the Pinehaven Stream Floodplain Management Plan (FMP), with costs to be shared 50% to UHCC and 50% to GWRC.
13. The FMP established goals, objectives, methods and scope for managing flood issues.6 The FMP proposed a range of methods for managing flooding in the catchment. The main methods proposed were structural, a Plan-Change and a range of non-structural activities.
14. The partnership between GWRC and UHCC is recorded in the MoU. The purpose of this Pinehaven Stream Floodplain Management Plan Implementation Project Agreement dated 16 September 2016 (MoU) was to set out the roles and responsibilities of the GWRC and UHCC in relation to the Project,7 including in light of historic allocations of responsibility under the Administration of Watercourses Agreement in 1977. Wellington Water is not a party to the MoU.
15. In summary the MoU provides for the following governance and management structure for the Project:
    - The Subcommittee is a subcommittee of GWRC and its membership comprises of elected members from UHCC, GWRC and Hutt City Council. The Subcommittee is responsible for, among other things:
        i. the governance of the Project;
        ii. recommending to the Councils any change to the scope of work necessary or desirable to achieve the implementation and efficient operation of the FMP; and
        iii. recommending the provisions of funding and obtaining consents necessary for the FMP.
    - The Steering Group is responsible for the management of the delivery of the Project and reporting to the Subcommittee on the progress of the FMP. Membership of the Steering Group is comprised of senior officers respectively appointed by UHCC and GWRC (and shall include the Director Asset Management and Operations at UHCC and the Manager Flood Protection at GWRC). Officers from the Steering Group report to their respective Councils. The MoU also provided for a Project Manager role in relation to the FMP in its entirety. The Project Manager was also to be a member of the Steering Group. Routine decisions of each Council were to be implemented through the Project Manager, in accordance with the provisions of each Council's annual plan.
    - However, a Project Manager was never appointed by the Steering Group, despite the MoU providing for the Project Manager to have the following responsibilities:
        i. overall responsibility for the project management;

ii. responsibility for control of programmes;
iii. responsibility for implementation;
iv. the coordination of the activities of the FMP outcomes;
v. the preparation and control of programmes and budgets; and
vi. the management of any public consultation or engagement process.

- Having a Project Manager appointed for the entire FMP as as set out by the MoU would have helped address issues experienced with coordinating implementation of the Project.
- In relation to funding of the Project, the MoU provides that:
  i. any cost increases above 10% of the original estimated project cost require the Steering Group approval to evaluate the reasons for the cost overrun and determine the apportionment of such additional costs.8
  ii. available funding for the Project is to be showing within each Council's LTP.

16. Wellington Water is currently acting as the delivery agent, on behalf of UHCC, for the delivery of the structural elements, however Wellington Water was never formally appointed in the usual way involving formal documentation and as such there is no clarity about what Wellington Water's role in the Pinehaven Project entails. For completeness, we note this role as the delivery agent appears to be different to the Project Manager role provided for in the MoU, which relates to the FMP in its entirety, as discussed above at paragraph 15.
17. The original Project costs used in the FMP originated in a preferred options report from 2014, with no adjustment. Despite the fact that the Project was originally estimated in the MoU to be completed in 20259 (over 10 years after the initial estimate was developed), the estimate did not include any allowance for inflation, changing market conditions or any changes to the original Project scope. In particular, the original estimate did not include sufficient or in some cases any provision for the following costs:
    - relating to house removal;
    - changes to the scope of the culverts work;
    - service relocations;
    - drainage works;
    - impacts of temporary works;
    - compliance with seasonal working conditions;
    - ecological and construction consent conditions; or
    - the general long term nature of the Project.
18. Further, during the period of the Project, both New Zealand as a whole as well as the Wellington Region have experienced significant cost escalation across the construction industry. This is by no means the only Project to have been affected.
19. It is also important to recognise that any substantive changes in the scope of the Project (as discussed in further detail at paragraph **Error! Reference source not found.**), require approval by the Steering Group (with due regard to the requirements of the Council's respective LTP).[10] Wellington Water has been in regular contact with the Steering Group and both UHCC and GWRC during the course of the Project, including providing detailed updates to the Steering Group regarding the changes to the estimate Project costs (as discussed in further detail at paragraph **Error! Reference source not found.**).

Wellington Water's role

20. As noted above, Wellington Water is currently acting as the delivery agent, on behalf of UHCC, but without any formal documentation defining its role. As such there is no clarity around Wellington Water's role in the Pinehaven Project. Previously Wellington Water also supported UHCC in a number of non-structural works. While the MoU is relatively clear on the division of responsibility and the role of Project Manager, Wellington Water's role in practice has not reflected what is set out in the MoU. Rather, Wellington Water's role has been subject to the direction and approval of the Councils through the Subcommittee and Steering Group. As set out in the summary above, Wellington Water's role has been the subject of ongoing uncertainty of scope and funding.

Scope and Progress of the FMP

21. The FMP refers to three methods for the Pinehaven flood management. These include River Management, Non-structural and Structural.

River Management

22. This method covers the day-to-day maintenance of the stream to avoid blockages, maintain capacity and minimise erosion.
23. Wellington Water is not involved or responsible for the maintenance of the stream but has been supporting this method by delivering to the requirement that all works in the stream are constructed within the approved construction management plans and methodologies.

Non-structural

24. These methods relate to planning controls for development in the catchment, community awareness and preparedness, and emergency procedures.
25. The non-structural methods include planning controls for activities within the flood prone area as well as the purchase and removal of three properties.
26. Wellington Water has supported UHCC through the Plan Change 42, which became operative on 12 September 2019. This plan change addresses the risk from flooding within the Mangaroa River and Pinehaven Stream catchments for a 1:100-year flood event.
27. Wellington Water has removed all three properties necessary to allow for the progression of the structural works. These were 48 Blue Mountains Road, 4 Sunbrae Drive and 28 Blue Mountains Road.

Structural

28. This is the physical works designed to manage flood risk associated with the stream channel and intended to increase the capacity of the stream, reduce blockages and manage flows on the floodplain.
29. The works in the catchment have been designed to provide capacity in the channel for a 4%AEP flood event and protection of building floor levels to a 1%AEP flood.
30. Due to available annual plan budgets, and uncertainty in funding, works have been delivered as packages as per the scope below. The scope for each package has had to be determined annually according to available funding, as opposed to being determined as part of an overall approved package:

Phase	Stages	Description
Phase 1		Pinehaven and Sunbrae culvert construction, removal of 48 Blue Mountains Rd and 4 Sunbrae Drive (including design and consenting for the full project)
Phase 2	9 – 10	Willow Park vertical wall stream channel and stream stabilisation, bridge, earthworks and landscaping
Phase 3	7 – 8	Removal of 28 Blue Mountains Rd, stream re-alignment, new driveway to 30 and 32 Blue Mountains Rd, vertical wall stream channel, earthworks and landscaping
Phase 4	5 – 6	Vertical wall stream channel and driveways to 30 – 40 Blue Mountains Rd
Phase 5	1 – 4	Vertical wall stream channel and driveways behind 8 – 11 Birch Grove

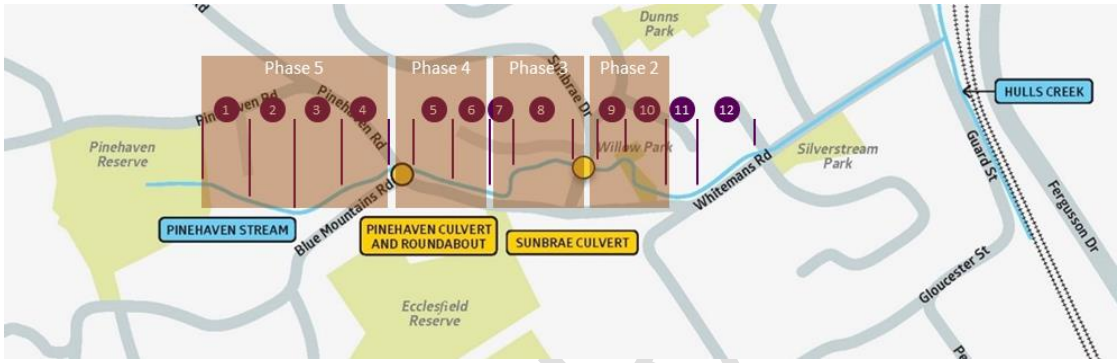


Figure 1: Phase Scope and Location Plan

31. As UHCC's delivery agent for the structural works Wellington Water has completed and achieved the following:

Phase 1 (100% complete)
- Preliminary Design (2017)
- Detailed Design (2020)
- Culverts consent (2020)
- Streamworks consent (2021)
- Culverts construction complete, 4 Sunbrae and 48 BMR removed (2022)

Phase 2 (94% Practically completed at the end of August 2024)
- Construction is expected complete October 2024

Phase 3 (Paused)
- 28 Blue Mountains Road house removed early due to fire damage. (100% completed)
- Works have been paused pending the outcome of this review.

Phase 4 and 5 (On Hold)
- Currently unfunded by UHCC.

Reporting

32. Councils have been kept informed of Project progress at regular intervals throughout the Project delivery through formal monthly, quarterly and annual reporting, regular meetings and other informal updates.

Monthly Reporting:

33. The Project is included in the monthly Major Projects reports provided to UHCC and GWRC. Monthly meetings are held to discuss the reports and raise any queries, risks to projects or issues. More detailed monthly construction reports have also been provided since November 2023, to both UHCC and GWRC. These reports have included detail on spend against budget, and RAG status and commentary on component sub-projects. This also includes indications when the project was expected to increase in costs for delivery.

Quarterly Reporting:

34. Project specific reporting has included detailed quarterly financial reporting of project costs direct to UHCC and GWRC, as well as quarterly Better Off Funding reporting to UHCC.

Annual Reporting:

35. The project team has also provided information and updates as requested to GWRC for the FMP Implementation Reporting to the Council Committees (Te Awa Kairangi/Hutt Valley Committee and Environment Committee). Most recently this has included the 2022/23 and 2023/24 Te Awa Kairangi / Hutt River and Pinehaven Stream Annual Floodplain Management Implementation Report. The 2023 increase in cost estimate was noted in the 2022/23 report presented to the Subcommittee on the 9 November 2023.

Steering Group:

36. Over the course of the Project, the Steering Group and Councils have been consulted regularly in relation to challenges faced by the Project, including the rising costs and project scope.
37. Wellington Water has presented a number of updates to the Steering Group during the course of the Project to date and has requested key decisions in relation to the project as reflected in Appendix A.
38. It should also be noted that GWRC has provided regular updates to the Subcommittee on progress, challenges and funding requirements.

Meetings:

39. The MoU requires the Steering Group to meet on a two monthly basis or as necessary. Noting the long term nature of the Project the MoU requirements evidence the recommended regularity of the updates intended to be provided to the Steering Group.
40. As Wellington Water has never been appointed to the Steering Group we cannot confirm the regularity of the Steering Group meetings.

Project Challenges

41. To date progress has been limited to available annual planning budgets and approvals, with allowable winter working and approval of construction management plans.

Funding

42. In summary the funding for the Project has been released annually following the annual planning process, thus not allowing for efficient delivery as per the Wellington Water delivery model. This has meant the project has been progressing based on annual plan funding in “phases”.
43. This has presented several challenges in progressing the works. For example:
    i. The annual funding has only been confirmed (from both GWRC and UHCC) once the financial year has started. This has prevented effective pre-planning for the work to be done in that financial year. This has also caused uncertainty in procurement pathways and retaining resources on the project.
    ii. The annual funding has been subject to hold points to confirm the scope of works that can be done for the available funding and benefit assessment before approval to proceed. This has been a challenge as it leaves very little time for physical works to progress once scoping has been confirmed and approved, and procurement is

done. This is also affected by timing in relation to seasonal consent requirements and approvals. Leaving actual physical works time extremely constrained.

44. Despite the difficulties in cost estimate approvals and funding commitments, Wellington Water has worked through these issues to progress Phase 2 for completion in 2024.
45. It has been communicated to the Steering Group since 2020 that it would not be possible to complete the full Project scope without additional funding.
46. More recently, in preparation for UHCC and GWRC LTP, Wellington Water was requested to provide a revised cost estimate for the full scope of works as noted in the in the Subcommittee paper presented by GWRC on 22 August 2023: "*Current budgets will only enable a portion of the channel works to be completed. Revised estimates to complete the full package of works to enable* them to be included in Long Term Plan deliberations over the next few months are also being developed."
47. This was provided to the Steering Group, and both Councils, in August 2023 with an engineer's estimate of $61M. The estimate was also escalated by GWRC to the Subcommittee in the following annual report presented in November 2023.

48. Consent and Winter Works Permitting
49. The project is subject to stringent consent conditions and seasonal ecological and works requirements. There is currently no guidance, or certainty, on what works will be considered or permitted during the winter periods.
50. This has presented several challenges and risks in progressing the works:
    i. Uncertainty on which works can take place during the winter periods, how much work and methodologies have had an impact on programme and costs. This, combined with the timing of approvals to progress works has left the construction periods very constrained, and at risk even during the works.
    ii. The winter works permit application is currently monthly, incurring additional costs.
51. As an example, Phase 2 works were delayed at the start due to not securing a winter works permit and is currently required to apply on a monthly basis for works outside of the stream.

Appendices

A - Project Milestones

B - Cost Estimate & Benefits

C - Review Scope

D - FMP

E – Electronic Transfer

- UHCC Monthly Pinehaven reports
- UHCC and GWRC Pinehaven Quarterly Financial reports
- Steering Group 2022/23 & Culverts example
- Subcommittee Papers (publicly available)

Appendix A: Project Milestones

Year	Reference
2014	SKM Preferred Options Report Estimate $11M
2016	6 Sept 2016 UHCC & GWRC Floodplain Management Plan (FMP) Estimate $11M
	16 Sept 2017 UHCC & GWRC MOU Estimate $19.49M
2017	Prelim Design Complete
2019	12 Sept 2019 Plan Change 42 (Mangaroa and Pinehaven Flood Hazard Extents)
2020	Culverts Consent Granted
	April 2020 Steering Group – Paper cost escalations
	May 2020 Steering Group – Decision Paper for Culverts to proceed
	July 2020 3 Waters Reform Announced
	November 2020 Steering Group Email Notice – All works on hold
2021	Feb 2021 Steering Group - Approval to proceed with Culverts
	Feb 2021

	Stream works Consent (End of Appeal date)
2022	Culverts complete
	Three Waters Reform Details Announced
	Feb 2022 Steering Group - Reduced Scope
	Nov 2022 Steering Group • Budget & Funding • Reduced Scope • Comms "Appetite for Future Phases 3.1. From UHCC perspective, Geoff felt that there is uncertainty around funding beyond stage 3, due to 3 Waters and Entity C in 2024. 3.2 Graeme noted that it is also an urbanised stream and GWRC do not necessarily have any say in this stream, it would probably fall under the portfolio of the new entity. Stormwater is still a grey area under the 3 Waters reform. 3.3. It was agreed that due to the uncertainty no commitment would be made to future phases, but the opportunity left open at this stage." 3.4. Lyndie (WWL) advised that a new estimate would be prepared for the full scope of works."
2023	March 2023 Steering Group Email • Progress update and risks
	Apr 2023 Affordable Water Reforms Announcement
	April 2023 Steering Group • Insufficient funding to progress full scope
	April 2023 Steering Group Email • Escalation on construction methodology approvals and winter works challenges
	June 2023

	Steering Group Email • Phase 2 to commence and risks. • Phase 2
	June 2023 Steering Group Email • Phase 2 start & LTP
	17 Aug 2023 Steering Group • Phase 2 update • Full project update a) Phases of the project b) Estimate / Funding (Estimate $61M) c) Risks • Estimate & Phase of Works Brief • Detail cost and modelling report
	Sept 2023 Phase 2 Willow Park Started (CMEP Approved July 2023)
	Nov 2023 Hutt Valley Sub-committee annual report (GWRC) • Estimate $57M
2024	Feb 2024 Repeal of Three Waters Reform Programme
2028	Land use Consents set to Expire

Appendix B: Review Scope

Reference: Pinehaven Flood Management Implementation – Project Process Review Brief

"On 6 August 2024, the Te Awa/Hutt River Valley Subcommittee (the Subcommittee) endorsed a review of the three remaining phases of the Pinehaven Flood Management Plan (FMP) with delivery agent Wellington Water Limited. The review will interrogate the significant cost escalation and explore alternative options to mitigate flood risk and achieve the objectives of the Pinehaven FMP.

The outcome of the review of the three remaining phases of the Pinehaven FMP will be reported back to the 22 October 2024 Subcommittee meeting. The final draft will be ready for the approval workflow by Friday 4 October 2024."

Appendix C Flood Management Plan Objectives

Reference: Flood Management Plan

"Reduce the risk of injury or harm from fast or deep flowing water.

- Design and maintain flood protection assets so they perform to the UHCC target level of service for streams.
- Identify, inform and protect the potential secondary overland flowpaths of flood waters.
- Upgrade the capacity of the stream channel to improve its ability to convey floods.
- Advise people of the flood risk through the planning and emergency management mechanisms outlined in this FMP.
- Locate new development away from the flood hazard areas.
- Help the community and the emergency services to plan effective responses to flooding.

Ensure use and development of land is compatible with the objectives of reducing flood risk:

- Communicate and provide advice on flood risk, so that appropriate decisions are made about land use.
- Protection of secondary overflow paths.
- Control future development and land use in the catchment. As a minimum, new development should demonstrate hydraulic neutrality in comparison with existing background peak flow rates.
- Control future forestry operations in the catchment so that forestry debris do not limit the flood-carrying capacity of streams.

Inform and empower communities to take appropriate action about flood risk through.

- The provision of publicly accessible flood hazard information and advice.
- The provision of standard stream channel and crossing design capacities for private upgrade works.
- Provide recommended building levels to reduce the flood risk to residential dwellings.

Contribute to the economic wellbeing and resilience of the region through flood risk management.

- Agree levels of service with the community and confirm responsibilities and extent of stream channel maintenance.
- Maintain channels and flood mitigation assets.
- Inform landowners about flood risk management through identification of appropriate building floor levels and how to maintain or improve driveway and structure crossings of the Pinehaven Stream.
- Consider the potential impacts of climate change in the design of flood management infrastructure.

Recognise the relationship of tangata whenua with water bodies and the cultural values they attribute to streams in the catchment.

- Continue to engage with tangata whenua to understand their interest in future upgrades of the flood protection assets within the Pinehaven Catchment.
- Enhance the environmental quality of streams in the catchment.
- Avoid or minimise the damage to the existing ecosystems.
- Restore habitat that is damaged or destroyed during the construction process.
- Remove barriers to fish passage where this will not have negative impacts on native fish populations.
- Maintain and where possible enhance the surrounding environment when undertaking flood protection works. For example, by identifying opportunities to enhance the ecosystems of the catchment when undertaking flood protection works.
- Raise public awareness of the important ecological and recreational function that streams provide in the catchment, and the community's responsibility in flood protection through:
    - Providing education programmes on the values of natural ecosystems in providing hazard protection (through erosion control and through retention/ uptake of surface water.
    - The functioning of stream ecosystems and the species that live there.
    - Guidance on appropriate riparian planting (for community groups).
    - Foster a sense of community responsibility for flood protection and the river environment through facilitating/engaging community groups in restoration activities.

Recognise and provide for recreation use within stream corridors in the catchment, where this is appropriate.

- Develop design responses that create opportunities for improved recreation use or community accessibility to facilities in the area.
- Maintain existing recreation opportunities as part of the implementation of any structural upgrade works within current recreation reserve space.
- Look for opportunities for additional community stream access.
- Maximise co-benefits of flood detention/green space.
- Maintain community resilience.

Te Awa Kairangi / Hutt River Valley Subcommittee
13 May 2025
Report 25.177

For Information

HUTT VALLEY FLOOD RISK MANAGEMENT UPDATE

Te take mō te pūrongo
Purpose

1. To advise the Te Awa Kairangi / Hutt River Valley Subcommittee (the Subcommittee) of progress on flood risk management activities in the Hutt Catchment.

Te horopaki
Context

2. Greater Wellington Regional Council (Greater Wellington) has an ongoing programme of projects and operational work within the catchments of Te Awa Kairangi/Hutt River and the Pinehaven Stream. These activities are included in or guided by the floodplain management plans and river management schemes for the rivers and streams within these catchments

Te tātaritanga
Analysis

Flood Knowledge Investigations

3. The Moonshine stopbank options assessment investigation is underway and due for recommendations and a final preferred option by the end of June 2025. This investigation will evaluate options systematically using a multi-criteria analysis to ensure the best option is taken forward to the detailed design phase for implementation. Internal stakeholders have been consulted and engagement with Waka Kotahi New Zealand Transport Authority (NZTA), Upper Hutt City Council (UHCC), and Wellington Water Limited (WWL) have been arranged to ensure organisational alignment.

4. Greater Wellington has applied to the Ministry of Business, Innovation and Employment (MBIE) for a Crown contribution towards this project under the Regional Infrastructure Fund (Flood Resilience).

Upper Hutt Flood Mapping Consultation

5. Greater Wellington officers, in conjunction with WWL and UHCC, are arranging public consultation on updated flood hazard mapping in the Upper Hutt area. This is the final consultation on Greater Wellington's updated Hutt River mapping before the Independent Audit is undertaken and the maps are finalised.

6. Greater Wellington staff are arranging a workshop to brief UHCC councillors that will take place in May. Consultation is likely to take place from mid-May to mid-June, although dates and locations are still being arranged.

River Ranger activities:

7. Student research themed on the "History of the Hutt River Trail" funded through the Victoria University Wellington / Greater Wellington / Rotary Club Collaboration Summer Research Scholarship 2024/2025 was completed end of February 2025. The research papers outlined seven main themed content areas as the foundation for a coherent and engaging narrative story book. These outlined the transformation of the area from an urbanized river control wasteland into an ecological and recreational park within an iwi partnered governmental strategic framework.

8. Signage and Wayfinding: Replacement entry and trail head signage installation was completed mid-February at Taita Park, Fraser Park and Belmont Domain entry points to the Hutt River Trail network.

9. Whakawhirinaki Silverstream water pipe bridge and shared path: Signage and trail linkage landscape discussions were held with project consultants that tie-in with their opening mid-year.

10. Parks / Flood Operations Delivery collaboration at Totara Park to Riverstone Terraces on Hutt River Trail: In February a dozen in-house staff were committed for two days on this upgrade work. Gravel surface replenishment and upgrade was completed with excavators and motorized gravel barrows utilising cross-unit skills working together in the catchment.

11. Remutaka Cycle Trail (RCT) quarterly steering group meeting representation: Discussion and site-meetings with RCT around the diversion signage from Melling Link to Kennedy Goode Bridge, and Ministry of Business, Innovation and Employment (MBIE) trail fund round discussions for 2025.
12. Community Environment Fund: We are supporting four active group applications for restoration work:
    - Mawaihakona Stream,
    - Manor Park (Forest & Bird),
    - Belmont Wetland (Pareraho Forest Trust), and
    - Totara Park streamside restoration (Heretaunga Community Church).

    These are mostly weed control and planting support applications.
13. Hutt City Council (HCC) Hikoikoi Landing – Waione Street bridge entry: Greater Wellington trail head upgrade planning work has been undertaken between Greater Wellington / HCC officers and Council in support of the mayoral endorsed project footpath, signage and riparian planting zone including a paua shell inspired focal seating point that draws upon the local history of ancestral gathering of kai moana.
14. HCC Beltway: on-site discussion with Greater Wellington / HCC officers to support the planning of the pedestrian/cycle crossing point connection to the Hutt River Trail at Fraser Park Taita Drive intersection.
15. Recruitment: a new Hutt River Ranger has been appointed and started with us 14 April 2025. We are looking at current and future River Ranger workstreams to create consistency between both the Hutt Vally and newly created Kapiti River Ranger position.

16. Camping bylaw compliance Upper Hutt River, Poets Park and Whakatikei: we have been working with Upper Hutt Police and the community constable to enforce trespass notices.

17. Boffa Miskell Te Awa Kairangi Hutt River Trail: the Existing State Assessment was finalised at the end of 2024. The Stage 2 Strategic Direction is considering scope and budget and Te Awa Kairangi Trails Stage 2 work options have been developed through workshops and internal trail meetings.

Flood Operations Delivery Maintenance

18. Works to remove gravel from the Belmont Wetlands forebays has been completed. Ongoing monitoring will be required to confirm that sufficient material has been removed to ensure the wetland continues to function efficiently, cleaning and purifying flows from the stormwater pipe under SH2.

19. Stopbank and berm mowing has continued, and vegetation removal from the Maoribank stopbank has been undertaken. Repairs and maintenance on the Gemstone Drive stopbank has also been completed.

20. A clearing run has been undertaken on the Waiwhetu Stream channel and channel shaping works completed on the Pomare erosion channel. Berm drainage works have also been conducted between Poets Park and Whakatiki.

21. Other works conducted includes: topping up of the rock edge protection at Croft Grove (Strand Park), removal of an old debris fence at River Road, and willow line maintenance at various sites throughout the scheme.

Ngā hua ahumoni
Financial implications

22. For this reporting period, projects are within the current budgets.

Ngā Take e hāngai ana te iwi Māori
Implications for Māori

23. Greater Wellington is required to manage land and water within a range of statutory requirements, including giving effect to Te Mana o Te Wai and considering Te Tiriti o Waitangi in the development and implementation of the Greater Wellington's strategies, plans programmes and initiatives.

24. Implementation with mana whenua partners is guided by Te Whāriki – the Māori Outcomes Framework as part of Greater Wellington's Long-Term Plan 2024–34.

25. Ngāti Toa Rangitira and Taranaki Whānui ki Te Upoko o Te Ika are members of the RiverLink Board.

26. A significant number of Māori, both mana whenua and mātāwaka, live and work in flood prone areas along Te Awa Kairangi. There are also numerous sites of cultural and spiritual significance potentially at risk from flooding. Effective delivery of our flood risk management programme helps to protect Māori communities and their values across the four wellbeings.

Te huritao ki te huringa o te āhuarangi
Consideration of climate change

27. Each project within the catchment considers and responds to the predicted impacts of climate change when considering the appropriate response to the issue the project seeks to address.

28. This programme aligns with Greater Wellington's Climate Change strategy (2015), which states 'we will help the region adapt to climate change'. The projects increase climate change adaptation and resilience to natural disasters in the region.

29. The greenhouse gas emissions from rock supply vary depending on the quarry source of the rock and transport to the work sites. Quarry sources for projects vary. The emissions from rock supply production and transport are not presently part of the organisation's greenhouse gas inventory.

30. Greater Wellington currently assesses options to address flood risk based on the predicted impacts of climate change over the next 100-years. Increased rainfall and sea level rise predictions are assessed on a catchment-by-catchment basis.

Ngā kaiwaitohu
Signatories

Writers	Tina Love – Team Leader, Infrastructure Projects Hamish Fenwick – Team Leader, Flood Operations Delivery Andy Brown – Knowledge Risk Management & Resilience Lead Francie Morrow – Team Leader, Knowledge Water Resilience
Approvers	Jack Mace – Hautū Whakatutuki | Director Delivery David Hipkins – Hautū Whai Māramatanga | Director Knowledge and Insights Lian Butcher – Kaiwhakahaere Matua, Taiao | Group Manager Environment

He whakarāpopoto i ngā huritaonga **Summary of considerations**
Fit with Council's roles or with Committee's terms of reference The Subcommittee's specific responsibilities include "reviewing periodically the effectiveness of implementation and delivery of Floodplain Management Plans for the Te Awa Kairangi/Hutt River Floodplain".
Contribution to Annual Plan / Long Term Plan / Other key strategies and policies The projects contained within this report deliver on Greater Wellington's strategic priority area of te tū pakari a te rohe/regional resilience, and support delivery of Greater Wellington's strategic priority area of te oranga o te wai māori me te rerenga rauropi/freshwater quality and biodiversity.
Internal consultation Specific projects consult with groups and teams across Greater Wellington, where relevant to a project.
Risks and impacts - legal / health and safety etc. The purpose of implementing floodplain management plans is to reduce the risk to communities and improve the region's resilience.

Te Awa Kairangi / Hutt River Valley Sub Committee
13 May 2025
Report 25.202

For Information

TE WAI TAKAMORI O TE AWA KAIRANGI (RIVERLINK) – GREATER WELLINGTON PROGRAMME

Te take mō te pūrongo
Purpose

1. To update Te Awa Kairangi / Hutt River Valley Subcommittee (the Subcommittee) on the Greater Wellington Programme since the last report update in late 2024.

Te tāhū kōrero
Background

2. Commenced in 2012, the Te Wai Takamori o Te Awa Kairangi (RiverLink) programme of work is a partnership project between Greater Wellington Regional Council (Greater Wellington), Hutt City Council (HCC), NZ Transport Agency Waka Kotahi (NZTA), Ngāti Toa Rangitira and Taranaki Whānui ki Te Upoko o Te Ika (collectively the Programme Partners).
3. Delivery of RiverLink relates to Greater Wellington's strategic priorities for regional resilience and public transport. Strategic priorities for freshwater quality, biodiversity, and multi-modal transport options are also supported by the successful completion of Riverlink.
4. Greater Wellington withdrew from the Alliance Delivery of its programme in March 2024 and entered into a Relationship Agreement and Commercial Development Agreement for Te Awa Kairangi with HCC and NZTA in April 2025.

Te tātaritanga
Analysis

Overall Programme

5. Interface management processes as outlined in the Relationship Agreement are being developed with partners.
6. Programme Wide Consents, Comms and Engagement works streams continue to be coordinated on a programme wide basis
7. Updates to the Hutt aquifer database model (HAM5) have indicated that gravel extraction works could potentially affect the aquifer recharge, meaning that bulk water cannot be extracted to the same levels. RiverLink works are continuing as

proposed and risk mitigation measures such as additional monitoring will be put in place.

8. Greater Wellington Hydraulic model is being updated through the design process. Greater Wellington has received its 50% design of its flood mitigation works (including updates to the model) at the end of April and provided this to HCC and NZTA on 5 May 2025.

9. Funding bid submitted by the Flood Resilience Tranche 1 team for Crown's Regional Infrastructure Fund (RIF) to deliver Mills Street Stopbank Stage 2 ($9.3m) and RiverLink Rockline construction ($3.3m).

Property

10. A total of 144 properties are being acquired for the Project.

11. 143 properties have now been acquired and settled with one land acquisition remaining to be settled. (69-95 High Street settled 29 April 2025, 39A Mills Street to settle on or before 30 June 2025).

12. 64 commercial rights (lessee interests, easement interests, business closures and business relocations) have been acquired with 6 lease acquisitions remaining (Millies House and the four retailers at 69-95 High Street).

13. Vacant possession has now been secured for:

    a Area E (85-103 Pharazyn Street)

    b Area B (even numbers 50-90 Marsden Street)

    c Area I (7-12 Daly Street)

    d Area H (39A-56 Mills Street) - note that vacant possession of 39A Mills will be available not later than 30 June 2025

    e Area A (22-77 Marsden Street).

14. The targeted vacant possession date for the remaining tenancies in lower Daly Street/High Street is September 2025, noting both tenants at 4 Daly Street have now vacated.

Consents and Designations

15. Greater Wellington submitted and had approved an Outline Plan of Works (OPW) for retention of the gravel crushing plant on the True Left Bank along Harcourt Werry Drive.

16. Greater Wellington provided ground water monitoring plans to Wellington Water Ltd (WWL) and Greater Wellington's Environmental Regulation.

17. Greater Wellington submitted the Early Works Construction Environmental Management Plans for upcoming demolition to Environmental Regulation.

18. Active Modes OPW and condition changes to recognise the proposed changes to active modes is currently being worked with partners with a view to being submitted mid-year.

19. Three Project Design Liaison Group (PDLG) meetings have been held so far in 2025.

20. The quarterly report for GW works is in preparation.

Demolition

21. Removal of alligator weed, a significant pest plant, had to be undertaken along Marsden Street. The roots of the plant needed to be completely removed, which meant digging approximately a metre into the Marsden Street stopbank toe and remediating with clean fill.

22. Above ground demolition of Randwick Meats (71 Pharazyn Street) completed. Below ground demolition at the site is still to be completed.

23. Pharazyn Street and upper Marsden Street demolition (above and below ground) fully signed off by GW. CERES demobilised from Pharazyn Street in March 2025.

24. Dixon Dunlop property hand over to NZTA completed.

25. Daly Street demolition planned to commence in October 2025.

Mills Street Stopbank Construction

26. Practical completion reached for stage 1 in October 2024, on time and under budget. Survey pins were placed for monitoring over an initial 6-month period and a baseline survey completed. Monitoring continues.

27. The site has not been opened up for public access due to the significant amount of work required, cost, and health and safety considerations. Traffic management and fencing are being maintained around the site until a contractor is mobilised for stage 2.

28. Stage 2 100% design package received from Aecom and reviewed internally.

River works, rocklines, and bioengineering

29. GoodRich were engaged to complete willow removal work ahead of rocklines construction. Willow removal work completed on true right bank and partial removal on true left bank, and tree groynes placed.

30. Issued For Construction design for rocklines (excluding stormwater components) received from Damwatch and technical assurance signed off.

31. Procurement process completed and NZS:3910 contract signed in February with Taylors for rocklines construction. Damwatch appointed as Engineer to Contract.

32. Archaeological and other investigations completed at R3 rockline site upstream of Melling Bridge adjacent to Block Road car park and placement of rock has now commenced.

Utilities

33. 33kV cable relocation Construction Agreement being negotiated with Wellington Electricity. Greater Wellington will hold the contract with financial contribution from partners. Commercial discussions underway with NZTA regarding percentage cost splits.

34. Greater Wellington and HCC are working together with Wellington Electricity (WEL) on options for substation relocation and the new cable route to find the best location and future proof the supply network.

35. Contract for substation relocation design has been signed with Wellington Electricity.

36. Discussions underway on a new agreement between Greater Wellington, HCC and Wellington Electricity Lines Limited regarding work on water assets, and betterment of those assets.

37. Options and consent implications for relocation and betterment of the Western Hills Main Sewer between New Melling and Ewen bridges are being considered by partners.

Ngā hua ahumoni
Financial implications

38. Greater Wellington has, through its 2021-31 Long Term Plan and subsequent annual planning processes, committed funding of $295 million to delivery of the flood protection benefits of the Programme.

39. This budget does not include allowances for improvements to facilities related to public transport associated with the relocation of Melling Train Station, as NZTA is responsible for its relocation.

40. In addition, inflation and escalation will need to be adjusted during the Programme. The next formal opportunity to adjust the current budget will be through the 2024-34 Long Term Plan.

41. The CAPEX spend to date has been $177.7 million since 2016. Of this $111 million has been spent on property purchase (excluding demolition).

Ngā Take e hāngai ana te iwi Māori

Implications for Māori

42. Ngāti Toa Rangitira and Taranaki Whānui ki Te Upoko o Te Ika are members of the Project Governance Group and will remain so under the Relationship Agreement. Mana whenua and Greater Wellington will continue to engage at the Project Governance level and through the overall Programme delivery.

Te huritao ki te huringa o te āhuarangi
Consideration of climate change

43. The Greater Wellington components of the Programme are subject to Greater Wellington's initiatives designed to minimise greenhouse gas emissions and enhance sequestration capacity. We will work with the Partners to develop an approach that supports Greater Wellington's mitigation objectives. The current basis of reference for this includes the RiverLink consent conditions and the Code of Practice for River Management (Te Awa Kairangi 2020). The Greater Wellington corporate sustainability programme and Greater Wellington's procurement process will encourage suppliers and contractors to minimise emissions.

44. The design development for the Project acknowledges the need to adapt to a changing climate and aims to address these predicted impacts. Greater Wellington has included allowances for climate change impacts within its Preliminary Design.

45. Greater Wellington's flood risk mitigation scope provides for flood protection upgrades to safely convey the Design Flood Event past the Hutt City Centre. The levels of service may, however, be at risk through the design mitigation process if the other Partners in this Programme do not agree to fairly balance cost and delivery risk associated with any mitigations required to deliver a flood protection system that can safely convey the Design Flood Event in terms of both capacity and security.

Te whakatūtakitaki
Engagement

46. The Programme has been extensively promoted in the Hutt community through workshops, open days and targeted communications and engagement. The last major announcements were made at the end of April with the confirmation of the Melling Transport aspects of the wider programme.

Ngā kaiwaitohu
Signatories

Writers	Tracy Berghan – Manager RiverLink, Partner Lead, Te Wai Takamori o Te Awa Kairangi
Approvers	Fiona Abbott – Programme Director Lian Butcher – Group Manager, Environment Group

He whakarāpopoto i ngā huritaonga **Summary of considerations**
Fit with Council's roles or with Committee's terms of reference Te Awa Kairangi / Hutt River Valley Subcommittee's specific responsibilities include to "review periodically the effectiveness of implementation and delivery of floodplain management plans for the Te Awa Kairangi/Hutt River floodplain", of which the Te Wai Takamori o Te Awa Kairangi project is part.
Contribution to Annual Plan / Long Term Plan / Other key strategies and policies RiverLink contributes to the delivery of Greater Wellington's strategic priorities of Regional Resilience, Freshwater Quality and Biodiversity, and Public Transport.
Internal consultation Internal consultation was undertaken as appropriate to the impact of the proposed delivery changes affecting regional resilience.
Risks and impacts - legal / health and safety etc. Escalation and general uncertainties in the construction market will continue for some time and cost pressure on construction will remain. A Risk Register for the programme is available.

Te Awa Kairangi / Hutt River Valley Subcommittee
13 May 2025
Report 25.195

For Information

BELMONT WETLAND MAINTENANCE WORKS

Te take mō te pūrongo
Purpose

1. To inform the Committee in more detail about the recent maintenance activity undertaken on the Belmont Wetland, the steps taken to achieve the maintenance and the across team integration required to successfully complete the maintenance with minimising the effects to the environment.

Te horopaki
Context

2. The Belmont Wetland was constructed as a trial to improve water quality from stormwater and trap contaminated sediment before entering Te Awa Kairangi, while also providing habitat for fish, insects and birds.
3. The required maintenance to remove the contaminated sediment from the wetland bays is needed to provide capacity to trap further sediment before entering the lower wetlands and river.
4. The wetland is a sensitive ecosystem and maintenance in wetlands is a consented activity requiring specialist skills across several teams in Greater Wellington Regional Council (Greater Wellington) working together as one team.
5. Monitoring of the water quality, habitat and fish species and population is required to inform the success of the wetland and improve future maintenance activities.
6. The Belmont Wetland Resource Consent is split into two parts, construction and maintenance. The construction is now completed, and the focus is now on maintaining the asset.
7. The consent requires an Ongoing Maintenance Plan (OPM) which is a one off document outlining inspection frequency, maintenance triggers, methodology for maintenance and measures taken to minimize the effects to wetland plants.
8. For each maintenance activity an Ecological Monitoring Plan is required (EMP) stating how and when the performance of vegetation in the wetland and quality of habitat will be assessed, how and when the water quality entering and exiting the wetland will be assessed and how and when fish species and fish numbers present within the wetland will be identified.

9. To ensure the successful delivery of the wetland maintenance, across team integration essential and expert knowledge and skills were drawn on from the Consents Management Team, Knowledge and Insight Freshwater Ecologists, the Communications Team and Flood Operations.
10. The methodology for the maintenance work was broken up into three stages, Pre monitoring, Sediment Removal and Re-establishment.
11. Pre monitoring included taking water and sediment samples to establish quality of the water entering the wetland and exiting the wetland. The sediment samples were tested for contamination.
12. Fish trapping and relocation was also undertaken to remove the fish population prior to the sediment removal taking place. Records of this species, size and numbers were also made to include into the EMR.
13. The removal of sediment from the wetland forebays was undertaken using both a small excavator and vacuum truck. The sediment was stockpiled onsite in a sediment bund to dry out before being transported to a contaminated fill dump site.
14. Re-establishment of wetland plants was undertaken to provide water quality improvement and habitat for fish, birds and insects.

Ngā hua ahumoni
Financial implications

15. Required maintenance on the wetland is identified though the asset inspection process outlined in the OMP and then included into the annual maintenance work plan and budget.
16. The budget for the maintenance comes from the Lower Hutt River Scheme Flood Operations budget which is a 50/50 share of targeted and general rates.

Ngā āpitihanga
Attachments

Number	Title
1	Belmont Wetland Maintenance 2025 Presentation

Ngā kaiwaitohu
Signatories

Writers	Shaun Edwards – Lead Engineer, Flood Operations Delivery Hamish Fenwick – Team Leader, Flood Operations Delivery
Approvers	Jack Mace – Director Delivery Lian Butcher – Group Manager Environment Group

He whakarāpopoto i ngā huritaonga **Summary of considerations**
Fit with Council's roles or with Committee's terms of reference The Subcommittee's specific responsibilities include to oversee development, implementation and review of floodplain management plans (FMPs) for the Te Awa Kairangi/Hutt River floodplain. This report relates to the development of the FMP within a wider programme of work.
Contribution to Annual Plan / Long Term Plan / Other key strategies and policies The project proposed in this report supports the delivery of Greater Wellington and HCC's Long Term Plan objectives, including the priority area of te tū pakari a te rohe/regional resilience and the understanding of climate change.
Internal consultation Specific projects consult with groups and teams across Greater Wellington, where relevant to a project
Risks and impacts - legal / health and safety etc. A key purpose of the project proposed in this report is to reduce the risk to communities and improve the region's resilience.

BELMONT WETLAND MAINTENANCE WORK

Greater Wellington
Te Pane Matua Taiao

Scope

- Brief purpose of the wetland and how it works
- Reason for needing to maintain the sediment in the wetland
- Bullet point main resource consent conditions
- Across team integration to complete the work
- Methodology for pre monitoring, physical works and post monitoring

Attachment 1 to Report 25.195

Wetland purpose

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Wetland purpose

A trial to determine if improvement to stormwater quality entering Te Awa Kairangi can be achieved while also providing ecological benefits to the river berm by:

- Collecting and trapping contaminated sediment.
- Cleaning and improving water quality
- Creating habitat and biodiversity

Attachment 1 to Report 25.195

Wetland Purpose

Attachment 1 to Report 25.195

Reason for needing to retain sediment & maintenance cleaning

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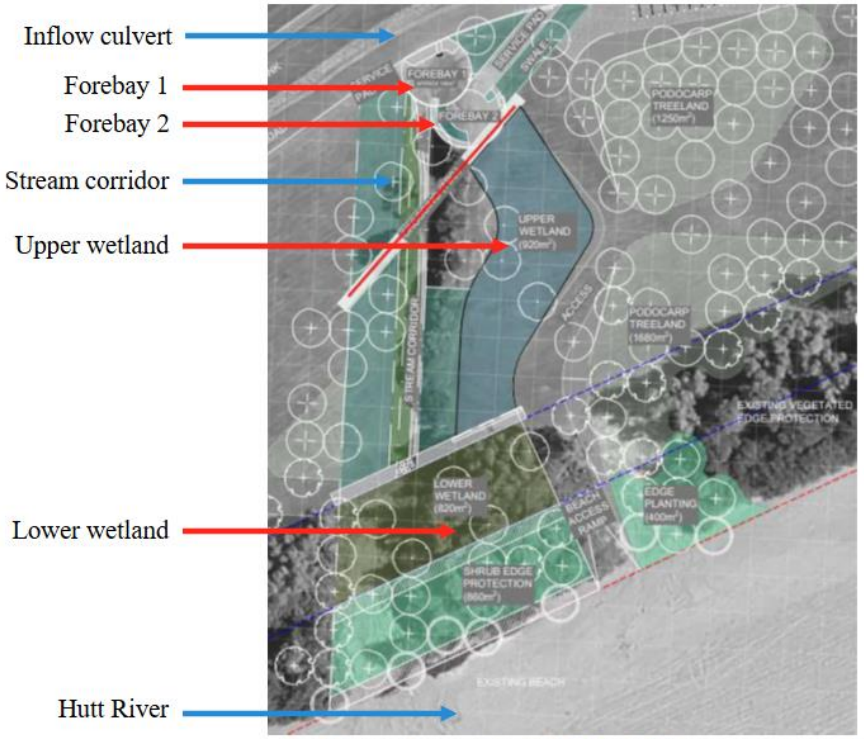
Reason for retaining sediment and maintenance cleaning

- Retaining contaminated material and water to prevent it entering the Awa.

  Potential contaminates in stormwater runoff:

  - Metals (incl. copper, lead, chromium and zinc)
  - Suspended solids
  - Nitrogen
  - Phosphorus
  - Organochlorine pesticides (OCP's including DDT)
  - Polycyclic aromatic hydrocarbons (PAH's)
  - Polychlorinated biphenyl (PCB's)
  - Per- and polyfluoroalkyl substances (PFAS)

- Providing capacity to collect further sediment
  - Remove contaminated sediment and dispose
  - Leaves capacity to collect more sediment



Greater Wellington Regional Council (2022). Belmont Wetland Ongoing Maintenance Plan. Resource Consent no. WGN190330.

Attachment 1 to Report 25.195

Main consent conditions

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Main consent conditions

- Resource Consent WGN 190330, split into two parts:
  - Part one: wetland construction, granted for 5 years – complete.
  - Part two: wetland maintenance, granted for 35 years; expires 23 August 2054 – ongoing.
- Complex consent that relies on:
  - An Ongoing Maintenance Plan (OMP).
  - Ecological Monitoring Plan (EMP) for maintenance works.
  - Ecological Monitoring Report (EMR)
- Covers re-instatement if damaged from a flood event from either the stream or Te Awa Kairangi

Main consent conditions

- Notification to EReg, and copy of consent on site and given to contractors.
- Operate and maintain the wetland to maintain 'natural' flows of the stream or wetland but rain induced events are directed into the wetland.
- Erosion, scour or instability of the stream must be fixed.
- An OMP has been certified by EReg before any work can be done.
  - One off document to cover all ongoing maintenance
  - Sets out inspection frequency
  - Triggers for maintenance
  - Methodology for maintenance works
  - Measures to ensure effects on plantings (within the wetland) are minimised

Main consent conditions

- An Enviromental Monitoring Plan (EMP) is required for each individual maintenance Activity that outlines.
  - How and when performance of vegetation in the wetland and quality of habitat will be assessed;
  - How and when water quality entering and exiting the wetland will be assessed;
  - How and when fish species and fish numbers present within the wetland will be identified.
- Once all maintenance is completed an n Ecological Monitoring Report (EMR) is required to be submitted to Ereg that includes
  - Any trends or patterns in the monitoring data showing an environmental effect;
  - A summary or monitoring data collected as per the EMP
  - Recommendations for any further monitoring or remedial measures that may be required.

Attachment 1 to Report 25.195

Across team integration

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Across Team Integration

- Consents Management Delivery
  - Develop OMP and EMP, Advise on conditions and correspondence with Ereg
- Knowledge and Insight Freshwater Ecologists
  - Sediment and water sampling, Pre and post Monitoring, Fish relocation, Ecological monitoring report
- Communications
  - Site Signage, Newspaper spread, Facebook posts and updates
- Flood Operations
  - Scheduling, Notify Ereg, Site Establishment, Contractor management, Public interface, Health & Safety, planting re-establishment

Attachment 1 to Report 25.195

Methodology

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Methodology

- Pre-works monitoring
- Physical works
- Post monitoring

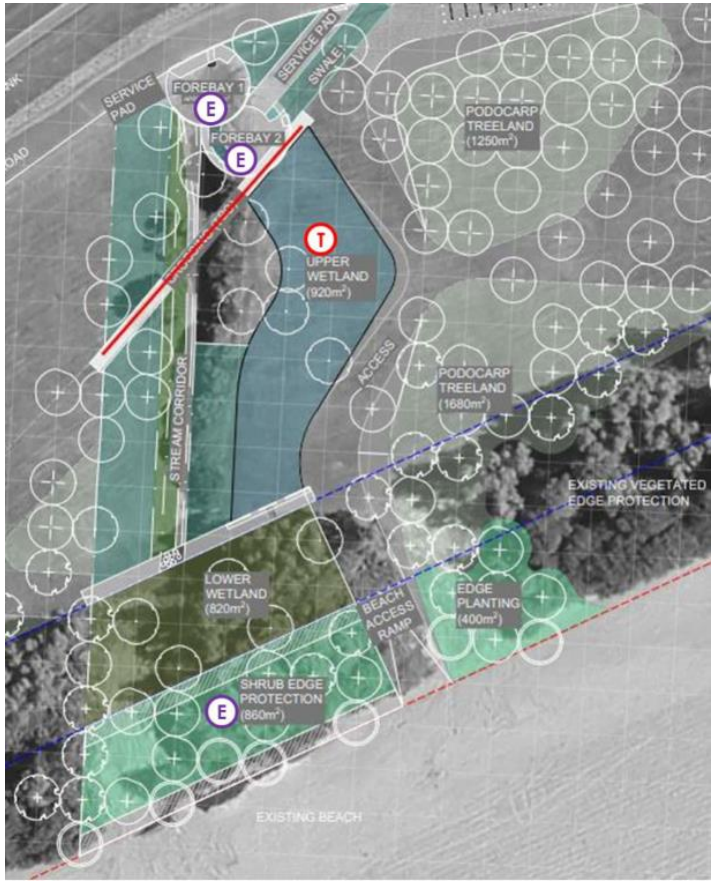
Attachment 1 to Report 25.195

Pre-works monitoring

- Sediment and water sampling locations
  - Low levels of Lead, Chromium, Copper and Zinc where detected along with other organic contaminants

Pre-works

- Electrofishing and overnight trapping locations

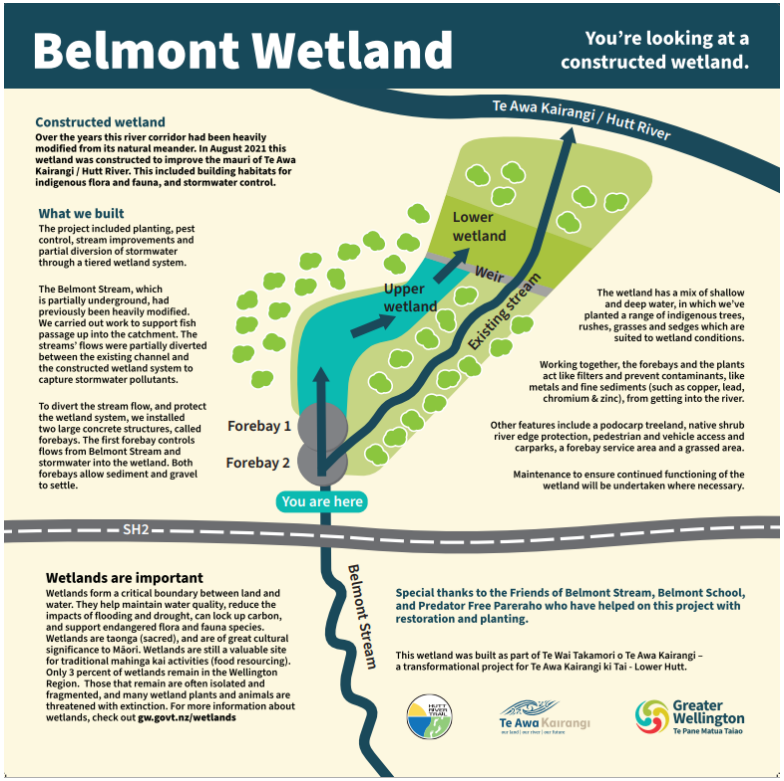


Pre-works

Trapping Forebay 1 night of 10 March

Species	Unidentified Bully	Dinah's Bully	Common Bully	Giant Bully	Inanga	Shortfin Eel	Longfin Eel	Kokura
Length (mm)								
10	1	5	5					
20	3	19	9					
30	3	54	9	1				1
40	5	55	9					1
50	7	12	6		2			
60	10	2			2			
70								
80					8			
90					10			
100					18			
110					4			
120								
130					2			
250							1	
350						1	1	
400							1	
650							1	
900						1		
Total	**29**	**147**	**38**	**1**	**46**	**2**	**4**	**2**

Works – Site Establishment



Attachment 1 to Report 25.195

Works – Sediment Removal

Works – Plant Re-establishment

This was done with consultation and involvement with the local community care group.

Questions?

Questions?