



**I, Kitea Tipuna, Tumu Whakarae Chief Executive, hereby give notice that
Infrastructure and Regulatory Committee Meeting will be held on:**

Date: Tuesday, 10 September 2024
Time: 1:30 pm
Location: Council Chamber, Wairoa District Council,
Coronation Square, Wairoa

AGENDA

Infrastructure and Regulatory Committee Meeting

10 September 2024

MEMBERSHIP: His Worship the Mayor Craig Little, Cr Chaans Tumataroa-Clarke, Cr Denise Eaglesome-Karekare, Mr Chris Olsen, Cr Benita Cairns

The agenda and associated papers are also available on our website: www.wairoadc.govt.nz

For further information please contact us 06 838 7309 or by email info@wairoadc.govt.nz

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- 1 KARAKIA**
- 2 APOLOGIES FOR ABSENCE**
- 3 DECLARATIONS OF CONFLICT OF INTEREST**
- 4 CHAIRPERSON'S ANNOUNCEMENTS**
- 5 LATE ITEMS OF URGENT BUSINESS**
- 6 PUBLIC PARTICIPATION**

A maximum of 30 minutes has been set aside for members of the public to speak on any item on the agenda. Up to 5 minutes per person is allowed. As per Standing Order 15.1 requests to speak must be made to the Chief Executive Officer at least one clear day before the meeting; however this requirement may be waived by the Chairperson. Requests should also outline the matters that will be addressed by the speaker(s).

7 MINUTES OF THE PREVIOUS MEETING

Ordinary Meeting - 13 August 2024

**MINUTES OF WAIROA DISTRICT COUNCIL
INFRASTRUCTURE AND REGULATORY COMMITTEE MEETING
HELD AT THE COUNCIL CHAMBER, WAIROA DISTRICT COUNCIL, CORONATION SQUARE, WAIROA
ON TUESDAY, 13 AUGUST 2024 AT 1:30 PM**

PRESENT: His Worship the Mayor Craig Little (via zoom), Cr Chaans Tumataroa-Clarke, Cr Denise Eaglesome-Karekare, Mr Chris Olsen, Cr Benita Cairns

IN ATTENDANCE: **Kitea Tipuna** (Tumu Whakarae | Chief Executive), **Gary Borg** (Pouwhakarae – Pūtea/Tautāwhi Rangapū | Group Manager Finance and Corporate Support), **Hinetaakoha Viriaere** (Pouwhakarae Whakamahere me te Waeture | Group Manager Planning & Regulatory), **Michael Hardie** (Pouwhakarae – Hua Pūmau | Group Manager Assets and Infrastructure), **Frances Manase** (Kaiurungi Mana Ārahi | Governance Officer), **Duane Culshaw** (Pouahurea Māori | Māori Relationships Manager)

1 KARAKIA

The opening karakia was given by the Chair Cr Tumataroa-Clarke.

2 APOLOGIES FOR ABSENCE

Nil

3 DECLARATION OF CONFLICT OF INTEREST

To be declared as the agenda progresses.

4 CHAIRPERSON'S ANNOUNCEMENTS

Nil.

5 LATE ITEMS OF URGENT BUSINESS

LATE ITEM

COMMITTEE RESOLUTION 2024/91

Moved: Cr Chaans Tumataroa-Clarke

Seconded: Cr Benita Cairns

That the report 8.1 Planning and Regulatory Report June0July 2024 be received as a late item.

CARRIED

6 PUBLIC PARTICIPATION

A maximum of 30 minutes has been set aside for members of the public to speak on any item on the agenda. Up to 5 minutes per person is allowed. As per Standing Order 14.14

requests to speak must be made to the meeting secretary at least one clear day before the meeting; however this requirement may be waived by the Chairperson.

7 MINUTES OF THE PREVIOUS MEETING

COMMITTEE RESOLUTION 2024/92

Moved: Cr Benita Cairns

Seconded: Mr Chris Olsen

That the minutes [and confidential minutes] of the Ordinary Meeting held on 16 July 2024 be confirmed with amendments.

CARRIED

Amendments:

- Change wording on Action Sheet from top 3 risks identified through climate change in the roading sector to 3 risks on climate change on the Wairoa roading network.

8 GENERAL ITEMS

8.1 ASSETS & INFRASTRUCTURE GROUP - UPDATE

COMMITTEE RESOLUTION 2024/93

Moved: His Worship the Mayor Craig Little

Seconded: Cr Benita Cairns

The Pouwhakarae-Hua Pumau | Group Manager Assets & Infrastructure RECOMMENDS that Committee receive the report, and provide direction where appropriate.

CARRIED

Group Manager of Assets & Infrastructure introduced the report and the below points were highlighted:

- The Regional Land Transport Plan (RLTP) prioritises the Mahia area's focus on positivity and resilience, which has been identified as the most significant aspect of the plan. Although this is a main priority for Wairoa District Council, it is not a priority at the National level.
- The committee raised concerns about SH2 reconstruction not being ranked higher on the prioritisation list. The Group Manager of Assets & Infrastructure will continue advocating for its prioritisation. A letter with Gisborne District Council will be drafted to highlight these concerns to present to the chair of the RTC.
- Te Reinga Bridge update: A meeting with the trust governance on land issues has been scheduled. Council and trustees have made contact, and elected members have been requested to attend.
- The Tuai community consultation on water chlorination, an uncompliant supply, must be completed by year-end. His Worship suggested bringing government officials to the community meeting.

- The Committee requested clarification on the Customer Service Requests Dashboard graphs, including overall narratives and required recommendations.
- A suggestion was made to create an Electric Vehicle Policy to promote a more environmentally friendly transition in Wairoa. The committee noted practical issues, such as the roading network and the availability of recharging stations and hill climbing capabilities, which could impact this.
- Four Oil Pitch trial: It was suggested to conduct an independent review on the issues currently being faced since the upgrade. Cr Cairns declared a conflict of interest in relation to this topic.

8.1 PLANNING AND REGULATORY REPORT JUNE-JULY 2024

COMMITTEE RESOLUTION 2024/94

Moved: Cr Chaans Tumataroa-Clarke

Seconded: Cr Denise Eaglesome-Karekare

The Pouwhakarae - Whakamahere me te Waeture | Group Manager Planning and Regulatory RECOMMENDS that Committee receive the report titled 'Planning and Regulatory Group Report –June and July 2024'.

CARRIED

The Group Manager of Planning and Regulatory introduced the report and provided the below key updates:

- The planning department are now managing the Temporary Accommodation Service cabins.
- 4 pods have landed in Wairoa: 3x 1 bedroom self-contained units and 1x sleepout.
- Approximately 4 pods to be deployed to Wairoa weekly for the next few weeks.
- The International Audit of New Zealand (IANZ) assessments, originally scheduled for August 2024, were extended due to the flood event. They will be conducting onsite audits from the 18th -20th of September 2024 focussing on policies and procedures in specific areas including - Building consents (not exemptions), notice of fixes (just for building consents), and compliance schedules.
- Road naming issue at Mahanga: Developers met with mana whenua years ago regarding renaming the road, however pronunciation concerns persist. It was recommended that developers and mana whenua resolve the issue between themselves. and directed the Māori Relationships Manager to support this process and report back once a name is agreed. It was also suggested to review the Councils street naming policy.

The Group Manager of Planning and Regulatory identified the following risks related to control and compliance licensing:

- Legislation and Regulatory policy changes: A mitigation to this risk, the Governance team provide regular updates to appropriate groups to ensure WDC are frequently updated with any changes to legislation.

- Behind in the noncompliant on the Dog Control Bylaw.
- The number of WDC Bylaws that are needing to be review to ensure they are fit for purpose. The Committee suggested seeking external support to review and update policies and bylaws in a timely manner, and to report back to the Committee. The Chief Executive briefly advised that following Cyclone Gabrielle, WDC must provide hazard mapping for flood-prone areas and those areas without flood mitigation plans. This will be included in the ongoing Infrastructure Strategy.

His Worship the Mayor, Craig Little left the meeting at 2:43pm.

The closing karakia was given by The Chair, Cr Tumataroa-Clarke.

The Meeting closed at 3:40pm.

The minutes of this meeting were confirmed at the Infrastructure and Regulatory Committee Meeting held on 10 September 2024.

Infrastructure and Regulatory Committee – Actions Sheet

<u>MEETING THE ACTION WAS RAISED IN</u>	<u>ACTION</u>	<u>OFFICER RESPONSIBLE</u>	<u>COMMENTS</u>	<u>STATUS</u>	<u>PUBLIC EXCLUDED</u>
26/03/2024	Walking and Cycling Strategy/Paper	Michael Hardie	Discussion arose around updating the current WDC strategy to reflect the current make-up of the community and extending the scope and vision to reach the entire community.	In progress	No
16/07/2024	Top 3 risks on climate change on the Wairoa roading network.	Michael Hardie	Major assets types high risks: Bridges, Pavements, Coastal Roads	In Progress	No
13/08/2024	A list of roads that need and upgrade/maintenance	Michael Hardie	I believe this is to do with the Uneconomic Roads workshop, this is to be scheduled in late September.	In Progress	

13/08/2024	Draft a combined letter with Gisborne District Council on behalf of the Council to highlight the prioritisation concerns to present to the chair of the RTC.	His Worship the Mayor and Kate Standing			No
13/08/2024	Clarification on CSR Dashboard graphs, including overall narratives and required recommendations.	Michael Hardie	Work in progress.	In Progress	No
13/08/2024	To consult regarding how many abandoned vehicles can be on one property.	Hinetaakoha Viriaere		In Progress	No
13/08/2024	A policy and bylaw schedule with a section that shows which needs to go out for consultation and which policies and or bylaws that can be addressed in house.	Hinetaakoha Viriaere		In Progress	No

.....

CHAIRPERSON

8 GENERAL ITEMS

8.1 ASSETS & INFRASTRUCTURE GROUP - UPDATE

Author: Mike Hardie, Pouwhakarae-Hua Pumau | Group Manager Assets & Infrastructure

Authoriser: Kitea Tipuna, Tumu Whakarae Chief Executive

Appendices: 1. Meeting focus schedule [↓](#)

PURPOSE

This report provides information for the Committee on Assests & Infrastructure Group and the differing activities within.

RECOMMENDATION

The Pouwhakarae-Hua Pumau | Group Manager Assets & Infrastructure RECOMMENDS that Committee receive the report, and provide direction where appropriate.

2. BACKGROUND

2.1 This report is aimed at providing the Infrastructure & Regulatory Committee key information, updates, and risk of key assets and infrastructure items at a high level.

3. DIRECTION

3.1 This section will outline the direction that Council officers are seeking from the Infrastructure & Regulatory Committee. It will outline how projects align with Council’s direction and how these projects are being delivered in line with relevant policies and strategies i.e., Infrastructure strategy, procurement guidelines, AMPs, LTP, Annual Plan.

3.2 Committee Direction Tracker

This table documents specific direction from previous Committee meetings. It will allow Council officers to track progress on these high-level matters and ensure they are closed out. Commentary can be provided on status of progress or any issues around this. Tasks will be deleted off tracker once they are completed or no longer relevant.

<i>Committee Meeting Date</i>	<i>Committee Direction/Action Required</i>	<i>Commentary</i>
18 July 2023	Uneconomic Road Policy/Road maintenance rationalisation	Workshop held in December 2023. More work underway to plan this out. Update: September 2024 will be the next workshop.
18 July	Tuai community consultation	Communication plan updated and

2023	around water chlorination	targeting June 2024 for initial hui. Update: Aim to have this scheduled for September/October.
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4. MONITORING

- 4.1 This section will refer to the monitoring dashboard **see Attachment 1**. This is the operational spend and CSR data for each activity in the Assets and Infrastructure department.

5. MEETING FOCUS

- 5.1 Please see attached the proposed focus for the upcoming Committee meetings.
- 5.2 The purpose of this is to have a focus on set items which will have good supporting information so the Committee can provide guidance on these areas.
- 5.3 The papers for that particular month may still have other information that is of high importance.

6. KEY UPDATES

- 6.1 The report focus for the Committee is **3 Waters**

6.1.1. Local Waters Done Well (LWDW)

- 6.1.1.1. An update was given to the full Council Meeting on 27th August, titled Local Water Done Well (Update from the RRA). Please refer to this report for latest updates

6.1.2. Compliance

Mahia Beach Wastewater Scheme:

- Annual compliance reporting has been completed and delivered to HBRC for assessment.
- Out of 47 conditions, there is 1 partial compliance, 2 historic non-compliances, 1 condition affected by third-party issues, and 1 current non-compliance related to over discharging. The over discharge was necessary due to high rainfall and increased pond levels, with prior discussion with the HBRC.
- Ongoing monitoring of land movement post-Gabrielle continues.
- Smoke testing has been carried out in the Mahia Heights area and showed no major concerns to Council network but did highlight some private issues with smoke coming out of the ground within property boundaries and these have since been passed onto the building team.

Opoutama Beach Wastewater Scheme:

- Annual compliance reporting has been completed and delivered to HBRC for assessment.

- Of the 59 conditions, there is 1 non-compliance concerning discharge quality and 1 condition with partial compliance.
- The system continues to react to weather fluctuations and high swells, causing flooding at the pump station which impacts treatment performance.
- Odour investigations are ongoing (see later in report for further detail).

Wairoa Wastewater Scheme:

- Annual compliance reports are underway.
- Regular meetings are established with the BRM and MWWP
- Master planning is underway to deliver projects as per the Wairoa consent.
 - Separation of mortuary waste from the wastewater system.
 - Project underway and design received for an irrigation system. As part of the Wairoa cemetery upgrade, an area has been earmarked as the irrigation location. Next step is the physical separation at the undertakers and how the mortuary waste is transported and discharged.
- Storage, Irrigation, UV
 - Planning is ongoing and a workshop will be organised with elected members to discuss further and the ongoing challenges with these components.

Tuai and Mahanga Drinking Water Scheme:

The consents for these two schemes have been granted for a further two years while discussions around longer term consenting is progressed.

6.1.3. Projects

The Tuai watermains replacement project.

Project Objective: The Tuai Watermains Replacement Project aims to mitigate the risk of contamination and illness due to the failure and degradation of the aging piped network. The current system is non-chlorinated and in poor condition, heightening the risk of contamination.

Challenges: Wet Weather: The project has experienced 24 rain days, which has impacted progress. The expected completion date is now late September.

Risks and Incidents: Unknown Underground Utility Services: During the project, a 400v power line was struck. Despite plans being provided and conducting locates before work commenced, this cable was inadvertently missed. The directional

drilling method employed included safety provisions to prevent electrocution. An alarm on the drill head detected the voltage, prompting immediate excavation to check for damage. Repairs were completed the following day. There were no impacts on residents, and no public complaints were reported. WDC H&S Officer was notified and included in an investigation process.

Wastewater pump station electrical and resilience upgrades

Project Objective: The primary objective of this project is to address the communication and electrical issues identified during Cyclone Gabrielle and subsequent inspections. The project involves:

Installation of Starlink: To enhance communication reliability and ensure continuous network monitoring.

Upgrading Electrical Components: Replacing outdated electrical components in pump stations to meet current industry standards.

Challenges: Maintaining System Operation: The key challenge is to carry out necessary upgrades while keeping the existing system operational. A similar upgrade project was successfully completed at the landfill, where any failure impact would be minimal. This experience has provided valuable insights and addressed potential issues before commencing the wastewater pump station work.

Watermain Upgrades

Project Objective: In response to the numerous watermain failures following Cyclone Gabrielle, a structured approach is being adopted to identify areas requiring renewal. This approach aims to prioritize and address the most critical sections of the watermain network.

Renewal Identification Process Criteria for Selection:

Pipe Condition - Assessing the current state of the pipes to determine their integrity and performance.

Pipe Age - Considering the age of the pipes as older systems are more prone to failure.

Failure Rate - Analysing the frequency of failures to identify high-risk areas.

Failure Costs - Evaluating the cost implications of past failures to prioritize renewals based on economic impact.

A matrix is being used to evaluate and rank watermains based on the above criteria. This systematic approach will ensure that the most critical and cost-effective renewal projects are identified and addressed.

Stormwater Works

Pipe replacements

The Carroll Street stormwater replacement project will commence once timing with the transport team has been confirmed who are due reseal this area.

Stream Improvements

Project Objective: The Wairoa Township Stream Improvement Initiative aims to enhance the quality of stormwater discharge and raise awareness of the streams' historical and environmental significance. This project aligns with the consent conditions of the Wairoa wastewater consent and seeks to integrate various expert insights into stream management and improvement. A recent stakeholder meeting was held with staff from various organizations, including environmental planners, ecology scientists, historians, fish passage experts, and council staff. The purpose of this meeting was to bring together a diverse group of experts to explore the streams which are currently used as part of the stormwater drainage network, discuss ways to enhance the quality of stormwater discharge, increase awareness of the streams' historical and ecological importance.



1 Tiaho School site 1930s. Tawhara Stream visible



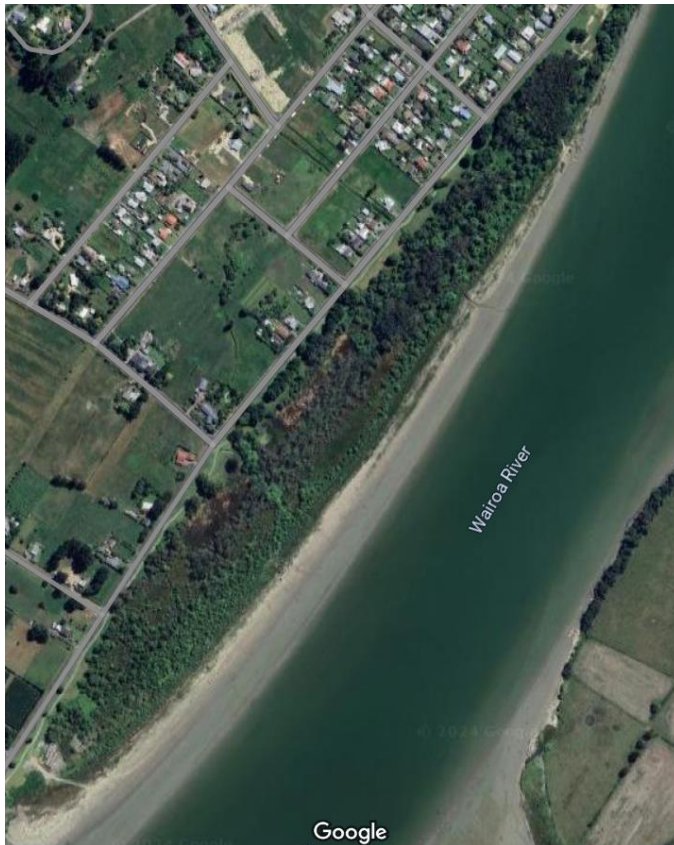
The Tawhara Stream still visible through the Tiaho school field.

Proposed Wetland Restoration – Kopu Road

During a site visit, it was observed that Raupo (a type of native reed) is re-growing in the area but is being increasingly overtaken by invasive exotic species such as poplar trees and lilies.

Project Objective: To clean the area of exotic species to improve aesthetics and restore the site to its original wetland condition. The benefit of this is ecological improvement. By removing exotics will help in rejuvenating the native Raupo and enhancing the wetland habitat. The removal of invasive species will improve the visual appeal of the area.

Contact has been made with the Hawke's Bay Regional Council (HBRC) to determine the feasibility of the proposed work and to understand the consents required for the removal of exotic species. The question of whether WDC would be interested in undertaking the cleaning of this area has been raised, and discussions will take place to determine if this is appropriate and in WDC jurisdiction.



Although a lot of this is outside the relevance of direct 3-water infrastructure, our team believe that these types of areas are beneficial to act like 'sponges' which will in turn help with our stormwater issues, and also strengthens networks with stakeholders such as HBRC and Matangirau Reserves Board.

Blue Bay Wastewater Scheme odour

Persistent odour problems continue at the Blue Bay Wastewater Plant. Although there were no complaints received since early June, recent complaints have resumed.

A series of interim measures have been implemented to attempt to address the odour issues and a monthly report is being provided to residents to keep them informed of the situation and the steps being taken.

Next major steps are to install an odour filter replacement. The procurement process for the new filter is underway and are in the realms of \$20,000+gst.

6.1.4. Contract Procurement

The 3 waters maintenance contract term ends in 2025. With the Local Waters Done Well (LWDW) developments continuing in the background, there are uncertainties around what the procurement should look like.

Options for rollover are being considered (pending LWDW decisions) as well as going back to market with a shorter-term contract.

In the mix for consideration is the separation of the mechanical and electrical components of the contract, from the general civil works. Given the critical nature of numerous assets for network operation, the current thought is to separate the procurement of mechanical and electrical components from the main civil components. This approach is intended to ensure that best practices are maintained, and that specialized expertise is applied to both mechanical and electrical systems, enhancing overall maintenance effectiveness.

Further Information

- Attachments

Infrastructure & Regulatory Meeting Focus Schedule

Date	Focus
Aug-24	Land Transport
Sep-24	3 Waters
Oct-24	Risks Update
Nov-24	Procurement
Dec-24	Capital Projects
Jan-25	Solid Waste
Feb-25	Open Spaces/Built Spaces
Mar-25	Risks Update
Apr-25	Land Transport
May-25	3 Waters
Jun-25	Capital Projects

DRAFT

8.2 MAHANGA WETLAND - HYDROLOGICAL ASSESSMENT REPORT

Author: Mike Hardie, Pouwhakarae - Hua Pumau | Group Manager Assets & Infrastructure

Authoriser: Kitea Tipuna, Tumu Whakarae Chief Executive

Appendices: 1. Mahanga Hydrological Assessment [↓](#)

1. PURPOSE

- 1.1 This report provides information for Committee on the Mahanga Hydrological Assessment Report commissioned by Hawkes Bay Regional Council. No decisions are required by Committee at this stage.
- 1.2 The purpose is to table the hydrological report to the Committee, with a follow up detailed report on next steps at the next Council meeting.

RECOMMENDATION

The Pouwhakarae - Hua Pumau | Group Manager Assets & Infrastructure RECOMMENDS that Committee receive the report.

2. BACKGROUND

- 2.1 Hawkes Bay Regional Council (HBRC), Wairoa District Council (WDC), and Department of Conservation (DOC) have been investigating on-going issues relating to the interaction of the Mahanga wetland and the Hine Rauiri Stream with local infrastructure in the Mahanga community. The issues include periodic flooding of residential properties located adjacent to the wetland, as well as flooding and inaccessibility issues with the ford along Happy Jacks Road. The environmental setting is complex and the interaction of the natural and anthropogenic processes in and around the wetland is not currently well understood.
- 2.2 HBRC commissioned a hydrological assessment of the Mahanga Wetland and surrounding area be undertaken and to evaluate options to mitigate the issues faced in the community.
- 2.3 These issues have been ongoing for 20+ years.

3. EVALUATION OF OPTIONS

- 3.1 Based on the conceptual hydrological model and water balance assessment, a number of potential remediation options developed for the site have been evaluated. The options presented are a combination of previous reports as well as additional concepts based on report writers understanding of the wetland system. The attached report outlines the evaluations presented.
- 3.2 Each option has been evaluated based on the potential effects on:
 - 3.2.1. The flooding of residential properties
 - 3.2.2. The ecology of the wetland

- 3.2.3. The ecology of the stream
- 3.2.4. The use of Happy Jacks Road ford
- 3.2.5. Long-term sustainability
- 3.3 The majority of the options considered do not provide a complete solution to all the issues.

4. PROPOSAL MOVING FORWARD

- 4.1 Mahanga Wetland Hydrological Assessment Report tabled at the WDC Infrastructure & Regulatory Committee
- 4.2 Short term – WDC, in working with HBRC and DOC, will lead the clearing of the drain behind properties to allow a clear channel for water to get away faster if needed. This will prove whether this is an issue in the whole situation. HBRC will continue to monitor the mouth opening by installing measuring devices and open mouth when required. HBRC will lead engagement with key stakeholders in the community.
- 4.3 Further information and options moving forward to be tabled at both WDC and HBRC Council meetings.
- 4.4 Workshops with Elected Members if required.
- 4.5 Medium/Long term strategies understood and developed.

Further Information

n/a

References (to or from other Committees)

n/a

Mahanga Wetland – Hydrological Assessment

✦ Prepared for

Hawke's Bay Regional Council

✦ November 2023



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Quality Control Sheet

TITLE

Mahanga Wetland – Hydrological Assessment

CLIENT

Hawke’s Bay Regional Council

ISSUE DATE

22 November 2023

JOB REFERENCE

W02610500

Revision History					
REV	Date	Status/Purpose	Prepared By	Reviewed by	Approved by
0	5 Oct 2023	Draft for client review	Ella Boam	Katy Grant	Ramon Strong
1	22 Nov 2023	Final	Ella Boam	Katy Grant	Ramon Strong

DOCUMENT CONTRIBUTORS

Prepared by

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Ella Boam

Reviewed and approved by

SIGNATURE

Katy Grant

Ramon Strong

Limitations:

This report has been prepared by Pattle Delamore Partners Limited (PDP) on the basis of information provided by Hawke’s Bay Regional Council. 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.

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Appendix A: Site Photos (August 2023)
Appendix B: Stormwater Drain and Hine Rauiri Stream Survey
Appendix C: Flooding Photographs
Appendix D: Options Evaluation



1.0 Introduction

Hawke's Bay Regional Council (HBRC) has been investigating ongoing issues relating to the interaction of the Mahanga wetland and the Hine Rauiri Stream with local infrastructure in the Mahanga community. The issues include periodic flooding of residential properties located adjacent to the wetland, as well as flooding and inaccessibility issues with a ford along Happy Jacks Road. The environmental setting is complex and the interaction of natural and anthropogenic processes in and around the wetland is not currently well understood.

HBRC has requested that Pattle Delamore Partners (PDP) undertake a hydrological assessment of the Mahanga Wetland and surrounding area and evaluate options to mitigate the issues faced in the community.

2.0 Key Issues

The key issues relating the wetland and Hine Rauiri Stream are summarised below. A map of the wetland and surrounds, including the locations of key sites, is provided in Figure 1.

- ✧ There have been instances of flooding at properties located adjacent to the wetland. The properties and the wetland are separated by a man-made stormwater drain, which was installed around the 1970's.
 - A number of these properties have septic tanks with overflow outlets into the drain. There have reportedly been times where these systems have flooded, and wastewater has discharged directly into the drain/wetland complex.
 - Stormwater from the road system is discharged via subsurface pipes into the stormwater drain. During heavy rainfall events, the pipe outlets become flooded and back up, which results in the cul-de-sac sumps overflowing, and overland flow occurring through the nearby properties.
- ✧ The wetland drains into the Hine Rauiri Stream, which discharges water to the coast. Near the mouth of the stream, there is a ford which forms part of Happy Jacks Road. The ford can often become flooded and unusable.

Part of the difficulty in addressing these issues is the ecological significance of the local environment, as well as the presence of a number of sites of cultural significance:

- ✧ The wetland is protected by a conservation covenant (via the Department of Conservation). The wetland is of ecological significance and managing the water levels is of key importance to the health of the wetland and the species that inhabit it.



- ✧ The Hine Rauiri Stream is also of ecological significance. Inanga have been known to spawn immediately upstream of the Happy Jacks Road ford. Juvenile inanga (whitebait) are poor swimmers and require a gentle stream slope/low flow velocity to be able to migrate upstream from the sea.
- ✧ The Hine Rauiri Stream also has cultural significance to local iwi. This includes the Tamatea Spring, which is located within the stream, upstream of the Happy Jacks Road ford.
- ✧ Papaka Urupa is also a site of cultural significance. This is located between the stream mouth and Happy Jacks Road.

2.1 Background

The issues faced in Mahanga have been the subject of a number of studies in recent years. Key reports that have previously been prepared include:

- ✧ *Mahanga Wetland Assessment*. Prepared by Nicholas Singers and Christine Bayler of Nicholas Singers Ecological Solutions Limited for Hawke's Bay Regional Council, Wairoa District Council and the Department of Conservation. 2016.
- ✧ *Mahanga Wetland and Hine Rauiri Stream Restoration*. Prepared by John Cheyne of Wetland Works for the Department of Conservation. 2020.
- ✧ *Mahanga Wetland – Stocktake of land ownership and responsibilities*. Prepared by N.W. Zaman for Hawke's Bay Regional Council, Wairoa District Council and the Department of Conservation. 2021.
- ✧ *Mahanga Wetland and Hine Rauiri Stream: Issues and Options for Management*. Prepared by N.W. Zaman for Hawke's Bay Regional Council, Wairoa District Council and the Department of Conservation. 2022.

These assessments cover a range of issues, including ecology and land ownership. However, an assessment of the hydrological environment and associated processes has not specifically been undertaken. This report builds on the work previously undertaken for the Mahanga area, as well developing a conceptual hydrological model to aid in evaluating potential remedial options.

3.0 Environmental Setting

The Mahanga Wetland and surrounding environment have previously been described in detail by Singers and Bayler (2016) and Cheyne (2020), including the ecological setting. The following sections incorporate details provided in these reports as well as integrating hydrological observations made during a site visit by a PDP hydrogeologist in August 2023. Photographs taken during this site visit are presented in Appendix A.



3.1 The Mahanga Wetland

The Mahanga Wetland, within the covenant boundary, is approximately 5.8 ha in size and is situated in a roughly triangular, low-lying basin (Figure 2). The wetland is bound by sand dunes along the coastline. In recent decades the dunes have been developed with free-standing residential properties. To the northeast and northwest of the wetland is hill country, which is mapped as landslide deposits of Tolaga Group sandstone and mudstone (Mazengarb and Speden, 2000). LiDAR indicates that the wetland is typically between 1.5 and 3.0 mRL (Figure 2).

While the wetland is currently defined and protected by a conservation covenant, the covenant boundary was delineated in 2002 and is unlikely to be representative of the wetland extent when considering the Wetland Delineation Protocols (MfE, 2022) associated with the National Policy Statement for Freshwater Management (MfE, 2020). Based on the low-lying topography and observations made during the site visit, it is possible that the wetland extends northwest of Mahanga Road, eastwards adjacent to the Hine Rauiri Stream and south of the covenant boundary (adjacent to Katrin Place and Quentin Place) and beyond to the southern side of Blakes Approach (Figure 2, Photographs A2 and A6).

The dominant vegetation in the wetland is raupō, which typically grows in large colonies, in shallow, fresh, or slightly brackish water (Maanaki Whenua, n.d.). The wetland has an uneven surface, and it has been anecdotally observed that lower lying zones have permanent water while higher zones are ephemeral. A review of recent aerial imagery and observations made during the site visit suggest that the majority of the wetland is covered with raupō and there are few areas of open water (Photograph A1).

Prior to the conservation covenant being placed, the wetland was subject to a series of modifications, including the installation of a series of drains and a causeway. One of the earliest modifications is thought to be the creation of a key drainage channel that connects the area upstream of Mahanga Road through to the Hine Rauiri Stream (Figure 1). This has been in place since at least 1942 (Zaman, 2021).

The channel is culverted under Mahanga Road, flows in a southerly direction before abruptly turning to the southeast. The channel bisects the wetland in a straight line before becoming the Hine Rauiri Stream at the eastern covenant boundary. Further drainage, a causeway and other raised bunds were installed many years later. The specific dates are unknown but based on available aerial imagery, modifications appear to have occurred between the 1980's to early 2000's (Retrolens and Google Earth). Pampas has been observed growing along the raised areas, which may indicate different hydrological conditions i.e., a greater depth to groundwater (Photograph A1).



3.2 Residential Properties and the Stormwater Drain

As noted above, the Mahanga Wetland is bound by sand dunes along the coastline, as well as further inland. Judges Parade was constructed along a coastal dune with three small cul-de-sacs (Rhona, Katrin and Quentin Places) all located on the landward side of the dune, sloping down towards the wetland basin. The houses located closest to the wetland typically have the lowest elevations, which are similar to that of the wetland surface (Figure 2).

As part of the residential development of Mahanga Beach (circa 1970's), a channel was constructed between the wetland and the proposed properties to enable stormwater drainage from the roads (the 'stormwater drain'). The stormwater drain separates the wetland from the adjacent properties and extends from south of Quentin Place, draining northeast to the Hine Rauiri Stream (Figure 1). The stormwater drain connects to the stream down-gradient of the wetland covenant boundary.

A survey of the stormwater drain and Hine Rauiri Stream was undertaken by Wairoa District Council in 2017 (Appendix B). The survey indicates that the depth along the channels does not gradually fall, but rather is inconsistent as a result of local modifications. As the water level was not surveyed, the fall along the length of the drain is not accurately known. However, based on site observations and available LiDAR, the elevation loss is likely to be minimal, of the order of 0.1 m. It is possible that there are areas (such as in the vicinity of Quentin Place) where the water level in the stormwater channel is the same as at the wetland outlet indicating that drainage may be limited.

During the site visit, the stormwater drain was observed to have a high water level which was very close to ground level (Photograph A3). Very minimal to no flow was observed and substantial duckweed (*Lemna disperma*) had established in parts of the channel. Duckweed grows in wetland environments, ponds and shallow streams where the current is slow-moving (de Lange, 2023). This indicates that these conditions are typical of the stormwater drain. In other areas, the stormwater drain was choked with raupō (Photograph A4). Anecdotal reports indicate that localised areas of the drain may also be partially clogged with rubbish and/or garden waste.

The properties which have experienced periodic flooding in the Mahanga area are located adjacent to the stormwater drain in areas where the elevation difference between the properties and the wetland is minimal. Properties in the vicinity of Quentin Place are particularly low-lying (Figures 1 and 2). The frequency of flooding is unknown.



3.3 Hine Rauiri Stream and Happy Jacks Ford

The Hine Rauiri Stream conveys water from the wetland to the coast over a distance of approximately 200 m (along the stream). Between the wetland and the beach, the elevation loss is of the order of 0.1 m. At the beach front, the majority of elevation is lost as the stream mouth falls approximately 1.2 m (depending on tide cycle) to sea level (Photograph A5).

Based on the drainage survey undertaken in 2017 (Appendix B), the stream appears to have been artificially deepened and widened between the wetland and Happy Jacks Road ford (Photograph A6). The stream has no defined banks, the water level is essentially at ground level and the flow is very slow. The stream conveys surface water from the wetland but is also likely to have a groundwater component. This is further discussed in Section 4.0 below. The Tamatea spring is located in this reach of the stream.

The Happy Jacks Road ford is located immediately upstream of the stream mouth. In recent years, the stream passed over Happy Jacks Road at a perpendicular angle. However, in 2019 the stream channel was realigned along the ford and a more direct path to the coast was created. During both alignments, the ford experienced periodic flooding which made it unusable. In August 2023 the ford was inundated with water up to ~0.5 m depth (Photograph A7).

The mouth of the stream is located in a small embayment. Due to the dynamic nature of the coastal environment, the mouth is periodically choked with debris thrown up by the ocean including sand, cobbles/boulders and wood debris. Local residents and council staff have removed this material and debris to 'unblock' the stream. Wave action also causes erosion along the coastal dunes (Photograph A8).

4.0 Hydrological Conceptual Model

4.1 Recharge Mechanisms

The Mahanga Wetland is essentially a large sponge, which is recharged by a combination of direct rainfall infiltration as well as surface water and groundwater inflows from the surrounding hills. It is located at the coast near the end of the catchment.

The catchment has an estimated area of ~120 ha (Singers and Bayler, 2016), which largely comprises eastern facing hillslopes rising from sea level to ~260 m RL. The slopes are moderately inclined and mapped as landslide debris of Tolaga Group sandstone and mudstone with minor conglomerate (Mazengarb and Speden, 2000). Tolaga Group units typically have low permeabilities but can include more permeable units of limestone and conglomerate.



Based on site observations, including the presence of small ponds across the hillsides above the wetland, it is likely that these deposits have lower permeabilities. There is unlikely to be significant aquifer system within these deposits, but some infiltration and subsurface flow will still occur. Groundwater movement and seepage is expected to be slow.

The main sources of recharge into the wetland are likely to be via direct rainfall infiltration and overland flow from the immediately adjacent hillslopes and wider catchment. While there are no permanent streams mapped within the catchment, ephemeral flow paths will drain into the low-lying wetland.

Singer and Bayler (2016) noted that several springs feed the stream/flow path which enters the wetland above Mahanga Road, including one that arises at the base of the hillslopes. The mechanism of these springs was not investigated as part of this assessment, but they could be indicative of local groundwater levels or geological changes.

Based on the local topography and geology, the majority of the overland flow and groundwater seepage is likely to be funnelled into the wetland. A high-level estimate of catchment inflows (based on average rainfall minus potential evapotranspiration and a catchment size of 120 ha) has been calculated to be approximately 584,000 m³/year¹. Given the catchment and methods of recharge, water levels in the wetland are likely to rapidly rise in response to direct rainfall infiltration and surface water inflows.

4.2 Water Levels

It is anticipated that the low-lying wetland complex is underlain by low-permeability deposits common in inter-dunal zones. The groundwater level within the wetland is shallow (i.e., close to ground level) and maybe slightly tidally influenced, given the proximity to the coast and relative elevations. A sustained high groundwater level is indicated by the presence of raupō, the static water level in the stormwater drain, and the boggy nature of the low-lying areas where vegetation has been cleared. Based on the level in the stormwater drain, the groundwater level at the downstream extent of the wetland is likely to be of the order of 1.4 mRL.

4.3 Drainage Structures

While there is little available information on the nature of the drains installed throughout the wetland, it appears that as a result of the high groundwater level and flat gradient, they have been largely ineffective at lowering the water table. This includes the stormwater drain along the downstream boundary. The excavation of the drain created a channel into which groundwater discharges. As the drain has a very low hydraulic gradient, the water does not effectively drain,

¹ Based on average data from HBRC sites Kopuawhara Stream at Railway Bridge (rainfall) and Pukeorapa (PET) from 2017 – 2021.



resulting in a high static water table. This is considered to be the main control on drainage, rather than the presence of raupō or other impedances (such as rubbish) within the drain.

It is noted that while the drain collects stormwater from the road network, it is likely to be predominantly groundwater fed. When the water level in the drain is elevated, the outlet of the stormwater pipe becomes submerged, which then backs up and leads to overland flow. Similarly, high groundwater levels also reduce the unsaturated soil thickness available for disposal of wastewater from on-site systems.

Surface water is able to move through the wetland system via the main drainage channel, which bisects the wetland and connects the area upstream of Mahanga Road to the Hine Rauiri Stream (Figure 1). Depending on the depth of the channel, it is also likely to be partially groundwater fed. It is possible that this channel has reduced the natural flow of water through the wetland by capturing surface water (and potentially groundwater) flow and directing it towards the outlet rather than allowing a diffuse movement across the wetland. However, this has not been confirmed and the extent to which this could affect the functioning of the wetland is unknown.

4.4 Flooding

Flooding of properties adjacent to the wetland is likely to be primarily driven by rising groundwater levels but is worsened by surface flows in larger events. It appears that the properties affected by flooding are in the lowest lying areas, such as those at the southern end of the wetland complex near Quentin Place. Here, the lowest ground levels are ~1.8 m RL, which is lower than portions of the wetland and less than 0.5 m above the water level in the stormwater drain. Images from flooding in this location (Photograph A9), indicate that groundwater can rise above ground level in locally depressed areas.

In larger events (Photograph C10) it is likely that flooding results from both rising groundwater levels and greater inflows from surface water flow (including stormwater). It is noted that while the addition of stormwater has anecdotally contributed to flooding, the contribution of stormwater has been calculated to be ~0.5% of the total annual rainfall falling on the wetland catchment. It is therefore only a minor contribution of water entering the wetland system. However, overland flow through residential properties can occur when the stormwater outlet pipe falls below the water level in the stormwater drain.

4.5 Discharge

Outflow from the wetland is likely to be predominantly via the Hine Rauiri Stream (~95%), with a small proportion of groundwater seepage also occurring through the sand dunes to the coast. Groundwater discharge is likely to occur along the downstream length of the wetland and may vary depending on the tidal cycle i.e., less discharge occurring at high tide.



As noted above, the Hine Rauriri Stream conveys water from the wetland, including the discharge from the Tamatea Spring. Based on the 2017 survey (Appendix B), the base of the Hine Rauiri stream between the wetland boundary and the ford is well below groundwater level (resulting in groundwater inflow).

The Tamatea Spring is located at the boundary of recent beach deposits with the older landslide debris. The spring is potentially the result of groundwater flow abutting against the less permeable rock, resulting in an upwards gradient. However, the source of groundwater feeding the spring and the discharge is unknown.

The Happy Jacks Road ford currently acts as part of the stream bed, but the depth of the stream is considerably shallower and is likely to be above the groundwater table at this location. The issues arising from the ford becoming flooded and unusable are governed by the invert levels of both the ford and the stream mouth. The level of the ford is likely to have degraded over time as a result of use, while the level of the stream mouth fluctuates in response to the coastal environment and flow conditions within the stream.

At the time of the survey (Appendix B), the invert level of the stream mouth was higher than both the base of the Hine Rauiri Stream and stormwater drain. While the build-up of woody debris may have some impedance on flow at the mouth, the primary control of water levels is the relative elevations of the stream water level and the ford and stream mouth invert levels. The invert level of the Happy Jacks Road ford is considered to be a key control of the water level in the stormwater drain and wetland system i.e., the higher the ford level, the higher the water level in these features.

4.6 Summary

At a high-level, the hydrological model of the wetland system can be conceptualised as a bowl with a pour spout. The groundwater in the wetland, stormwater drain and Hine Rauiri Stream is held in the bowl. The water levels are high (near ground level) and as a result of the minimal fall across this area, the hydraulic gradient is low. The volume of water that is able to be discharged from the bowl is controlled by the height of the pour spout, which is the Happy Jacks Road ford and the stream mouth (depending on which is higher). Given the nature of the 'bowl' system, there is the potential that even with increased discharge along the Hine Rauiri Stream and stormwater drains, high groundwater levels are likely to persist within the wetland and still have a significant impact of flood hazard of the surrounding area.



5.0 Potential Impacts Of Climate Change

Based on the conceptual hydrological model of the Mahanga Wetland, it is anticipated that flooding effects will progressively worsen and occur more frequently as a result of predicted changes to the climate and sea level rise.

Climate modelling based on simulations from the Intergovernmental Panel on Climate Change (IPCC) Fifth Assessment Report has been undertaken by NIWA (2020) for the Tairāwhiti and Hawke's Bay Regions, and updated sea level rise projections have been assessed by the NZ SeaRise research programme (2022). These projections combine the 2021 IPCC Sixth Assessment Report (AR6) sea-level data (downscaled to New Zealand), with localised rates of vertical land movement (VLM) around the coast. These studies indicate the following changes to climate and sea level in the Hawke's Bay and Gisborne regions:

- ✧ Rising sea levels have already been observed within the Hawke's Bay region (NIWA, 2020). Based on the most likely current pathway, it has been projected that at Mahanga Beach, sea level may rise above current levels by approximately 0.1 m by 2050 and 0.6 m by 2100. This allows for vertical land movement as a result of tectonic activity, which has been estimated to be lowering by 1.14 mm/year (NZ SeaRise Programme, 2022).
- ✧ As sea levels rise, so will the probability of current high-water marks being exceeded, while the average recurrence interval of rare storm-tide event will become smaller (NIWA, 2020).
- ✧ Extreme, rare rainfall events are projected to become more severe in the future. Short duration rainfall events have the largest relative increases compared with longer duration rainfall events (NIWA, 2020).
- ✧ Changes in the Mean Annual Flood (MAF) are expected to be spatially diverse across time and greenhouse gas concentration scenarios. By the end of the century, under high concentrations, MAF is expected to increase by up to 50% for around half of the Hawke's Bay region's rivers (NIWA, 2020).

Given the already small relative difference between sea level and groundwater levels in the Mahanga Wetland, any rise in sea levels will reduce the capacity of the wetland to provide groundwater storage. Coupled with the projected increases in rainfall and particularly more severe extreme rainfall events, the occurrence and severity of flooding is likely to worsen. Properties which are already affected by flooding may therefore experience more frequent events, greater flood depths and increased periods of ground saturation, which may eventually become permanently wet. It is also possible that increasing saltwater intrusion will occur, leading to more brackish conditions. As well as worsening effects for properties already affected, properties located at higher ground levels may also start to experience flooding.



6.0 Water Balance

A number of remedial options have previously been developed to address the flooding of properties adjacent to the wetland and are discussed in Section 7.0. The feasibility of these options is complicated by the hydrological environment, the dynamic coastline and the ecological and cultural significance of the wetland, Hine Rauiri Stream, Tamatea Spring and Papaka Urupa. To aid in evaluating the feasibility of remediation options and specifically lowering the stream mouth, a high-level water balance has been developed for the wetland.

This broadly quantifies the inflows and outflows associated with the existing wetland system. It has been developed based on the conceptual hydrological model detailed in Section 4.0 above and provides an indication of the potential effects of changes to the hydrological system.

The water balance has been developed without any site-specific climate or hydrological data. There are no groundwater levels, stream stage measurements or flow gauging information available for the site and similarly, no site-specific climate stations. Therefore, the inputs to the water balance have been obtained from the nearest available HBRC climate stations and LiDAR data, and a number of parameters have been estimated or based on typical values for the site conditions.

The water balance has been calculated at an annual resolution and therefore does not allow for seasonal variability to be assessed. The mass balance equation used is presented below and assumes that there is currently no significant change in storage within the wetland on an annual basis.

$$Q_I + Q_R = Q_S + Q_{GW}$$

Where:

Q_I - direct infiltration (rainfall – potential evapotranspiration (PET)) into the wetland

Q_R - runoff from the surrounding catchment

Q_S – discharge from the wetland via stream flow

Q_{GW} – discharge from the wetland via groundwater seepage

The parameters used to calculate the flows identified above include:

- ✧ The area of the wetland (7.8 ha)² and the upstream catchment area (120 ha).
- ✧ Annual average rainfall obtained from HBRC site Kopuawhara Stream at Railway Bridge (2017 – 2021).

² Area of wetland within the covenant boundary is 5.8 ha. Total area of 7.8 ha has been used to align with Singers and Bayler (2016).



- ✧ Annual average Potential Evapotranspiration (PET) obtained from HBRC site Pukeorapa (2017 – 2021).
- ✧ An estimated run-off coefficient of 0.7.
- ✧ An estimate of flow at the stream mouth was based on a cross sectional area (estimated based on site observations), stream slope (LiDAR water levels) and visual assessment.
- ✧ An estimate of groundwater throughflow from the wetland, based on a typical hydraulic conductivity value and an estimated aquifer thickness and groundwater gradient.

In addition to the parameters outlined above, a porosity of 0.8 was also used to determine the potential volume of storage available in the wetland. This is a conservative estimate assuming interbedded peat and clay soils.

This assessment indicated that outflow from the wetland is predominantly via the Hine Rauiri Stream, with a small proportion of groundwater seepage also occurring. It was also identified that the wetland has significantly higher throughflow than storage capacity i.e., the majority of water that enters the wetland is discharged. When conceptualising the system as a bowl with a pour spout, the bowl (wetland) is largely full, with high groundwater levels. Surface water and groundwater inflows top up the groundwater, with excess discharged via the stream (pour spout).

Lowering the stream mouth has previously been identified as a potential solution to reduce the effects of flooding of properties. This was simulated in the water balance, by increasing the grade of the lower reach of the stream, between the Tamatea Spring to the stream mouth, by lowering the stream mouth by 0.4 m. The water balance suggests that this could lead to discharge from the stream exceeding inflows into the wetland, which would result in significant dewatering of the wetland. However, it should be noted that the following limitations apply to this assessment:

- ✧ The water balance is undertaken at an annual resolution and does not account for seasonal changes i.e., the availability of water through different seasons.
- ✧ The interconnection between surface water and groundwater levels is not currently well understood.
- ✧ The changes to the lower stream reach do not account for the movement of water through the wetland, which are likely to be slower and more restricted than the model indicates.
- ✧ Similarly, given the flat hydraulic gradient along the stormwater drain, there is uncertainty regarding whether the water levels in the stormwater drain would be lowered in this situation.



- A key issue is the flooding of residential properties, which occurs during periods of high flow. It is currently unknown whether during these events, even at an increased grade, there would be sufficient capacity to convey water from the wetland to reduce the flood hazard.
- ✧ The potential inflows from groundwater springs into the wetland, and particularly from the Tamatea Spring is unknown. The inflow from the spring may restrict the volume of water conveyed from the wetland.

It is noted that the water balance does not account for the invert level of the Happy Jacks Road ford, which is a key control of the water level in the stormwater drain and wetland system. Therefore, while the water balance provides an indication that lowering the stream mouth could lower the water levels within the wetland, a more detailed assessment of the groundwater dynamics and interaction with the Hine Ruairi Stream would be required to quantify this. This is further discussed in Section 8.0 below.

7.0 Evaluation of Options

Based on the conceptual hydrological model and water balance assessment, a number of potential remediation options developed for the site have been evaluated. The options presented are a combination of those previously identified by Singers and Bayler (2016) and Cheyne (2020), as well as additional concepts based on our hydrological understanding of the wetland system. The evaluation is presented in Table D1, Appendix D.

Each option has been evaluated based on the potential effects on:

- ✧ The flooding of residential properties
- ✧ The ecology of the wetland
- ✧ The ecology of the stream
- ✧ The use of Happy Jacks Road ford
- ✧ Long-term sustainability

The majority of the options considered do not provide a complete solution to all the issues. The assessment indicates that a combination of lowering the stream mouth and potentially removing the stormwater drain and replacing it with a bund may address the majority of the problems. However, there is significant uncertainty and data gaps that would need to be addressed before these solutions could be implemented. There is unlikely to be a solution which will be palatable to all the local stakeholders.



8.0 Summary and Recommendations

The interaction of natural and anthropogenic processes operating in Mahanga is complex. There is currently insufficient data to accurately quantify the hydrological processes operating in the wetland. However, based on the current understanding of the system, it can be conceptually thought of as a bowl with a pour spout. The bowl (wetland) is largely full, with high groundwater levels. Surface water and groundwater inflows top up the groundwater, with excess discharged via the stream (pour spout). The water levels in the wetland are controlled by the invert level of the stream mouth and/or the ford. If this is lowered, it could drain some of the groundwater until levels stabilise again, potentially affecting the wetland health.

The Hine Rauiri Stream and stormwater drain are connected to the groundwater within the wetland. Improving the fall along the stormwater drain will potentially result in some temporary initial improvement. However, this will rapidly cause an increase in groundwater discharge into drain. The recharge of the wetland from surface water and groundwater inflows will maintain the groundwater level and thereby the water level within the drain, and as a result may not significantly reduce the water level and the flood hazard. Furthermore, if sea level rises in accordance with the climate change predictions, this issue could be exacerbated by a reduction in the gradient between groundwater in the wetland and average sea level, leading to a reduction in groundwater discharge through the sandbar.

This assessment of the hydrological environment and evaluation of remedial options has identified the following key uncertainties, which limit the effective assessment of potential solutions to the various issues at Mahanga:

- ✧ The relationship between surface water and groundwater levels is not currently well understood. This relates to both within the wetland, the stormwater drain and the Hine Rauiri Stream.
- ✧ Similarly, the extent of groundwater and surface water level fluctuations is unknown.
- ✧ The inflows from the Tamatea Spring to the Hine Rauiri Stream have not been quantified.
- ✧ The fall along the stormwater drain and whether this changes seasonally is unknown.
- ✧ The effects from the historical modifications within the wetland on the existing hydrological processes are unknown.
- ✧ The current ecological nature of the Hine Rauiri Stream has not been investigated.



- ∴ The level of groundwater fluctuation that is able to be sustained by the wetland vegetation is unknown e.g., at what point would a lowered groundwater table restrict the ability of the wetland to function?

To improve understanding of the hydrological environment and enable a more robust assessment of potential effects of the preferred remedial options to be undertaken, the following additional work should be considered. The first two points are considered to be the highest priority:

- ∴ An ecological study to assess the potential effects to wetland species from lowered water levels i.e., understand at what point would a lowered groundwater table restrict the ability of the wetland to function.
- ∴ Water level monitoring within the wetland to determine:
 - Different hydrological dynamics in different areas (effects from raised bunds and drainage modifications).
 - Tidal influence.
 - Seasonal water level changes and changes in flood events.
 - Hydraulic gradient.
 - Connection to surface water drains.

Understanding the effect on groundwater levels as a result of increased discharge from the Hine Rauiri Stream and stormwater drain, is critical to understanding options to reduce the flood risk to the adjacent properties.

- ∴ Gauging and stage measurements of the stormwater drain and Hine Rauiri Stream. This would enable the inflows from Tamatea Spring to be measured and connection with groundwater to be assessed.
- ∴ A delineation of the wetland complex based on protocols outlined in the NPS-FM (2022).
- ∴ Ecological survey of the lower Hine Rauiri Stream to understand whether inanga are migrating up the stream.

9.0 References

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Figures:

W02610500 – MAHANGA WETLAND HYDROLOGICAL ASSESSMENT



FIGURE 1: MAHANGA WETLAND AND KEY LOCATIONS

W02610500 – MAHANGA WETLAND HYDROLOGICAL ASSESSMENT

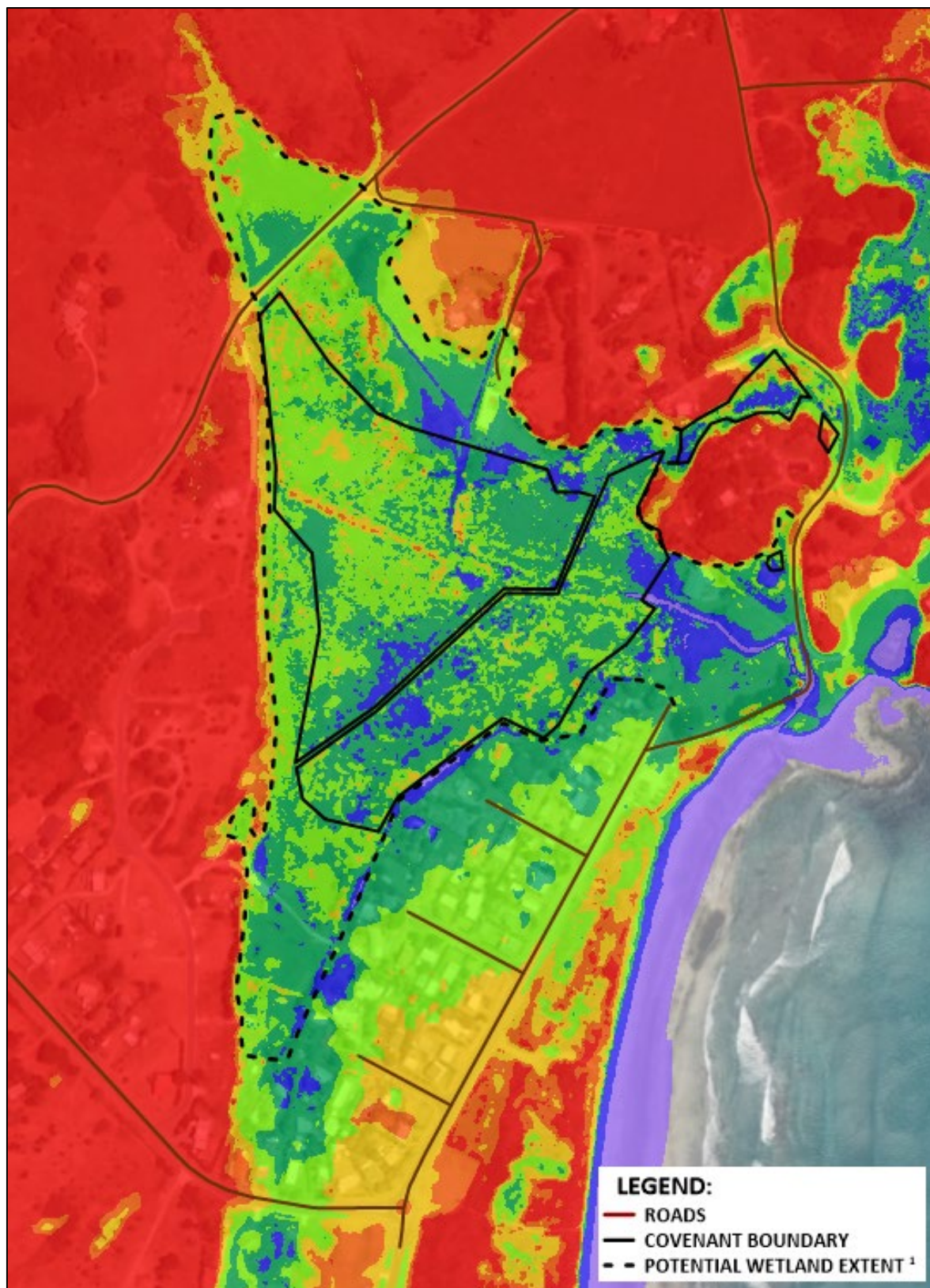


FIGURE 2: ELEVATION MAP OF MAHANGA WETLAND (LIDAR FLOWN IN 2020/2021)

Notes:

¹ Wetland extent has been based on low-lying areas outside of residential development and is indicative only.

² All areas which are ≥4.0 mRL are shown as red and those which are ≤1.5 mRL are light purple.

Appendix A: Site Photos (August 2023)

W02610500 – MAHANGA WETLAND HYDROLOGICAL ASSESSMENT



Photograph A1: View east over the Mahanga Wetland. The wetland is filled with raupō, with pampas growing along raised bunds.



Photograph A2: Low-lying area south of wetland covenant boundary and west of Quentin Place.

PATTLE DELAMORE PARTNERS

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W02610500 – MAHANGA WETLAND HYDROLOGICAL ASSESSMENT



Photograph A3: Duckweed growth within the stormwater drain behind 6-7 Quentin Place. The water level is only slightly lower than the ground level.



Photograph A4: Raupō growth within the stormwater drain at 6 Rhona Place. The water level is only slightly lower than the ground level.

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W02610500 – MAHANGA WETLAND HYDROLOGICAL ASSESSMENT



Photograph A5: Mouth of Hine Rauiri Stream (white arrow). The majority of elevation in the stream is lost at the beach front.



Photograph A6: Hine Rauriri Stream, downstream of wetland covenant boundary.

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W02610500 – MAHANGA WETLAND HYDROLOGICAL ASSESSMENT



Photograph A7: Happy Jacks Road Ford. Hine Rauiri Stream enters ford at arrow.




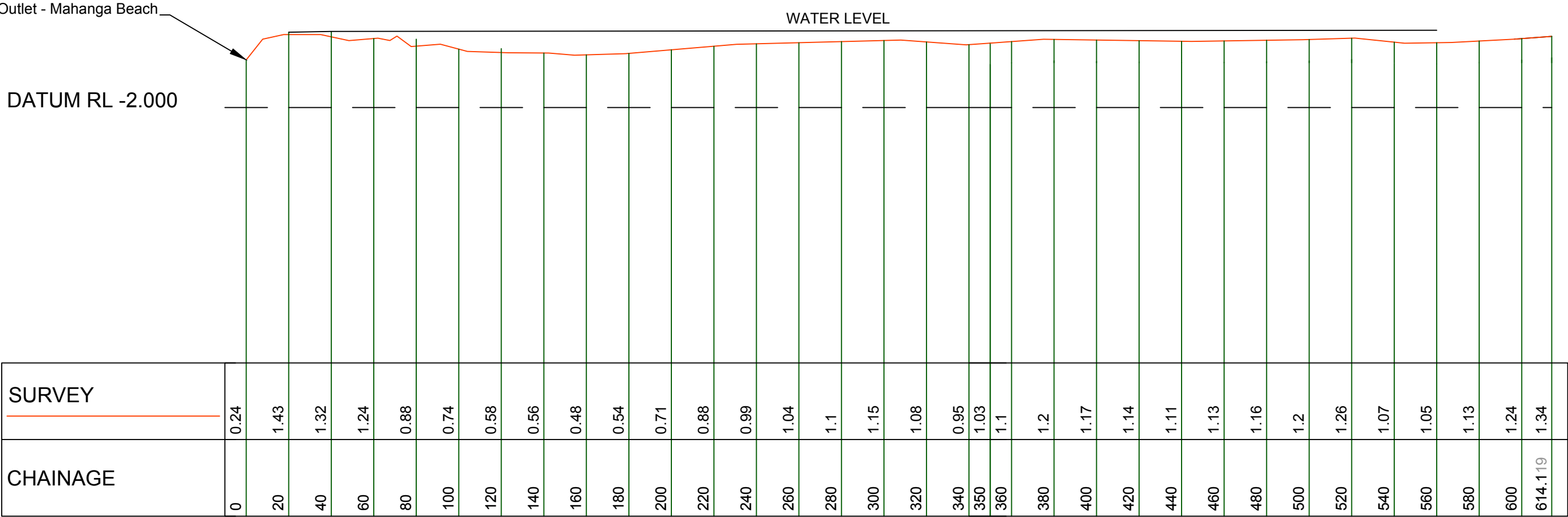
Photograph A8: Coastal erosion and debris washed up on shore near the mouth of Hine Rauiri Stream.

**Appendix B: Stormwater Drain and Hine Rauiri
Stream Survey**




Yellow Crosses indicate
survey points

		Survey	AJH, HC			Title Mahanga Drain Survey			
		Drawn	AJH			Contract			
		Checked				Scale N.T.S			
		Approved				Date Jun 18	Job No.	Sheet 01	Re
Amendments		Date							

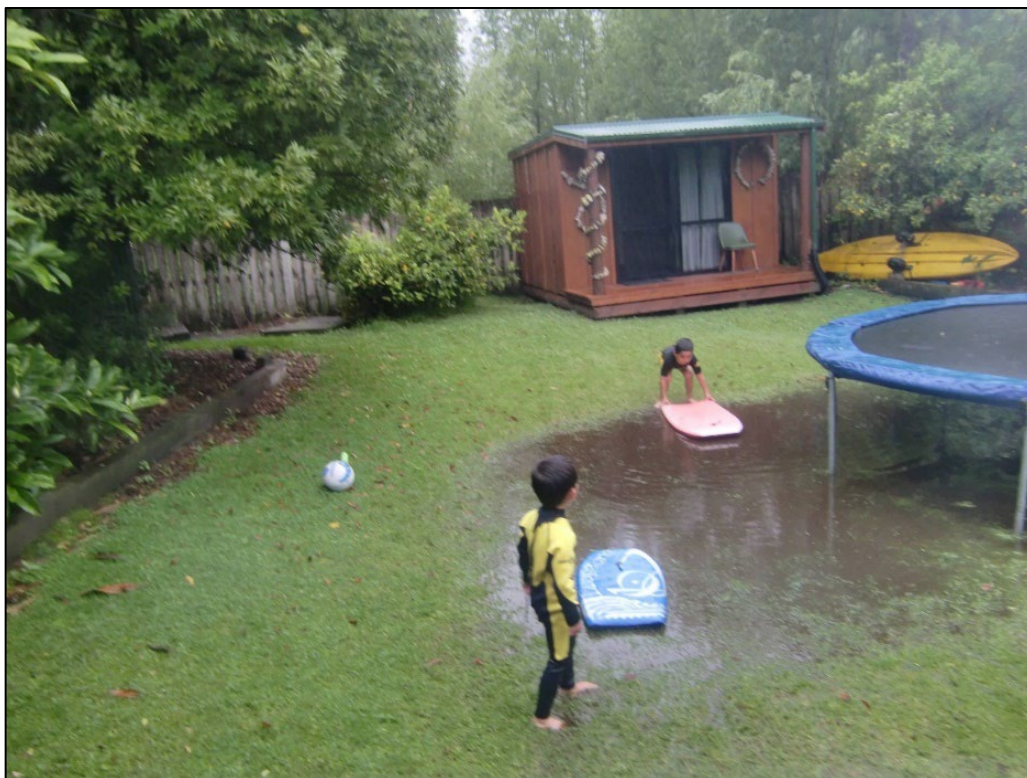


- LONGITUDINAL SECTION
A1 HORZ SCALE 1:2000
A1 VERT SCALE 1:200

	Survey	AJH, HC			Title Mahanga Drain Survey			
	Drawn	AJH			Contract			
	Checked				Scale N.T.S			
	Approved				Date Jun 18			
Amendments	Date				Job No.	Sheet 01	Re	

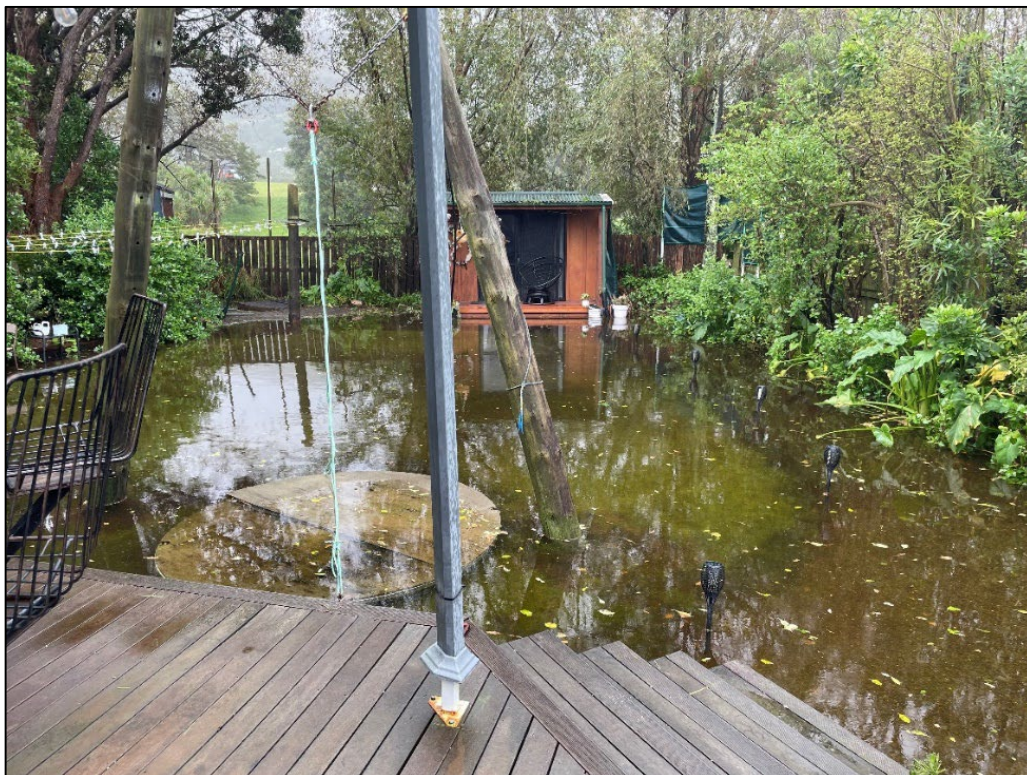
Appendix C: Flooding Photographs

W02610500 – MAHANGA WETLAND HYDROLOGICAL ASSESSMENT



Photograph C1: Flooding (1 August 2012) at 5 Quentin Place.

Photograph supplied by Neale and Michi Gordon.



Photograph C2: Flooding during Cyclone Gabrielle (14 February 2023) at 5 Quentin Place.

Photograph supplied by Neale and Michi Gordon.

PATTLE DELAMORE PARTNERS

Appendix D: Options Evaluation



Table 1: Options Evaluation								
	Option	Summary	Benefits	Constraints	Effect on Flooding	Effect on Wetland Ecology	Effect on Stream Ecology	Effect on use of Happy Jacks Road Ford
Changes to the Wetland Catchment								
1	Catchment management (forest regeneration and grazing reduction in catchment) <i>Singer and Bayler (2016)</i>	Long term improvements to district ecology and water quality. Limited improvement to flood hazard.	<ul style="list-style-type: none">Long-term improvement of rainfall interceptionReduced grazing will enhance water qualityBenefits to the wider ecological district (coastal forest)	<ul style="list-style-type: none">Long-term solutionLarge area of improvement requiredSignificant change to local land use required (multiple parties affected)Incomplete solution	<ul style="list-style-type: none">No change from current situation (immediate)Regenerated forest may reduce storm runoff in future, but effects may be counterbalanced by increased high intensity events due to climate change	<ul style="list-style-type: none">No change from current situation (immediate)Some water quality benefits in futurePotential reduction of inflows following large events due to reduced run-off	<ul style="list-style-type: none">No change from current situation (immediate)Potentially some reduction in higher flow events (although the effects of climate change may negate this)	<ul style="list-style-type: none">No change from current situation
Changes to Properties								
2	Raising height of flood prone land in residential properties <i>Singer and Bayler (2016)</i>	Improvement to flooding issues without adversely affecting wetland. But expensive and effectiveness will reduce in future with sea level rise and climate change.	<ul style="list-style-type: none">Reduce flood risk hazard by increasing freeboard between ground level and the groundwater table and flood level.Will not significantly affect water levels within wetland.	<ul style="list-style-type: none">Expensive.Temporary, sea level rise will reduce freeboardSignificant disruption to multiple landownersMay require movement of infrastructure (stormwater outlets and wastewater systems)Overland flow from stormwater sumps will remain an issueIncomplete solution	<ul style="list-style-type: none">Reduce flooding experienced at properties in short-termLevel of protection will decrease with predicted climate changes and sea-level rise	<ul style="list-style-type: none">No change from current situation as long as construction works are restricted to private property (assessment required to confirm)	<ul style="list-style-type: none">No change from current situation (assessment required to confirm)	<ul style="list-style-type: none">No change from current situation
3	Removal of on-site wastewater systems from individual properties	Removal of the wastewater systems will improve water quality but will likely need to be replaced with a community scheme.	<ul style="list-style-type: none">Improved water quality in wetland system and stream.Potential for better treatment system if community system is developed.	<ul style="list-style-type: none">Some properties do not have an adequate area to move their systems so a community system is likely to be required which treats and disposes of wastewater off-siteExpensiveIncomplete solution	<ul style="list-style-type: none">No change to occurrence and severity of floodingImproved water quality and reduced health risks during flooding events	<ul style="list-style-type: none">Improved water quality (localised to downstream boundary in the vicinity of the drain)	<ul style="list-style-type: none">Improved water quality	<ul style="list-style-type: none">No change from current situation



Table 1: Options Evaluation								
	Option	Summary	Benefits	Constraints	Effect on Flooding	Effect on Wetland Ecology	Effect on Stream Ecology	Effect on use of Happy Jacks Road Ford
4	Managed retreat	Significant impact on community and expensive. Removal of houses and wastewater infrastructure in flood prone properties will remove hazard posed to people and property.	<ul style="list-style-type: none">✧ Flooding will still occur at properties but risk to people and property will be removed in properties no longer occupied✧ Removal of wastewater systems will improve water quality (see option 3)✧ Complete solution	<ul style="list-style-type: none">✧ Significant impact on community✧ Expensive	<ul style="list-style-type: none">✧ Flooding will still occur at properties but risk to people and property will be removed in properties no longer occupied✧ Improved water quality	<ul style="list-style-type: none">✧ Improved water quality	<ul style="list-style-type: none">✧ Improved water quality	<ul style="list-style-type: none">✧ No change from current situation
Changes to Wetland								
5	Remove the drainage channels and bunds throughout the wetland <i>Singer and Bayler (2016)</i>	Likely to improve functioning of the wetland and allow more natural diffuse water flow. Potential effect on flood hazard is uncertain. Further assessment is required.	<ul style="list-style-type: none">✧ Restoration of more natural wetland conditions✧ Possible improvement of storage capacity within the wetland ³✧ Possible improvement in conveyance of water throughout the wetland ¹	<ul style="list-style-type: none">✧ Short term but potentially significant disruption during earthworks✧ Current uncertainty regarding how this will influence flood hazard✧ Unforeseen negatives are possible✧ Incomplete solution	<ul style="list-style-type: none">✧ Uncertainty regarding effects to flooding.✧ Likely that flood hazard will remain an issue for low-lying properties	<ul style="list-style-type: none">✧ Short term disruption but likely to allow more natural diffuse water flow.✧ Could combine with selected planting to improve wetland diversity and health	<ul style="list-style-type: none">✧ Possible changes to stream flow which could influence in-stream ecology. Potential for significant reduction if main drainage channel is removed.	<ul style="list-style-type: none">✧ No change from current situation unless works are also completed on the outlet.
6	Construction of ponds within the wetland <i>Cheyne (2020)</i>	Likely to have ecological benefits (Cheyne, 2020). Potential effect on flood hazard is uncertain.	<ul style="list-style-type: none">✧ Improve ratio of open water in wetland for ecological benefits✧ Possible improvement of storage capacity within the wetland ⁴	<ul style="list-style-type: none">✧ Short-term but potentially significant disruption during earthworks✧ Ongoing maintenance required to control raupō✧ Current uncertainty regarding how this will influence flood hazard✧ Incomplete solution	<ul style="list-style-type: none">✧ Uncertainty regarding effects to flooding✧ Likely that flood hazard will remain an issue for low-lying properties	<ul style="list-style-type: none">✧ Short-term disruption✧ Increased areas of open water may improve habitat conditions for some species (e.g., eels and open water birds)✧ May promote duckweed growth in ponds	<ul style="list-style-type: none">✧ Uncertainty regarding effects to in stream ecology	<ul style="list-style-type: none">✧ No change from current situation

³ There is currently insufficient information to conclude whether the removal of the drainage channels and raised bunds within the wetland will improve the flood hazard.

⁴ There is currently insufficient information to conclude whether the storage capacity would be improved within the wetland and how this may change over-time.



Table 1: Options Evaluation								
	Option	Summary	Benefits	Constraints	Effect on Flooding	Effect on Wetland Ecology	Effect on Stream Ecology	Effect on use of Happy Jacks Road Ford
Changes to Stormwater System								
7	Clear vegetation and blockages from the stormwater drain	Will satisfy community desire to remove vegetation but will not improve flood hazard.	<ul style="list-style-type: none">Community desire for vegetation to be removedRemove any impedances to flow within the drainUnlikely to negatively affect wetland ecosystem health	<ul style="list-style-type: none">Unlikely to lower water table within the wetland or drainNo significant improvement to water conveyancePromotion of duck weed growthOngoing maintenance required as vegetation reestablishesIncomplete solution	<ul style="list-style-type: none">No change from current situation	<ul style="list-style-type: none">While vegetation is removed, unlikely to negatively affect wetland ecosystem	<ul style="list-style-type: none">No change from current situation	<ul style="list-style-type: none">No change from current situation
8	Fill in stormwater drain and replace with raised bund	Likely to improve functioning of the wetland and allow more natural diffuse water flow. Restrict contribution of surface water and stormwater to flooding, but groundwater flooding remains a hazard.	<ul style="list-style-type: none">Restoration of more natural wetland conditionsRestrict contribution of surface water flooding adjacent to propertiesEliminate contribution of stormwater contribution to flooding (including as overland flow)	<ul style="list-style-type: none">Groundwater flooding still a hazard at propertiesRequirement to redesign and construct stormwater systemPotentially significant disruption along length of wetland during earthworksIncomplete solution	<ul style="list-style-type: none">No change to groundwater flooding hazardRestrict contribution of surface water to floodingEliminate stormwater overland flow	<ul style="list-style-type: none">Short-term disruption but likely to allow more natural diffuse water flow.	<ul style="list-style-type: none">Improvement on stream ecology as no wastewater or stormwater discharge into stream.	<ul style="list-style-type: none">No change from current situation
9	Stop stormwater from draining into wetland <i>Singer and Bayler (2016)</i>	Limit contribution of stormwater to flooding, but flooding remains a hazard from groundwater and surface water.	<ul style="list-style-type: none">Eliminate contribution of stormwater to flooding (including as overland flow)	<ul style="list-style-type: none">Groundwater flooding still a hazard at propertiesRequirement to redesign and construct stormwater systemExpensiveDisruptive to local homeownersIncomplete solution	<ul style="list-style-type: none">Reduction in flooding events, but low-lying properties still vulnerable to groundwater and wetland flooding hazard	<ul style="list-style-type: none">Improvement to water quality	<ul style="list-style-type: none">Improvement to stream ecology as no stormwater discharging into stream.	<ul style="list-style-type: none">No change from current situation



Table 1: Options Evaluation								
	Option	Summary	Benefits	Constraints	Effect on Flooding	Effect on Wetland Ecology	Effect on Stream Ecology	Effect on use of Happy Jacks Road Ford
Changes to Hine Rauriri Stream and Happy Jacks Road Ford								
10	Installation of a weir downstream of the wetland <i>Cheyne (2020)</i>	There is current uncertainty regarding the effectiveness of a weir to raise water levels within the wetland, given the low lying and flat topography. An effective weir has the potentially to lead to a minor increase in flood hazard.	<ul style="list-style-type: none">✧ May aid to maintain surface water level in wetland ⁵	<ul style="list-style-type: none">✧ Will not improve conveyance from wetland or stormwater drain to stream mouth✧ Will not significantly alter groundwater levels or reduce the flood risk✧ If weir was installed above confluence of stormwater drain, water from wetland would still discharge via this channel✧ May lead to unforeseen adverse effects such as alternative flood flow paths✧ Incomplete solution	<ul style="list-style-type: none">✧ No change from current situation✧ Weir would aid in maintaining and increasing water levels which could potentially slightly worsen flood hazard.	<ul style="list-style-type: none">✧ May result in higher water levels in wetland for longer periods throughout year ³	<ul style="list-style-type: none">✧ Will control flow rate in stream.✧ Risk of stream flow being reduced during drier periods, although unlikely to run dry.✧ Potentially increase difficulty for migratory indigenous fish (including īnanga) to migrate upstream.	<ul style="list-style-type: none">✧ May be a temporary effect on flow, but elevation of the stream mouth is the key control at the ford.
11	Increase height of the ford (grade to fall towards to the coast) ⁶	Improve accessibility of the ford by decreasing water depth. May lead to minor increase in wetland water levels No change to flood hazard.	<ul style="list-style-type: none">✧ Improve accessibility of the ford by reducing potential for ponding✧ Possible that water levels upstream of ford will slightly increase (potential benefit for wetland)	<ul style="list-style-type: none">✧ Ongoing maintenance required to maintain ford level. Use of ford and flow from stream will slowly degrade ford.✧ Possible that water levels upstream of ford will slightly increase (potential constraint for flood hazard)✧ Will not improve flood hazard.✧ Potentially increase difficulty for inanga to travel upstream.✧ Incomplete solution	<ul style="list-style-type: none">✧ No change from current situation	<ul style="list-style-type: none">✧ No change from current situation	<ul style="list-style-type: none">✧ Will increase difficulty for migratory indigenous fish (including īnanga) to migrate upstream.	<ul style="list-style-type: none">✧ Improved accessibility (with ongoing maintenance required)

⁵ Difference between surface water and groundwater levels are currently unknown. A weir may not be feasible given the low-lying nature of the site and the interception of groundwater within the Hine Rauiri Stream.

⁶ Could also be considered as installation of a weir at upstream end of road ford (Cheyne, 2020)



Table 1: Options Evaluation								
	Option	Summary	Benefits	Constraints	Effect on Flooding	Effect on Wetland Ecology	Effect on Stream Ecology	Effect on use of Happy Jacks Road Ford
12	Regularly unblock the stream outflow (woody debris) <i>Singer and Bayler (2016)</i>	Slight improvement to conveyance of water at stream mouth and lowering of ford water level but unlikely to have a material difference on stream flow or flood hazard.	<ul style="list-style-type: none">Minor improvement of conveyance of water at stream mouth.Minor decrease in water levels in ford	<ul style="list-style-type: none">Will not improve flood hazard.Potentially increase difficulty for inanga to travel upstream.Incomplete solution	<ul style="list-style-type: none">No change from current situation	<ul style="list-style-type: none">No change from current situation	<ul style="list-style-type: none">Potentially increase difficulty for inanga to migrate upstream.	<ul style="list-style-type: none">May slightly decrease water levels in ford but is not key control
13	Increase the slope leading to the stream mouth (removal of sand and debris to reduce height of outlet)	While lowering the outlet of the stream may lower the water levels in the stormwater drain and wetland, there is uncertainty that this would significantly improve the flood hazard at the properties. The feasibility of this option is constrained by the local flat topography and the level of event in which flooding occurs.	<ul style="list-style-type: none">Potential to reduce water levels in the wetland and stormwater drain which could enable greater storage and freeboard ⁴Possible to include reshaping the ford to improve accessibility and reduce potential for floodingPotentially complete solution (but significant monitoring and assessment required to determine effectiveness)	<ul style="list-style-type: none">Extent of works constrained by locations of Tamatea Spring and Papaka UrupāPotential to lower water levels in Hine Rauiri Stream and wetlandMay not be able to sufficiently increase slope to lower water levels in wetland stormwater drain to reduce flood hazardDynamic coastal environment likely to alter height of stream mouth. Ongoing maintenance to reduce height is likely to be required.	<ul style="list-style-type: none">While lowered water levels could improve storage and conveyance from the wetland, this is currently uncertain.It is possible that even if water levels were able to be lowered, the extent would not be sufficient to materially reduce the flood hazard at the low-lying properties.	<ul style="list-style-type: none">Potential for adverse effects to wetland ecology (flora and fauna) depending on extent and depth water level is lowered ⁷	<ul style="list-style-type: none">Will adversely impact ability of inanga to travel upstream.May have unforeseen negative consequences to other freshwater species	<ul style="list-style-type: none">Ford would likely need to be reshaped to accommodate altered stream gradientLikely to reduce potential for flooding in ford but regular maintenance required to maintain flow perpendicular to the road

⁷ While water balance indicates the potential for water levels within the wetland and stormwater drain to be lowered, this is dependent on the extent of physical works (length and height change) of steepening the lower reach of the Hine Rauiri Stream. Further details provided in Section 6.0.

8.3 PLANNING AND REGULATORY REPORT - JULY AND AUGUST 2024

Author: Hinetaakoha Viriaere, Pouwhakarae - Whakamahere me te Waeture | Group Manager Planning and Regulatory

Authoriser: Kitea Tipuna, Tumu Whakarae Chief Executive

Appendices: 1. Planning and Regulatory Report - July and August 2024 [↓](#)

1. PURPOSE

This report provides information for the Infrastructure and Regulatory Committee on key matters from the Planning and Regulatory Group and includes updates from Planning and Resource Management, Environmental Health, Building Control and Rapid Building Assessments, Compliance including Dog Control, Stock Control, Freedom Camping and Trade Waste Compliance Management.

1.1 No decisions are required by Committee.

RECOMMENDATION

The Pouwhakarae - Whakamahere me te Waeture | Group Manager Planning and Regulatory RECOMMENDS that the Committee receive the report titled Planning and Regulatory Group Report – July and August 2024.

2. BACKGROUND

2.1 Each month the Pouwhakarae Whakamahere me te Waeture presents a report to the Infrastructure and Regulatory Committee that provides updates from the Planning and Regulatory Group. The Report includes the statistics for the month and the previous month to highlight changes in the data from month to month.

2.2 The Planning and Regulatory report for the months of August and September 2024 highlights key updates that includes information regarding the following matters:

- The consultation period for the Dangerous, Insanitary and Affected Building Policy has come to an end, 1 submission was received, submitter does not wish to be heard.
- The renewal applications of the Frasertown Tavern's on and off licence received over 30 objections during the public notice period. A hearing will be held in 2025.
- The Compliance Team have been doing area visits to locals and distributing education notices.
- Dog Registrations have been steady and consistent with many registrations being paid electronically; Council confirmed extension of 1 month for registration period.

Confirmation of statutory compliance

In accordance with section 76 of the Local Government Act 2002, this report is approved as:

- a. containing sufficient information about the options and their benefits and costs, bearing in mind the significance of the decisions; and,

- b. is based on adequate knowledge about, and adequate consideration of, the views and preferences of affected and interested parties bearing in mind the significance of the decision.



PLANNING & REGULATORY GROUP REPORTS

Due 3rd of September.

MONTH: July 2024 – Aug 2024

1. PLANNING & REGULATORY SUMMARY

GENERAL:

- The consultation period for the Dangerous, Insanitary and Affected Building Policy has come to an end, 1 submission was received, submitter does not wish to be heard.
- The renewal applications of the Frasertown Tavern's on and off licence received over 30 objections during the public notice period. A hearing will be held in 2025.
- The Compliance Team have been doing area visits to locals and distributing education notices.
- Dog Registrations have been steady and consistent with many registrations being paid electronically; Council confirmed extension of 1 month for registration period.

2. PLANNING & RESOURCE MANAGEMENT

Resource Consents	July	Aug
Consent applications received	4	6
Ancillary applications received (COC, Sec 223, 224, 221 etc)	0	1
Ancillary applications granted (COC, Sec 223, 224, 221 etc)	0	0
Decisions notified	1	1
Proportion of consents processed within statutory timeframes	100%	100%
Proportion of ancillary applications processed within statutory applications	0	0
Onsite visits/inspections undertaken	5	3
RMA breaches recorded	0	1
Infringements issued	0	0
Pre application meetings (In person)	6	0

- Planning for the District Plan Review project is underway. Mahea consultants are assisting the Planning team with this project. A timeline of dates for the district plan review programme to be confirmed next month.



- The Temporary Accommodation Service (TAS) project manager role is sitting with the Planning Department on behalf of the Wairoa District Council. This role includes liaising with the TAS group regarding the TAS cabins deployment and infrastructure connections for whānau affected by the June 2024 weather event.
- As the LTP has been set, work is developing and moving towards the District Contributions Policy.

3. ENVIRONMENTAL HEALTH

3.1 Liquor Licensing

	July	Aug
New licences Issued (Managers/club/on/off)	0	1
Renewals issued (Managers/club/on/off)	1	0
Special licences applied for	1	2
Proportion of licences issued within statutory timeframes	100%	100%

3.2 Health licensing

	July	Aug
Health licences Issued	1	10
Food Control Registration / NPs New	0	0
Food Control Plan Re: Registration	3	3
Food Premises visited for compliance	5	5
Proportion of licences issued within statutory timeframes	100%	100%
Warnings Issued for compliance	1	0
Infringements issued	0	0

3.3 Noise Control

	July	Aug
Call outs received	3	4
Premises Visited	3	3
Warnings Issued/Items Seized	0	0
Infringements issued	0	0

- The renewal applications of the Frasertown Tavern's on and off licence received over 30 objections during the public notice period. A hearing will be sought to take place early 2025. Tenfold are still able to remain operating under their current licences.

WDC Regulatory Department Monthly Report

4. BUILDING CONTROL

Building Consents	July	Aug
Consents received	25	19
Consents granted	16	3
Residential consents issued	12	3
Total value of new building consent/work (received)	\$3,471,500	\$5,997,000
Proportion of building consents processed within statutory timeframes	100%	100%
Proportion of CCC's issued within statutory timeframes	77%	100%
Building consent exemptions issued	0	5
Inspections undertaken	42	26
Property Information		
LIM's received	0	0
Proportion of LIM's issued within statutory timeframes	100%	100%

- BCA resources will be under pressure as the cyclone & June 2024 flood event recovery progresses.
- IANZ BCA onsite accreditation that was scheduled for August has been moved to late September due to June 2024 flood event.
- The Consultation period for the Dangerous, Insanitary and Affected Building Policy has come to an end, 1 submission was received, submitter does not wish to be heard.

4.1 Rapid Building Assessments from Cyclone Gabrielle June – July 2024

Rapid Building Assessments Tally - July 2024	Commercial	Residential
Red – entry prohibited	0	3
Yellow – restricted access	33	89
White – can be used	35	136
Green – building reinstated	44	130

Rapid Building Assessments Tally - August 2024	Commercial	Residential
Red – entry prohibited	0	3
Yellow – restricted access	33	87
White – can be used	35	135
Green – building reinstated	44	133

4.1.2 Rapid Building Assessments from June 2024 Rain Event

Rapid Building Assessments Tally - July 2024	Residential
Red – entry prohibited	0
Yellow – restricted access	124

Rapid Building Assessments Tally - July 2024	Residential
Red – entry prohibited	0
Yellow – restricted access	122

4.2 RBA Placards

Following a Rapid Building assessment (RBA), a building or home will receive either a white, yellow or red placard (notice).

4.2.1 Changing/Removing a Red Placard

When repairing a building issued with a red placard, it is important that any work is done in liaison with the building owner's insurer, the local territorial authority and in conjunction with appropriate experts and professionals. No one should enter the building unless authorised to do so. To begin the process of repair/remediation, an owner should first contact their insurer, who should arrange (or help to arrange) for more detailed engineering evaluations.

A building owner will also need to work with their local territorial authority to arrange authorised access for an appropriate professional so they can assess the damage (e.g geotechnical or structural engineer, builder, drainlayer or plumber). The territorial authority will, if appropriate, issue authorisation to access the building. In some cases, access may be refused, for instance due to a high risk to life safety.



4.2.2 Repair and Remediation Work

In the case of a red placard, it is likely that a detailed evaluation will need to be undertaken, usually by a structural or geotechnical engineer, who can provide advice on building usability and options to address any damage, e.g repair or demolition.

A detailed evaluation should also describe what remedial actions are possible to be completed to recommend a change in placard status, including:

- Whether the building owner needs to apply for building/resource consent, or a discretionary exemption from the requirement for building consent for remedial works required to request a placard change; or
- Whether to carry out other remedial works, for which consent is not required, that are required to request a placard change. Owners may need to carry out urgent repairs during an emergency period when it is not possible to process building consent applications. These repairs often involve building work that in normal times would require a building consent. If there is urgent work that needs to be done, the homeowner should contact their insurer and territorial authority before proceeding.

5. COMPLIANCE

5.1 Dog Control

	July	Aug
Call outs received	51	49
Impounded	14	12
Warnings issued	4	5
Infringements issued	8	5
Pending court cases	0	0
Dogs destroyed	7	4
Dogs rehomed	0	2

5.2 Stock Control

	July	Aug
Call outs received (farm animals)	21	14
Impounded farm animals	0	0
Warning issued on stray farm animals	2	4
Invoice issued	0	2
Pending court cases	0	0
Animals destroyed	0	0

5.3 Call Outs

The Compliance team have had a high number of calls for worrying of stock around the district. Council has been able to mediate with stock owners and dog owners for an outcome to address the issues. Dog traps have been given out to trap worrying dogs on farmland. Compliance have placed a notice out to the public to be more responsible, as well as educating owners while out in

the field. The Compliance team have been mail dropping in Mahia, Waikaremoana and Te Reinga with a focus on education and putting comms out about stock and dogs, this has made a positive impact in these areas. The Compliance team have also been collaborating with police to assist on educating visits to areas with them, this also is a positive outcome in the communities.

5.4 Dog Registrations

Dog Registrations have been steady and consistent with many registrations being paid electronically, Council is getting owners applying for permits and responsible ownership permits for future registrations. Council approved that the registration period will extend 1 more month to help alleviate the strain on those who were once again impacted by the flood.

5.6 Freedom Camping

	July	Aug
Number of Patrols	5	2
Warnings issued	0	2
Infringements issued	0	0
Pending court cases	0	0

- 5.6.1 There has been good communication and feedback from Manaaki Tangata kaimahi; they also check on other facilities around the district and make contact if there are any damages or concerns.
- 5.6.2 There have been a few campers coming through, some camping areas around Wairoa have been closed due to grass regrowth and problems with the toilets.

5.7 COMPLIANCE – TRADE WASTE

6.1 Trade Waste Compliance Management

	July	Aug
Premises Inspected	14	9
New Trade Waste Licenses Issued	0	0
Trade Waste Licenses Renewed	3	1
Trade Waste Management Plans Initiated	2	2

- i. The removal of Flood damaged cars has been completed, x43 cars were picked up in July. Have cleaned rubbish and glass up from car storage area, we still are looking for a permanent place to store car wrecks. Have done a cycle with Pearse Waste cleaning grease traps to make sure they are cleaned as per management plans.