



Kaituna Catchment Control Scheme Advisory Group Meeting

**Wednesday 15 March 2023
10:00am**

Suite 4
Trustpower Baypark
81 Truman Lane
Tauranga



Kaituna Catchment Control Scheme Advisory Group Meeting

Wednesday 15 March 2023 at 10am

Agenda

- 1 **Welcome**
- 2 **Apologies**
- 3 **Notes of previous meeting held 31 August 2022**
- 4 **Matters arising from previous meeting**
- 5 **Capital Works Programme Update**
- 6 **Maintenance Work Programme Update**
- 7 **Finance Report**
- 8 **Upcoming Long Term Plan, Rivers and Drainage Asset Management Plan and Infrastructure Strategy Review**
- 9 **General business**
- 10 **Public forum**
- 11 **Meeting closure**

Notes of the Kaituna Catchment Control Scheme Advisory Group meeting held at Te Puke War Memorial Hall, Wednesday 31 August 2022, commencing at 10am

Chair: Councillor Norm Bruning

Advisory Group: Barry Roderick, Graham Thompson, Heather Brake, Richard Weld, Roger Hintz, Richard Crawford (alternate to John Scrimgeour, Western Bay of Plenty District Council)

BOPRC Staff: Chris Ingle (General Manager Integrated Catchments), Kirsty Brown (Rivers and Drainage Assets Manager), Jo Heath (Rivers and Drainage Assets Coordinator), Bruce Crabbe (Rivers and Drainage Operations Manager), Kerry Smith (Area Engineer), Mark Townsend (Engineering Manager), Laura Boucher (Communications Partner), Pete Hennessey (Communications Partner from 11:15am)

Public: Kelsey Weld, Noel McLeod, Riaan Rossouw (Western Bay of Plenty District Council)

Apologies: Councillor Matemoana McDonald, Councillor Jane Nees, Nick Chater, Councillor John Scrimgeour (Western Bay of Plenty District Council), Greg Manzano (Rotorua Lakes Council), Dean Flavell (Te Maru o Kaituna)

1 **Welcome**

Councillor Bruning welcomed everyone to the meeting.

Barry Roderick expressed thanks to Councillor Bruning for his time as Councillor and his involvement with the Kaituna Advisory Group.

2 **Apologies**

Apologies were received as recorded above.

3 **Notes of previous meeting held 4 April 2022**

The record in the notes that capital expenditure, for the 6 months ending 31 December 2022, was \$1,170,000 lower than budgeted was queried as being very high (Page 7, Item 8 Finance Report, 5th bullet point). This was checked following the meeting and confirmed as correct. The under expenditure at the time was largely the result of the Te Puke Stormwater project with a budget of \$1,280,000 being pushed out to 2022-2023.

Resolved

That the Kaituna Catchment Control Scheme Advisory Group:

Confirm the notes of the meeting held 4 April 2022, subject to confirmation of query noted above, as a true and correct record.

**Weld/Roderick
CARRIED**

4 **Matters arising from previous meeting**

Kirsty Brown ran through the actions from the previous meeting with an update on the Pond G independent review provided by Mark Townsend.

Mark advised that the independent review of Tauranga City Council's consent by PDP (Pattle Delamore Partners) has highlighted a few issues around the ability of consent conditions being met. Currently working with the Regulatory Compliance Team and Tauranga City Council with the likely outcome being that Pond G will need to be made bigger to meet consent conditions. Mark advised that there are legal avenues to stop the development if necessary.

5 **Scheme annual report 2021-2022**

Kirsty Brown spoke to the annual report in the agenda pack and provided an overview of the scheme's revenue and expenditure for the year ending 30 June 2022. An additional page to the Statement of Revenue and Expense was tabled providing the reserve and loan information that was not available when the agenda pack was circulated.

Key points:

- The maintenance programme was delivered to programme and slightly over budget.
- Several of the larger capital work projects were significantly underspent due to planning and construction components being deferred to 2022-2023, and in some cases 2023-2024.
- Operating revenue of \$2,771,000 was \$48,000 lower than budget of \$2,819,000, mainly due to lower than forecast interest rates
- Operating expenditure of \$2,907,000 was \$337,000 higher than budget of \$2,570,000, mainly due to higher net overhead charges and recoveries (including additional staff time)
- Capital revenue was of \$1,506,000 was \$1,623,000 lower than budget of \$3,129,000, due to CIP funding payment delays with the Kaituna Mole and Ngongotahā projects. Central government is currently running six months behind in payments.
- Capital expenditure of \$1,791,000 was \$3,706,000 lower than budget of \$5,497,000, with construction components of projects delayed and carry forwards into 2022-2023 proposed for several projects.
- Total reserve fund opening balance of \$5,251,000 and closing balance of \$5,068,000 (decreased by \$183,000)
- Internal loan opening balance of \$7,902,000 and closing balance of \$7,719,000 (decreased by \$183,000)
- Asset valuation as at 1 July 2021 of \$77.3 million

Discussion:

- April 2017 Flood Repair Project insurance claims were discussed, and staff confirmed that all the insurance recoveries had been finalised and paid out.
- Members questioned how the works reserve money was used. Bruce Crabbe explained that the works reserve is about under and overs. If there is operating surplus at the end of a financial year it goes into the works reserve and if there is an operating deficit it can be offset from the works reserve within Finance Policy guidelines.

- Members questioned the higher than budget overhead charges due to additional staff time. Bruce Crabbe explained that there had been several rain events throughout the year where Operations staff were working 60-hour weeks.
- The on charging of staff time spent giving technical advice on consent applications and developments like the TEL and Rangiuru Business Park was discussed. Chris Ingle assured members that any Regional Council staff time associated with development within the area is charged to the applicant.

ACTION:

Finance team to provide an explanation of any reserve money spending in future reports.

6 Capital programme

Mark Townsend spoke to the agenda report and delivered a presentation.

Key points:Ford Road Pump Station

- Rangiuru Business Park want to utilise the upgrade to meet their consent requirements and are working through what capacity would be needed for their development. They will pay for additional pump capacity above the design for scheme requirements. The detailed design is on hold until this proposal has been finalised.
- Consultation is ongoing with landowners, iwi, Department of Conservation and Fish and Game. Still awaiting Cultural Impact Assessment from Tapuika.
- Iwi would like the area to revert to wetland and have been opposed to the proposal from the start. Through three years of consultation their stance has not changed. Mark believes the consent process will go to a hearing, adding three months to the consenting process.
- Design for the project is scheduled for completion by August 2023 with construction in the 2023-2024 summer.
- Mark commented that he is not anticipating cost escalation however feels there will be schedule delays. Members responded that any delays result in increased costs and landowners are nervous about this project.

Te Puke Stormwater Project

- Modelling report has been produced and confirms the known problems. Regional Council and Western Bay of Plenty District Council working together on possible long-term options.
- Central government are pushing for new houses and housing intensification. Western Bay of Plenty District Council have identified Te Puke as an area for intensification and Plan Change 92 introduces new Medium Density Residential Standards for all existing residential areas of Ōmokoroa and Te Puke and additional new residential areas. Submissions on the plan change close 16 September 2022. Regional Council will be submitting on water quality, water quantity and environmental concerns.

Ngongotahā Stream mitigation

- Hoped to have been in the middle of construction at this stage however still talking with the AMP Showgrounds to gain landowner approval for the Southern Bypass.
- Discussions continue regarding the hi-flow bypasses as staff work through agreements with landowners.
- Rotorua Lakes Council are responsible for the raising of Western Road and the councils are working together to get the best outcomes.

Kaituna capacity review

- Report was finalised in July and while the Kaituna River meets the 1% AEP level of service, upgrades are required in some 10% AEP areas and on some canals upstream of Te Matai.
- Currently in assessment stage and any upgrade work will need to be included into the Annual Plan.

Kaituna stopbank geotechnical investigations

- Investigations have already been undertaken on three sites where seepage issues have been identified. In these cases, the locations have been associated with old river flow paths.
- Currently identifying other sites for testing to begin early in 2023. Mark Townsend asked members to let him know if they were aware of any sites to investigate.

Attendance: Pete Hennessey arrived at 11:15 am

7 **Maintenance programme**

Bruce Crabbe spoke to the agenda pack report, and Kerry Smith delivered a presentation highlighting a range of work being undertaken within the scheme.

Key points:

- It has been a wet winter, with double the typical rainfall during June and July. As a result, the pumps have been running significantly longer hours and this will have an impact on expenditure to cover the cost of diesel, electricity, and staff time. The rain has been steady rather than intense and the drainage system has performed well.
- The Operations Team have put a lot of effort into tidying up the Waingaehe Floodway following the last condition assessment where issues were identified with high-risk trees, fences, and landscaping encroaching beyond residents' legal property boundary. Vegetation has been removed and 560 metres of rural, and 150 metres of urban, fencing realigned onto legal boundary.
- Ngāti Kea/Ngāti Tuara approached Regional Council for assistance with cleaning up along the Utuhina Stream. This grew into a substantial community effort where Regional Council removed mature gum trees and other vegetation, the hapū prepared the site for planting and together with Rotorua Boy's High students planted approximately 5000 natives. A local contractor, Campbell Contracting, who is also a neighbouring landowner, contributed some digger hours. The area is looking great and as a result momentum is building amongst property owners to do similar on the opposite bank.
- The right bank of the Ohineangaanga has been cleaned up with pest plants removed, the berm levelled and reshaped, and the landside of the stopbank toe loaded. The area is now growing good pasture grass and is suitable for grazing.

- Kopuaroa pump station has had an electrical and telemetry upgrade.
- The Te Arawa Lakes Trust dairy farm's constructed wetlands project is a Land Management team led project and the Operations team are assisting with the pond construction work which is 80 percent complete.
- The long reach digger was scheduled for replacement and because it was in good condition and met the teams needs the decision was made to refurbish it rather than replace.
- Have purchased an 8T digger with mounted mulcher and dedicated transport trailer. Staff often found it challenging to hire the right digger when it was needed and this option means the team is self-sufficient, have a digger available when needed and can get more done and at less cost.

Discussion:

- The issue of trees on or adjacent to stopbanks was discussed with Bruce Crabbe explaining that even trees adjacent to the stopbank can have roots growing into the stopbank. Cutting the trees down is relatively straightforward however the root balls also need to be removed, roots down to a diameter of 20 mm chased and removed, and then any damage to the stopbank repaired with the appropriate soils and compaction.
- Members questioned whether landowners along the Waingaehe contributed to the cost of the new fences. Kerry Smith advised that where Regional Council was the neighbouring landowner the fencing costs were split 50/50 as per Fencing Act requirements.
- Monitoring of constructed wetlands and drain upgrades within the focus catchments was discussed with members commenting that farmers need to be able to see evidence that the cost of fencing, retiring productive land, and riparian planting is resulting in improved water quality. With the Essential Freshwater requirements farmers are looking at what it will mean for their businesses in the future and the costs of being compliant. Kerry Smith advised that there is a monitoring programme in place however still a little early yet for any results.
- It was reported that the Bell Road C pump station was shut down for maintenance during one of the recent rain events and members questioned whether this was necessary. Kerry advised that any scheduled maintenance would usually be deferred if there was a rain event and undertook to investigate and report back to the group.

ACTION:

Staff to provide members with an outline of the monitoring programme in place for the best practice drain upgrades happening in the focus catchments.

ACTION:

Staff to investigate the Bell Road C pump station being shut down for maintenance during a recent rain event.

8 Te Maru o Kaituna River Authority

Kirsty Brown explained that this agenda item was intended to improve information sharing between the Advisory Group and Te Maru o Kaituna River Authority. The agenda report provides members with a high-level overview of key topics from the Te Maru o Kaituna

meeting held 20 May 2020. Staff also provide Te Maru o Kaituna with updates from the Kaituna Advisory Group meetings, and this has been well received.

Members can access Te Maru o Kaituna meeting agendas, minutes and presentations on the website at www.boprc.govt.nz/your-council/council-and-region/committees/te-maru-o-kaituna-river-authority

9 Asset management planning

Kirsty Brown spoke to the agenda report signalling that the river management environment and how Regional Council will deliver on flood protection and land drainage services is changing. The way river works are managed will focus on adaptability and maximising natural river processes, while continuing to meet flood protection levels of service. Future solutions may involve providing more room for the river and using natural and nature-based flood risk management solutions.

This approach will be incorporated in the Rivers and Drainage Asset Management Plan review in 2023-2024. Workshops with advisory groups on implications of the proposals will be valuable as the review progresses.

Kirsty also spoke about the National Adaptation Plan released in August 2022. The Plan looks at the impacts of climate change now and into the future and sets out how Aotearoa New Zealand can adapt. The Plan recognises that councils have functions and duties in relation to natural hazards, civil defence and emergency management, and improving community resilience. All councils are required to consider the National Adaptation Plan in their planning processes from November 2022.

Discussion

- 'Soft engineering' solutions were explained with examples provided such as using riparian planting instead of rock for erosion protection, providing upper catchment retention, creating wetlands as flood storage.
- Staff explained that the Kaituna River is not confined like some of the Eastern Bay rivers where the approach is to make room for the river and allow it to meander and find a more natural state.
- Soft engineering solutions and making room for the river are not new approaches for river management in the region, however they have not previously been formalised in the Asset Management Plan.

10 General business

10.1 General business report

Kirsty Brown took the agenda report as read and highlighted a few key points.

Key points:

- The advisory group Terms of Reference Review is progressing with a draft issued to group members for feedback. Review process is on hold until the new Council has formed post local body elections in October.
- The next round of flood protection and drainage infrastructure assets condition and performance assessments are due to commence. Asset condition is a measure of the physical state of an asset which is visually assessed by staff/contractors and graded from 1 (very good) to 5 (very poor). Condition assessment looks at the physical state of

an asset and performance assessment is a 'whole picture' analysis assessing required service levels, asset condition, intrinsic strength, capacity, geology, and the potential risks to communities. Kirsty advised that the condition assessments are undertaken by experienced staff or suitably qualified contractors.

- Local Government elections are being held for Regional Council's 14 councillor roles. Postal voting opens on 16 September and closes 8 October 2022.
- Councillor Bruning is not running for re-election and Kirsty Brown thanked him for his service to the community and the environment. Councillor Bruning responded that he had spent three terms on Council and during that time had been involved with all the Rivers Scheme Advisory Groups. He enjoyed working with the groups and thanked members for their input.

Discussion:

Members provided feedback on the Terms of Reference Review. Most members have been involved in the advisory group for many years and have a wealth of knowledge about the scheme. They agreed that it was sensible to get new members involved however the six-year membership term would result in that wealth of knowledge being lost from the group, and all at the same time. Recommendation was made to consider the staggering of longer-term members leaving the group. Chris Ingle agreed and would discuss with the review team. Kirsty Brown also confirmed that representatives could get nominated again after standing down for a term and that family members could be nominated.

10.2 High water levels in Lake Rotorua

Mark Townsend reported that Lake Rotorua has been experiencing its highest sustained levels since 2017 following heavy rainfall in June and July. The Ohau Channel stoplogs were removed in early June to allow more water to flow out of the lake however with continued rainfall the high levels will be sustained and could even rise further.

10.3 Communications update

Laura Boucher and Pete Hennessey from the Communications Team introduced themselves and discussed working with the Advisory Group to help provide information that would be beneficial to their community. A quick round table was held to find out what was working, and what members would like to see more of. Members praised the Rivers and Drainage Assets Team for a clear agenda and comprehensive package of information for the meetings. They also requested that information was timely, relevant, and provided in a way that they could share with their communities.

11 Member's forum

Richard Weld asked about pump caretaker payments. The Diagonal pump station caretaker does a lot of work to support the drainage system and has not been receiving the caretaker payment.

ACTION:

Staff to investigate Diagonal Drain pump station caretaker fee not being paid.

Meeting closed at 12:15 pm

Action Sheet

Kaituna Catchment Control Scheme Advisory Group Meeting

31 August 2022

Action	Person Responsible	Completed	Comment
1 Finance team to provide an explanation of any reserve money spending in future reports.	Kirsty/Finance	23/02/23	Commentary included in the latest Finance Report
2 Staff to provide members with an outline of the monitoring programme in place for the best practice drain upgrades happening in the focus catchments.	Jo	7/10/22	Email sent to members on 7/10/22 Reference A4223800
3 Staff to investigate the Bell Road C pump station being shut down for maintenance during a recent rain event.	Kerry	25/11/22	Email sent to members on 25/11/22 Reference A4258579
4 Staff to investigate the Diagonal Drain pump station caretaker fee not being paid.	Kerry/Bruce	27/02/23	Diagonal Drain caretaker fee will be included with the annual caretaker payment round in March.

Kaituna Catchment Control Scheme

Capital Works Programme 2022-2023

The following table outlines the Kaituna Catchment Control Scheme capital work programme for 2022-2023

Budget figures are from the Annual Plan 2021-2031 and include approved carry forwards from the previous financial year.

Kaituna Catchment Control Scheme Capital Budget for 2022-2023 is \$2,078,394

Project name and background	Annual Plan Budget 2022-2023	Update	Milestones 2022-2023
<p>Kaituna Pump Replacements</p> <p>As identified in the Asset Management Plan pumps need replacement or upgrading when close to end of life. Pump condition assessments are underway to prioritise replacements. Fish passage regulations require that replacement pumps be fish friendly.</p> <p>The following pumps are scheduled for replacement in 2022-2023:</p> <ul style="list-style-type: none"> • <u>Bell Road A and B pump stations</u> – replace submersible pumps with fish friendly pumps. • <u>Maketū Pump Station</u> <ul style="list-style-type: none"> - replace submersible pump with fish friendly pump. - undertake condition assessment (including underwater inspection) of the outlet structure to assess damaged concrete and sheet piling. 	\$642,178	<p>Investigation and research are currently underway.</p> <p>It is expected that the team will need to work directly with suppliers to develop a pump that will suit BOP conditions.</p> <p>It is unlikely that pumps will be replaced with fish friendly versions this financial year.</p> <p>Maketū Pumpstation works are yet to be awarded.</p>	Pump station repairs and pump replacements completed by June 2023

Project name and background	Annual Plan Budget 2022-2023	Update	Milestones 2022-2023
<p>Kaituna Pump Station Electronic Upgrades</p> <p>Project involving progressively upgrading pump station electronics.</p> <p>In 2022-2023 the focus is upgrades for Armer's and Marshall's temporary pumps, and Bell Road A and B pump stations.</p>	<p>\$108,306</p>	<p>Some minor works have been completed on the telemetry to Armers and Marshalls Pumps.</p> <p>Remaining upgrade works are on hold until fish friendly pump options are known and therefore are unlikely to be completed this financial year.</p>	<p>Complete electronics upgrade and remote telemetry installation (Ricardo Remote Monitoring System) by June 2023</p>
<p>Ford Road Pump Station Upgrade</p> <p>The upgrade involves additional pump capacity at the Diagonal Drain pump station located upstream of the Ford Road site and includes:</p> <ul style="list-style-type: none"> • A new pump station adjacent to Diagonal Drain pump station • Decommissioning of the existing gravity outlet and gates at Ford Road • Widening 1600 metres of existing drains and upgrading x2 culvert crossings <p>Regional Council received early indication from Rangiorua Business Park that despite their best efforts to manage stormwater on-site, the development will likely result in adverse downstream effects due to the additional volume being created. Mitigating the additional volume within the low-lying land is likely to require increased pump capacity. Rangiorua Business Park is currently undertaking detailed modelling to quantify the required mitigation measures. It is likely that they will be seeking additional pumping capacity at Diagonal Drain pump station.</p> <p><i>There is budget for the physical work components of this project in 2023-2024</i></p>	<p>\$571,910</p>	<p>Project delayed</p> <p>Modelling information has been received however further discussions are planned in March to confirm requirements.</p>	<p>Project delayed</p> <p>Once third-party modelling has been received (due in November 2022), the project team will regroup and confirm requirements moving forward.</p> <p>These are anticipated to be:</p> <ul style="list-style-type: none"> • Finalise design amendments by March 2023 • Lodge resource consent application by June 2023 • Complete detailed design by August 2023
<p>Upper Kaituna Stopbank Modelling</p> <p>This modelling is part of the Capacity Review of the Rotorua Streams (Upper Kaituna) – Waiteti Stream, Ngongotahā Stream, Waiowhero Stream, Utuhina Stream, Puarenga Stream,</p>	<p>\$51,000</p>	<p>Hydraulic modelling of the Puarenga is well underway and the Waingaehe modelling has now commenced.</p> <p>Hydrology completed for the Waiteti</p>	<ul style="list-style-type: none"> • Hydraulic modelling of the Puarenga and Waingaehe and streams completed by June 2023

Project name and background	Annual Plan Budget 2022-2023	Update	Milestones 2022-2023
<p>Waingaehe Stream.</p> <p>Hydrological modelling has been completed for the Puarenga, Waingaehe and Waitetī streams.</p> <p>The focus for 2022-2023 is on completing hydraulic modelling for the Puarenga, and Waingaehe streams, and hydrological modelling for the Waitetī and Waiowhero Streams.</p>		and Waiowhero Streams.	<ul style="list-style-type: none"> Hydrological modelling for the Waitetī and Waiowhero Streams completed by June 2023
<p>Kaituna Mole Upgrade</p> <p>The Kaituna Mole is a river mouth control structure located at the mouth of the Kaituna River. Remedial work providing improved corrosion resistance and concrete capping necessary to maintain the integrity of the existing structure was completed December 2021.</p> <p>Carpark development (including landscaping and toilets) is a Western Bay of Plenty District Council led project with some funding provided by Central Government.</p>	\$250,000	<p>Carpark sealing completed</p> <p>Carpark has been sealed by WBOPDC.</p> <p>Toilet installation delayed by cyclone Gabrielle impacts.</p> <p>Minor site landscaping remaining.</p>	<ul style="list-style-type: none"> Carpark scheduled for sealing in October 2022 Project complete by June 2023
<p>Te Puke Stormwater</p> <p>Stage 1 and 2 modelling work to quantify the extent to which development in Te Puke is affecting the Kaituna Scheme has been completed by DHI, with assistance from Blue Duck Limited.</p> <p>This project started in 2019-2020 with option modelling scheduled for completion in 2022-2023 and resulting mitigation works programmed for 2023-2024.</p> <p><i>There is also budget for this project in 2023-2024.</i></p>	\$115,000	<p>WBoPDC workshop completed.</p> <p>Mitigation investigation work on hold pending adjustment to model.</p>	<p>Option modelling completed by June 2023</p> <p>Detailed design for mitigation works completed by June 2024</p>
<p>Ngongotahā Stream Flood Mitigation – Civil Works</p> <p>This project involves implementing the recommendations of the independent Ngongotahā Stream Review and includes:</p> <ul style="list-style-type: none"> Raising Western Road (Rotorua Lakes Council) Constructing new stopbanks alongside Brookdale Drive and Streamdale Place 	\$340,000	<p>Geotechnical investigations for the stopbanks works are scheduled for March.</p> <p>2D modelling to inform the high flow bypass consent is underway and</p>	<ul style="list-style-type: none"> High flow bypass consent application lodged by April 2023 Land access agreements for high flow bypasses by March 2023 Land access agreements

Project name and background	Annual Plan Budget 2022-2023	Update	Milestones 2022-2023
<ul style="list-style-type: none"> Constructing high flow bypasses on stream bends Constructing a southern bypass channel <p>In 2022-2023 the focus is on construction of the high flow bypasses and gaining landowner approval for the remaining work.</p> <p><i>Central Government Climate Resilience Funding has been approved for this project.</i></p>		<p>draft results are expected in March.</p> <p>Three of five land access agreements are completed.</p>	<p>for Southern bypass by June 2023</p> <ul style="list-style-type: none"> Enabling works (Western Road utility relocation) by June 2023 High flow bypass construction completed by June 2023 Stopbank detailed design by August 2023
<p>Kaituna River Stopbank</p>	<p>Within Regional Flood Risk Coordination budget</p>	<p>14 sites selected for investigation. Preliminary geotechnical investigations underway.</p> <p>Scoping for more detailed investigations nearing completion.</p>	<ul style="list-style-type: none"> Geotechnical Investigations completed
<p>Bell Road Modelling</p> <p>Modelling has been undertaken to determine whether the drainage level of service is being met and what mitigation options could be utilised to maintain the level of service.</p> <p>Modelling shows that the level of service is not being met in large areas. Mitigation options do not reduce the areas significantly and climate change effects would be difficult to manage into the future.</p> <p>Recommendation is to reduce the level of service and retire farmland as it becomes uneconomical to farm.</p> <p>Climate Change modelling was completed in December 2021. Decision has been made to rerun the modelling using new ground level information (Lidar) which will improve the reliability of the results.</p>	<p>Unbudgeted</p>	<p>The updated modelling report that includes climate change effects has been received and reviewed by staff. It is now back with the modeller for amendment.</p>	<ul style="list-style-type: none"> Rerun climate change Modelling with latest ground level information by March 2023

Kaituna Catchment Control Scheme

Maintenance Programme 2022-2023

The purpose of this report is to provide an overview of the Kaituna Catchment Control Scheme maintenance work programme for 2022-2023.

Maintenance work programme

Maintenance works comprise activities that ensure the drainage and river flood protection networks are operational and providing the agreed level of service. These activities are programmed through the Asset Management Plan considering asset lifecycle, and maintenance and inspection schedules. Maintenance programme budgets are set during the Long Term Plan and Annual Plan processes.

Scheme maintenance work includes:

- Drain maintenance - desilting, de-weeding, weed spraying, water quality improvements.
- Pump stations - operation, inspections, and maintenance.
- Culvert and floodgates - inspections and maintenance.
- Stopbanks - inspections, maintenance, repairs, pest control.
- River maintenance - pest plant control, beach shaping, habitat enhancement works.
- Erosion control – rock refurbishment, edge planting, trenched willows, willow maintenance.
- Annual flood damage repairs.

Key projects in 2022-2023:

- Borough and Seddon Street Drain improvements including upgrading and modifying multiple floodgate structures. *Borough and Seddon Street Floodgates have been upgraded.*
- Lowland drains riparian works in conjunction with Land Management staff implementing best practice drain shaping, fencing and riparian planting following Ministry for the Environment/Dairy NZ guidelines. Approximately 2.8 km of fencing and planting planned along Singleton's Gravity Drain, Tapsell's Drain, Crossan's Drain and Main Outlet Drain. Crossan's and Main Drain completed.
- Lowland drains culvert installations to improve excavator access and efficiency for drain maintenance. 26 of the 47 installed.
- Kaituna River willow and vegetation maintenance over approximately 4 km within the area from Kenana Road to McMeeking Road (approximate river distance 11 km to 16 km). Not completed
- Ongoing clearing of pest plants and opening of waterways along the Rotorua urban streams. Ongoing and responding to a large volume of windfall trees from weather events.
- Ōhau Channel stoplog improvements and edge protection repairs. Stoplogs upgraded. Bank stabilization still to complete.
- More an unexpected work stream than a project but warm wet conditions have meant huge volumes of weed growth in the scheme, additional hours of weed management in canals and at pumpstations. Also, a huge commitment to running temporary and diesel pumps with an estimated 40,000 liters of diesel delivered by Ute/man to various temporary pumps.

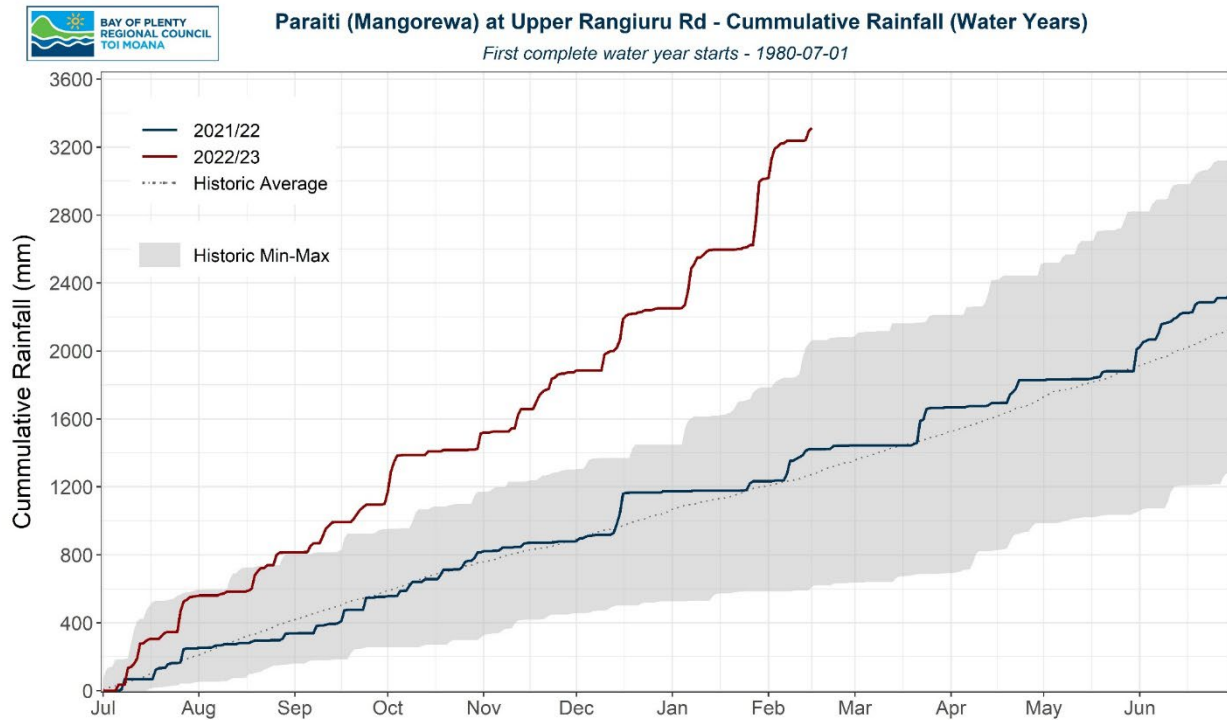
So, how wet is wet?

The Bay of Plenty has had a wet winter season and start to 2023, but just how wet has it been and is it unusual?

2022–2023 Rainfall Statistics

The following graphs provide a good representation of the exceptional and consistent rainfall that has occurred across the wider Rotorua/Kaituna River catchment this year. The graphs include historic rainfall since the respective sites were established (Paraiti River (Mangorewa) since 1980, Kaituna at Te Matai since 1990, and Rotorua at Whakarewarewa since 1901).

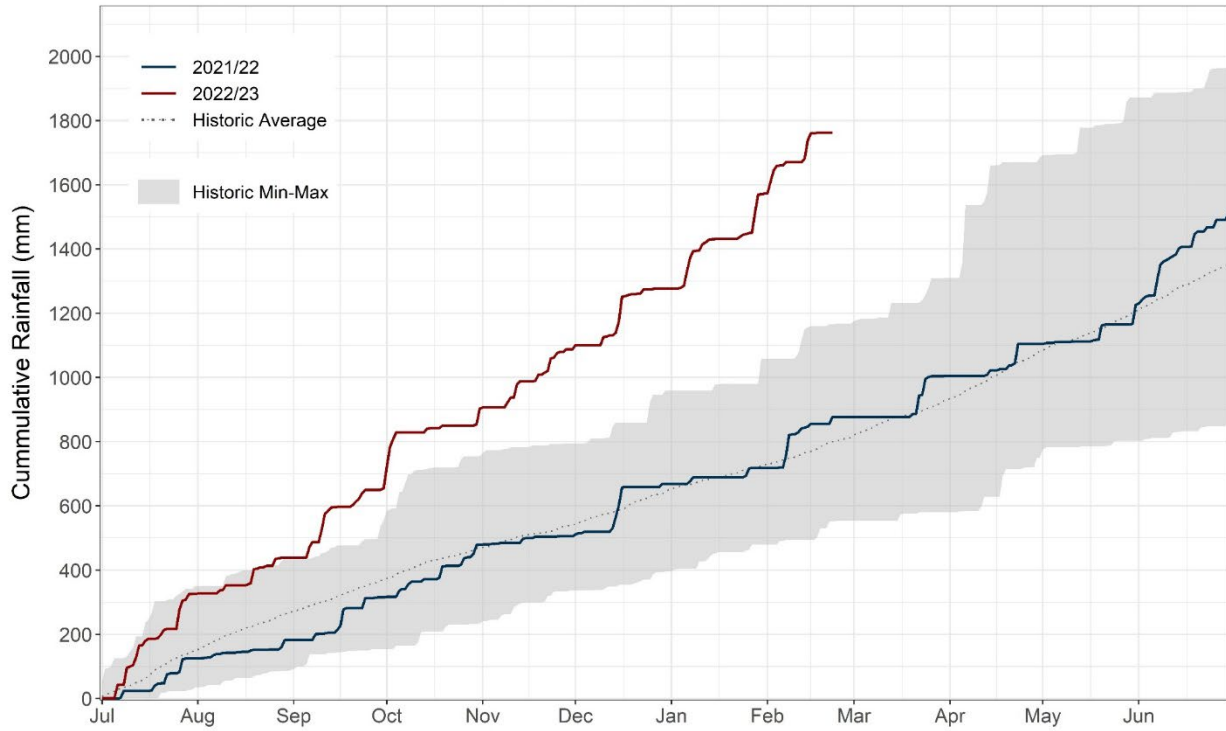
The light grey shaded portion of the graph represents the historic range of maximum and minimum accumulated rain to that day since the site was first established. The red line is the current year's rainfall record which, at each site, exceeds historic maximum rainfall by a significant margin. The Paraiti rainfall to date this year already exceeds the historic maximum annual rainfall recorded, with four and a half months remaining to year end.





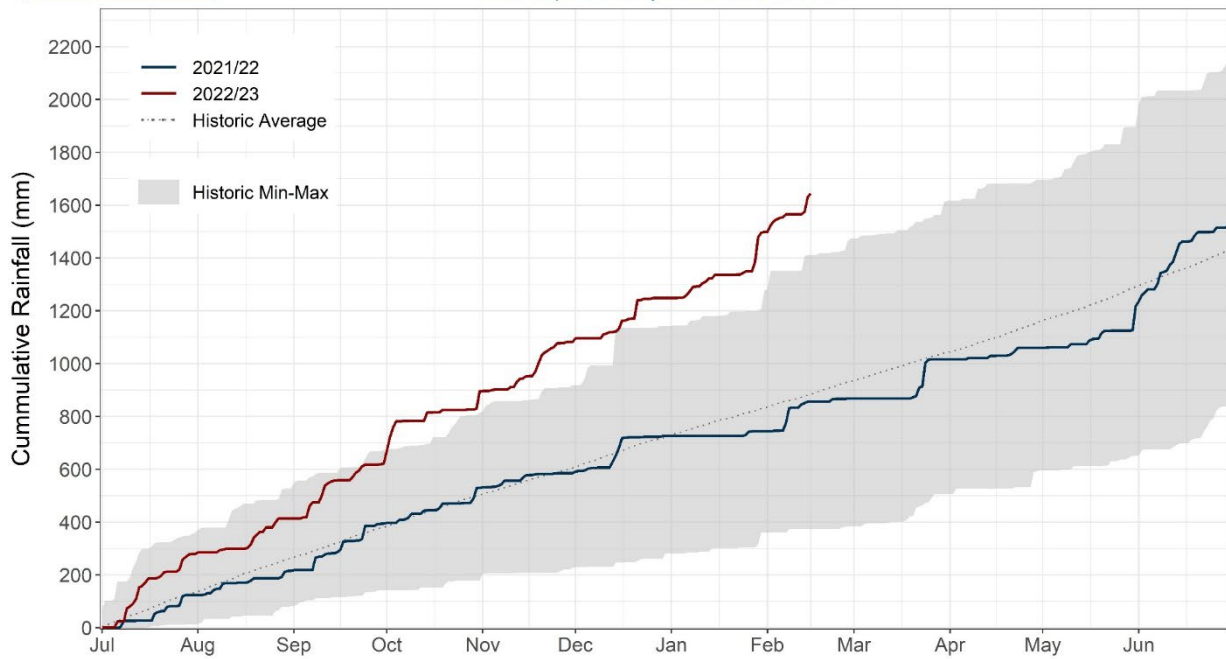
Kaituna at Te Matai - Cumulative Rainfall (Water Years)

First complete water year starts - 1990-07-01



Rotorua at Whakarewarewa - Cumulative Rainfall (Water Years)

First complete water year starts - 1901-07-01



Kaituna Catchment Control Scheme Pump Statistics

From 1 June 2022 to the of writing this report (20 February 2023) the Bell Road C's two submersible pumps ran for a total of 2,130 hours and 15 minutes or averaging just over nine hours per day. For the same period 1 June 2021 to 20 February 2022 the Bell Road ran for 7 hours 18 minutes.

The Armer's and Marshall's pumps were commissioned in early 2019 and in the 40 months until 1 June 2022 they had run a total of 1278 hours combined. At their last service in February 2023 their combined hours sit just under 5000. So, 3,700 hours in the last seven and a half months. In addition, there has been mobile pumps stationed at Armer and Marshall pumps as well as the Seddon Street/Lawler Drain outlet.

Two mobile pumps were also established at Kopuaroa Pump Station after the Auckland Anniversary weekend event which caused overflowing of Raparapahoe Canal into the Kopuaroa Catchment.

Year to date (YTD) diesel consumption for Bell Road C pump station and the mobile pumps has cost approximately \$162,000. YTD electrical costs for Ford Road, Diagonal, Bell Road A and B and the Kopuaroa Pumpstation in the Lower Kaituna is at \$116,114 +GST (July-February). In the 21/22 financial year the scheme spent \$45,869 +GST over the 12 months.

Maintenance programme budget 2022-2023

A budget summary table for the Kaituna Catchment Control maintenance programme is shown below followed by a more detailed breakdown of the programme with estimated costs by type of work. The annual budget figures include operational costs only and exclude non-operational costs (e.g., debt servicing and infrastructural asset insurance).

Kaituna Catchment Control Scheme Maintenance Works Programme 2021-2022		
Lower Kaituna		Annual Budget
	General	\$17,000
	Flood Damage Allowance	\$181,000
	Reach 1 (River mouth to Te Matai)	\$124,900
	Reach 2 (Te Matai to Paraiti River)	\$46,600
	Reach 3 (Canals and Drains)	\$308,600
	Pump Station Maintenance	\$254,500
	TOTAL LOWER KAITUNA	\$932,600
Upper Kaituna		
	General	27,000
	Flood Damage Allowance	37,300
	Reach 4 (Rotorua Streams)	\$120,400
	Reach 5 (Ōhau Channel)	\$77,800
	TOTAL UPPER KAITUNA	\$262,500
KAITUNA SCHEME TOTAL		\$1,195,100

Summary of RiverSpace Drainage Performance Investigation

The drainage area comprising Seddon Street, Lawler and Borough Drains has been particularly impacted by repeat rainfall events since June 2022. To investigate the performance of the drainage network in that area, BOPRC contracted RiverSpace Ltd (Roger Waugh) to investigate and make recommendations for improvements where appropriate.

The investigation report is quite technical and detailed. A summary of the report content follows:

The area covered by the investigation is shown in the map below:

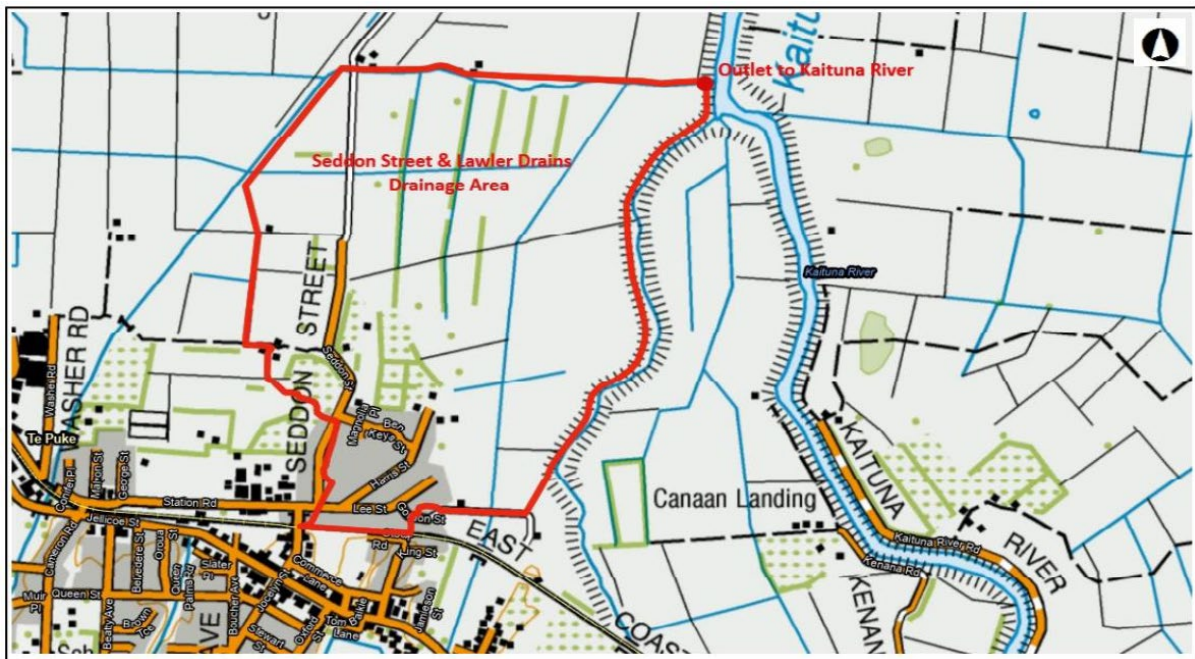


Figure 1. Seddon Street and Lawler Drainage Area

2022-2023 Rainfall Data for Marshall Farm Site:

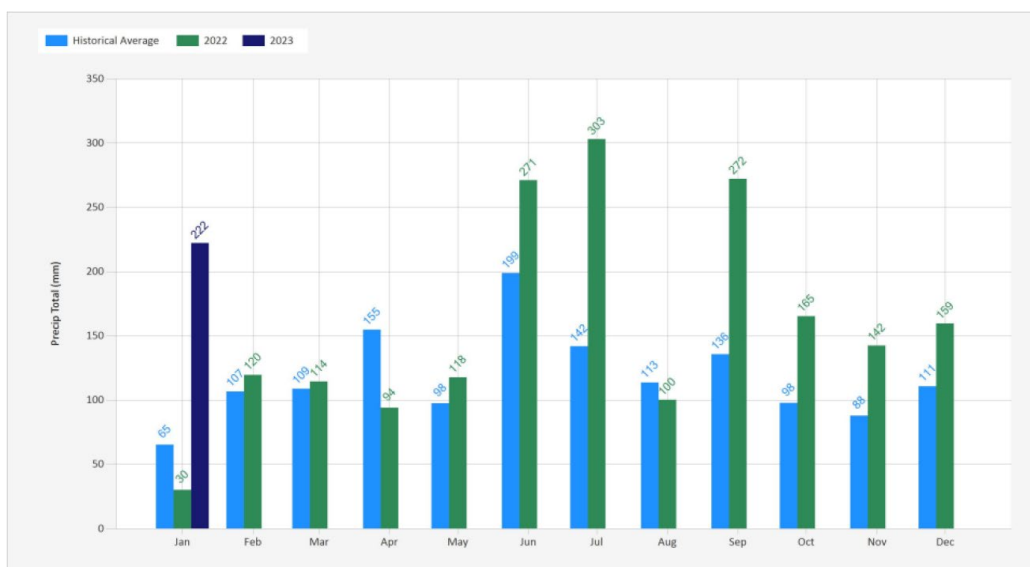


Figure 4. Marshall's Farm - Monthly rainfall totals 1 January 2022 to 28 January 2023



Lawler Drain: Pasture damage and elevated drain water level approximately 11 days following previous significant rain event. Photo C. Armer 29-01-2022.

Solutions and Suggested Improvements (from RiverSpace report):

Follow up actions inserted in italics:

- 1 If the low-lying land is to stay in dairy day to day pumping will be required. As an indication to service just the Lawler Drain contributing to the current outlets, a pump of 700l/s will be required to meet the 37.5mm/day drainage coefficient. If the higher land currently going to Seddon Street Drain through other floodgated outlets was included, a pump of 950l/s will be required. These pump design capacities do not include any overflows from Borough Drain.

Follow-up action (February 2023)
A new pump station at the outlet of Seddon Street Drain, with a discharge capacity of 950 litres per second, is being designed and built as quickly as possible. The pump station will be designed to also provide 'day to day' drainage to provide appropriate drainage freeboard.

- 2 The Borough Bypass Drain should be further investigated to confirm it is not contributing water in under-design events to the low-lying areas of the Lawler Drain area.

Follow-up action (February 2023)
RiverSpace has been contracted to carry out this investigation.

- 3 A HDPE floodgate should be installed on the Seddon Street outlet to improve the gravity drainage by allowing the floodgate to open earlier and stay open longer. Outflows will also increase as the gate will not impede flow as much when the gate is open.

Follow-up action (February 2023)
Replacement HDPE floodgate is underway.

- 4 Areas where water is contributing to either Lawler or Borough Drains from the higher ground, especially urban and industrial, should be investigated to confirm they cannot be exited to the Managh's Drain, Ohineangaanga Canal or Kaituna River earlier to reduce ponding on low lying land.

<i>Follow-up action (February 2023)</i>
<i>RiverSpace has been contracted to carry out this investigation.</i>

- 5 The probe levels on the Armer pump should be reviewed to provide acceptable drainage for the Armer Drain area, compared with land levels, the settings should be start 0.5m stop 0.35m (Moturiki).

<i>Follow-up action (February 2023)</i>
<i>Completed.</i>

- 6 These low-lying areas of land should be aligned with the outcomes and decisions from the Te Puke stormwater investigation and mitigation project due for completion June 2023. This project should include long term solutions that may include creating more floodable areas and change of land use.

<i>Follow-up action (February 2023)</i>
<i>Progressing as part of the joint WBOPDC/BOPRC Te Puke stormwater investigation project.</i>

- 7 As mitigations are introduced the rating classification will need to address changed benefits and rating charges.

<i>Follow-up action (February 2023)</i>
<i>An update regarding Stage one of the rating classification review is included in General Business of the March 2023 Advisory Group meeting. Stage two, that includes this drainage area, will be commenced when the Te Puke stormwater investigation is completed.</i>

Bay of Plenty Regional Council - Toi Moana

Statement of revenue and expense: Kaituna Catchment Control Scheme

For the 6 months ending 31 December 2022

Line		Year to date		Variance		Variance commentary	Annual		Variance	
		Budget	Actual	\$	Variance indicator		Budget	Forecast	\$	Variance indicator
		\$000								
Operating revenue by class										
1	General rates	123	123	0	-		246	246	0	-
2	Targeted rates	1,196	1,193	(3)	Lower		2,387	2,384	(3)	Lower
3	External interest income	2	56	54	Higher	Higher interest rates	5	58	54	Higher
4	Other revenue	16	0	(16)	Lower	DOC Kaituna wetland (grant in lieu of rates) due	32	30	(2)	Lower
5	Investment income	188	188	0	Higher		376	376	0	Higher
6	Total revenue	1,525	1,560	35	Higher		3,046	3,094	48	Higher
Operating expenditure by class										
8	Other expenses	1,151	537	(614)	Lower	Higher fuel and electricity costs due to the adverse weather.	2,304	763	(1,541)	Lower
9	Contract work	364	163	(201)	Lower	Weather delays	728	856	128	Higher
10	Depreciation and Amortisation	209	192	(17)	Lower	Lower depreciation due to lower capital costs in previous years.	418	401	(17)	Lower
11	Subtotal - expenditure	1,724	892	(832)	Lower		3,450	2,020	(1,430)	Lower
12	Net overhead charges and recoveries	637	625	(12)	Lower		1,268	1,256	(12)	Lower
13	Total operating expenditure	2,361	1,517	(844)	Lower		4,718	3,276	(1,442)	Lower
14	Total operating surplus (deficit)	(836)	43	879			(1,672)	(182)	1,490	

Bay of Plenty Regional Council - Toi Moana

Statement of revenue and expense: Kaituna Catchment Control Scheme

For the 6 months ending 31 December 2022

	Year to date		Variance		Variance commentary	Annual		Variance		
	Budget	Actual	\$	Variance indicator		Budget	Forecast	\$	Variance indicator	
	\$000					\$000				
15	Capital revenue by class									
16	Capital funding	511	449	(62)	Lower	Final payment received for insurance recoveries from 2017 flood event	984	459	(525)	Lower
17	Total capital revenue	511	449	(62)	Lower		984	459	(525)	Lower
18	Total surplus (deficit)	(325)	492	817			(688)	277	965	
19	Capital expenditure by project									
20	Bell Road Pump Station	321	0	(321)	Lower	Pumpstation repairs and pump replacements to be completed by June 2023.	642	642	(0)	Lower
21	Kaituna pump station electronic upgrades	54	0	(54)	Lower	To be completed by June 2023.	108	72	(36)	Lower
22	Ford Road Pump Station	286	0	(286)	Lower	Project delays	572	570	(2)	Lower
23	Te Puke Stormwater project	0	0	0	Higher	Carry forward from 2021/22 of \$115,000	0	115	115	Higher
24	Utuhina stream stopbanks	0	9	9	Higher		0	9	9	Higher
25	Kaituna Mole	0	0	0	-	To be transferred to WBOPDC by year end for carpark and toilet. Carry forward from 2021/22 of \$250,000.	0	250	250	Higher
26	Upper Kaituna stopbank modelling	0	8	8	Higher	Carry forward from 2021/22 of \$51,000	0	51	51	Higher
27	Ngongotaha Stream Civil Works	0	304	304	Higher	Carry forward from 2021/22 of \$340,000	0	340	340	Higher
28	Total capital expenditure	661	322	(339)			1,322	2,050	727	

Bay of Plenty Regional Council - Toi Moana

Statement of revenue and expense: Kaituna Catchment Control Scheme

For the 6 months ending 31 December 2022

	Year to date		Variance		Variance commentary	Annual		Variance	
	Budget	Actual	\$	Variance indicator		Budget	Forecast	\$	Variance indicator
	\$000					\$000			
30	Opening Balance \$000		Closing Balance \$000						
		Movement \$000							
31	Flood Damage Reserve	1,889	160	2,049	Funds available				Annual contribution to flood damage
32	Asset Replacement Reserve	1,420	(44)	1,376	Funds available				Loan repayments
33	Works Reserve	827	614	1,441	Funds available				80% contribution of underspend
34	NZTA Reserve	615	19	634	Funds available				Quarterly interest received
35	Remediation Reseerve	500	16	516	Funds available				Quarterly interest received
36	Total Reserves	5,251	765	6,016					
37	Loans								
	Opening Balance \$000		Closing Balance \$000						
38		Movement \$000							
39		8,911	(580)	8,331					
40	Asset Valuation								
	Balance 01/07/2021 \$000		Balance 01/07/2022 \$000						
41		Movement \$000							
42		77,297	10,347	87,644					

MEMORANDUM



To: Kaituna Catchment Control Scheme
Advisory Group

From: Kirsty Brown

Date: 24 February 2023

Rivers and Drainage Assets Manager

File Ref:

Subject: Upcoming review of Council's Long Term Plan, Rivers and Drainage Assets Management Plan and Infrastructure Strategy

This report seeks feedback from advisory group members on how they would like to contribute to the upcoming three yearly review of Council's Long Term Plan (**LTP**), Rivers and Drainage Asset Management Plan (**RADAMP**) and Infrastructure Strategy (**IS**).

Background

The LTP is Council's key strategic document. It sets out Council's priorities for the next ten years, including what will be done, associated costs and how it will be funded. The LTP is reviewed every three years to make sure it remains relevant and accurate, and that Council can continue to meet the current and future needs of our communities. You'll also be aware of the Annual Plan, this is primarily a budget update of what is contained in the LTP for a given year.

Alongside the LTP, the RADAMP and the IS are also reviewed.

While the LTP outlines the strategic direction of Council (vision, community outcomes, services, and activities) the RADAMP provides the framework to manage and maintain infrastructure assets necessary to achieve the flood protection and control services identified in the LTP. The RADAMP has a 50-year outlook.

The IS for Council's Flood Protection and Control activity is a requirement of the Local Government Act. The IS sits within the LTP, and identifies significant flood protection and control infrastructure issues, options for managing those issues and the implications. The IS covers a 30-year period.

Asset Management Planning 2023/24

As highlighted during the September 2022 round of advisory group meetings, a central theme for our next LTP and RADAMP review will be supporting our communities to be more sustainable and resilient now and into the future.

This requires a shift in our thinking, particularly for ongoing and future flood and erosion control works in both rural and urban areas, focusing on enabling river catchments to behave more naturally.

This will likely change the way river works are managed, with a focus on adaptability, maximising natural river process while continuing to meet flood protection needs. Against this background, clear levels of service, 'trigger' guidelines and scales of intervention will be needed to support this change.

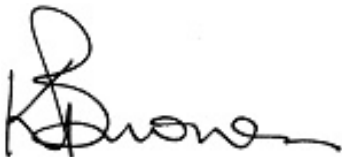
Indictive timeline

- 6 September 2023 – Kaituna Catchment Control Scheme Advisory Group meeting.
- December 2023 – Council's adoption of draft LTP activity plans, asset management plans and budgets for audit.
- January 2024 – Audit NZ review.
- March 2024 – full public consultation.
- May/June 2024 – Council deliberations and adoption of Final LTP.
- 1 July 2024 – LTP becomes operational.

Advisory Group Members Input

During the previous LTP, RADAMP and IS review in 2020-21, an additional group meeting was held in August to enable members an opportunity to provide feedback on proposed changes and budgets. I'm now seeking feedback from members if they would prefer:

- a) Separate meeting in either July or August given the significance of the items being considered as part of the review process
- b) Additional time set for this purpose during the September meeting.



Kirsty Brown
Rivers and Drainage Assets Manager

MEMORANDUM



To: Kaituna Catchment Control Scheme
Advisory Group

From: Kirsty Brown
Rivers and Drainage Assets Manager

Date: 21 February 2023

File Ref:

Subject: General Business Update

1 Minor Changes to Kaituna Rating System

As a result of Simon Harris' (LWP Ltd) review of the Kaituna Catchment Control Scheme rating system, minor rating modifications are to be included in the 2022/23 Annual Plan rate strike.

In summary, the changes are:

- Bell Road/Papamoa: The site ratio in the B5 area should be increased to allow for the increased benefit associated with its reliance on the Bell Road drainage scheme.
- Ngongotaha: Reclassify areas protected by engineering works in the upper Ngongotaha.
- Utuhina: Adjust the boundary to incorporate the Pukehangi Heights subdivision consented area.
- Rotorua streams: Reclassify land adjacent to the Ngongotaha, Utuhina, and Puarenga to provide for funding of stream maintenance and flood mitigation benefits.

As agreed, the Te Puke portion of the review was put on hold until the optioneering process has been completed. This would enable accurate information to support modifications to the rating classification for this area.

2 Catchments Update - Jackson Efford, Principal Advisor - Land and Water

2.1 Lawrence Oliver Park Wetland and Managh's Drain Project

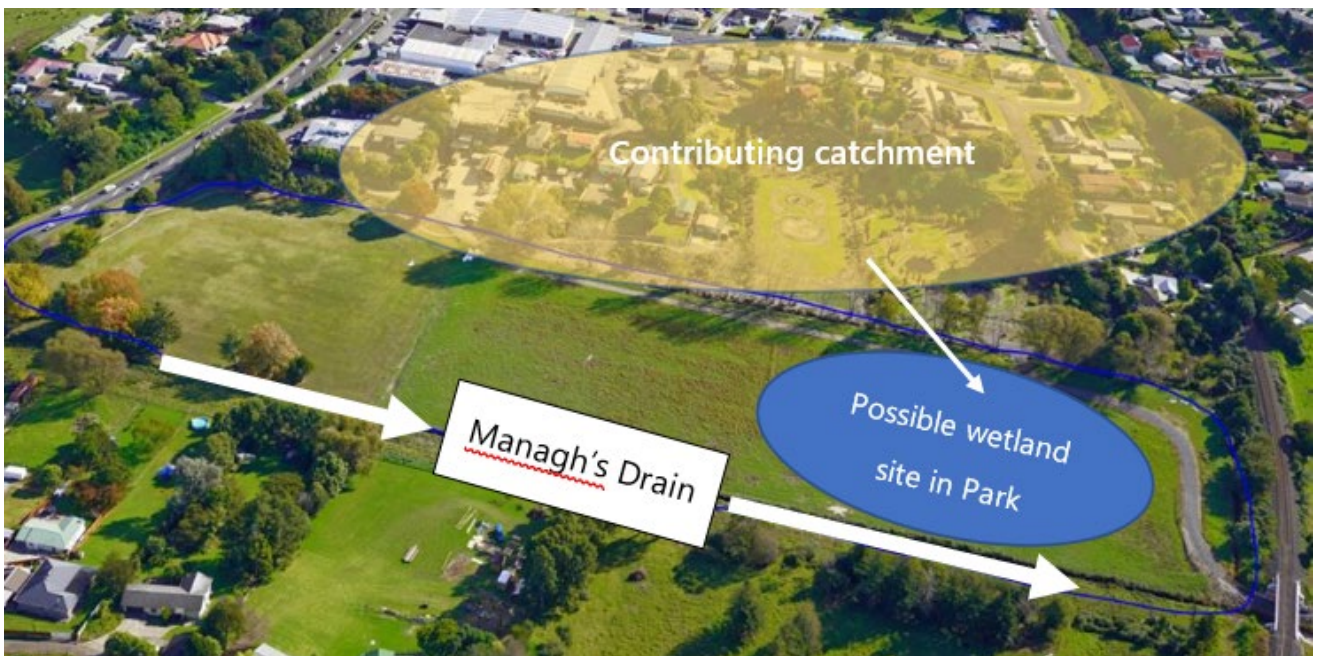
A new constructed treatment wetland project is being planned for the Lawrence Oliver Park in Te Puke. The park is owned by Western Bay of Plenty District Council, but is bordered by the scheme's Managh's Drain on the eastern side.

The park is very low-lying and flood prone, with the drain regularly overtopping into the park during flood flows. The Te Ara Kahikatea Pathway Society walkway passes around the park, making it the ideal location for a new publicly accessible wetland.

The project would provide some water quality treatment benefits, treating run-off from the adjoining commercial and residential areas, as well as valuable biodiversity habitat and recreation/amenity/cultural values.

As part of the project, it is proposed that the reach of Managh's Drain alongside the park be enhanced to a much more natural state in line with best practice drain upgrade work, by introducing more gentle batters and some minor sinuosity, along with native planting (taller vegetation on one side with shorter vegetation on the other side to allow for maintenance).

Initial discussions are underway with the adjoining landowner to Managh's Drain (opposite the park) and Council's Rivers and Drainage Operations and Engineering staff to ensure full scheme function is maintained. The wetland and Managh's Drain enhancement would likely increase flood storage capacity. The project will be funded in partnership with Council's Land Management, team Western Bay of Plenty District Council and community funding.



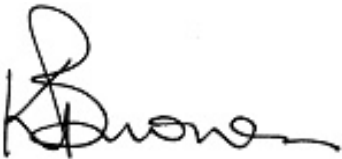


2.2 Ford Road and Waitepuia Focus Catchments

Land Management work is continuing successfully across the Ford Road and Waitepuia Focus Catchments as per the attached November catchment newsletter update. Unfortunately the number of new enquires for support has decreased.

Subsequently, Focus Catchment support is now also being offered across the wider Kaituna Catchment (outside of Ford Road/Waitepuia) for those higher-risk properties where water quality improvements can be achieved with land management actions such as new stock exclusion fencing from waterways/wetlands/bush areas, and retirement and planting of steeper erosion-prone or marginal land.

For any new enquires for Land Management support in the Kaituna please contact anna.dawson@boprc.govt.nz or michael.tyler@boprc.govt.nz. To date over 69,000 native plants and 7 km of new stock exclusion fencing have been completed with landowners in the Ford Road/Waitepuia Focus Catchment area, with another 13 km of fencing and ~100,000 plants planned for this year through signed Environmental Programme Agreements.

A handwritten signature in black ink, appearing to read 'K Brown', with a stylized flourish above the name.

Kirsty Brown
Rivers and Drainage Assets Manager

Ford Road / Waitepuia catchment update

November 2022



Bay of Plenty Regional Council assistance

The Ford Road / Waitepuia sub-catchments are several degraded catchment areas that have been added to Bay of Plenty Regional Council's focus catchment programme.

The goal of this programme is to restore the health of the ecosystems within the sub-catchment areas and that of Te Awa o Ngātoroirangi/Maketū Estuary (receiving environment), which the catchment drains into.

To achieve this goal, Regional Council's land management team have been working closely with landowners in the sub-catchments, providing funding grants, technical advice and practical assistance. Regional Council will continue to offer this support to rural landowners in the Ford Road / Waitepuia sub-catchments into 2022/23.

Works and support from Regional Council could include fencing, planting, wetland development, farm environment planning, nutrient budgeting, and erosion control. These actions can help improve farm productivity and value, and help to reduce the run-off of sediment, bacteria and nutrients from your land.

Learn more about the project on our website boprc.govt.nz/our-projects/waitepuia-catchment or contact the land management officers for the catchment:

Michael Tyler, P. 0800 884 881 (ex 8522)
E. Michael.Tyler@boprc.govt.nz

Anna Dawson, P. 0800 884 880 (ex 8323)
E. Anna.Dawson@boprc.govt.nz



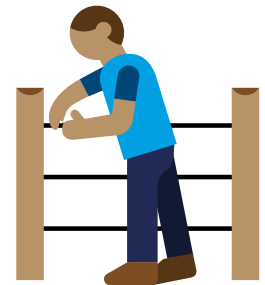
Aerial image of lower Waitepuia sub-catchment looking south (upstream).

Information of works

Completed to date:



69,260
natives planted



7.1 km
of fencing

Catchment works were implemented using local contractors and suppliers.

Planned works:

- 13.8km of fencing
- 106,900 natives to be planted
- Treatment wetland construction: One built (75%) and another planned for 2022/2023.

These figures do not include Te Pourepo o Kaituna, Whakapoukorero, Papahikahawai, Ford Island, Otaiparia and Te Pā Ika projects.



Progress is underway at the Te Arawa Lakes Treatment Project.

TALT Treatment Wetland

In the 1800s, Kawa swamp dominated the lowland areas of Maketū. Over time, however, the rich swamp lands were sold and drained for agricultural and pastoral use.

Within the lower Kaituna catchment, remnant wetlands now represent less than 4% of the historical 6,500ha of Kawa swamp that covered the floodplain. Restoring new wetlands and enhancing those that remain is important, as wetlands play a key role in improving the quality of land and water.

A new wetland is being constructed within the Ford Road / Waitepuia sub-catchments, as part of Regional Council's focus catchment programme. The programme aims to reduce land run-off, and protect rivers and streams around the Bay of Plenty, to improve the water quality within priority areas that have been identified as most at risk of degradation.

This wetland is being developed to treat surface drainage and run-off from the above 49ha sub-catchment area. The wetland will help filter contaminants (such as nitrogen and phosphorus) that are entering waterways in the focus catchment. The primary goal is to restore the catchment health, and ultimately reduce the volumes and concentrations of these contaminants entering the downstream area of Te Awa o Ngātoroirangi / Maketū Estuary.

As of October 2022, earthworks to establish the wetland area are 75% complete. This wetland is a joint project between Te Arawa Lakes Trust, and Regional Council land management and rivers and drainage teams.

BMP Drains

Healthy drains (fenced and with low sediment build up) can be of huge benefit to your land and the local ecosystem. They can help reduce the amount of contaminants lost in waterways, optimise soil moisture, improve pasture production and stock health, and provide habitat for fish and insects.

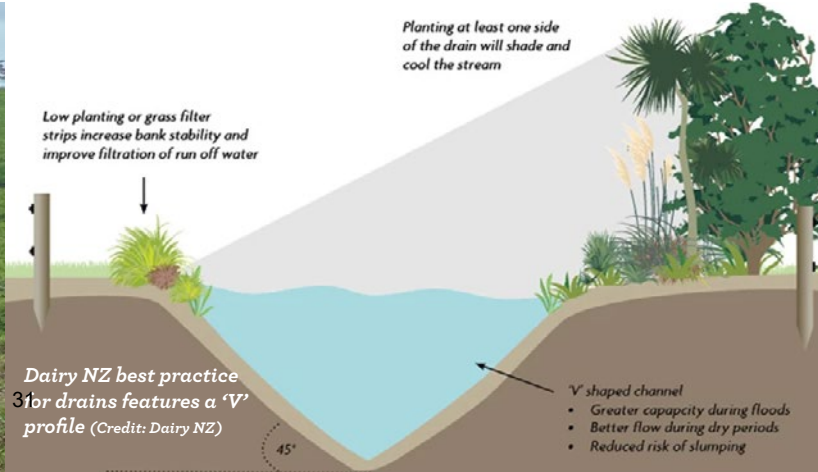
Dairy NZ's best practice standards state that drains with gently sloping banks (45-degree or 1:1) are most effective as the 'V' profile will concentrate low flows during summer and minimise weed growth, as well as provide maximum capacity to move water in a flood.

This bank shape also helps to reduce bank slumping, by providing a sloped buffer that grass can establish on and, therefore, increase the capacity to strip sediments. In fact, grass buffers have been shown to remove up to 90% of suspended sediments and up to 80% of phosphorus, as well as faecal bacteria associated with agricultural run-off.

Regional Council is here to help you achieve best practice standards as part of an Environmental Programme for your land. Works would involve establishing or moving fences on the northern or western sides of the drains to create 3-4m setback, which would then be planted with native shrub and tree species. Fences on the southern or western sides would be established or moved back by 1.5m and planted with grasses. This will provide shade to the drain and help lower the temperature of water in the drain, to better regulate dissolved oxygen for aquatic organisms.



An example of private landowners adopting good management practices and implementing restoration works on their property.



Floating wetland

Floating wetlands have become a popular tool for treating nutrient rich waterways. They involve a buoyant structure that is heavily planted with emergent wetland plants floating on top of ponded (i.e. lakes) or slow moving waterways (i.e. drains) with excess nutrients.

Plant roots hang beneath the floating wetland, eventually forming a dense mass in the water. The roots grow through the water column and a biofilm forms on their surfaces, enabling the uptake of nutrients and the settling of sediment. Floating wetlands can also inhibit algal growth through shading, and provide habitat for aquatic insects, fish and birdlife.

They have been identified as a cost-effective solution for sustainably removing nutrients, however their application and effectiveness are still in an experimental stage. More research is needed on their functionality (ecosystem restoration, nutrient removal, shading, habitat, plant growth), along with their robustness, longevity and maintenance requirements (including installation/removal, weeding and channel deepening).

Field experiments are being carried out in the Ford Rd / Waitepuia sub-catchments, which will provide useful information around the applicability and effectiveness of these systems.



A floating wetland in action in the Ford Rd/Waitepuia sub-catchments.



Kaituna Wetland Planting Day

Our 2022 Field Days have come to an end, with more than 3,000 native trees and shrubs planted into the Te Pourepo o Kaituna wetland, thanks to the volunteer support of Western Bay of Plenty school students.

The planting was part of a series of field days at the Kaituna wetland, organised by Regional Council and Maketū Ōngātoro Wetland Society (MOWS), in collaboration with Ngāti Whakaue, Tapuika and Department of Conservation.

This annual series, which is now in its third year, invites students from across the Western Bay to take their teachings out of the classroom and into a real-life conservation project.

This year, nine schools took part with more than 400 students from Waihī Beach to Ōtamarākau experiencing the wetland. Field day activities included a korero with kaumatua Liam Tapsell about the cultural importance of wetlands, digging and sifting through dirt to better understand soil health, and planting to cover one hectare of the wetland in kahikatea forest species, flax (harakeke) and native shrubs. There was also an educational hikoi (walk) through the wetland with MOWS to see flora and fauna, with a rare kōtuku (white heron) often making an appearance.

The school planting programme wrapped up in September 2022. The focus for the rest of the year is pest plant maintenance to give new and existing plants an opportunity to become established in the wetland. Regional Council's land management team will also be undertaking regular monitoring to check how the wetland is progressing, and there are future plans for more planting days in 2023.



A kōtuku (white heron) was spotted during several of the field days.



Ford Rd / Waitepuia focus catchment

