GREAT LAKE TAUPŌ
Taupō District Council

ATTACHMENTS

Risk and Assurance Committee Meeting

16 September 2025

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TAUPŌ DISTRICT COUNCIL
MINUTES OF THE RISK AND ASSURANCE COMMITTEE MEETING
HELD AT THE COUNCIL CHAMBER, LEVEL 1, 67 HOROMĀTANGI STREET, TAUPŌ
ON THURSDAY, 5 JUNE 2025 AT 12.30PM

PRESENT: Mr Bruce Robertson (in the Chair), Cr Danny Loughlin, Mr Anthony Byett, Cr Rachel Shepherd, Cr Kevin Taylor, Mayor David Trewavas

IN ATTENDANCE: Cr Sandra Greenslade

Chief Executive (J Gardyne), General Manager Organisation Performance (S Matthews), General Manager Community Infrastructure and Services (T Hale), Legal and Governance Manager (N McAdie), Finance Manager (J Paenga), Business Excellence Manager (L Chick), People and Culture Manager (L Nienhuser), Environmental Services Manager (J Sparks), Digital Solutions Manager (T May), Property and Development Manager (C Haskell), Project Management Office Manager (P Fletcher), Policy Manager (N Carroll), Senior Policy Advisors (K Goode and P Caruana), Risk Advisor (M Hill), Legal and Governance Coordinator (M Cammell), Governance Quality Manager (S James)

MEDIA AND PUBLIC: Audit New Zealand representative, Mr Leon Pieterse (via MS Teams, for agenda items 1-5.11)

1 KARAKIA

2 WHAKAPĀHA | APOLOGIES

RACC202506/01 RESOLUTION

Moved: Mr Bruce Robertson
Seconded: Cr Rachel Shepherd

That the apology received from Cr John Williamson be accepted.

CARRIED

Note: All members present at the Risk and Assurance Committee meeting voted in favour of resolution RACC202506/01 above.

3 NGĀ WHAKAPĀNGA TUKITUKI | CONFLICTS OF INTEREST

Nil

4 WHAKAMANATANGA O NGĀ MENETI | CONFIRMATION OF MINUTES

4.1 RISK AND ASSURANCE COMMITTEE MEETING - 17 MARCH 2025

RACC202506/02 RESOLUTION

Moved: Mr Bruce Robertson
Seconded: Mr Anthony Byett

That the minutes of the Risk and Assurance Committee meeting held on Monday 17 March 2025 be approved and adopted as a true and correct record.

CARRIED

Note: All members present at the Risk and Assurance Committee meeting voted in favour of resolution RACC202506/02 above.

5 NGĀ RIPOATA | REPORTS

5.1 ANNUAL PLAN 2025/26 UPDATE

The Senior Policy Advisor presented the report and advised that if the delegation was approved, the draft Annual Plan 2025/26 document would be circulated to the Committee Chairperson, Mr Bruce Robertson and Independent Member, Mr Anthony Byett on 23 June 2025.

Members agreed to delegate authority as recommended.

RACC202506/03 RESOLUTION

Moved: Cr Danny Loughlin
Seconded: Cr Kevin Taylor

That the Risk and Assurance Committee delegates authority to the Chair and Independent Member to endorse the draft Annual Plan 2025/26 prior to Council adoption at the end of June 2025.

CARRIED

Note: All members present at the Risk and Assurance Committee meeting voted in favour of resolution RACC202506/03 above.

5.2 AUDIT MANAGEMENT REPORT FOR 2023-24

The Finance Manager introduced the item.

In answer to a question, the Audit New Zealand representative, Mr Leon Pieterse advised that there were no management comments causing concern from an Audit New Zealand perspective.

The main focus of discussion was signficant improvements to the asset management process. The following points were noted in relation to this:

- Some improvements were simply refinements, for example recognising vested assets in a certain way on the date of approval by the development team.
- A lot of improvements had already been completed.
- The asset capitalisation backlog was taking priority.
- Mr Pieterse confirmed that the issues were not impacting on the physical management of assets, but instead related to financial reporting.
- There was a programme in place to address the issues.

Members noted the measures in place to address high annual leave balances.

The independent Chairperson thanked Mr Pieterse for his report and expressed appreciation for the external view via the audit.

RACC202506/04 RESOLUTION

Moved: Mr Bruce Robertson
Seconded: Cr Danny Loughlin

That the Risk and Assurance Committee receives the Audit New Zealand report to Taupō District Council on the audit for the year ended 30 June 2024 (A3752813).

CARRIED

Note: All members present at the Risk and Assurance Committee meeting voted in favour of resolution RACC202506/04 above.

5.3 ADOPTION DATE FOR 2025 ANNUAL REPORT

The General Manager Organisation Performance and the Finance Manager explained the reasons for the proposed late adoption of the 2025 Annual Report. These included the significant work being undertaken by the finance team as a result of the new rates module implementation and Local Water Done Well; the need to allow enough time for work papers to be checked; and the need to meet compressed audit timings.

Members supported the proposal to delay adoption of the 2025 Annual Report.

The independent Chairperson noted that Audit New Zealand would be required to inform the Auditor-General who would in turn inform Parliament of the statutory breach arising from late adoption. There may be minor or modest consequences as a result. He added that Council should be informed, along with the Secretary for Local Government and the local Member of Parliament.

RACC202506/05 RESOLUTION

Moved: Mr Bruce Robertson
Seconded: Cr Danny Loughlin

That the Risk and Assurance Committee:

1. Recommends to Council to delay adoption of the 2024/25 Annual Report to the proposed timelines of mid-December 2025, which allows Council flexibility with timeframes and enables continuity of auditor availability; and

2. Notes that this does not meet the timeframes for reporting deadlines within the Local Government Act 2002.

CARRIED

Note: All members present at the Risk and Assurance Committee meeting voted in favour of resolution RACC202506/05 above.

5.4 AUDIT PLAN FOR ANNUAL REPORT 2025

The Finance Manager advised that the timeframe for audit of the Annual Report 2025 was tight, with one week less than usual allocated. However, the auditor was familiar with Taupō District Council.

In answer to questions, the Finance Manager advised that:

- All fair valuations had been completed, with no material change reflected.
- The intention was to have a draft document available by 12 September. This would be provided to the Risk and Assurance Committee to consider at the meeting scheduled to be held on 16 September.

The independent Chairperson noted that it would be important for the Committee to review the draft Annual Report 2025 and standard letter of representation. A letter of confidence could then be provided to the incoming Council following the 11 October local elections.

RACC202506/06 RESOLUTION

Moved: Mayor David Trewavas
Seconded: Mr Anthony Byett

That the Risk and Assurance Committee approves the Taupō District Council Audit Plan 2025 (A3755874) to enable His Worship the Mayor to sign the Plan.

CARRIED

Note: All members present at the Risk and Assurance Committee meeting voted in favour of resolution RACC202506/06 above.

5.5 AUDIT NZ UPDATE - INTERIM AUDIT

Mr Pieterse confirmed that the interim audit was on track. The independent Chairperson thanked Mr Pieterse and noted that Audit New Zealand had indicated that they expected to issue a qualified opinion on the statement of service performance as a result of the ongoing issue with recording of water and wastewater fault response and resolution times.

RACC202506/07 RESOLUTION

Moved: Mr Bruce Robertson
Seconded: Cr Rachel Shepherd

That the Risk and Assurance Committee receives the Taupō District Council – Update to Risk and Assurance Committee June 2025 (A3766496)

CARRIED

Note: All members present at the Risk and Assurance Committee meeting voted in favour of resolution RACC202506/07 above.

5.6 BUILDING CONSENT AUTHORITY (BCA) INTERNATIONAL ACCREDITATION NEW ZEALAND (IANZ) AUDIT MARCH 2025

The Environmental Services Manager presented the Building Consent Authority (BCA) Accreditation assessment report and the following points were noted:

- A significant amount of work had been completed by the BCA over the last four years and key team members D Southey, D Thorley and S Massey were acknowledged.
- At the time of the last audit (September 2021), 17 general non-compliances were identified and the BCA was on an annual audit cycle.
- Only five general non-compliances had been raised during the most recent audit, two of which had been resolved completely and the other three were on track to be resolved by 7 July 2025.
- It was expected that the yellow highlighting on the 'risk at the end of the assessment clearance process' would be removed when the report was re-issued.

In answer to a question, the Environmental Services Manager advised that 95% of inspections were undertaken within one to two working days of booking. Any delays would be a result of extenuating circumstances.

Members asked for their thanks to be passed on to the BCA team in light of the positive report.

RACC202506/08 RESOLUTION

Moved: Cr Rachel Shepherd
Seconded: Mayor David Trewavas

That the Risk and Assurance Committee receives the 2025 IANZ Accreditation report of the Building Consent Authority.

CARRIED

Note: All members present at the Risk and Assurance Committee meeting voted in favour of resolution RACC202506/08 above.

5.7 SIX-MONTHLY PROGRESS UPDATE ON COUNCIL'S DEVELOPMENT PROJECTS

The Property and Development Manager presented the report, which detailed progress made on Council's large development projects (the East Urban Lands housing development; 204 Crown Road industrial development; and 30 Mahoe Street industrial development).

The independent Chairperson asked, from a risk perspective, what the objective was for the projects and then, will that objective be achieved? The Property and Development Manager explained that the objective for Crown Road and Mahoe Street was to bring industrial sites to the district. For Crown Road, there had been slight cost overruns, but the return was expected to be greater than anticipated. The objective for the East Urban Lands development was to bring affordable homes to the district and Council was on-track to achieve this.

In response to another question, the Property and Development Manager advised that 'for sale' signs were up for Mahoe Street and Crown Road was set to 'go live' on 1 July 2025 with a six week tender campaign.

RACC202506/09 RESOLUTION

Moved: Cr Danny Loughlin
Seconded: Cr Rachel Shepherd

That the Risk and Assurance Committee receives the six-monthly update on Council's development projects.

CARRIED

Note: All members present at the Risk and Assurance Committee meeting voted in favour of resolution RACC202506/09 above.

5.8 DIGITAL IMPROVEMENT WORKPLAN

The General Manager Organisation Performance and the Digital Solutions Manager responded to questions and the following points were noted:

- The Enterprise Resource Planning (ERP) project team was taking a risk prioritisation approach, for example responding to legislative changes and government reform including Local Water Done Well. At the same time, there was allowance for 'quick win' improvements to be made, for example new software to support Council's grants management process.
- Splitting into separate packages would likely cost more, but it was not sustainable to take a 'big bang' approach. Separate packages would also enable the team to reconsider past decisions if appropriate, for example the approach to content management may need to change in light of Artificial Intelligence (AI) developments. Another benefit of the new approach was that the separate work packages could be aligned to actions in the organisational business plan, which in turn resulted in greater organisational buy-in.
- There had been significant issues with the rating module. It was a very new product with Taupō District Council being only the second council in the country to implement. Work to resolve issues was ongoing.
- Lessons learnt included recognising the importance of understanding what people are doing; changing to a more agile approach; and the need to understand the data involved at an earlier stage in the process.
- The digital governance group was new and considering current risks. The intention was that the group would provide live risk management over the total project and programme of work going forward.

Members asked for more regular reporting in relation to the digital improvement plan and programme, both to the Risk and Assurance Committee (with a focus on the risk environment and risk controls) and full Council.

RACC202506/10 RESOLUTION

Moved: Cr Danny Loughlin
Seconded: Mr Anthony Byett

That the Risk and Assurance Committee receives the update on the digital improvement workplan, including risk and progress.

CARRIED

Note: All members present at the Risk and Assurance Committee meeting voted in favour of resolution RACC202506/10 above.

5.9 HEALTH, SAFETY AND WELLBEING UPDATE

The Business Excellence Manager summarised the report and answered questions. The following points were noted:

- Despite resourcing challenges, Council was continuing to make progress in implementing improvements to the Health, Safety and Wellbeing system.
- Aggression incidents were mostly general anti-social behaviour, particularly from homeless people. The 11 incidents reported during the period were not all physical in nature.
- Council was taking an organisation-wide approach to supporting staff mental health and wellbeing. This included mental health first aid training and leadership programmes to ensure staff had the tools to identify and work through issues.
- It had not yet been decided whether the wellbeing support platform pilot launched by the people and culture team would be rolled-out to the organisation.
- Council was at the start of the process to implement actions addressing the Zero Harm strategic risk. Expectations needed to be clear, staff supported and managers trained to continue the process of improvement.

A member asked for more systems and processes to be put into place to support committee members and keep them safe in their roles.

RACC202506/11 RESOLUTION

Moved: Cr Rachel Shepherd
Seconded: Mr Anthony Byett

That the Risk and Assurance Committee receives the Health, Safety and Wellbeing update for the period 14 February – 5 May 2025.

CARRIED

Note: All members present at the Risk and Assurance Committee meeting voted in favour of resolution RACC202506/11 above.

5.10 NON-FINANCIAL PERFORMANCE MEASURES REPORTING

The Business Excellence Manager made a correction to the Off-Track Measures Report – Transport, explaining that the actual and forecast results were not expected to be nil as shown on the graph, as Council did intend to complete some resurfacing of the sealed local road network during the period.

In answer to a question, the General Manager Community Infrastructure and Services advised that there was nothing insurmountable in the measures falling within his portfolio.

In answer to another question, the General Manager Community Infrastructure and Services confirmed that some modelling and design work had been included in the draft Annual Plan 2025/26 as a result of the 7 February 2025 flooding event in Taupō. The Chief Executive added that lessons learnt included earlier activation of the Emergency Operations Centre (EOC); changes to how Council works with contractors in

such an event; and internal communications.

The General Manager Community Infrastructure and Services advised that there were 15 water schemes in the Taupō District (some of which were broken into networks); and 11 wastewater schemes.

The General Manager Organisation Performance answered a question about the strategic property measures, explaining that the action relating to healthy and sustainable homes was not off-track, but it was a case of those outcomes not being relevant because central government and other agencies were already providing the support.

RACC202506/12 RESOLUTION

Moved: Cr Danny Loughlin
Seconded: Cr Kevin Taylor

That the Risk and Assurance Committee receives the Non-Financial Performance Measures Q3 2024/25 Report.

CARRIED

Note: All members present at the Risk and Assurance Committee meeting voted in favour of resolution RACC202506/12 above.

The meeting adjourned at this point (1.48pm) and reconvened at 2.00pm.

5.11 OUTSTANDING AUDIT AND IMPROVEMENT ITEMS

The Business Excellence Manager introduced the Legal and Governance Coordinator, Molly Cammell, who had been instrumental in preparing the report.

In answer to a question, the Business Excellence Manager explained that there was a small overlap between the open and closed audit items, for example between Annual Report and CouncilMark recommendations, but overall there was not a lot of duplication.

In relation to the wastewater and water median resolution time issue, the General Manager Community Infrastructure and Services advised that the Assetfinda upgrade had been challenging, but progress was expected by the end of July 2025. The issue did not relate to resolution times. It was simply a reporting issue.

The People and Culture Manager provided more explanation of the 'review of payroll masterfile changes' recommendation. She explained that no-one from the finance team could access or see the payroll system currently. Management was considering the risks involved in opening up the system to allow greater access for checking purposes.

The independent Chairperson asked for the next report to include analysis of the risks / effects on controls of delaying / not progressing particular pieces of work.

RACC202506/13 RESOLUTION

Moved: Mr Bruce Robertson
Seconded: Mr Anthony Byett

That the Risk and Assurance Committee:

1. Receives the report on the status of the audit and review recommendations; and

2. Acknowledges that conflicting workloads related to Council's Water Service Delivery Plan, digital improvement, and asset capitalisation may delay progressing outstanding audit matters, other than those relating to health and safety and regulatory compliance which will be progressed in line with timeframes agreed with the committee.

CARRIED

Note: All members present at the Risk and Assurance Committee meeting voted in favour of resolution RACC202506/13 above.

5.12 SENSITIVE EXPENDITURE REVIEW - 1 JANUARY 2025 - 31 MARCH 2025

The Legal and Governance Coordinator advised that adherance to policy had largely been confirmed, with a few opportunities for improvement implemented.

The Chairperson noted that some of his approvals during the period could have been more prompt. This could be improved upon if email approvals would suffice in future. He added that he was also starting to provide pre-approval for some expenditure, which was always desirable if possible.

RACC202506/14 RESOLUTION

Moved: Cr Danny Loughlin
Seconded: Mr Anthony Byett

That the Risk and Assurance Committee receives the Sensitive Expenditure Review for the period 1 January 2025 to 31 March 2025.

CARRIED

Note: All members present at the Risk and Assurance Committee meeting voted in favour of resolution RACC202506/14 above.

5.13 RISK MANAGEMENT QUARTERLY UPDATE

The Risk Advisor summarised the risk management quarterly update.

RACC202506/15 RESOLUTION

Moved: Mr Bruce Robertson
Seconded: Mayor David Trewavas

That the Risk and Assurance Committee receives the Risk Management Quarterly Update.

CARRIED

Note: All members present at the Risk and Assurance Committee meeting voted in favour of resolution RACC202506/15 above.

5.14 STRATEGIC RISK UPDATE

A risk appetite workshop had been held earlier in the day.

Members discussed the strategic risk update.

The following points were noted:

- The Critical Infrastructure Failure risk analysis would be presented at the next Risk and Assurance Committee meeting.
- The current Zero Harm risk assessment should improve once the new Health and Safety Manager had started. Aggression events were posing risk to staff; and other incidents/accidents did occur from time to time. The aim was to support staff to ensure health and safety philosophies are embedded in day-to-day work. Council workers were exposed to a wide range of different risks, including chemical and tank work gas risks; and different vehicle risks.
- Council had responsibilities under the legislation to take reasonably practicable steps to keep the public safe while using Council buildings.

- Climate change risks were intrinsically linked to the Critical Infrastructure Failure risk. There was still more work to be done on this, with a roadmap developed and actions to be completed prior to preparing the report to the next Committee meeting.
- Financial consequences were currently driving a lot of the high and extreme risk ratings. The financial limit could be increased to be more reflective of what is happening operationally.

In answer to a question, the Chief Executive agreed that more flexibility through the financial strategy would assist with risk appetite assessments. Teams with higher turnover were of concern from an operational perspective, but not simply because of the turnover. Loss of corporate knowledge was at the heart of the 'attracting and retaining a competent workforce risk', but management was aware of that and the drivers behind it, and was taking action to address those issues.

The independent Chairperson asked for risk appetite to be included on the next Committee meeting agenda, for further discussion.

In receiving the Strategic Risk Update, members acknowledged that some of Council's strategic risks were evaluated as being outside of Council's risk appetite. Members were concerned about this and looked forward to progressing the discussion on Council's risk appetite at the next Committee meeting.

RACC202506/16 RESOLUTION

Moved: Mr Bruce Robertson
Seconded: Cr Kevin Taylor

That the Risk and Assurance Committee receives the Strategic Risk Update.

CARRIED

Note: All members present at the Risk and Assurance Committee meeting voted in favour of resolution RACC202506/16 above.

5.15 INTERNAL AUDIT PROGRAMME 2024-25

The Risk Advisor summarised the report. The General Manager Organisation Performance added that Council had completed a number of internal audits over the last few years, but the aim now was to conduct audits in a planned, structured way going forward.

RACC202506/17 RESOLUTION

Moved: Cr Danny Loughlin
Seconded: Cr Rachel Shepherd

That the Risk and Assurance Committee receives the internal audit programme update 2024-25.

CARRIED

Note: All members present at the Risk and Assurance Committee meeting voted in favour of resolution RACC202506/17 above.

5.16 BUSINESS CONTINUITY UPDATE

The Risk Advisor summarised the report and added that after working with the organisation, the number of business continuity plans had been reduced to 11 or 12. The business continuity policy would be presented to the Risk and Assurance Committee to approve in due course; the crisis management plan would be approved by the executive team; and general managers would oversee business continuity plans within their respective areas.

In answer to questions, the Risk Advisor explained that:

- Scenarios considered in relation to payroll were lack of access to the Council building; IT failure; and pandemic affecting critical team members.
- There was a need to understand how business critical functions currently operate during crisis management events.
- Recommended review cycles were as follows:
  - Business continuity policies – every three years;
  - crisis management plans - annually (with ongoing lessons learnt and approaches adapted following every event); and
  - business continuity plans – ongoing review, as staff and systems/processes change.
- Business continuity plans needed to be tested and evaluated annually against different scenarios.

The independent Chairperson suggested that it would be helpful for the Risk and Assurance Committee to see the business continuity plans when considering the business continuity policy.

RACC202506/18 RESOLUTION

Moved: Mr Bruce Robertson
Seconded: Cr Danny Loughlin

That the Risk and Assurance Committee receives the business continuity update.

CARRIED

Note: All members present at the Risk and Assurance Committee meeting voted in favour of resolution RACC202506/18 above.

5.17 INSURANCE UPDATE

The Business Excellence Manager presented the insurance update report, which provided an overview of progress made, and Council's approach to insurance.

RACC202506/19 RESOLUTION

Moved: Mr Anthony Byett
Seconded: Cr Danny Loughlin

That the Risk and Assurance Committee receives the insurance update report.

CARRIED

Note: All members present at the Risk and Assurance Committee meeting voted in favour of resolution RACC202506/19 above.

5.18 FINANCIAL STRATEGY UPDATE AND SIGNIFICANT PROJECTS RISK REPORT

The Finance Manager and the Project Management Office Manager presented the report. The following points were noted:

- There had been a general shift downwards in residual risks.
- Relationship management was an important part of project managers' work. Project managers were responsible for completing a full stakeholder analysis at the beginning of each project. The supplier panel approach had enhanced project managers' ability to communicate regularly with contractors.

RACC202506/20 RESOLUTION

Moved: Mr Bruce Robertson
Seconded: Cr Rachel Shepherd

That the Risk and Assurance Committee receives the Financial Strategy Update (A3761599) and the Significant Projects Risks Report (A3756221).

CARRIED

Note: All members present at the Risk and Assurance Committee meeting voted in favour of resolution RACC202506/20 above.

5.19 TREASURY UPDATE MARCH 2025

In answer to a question, the Finance Manager advised that the difference between the external Council drawn debt ($216m) and funds drawn from Local Government Funding Agency ($179m) was commercial paper.

In answer to another question, the General Manager Organisation Performance advised that the interest rate risk management figures included swaps and other cover, not just loans maturing. There had been a reduction in the cost of capital seen since Council had moved from microbands to larger bands. Staff were working with Bancorp to ensure Council was holding the appropriate level of cover.

The independent Chairperson noted that all treasury activities were compliant with policy.

RACC202506/21 RESOLUTION

Moved: Mr Bruce Robertson
Seconded: Cr Danny Loughlin

That the Risk and Assurance Committee receives the Taupō District Council Dashboard March 2025 (A3753977), the Taupō District Council – Asset Allocation & Performance Report March 2025 (A3766011) and the ESG Attestation for TDC 31 March 2025 (A3766019).

CARRIED

Note: All members present at the Risk and Assurance Committee meeting voted in favour of resolution RACC202506/21 above.

5.20 RISK AND ASSURANCE COMMITTEE WORKPLAN UPDATE

The Business Excellence Manager summarised the proposed changes to the Committee workplan.

RACC202506/22 RESOLUTION

Moved: Mr Bruce Robertson
Seconded: Cr Danny Loughlin

That the Risk and Assurance Committee receives the updated Workplan for 2025.

CARRIED

Note: All members present at the Risk and Assurance Committee meeting voted in favour of resolution RACC202506/22 above.

6 NGĀ KŌRERO TŪMATAITI | CONFIDENTIAL BUSINESS

RACC202506/23 RESOLUTION

Moved: Mr Bruce Robertson
Seconded: Cr Danny Loughlin

RESOLUTION TO EXCLUDE THE PUBLIC

I move that the public be excluded from the following parts of the proceedings of this meeting.

The general subject of each matter to be considered while the public is excluded, the reason for passing this resolution in relation to each matter, and the specific grounds under section 48[1] of the Local Government Official Information and Meetings Act 1987 for the passing of this resolution are as follows:

General subject of each matter to be considered	Reason for passing this resolution in relation to each matter	Ground(s) under Section 48(1) for the passing of this resolution	Plain English reason for passing this resolution in relation to each matter
Agenda Item No: 6.1 Confirmation of Confidential Portion of Risk and Assurance Committee Minutes - 17 March 2025	Section 7(2)(g) - the withholding of the information is necessary to maintain legal professional privilege	Section 48(1)(a)(i)- the public conduct of the relevant part of the proceedings of the meeting would be likely to result in the disclosure of information for which good reason for withholding would exist under section 7	There is a need to retain this portion of the minutes in confidence to maintain legal professional privilege where members have received advice from Council's Legal and Governance Manager relating to potential legal challenges against Council
Agenda Item No: 6.2 Legal and Litigation Update	Section 7(2)(g) - the withholding of the information is necessary to maintain legal professional privilege	Section 48(1)(a)(i)- the public conduct of the relevant part of the proceedings of the meeting would be likely to result in the disclosure of information for which good reason for withholding would exist under section 7	To allow the Council to receive confidential legal updates regarding various legal matters that contain information subject to legal professional privilege.

I also move that Deloitte representatives Ms Shirley Walls and Mr David Seath be permitted to remain at this meeting, after the public has been excluded, because of their knowledge of audits they have undertaken in relation to agenda item 6.3.

CARRIED

Note: All members present at the Risk and Assurance Committee meeting voted in favour of resolution RACC202506/23 above.

The meeting closed at 4.18pm with a karakia recited by all present at the meeting.

The minutes of this meeting were confirmed at the Risk and Assurance Committee meeting held on 16 September 2025.

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CHAIRPERSON

JASANZ

Recognised Agency Reassessment Report

Taupo District Council

Assessment No: TS2-23
Dated: 14/05/25

COMMERCIAL IN CONFIDENCE

Assessment No: TS2-23

Council name	Taupo District Council		
Assessment location (address)	67 Horomatangi Street, Taupo		
Assessment number	TS2-23		
Assessment date/s	14/05/25		
Assessment type	Reassessment		
Assessment purpose	Surveillance assessment of the implementation of the Agency's Quality Management System (QMS), onsite to verify compliance with the requirements to be a Recognised Agency to conduct verification services under the *Food Act 2014*.		
Assessment objective	1. To assess the Agency's implementation of the Quality Management System (QMS) against the assessment criteria and reviewing - Changes to the system, documentation, and key personnel - Random selection of files - Follow-up on findings from the previous assessment. 2. To form a view whether the Agency does/does not continue to meet the requirements to be a Recognised Agency to conduct verification services under the Food Act 2014.		
Assessment scope	• Verification of template Food Control Plans registered by MPI, sections 39 & 40. • Verification of national programme businesses in: o General – all national programme businesses		
Assessment criteria	• Food Regulations 2015 – Regulation 110 (that is, the requirements of a QMS – refer to Appendix A). • Food Act 2014 – section 155 and 156 (that is, performance of specified functions and activities of Recognised Agencies and Recognised Persons)		
Assessment team:			
Assessor	Sue Williams		
Assessment report:			
Drafted by	Sue Williams	Date	16/05/25
Updated by	Sue Williams	Date	19/05/25
Final by	Jo Jenkins	Date	3/06/25

ASSESSMENT COVERAGE

1. Overview of the Council and its QMS

This report relates to the surveillance assessment of Taupo District Council (TDC) as a Recognised Agency under the Food Act 2014 and Food Regulations 2015 for Template Food Control Plans (TFCP) and National Programmes (NP).

There are 384 registered business sites / 353 registrations. Eight businesses are with Third Party Agencies (TPA). The number of businesses is gradually growing, a significant number of businesses have changed hands, as well as more online businesses and mobile trucks.

The team are to be commended on the improvements made since the last assessment with very few unscheduled verifications and just a few overdue CARs. The observations noted at the previous assessment had been reviewed and actioned where applicable.

The JASANZ Assessor would like to thank Bryan and the team for their cooperation during this assessment.

2. Changes to the QMS

Minor changes were made to the Quality Management System Document (QMSD) in March, May, June and December 2024. The manual is now at version 5.7. A general email was sent out to all businesses last month regarding the MPI Levy.

Unscheduled and unannounced verifications are detailed on page 57 of the QMSD; voluntary suspension pages 61-62; cancellation of registration pages 62-63 and mandatory suspension page 64.

2.1 Conflict of Interest

The process is documented in the QMSD, Managing Conflict of Interest, pages 26-29. All employees are responsible for identifying and declaring any actual or perceived conflict of interest. Where a conflict of interest is evident then this must be declared to the Environmental Service Manager who will record the details in the Staff Conflicts of Interest Register. Currently there are three COIs declared for Bryan Brett, and 2 each for Jess Sparks and Shane Hancock.

2.2 Confidentiality

The process is documented in the QMSD, Document Control and Confidentiality of Information, pages 35 & 36 and in Document Security page 39.

All documents are in MagiQ, the Council are looking at moving these into CIA. All computer systems are subject to password control. All IT systems are protected by the virus scanning software Palo Alto Cortex XDR that monitors for potential threats to the integrity of the system. This system also manages devices to ensure they comply with company IT policies regarding security.

There are virtual servers in the Council Data Centre and a new ERP system in the Cloud. Important systems are backed up hourly into the Cloud. The IT team restore documents on a regular basis and therefore do not undertake scheduled restores. The Council do their own internal testing and currently no external penetration testing is conducted. The IT team undertake phishing training and every month phishing emails are sent out to staff. It was explained that while clicking on emails has decreased due to staff turnover this continues to be a focus for the team. The Council have a good email system in place and this and monitored by IT. The website is jointly managed with Datacom, but the communication team can make changes. The Council use a platform called Dato that enables the servers to be accessed through their Cloud in the event of a disaster.

Staffing & 2.4 Resources

There have been no changes to the team of Bryan Brett, Shane Hancock and Tamzen Winder since the last assessment. TDC have used contractor Craig Smith in the past but not recently.

Roles and responsibilities are documented in the QMSD pages 9-10. Appointment of verifiers & Competency requirements for verifiers is documented in the QMSD pages 12-17. This section details initial competency requirements and sector specific approvals; ongoing competency, Directed Verification of Food Importers (including the requirement for mock verifications ever 2 years). Resourcing including the role of the QS Coordinator is documented in the QMSD pages 30-31. Review and management of workload is documented in the QMSD pages 33-34.

The Competency Summary for Verifiers lists the competencies by sector. This includes the requirements for Importers/Directed Verifications.

A mock directed verification was undertaken 25/06/25. Bryan took the role of the Importer and both Tamzen and Shane acted as the verifiers. A mock scenario was created for Importer Exotic Spices Ltd. The details included information from MPI about the issues; information for the verifier, together with some assumptions; examples of labelling and a product list. Supplementary information was provided as well as a detailed checklist for the verification of this unregistered importer. A comprehensive verification report was also completed. The exercise raised several very good recommendations. It may be beneficial to liaise with Whanganui District Council on future mock activities.

Observation

The team undertook a very thorough directed verification, and it is therefore recommended that the scope of Recognition for Directed Verification of Food Importers be continued.

Recommendation 2

For those verification scopes that are undertaken infrequently, the team review any changes to legislation, check the internal library and undertake research.

Regular QMS meetings are held as per the QMSD page 18. Minutes for April/May 24, August 24, December 24 and March 2025 were reviewed. These included a summary section of the previous month's activities, registration and verification activity, resourcing/workload, training, QMS processes changes, reviews, approvals, contractors, COI, NC/CAs and complaints. Training opportunities are also discussed at team meetings i.e. distilling & brewing.

The team attend the Bay of Plenty Cluster Group meetings, these are held 2-3 times per year; Te Puke 10/04/24; Rotorua 29/08/24 (covered Gluten free, Bryan also gave a presentation on exemptions, fund raising, market rules). The next meeting is in Rotorua 26/05/25 and will include an Allergen labelling case study.

The team regularly monitor websites and Facebook; businesses will also let the team know about any unregistered businesses. Shane uses messenger to contact the business; details are recorded on a spreadsheet he manages. The verifiers also work with the Council Events team to check attendees are registered. They also work closely with local markets.

The calibration process is documented in the QMSD page 31. There are three thermometers and one back up as well as two Luton pH meters. An ETI Reference thermometer is also included on the register and is primarily used for enforcement. All calibrations are up to date.

2.5 Reporting requirements

The process is documented in the QMSD page 39, this includes timeframes for updating of MAPs. Notification to MPI on surrender of warrants is documented on page 17.

Tamzen and Bryan do most of the scheduling, details are entered into the Environmental Health Inspection and Checks and then into the individual verifiers calendars. Verifications are currently booked 2-3 weeks out and new verifications are booked 6 weeks out. There are currently no overdue verifications.

2.6 Records

Document Control is detailed in the QMSD page 35 and record keeping is documented on page 37. All documents are stored in Objective. Physical disposal of records is via a secure document disposal service.

The reports reviewed are noted on pages 7-8 of this report. The reports were clear and concise, and the overview summary was comprehensive and gave good details as to the business' operations and the results of the verification, this includes CARs, Areas for Improvement and Issues resolved during the verification. In the second part of the report the verifiers record details against the Mandatory, Top 5, and other applicable topics. Photos are also included.

Evidence was available to demonstrate that reports are being completed and uploaded within the required timeframe.

2.7 Non-Compliance and Corrective Actions

The nonconformity and corrective action process is documented on page 49 of the QMSD; with reporting of critical NCs detailed on Page 50; close out of corrective actions page 51, (this also includes the escalation process that is followed if CARs are not clossed by the due date); frequency and review of verification decisions detailed on page 52.

There are 12 open verifications where CARs were due for closure with one from December 24 requiring additional work; Hopus Banderz TPD000764 from February given ultimatum, complete, surrender or be cancelled; two from March 25 and the rest for May 25. Where CARs are not closed then the outcome is changed to unacceptable and the verification frequency is also changed i.e. Vietnamese Joint.

A warning letter was issued to TPD000584 by Bryan Brett, due to identification of several critical nonconformities. A formal education letter was issued by Shane Hancock to Pita Pit Taupo 20/11/24 about cleaning and sanitising. One Notice of Direction issued in March 24; the business was ordered to close due to a cockroach infestation. They now have regular pest control treatment.

There have been no other Notices of Direction or Improvement Notices issued since March 2024. There have been a number of critical NCs raised and these are immediately notified to MPI. Most issues are unintentional.

2.8 Complaints and Disputes

The complaints process is documented in the QMSD pages 42-43. There have been no appeals or complaints about verifiers since the last assessment. There has been no food borne illnesses in the area. A few complaints have been received; 17/01/25 unregistered business; 16/02/25 Sushi being stored in unrefrigerated cabinets; 14/03/25 Taupo Food & Spices selling out of date products. Shane visited and discussed the issue with best before dates followed up at the upcoming verification. Prior to undertaking a verification, the verifiers also check online and check complaints in the system. Most complaints (approximately 80%) come from MPI registered businesses i.e. Dominoes, Pak n Save

2.9 Internal Management

Internal audit, corrective actions and management review are detailed on page 19 of the QMSD - Internal review of the QMS. The minutes from the last MRM held 28/05/24 were reviewed the meeting was attended by Jess Spark and Bryan Brett. The minutes were comprehensive and covered the requirements.

The internal audit schedule was reviewed with all sections of Regulation 110 (2) covered over a 12-month period. The internal audits are conducted by a member of the building team, therefore ensuring independence. Two reports were reviewed; Reporting Requirements July 24 very comprehensive report; and Noncompliance & Corrective Actions 1 October 24, one NC raised as emails sent to businesses stating CARs now closed are not being saved.

2.10 Performance of review

CPD is documented in the QMSD pages 15-16, all staff completed the required points last year. Peer reviews are documented in the QMSD pages 23-24.

There is a performance framework that is goal orientated. Bryan does the goals for the team and Jess does his goals. These are more developmental. Tamzen has just been approved as an EHO. There are quarterly reviews and more in depth 6 monthly and end of year reviews.

Peer reviews are completed annually examples sighted for Bryan Brett 13/06/24 by Tamzen Winder at Lakeland Resort Taupo (tFCP). Shane Hancok by Tamzen Winder 11/04/25 Taupo Cosmopolitan club (tFCP) included AFIs from last peer review, no findings. Tamzen Winder by Bryan Brett 2/04/25 Hardy's Health Store Taupo NP2, a few opportunities for improvement were identified and there was a similar observation around what if scenarios as previous external peer review. As a result of this Tamzen did some research on dietary Supplements. This should be recorded as CPD training.

Observation

External reviews are also undertaken by verifiers within the cluster group. Anoop Lal for TCC undertook the 3 peer reviews last year. Tamzen 23/10/24 did not provide positive comments, this was followed up by Bryan. Shane Hancock 23/10/24, positive comments. Bryan 24/10/24 Siam Café, as English was a second language this changed to flow of the verification, some observations were noted.

Bryan has access to the managers dashboard. Everyone met the COPD points for last year, due to workload the team have not had the opportunity to do much training this year. The team are planning on doing cheese making training, they also attended the NZEIH conference. Training was conducted by Karen Perry around soft skills in auditing i.e. personality traits.

2.11 Contractual arrangements

Contractual requirements are documented in the QMSD page 44 and includes engagement of external contractors and their induction. The Council does not currently have any contracts in place with other Councils. There was a shared services agreement with South Waikato to do one verification for a butcher. No current verifications are undertaken for other Councils.

During peak verifications Craig Smith from APlus will be employed. The last contract with APlus Food Safety was sighted. APlus use the Taupo DC documentation when undertaking verifications. TDC contact the business agree date and then send the information to Craig. TDC review the report and upload to MAPS or Craig will upload to the TDC system that then syncs with MAPS. Craig is registered under TDC's QMS till 31/08/25. His internal peer review was completed by Bryan 29/04/24 several observations were noted i.e. use of leading questions. It would be beneficial to do a peer review on Craig when he is next asked to conduct verifications.

Observation

3. Random selection of files

Registration No	Organisation name	Type	Verification activity & date	Verifier	Comment
TPD000165	Lakeside Meats	tFCP	Site verification 01/05/2024 Acceptable Step 3 – 9 months	Craig Smith	Three CARs closed by the due date. Limited comments in the checklist
TPD000289	Volcanic Chocolate Limited	NP2	Limited scope verification 11/11/24 Acceptable Step 6 2 years	Bryan Brett	Previous verification unacceptable CNCs dropped from 3 years to 3 months. Very detailed notes focusing on the issues from previous verification i.e. labelling, allergens etc.
TPD000492	Kemps General Store	NP3	Site verification 20/09/2024 Unacceptable Step 5 – 18 months	Bryan Brett	Revisit by Tamzen to review 10 CARs 2 of which were non-compliant. All now closed. Very comprehensive and detailed report
TPD000548	The Creel Tackle House and Cafe	tFCP	Site verification 4/03/2024 Unacceptable Step 3 – 9 months	Bryan Brett	Revisit by Tamzen 30/04/24, 10 CARs and one Noncompliance.
TPD000097	Crafty Trout Brewing Co.	tFCP	Site verification 5/06/2024 Acceptable Step 5 -18 months	Tamzen Winder	3 CARS, closed. Good use of photos
TPD000740	The Dam Village Bakery Cafe	tFCP	Initial Site Verification 9/12/2024 Acceptable Step 4- 12 months	Tamzen Winder	4 CARs all closed
TPD000548	The Creel Tackle House and Cafe	tFCP	Site verification 14/12/2024 Unacceptable	Tamzen Winder	10 CARs. Revisit 28/01/25 and 6/03/25

			Step 2 – 6 months		
TPD000768	Rehua Orchard (Honey)	NP1	Initial verification 18/02/2025 Acceptable Step 8 - NFV	Shane Hancock	3 CARs closed out 18/03/25
TPD000357	Vine Eatery & Bar	tFCP	Site verification Acceptable 13/11/2024 Step 2 – 6 months	Shane Hancock	Previous verification was unacceptable now on 6 months. Closed with some unresolved CARs. Next verification currently being scheduled
TPD000411	Turangi Tavern	tFCP	Site verification 19/08/2024 Unacceptable Step 3 – 9 months	Shane Hancock	4 CARs and 1 Noncompliance Revisit 24/09/24
TPD000712	Turangi Bridge Motel	tFCP	Initial Site Verification 15/04/2024 Unacceptable Step 3 – 9 months	Shane Hancock	5 CARs and 1 noncompliance Closed out 6/05/24. Verification done in February as owner based in Tauranga
TPD 000712	Turangi Bridge Motel	tFCP	Site verification 12/02/25 Unacceptable Step 2- 6 months	Bryan Brett	5 CARs and 6 noncompliance's Went back 19/03/25 and closed them out

ASSESSMENT SUMMARY

Requirements	Assessed (Y or N)	Compliance? (Y or N or N/A)	Non-conformity No. (if applicable)
Changes to the QMS	**Y**	**Y**	
Conflicts of Interest	**Y**	**Y**	
Confidentiality	**Y**	**Y**	
Staffing	**Y**	**Y**	
Resourcing	**Y**	**Y**	
Reporting	**Y**	**Y**	
Records - random selection of files	**Y**	**Y**	
Noncompliance & corrective actions	**Y**	**Y**	
Complaints/appeals	**Y**	**Y**	
Internal management	**Y**	**Y**	
Review of performance	**Y**	**Y**	
Contractual arrangements	**Y**	**N/A**	

Recommendations

1. That the Agency continues to meet the requirements to be a Recognised Agency to conduct verification services under the *Food Act 2014*:
2. That Directed Verification of Food Importers remains on the scope of recognition; and
3. That all observations noted throughout this report be reviewed by the Agency and actioned where appropriate.

Appendix A

Regulation 110 of the *Food Regulations 2015* requires that the QMS contain procedures for:

a) **Conflicts of Interest** - maintaining independence and managing conflicts of interest and maintaining impartiality.

b) **Confidential information** - managing the confidentiality of information.

c) **Staffing** - ensuring that staff are trained and competent to perform the services for which they are employed or engaged; are aware of the scope of the specified functions and activities of the agency, person, or member; and that staff performance is regularly monitored.

d) **Resourcing** – ensuring that the agency, person, or member is adequately resourced (including having, or having access to, relevant technical expertise) to carry out its or his or her specified functions and activities.

e) **Reporting requirements** - meeting the reporting requirements under the applicable requirements of the *Food Act 2014*.

f) **Records** - keeping the following records and reports for at least 4 years: records relating to staff members' qualifications, training, work-related experience, and performance; records and reports of the specified functions and activities, and any related activity, of the agency, person, or member; records relating to each food business or registered importer to whom the agency, person, or member provides services; records and reports required to be kept under the applicable requirements of the Act; and making the above records or reports available at the request of the chief executive or a food safety officer.

g) **Non-compliance and corrective actions** - identifying and reporting any non-compliance with an applicable requirement of the Act occurring at a food business or the operations of a registered importer; and identify and monitor corrective actions that a food business or registered importer must carry out.

h) **Complaints and disputes** - investigating and managing complaints and disputes relating to the staff of the agency, person, or member; and the performance by the agency, person, or members of its or his or her specified functions and activities.

i) **Internal management** - providing for the regular review of the QMS.

j) **Review of performance** - reviewing the agency's, person's, or member's performance of its or his or her specified function and activities, for the purpose of ensuring that the applicable requirements of the *Food Act 2014* are met.

k) **Contractual arrangements** - ensuring that contractual arrangements with any food businesses or registered importer to whom the person, agency, or member provides services are documented and appropriate for the services being provided.

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GREAT LAKE TAUPŌ
Taupō District Council

Health & Safety Improvement Plan

KPMG Ref	H/M/L	Improvement Area	Key Focus Area	Actions	Planned Implementation Timelines
					Jul 25 · Aug 25 · Sept 25 · Oct 25 · Nov 25 · Dec 25 · Jan 26 · Feb 26 · Mar 26 · Apr 26 · May 26 · Jun 26 · 2026/27
R1.3 R1.4 R2.2 R2.3		**Critical Risk Management**	Establishment of critical risks and progressing risk identification and assessment process aiming to implement minimum mandatory controls.	Develop a Critical Risk Control Framework providing guidelines on the process for driving critical risk management for Council's critical risks: - Aggressive & Threatening behaviour; - Asbestos; - Driving; - Hazardous substances; - Psychosocial; - Plant and equipment; - Underground services; - Working at heights; - Working near roads; - Working with Animals.	Develop · Approval
			Aggressive & Threatening Behaviour (ATB)		
R7.1 R7.2				Finalise **Aggressive & Threatening Behaviour (A&TB)** risk assessments by workshopping with key stakeholders.	Risk assessments
R7.3				Develop *critical risk control procedure for A&TB* using risk assessment outputs and obtain Executive approval. This will finalise the specification of minimum mandatory controls. This will also address security related risks.	Risk procedures
				Train staff and team leaders on minimum mandatory controls.	Training on controls
				Implementation of any new minimum mandatory controls. Timing dependent upon what the proposed controls are.	
				Commence assurance by testing controls for adequacy and completeness. Timing dependent upon what the proposed controls are.	
			Asbestos		
				Perform risk assessments on **Asbestos** critical risk with key stakeholders. Use risk assessment process to refine controls identified in Council's existing Asbestos Management Plan.	
				Refine Corporate Asbestos Management Plan (the equivalent of a *critical risk control procedure for Asbestos)* using risk assessment outputs and obtain Executive approval. This will include specification of minimum mandatory controls.	
				Train staff and team leaders on minimum mandatory controls.	
				Implementation of any new minimum mandatory controls. Timing dependent upon what the proposed controls are.	
				Commence assurance by testing controls for adequacy and completeness. Timing dependent upon what any additional controls may be.	
			Working with animals		
				Perform risk assessments on **Working with Animals** critical risk with key stakeholders. Use risk assessment process to refine controls.	
				Develop *critical risk control procedure for Working with Animals* using risk assessment outputs and obtain Executive approval. This will include specification of minimum mandatory controls.	
				Train staff and team leaders on any additional (if any) minimum mandatory controls.	
				Implementation of any new minimum mandatory controls. Timing dependent upon what the proposed controls are.	
				Commence assurance by testing controls for adequacy and completeness. Timing dependent upon what any additional controls may be.	

KPMG Ref	H/M/L	Improvement Area	Key Focus Area	Actions	Planned Implementation Timelines
			Working at heights		
				Perform risk assessments on **Working at Heights** critical risk with key stakeholders. Use risk assessment process to refine controls.	
				Develop *critical risk control procedure for Working at Heights* using risk assessment outputs and obtain Executive approval. This will include specification of minimum mandatory controls.	
				Train staff and team leaders on any additional minimum mandatory controls.	
				Implementation of any new minimum mandatory controls.	
				Commence assurance by testing controls for adequacy and completeness. Timing dependent upon what any additional controls may be.	
			Driving		
				Programme to be advised.	
			Hazardous Substances		
				Programme to be advised.	
			Psychosocial		
				Programme to be advised.	
			Plant & Equipment		
				Programme to be advised.	
			Underground Services		
				Programme to be advised.	
			Working Near Roads		
R5.1 R5.2 R5.3 R5.4 R5.5		**Contractor compliance and oversight**	Establishing clear understanding of contractor management and team responsibilities regarding H&S.	Establish a Contractor H&S Management Framework clarifying minimum compliance requirements, integrating H&S considerations into the procurement process, defining roles and responsibilities (with respect to performance and monitoring), and providing guidance on the timing of inspections and audits.	Develop / Executive approval
				Train contract managers across the business on their roles and responsibilities and operationalise the Contractor Management Framework. E.g. ensure suitable site audit templates on mobile app. Publish updated guidance for suppliers on TDC website.	Training & Operationalisation
				Develop monitoring and reporting system to capture the number and type of inspections and audits being undertaken on contractors.	Monitoring & reporting
R5.2 R6.2 R13.2		**H&S training**	Developing a central H&S training needs matrix and training programme addressing all job-specific training requirements recommended by the KPMG audit and also identifying risk-based gaps.	Develop a risk-based, organisation-wide H&S training needs matrix specific to each role, which will require: i) identification of all TDC roles requiring specific H&S training to safety fulfil their role; ii) understanding training currently provided for those roles; iii) identification, in consultation with workers and team leaders, of any training gaps that may need to be filled.	
				Review existing training material (e.g. induction, use of PPE) and processes to ensure consistency.	
				Work with Team Leaders and Workers to develop additional training materials where gaps exist, e.g. additional SOPs.	
				Develop and implement a training programme that reflects current training undertaken and any potential additional training requirements based on the training needs matrix. Engage with workers and team leaders to understand implementation requirements (training budgets, time to attend (considering rosters and minimum staffing requirements).	

Ref	KPMG H/M/L	Improvement Area	Key Focus Area	Actions	Planned Implementation Timelines
R4.1		**Assurance programme**	Formalising assurance processes to set minimal requirements for assurance activities and securing management accountability.	Use outputs of Critical Risk Management activities to develop a risk-based internal audit plan and inspection schedule which will include: - business unit specific inspections done by team leaders (1st line assurance); - structured internal audits coordinated by H&S team (2nd line assurance); - a schedule for Health and Safety Representative inspections to be done quarterly as a minimum (1st line assurance); - Continuance of Leadership Safety Walks (initially by Executive team and extended to ELT) (2nd line assurance).	Audit plan & schedule development
				Develop audit & HSR inspection checklist.	Checklists developed
				Train Team Leaders and HSR on assurance approach and application of check-lists.	
				Undertake audits, inspections and safety walkabouts as per internal audit/inspection schedules.	
R4.2			Independent assurances processes need to be established across the organisation, as well as for H&S.	Collaborate with Risk Advisor, who is establishing an Internal Assurance Programme, to arrange for an independent H&S audit to be done by a 3rd party certification audit.	
R10.2		**Reporting & Accountability**	There needs to be enhanced visibility of H&S performance to Managers and Team Leaders.	Engage with developers of Council's H&S Incident Management System (Damstra) to further explore H&S reporting functionality with in the system.	
				Engage with the Executive, Managers and Team Leaders to understand potential H&S Key Performance Indicators and what H&S reporting would enhance their management of H&S matters. Use information as inputs into the development of reporting requirements specification and decide upon the suitability of Damstra to meet Council's H&S	
				- If Damstra suitable, roll out new configuration.	
				- If Damstra unsuitable, scope suitability of other products (reporting options, system integration needs with CiA, cost). Include costs for any system upgrades in the next Annual Plan.	
				- If Damstra unsuitable investigate other low cost, short-term reporting options using existing tools like Excel or PowerBI. The dashboard will be used to drive H&S accountability tool and be applied report on performance in achieving H&S key performance indicators.	
R10.1				Develop and roll-out enhanced H&S reporting to Executive, Managers and Team Leaders. Where relevant, ensure reporting includes progress on delivering Council's Health, Safety and Wellbeing Strategy, this Improvement Plan, and any detailed actions agreed as part of critical risk management.	
				In collaboration with People & Culture, explore the potential to include H&S KPIs into individual/team Annual Performance Development Plans in alignment with agreed roles and responsibilities. This should be informed by role specific risk assessments (i.e. managers with staff in high risks roles may have a greater requirement for this).	

KPMG Ref	H/M/L	Improvement Area	Key Focus Area	Actions	Planned Implementation Timelines
R6.1 R6.2 R6.3		**Emergency Preparedness and Response**	Updating Emergency Evacuation Plans to include risk based plausible emergency scenarios.	Update departmental emergency evacuation plans and perform risk-based emergency drills demonstrating an understanding of what emergency events could occur within operations. NOTE: Emergency scenarios arising from *Aggressive & Threatening Behaviours* will be addressed through the critical risk work above.	
				Develop a programme of drills and testing exercises for all relevant TDC locations. Use the debriefings as learning opportunities.	
R11.1		**Worker engagement and participation**	Reestablishing engagement with H&S Representatives and H&S Committee.	Introduce a system of celebrating the success of Health & Safety Representatives inclusive of the Health and Safety Committee e.g. by communicating their achievements across the organisation.	
R13.1			Council's uptake of incident reporting could be improved.	Encourage reporting of incidents across the organisation e.g. providing positive feedback mechanisms on reported incidents, action items, use of key performance indicators. - The importance of incident reporting will be a key message as systems for controlling risks are implemented on critical risk by critical risk basis (as part of above Critical Risk Management actions).	
R13.2				Rollout refresher training on the importance of reporting incidents and near-misses. Training will advise what should be reported and the timelines that these need to be entered into the system, including for incidents occurring with contractors. - This will be achieved while engaging the business through the critical risk assessment process described above, and a general organisational wide training for those not involved in critical risk management.	
R15.1		**Health & Safety Management System**	Council's H&S Management System is disaggregated, not being centrally held or standardised. There is a need to have a consistent approach to review of procedures across the organisation.	Throughout the above processes the H&S Team will be engaging with the wider organisation to develop a deeper understanding of key documents used to support the control of H&S risks (e.g. SOPs). All H&S documents, their custodian, and next review date are being captured into a H&S Document Register, held centrally by the H&S Team. This will continue to be populated as the H&S team work through the above actions. This document register, and the processes used to utilise them are the essence of Council's H&S System. As documents come up for review Council will seek to standardise procedures, however any significant gaps or conflicts identified through the Critical Risk Management process will be addressed as a priority.	

Risk Appetite Statement

STATEMENT

February 2024

Document Set ID: 361
Version: 2, Version Date: 09/05/2024

DOCUMENT CONTROL

VERSION	DATE	COMMENTS	DOC REFERENCE
DRAFT	24 Nov 2023	For issue to GM Organisational Improvement	
DRAFT	4 Jan 2024	For issue to Chair of Risk and Assurance Committee	
Issue 1	26 Mar 2024	*Pending Risk & Assurance Committee approval*	

DOCUMENT APPROVALS

	NAME	SIGNATURE	DATE
REVIEWER	Group Manager – Organisational Performance Sarah Matthews		13-Feb-2024
APPROVER	Risk and Assurance Committee Chair Bruce Robertson		

DOCUMENT CUSTODIAN AND REVIEW DATE

	NAME	REVIEW PERIOD	NEXT REVIEW DATE
CUSTODIAN	Risk Manager	3 yearly	March 2027

Risk Appetite

What is it?

A Risk Appetite Statement provides high-level guidance on the amount of risk an organisation is willing to take in pursuit of its strategic objectives. Our Risk Appetite Statement can also help us determine when we can be more aggressive in pursuit of our goals because it explicitly states what level of risk is acceptable.

Why do need it?

By default different functions within an organisation will have their own perspective around what is an acceptable level of risk. Some are very cautious, while others will be more aggressive. **By explicitly stating out Risk Appetite, Council has provided guidance as to the level of risk TDC is prepared to accept and what risks should be further controlled because they cross the threshold of acceptable risk.** We need this to ensure that all parts of TDC are 'on the same page' in terms of how much risk we're willing to take on.

When do we use it?

Anyone involved in managing risk in TDC should make themselves familiar with our Risk Appetite Statement below, and it becomes particularly important when making decisions on how to handle a particular risk or opportunity.
TDC's Risk Appetite was set by our Elected Members with input from the Executive Team and the Risk and Assurance Committee.

This Risk Appetite Statement (next page) is an integral part of TDC's Risk Management Framework (**Figure 1**) and should be read in conjunction with TDC's Risk Management Policy and Risk Management Framework.

Figure 1 – Key elements of TDC's risk management system.

TDC'S RISK APPETITE STATEMENT:	TDC IS WILLING TO ACCEPT RISKS THAT, SHOULD THEY OCCUR, RESULT IN: *(Any risks with consequences greater than this must occur only Rarely (refer to Likelihood table) or be managed down).*
Performance & Service Delivery	• Small parts of the community experience loss of service for up to 3 days. • Minor health or wellbeing impacts for some parts of the community due to loss of essential services. • Delivery of some services need to be deprioritised.
Financial	• 10-30% difference in budget or impact $200,000 - $750,000.
Health & Safety	• May require medical attention. • Requires support from external services e.g. EAP, to manage mental health concerns. No time off work is required.
Regulatory & Legal Compliance	• Small legal, regulatory or contractual breach with potential for limited litigation.
People	• Permanent staff turnover of up to 18%. • Moderate specialist skill gaps creating gaps in organisational capacity in key areas. • Resourcing with consultants may be required to fill the gaps in critical areas.
Reputation	• Negative local or regional media coverage for 3-7 days. • Moderate loss of community trust or loss of confidence by internal and external stakeholders.
Information Management	• Security flaws compromising the confidentiality and integrity of data or systems. • Data breaches are contained internally.
Environment & Climate	• Localised damage to the environment with a recovery time of 2-4 months. • Climate change event creates disruption to education, employment and community services for 4-14 days. • Moderate impact on businesses, livelihoods or consumer behaviour for 4-14 days.

Attachment 4 – Consequence Table

TIP!

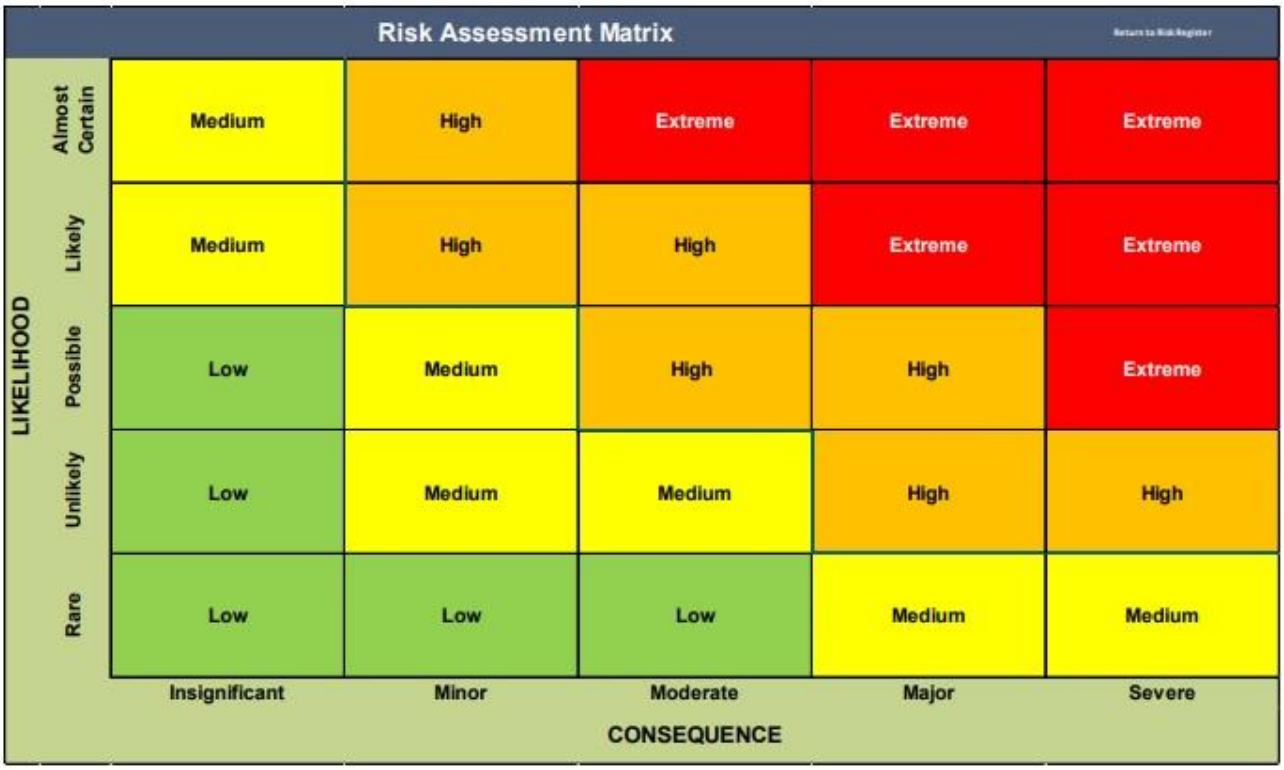
Make sure the consequence of the risk relates to its likelihood.
Often higher consequence events occur less frequently.

Use the table below to help you rate how significant the impacts of a risk event may be on your objectives - consider both direct and indirect effects, and short-term and long-term repercussions. This is an important **Risk Analysis** step.
If your risk has impacts in multiple categories (e.g. performance and service delivery, financial, etc) use the impact category that has the greatest/highest level of impact to combine with the likelihood assessment.
NOTE: the bullet points in the table below should be read as 'or' statements (as opposed to 'and' statements).

	INSIGNIFICANT 1	**MINOR 2**	**MODERATE 3**	**MAJOR 4**	**SEVERE 5**
Performance & Service Delivery	• Minor loss of service for some individuals for a short period of time. • No impact on the community's health and wellbeing.	• Loss of service for a small group of the community for a short period of time (hours). • No impact on community's health and wellbeing.	• Small parts of the community experience loss of service for 1-3 days. • Minor health or wellbeing impacts for some parts of the community due to loss of essential services. • Delivery of some services need to be deprioritised.	• Loss of core service impacting large parts of the community for 1-3 days. • Health and wellbeing for several parts of the community may be compromised. • Performance of a few services significantly reduced. • Major reorganisation of work programme in medium term (6 weeks - 6 months).	• Loss of core service impacting large parts of the community for more than 3 days. • The health, safety or wellbeing of many communities is severely compromised. • Performance of many services significantly reduced. • Reprioritisation of council's work programme for long-term objectives and LTP commitments (>6 months).
Financial	• Financial impact <$50,000.	• <10% difference in budget or impact $50,000 – $200,000.	• 10-30% difference in budget or impact $200,000 - $750,000.	• 30% - 40% difference in budget or impact $750,000 - $1,500,000.	• Serious long term financial implications requiring additional funding through either increasing rates or debt. • >40% difference in budget or an impact >$1.5M.
Health & Safety	• No treatment required. • No long term effects.	• First Aid treatment required. • May result in limited lost time from work. • Reversable health effects.	• May require medical attention. • Requires support from external services e.g. EAP, to manage mental health concerns and no time off work is required.	• Likely to result in Lost Time Injury and is Notifiable to WorkSafe. • Potential for prosecution under Health & Safety at Work Act. • Requires support from external services e.g. EAP, to manage mental health concerns. No time off work is required.	• Significant injury, disability or death. • Notifiable to WorkSafe. • Potential for prosecution under Health & Safety at Work Act. • Requires support from external services e.g. EAP, to manage mental health concerns and leads to no longer being able to work.
Regulatory & Legal Compliance	• Minor legal, compliance, or contractual breach but unlikely to have subsequent impacts.	• Minor legal, regulatory or contractual breach with potential for fines, but without litigation.	• Small legal, regulatory or contractual breach with potential for limited litigation.	• Major breach of legal, regulatory, or contractual obligations that will likely result in legal proceedings or sanction by regulator.	• Serious breach of legal, regulatory, or contractual obligations that will definitely result in legal proceedings (possibly multiple litigations). Significant exposure to ongoing liabilities.

	INSIGNIFICANT 1	MINOR 2	MODERATE 3	MAJOR 4	SEVERE 5
People	• Permanent staff turnover <15%. • Minimal loss of internal capacity and/or capability not affecting operations or service levels.	• Permanent staff turnover 15-16%. • Minimal specialist skills gaps. • Loss of organisational capacity and/or capability in some non-critical areas. • Coverage with existing teams (secondments, higher duties) to manage short term workload.	• Permanent staff turnover 17-18%. • Moderate specialist skill gaps creating gaps in organisational capacity in key areas. • Resourcing with consultants may be required to fill the gaps in critical areas.	• Permanent staff turnover 18-20%. • Major specialist gaps and disruption to business operation (refer to Performance & Service Delivery consequence description). • Resourcing with consultants required to fill the gaps in critical areas.	• Permanent staff turnover >20%. • Major specialist gaps and serious disruption to business operation (refer to Performance & Service Delivery consequence description). • Resourcing with consultants required to fill the gaps in critical areas and redeployment of existing staff where feasible.
Reputation	• Negative feedback from individuals. Insignificant reduction in trust and confidence. • No media or political attention.	• Negative local media coverage for one or two days. • Short-term loss of trust and confidence by small groups in the community. • Elements of public expectations not being met.	• Negative local or regional media coverage for 3-7 days. • Moderate loss of community trust or loss of confidence by internal and external stakeholders.	• Ongoing negative regional or nationwide media coverage for a period of 1-2 weeks. • Major reduction in trust and confidence by internal and external stakeholders or the public.	• Sustained adverse comment and media coverage - including international exposure - over several weeks. • Significant loss of public trust and confidence and damage to council's reputation. • Public calls (at a national level) for specific remedial action to be taken. Court action possible.
Information Management	• Isolated equipment failure.	• Compromise of user password or information management processes.	• Security flaws compromising the confidentiality and integrity of data or systems. • Data breaches are contained internally.	• Significant disruption to critical activities for 1-2 days. • Breach of non-confidential information to unauthorised/external parties. • Loss of a core system or data for 1-2 days.	• Information and/or systems are compromised with significant ongoing impacts (internal and external). • Significant and sustained disruption to critical activities (more than 2 days). • Breach of confidential information to unauthorised/external parties. • Loss of a core system for > 2 days. • Critical data is permanently lost.
Environment & Climate	• Minimal localised damage to the environment with a recovery time of up to 2 weeks. • No significant climate change impact. Can be managed through business as usual. • No impact on businesses, livelihoods or consumer behaviour.	• Minor localised damage to the environment with a recovery time of 2-8 weeks. • Climate change event creates disruption to education, employment and community services for 1-3 days. • Limited impact on businesses, livelihoods or consumer behaviour for 1-3 days.	• Localised damage to the environment with a recovery time of 2-4 months. • Climate change event creates disruption to education, employment and community services for 4-14 days. • Moderate impact on businesses, livelihoods or consumer behaviour for 4-14 days.	• Major, localised damage to the environment with a recovery time of between 4-12 months. • Climate change event creates disruption to education, employment and community services for 2-6 weeks. • Major impact on businesses, livelihoods or consumer behaviour for 2-6 weeks.	• Extensive and widespread damage to the environment with a recovery time exceeding 12 months. • Climate change event creates disruption to education, employment and community services for more than 6 weeks. • Severe impact on businesses, livelihoods or consumer behaviour for more than 6 weeks.

Document Set ID: 364
Version: 3, Version Date: 09/05/2024


Risk Assessment Matrix
LIKELIHOOD
Almost Certain
Likely
Possible
Unlikely
Rare
Medium
High
Extreme
Extreme
Extreme
Medium
High
High
Extreme
Extreme
Low
Medium
High
High
Extreme
Low
Medium
Medium
High
High
Low
Low
Low
Medium
Medium
Insignificant
Minor
Moderate
Major
Severe
CONSEQUENCE

Risk Appetite Statement

STATEMENT

September 2025

Version 2.0

DOCUMENT CONTROL

VERSION	DATE	COMMENTS	DOC REFERENCE
Version 1.0	26 Mar 2024	Risk & Assurance Committee approval	361
Version 2.0	16 Sept 2025	Risk & Assurance Committee approval	361

DOCUMENT APPROVALS

	NAME	SIGNATURE	DATE
REVIEWER	General Manager – Organisational Performance	Sarah Matthews	XXX
APPROVER	Chair of Risk and Assurance Committee	Bruce Robertson	XXX

DOCUMENT CUSTODIAN AND REVIEW DATE

	NAME	REVIEW PERIOD	NEXT REVIEW DATE
CUSTODIAN	Risk Advisor	3 yearly	Sep 2028

Risk Appetite

What is it?

A Risk Appetite Statement provides high-level guidance on the amount of risk an organisation is willing to take in pursuit of its strategic objectives. Our Risk Appetite Statement can also help us determine when we can be more aggressive in pursuit of our goals because it explicitly states what level of risk is acceptable.

Why do need it?

By default, different functions within an organisation will have their own perspective around what is an acceptable level of risk. Some are very cautious, while others will be more aggressive. **By explicitly stating out Risk Appetite, Council has provided guidance as to the level of risk TDC is prepared to accept and what risks should be further controlled because they cross the threshold of acceptable risk.** We need this to ensure that all parts of TDC are 'on the same page' in terms of how much risk we're willing to take on.

When do we use it?

Anyone involved in managing risk in TDC should make themselves familiar with our Risk Appetite Statement below, and it becomes particularly important when making decisions on how to handle a particular risk or opportunity.
TDC's Risk Appetite was set by our Elected Members with input from the Executive Team and the Risk and Assurance Committee.

This Risk Appetite Statement (next page) is an integral part of TDC's Risk Management Framework (**Figure 1**) and should be read in conjunction with TDC's **Risk Management Policy** and **Risk Management Framework**.

Figure 1 – Key elements of TDC's risk management system.

TDC'S RISK APPETITE STATEMENT:	Risks that are assessed as **at least likely to occur** and **meet the below thresholds exceed Council's Risk Appetite**:	
Financial	**Capital:**	• Risks more than 7.5% of Councils Capital Budget / **> $5M**
	Operational:	• Risks more than 0.65% of Council's Operational Budget / **> $1.0M**
Performance & Service Delivery	• Loss of a non-critical service (e.g. park, library, swimming pool) for more than 6 months. • Loss of critical services affecting at least 100 properties for more than 3 days. • More than moderate impact on community's health, safety and wellbeing resulting from loss of critical services. • Moderate impact on businesses or livelihoods for more than 14 days resulting from loss of critical services. • Delivery of some services need to be deprioritised.	
Health & Safety	• ***Safety*** - Lost Time Injury or more than 7 days. • ***Wellbeing*** - Requiring support from external services e.g. EAP, to manage mental health concerns and time off work is required for more than 7 days. • ***Occupational Health*** - Reversible health effects that result in time off work that exceeds 7 days.	
Regulatory & Legal Compliance	• Major legal regulatory, compliance or contractual breach with the potential for fines or litigation.	
People	• Permanent staff turnover exceeding 20%. • Major specialist skill gaps creating gaps in organisational capacity in key areas. • Resourcing with consultants may be required to fill the gaps in critical areas.	
Reputation	• Negative local or regional media coverage for more than 7 days. • Major loss of community trust or loss of confidence by internal and external stakeholders.	
Information Management	• Security flaws compromising the confidentiality and integrity of data or systems. • Data breaches are contained internally. • Loss of a core system for more than 24 hours.	
Environment & Climate	• Moderate localised damage to the environment with a recovery time of more than 6 months. • Greater than localised moderate impact to one species or ecosystem.	

Attachment 4 – Consequence Table

TIP!

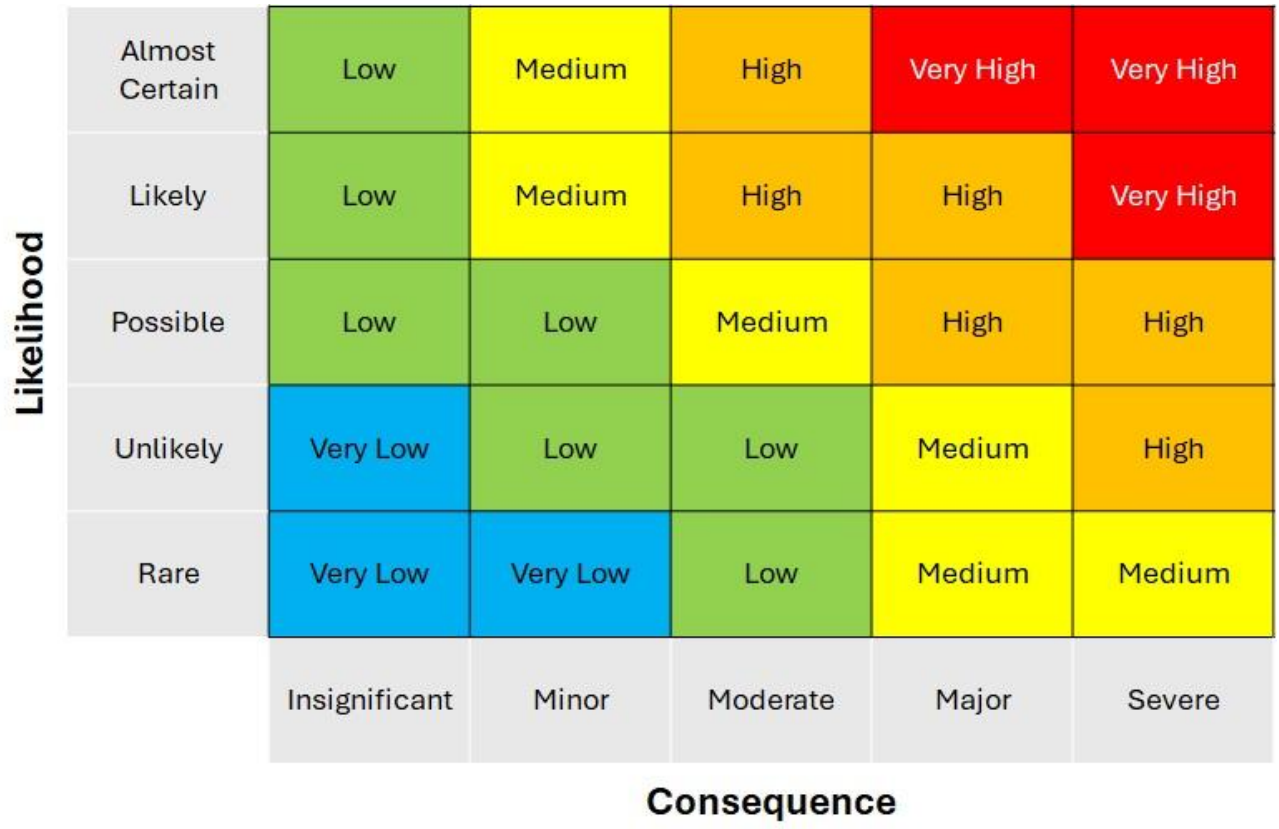
Make sure the consequence of the risk relates to its likelihood.
Often higher consequence events occur less frequently.

Use the table below to help you rate how significant the impacts of a risk event may be on your objectives - consider both direct and indirect effects, and short-term and long-term repercussions. This is an important **Risk Analysis** step.
If your risk has impacts in multiple categories (e.g. performance and service delivery, financial, etc) use the impact category that has the greatest/highest level of impact to combine with the likelihood assessment.
NOTE: the bullet points in the table below should be read as 'or' statements (as opposed to 'and' statements).

		INSIGNIFICANT 1	MINOR 2	MODERATE 3	MAJOR 4	SEVERE 5
Council-wide	CapEx	Up to 2.5% of Council's Capital Budget **<= $1.7M**	>2.5% - 5% of Council's Capital Budget **>$1.7M to $3.4M**	5% - 7.5% of Council's Capital Budget **>$3.4M to $5M**	7.5% - 10% of Council's Capital Budget **>$5M to $6.7M**	>10% of Council's Capital Budget **>$6.7M**
	OpEx	Up to 0.13% of Council's Operational Budget **<= $200k**	0.13% - 0.4% of Council's Operational Budget **$201k to $600k**	0.4% - 0.65% of Council's Operational Budget **$601k to $1.0M**	0.65% - 0.9% of Council's Operational Budget **>$1.0M to $1.4M**	>0.9% of Council's Operational Budget **>$1.4M**
Business Unit/ Project	CapEx	Up to 0.25% of Council's Capital Budget **<= $200k**	>0.25% - 0.5% of Councils Capital Budget **$201k to $300k**	0.5% - 0.75% of Councils Capital Budget **$301k to $500k**	0.75% - 1.0% of Council's Capital Budget **$501k to $700k**	>1.0% of Councils Capital Budget **>$700k**
	OpEx	Up to 0.05% of Council's Operational Budget **<= $20k**	>0.05% - 0.10% of Council's Operational Budget **$21k to $40k**	0.10% - 0.15% of Council's Operational Budget **$41k to $60k**	0.15%-0.20% of Councils Operational Budget **$61k to $80k**	>0.20% of Councils Operational Budget **>$80k**
Performance & Service Delivery		• Loss of a non-critical service (e.g. park, library, swimming pool) for up to 2 weeks. • No impact on the community's health, safety and wellbeing. • No effect on businesses or livelihoods.	• Loss of a non-critical service (e.g. park, library, swimming pool) for 2 - 4 weeks. • Loss of critical services affecting up to 10 properties / businesses for 1 - 3 days. • Minor impact on community's health, safety and wellbeing for 1 - 3 days resulting from loss of critical services. • Minor impact on businesses or livelihoods for 1 - 3 days resulting from loss of critical services.	• Loss of a non-critical service (e.g. park, library, swimming pool) for 1 - 6 months. • Loss of critical services effecting 11 - 100 properties / businesses for 1 - 3 days. • Moderate impact on community's health, safety and wellbeing resulting from loss of critical services. • Moderate impact on businesses or livelihoods for 4 - 14 days resulting from loss of critical services. • Delivery of some services need to be deprioritised.	• Loss of a non-critical service (e.g. park, library, swimming pool) for 6 - 12 months. • Loss of critical services effecting 101 - 1,000 properties / businesses for 1 - 3 days. • Major impact on community's health, safety and wellbeing resulting from loss of critical services. • Major impact on businesses or livelihoods for 2 - 6 weeks resulting from loss of critical services. • Major reorganisation of work programme in medium term (6 weeks - 6 months).	• Loss of a non-critical service (e.g. park, library, swimming pool) for over 12 months. • Loss of critical services effecting over 1000 properties for more than 3 days. • Severe impact on community's health, safety and wellbeing resulting from loss of critical services. • Severe impact on businesses or livelihoods for over 6 weeks resulting from loss of critical services. • Reprioritisation of council's work programme for long-term objectives and LTP commitments (>6 months).

	INSIGNIFICANT 1	MINOR 2	MODERATE 3	MAJOR 4	SEVERE 5
Health & Safety	• ***Safety*** - Minor physical injury, possibly requiring First Aid treatment. • ***Wellbeing*** - Not requiring support or counselling. • ***Occupational Health*** - Exposure to hazards without health effects.	• ***Safety*** - Physical Injury requiring medical treatment without hospitalisation or loss of working time. • ***Wellbeing*** - May require internal support or counselling. • ***Occupational Health*** - Reversable health effects without loss of time.	• ***Safety*** - Lost Time Injury (up to 7 days). • ***Wellbeing*** - Requiring support from external services e.g. EAP, to manage mental health concerns and time off work is required (up to 7 days). • ***Occupational Health*** - Reversible health effects with limited loss of time (up to 7 days).	• ***Safety*** - Lost Time Injury (more than 7 days). • ***Wellbeing*** - Requiring support from external services e.g. EAP, to manage mental health concerns and time off work is required (more than 7 days). • ***Occupational Health*** - Reversible health effects with limited loss of time (more than 7 days)	• ***Safety*** - Life changing injury or fatality. • ***Wellbeing*** - Requiring support from external services e.g. EAP, to manage mental health concerns and unable to return to work. • ***Occupational Health*** - Irreversible health effects.
Regulatory & Legal Compliance	• Minor legal, compliance, or contractual breach (but unlikely to have subsequent impacts).	• Small legal, regulatory or contractual breach with low potential for fines or litigation.	• Medium legal regulatory, compliance or contractual breach with the potential for fines or litigation.	• Major breach of legal, regulatory, or contractual obligations that will likely result in legal proceedings, fines or sanctions.	• Significant (potentially continuing) breach of legal, regulatory, or contractual obligations that will result in legal proceedings. Exposure to ongoing liabilities.
People	• Permanent staff turnover <15%. • Minimal loss of internal capacity and/or capability not affecting operations or service levels.	• Permanent staff turnover 15 - 18%. • Minimal specialist skills gaps. • Loss of organisational capacity and/or capability in some non-critical areas. • Coverage with existing teams (secondments, higher duties) to manage short term workload.	• Permanent staff turnover 18 - 20%. • Moderate specialist skill gaps creating gaps in organisational capacity in key areas. • Resourcing with consultants may be required to fill the gaps in critical areas.	• Permanent staff turnover 21 - 25%. • Major specialist gaps and disruption to business operation (refer to Performance & Service Delivery consequence description). • Resourcing with consultants required to fill the gaps in critical areas.	• Permanent staff turnover >25%. • Major specialist gaps and serious disruption to business operation (refer to Performance & Service Delivery consequence description). • Resourcing with consultants required to fill the gaps in critical areas and redeployment of existing staff where feasible.
Reputation	• Negative feedback from individuals. Insignificant reduction in trust and confidence. • No media or political attention.	• Negative local media coverage for one or two days. • Short-term loss of trust and confidence by small groups in the community. • Elements of public expectations not being met.	• Negative local or regional media coverage for 3-7 days. • Moderate loss of community trust or loss of confidence by internal and external stakeholders.	• Ongoing negative regional or nationwide media coverage for a period of 1-2 weeks. • Major reduction in trust and confidence by internal and external stakeholders or the public.	• Sustained adverse comment and media coverage - including international exposure - over several weeks. • Significant loss of public trust and confidence and damage to council's reputation. • Public calls (at a national level) for specific remedial action to be taken. Court action possible.
Information Management	• Isolated equipment failure.	• Compromise of user password or information management processes.	• Security flaws compromising the confidentiality and integrity of data or systems. • Data breaches are contained internally.	• Significant disruption to critical activities for 1 - 2 days. • Breach of non-confidential information to unauthorised/external parties. • Loss of a core system or data for 1 - 2 days.	• Information and/or systems are compromised with significant ongoing impacts (internal and external). • Significant and sustained disruption to critical activities (more than 2 days). • Breach of confidential information to unauthorised/external parties. • Loss of a core system for > 2 days. • Critical data is permanently lost.

	INSIGNIFICANT 1	MINOR 2	MODERATE 3	MAJOR 4	SEVERE 5
Environment & Climate	• Localised, short-term damage to the land or environment with a recovery time of up to 2 months. • No noticeable impact on species or ecosystems	• Minor localised damage to the land or environment with a recovery time of 2 - 4 months. • Localised and minor impact to one species or ecosystem.	• Moderate localised damage to the environment with a recovery time of 4 - 6 months. • Localised moderate impact to one species or ecosystem.	• Major, localised damage to the environment with a recovery time of between 6 - 12 months. • Major or significant impact to one or more species or ecosystem.	• Extensive and widespread damage to the environment with a recovery time exceeding 12 months. • Permanent loss of one or more species or ecosystems.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Almost Certain
Likely
Possible
Unlikely
Rare
Low
Medium
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Very High
Very High
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Very Low
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Insignificant
Minor
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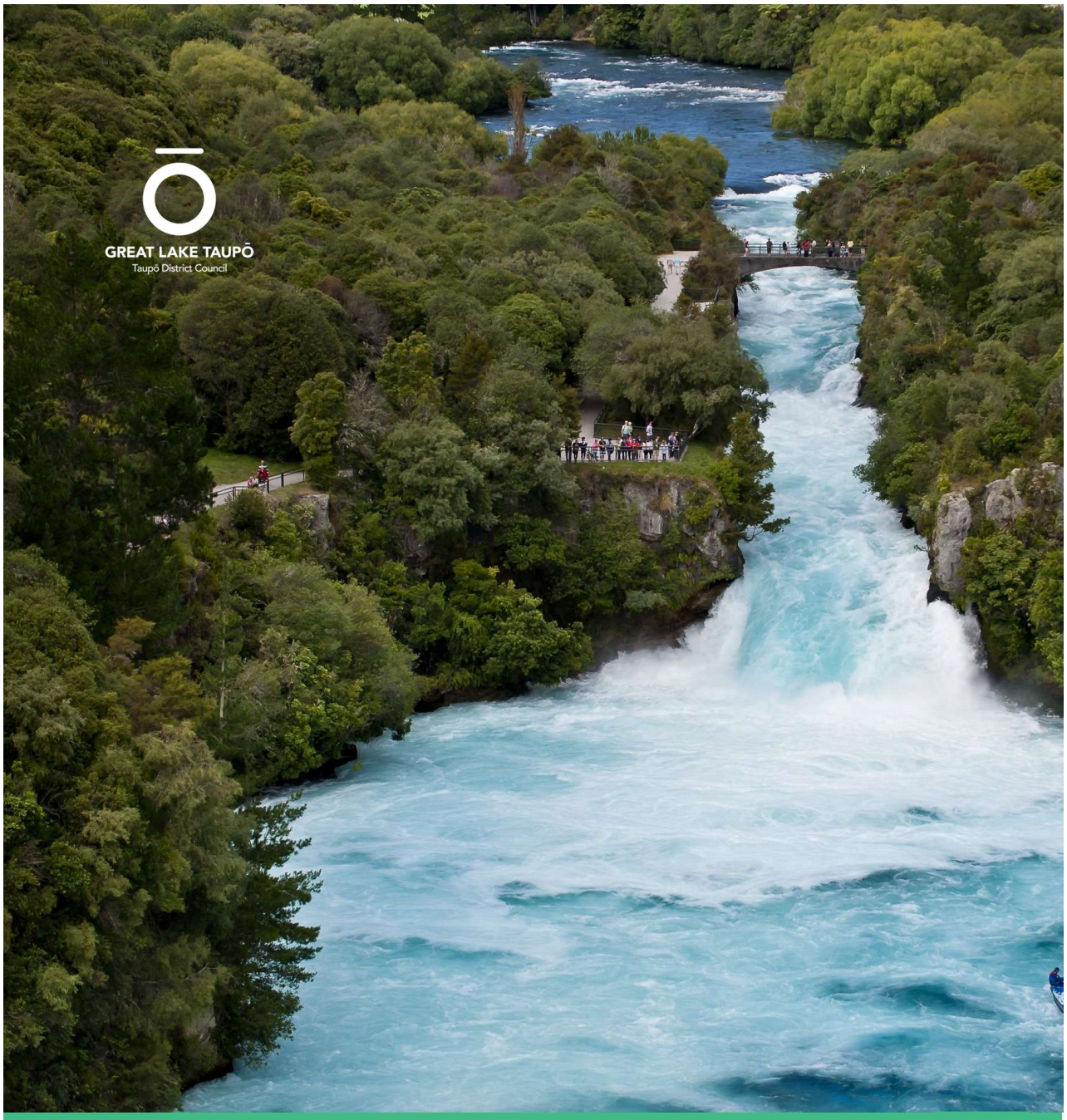
Major
Severe
Consequence



Risk Management Framework

September 2025

Version 2.0

FRAMEWORK

DOCUMENT CONTROL

VERSION	DATE	COMMENTS	DOC REFERENCE
Version 1.0	5-Mar-24	Risk and Assurance Committee approval	
Version 2.0	16-Sep-25	Risk and Assurance Committee approval	

DOCUMENT APPROVALS

	NAME	SIGNATURE	DATE
REVIEWER	General Manager – Organisational Performance	Sarah Matthews	XXX
APPROVER	Risk and Assurance Committee Chair	Bruce Robertson	XXX

DOCUMENT CUSTODIAN AND REVIEW DATE

	NAME	REVIEW PERIOD	NEXT REVIEW DATE
CUSTODIAN	Risk Advisor	3 yearly	Sep 2028

Contents

1. Introduction

What is Risk Management? Risks are defined as the effects of uncertainty on objectives (ISO 31000). Risks can be negative (a threat) or positive (an opportunity). Risk management refers to activities carried out to reduce the impact of uncertainty to an acceptable level, or to take advantage of opportunities.

Why Risk Management? We are here to succeed; to deliver on the commitments we have made to our community. The effective management of risk enables Council to lead the Taupō District, deliver our Long-term Plan and fulfil our objectives. It also provides key information for decision making and ensures resources are applied where they are most needed to support operational effectiveness and efficiency.

Risk management can be likened to the brakes on a car. Yes, they can slow you down or stop you, but the better your brakes, the faster you can go. If you know about your risks and manage them, you'll arrive at your destination faster.

Risk management is not new to TDC – we already manage risks through various means (e.g. we manage risks to staff wellbeing through our various leave and anti-bullying policies) and have had a risk management framework in place to provide guidance and direction on structured and consistent risk management since March 2024.

TDC's Risk Management System (Figure 1) has four key building blocks which together enable successful risk management. This Risk Management Framework supports staff by providing guidance on how to implement the risk management objectives and principles outlined in our Risk Management Policy. We all have a responsibility to understand our role in managing risk so that we can safeguard our people, assets, finances, property and reputation, and this Framework will help you develop your knowledge.

Figure 1 – Key elements of TDC's risk management system

2. Purpose

The purpose of this Risk Management Framework (Framework) is to help staff manage significant risks that may affect successful achievement of our objectives by providing:

- Direction for consistent risk management at TDC including how risks are identified, analysed, and evaluated.

- Guidance on how to design risk response plans; and
- Information on how risks are reported, escalated, and communicated.

3. Who is this framework for?

Everyone! This Framework is in place to define Council's expectations for the consistent identification, assessment and management of risks across TDC. This will enable us to compare risks against one another so we can determine where to focus our attention.

The risk management process described in this Framework applies to all levels of activity within TDC, whether it be strategic, operational, or at project level. The specific tools you apply may, however, vary across TDC, depending on the nature of the risk and context your team is operating in.

How does this relate to health and safety risk management? The systems we use to manage health and safety at work are complementary to this Risk Management Framework. TDC has well established processes for managing workplace hazards and these continue to be invaluable. However, by also applying the risk assessment processes described here we can compare health and safety risks against other types of risk, so we can prioritise what to manage first.

Is there someone in my team that is responsible for making risk management happen? Yes, we all have responsibilities to identify and discuss actual or potential risks, but your supervisor, Team Leader or Manager should facilitate discussions within your team around what might prevent you from achieving the desired outcomes. Our **Risk Management Policy** and our RACI Chart[1] outlines roles and responsibilities across TDC and our Risk Advisor is here to offer advice and support.

4. What is a risk framework?

A Risk Management Framework is:

> A set of components that provide the foundations & organisational arrangements for designing, implementing, monitoring, reviewing, & continually improving risk management throughout an organisation.

Basically, it's a system for 'doing risk management right', and ISO 31000:2018 identifies that successful risk management frameworks include all the key elements described in **Figure 2**. It's a cyclical risk management approach that incorporates integrating, designing, implementing, evaluating, and improving Enterprise Risk Management. If these key elements are in place and working properly, risk management should be integrated into our governance, day to day decision making and continuously improving.

[1] A RACI chart is a table detailing who is accountable, responsible, and those people who should be consulted and informed.

Figure 2 – Key elements of successful Risk Management Frameworks (ISO 31000:2018 Risk Management – Guidelines)

5. TDC's Risk Framework:

Accountability and Governance

TDC's risk management operates at three levels:

- **Strategic Risks** – those big chunky risks that can prevent TDC from achieving its strategic objectives as outlined in our Vision and Values and Long-term Plan.
- **Enterprise Level** – enterprise-wide view of "big-ticket" risks that may exceed Council's Risk Appetite and as such need Executive level ownership. These are more fluid than TDC's strategic risks and are at a level that Executive can either effectively manage or escalate to elected members.
- **Business Level** – those day-to-day corporate, operational or project risks that are managed by each business unit or team and remain within Council's Risk Appetite. From time to time, a business level risk may exceed Council's Risk Appetite and then requires escalation to the Executive level for management.

The risk management accountabilities for each of these levels of risk is further described in **Figure 3**.

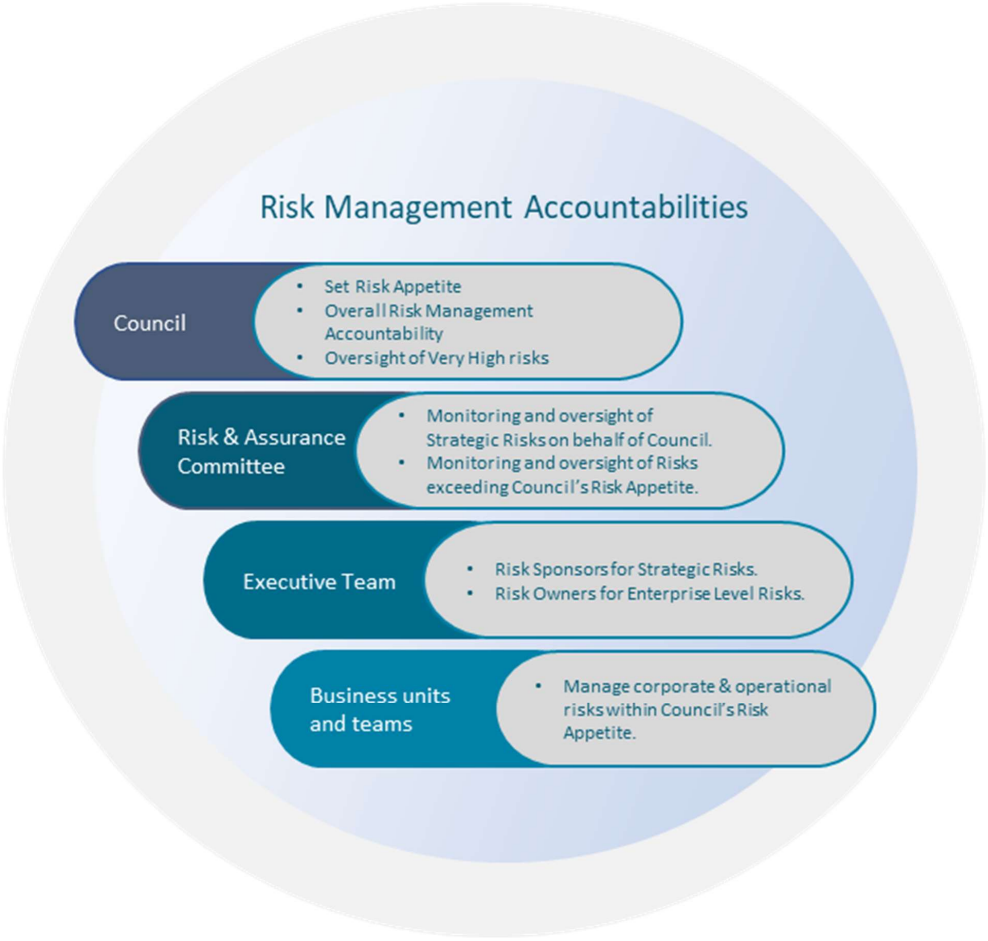


Figure 3 – Accountabilities for strategic, enterprise and business level risk management.

Leadership & Commitment

TDC's commitment to risk management is led by our Executive Team with the support of the Enterprise Leadership Team. They are answerable to our Risk and Assurance Committee who have committed to enterprise risk management by adopting TDC's Risk Management Policy. It is their expectation that risks will be identified and managed across the entire organisation using the processes outlined in this framework**.**

What does this mean for you?

- You should see your manager (& team) asking frequently: "What can stop us from achieving our objectives?." "What do we need to have in place to make sure we will achieve our objectives?," especially prior to making significant decisions.
- You should also see your manager ensuring the outputs of these discussions (risks and risk controls) being captured in risk registers.
- As staff you should be given time to specifically contribute to these discussions, and to make suggestions and undertake tasks to stop risks becoming a reality.

- You should also be given time to develop an understanding of how risk management works at TDC (by reading this Framework or attending training).
- You will be held accountable for doing what you say you're going to do. If you have been given a task that is required to manage a risk – you'll be expected to deliver on this.
- Ensure the risks identified are communicated to elected members via the risk section of committee papers you prepare.

What are my responsibilities?

Your risk management responsibilities depend on your role in TDC. Our Risk Management Policy outlines specific responsibilities for staff, supervisors and team leaders, Enterprise Leaders and our Executive Team. All staff are expected to proactively identify and report risks using the processes described in this Framework. We are all jointly responsible for identifying and managing risks to the work we are delivering on behalf of council.

Design, Implementation, Evaluation & Improvement

TDC's Risk Management Framework has been **designed** to account for the internal and external environment that we operate in, and also the level of risk management maturity. It will change and evolve over time to account for our operating environment and as TDC's risk management maturity develops.

In **implementing** this Framework, we want to ensure that you clearly understand how the whole Framework (system) works, so that you can help ensure it's implemented consistently across Council. This is important as it enables senior management to 'compare apples with apples' when comparing risks across departmental groups and prioritise the investment in risk controls. You should be given time to understand it and implement it (see Leadership & Commitment above).

The effectiveness of TDC's Framework and its implementation will be **evaluated** against our Key Performance Indicators (KPIs) and the Framework will be reviewed at least every 3 years to reflect changes in our operating environment and our performance.

This Framework needs to serve its purpose (help us manage risk better) and work for those that implement it. We are seeking to continuously **improve** it, without having to wait for a formal review. If this Framework doesn't work for your business unit, then we want to know about it. Contact our Risk Advisor.

6. Risk Management Process

A key element of TDC's Risk Management Framework is our Risk Management Process which aligns with international best practice. This will help you to understand what steps you need to take to manage risk to your team's objectives.

The Risk Management Process outlined below is an internationally accepted, structured and consistent way to think about risk (**Figure 4).** It involves a series of steps that, if followed, will help you to determine where you should focus your attention first.

Ultimately, the purpose of risk management is to increase the likelihood of achieving your objectives by proactively identifying and managing potential threats.

Applying the risk management process outlined in **Figure 4** allows us to focus our attention on our biggest risks and helps ensure we proactively control these by either mitigating their impacts, completely avoiding them, or reduce their likelihood and/or impacts. While it may appear to be a sequential process with start and finish it is in fact iterative in practice, with the process repeating itself in a constant cycle of improvement.

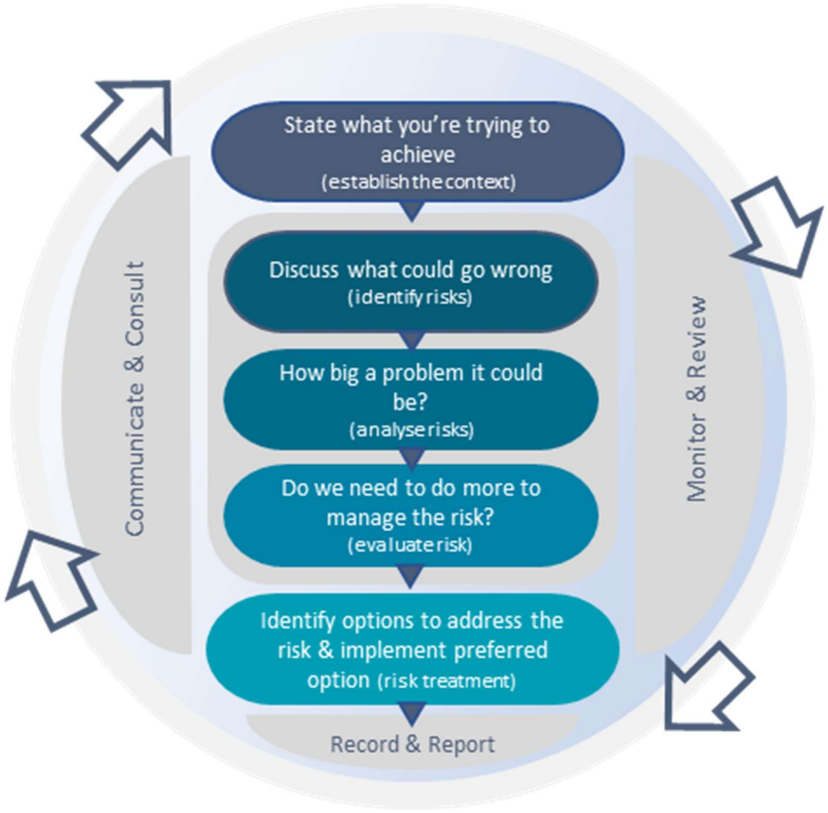


Figure 4 – Risk Management Process (ISO 31000)

Implementation of Council's risk management process will identify risks that will be captured in risk registers (**Figure 5**).

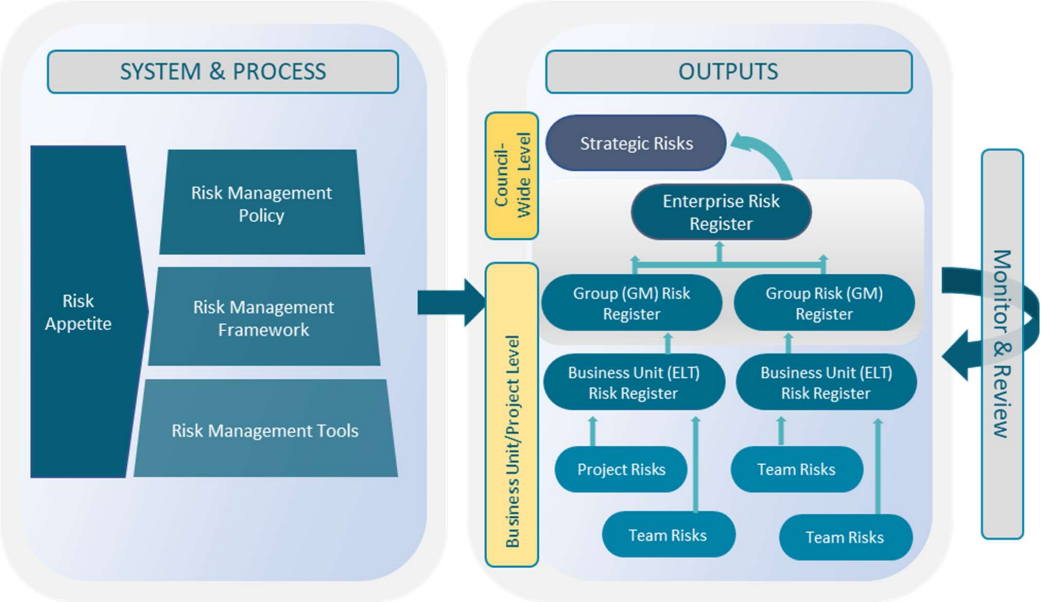


Figure 5 – Application of TDC's risk management systems and processes will capture our risks in risk registers.

How do I apply this at TDC? Where do I start?

Managing risk effectively takes time and resources. Before you start applying the risk management process to your department/team/project consider the environment you're operating in and make a plan for implementing this risk management process that reflects that environment. There is a template for planning how you will implement risk management processes in your department/team/project in Attachment 1 – Plan for implementing the risk management process.

When developing your plan consider how fast moving the work is that you're doing. Do you inherently know there are likely to be some big risks that need strong management? This will help to determine how often you should be seeking to review your risks. E.g. if you're in a high value, high-risk, fast-moving project, you may wish to review key risks fortnightly. When doing your planning ask: how will I ensure there is time to identify & manage risks?

Communicate & Consult

One of the first risk management steps you should take is to ask:

- **Who are my stakeholders and how can they impact what we are trying to achieve?**
- **Who has responsibilities that are key to our success and is everyone clear on their role?**

By answering these questions, you will identify the key people or organisations you need to communicate and consult with throughout the risk management process. Communication and consultation aims to:

- Bring different areas of expertise together for each step of the risk management process;
- Ensure that different views are considered when evaluating risks;
- Ensure that there is sufficient information to make informed decisions and provide good oversight.

Step 1 – ESTABLISH THE CONTEXT – WHAT ARE WE TRYING TO ACHIEVE & IN WHAT ENVIRONMENT?

Whether you're trying to manage risks to a project or risks to the delivery of day-to-day operations, this Risk Management Framework can help you. To get started, you need to understand:

i) Your objectives – what are you trying to achieve?

ii) The internal and external environment (context) that you're trying to meet your objectives within.

Write them down if you haven't already. It's also helpful to ask yourself:

- **Why am I doing this?**
- **How does it link to TDC's Vision and Values?**
- **What needs to be in place for our objectives to be met?**

In establishing the context consider and record the following:

- What are the aims and objectives of the organisation and your department/team/project?
- What is your core activity?
- Who is involved with your department/team/project - both internally and externally?
- What relationships does your department/team/project have and how important are these?
- What laws, regulations, rules, or standards apply to your department/team/project?
- What trends are affecting your department/team/project?

Step 2 – IDENTIFY RISKS – WHAT COULD CAUSE US PROBLEMS?

Risk identification identifies potential events, situations, or circumstances that would prevent or delay the achievement of your objectives. It helps the Council to minimise surprises, avoid unnecessary costs and be more resilient.

To get started, we recommend you:

i) Read this Framework from start to finish; then

ii) Go to the Risk Management Portal on Tui or click on the hyperlinks below to download:

a. the generic **Risk Register** template. This will be where you record the risks you identify.

b. Two tables that will help you differentiate what to really worry about (the big risks) and the not so big risks. We can prioritise risks by estimating both how likely they are to occur (**Likelihood Table**) AND if they do occur, the potential consequences of that risk (**Consequence Table**).

c. Risk Identification Prompts. This is a list of questions to ask yourself that might help stimulate discussion around potential sources of risk.

Risk Identification Meeting. The next step is to get a few key people together to discuss what might prevent or delay the achievement of your objectives (what could go wrong).

Before you set-up your risk identification meeting consider who should attend. You might find people outside of your key team might be able to offer insights into what could potentially go wrong. The meeting should start with asking:

"What do we need to make this project/improvement/operation successful?" and then considering,

"What could stop us achieving this?" and "What assumptions have we made?" assumptions are a key source of risk.

Have a read of the Risk Identification Prompts and ask who might have a good understanding of some of these risks? You need to invite a broad enough range of people, without making the meeting so large that people disengage. Typically 4-10 people is a good number but be guided by the context of your project/team/department.

Make sure you're prepared. Before your risk identification meeting, make sure you're prepared. The Risk ID Meeting Check-Sheet is a helpful tool.

When recording the risks you have identified capture:

i) the event that has an effect on objectives (record in Risk Title column in the Risk Register)

ii) which has been caused by… (Risk Cause column in Risk Register)

iii) resulting in …. (Risk Consequence column in Risk Register)

TIP!

How to capture risks

EXAMPLE 1.	**Title:**	Failure to Manage Project Interdependencies.
	Cause:	Interdependencies between projects in the programme of work are not understood and managed.
	Consequence:	Projects may can be delayed and there may be increased costs to complete the programme of work.
EXAMPLE 2.	**Title:**	Insufficient Testing of IT Systems.
	Cause:	The new IT system may not be fully tested before implementation.
	Consequence:	System errors may occur, delaying project completion by three months, and costing a further $100,000 of unbudgeted expenditure for extending existing IT licences.

Step 3 – ANALYSE – WHAT CAUSES A RISK AND HOW BIG IS THE RISK?

In order to identify the big risks from the small risks and help us prioritise where to put our attention we need to analyse them. We do this at TDC by:

1. Identifying risk sources and causes;
2. Estimating the likelihood of the risk occurring and the consequences/potential impacts.

It is recommended you have a separate, second risk meeting to analyse the risks – risk identification and analysis can be a lot to cover in one meeting.

How to analyse risk

There are two steps in this analysis. The first looks at the inherent risk (the risk without any controls in place) and the second looks at residual risk (the risk after controls have been successfully implemented).

For each risk in your risk register determine the inherent and residual risk by:

- Identifying and recording the causes of the risk. In most cases there are likely to be more than one risk cause. Note these down.
- Referring to the Likelihood Table and using your judgement and experience to assess whether the likelihood of is Almost Certain, Likely, Possible, Unlikely or Rare.
- Referring to the Consequence Table and using your knowledge and experience to assess whether the consequence of each of the cause is Insignificant, Minor, Moderate, Major or Severe.
- Referring to the Risk Rating Matrix below, which is also included with the Risk Register Template, determine the risk rating for the inherent and residual risks.

Tiered Risk Analysis

Council's Risk Consequence Table has two levels for assessing the financial consequences of a risk – ***Council-wide*** or ***Business Unit/Project***.

These two different levels ensure our Risk Management System is meaningful at both the Council-wide (CE/Risk and Assurance/Council) and at the Business Unit level (day-to-day operations).

> **Risk consequences should be analysed at the Business/Unit Project level,**
> **(except for risks on the Enterprise Risk Register which are analysed at the Council-wide level).**

Sorting Wheat from Chaff

Once you've estimated each risk's likelihood and consequence, the risk register will automatically calculate the Risk Rating as either Very High, High, Moderate, Low or Very Low. The matrix below (**Figure 6**) illustrates how this is done. E.g. a risk that could *Possibly* happen but has a *Moderate* consequence has a risk rating of *Medium*.

TIP!

Analysing Risk – don't spend too long!

We assess the likelihood and consequence so we can focus on managing the 'big risks'. If we spend too much time trying to fine tune how likely the risk or its impacts, we have less time to identify risk controls and manage risk effectively. Risks are inherently uncertain, so it won't be easy to analyse (i.e. determine Likelihood & Consequence). Do your best and make sure you involve a variety of people who understand the risk and then get on with managing it.

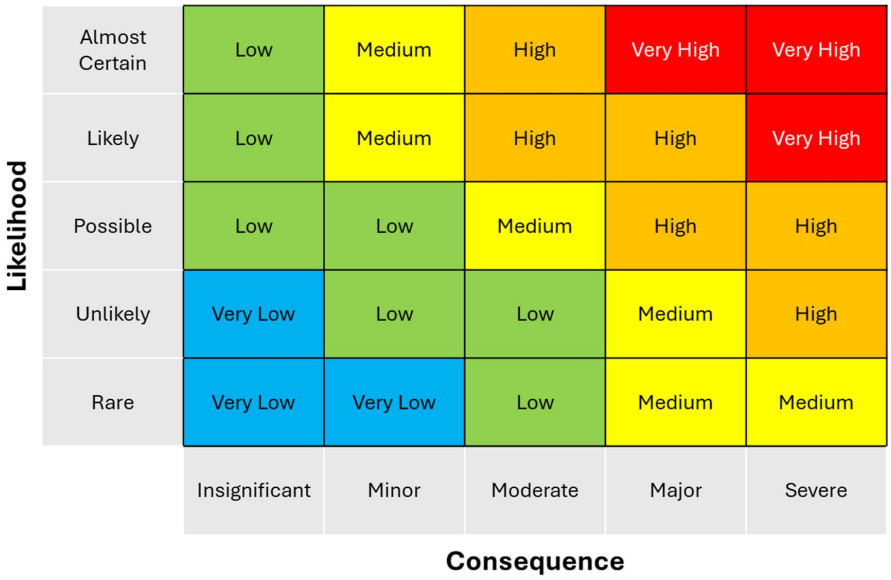


Figure 6 – TDC's Risk Assessment Matrix showing how Risk Rating is calculated.

Why is it important to understand the Risk Rating?

The Risk Rating helps us prioritise where to focus our time, money and attention, but also determines what level of management is responsible for ensuring adequate management of the risk (or accepting the risk).

Step 4 – RISK EVALUATION – DO WE NEED TO DO MORE?

Now that our risks are understood we need to prioritise management effort based on the risk rating. Risk evaluation assists in determining which risks are a priority for risk treatment.

Evaluating Business Unit/Project Level risks

For risks developed at the Business Unit or Project level, use **Figure 7** to guide next steps.

Level of Risk	Treat	Escalation	Authority to accept risk as currently rated
Very High	Treat	• Notify manager as soon as practicable and explicitly advise them of its potential consequences. • Unless risk can be reduced, Manager to include in their risk register.	General Manager
High	Treat	• Notify manager as soon as practicable and explicitly advise them of its potential consequences. • Unless risk can be reduced, Manager to include in their risk register.	General Manager
Medium	Treat, if cost effective to do so	• Monitor and notify manager if there are indications that the risk may increase.	Enterprise Leader
Low	Treat, if time and money allow	• Monitor	Manager/Team Leader/Project Manager
Very Low	Accept	• Monitor	Manager/Team Leader/Project Manager

Figure 7 – Risk evaluation guidance for determining level of management attention and treatment approach for Business Unit/Project level risks, based on Residual Risk Rating.

Risk that are rated High or Very High are escalated and included in Group level risk registers. Risks on the Group level risk registers are analysed and used to inform the development of the Enterprise Risk Register.

Evaluating Enterprise Risks

Risks that are significant enough to be included on Council's Enterprise Risk Register will be managed by a member of the Executive Team.

Risks in Council's Enterprise Risk Register that are rated High or Very High exceed **Council's Risk Appetite** and are reported quarterly to the Risk and Assurance Committee and to Council. These are actively managed unless exceedance of Council's Risk Appetite is explicitly accepted by the Risk and Assurance Committee, which has delegated risk management responsibilities by Council.

TIP!

What is Risk Appetite?

Risk Appetite is the amount of risk an organisation is willing to accept in pursuit of its strategic objectives.

Risk Appetite needs to balance what the level of risk that is considered acceptable, and the cost of mitigating to that level of acceptance.

Why is it important? A well-articulated risk appetite statement can give confidence that everyone is on the same page when it comes to taking and managing risks.

Step 5 – TREAT THE RISKS

Risks assessed High or Very High require further risk treatment.

The selection of risk treatment will need to balance the potential benefits of a treatment against the time and cost of doing so. Be realistic – we will never be risk free, so we are looking to reduce risks as low as reasonably practicable. There are some things we cannot change no matter what resources we throw at it or how hard we try.

Risk treatments may involve one or a combination of the following. What type of treatment and when you use it is not set in stone, but we would encourage you to aim for the safest option where practicable.

Risk Treatment Approaches

When considering possible risk treatment approaches, we recommend asking yourself these questions:

1. Risk **Avoidance** – Can I avoid the risk completely by choosing an alternative less risky approach or process or ceasing the activity that introduced the risk?
2. Risk **Reduction** – If I cannot avoid the risk or it isn't practical to do so, what can I do to reduce the likelihood or consequence of the risk to an acceptable level?
3. Risk **Transfer** – Can I transfer all or part of the risk to another party? (usually an insurance company).
4. Risk **Acceptance** – Making an informed decision that the cost of the risk treatment outweighs the benefit and accepting the risk. No further action is taken to treat the risk. *This needs to be done at the right level of the organisation* **(Figure 7)**.

Detailed Treatment Plans. Where a detailed treatment plan is needed for a High or Very High risk, the plan should be recorded in the risk register and:

1. **Specify the treatment option agreed** - avoid, reduce, transfer or accept.
2. **Document the treatment plan** - outline the approach to be used to treat the risk. Any relationships or interdependencies with other risks should also be highlighted.
3. **Assign an appropriate owner** – state who is accountable for monitoring and reporting on progress of the treatment plan implementation. Where the treatment plan owner and the risk owner are different, the risk owner has ultimate accountability for ensuring the agreed treatment plan is implemented.
4. **Specify a target resolution date** - where risk treatments have long lead times, consider the development of interim measures. *For example, it is unlikely to be acceptable for a residual risk to be rated 'Very High' and to have a risk treatment with a resolution timeframe of two years.*

Step 6 – RECORD AND REPORT RISKS

Record Risks – Create a risk register to record your risks – the TDC template is here. Save it where everyone can access it (Objective, Teams or the ECM). Let Risk Owners, the rest of the team, and those with risk management responsibilities know where to find it.

Report / Escalate Risks – Report your risks. Who needs to know about the risks? Your team? Your manager? Your Project Sponsor? Letting others know about risks helps to ensure the best possible treatment can be identified and ensures everyone is on the same page – TDC takes a No Surprises approach. By understanding the risks from the outset, Elected Members and management can make informed decisions. **Figure 8** outlines an approach for how risks can be escalated in TDC.

Enterprise Risks – some risks may be so large that they are also reported in the Enterprise Risk Register. This combines the largest risks identified across TDC and is reported to the Executive. The Enterprise Risk Register is managed by the TDC Risk Advisor, and individual risks within the register are managed by a member of the Executive.

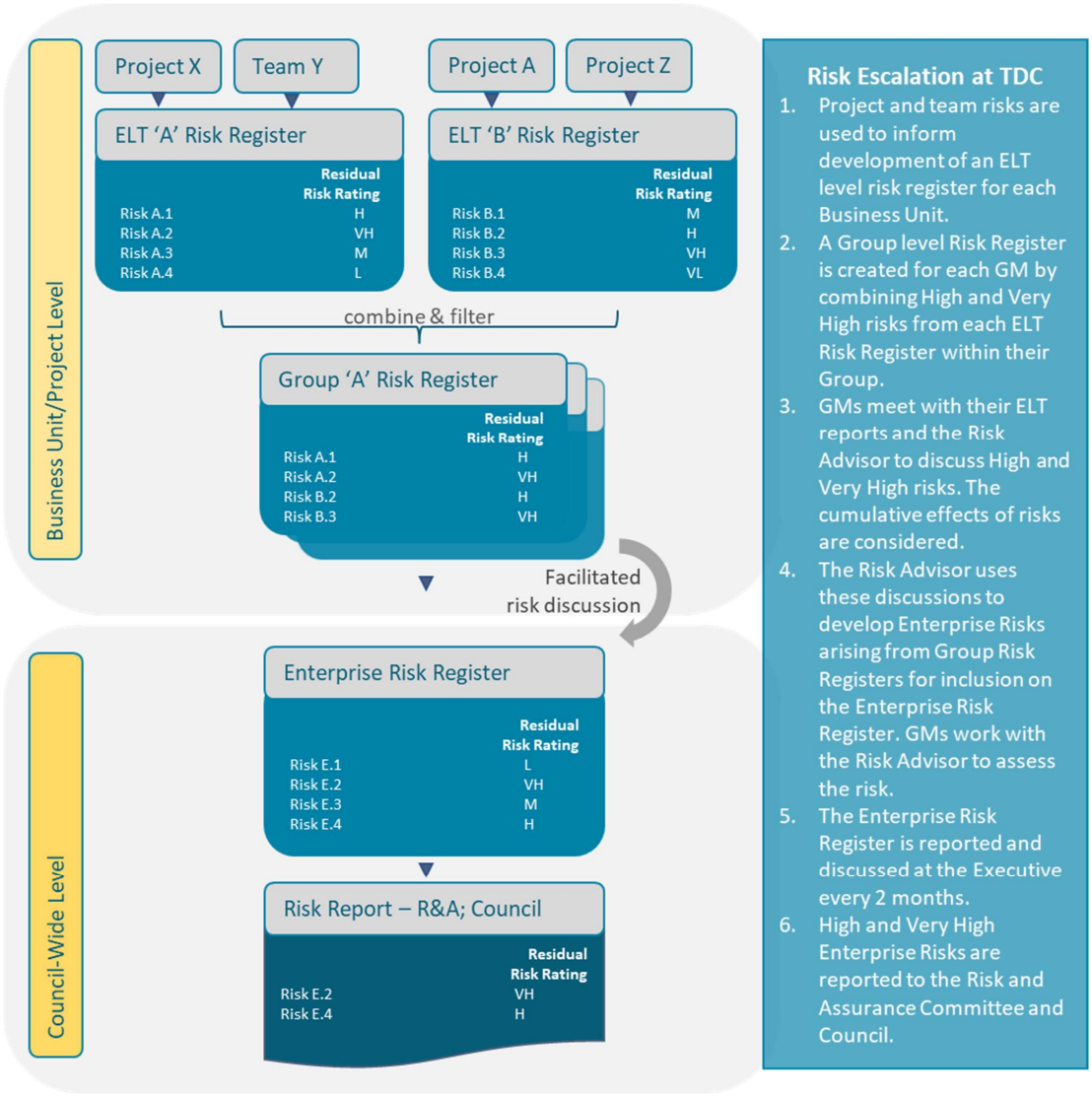


Figure 8 – A TDC approach for risk escalation, based on Residual Risk Rating.

STEP 7 – MONITOR, REVIEW AND REPORT THE RISKS – ARE THE CONTROLS IN PLACE AND DO THEY WORK?

Monitor and review through all stages of the risk management process.

Check the risks: Monitor all risks within your risk registers and ask;

- Are the risk controls actually being implemented and are they working as intended?
- Is the risk still about the same? Is it becoming a bigger problem needing more treatment? Perhaps it's no longer a risk and can be closed.

Check the context: Monitor the TDC internal and external environments and ask;

- Has it changed? Will this impact on what I'm trying to achieve?
- Has the changed environment created new risks?
- Have there been any close calls (e.g. near misses) or lessons learned which has changed my perception of the risk?

The frequency of monitoring should be sufficient to ensure that Risk Owners and Risk Treatment Owners are controlling the risk to as low as reasonably practicable. This will vary depending upon the specific risk details and the context that risks sit within. It is for Enterprise Leaders (ELT) to ensure their teams are monitoring risks sufficiently frequently. This will require the ELT to maintain a working knowledge of the status of risks within their business unit.

Recording the results of monitoring and review can be done using the risk Monitoring and Review tab on the Risk Register Template. Make the results of these reviews a standing item on agendas for teams responsible for the risk response.

Risk reporting should occur on a regular basis to the appropriate level as defined below. This supports the no surprises approach detailed in step 6 and ensures visibility over the management risks within TDC.

Council	• Receive six-monthly reports on the status of Strategic Risks and risk exceeding Council's Risk Appetite.
Risk and Assurance Committee	• Receive quarterly reports on the status of Strategic Risks and any emerging enterprise level risks, and Enterprise risks exceeding Council's Risk Appetite.
Executive	• Participate in quarterly Strategic risk profile reviews to inform reporting to Risk and Assurance and Council. • Receive ad hoc notification from their staff of risks that are likely to exceed Council's Risk Appetite. • Receive 2-monthly Enterprise Risk Register reports.
Enterprise Leaders	• Receive regular reports from their teams on the status of risks within their business unit (frequency at the discretion of the Enterprise Leader). • Receive ad hoc notification from their staff of risks that are likely to exceed Council's Risk Appetite.

NEED HELP?

If you need help don’t hesitate to reach out to the TDC Risk Advisor.

We want you to be successful in reaching your goals and will do whatever we can to help you understand how to better manage risks to these.

Quarterly Strategic Risk Overview report | September 2025

Insights and Emerging Issues.

One new risk has been assessed for this report:

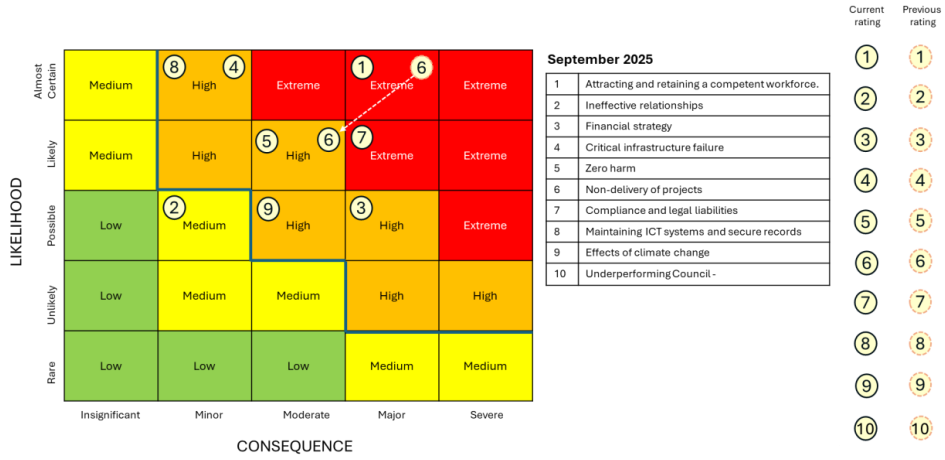
- **Critical Infrastructure Failure**. The risk has been assessed as high, reflecting the unique set of complex geographic risks posed to our critical infrastructure making it vulnerable to earthquakes, cyclones, and other natural hazards, all of which can have an effect on the critical infrastructure the community relies on.

  Officers envisage this risk decreasing over time as resilience is factored into the design and build of new infrastructure to increase its ability to withstand, adapt to, and recover from unexpected events and other natural disasters which is contributing to resilience in New Zealand.

- There has been a decrease to the non-delivery of projects risk rating since the last update. This has been driven by the actual delivery of projects against targets over FY 24/25.

- All other risks remain static.

Strategic Risk Summary.



Strategic Risk Summary [based on a plausible scenario]

	1	2	3	4	5	6	7	8	9	10
Strategic Risk	Attracting and retaining a competent workforce	Ineffective relationships	Financial strategy	Critical infrastructure failure	Zero harm	Non-delivery of projects	Compliance and legal liabilities	Maintaining effective ICT systems and secure records	Effects of climate change	Under-performing Council
Current Rating	Extreme	Medium	High	High	High	High	Extreme	High	High	
Within Risk Appetite	No	Yes	No	No	No	No	No	No	No	
Change in Risk Status	⟷	⟷	⟷	New	⟷	↓	⟷	⟷	Not previously rated	
Next review	November 2025	October 2025	February 2026	December 2025	September 2025	November 2025	October 2025	January 2026	December 2025	
Risk Owner	GM People and Community	GM People and Community	GM Organisation Performance	GM Community Infra & Services	GM Organisation Performance	GM Community Infra & Services	GM Organisation Performance	GM Organisation Performance	GM Strategy and Environment	

Strategic risk overviews.

1. Attracting and retaining a competent workforce:

If the Council is unable to attract and retain competent workers at the required levels, then it would be unable to achieve the required outcomes and objectives.

Council currently has an overall staff turnover of 18.6% at the end of July 2025 for the preceding 12 months, which exceeds council's risk appetite (up to 18% turnover). There are some high-turnover business units (specific Council services) that are contributing to this overall percentage which when removed, reduce the overall council turnover to 14% which sits within council's risk appetite.

Research indicates that engagement is a valuable indicator of organisational culture and a key driver for retaining staff. Councils' annual engagement survey remains consistent at 3.89 which is slightly better than other Council's using the same database. People and Culture continue to support teams where engagement scores are below average.

Current approaches in managing this risk work well at the generic level. More targeted approaches may be needed to support business units with high turnover as in-house capacity to support increased recruitment is diverting expertise away from supporting teams that need additional engagement support.

2. Ineffective relationships:

If effective relationships with partners, stakeholders, and the community are not developed and maintained, then this could result in missed opportunities to benefit from connections, delays the delivery of projects and services, community mistrust, or damage to TDC reputation.

Council has established relationships with many communities, with Iwi and hapu, and with other key stakeholders that are critical for project consultation and to inform the delivery of Council business. Investment in staff expertise in building and maintaining external relationships, and to help grow engagement and communication approaches across Council teams is yielding early benefits.

Engagement approaches and effective communication during the development of the Long-Term Plan provided community steer on what is important to ratepayers within the Taupō district and guided Council in its decision making. Sustaining relationship management, engagement and communication efforts over the long term is essential in supporting Council retaining social licence with its stakeholders and communities, credibility, and its good reputation. Effective and ongoing relationship and media management are critical to maintaining favourable relationships with communities and key stakeholders.

Changes in central government policy could potentially impact Councils existing relationships, for example resource consent processes and unfunded mandates (for example, Local Water Done Well).

Financial Strategy:

If Council does not have sufficient liquidity and/or funding, then delivery of service levels and ability to fund key projects may be significantly impacted. This could include not having adequate borrowing headroom, growth being different to projections and modelling, planned asset sales being delayed, funding required for unforeseen event such as a disaster.

Council remains in a strong position to cope with emerging financial pressures, both as a result of its financial status, and from its solid policies and practices underpinned by robust internal capability and external support, e.g. external management of TEL funds. Risk Tolerance Analysis undertaken in 2023 indicated Council could withstand financial losses between $20M (when analysed against revenue measures) to $145M (when analysed against asset, liability and debt measures). Also, Council's strong Standard and Poors credit rating has recently been confirmed as AA.

However, like all organisations, Council is subject to national and global drivers for economic shifts in inflation / interest rates and wider cost of living consequences on communities. These macro-economic impacts may affect the efficacy of Council's Financial Strategy.

Alongside central government's Local Waters Done Well reforms, there has been central government messaging that Council's should do more to 'harness debt' to spread costs over a longer time period. Although not materialising yet, it has the potential for pressure on TDC to increase debt during Council's next planning processes, which may challenge prudent financial management.

Council can be seen as last line of liability, particularly in the building and regulatory environment, exposing it to financial risk, e.g. in the case of the 'leaky buildings' Auckland Council received claims of more than $250M. Council is also perceived as having 'deep pockets', making it further exposed to claims.

Council has obtained additional Infrastructure Insurance to offset its overall uninsured risk exposure and will protect Council's debt headroom and liquid assets (including Council's TEL fund), following a significant event.

Increasing severe weather events and other emergencies are placing pressure on Council to 'get ahead' with resilience improvements to Council assets, while also being exposed to the management of other costs in

3. Critical infrastructure failure:

If any infrastructure essential for ensuring the safety and wellbeing of the community fails, then there could be adverse effects on public health and environmental outcomes.

New Zealand is one of the most hazard-exposed countries on the planet, with our critical infrastructure systems facing a unique set of complex geographic risks making it vulnerable to earthquakes, cyclones, and other natural hazards, all of which can have an effect on the critical infrastructure the community relies on, for example (but not limited to):

- three waters infrastructure
- bridges
- roading
- landfill / solid waste disposal sites.

At a Cabinet level, in December 2014 the government agreed a National Risk and Resilience Framework. The intent is to ensure that government is being strategic and proactive in efforts to manage risks and build resilience to the biggest hazards and national security threats that could potentially derail the country.

As a result, this strategic risk is decreasing over time as there is an increased focus on building resilience into infrastructure assets and systems, including power and telecommunications. There is also a strengthened regulatory environment which involves designing and managing infrastructure to withstand, adapt to, and recover from unexpected events and other natural disasters which is contributing to resilience in New Zealand – i.e. building codes etc.

Our infrastructure systems are interconnected, therefore disruptions to one can cascade to others. Resilience requires considering these interdependencies and ensuring that systems can maintain functionality even when others are disrupted. For example, bridging carrying three waters assets, power, or telcos – resilience requires alternative methods of service delivery in the event that a bridge fails.

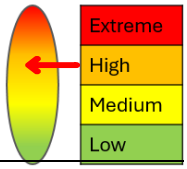
Improved technology is also available to Council to capture better data / information to help monitor potential disruptors (use of telemetry).

responding to these unplanned events. Council's Disaster Recovery Reserve (approx. $2.7M) can be utilised for response and recovery costs.	Public awareness and understanding of the risk associated with critical infrastructure - and how reliant on it they are to live has also improved.
4. Zero Harm *Significant harm is caused to workers, or others, due to poor or inactive health and safety systems, non-compliance with legislative requirements, or inadequate governance/ management of shared health and safety responsibilities with other PCBUs.* Progress has been made in the short-term on initiating health and safety improvements across Council, with a focus on management of critical risks. The broader organisation is supportive of, and committed to, improving health and safety in TDC. The establishment of structural improvements needed, as identified within the August 2023 KMPG Health and Safety Review report, has been slow due to a combination of no organisational H&S resource for 3 months in mid-2024 and the ongoing pressures of managing day to day operational matters. Of the 42 recommendations the following remain open: 5 of 7 High; 13 of 15 Medium; 5 of 20 Low recommendations. System improvements will be on hold until a new H&S Manager can be recruited (the role is currently vacant). In acknowledgement of the significant amount of work required to drive health and safety improvements a Business Excellence Coordinator was engaged on a 12-month secondment from February 2025. The role's current priority is to support the health and safety function within the Business Excellence Team.	**5. Non-delivery of projects:** *If the Council does not deliver the projects it has funded within the planned timeframes, then this has a negative flow on effect for future planning and funding for the organisation and delivery for the community.* The issue of deliverability and its solution sits with multiple teams across Council. The organisation is currently on target to deliver against the project delivery targets agreed by elected members for Financial Year 24/25. However, the volume of projects planned for delivery increases each year. In tandem, 3 years of shovel ready funding (2020-2023) has resulted in an increase of carry-over capital. There is a continued risk that some projects will not be completed within the planned financial year. Project lifecycles are such that extrinsic and intrinsic factors create delays that mean projects do not fit perfectly within "financial years" Risks include contractor skills / availability, economic factors such as a recession or high inflation, weather conditions, systems and data quality, engagement process. Our capital delivery target for 24/25 was $68M. At 24/25 financial year end, TDC delivered $75M against an annual plan budget of $70.9M. Our annual plan budget does not include the carry forward of $46.2M from the last financial year. However, increased delivered decreased the outstanding carry-forward. Although carry-forward is still being finalised, it is expected to be around 7% less than 24/25 It still remains that in order to truly get on top of our increasing capital plan along with the carry-forward from previous years we must improve deliverability.
6. Compliance and legal liabilities *If Council does not meet its broad range of legislative and compliance responsibilities, either intentionally or unintentionally, then it may be subject to legal action or suffer other damage.* Council is finding it increasingly challenging to secure sufficient liability cover (consistent with what we are hearing from the sector), with exclusions and policy conditions increasing Councils risk. This reflects that a lack of international appetite to provide liability cover for NZ's local authority sector off the back of leaky buildings, legislative challenges, and other events. The introduction of the Drinking Water Quality Assurance Rules in 2022 raised the water quality bar. We are working towards Councils water supply schemes being fully compliant, and council has a comprehensive programme of upgrades to our water treatment plants which will address this. Climate change continues to be a cause of concern where the increased frequency of extreme weather events threatens the ability of our infrastructure to cope. Central government reforms in the building and resource management area will have a significant impact on Councils regulatory services in the future. Increased public interest in official information and more concern around privacy, both of which are having resourcing implications for council. A rise in sovereign citizen challenging council authority is leading to increased time and effort defending council's position.	**7. Maintaining ICT Systems and secure records:** *IT systems and council data are vulnerable to system failures and cyberattacks impacting councils' operations and reputation.* Due to the sensitivities around the IT systems vulnerabilities this profile has been excluded from the public.
8. Effects of climate change: *If the current and future effects of climate change are not addressed in the Council's planning and delivery of services, then the impacts of climate change may have significant effects on the community and require additional unbudgeted resources to manage.*	**9. Underperforming Council:** *If the Council fails to function as a cohesive team, then its ability to provide the governance required can be compromised and creating high levels of uncertainty it its ability to achieve its strategic objectives.* Yet to be assessed

Council has a good understanding of its own emissions profile and has a Climate Change Strategy that focusses on how we can reduce those emissions. This risk however relates to how Council is responding to and planning to adapt to climate change, as opposed to preventing its occurrence. Council has core activities that need to consider the impact of climate change: • Planning and building controls to ensure buildings are built to withstand likely hazards and avoid unsuitable high-risk hazard areas. • Providing resilient lifeline infrastructure, like water, wastewater, roads, and community evacuation centres. • Stormwater management in urban areas (which typically is designed for regular rain events, not large flooding events – which will overwhelm the stormwater network). The financial aspects, like having appropriate insurance and setting aside money to rebuild infrastructure after a natural disaster, are addressed through Strategic Risk 3 Financial Strategy. Similarly, Council's activities in emergency management and civil defence planning and operations are already subject to their own risk management and review processes. We have undertaken a review (August 2025), of the potential climate change impacts and risks for the core activities detailed above. The review provides a clear picture of the climate change impacts and risks that Taupō district will face. There is good qualitative and modelled quantitative information for what we can expect. We have a good understanding of the way that climate change is likely to affect the way we deliver services to the community. Through our planning and delivery processes we have mitigation measures in place to build resilience in our service delivery. There are four areas where our planning and delivery of services is likely to fall below community expectations, as we anticipate: • private property damage and house flooding in a large heavy rain event. • wastewater spills, including into the Waikato River, during regular heavy rain events. • continued erosion of key public reserve land. • continued significant potholing during regular heavy rain events, concentrated on roads that have had seal maintenance deferred.	

STRATEGIC RISK PROFILE.

Strategic Risk	Critical Infrastructure Failure
Description	If any infrastructure essential for ensuring the safety and wellbeing of the community fails, then there could be adverse effects on public health and environmental outcomes.
Owner	General Manager – Community Infrastructure and Services
Last reviewed	New - Jun 2025
Next review	December 2025

Risk Rating (Plausible scenario)	
Within TDC Risk appetite?	**N**
Risk trend	↑ / ⇄ ✓ / ↓

Commentary and Emerging issues.

New Zealand is one of the most hazard-exposed countries on the planet, with our critical infrastructure systems facing a unique set of complex geographic risks making it vulnerable to earthquakes, cyclones, and other natural hazards, all of which can have an effect on the critical infrastructure the community relies on, for example (but not limited to):

- three waters infrastructure
- bridges
- roading
- landfill / solid waste disposal sites.

At a Cabinet level, in December 2014 the government agreed a National Risk and Resilience Framework. The intent is to ensure that government is being strategic and proactive in efforts to manage risks and build resilience to the biggest hazards and national security threats that could potentially derail the country.

As a result, this strategic risk is decreasing over time as there is an increased focus on building resilience into infrastructure assets and systems, including power and telecommunications. There is also a strengthened regulatory environment which involves designing and managing infrastructure to withstand, adapt to, and recover from unexpected events and other natural disasters which is contributing to resilience in New Zealand – i.e. building codes etc.

Our infrastructure systems are interconnected, therefore disruptions to one can cascade to others. Resilience requires considering these interdependencies and ensuring that systems can maintain functionality even when others are disrupted. For example, bridging carrying three waters assets, power, or telcos – resilience requires alternative methods of service delivery in the event that a bridge fails.

Improved technology is also available to Council to capture better data / information to help monitor potential disruptors (use of telemetry).

Public awareness and understanding of the risk associated with critical infrastructure - and how reliant on it they are to live has also improved.

Risk drivers / causes.

1. **Inconsistent application of best practice approaches and tools** for identifying, assessing, recording and maintaining critical infrastructure assets; ensuring access to asset components / 'spares' – to minimise asset downtime.
2. **Inconsistent documented guidance and practice** to support staff doing the right thing; a lack of clear and consistently applied Standard Operating Procedures (SOPs) leaves staff vulnerable.

STRATEGIC RISK PROFILE.

3. **Availability of technical skills** – limited expertise, an over reliance on contractors, or key staff in some areas creates additional vulnerability through key person risk – TDC fights with other players for access to talent.
4. **Disruptive events** – critical assets are exposed to a variety of external disruptors e.g. severe weather events, fire, cyber-attack, power outages.
5. **Changes in the regulatory or financial landscape** shift broader priorities for funding. Reduction in central government investment impacts on the ability for local improvements and maintenance to ensure assets are fit for purpose. Regional consenting requirements slow down project delivery.
6. **Global supply chains** remain impacted following covid (or through new drivers such as offshore tariffs) reducing access to critical components and driving cost up.
7. **Consultation processes** can slow critical asset repairs, increasing the risk of more significant asset failure in the meantime.

Possible key impacts to TDC should the risk materialise.

Plausible scenario	Worst case scenario
• Public water supply is compromised resulting in boil water notices being issued to impacted communities – possible public health risk. • Stormwater capacity is exceeded during severe rainfall events causing roading impacts and localised flooding to home and businesses. • Capacity at landfill site may be exceeded following significant emergency (debris management). • Bridge failure results in significant re-routing for community traffic or goods with heavy loads. • Disruption to infrastructure SCADA (Supervisory Control and Data Acquisition) system leaves council unable to remotely operate, gather data, or receive alerts from Water supply / wastewater / stormwater systems. • Failure of infrastructure resulting in discharge of untreated or partially treated waste into waterways.	• Widespread impacts across multiple critical infrastructure systems and assets causing significant disruption to the community. • Older critical infrastructure assets are unrepairable and require unbudgeted replacement. • Ongoing compromised service levels. • Land instability renders parts of the roading network too high risk for normal use requiring alternate routes with travel delays. • Widespread heightened public health risk / increased wellbeing impacts on the community. • Long term delays to service restoration as a result of insufficient contractor workforce available to repair or reinstate damaged assets. • Breach of regulations / legislation resulting in an increased risk of fines. • Loss of public confidence.

What are we tracking to understand this risk [Risk Indicators]

- Tracking asset age, condition for critical assets.
- Monitoring asset maintenance and repair history to look for trends.
- Monitoring Geotech risks and flood area risks where critical infrastructure is located including the completion of a SCADA scoping exercise to identify areas of risk.
- Assessment and reporting of compliance with drinking water quality and supply.
- Stormwater overland flow path modelling and network capacity assessment.
- The TDC Policy team monitor and respond to new / changes to central government policy (e.g. overland flowpath legislation).

How we are addressing this risk now.

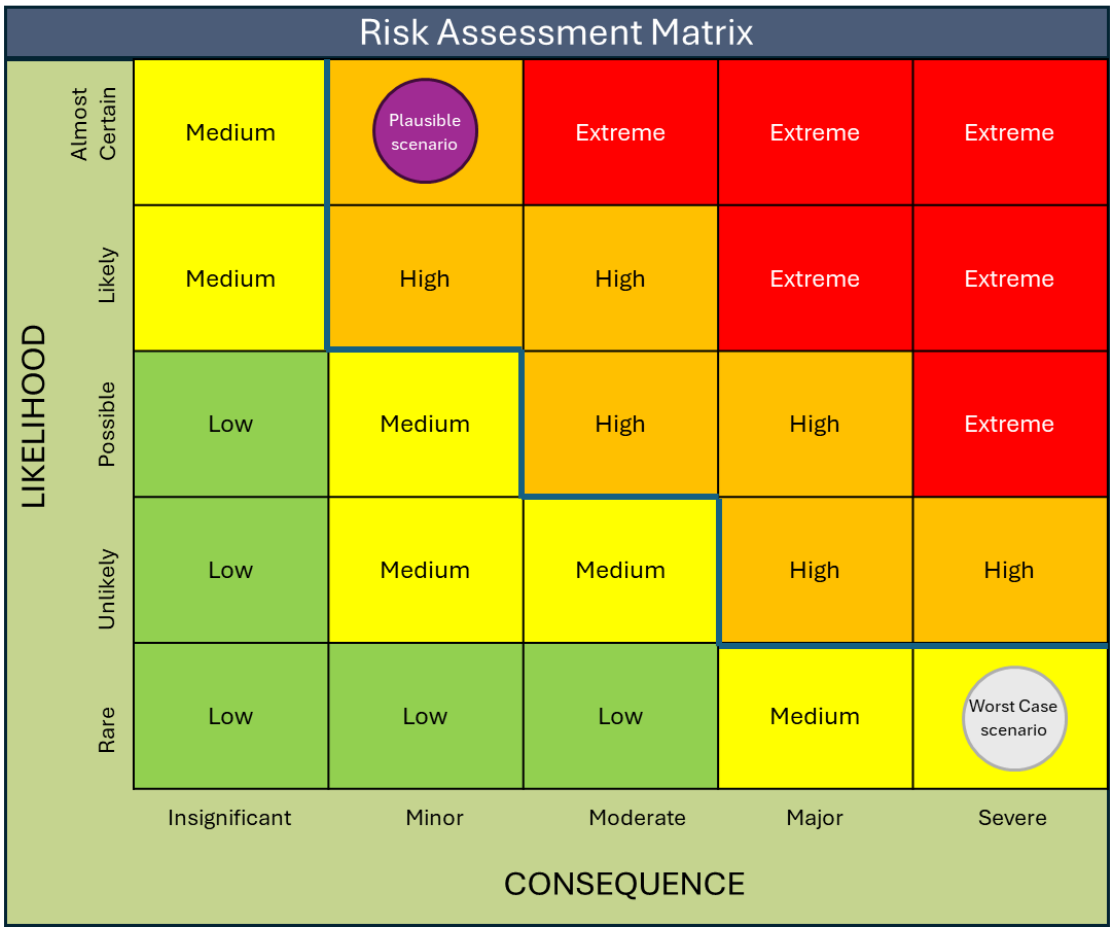
- Understanding hazard risk and asset vulnerability – e.g. modelling hazard risk e.g. earthquake risk (via BOPLASS); overland flow path. Mapping asset information and condition assessments.
- Building resilience over the long-term. Development of Infrastructure Strategy.
- Technological / best practice advances. Taking innovation and incorporating as part of normal practice.
- Strengthening immediate response actions. Review of business continuity planning and crisis management arrangements. Response tools i.e. portable flood response equipment / generators.
- Identification of budget for resilience in the Long Term Plan (LTP).

STRATEGIC RISK PROFILE.

Future actions to manage the risk more effectively.
• Continuing work to identify, assess and review assets and condition to build a comprehensive overview of critical asset condition and investment needs. • Clarifying expectations around levels of service (within budget) for BAU delivery and defining emergency levels of service. Identifying critical customers and service needs. Planning for critical customer service levels. • Community engagement – to support a better understanding of service level and associated cost. Supporting the community to be more resilient to impacts on service levels from disruption. • Undertaking more scenario-based discussion / exercising to refine immediate response actions and associated response planning. • Investment in developing a comprehensive overview of critical infrastructure vulnerabilities and strengths (engineering assessments / condition assessments / seismic resilience). • Investment in more resilient assets (SCADA; ensuring planning infrastructure projects are delivered).
Connection to other Risks?
• **Strategic Risk 1** | Attracting and retaining a competent workforce (skills gaps; reliance on contractor skills; key person risk). • **Strategic Risk 3** | Financial Strategy (propensity to impact financial strategy through building resilient infrastructure or via repair / recovery costs). • **Strategic Risk 6** | Non-delivery of projects (planned projects are deprioritised; asset upgrade investment fails to keep up with increasing asset vulnerability). • **Strategic Risk 7** | Compliance and legal liabilities (unconsented discharge of wastewater; impacts to water quality, compromised roading access). • **Strategic Risk 8** | Maintaining ICT systems and secure records (critical asset IT systems compromised). • **Strategic Risk 9** | Effects of climate change (increase in severe weather events ; damage to critical infrastructure – particularly ageing assets).

STRATEGIC RISK PROFILE.

Plausible and Worst Case Scenario – **Critical Infrastructure**



REVIEW OF CLIMATE CHANGE RISKS

Contents

EXECUTIVE SUMMARY AND CONCLUSION

This paper explores the impacts and risks posed by climate change on Council's core operations and services.

Council plays several important roles in preparing for the effects of climate change:

- Planning and building controls to ensure buildings are built to withstand likely hazards and avoid unsuitable high-risk hazard areas.
- Emergency management and civil defence planning and operations.
- Providing resilient lifeline infrastructure, like water, wastewater, roads, and community evacuation centres.
- Stormwater management in urban areas (which typically is designed for regular rain events, not large flooding events – which will overwhelm the stormwater network)
- Having appropriate insurance and setting aside money to rebuild infrastructure after a natural disaster.

Climate change will have two main climate impacts.

- Increased risk (both frequency and intensity) of heavy rain and storm events, including flooding risks, high winds, landslips and erosion risks.
- Hotter drier summers, including drought and freshwater quality risks.

There are four key areas where Council is significantly exposed to risk and is unlikely to meet public expectations. These are the expectation of:

- private property damage and house flooding in a large heavy rain event
- wastewater spills, including into the Waikato River, during regularly heavy rain events
- continued erosion of key public reserve land
- continued significant potholing during regular heavy rain events, concentrated on roads that have had seal maintenance deferred.

Table 1 – expected climate change impacts and risks to Council's core operations.

Climate change impact	Risks to core Council operations
Increased risk (both frequency and intensity) of heavy rain and storm events, including: • Flooding • High winds • Lightning • Power outages • Landslip / slides • Erosion The risk of heavy rainfall and storm events is expected to have a marked increase due to climate change. Climate change has the potential to increase rainfall intensity over the next 100 years:[1] • by around 10 – 22% for a 24-hour event • with a historic 1 in 100-year event (150mm of rain in 24 hours) becoming a 1 in 50-year event – twice as likely.	In a heavy rain event, for example a 1 in 5- to 1 in 20-year event we can expect: • Our stormwater networks to be overwhelmed especially in historic areas (those built prior to 2009), with water running along roads, and overland flow paths to low points. This is likely to affect private properties and some houses. For example, in a recent 1 in 20-year event six houses had flooding above their habitable floor levels. In a widespread 1 in 100-year event, up to 1,000 houses may be impacted across the district. • Our wastewater systems to be inundated with stormwater resulting in multiple overflows. This includes the Taupō Wastewater treatment plant that is designed in an overflow event to controlled-spill into the Waikato River. Or overflows of the Tūrangi wastewater treatment plant ponds into the wetland area. • Our road network will suffer significant damage, typically multiple potholes, concentrated on roads that have had seal maintenance deferred. These impacts may also occur with smaller events, particularly if there are a number of successive heavy rain events – like we have seen during 2025.
In a large storm event with heavy rain or winds we can expect: • Fallen trees, debris, and minor slips on the road network. In a large event, overwhelming numbers of road blockages may reduce access and take some time to rectify. There is also the risk of washouts undermining roads – which take a longer time to repair. • Power outages at our key water and wastewater pump stations, relying on the use of generators and reducing plant capacity. In a large event there may not be enough generators, or it may not be possible to get generators to some sites. • The possibility that water quality, affected by waves and land-runoff, is too poor to treat at Council's water treatment plants, until the compliance upgrade programme is completed. Taupō water treatment plant is already upgraded. • Erosion or bank failure at any unprotected lakefront sites, including the potential undermining of walkways, roads, or wastewater pipes close to the lake. • A very large heavy rain event, or successive smaller events, poses the risk of ground movement resulting in water or wastewater pipe breaks. The primary impacts are loss of services, and wastewater spills. • Lightning poses a risk to critical electrical and plant equipment, but is relatively low risk.	

[1] Under the mid - high climate change scenarios.

Climate change impact	Risks to core Council operations
Hotter drier summers, including: • More hot days • Increased drought risks (both frequency and intensity) • Increased bush / wildfire risks • Freshwater quality impacts (including the risk of algae blooms) • Increased risks of pests and diseases In most instances, these risks already exist. And while climate change is expected to increase these risks, it does not represent a step change in risk. Freshwater quality impacts (including the risk of algae blooms) may be an exception – the climate change impacts on these have not been quantified.	The most significant risks from a hot, dry summer are: • The primary risk is the potential for a bloom of toxic algae in the vicinity of one of our lake water intakes. (Our lake intake sites are Hatepe, Taupō, Kinloch, Motuopa, Omori, and Motutere.) This is an existing risk. There has been no quantification of how much this risk may increase due to climate change. Council has controls in place to mitigate the health risk of water supplies being contaminated by algae toxins. The most likely impact of a toxic algae outbreak near a water take would be a halt to services (reliance on reservoirs and replacement tanker water). This risk will be mitigated as part of Council's water treatment plant upgrade programme. An upgrade for the Taupō Water Treatment Plant to treat algae toxins is also planned for around 2030.

PURPOSE AND SCOPE

This paper identifies the risks to Taupō District Council's core roles and responsibilities associated with climate change. It sets out:

- Council's core roles and responsibilities in preparing for the effects of climate change.
- The climate impacts expected from climate change, identified from a review of national and regional climate risk modelling and identification.
- The risks to Council's core roles and responsibilities, identified from a review of Council's asset management plans, district planning and building consenting rules, regional risk identification, and interviews with key Council staff.
- It identifies the key risks and possible actions that could be taken to reduce the risks.

This paper will be provided to Council's Risk and Assurance Committee, and used to update Council's strategic risk "Risk 9 Effects of Climate Change", and inform any subsequent any action plan.

Scope

Officers have undertaken a full desktop review of expected climate change risks and impacts form Taupō District, including:

- Waikato Regional Council, Technical Report 2024/28: Climate change hazards and risks in the Waikato region, 23 May 2025[2]
- NIWA / Ministry for the Environment, Aotearoa New Zealand climate projections, 18 September 2024[3]
- NIWA, High Intensity Rainfall Design System V4, August 2018[4]
- WAIKATO CDEM – Hazard Scenarios[5], and Hazard Risk Assessment, regional hazard summary, Dec 2024[6]
- Council's asset management planning[7]
- Discussions with Council's asset managers and development planners.

Out of scope

This paper has not considered the impacts of a climate change related civil defence and emergency planning operation, or long-term recovery operation, which are the subject of separate work.

This paper has not examined any secondary impacts of climate change, including:

- Risks to community and private property (except for overlaps with Council's responsibilities for stormwater management).
- Council's financial preparation for climate change related events or costs.
- Insurance availability and cost (e.g. increasing insurance premiums, higher risk areas becoming uninsurable).
- Access to borrowing / capital.
- Ability to collect / increase rates.
- Migrant (or refugee) impacts.
- Supply chain disruption.
- Inflation (e.g. from food or product shortages).
- Economic impacts (e.g. impacts on tourism from reduced snow, or algae bloom closing the lake, economic impacts from emergency events, risks to agriculture and forestry, including fire risks and pests).
- The impact from risks and disaster events elsewhere in the country (e.g. constrained government funding, calls for support to help with response and recovery).
- Social, health, environmental, or cultural impacts and risks.
- Changes related to legislation, policy, legal application, technology, other markets.

[2] https://www.waikatoregion.govt.nz/environment/climate-change/waikato-regional-climate-change-hazards-and-risks/
[3] https://environment.govt.nz/facts-and-science/climate-change/climate-change-projections/
[4] https://niwa.co.nz/climate-and-weather/high-intensity-rainfall-design-system-hirds
[5] https://www.waikatocivildefence.govt.nz/assets/NEW-WCDEMG/Waikato-CDEM-Group-Hazard-Risk-Assessment-December.pdf
[6] https://www.waikatocivildefence.govt.nz/assets/NEW-WCDEMG/Waikato-CDEM-Group-Hazard-Risk-Assessment-Regional-Hazard-Summary-December-2024.pdf
[7] https://www.taupodc.govt.nz/council/plans-and-strategies/asset-management-plans

COUNCIL'S CORE ROLES AND RESPONSIBILITIES

Council plays several important roles in preparing for the effects of climate change:

- Planning and building controls to ensure buildings are built to withstand likely hazards and avoid unsuitable high-risk hazard areas.
- Emergency management and civil defence planning and operations.
- Providing resilient lifeline infrastructure, like water, wastewater, roads, and community evacuation centres.
- Stormwater management in urban areas (which typically is designed for regular rain events, not large flooding events – which will overwhelm the stormwater network).
- Having appropriate insurance and setting aside money to rebuild infrastructure after a natural disaster.

THE CLIMATE IMPACTS EXPECTED FROM CLIMATE CHANGE

This paper explores and summarises the expected climate impacts in two groupings:

- Heavy rain and storm events: Including flooding, high winds, lightning, power outages, landslip / slide, and erosion
- Hotter drier summers: Including more hot days, increased drought risks, increased bush / wildfire risks, freshwater quality impacts, and increased risks of pests and diseases.

For each, it presents a summary of the available information, including qualitative or quantitative information on the expected level or increase of the risk, and what the identified risks are for Council's roles and responsibilities.

HEAVY RAIN AND STORM EVENTS

Overview of climate impacts risks

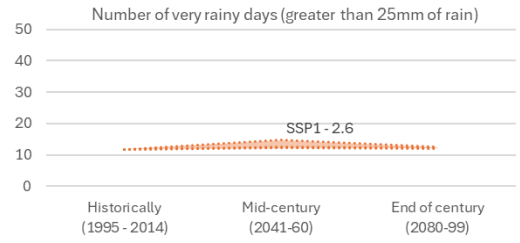
Increased risk of flooding events (both frequency and intensity): A historic 1 in 100-year event has the potential to become a 1 in 50-year event (i.e. an event of that magnitude will be twice as likely). Increased rainfall can overwhelm rivers and drainage systems, leading to widespread flooding in both urban and rural areas.

Increased erosion and landslide risks from higher rain, lake and river levels, and wind. Longer dry periods can exacerbate land instability as dry, cracked ground is more prone to failure during intense rainfall. Both one-off events, and accumulating impacts over time.

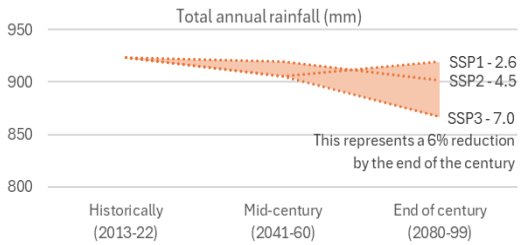
Increase risk of storm events (both frequency and intensity): Including ex-tropical cyclones, high wind, heavy rain, lightning, power and communications outages.

No increase in annual rainfall, or the number of heavy rain days is expected

Projected change in number of very rainy days [8]

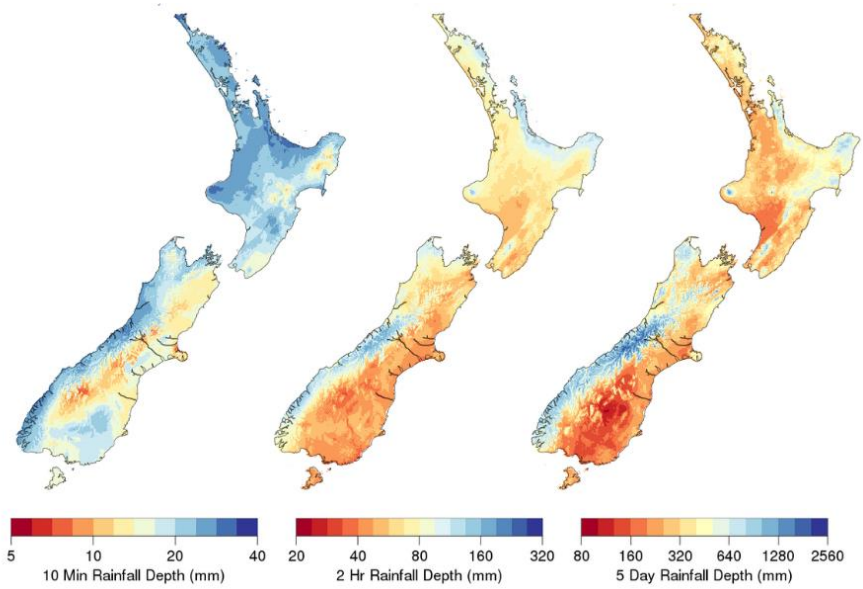


Projected change in total annual rainfall [6]



Taupō's rainfall volumes are moderate relative to other areas in New Zealand

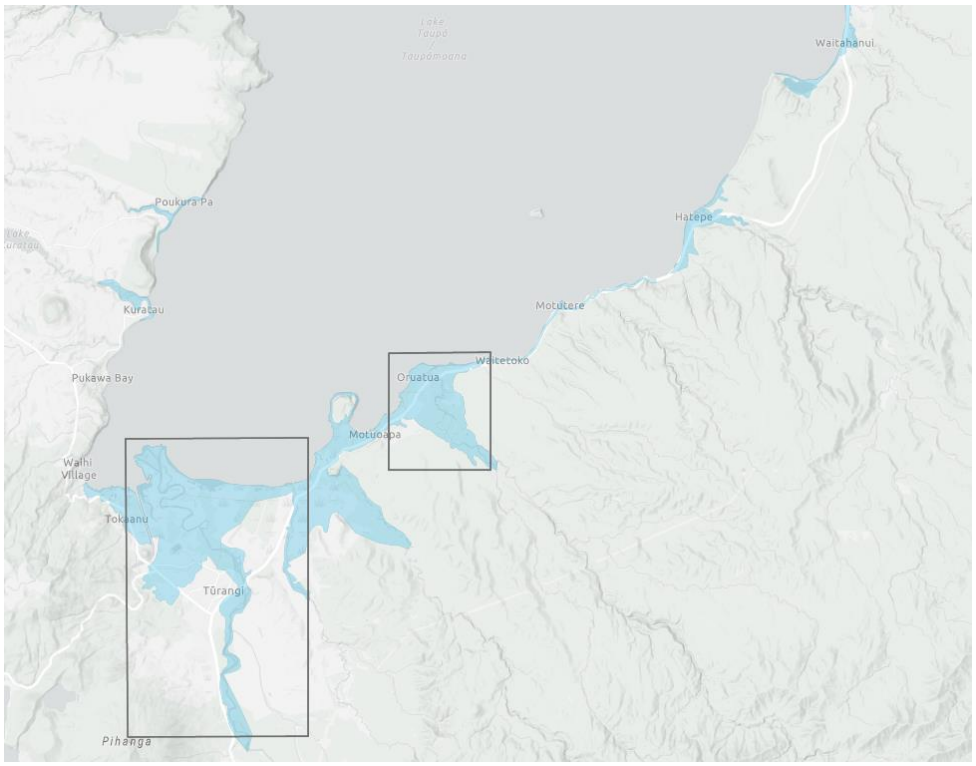
National rainfall volumes for 1 in 100-year event. [5]



[8] Source: Ministry for the Environment, Climate Change projections, Sep 2024: https://environment.govt.nz/facts-and-science/climate-change/climate-change-projections/climate-projections-summary-dashboard/

River flood mapping[9]

The Tongariro River in Tūrangi has flood protection managed by Waikato Regional Council. There is the potential for a significant number of houses to be flooded in a 1 in 100-year event, or in an extreme event where the flood protection is overwhelmed. The Tauranga-Taupō river also presents a significant flood risk to a number of houses in a large rainfall event.



9 https://waikatoregion.maps.arcgis.com/apps/MapSeries/index.html?appid=f2b48398f93146e8a5cf0aa3fddce92c

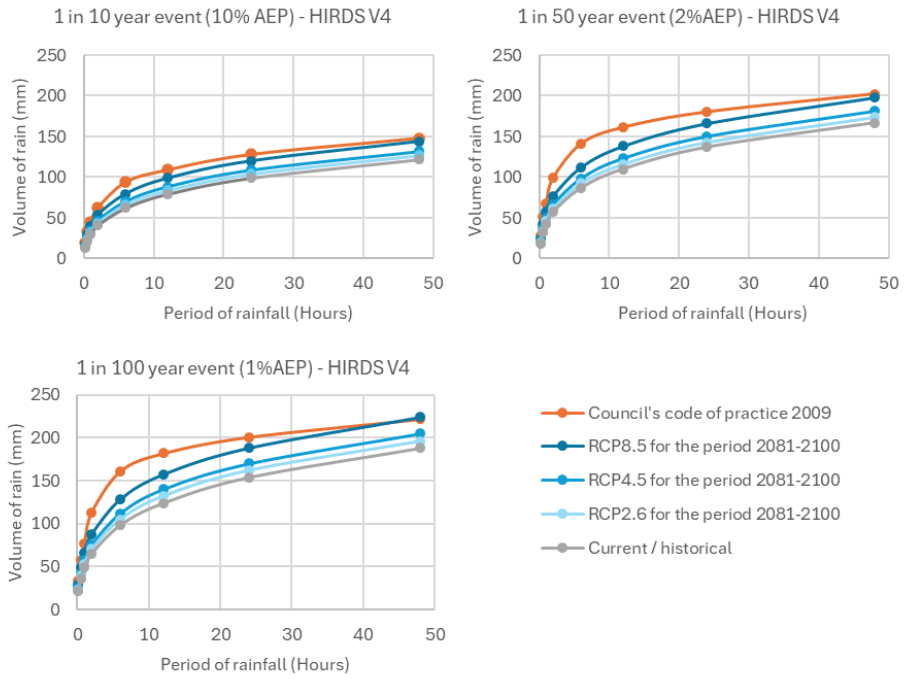
The intensity and likelihood of heavy rainfall events is increasing

Climate change has the potential to increase rainfall intensity over the next 100 years:

- by 14 – 30% for a short rain period of up to 6 hours under the mid - high climate change scenarios.
- by around 10 – 22% for a longer period of rain of 1 – 2 days under the mid - high climate change scenarios.

Or, a historic 1 in 100-year event has the potential to become a 1 in 50-year event (i.e. an event of that magnitude will be twice as likely) under the mid - higher climate change scenarios.

Projected change in intensity of heavy rainfall events [10]



Council has incorporated the risks of climate change into its rainfall modelling

- Council's Code of Practice for Development of Land (2009) applies even higher design rainfall requirements (see above charts).[11]
- Current stormwater modelling (overland flow paths (2019) – uses HIRDS version 3, with an allowance for climate change increasing rainfall intensity by around 19%.
- Current river and lake flood modelling uses AR4 (2007) and MFE guidance from 2008. However recent MFE guidance (April 2022), based on AR6, says that MfE latest models and advice from 2018 are still reasonable, the 2018 scenarios are within the range used in MFE's 2008 Guidance.[12]

[10] Source: NIWA, High Intensity Rainfall Design System (HIRDS) V4, 2018: https://niwa.co.nz/climate-and-weather/high-intensity-rainfall-design-system-hirds

[11] https://www.taupodc.govt.nz/rules-regulations-and-licenses/policies/code-of-practice-development-of-land

[12] Ministry for the Environment, Aotearoa New Zealand climate change projections guidance, April 2022: https://environment.govt.nz/assets/publications/Climate-Change-Projections-Guidance-FINAL.pdf

Overview of risk[13]

There are four key areas where Council is significantly exposed to risk and is unlikely to meet public expectations. These are the expectation of:

- private property damage and house flooding in a large heavy rain event
- wastewater spills, including into the Waikato River, during regularly heavy rain events
- continued erosion of key public reserve land
- continued significant potholing during regular heavy rain events, concentrated on roads that have had seal maintenance deferred.

Key risks

Heavy rain and storm events

	Water	Wastewater	Stormwater	Transport	Solid Waste	Property	Parks and open spaces	Building controls and planning
Flooding	✓	✓	✓	✓	✓	✓	✓	✓
High winds	✓	✓	✓	✓	✓	✓	✓	✓
Lightning	✓	✓		✓	✓	✓		
Power outages	✓	✓						
Landslip / slide	✓	✓	✓	✓		✓		✓
Erosion		✓		✓			✓	✓

In a heavy rain event, for example a 1 in 5 to 1 in 20-year event we can expect:

- Our stormwater networks to be overwhelmed in historic areas (those built prior to 2009), with water running along roads, and overland flow paths to low points. This is likely to affect private properties and some houses. For example in a recent 1 in 20-year event 6 houses had flooding above their floor levels. In a widespread 1 in 100-year event, up to 1,000 houses may be impacted across the district.
- Our wastewater systems to be inundated with stormwater resulting in multiple overflows. This includes the Taupō Wastewater treatment plant that is designed in an overflow event to controlled-spill into the Waikato River. Or overflows of the Tūrangi wastewater treatment plant ponds into the wetland area. All schemes have some risk. Mangakino is a known problem area.
- Our road network will suffer significant damage, typically multiple potholes, concentrated on roads that have had seal maintenance deferred. These impacts may also occur with smaller events, particularly if there are a number of successive heavy rain events – like those seen during 2025.

In a large storm event with heavy rain or winds we can also expect:

- Fallen trees, debris, and minor slips on the road network. In a large event, overwhelming numbers of road blockages may reduce access and take some time to rectify. There is also the risk of washouts undermining roads – which take a longer time to repair.
- Power outages at our key water and wastewater pump stations, relying on the use of generators and reducing plant capacity. In a large event there may not be enough generators, or it may not be possible to get generators to some sites.

[13] Adjusted from asset management plans following conversations with asset managers.

- The possibility that water quality, affected by waves and land-runoff, is too poor to treat at Council's water treatment plants, until the compliance upgrade programme is completed. Taupō water treatment plant is already upgraded.
- Erosion or bank failure at any unprotected lakefront sites, including the potential undermining of walkways, roads, or wastewater pipes close to the lake. Lakeshore erosion is a known problem at several sites. It occurs regularly through high wind / wave events, and through large erosion events – e.g., during storms. If left untreated, the community risks losing some high-value recreation spaces, and Council risks damage to or loss of some infrastructure assets, including wastewater and stormwater pipes. Kuratau is a significant risk area. Parts of Lake Terrace and Ferry Road are susceptible to bank failure caused by erosion of the toe of the supporting slope. While Council has funding and solutions designed, it has not implemented them due to lack of Iwi partners' support.
- A very large heavy rain event, or successive smaller events, poses the risk of ground movement and resulting in water or wastewater pipe breaks. The primary impacts are loss of services, and wastewater spills.
- Lightning poses a risk to critical electrical and plant equipment, but is relatively low risk.

Stormwater management risks

Climate change is making storm and heavy rain events more frequent and more severe. Taupō has recently experienced flooding (Feb 2025) from such an event. This event is estimated at around a 1 in 20-year event, with very heavy rainfall over a short period of 1 – 2 hours causing flooding to six houses. Such events are possible, and likely to have significant impacts on property in any area that is affected.

Problem 1 – we do not meet our service levels for 1 in 10-year event.

All new development and design areas (since at least 2009), are adequately planned and serviced to manage 1 in 10-year events, and support minimisation of property damage for 1 in 100-year events by protecting overland flow paths and gullies. The rainfall design levels that Council has used for some time are still appropriate taking into account the possible effects of climate change over the next 100 years.

However, historic stormwater systems (those built prior to 2009) are undersized and do not meet Council's intended service level of containing water for a 1 in 10-year event.

"Council has a network service level of provision of 1 in 10-year event but has not retrospectively upgraded the network unless there is a known flooding or erosion issue. To understand the current network capacity and identify the under-capacity areas that are causing problems, contractor reports and service requests and the overland flow path model are analysed".[14]

"The code of practice also considers climate change and effects on the district. The code provisions require that a 1 in 10-year event is soaked to ground for private property (pumice soils allow this) and Council's Stormwater network that predominantly services the roading network is now required to cater for a 1 in 10-year event and over land flow paths are designed up to a 1 in 100-year event.

"The Turangi township is an exception to this rule, due to the high-water table where a majority of the town discharges to the kerb.

"The older infrastructure installed before the allowance for climate change is sized to cater for 1:2 – 1:5-year events. Council has district specific climate change rainfall data included into the code." [15]

Council is working to improve its modelling to ensure it is reasonable. Once complete the information will be publicly available on LIMS (work is underway to improve modelling by the end of 2026).

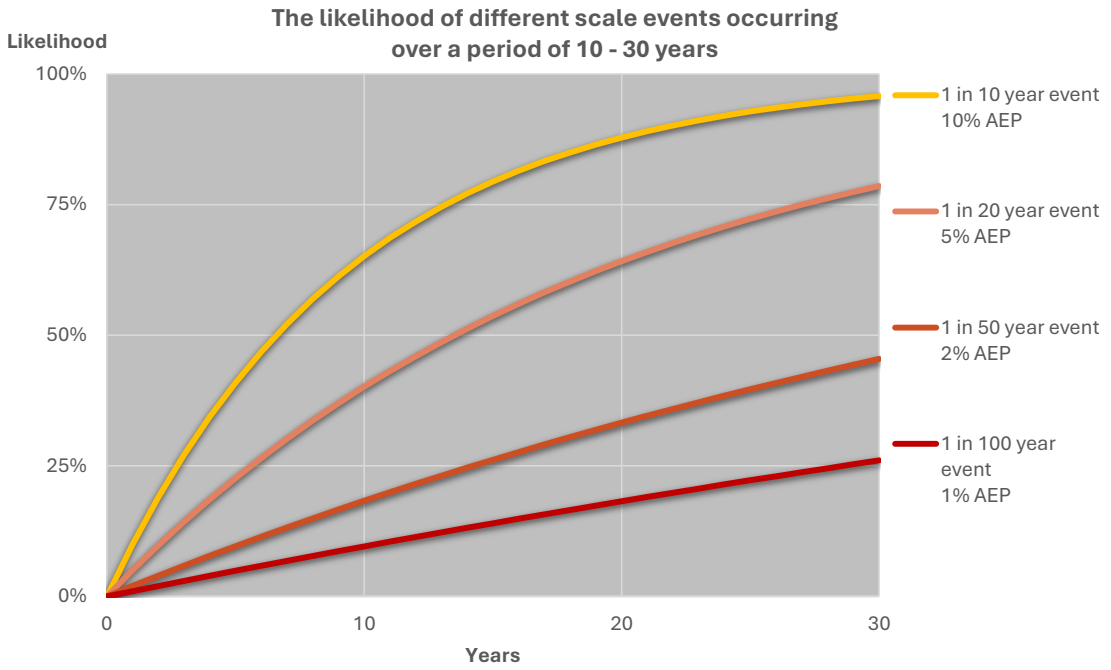
Once the modelling is complete, Council could assess the stormwater network to identify problem areas and identify if an investment programme to improve the 1 in 10-year event service levels can be achieved. This would likely be very expensive and need to be done over several years. The new requirement under the three waters reform to prepare Stormwater Network Risk Management Plans may be a catalyst for this work.

[14] Taupō District Council, Stormwater Asset Management Plan, 2024
[15] Taupō District Council, Stormwater Asset Management Plan, 2024

Problem 2 – for 1 in 20, 1 in 50, 1 in 100-year events there will be significant impacts.

High levels of rain will overwhelm Council's stormwater system (which is only designed for regular rain events), and are unlikely to be cost-efficiently managed through Council's stormwater systems.

Water will overflow into properties, following overland flow paths, and will pond in low areas.



Council has high-level modelling that suggest approximately 800 – 1,400 houses may be severely impacted in a 1 in 100-year event. This modelling has been identified as in need of significant improvement and rework.

Council is working to improve its modelling to ensure it is reasonable. Once complete the information will be publicly available on LIMS (work is underway to improve modelling by the end of 2026).

Even if Council improves its own stormwater networks, this will not change the fact that in a larger event, stormwater will not be contained by Council's stormwater network, and will follow overland flow paths, including flooding people's properties. There is an opportunity to better inform property owners about the risks of larger events – that stormwater will not be fully contained in Council networks, and that people should have their own measures in place to protect their property. More realistic modelling that can be made public and put on LIMs may be a catalyst for this work.

Council infrastructure and services risks

Water	• **Wastewater /Stormwater finding its way through to damaged water pipes due to: - Reticulation pipes movement.** With any water main break there is immediately a contamination risk. The risk scenario would be where there is land movement and a wastewater and a water pipe both break. Water mains are under pressure – so water is forced out of them rather than taking in water, and the most likely scenario is that there would be loss of services. But any break where there could be contamination is taken very seriously, and we have a number of controls that we put in place, for example: Doing a risk assessment, shutting off and/or isolating the service, repairing, disinfection, flushing the pipe and system, and doing water testing. The main mitigation for this is keeping on top of renewals, and our programme to replace older pipes made out of more brittle materials.

	• **Water quality too poor to treat:** In high wind, heavy rain or storm events, water can be stirred up in the lake and cause water quality issues, like high sediment content, that makes it difficult to treat. Currently several of our lake water intakes and treatment plants allow sediment to go through the treatment system. This is not just a quality (clarity and taste) of water issue, but also has potential health risks. Treatment plant upgrades will resolve this issue – sediment will not be able to be pass through the plant and will be captured in the treatment process. The Taupō water treatment plant already removes sediment. Currently if there are water quality issues in other areas, we rely on reservoir supplies, so there is potential service restrictions or limitations if this was an issue for a sustained period of time. Heavy rainfall can result in land runoff affecting water quality at our water supplies in Waihaha, River Road, and Tirohanga which are all stream or spring feed systems, which can be affected by surface water. When this happens we have to turn off the treatment plant, and replace water with tankers. We've not had problems in recent years at River Road or Tirohanga, but often have problems at Waihaha – which is a small restricted rural scheme (32 connected properties), many of which have their own water tanks, and little water is needed for irrigation after heavy rain events. • **Storm damage and power loss**: In heavy wind, rain or storm events there is the risk of loss of power (e.g. fallen trees taking out power). When there is power loss there is the potential for service disruption. Most of our main plants are set up to enable generators to be plugged in. In a recent event, the Tūrangi water treatment plant ran on generators for 3 – 4 weeks while power was restored. Hiring big generators and running them is costly. There is the potential for infrastructure damage in heavy rain and storm events, for example trees falling on, or flooding of network equipment (like a pump station). A lighting strike to critical electrical equipment, for example at a treatment plant, could cause significant damage.
Wastewater	• **Infiltration and inflow (I&I) of rainwater / stormwater into the wastewater network**. Large flows of rainwater get into the network through: o illegal connections to the wastewater system (e.g. house roof downpipes being plumbed into the wastewater system) o Low gully traps (example below [right image]), where rainwater will pool and flow into the wastewater system,  Source: 1News  Source: o And cracks in the wastewater pipe network. The result of getting large volumes stormwater in the wastewater network is overflows. These can occur at the treatment plants, or along the wastewater system like manholes, gully traps, or pump stations. Our treatment plants have a maximum inflow and controlled overflow spill systems, for example the Taupō Wastewater plant will overflow into the Waikato River. Our pump stations and treatment plants are monitored / have alarms systems to indicate an overflow.

	Wastewater overflows can result in health and environmental risks. In most instances these risks are low, with stormwater and rainwater washing and dispersing waste downstream fairly quickly. Health risks might be to anyone taking water further downstream, which would be managed through warning and boil water suggestions. The primary impact is reputational and cultural, with people concerned about wastewater ending up in the lake or rivers. If overflows become frequent then health and environmental risk becomes more substantial. We have an annual budget for works to reduce I&I risks. At the moment we are identifying entry points using smoke testing, flow monitoring and visual surveys. But it is a significant problem with a large number of entry points, many of which are on private property. To mitigate this risk, the first step is to identify entry areas, as we are doing through our I&I programme. We could do some further modelling to identify high risk areas. We are also doing some work to upgrade the capacity of the Taupō wastewater treatment plant. However, in practice heavy rain events are likely to result in wastewater overflows. And this is common around the country. The difference being that ours affects inland waterways, whereas in most areas it affects the coast. • **Land movement and pipe breaks:** Horizontal infrastructure, like pipes, is always at risk from land movement. This is a risk in heavy rain events, or event successive heavy rain events. The consequences of a pipe break are some environmental harm, that needs to be cleaned up. And loss of services. For a large break that will take some time to restore, we can contract temporary surface pipes to restore services, while it is fixed, as long as these are available and there is access. We haven't done any assessments to identify any particular areas that may be at risk of land movement. • **Storm damage and power loss:** Loss of power is a key risk affecting our treatment plants and pump stations. Most of our key plant is generator enabled (i.e. a generator can be plugged in to provide power), and can operate on reduced capacity for some time. In a large event getting generators to sites is a risk. Taupō wastewater treatment plant has its own generator. There is the potential for infrastructure damage in heavy rain and storm events, for example trees falling on, or flooding of network equipment (like a pump station). A lighting strike to critical electrical equipment, for example at a treatment plant, could cause significant damage.
Transport	• **Flooding: Roads or road structures damaged, blocked or destroyed due to flooding:** At extreme levels of flooding, our roads become the overland flow paths and some of them may not be passable, impacting service levels and access. We have a number of bridges around the district which are also at risk of damage during flood events. These risks can be exacerbated by forestry slash. • **Road damage and potholing:** The more common and frequent impact of high rain events is that roads that are not in good condition – where maintenance and renewals have been deferred – are easily damaged by water ingress causing potholes. Successive heavy rain events can have a dramatic impact on the quality of these roads – like widespread potholes and deeper potholes. Temporary measures to fill potholes can be washed away in successive events. Reactive work (repairing pot holes) is costly and reduces the funding available for proactive preventative maintenance. Permanent measures to repair and fix the roads comes from highly constrained budgets, and can take some time. Potholes are not just a level of service (smooth ride) issue, they can damage cars, leave the road exposed to further and greater damage in future rain events and further damage from vehicles, and can even cause road safety concerns when divers swerve to avoid them. The key to mitigating these risks would be increased preventative maintenance (pavement maintenance and drainage improvements) to stop roads being susceptible to potholing in heavy rain events. Almost all of the potholing and damage we see from heavy rain events is on roads that have had deferred maintenance and renewals.

	• **High winds: Roads or road structures blocked/damaged due to debris (fallen trees and/or power lines) and other objects blown into vehicle paths:** Heavy rain and high wind or storm events can result in trees and power poles falling, or tree branches and debris blocking roads. Individually these are not a large problem, but in a large event where there are scores or hundreds of these there can be significantly reduced service levels or access, and a significant amount of work is required to ensure safe traffic management, clear them and restore roads. Reactive work (picking up trees, slips etc) is costly and reduces the funding available for proactive preventative maintenance. • **Land slide/slip: Roads or road structures blocked, damaged or destroyed by land slide/slip possible occurring during heavy rain:** We have a large network of rural roads, which include many road cuttings, banks, and road built up above the surrounding land. In heavy rain and high wind or storm events, banks can be brought down. A key risk factor is trees or unsuitable vegetation on banks and road cuttings. Much of this vegetation is next to the roadway on private land. Successive events can also increase the risk, and there can be areas of repetitive slipping. Individual instances are usually not a large problem, and can easily be cleared. The risk is when there is a large event and multiple slips need to be dealt with. Under-slips or washouts are a greater problem to resolve, that take more time and resource to restore the roadway. We have a number of roads that are cut into slopes that are at risk (for example the roads in to Pukawa, and Omori /Kuratau), but also many of our roads are built up above the surrounding land and can also be at risk of being undermined by slips. The main mitigation options are preventative rural drain works, and tree and vegetation management. Our budgets for these are very limited and we mostly do reactive work, after a problem has occurred, or an imminent problem is identified. We don't have strong management and communications plans and protocols in place for large events. There is a significant communications challenge letting everyone know where there are problems or road closures, and detours and delays. There is also a significant management challenge in prioritising and allocating resources to fix the problems. There is also an opportunity to test and manage community expectations – If the community are willing to tolerate their road being closure for a period and accept the delay or taking alternative routes, we can more efficiently resolve the problem, rather than rushing, trying to fix everything at once, and doing expensive traffic management in multiple areas. • Power outages impact street lights and traffic lights. • Lightning strikes are a risk to streetlights and traffic lights.
Council buildings and facilities	• There are no high-risk or significant risks identified. No buildings and property assets have been identified as being in flood risk, slip risk, or wildfire risk areas. No detailed risk assessment has been done for buildings that may be used during Civil defence emergencies – but there have been no identified reasons to need one. • Main risks are storm and wind damage, including from fallen trees. Would expect this to be low level damage, however, when a tree fell on the Acacia Bay Hall it caused significant damage. • Loss of power can impact the provision of services. For example, the pool has to be closed if we cannot operate the filter. • Lightning strike to sensitive pool equipment could cause some costly damage, but is low risk.
Reserves	• Erosion is a key risk for Taupō reserves. Erosion, particularly of the lake foreshore, is an existing issue and is likely to be exacerbated by climate change. The process of erosion can be both long-term, through cumulative impacts over time, and in large erosion events, such as storms. **Lakeshore erosion risk areas** Yellow is high risk for erosion (management ongoing, some sites considered for engineered structures) Orange moderate risk (just monitoring at this stage)

- Kuratau is a high-risk site, the erosion of the foreshore can be significant, especially where a combination of high lake level and strong winds occurs, e.g., a storm event. This erosion is currently mitigated through as-needed beach nourishment under an existing resource consent and controlled in some areas by rock revetments. We have identified engineered mitigation and control solutions, and have funding set in the long-term plan under Project Watershed (co-funded with Waikato Regional Council) to put in these measures. We are in the process of getting a resource consent for the engineered structures, and engagement and consultation with Iwi / hapū is ongoing as permission to site the structures on the lakebed will be necessary. Delays in putting in place mitigation measures means that erosion continues, reducing the foreshore (and, therefore, reserve) area.
- Tapuaeharuru cliffs is another high risk site for erosion. This site currently has little mitigation or control measures in place. A range of options for this site have been sought, including engineered protection structures. Engagement and consultation with Iwi and hapū is ongoing to understand the issue and come to an agreed solution. Funds for works at this site have been set in the long-term plan, also under Project Watershed.
- Continued erosion at the above sites, and other areas, threatens reserve land, private properties, and Council infrastructure.
- Our gully reserves are designed to be overland flow paths. In a very large event there is the potential for erosion, including landslides, of gully banks. Historically there has been little control over where the boundaries of properties on the edges of these gullies extend to, erosion therefore threatens some existing residential areas.
- In heavy rain events, we can have scouring and damage to reserves where overland flows enter onto reserves, including lakefront reserves. This has a cost / repair impact that is not always planned for in budgets.
- In high wind and storm events, damage to trees and fallen trees can be a significant impact on our reserves requiring clean up and safety management. We have a small programme of tree assessments, and remove as soon as possible any dead, dying or dangerous trees, but it is difficult to determine all trees that may be at risk in a large event.
- In heavy rain events, we typically have good drainage for our sports fields, but pumice soil still compacts and needs additional maintenance to relieve compaction and support aeration.

Building controls and planning

Flooding	**River and lake flooding** New building and development in the river and lake flood hazard areas is controlled by the Taupō District Plan. The flood maps for these areas were added in 2019, and included the potential effects of climate change for a 1 in 100-year flood event. **Urban flooding (overland flow paths)** Council has in-house (not public) urban flood maps. It is working on improving the accuracy of these maps so that they can be made public and linked to property LIMs. Subdivision controls under the Resource Management Act 1991, allow Council to ensure that new development areas avoid (or mitigate) flood risk area. Council uses its in-house flood maps, or requires developers to identify flood risks, and how they are being managed. Council's Code of practice (2009) for the development land sets out that stormwater pipes should manage water flows for a 1 in 10-year event (10% AEP), and that overland flow paths should be safe for a 1 in 100-year event (1% AEP). The code provides rainfall intensities for these return periods, which account for expected impacts of climate change.[16] The Building Act 2004 (and associated building Code) provide controls for managing flooding risk – typically a minimum flood height above potential water levels. Council uses its in-house urban flood maps to identify potentially at risk new building.
High winds	The Building Act 2004 (and associated building Code) provide controls for high wind zones. National maps of high risk areas are available.
Landslip / slide	The Building Act 2004 (and associated building Code) provide controls for potential landslip or land instability risks. These are identified and managed on a case by case basis but can usually be identified by a site inspection. New buildings and developments in the Waihi Landslide Hazard Area are controlled by the Taupō District Plan.
Erosion	Esplanade strips around the lake and rivers and the foreshore protection are in the District Plan provide some protections against new building or development in potential erosion areas.

[16] Taupō District Council, Code of Practice for Development of Land, 2009

HOTTER DRIER SUMMERS

Overview of climate impacts

More hot days: A significant increase in hot days (greater than 25ºC) is expect for Taupō district, increasing from around 10 annually to 30 – 40 by mid-century and to 25 – 80 by the end of the century. Up to 10 of those might be very hot days (greater than 30ºC). While this seems like a large increase in 'hot days', it may reflect that we have a number of days just under 25 ºC currently, that will tip over that threshold.

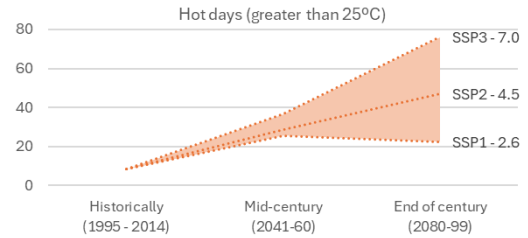
Increased drought risks: Taupō district's drought risk (frequency and intensity) is expected to increase somewhat driven by increased temperatures, but the number of dry and rainy days is not expected to change in summer, and total rainfall (mm) is actually expected to increase in summer by around 5 – 10%.

Increased bush / wildfire risks: Fire risks (frequency and intensity) are exacerbated by hotter weather, dryer conditions, and any high wind conditions. Taupō district's fire risk is expected to increase from relatively low to relatively low – medium.

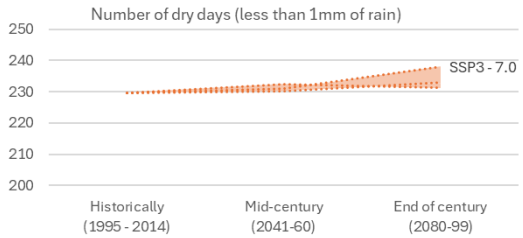
Freshwater quality impacts: Lower river flows, increasing water temperatures, impacts on habitats and species, increased risk of poor water quality, invasive species, and toxic algae bloom.

Pests / Diseases: A warming climate may allow populations of mosquitoes and ticks that spread tropical diseases, such as dengue fever and malaria. Other invasive pests and diseases may affect flora and fauna.

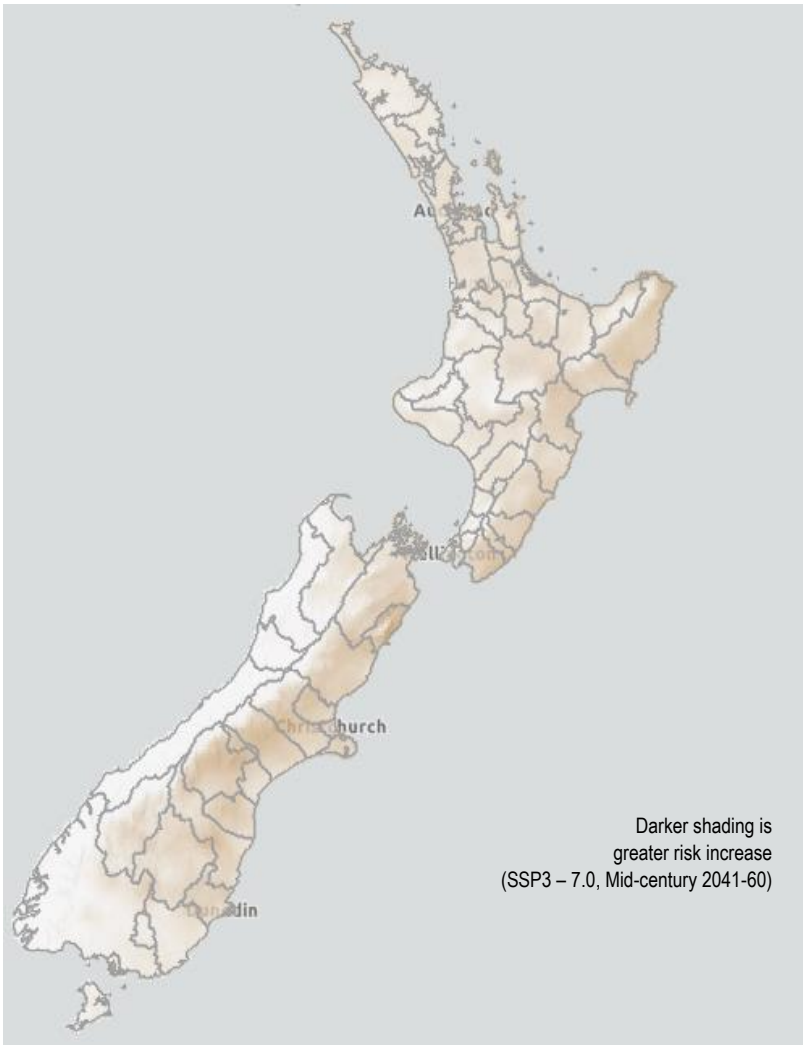
Projected increase in the number of hot days [17]



Projected increase in the number of dry days [11]



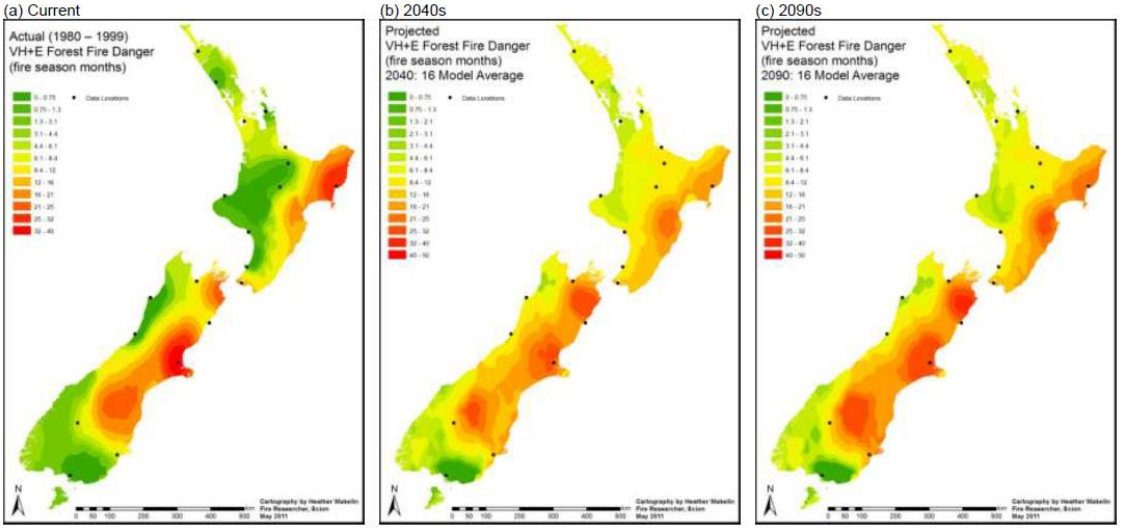
Increase in drought risk due to climate change [18]



[17] Source: Ministry for the Environment, Climate Change projections, Sep 2024: https://environment.govt.nz/facts-and-science/climate-change/climate-change-projections/climate-projections-summary-dashboard/

[18] Source: Ministry for the Environment, Climate Change projections, Sep 2024: https://map.climatedata.environment.govt.nz/

Projected increase in Very High and Extreme forest fire danger days per year [19]



Overview of risk[20]

There are no identified areas where Council is significantly exposed to risk or is unlikely to meet public expectations.

- The primary risk is the potential for a bloom of toxic algae in the vicinity of one of our lake water intakes. (Our lake intake sites are Hatepe, Taupō, Kinloch, Motuopa, Omori, and Motutere.)

  This is an existing risk. There has been no quantification of how much this risk may increase due to climate change.

  Council has controls in place to mitigate the health risk of water supplies being containment by algae toxins.

  The most likely impact of a toxic algae outbreak near a water take would be a halt to services (reliance on reservoirs and replacement tanker water).

  This risk will be mitigated as part of Council's water treatment plant upgrade programme. An upgrade for the Taupō Water Treatment Plant to treat algae toxins is also planned for around 2030.

Key risks

Hotter drier summers								
	Water	Wastewater	Stormwater	Transport	Solid Waste	Property	Parks and open spaces	Building controls and planning
More hot days								
Drought	✓						✓	
Water quality impacts (including algal blooms)	✓						✓	
Wild / bush fire			✓	✓	✓	✓		
Pests / Disease							✓	

[19] Source: *Improved estimates of the effect of climate change on NZ fire danger*, Scion and NIWA, 2011

[20] Adjusted from asset management plans following conversations with asset managers.

Council infrastructure and services risks

Water	• Public health risk from Water Source, including from Algae bloom and associated biotoxins: This is a known risk that exists currently. The risk scenario is if there is a bloom of toxic algae in the vicinity of one of our lake water intakes. Our lake intake sites are Hatepe, Taupō, Kinloch, Motuopa, Omori, and Motutere. We have a cyanotoxin management plan, which includes regular sampling over spring and summer periods to test for any signs of problems or toxins. If risks are identified we will do more frequent testing. If there are toxins present it is a real problem. They are dangerous and cannot be boiled out. We would have to stop water supplies and tanker in water to impacted communities. With our water treatment plant upgrades Hatepe, Kinloch, Motuoapa and Omori will have built in cyanotoxin treatment systems. For the Taupō water treatment plant we have funding in the Long-term Plan 2024 for upgrades to provide cyanotoxin treatment around 2030. This project hasn't yet been scoped or deigned. There are no plans for Motutere at this time. • Drought: The lake provides some insultation from the impacts of drought – we have a reasonably secure water takes for most of our network. However in a prolonged drought, restrictions are likely to be placed on us – which means that we would have to put in place water restrictions on water users. Some of our rural water schemes may be at risk, but there are no known issues (we've not had any problems in the past). Drought can also lead to ground movement (e.g. ground shrinking) which poses the risk of pipe breaks. The main mitigation for this is keeping on top of, renewals and our programme to replace older pipes made out of more brittle materials.
Wastewater	• There are no particular wastewater concerns in relation to dry spells, heat and drought. With the exception that these may have the potential to result in land movement which presents a risk of pipe breaks.
Transport	• Heat and road melting is not a significant issue for our district. We do get some softening of bitumen in high temperatures but not significant damage. There are other parts of the country that have more frequent and higher temperatures than us. This may require changes in materials in future, but we expect that these would be addressed through updating our planning and management approaches in time.
Reserves	• Droughts can have impact on our reserve operations. There might be less mowing, but more maintenance and watering costs, for example for sports fields. Many of our sport fields are not set up for irrigation (Invergarry Rd. end Crown Park, Tūrangitukua Park, Kaimanawa Reserve (outfield area) and we have a manual travelling irrigator for Mangakino sportsgrounds. Hickling Park and Crown Park (fields 1 to 10) have some irrigation, but limited capacity. So in drought conditions there is extra maintenance for sport fields, and there is a risk that the grass dies

Building controls and planning

Wild / bush fire	Forestry has setback requirements for new forests under the Resource Management (National Environmental Standards for Commercial Forestry) Regulations 2017, including 40m from an dwelling, 30m from the boundary of an urban area, and 10m from a neighbours property. Taupō's district plan requires buildings to be setback at least 30m from an existing plantation forest property boundary[21]. It also supports vegetation clearance around infrastructure, for example, under power lines.

[21] Taupō District Plan Rule 4B.2.6 vii refers

APPENDIX 1 – EXTRACTS FROM NIWA[22]

Rainfall

Typically, much of New Zealand is likely to experience drier springs and summers and wetter winters.

Extreme events

Changes to our rainfall and temperature will increase the likelihood of extreme events.

This is because a warmer atmosphere can hold more energy and moisture, leading to heavier and more intense rain.

For the same reason, ex-tropical cyclones (cyclones that originate in the Pacific) may be stronger and more intense when they reach New Zealand.

Bush fires may also increase in frequency and intensity as drought-like conditions become more common.

Temperature

Like much of the Earth, New Zealand will be warmer everywhere. Hot days – days above 25 degrees Celsius – are likely to be far more frequent.

Because of warmer temperatures, much of New Zealand may be frost free by 2100.

Drought

Meteorological drought can occur during extended periods of low rainfall. High temperatures can also exacerbate drought conditions as more evaporation occurs during hot weather. New Zealand will be much more prone to drought as our climate warms.

For much of the country, the number of days with rainfall is likely to decrease which will lead to longer dry spells. Warmer temperatures leading to moisture being evaporated from soils will further increase the risk of drought.

Water supplies

We will also have to think about our water supplies, but not only during dry periods.

In March 2017, a huge storm called 'The Tasman Tempest' descended on Auckland. Unprecedented amounts of rain fell on the Hunua Ranges causing massive slips into water reservoirs, contaminating drinking water with silt. Water restrictions were put in place and water managers realised that they would have to plan for similar events in the future.

As parts of the country become drier, people will have to think about how they can store or access water.

Freshwater environments

We're still learning how freshwater environments will be impacted by climate change. We do know that water in our rivers, lakes, estuaries and wetlands will become warmer as air temperature increases. Warmer water temperatures will likely impact the range of many species, as well as nutrient cycling and primary productivity. Like with marine waters, as freshwater environments warm, we might see proliferation of invasive species such as water hyacinth.

Changes in rainfall and snow and ice cover will also impact the amount and seasonal timing of water entering and exiting freshwater environments. Finally, changing wind and temperature patterns may increase the likelihood of algal blooms in lakes.

[22] https://niwa.co.nz/climate-change-information-climate-solvers/climate-change-and-possible-impacts-new-zealand

APPENDIX 2 – EXTRACTS FROM NIWA / MFE - AOTEAROA NEW ZEALAND CLIMATE PROJECTIONS[23]

Ministry for the Environment
Manatū Mō Te Taiao

Climate Projections by Territorial Authority ⓘ

Territorial Authority

Taupō District

This summary provides an overview of how the climate is projected to change in **Taupō District** between now and 2099 and presents projections as a range of values from a low emissions to a high emissions future.
These projections are relative to the **1995-2014** period and consider a range of scenarios for future climate change as defined by the Intergovernmental Panel on Climate Change (IPCC).

Average daily air temperature

Average temperatures in Taupō District are likely to be 0.9-1.5°C warmer by 2050, and 0.8-3.2°C warmer by 2090, with the greatest seasonal change projected in Summer. The average temperature in Summer is likely to increase by 1.1-1.8°C by 2050, and by 0.9-3.8°C by 2090.

Number of hot days (>25°C)

There were an average of 8.5 hot days - days when the temperature gets above 25°C - per year for Taupō District in the 1995-2014 period. There are projected to be between 0.2 and 36.0 more hot days per year by 2050, and between 0.1 and 77.3 more hot days per year by 2090.

Number of frost days (<0°C)

There were an average of 47.4 frost days - days when the temperature gets below 0°C - per year for Taupō District in the 1995-2014 period. There are projected to be between 6.0 and 33.4 fewer frost days per year by 2050, and between 5.9 and 70.4 fewer frost days per year by 2090.

Total rainfall

Annual rainfall in Taupō District is likely to change by between -7.5% and 1.3% by 2050, and change by between -11.4% and 1.0% by 2090, with greatest seasonal change projected in Spring. The total annual rainfall in Spring is likely to decrease by between -17.5% and -0.3% by 2050, and decrease by between -22.4% and -2.8% by 2090.

Number of very rainy days (>25mm)

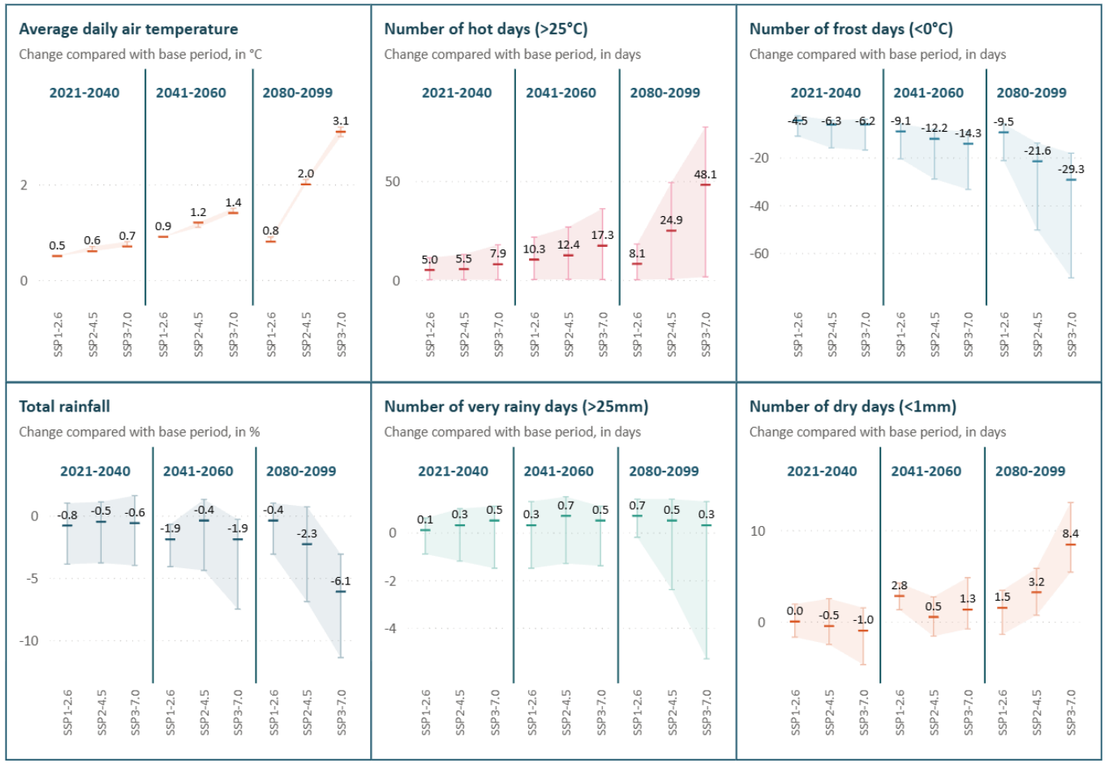
There were an average of 11.7 very rainy days - where rainfall exceeds 25 mm - for Taupō District in the 1995-2014 period. There are projected to be between 1.5 fewer and 1.5 more very rainy days per year by 2050, and between 5.3 fewer and 1.4 more very rainy days per year by 2090.

Number of dry days (<1mm)

There were an average of 229.7 dry days - days when rainfall is less than 1 mm - per year for Taupō District in the 1995-2014 period. There are projected to be between 1.6 fewer and 4.8 more dry days per year by 2050, and between 1.4 fewer and 13.0 more dry days per year by 2090.

Number of windy days (>10m/s)

There were an average of 12.6 windy days - days when the wind speed exceeded 10 metres per second per year - for Taupō District in the 1995-2014 period. There are projected to be between 0.0 and 5.7 fewer windy days per year by 2050, and between 13.3 fewer and 1.2 more windy days per year by 2090.



Future periods

Three future time periods are presented, providing projections of

- 2020 - 2040 near-term future
- 2041 - 2060 mid-century
- 2080 - 2099 end-of-century

Projection scenarios

Three scenarios are presented to provide projections of

- SSP1-2.6 "Sustainability"
- SSP2-4.5 "Middle of the Road"
- SSP3-7.0 "Regional Rivalry"

Definition of climate variables

Average air temperature (°C)
The average daily temperature across the year.

Number of hot days
The number of days per year with a maximum daily air temperature over 25°C.

Number of frost days
The number of days per year with a minimum daily air temperature below 0°C.

Total rainfall
The total amount of rainfall per year.

Number of very rainy days
The number of days per year with more than 25 mm of rainfall.

Number of dry days
The number of days with less than 1 mm of rainfall.

Number of windy days
The number of days with maximum wind speed more than 10 metres per second.

[23] https://environment.govt.nz/facts-and-science/climate-change/climate-change-projections/climate-projections-summary-dashboard/

APPENDIX 3 – EXTRACTS FROM WAIKATO REGIONAL CLIMATE CHANGE HAZARDS AND RISKS REPORT (MAY 2025)[24]

Key climate hazards in the Waikato

This report provides an overview of climate change hazards and risks identified through a high-level risk identification and screening process. Climate change is expected to increase the frequency, severity and impact of many natural hazards in the region. Over the next century, the Waikato region can expect rising sea levels, more extreme weather, warmer summers and milder winters with seasonal rainfall shifts. It is projected that drought risk will increase in the north and east over spring and summer, and there may be seasonal changes in rainfall and wind in the west.

Severe weather and flooding

The Waikato region is highly vulnerable to severe weather events, which are expected to become more frequent and intense due to climate change. Increased rainfall can overwhelm rivers and drainage systems, leading to widespread flooding in both urban and rural areas.

The Waikato region has extensive flood management schemes and land drainage networks, all built to provide agreed levels of service. However, with climate change these may be unable to maintain historic levels of protection without considerable additional investment. Ongoing development in flood-protected areas also further increases exposure to flood risk.

Landslides and erosion

Intense rainfall and river flooding drive increased land instability, including landslides and erosion. Longer dry periods can exacerbate land instability as dry, cracked ground is more prone to failure during intense rainfall. Landslides are common in steep catchments with weak geology, particularly when soils become oversaturated. Riverbank erosion is also common on outer river bends during flood events due to high-energy flows. Erosion can also have secondary impacts on water quality, as a result of sediment loads.

Droughts

The Waikato region, traditionally known for its plentiful water resources, is increasingly facing the prospect of more frequent and severe droughts due to climate change. Rising temperatures and less consistent rainfall are expected to increase the incidence and intensity of droughts.

Temperature increase

Extreme heatwaves are becoming more common and intense in the Waikato region as national temperatures rise. These heatwaves can have wide-ranging effects on human health, animal welfare, the marine environment and economic productivity. Additionally, warmer air can hold more moisture, which can result in more intense rainfall. Recent summers have seen record-breaking temperatures, with many more warm days (≥ 25°C) than usual. High afternoon temperatures and humidity in the Waikato can cause significant heat stress, with extreme events often persisting for several days with little respite overnight. The impacts of extreme heat include increased demand for water and energy, degradation of infrastructure such as roads, and challenges for agriculture due to heat stress on livestock and reduced crop yields. Additionally, fewer frost days are expected, which can affect winter recreational activities and tourism, as seen with the record-breaking low snowfall in Tongariro National Park in 2022.

Increased fire weather

Climate change predominantly increases the risk of wildfires by increasing temperatures and reducing moisture. Higher temperatures reduce relative humidity and prolong droughts, making fire fuels more available. Changing rainfall patterns also result in increased rainfall in some areas but drier conditions in others Climate change is expected to increase fire weather risk in Waikato by about 3 per cent per decade until 2050. The high-end scenario (RCP8.5) predicts a 10 per cent increase per decade in fire danger metrics from 2050 onwards, with the worst years showing double the current fire danger levels (Melia N et al., 2022)

[24] https://www.waikatoregion.govt.nz/environment/climate-change/waikato-regional-climate-change-hazards-and-risks/

Assessment of climate hazard exposure by district

The presence, intensity and impact of climate hazards, both now and into the future, varies across the Waikato region. Each area, and the communities, iwi Māori, organisations and businesses located within it, will be affected by climate change and its associated risks differently. Therefore, each will need to plan for climate change in a unique way.

Some districts have greater exposure to certain climate hazards than others. Consequently, the impact will vary across the region. However, a lower presence of hazards and risks in some districts does not imply the absence of risk. There may still be smaller or localised areas within those districts that can be impacted by a hazard.

The following table provides an overview of each territorial authority's climate hazard exposure across the region.

✓✓✓ Territorial authority (TA) has a large exposure to this climate hazard now and into the future with the potential to impact significant areas.

✓✓ TA has presence of hazard and exposure to this climate hazard now and into the future with the potential to impact localised areas.

✓ Limited presence and exposure of hazards and/or limited impact areas are impacted.

Table: Assessment of climate hazard exposure by district in the Waikato region (**Ministry for the Environment, 2024**) (**NZ Sea Rise, 2024**) (**Waikato Regional Council, 2025**).

Council	Flooding (Fluvial and Pluvial)*	Coastal hazards	Extreme weather	Higher temperature	Dryness and drought	Increased fire weather	Groundwater rise and salinity stress	Landslides and soil erosion	Marine heatwaves and ocean chemistry changes	Decreased frost
Thames Coromandel	✓✓✓	✓✓✓	✓✓✓	✓✓✓	✓✓✓	✓✓	✓✓✓	✓✓✓	✓✓✓	✓
Hauraki	✓✓✓	✓✓✓	✓✓✓	✓✓✓	✓✓✓	✓✓✓	✓✓✓	✓	✓✓✓	✓
Waikato	✓✓✓	✓✓✓	✓✓✓	✓✓✓	✓✓✓	✓✓	✓✓	✓✓	✓✓	✓
Hamilton City	✓✓	N/A	✓✓	✓✓✓	✓✓	✓	N/A	✓	N/A	✓
Matamata-Piako	✓✓✓	N/A	✓✓✓	✓✓✓	✓✓✓	✓✓✓	N/A	✓	N/A	✓
South Waikato	✓	N/A	✓	✓✓	✓✓	✓✓	N/A	✓	N/A	✓✓
Waipā	✓✓	N/A	✓	✓✓	✓✓	✓	N/A	✓✓	N/A	✓
Ōtorohanga	✓✓	✓✓	✓✓✓	✓✓	✓	✓	✓	✓✓✓	✓	✓✓
Waitomo	✓✓✓	✓✓	✓✓✓	✓	✓	✓	✓	✓✓✓	✓	✓✓
Taupō	✓✓	N/A	✓✓	✓	✓✓✓	✓	N/A	✓✓✓	N/A	✓✓✓
Rotorua Lakes (WRC area)	✓	N/A	✓✓	✓	✓✓	✓	N/A	✓✓	N/A	✓✓✓

**Waikato Regional Council and/or other district councils provide and manage flood protection and land drainage schemes throughout the region. Waikato Regional Council manages flood protection and land drainage in Waikato District, Hauraki District, Thames Coromandel District, Matamata-Piako District, Waipā District and Taupō District. Hauraki and Ōtorohanga District Councils manage their own flood protection and land drainage for parts of their districts.*

Flooding, extreme rainfall and storms

Hazard	Description	Present day (baseline 1995-2014)	Mid-century (2040 - 2060)			End of century (2080 - 2100)			Spatial variation across the region
			SSP2-4.5	SSP3-7.0	SSP5-8.5	SSP2-4.5	SSP3-7.0	SSP5-8.5	
Annual rainfall	• The total amount of rainfall per year or season. • Slight increase expected overall, but potential for a 11% decrease by end of century. • Rainfall intensity is expected to increase, so while seasonality of rainfall may decrease, more intense rainfall is expected to fall over shorter periods.	1160 – 2260mm total rainfall per year on average 122 to 152 rainy days per year	-3% to +0.4% change in annual rainfall -1 to +1 very rainy days per year	-3% to -2% change in annual rainfall -1 to +1 very rainy days per year	N/A	-5% to -2% change in annual rainfall -2 to +1 very rainy days per year	-8% to -6% change in annual rainfall -4 to +1 very rainy days per year	N/A	• Overall Rainfall: Projected to decrease in many districts, especially in spring. • Significant Decreases: Notable in Waikato, Thames-Coromandel, Hamilton City, Waipā, Ōtorohanga, Rotorua, and Taupō during spring. • Hauraki and Matamata-Piako: Show significant variability in winter rainfall, with decreases up to 16% and slight increases around 3%. • Taupō District: Largest projected change in rainfall by end of century, with annual rainfall expected to change between -11 and 1%. Spring rainfall could decrease by -22% to -3%. • Flooding Risk: Varies across the region, with flood-susceptible areas in all districts. Highly susceptible districts include Waikato, Hauraki, Matamata-Piako, and Coromandel. Taupō District also has flood-susceptible communities, especially in lakeshore areas like Tūrangi.
Extreme rainfall	• 1% AEP, 24 hour duration rainfall depth (mm) • A rainfall amount that has a 1% chance of being exceeded in any given year. • Likely to become more intense, leading to more extreme flooding. Projections taken from CMIP6 report (Yi, et al., 2021) where projections are provided for SSP2-4.5 and SSP5-8.5	197mm (24hr, 100year)	+13% rainfall depth (24hr, 100year)	N/A	+16% rainfall depth (24hr, 100year)	+19% rainfall depth (24hr, 100year)	N/A	+39% rainfall depth (24hr, 100year)	
Extreme weather events (wind & storms)	• Increase in cyclone frequency and intensity • Extreme precipitation intensity is projected to increase. • Windy days are defined as days with >10m/s. • The reduction in windy days tends to be more significant by end of century compared to mid-century. • Frequency of extreme winds is expected to increase in winter and decrease in summer • Increase in storm intensity predicted by end of century will result in an increase in gale force westerly winds. • This may mean that longer dry spells are followed by more intense rainfall events.	1 to 82 windy days on average per year	0 to 7 fewer windy days per year	0 to 7 fewer windy days per year	N/A	0 to 12 fewer windy days per year	0 to 20 fewer windy days per year	N/A	• North and eastern parts of the region, particularly the Coromandel Peninsula, Hauraki, Matamata-Piako and Waikato Districts are likely to experience more frequency and more intense cyclones. • Most districts are projected to experience a decrease in the number of windy days by both mid-century and end of century. • Taupō District could experience 13 fewer to 1.2 more windy days, which contrasts with the overall trend of decrease across the region. • North-eastern districts such as Coromandel, Hauraki and Matamata-Piako could experience more extreme cyclone activity into the future.
Increased land instability and soil erosion	• Increasing rainfall intensity will increase the probability of landslides occurring. • Changes in rainfall intensity could also lead to a broader geographical area susceptible to landslide risk. • Increases in earthflow, gully, sheet, and bank erosion are expected with increased rainfall and temperature.	*No projection information available							• The Coromandel Peninsula is highly susceptible to land instability, as well as Northern Waikato surrounding Port Waikato, Wharekawa, Hunua Rangers, and along King Country in the west of the region. • Land instability is also likely surrounding Lake Taupō due to the weaker volcanic ash and pyroclastic flow deposits. • These locations are also susceptible to soil erosion alongside land use areas highly populated by agriculture and horticulture, such as Hauraki Plains, Lower Waikato, Matamata-Piako and Tūākau/Pukekohe.

Temperature increase and drought

Hazard	Description	Present day (baseline 1995-2014)	Mid-century (2040 - 2060)		End of century (2080 - 2100)		Spatial variation across the region
			SSP2-4.5	SSP3-7.0	SSP2-4.5	SSP3-7.0	
Average temperatures	• The average daily air temperature per year or season.	8°C to 10°C on average per year	+ 1.1° to 1.2°C temperature increase	+ 1.3° to 1.4°C temperature increase	+ 1.9° to 2.1°C temperature increase	+ 2.9° to 3.1° C temperature increase	• Average daily temperature is expected to increase across the whole region, however Hamilton City, Ōtorohanga, Rotorua and Taupō Districts are expected to see a significant increase in the number of hot days, particularly by end of century. • By mid-century, three out of four summers in Hamilton will include a 15-day hot spell more intense than those occurring once a decade in the recent past (1984-2015). • By mid-century, significant multi-week heatwaves with temperatures at or above 30°C for several weeks could occur in Hamilton.
Hot days (>25deg)	• The number of days per year or season with a maximum daily air temperature over 25°C or greater and very hot as 30°C. • Significant increases are expected in summer, especially by end of century. • By mid-century, summer temperatures are projected to rise by +0.9°C – 1.8°C and up to 3.8°C by end of century.	10 to 38 hot days on average per year	+ 12 to 30 more hot days per year	+ 17 to 39 more hot days per year	+ 25 to 54 more hot days per year	+ 48 to 82 more hot days per year	
Frost days	• The number of days per year or season with a minimum daily air temperature below 0°C. • These will significantly decrease in the southern parts of the Waikato region, particularly by end of century.	6 to 45 frost days on average per year	3 to 12 fewer frost days per year	3 to 14 fewer frost days per year	5 to 22 fewer frost days per year	5 to 29 fewer frost days per year	• Taupō District will see the largest decrease in estimated frost days followed by Rotorua District. • There is a smaller decrease in the number of frost days seen across the northern Waikato Districts.
Drought	• Dry days are days where rainfall is less than 1mm per day. • Potential evapotranspiration deficit (PED) is a drought index (expressed in mm) representing drought exposure. • An increase in PED indicates an increase in drought severity. • By the end of century, the time spent in drought ranges from minimal change through to more than double, depending on the climate model and emission scenario considered.	213 to 242 dry days on average per year 42mm to 144mm PED	-2 to +1 more dry days per year +21mm to +36mm of PED	-2 to +1 more dry days per year +2mm to +44mm of PED	+1 to +3 more dry days per year +27mm to +66mm of PED	+6 to +8 more dry days per year +48mm to +87mm of PED	• Drought risk is expected to increase across the whole region, but particularly in north-eastern districts.
Increased fire weather	• Fire weather index is dependent on temperature, precipitation, relative humidity and wind speed. • The number of days with very high and extreme fire danger could increase significantly across the country.	*No projection information available					• The highest fire danger in Waikato is projected for the Matamata-Piako and Hauraki districts, including Matamata, Morrinsville, Waihi, Thames, Te Aroha, and Paeroa. • Districts and locations identified above will experience higher temperatures could see increased fire weather. • However, the Waikato region is not expected to see a significant increase in wind, which is an exacerbator of fire risk.

Taupō District

Climate change hazards and risks

This map provides a high-level overview of key climate hazards and risks for the district. It should not be interpreted as showing all climate hazards, risks and all locations.

Human

The loss of winter tourism will significantly impact Taupō communities, influencing communities' mental well-being. Vulnerable communities, such as those on the eastern and southern lakefront, face potential isolation risks driven by hazards. Land instability in Waihi Village poses a risk to Iwi/Māori as demand increases on marae and community facilities with possible damage to urupā and other places of cultural significance.

Economy

Increased temperature and fewer snow days will affect winter tourism in Taupō, while increased droughts will economically impact the rural sector by reducing stock productivity and raising agricultural costs. Seasonal changes and severe weather can also harm the forestry industry through reduced rainfall, wind damage to trees and increased fire risk.

Natural environment

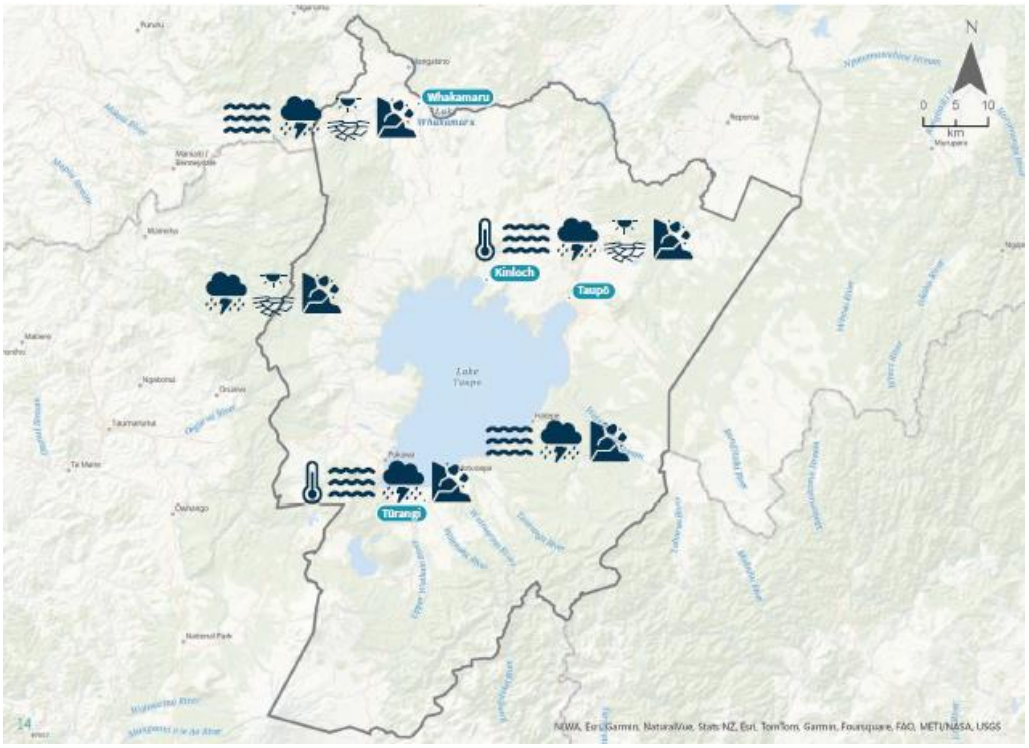
Warmer temperatures can negatively impact Lake Taupō's ecosystems, increasing algal blooms and biodiversity both in and around the lake. Increased rainfall and erosion can reduce water quality alongside increased run-off from urban centres like Taupō township and forestry areas.

Built environment

Critical infrastructure along SH1 and SH43 is vulnerable to flooding and land instability, and buildings along the eastern and southern shores of Lake Taupō are at risk of flooding, such as in Tūrangi, Tokaanu and Tauranga Taupō communites. Lake Taupō power generation is at risk during both high and low lake levels due to severe weather, drought and seasonality changes.

Hazards

- Extreme weather
- Rainfall and flooding
- Higher temperature
- Drought
- Land instability



Risks to the built domain

Risk focus area	Risk overview
Transport	**Road transport** • **Extreme weather** can cause washouts, slips, and surface damage. This can cause road damage and closures, impacting access, especially in rural or isolated communities. • **Flooding and landslides** risk of culvert washouts and bridge scour, making roads impassable, increasing accident rates. This can impact freight movements across the region resulting in supply chain issues and secondary impacts on the economy and people. This is exacerbated by capacity issues in existing culvert infrastructure. SH1 near Tūrangi suspectable from flooding from the Tauranga-Taupō an Tongariro rivers • **High groundwater** can compromise road integrity, requiring maintenance. • **High temperatures and drought** can lead to melting, cracking and subsidence of roads, especially in areas of peat. • **Drought related peat shrinkage** can cause subsidence, affecting roads and rail. Additionally, peat fires near roads can lead to thick smoke disrupting transport. **Air transport** • **High winds** can disrupt air services. • **High temperatures** can melt tarmac, disrupting operations.
Energy and telecommunications	**Electricity networks** • **Extreme weather** (high winds, snow and storms) can damage above-ground infrastructure, causing widespread outages, especially in isolated communities. • **Flooding** can damage infrastructure, decrease ground stability, and expose assets. • **Landslides** can cause damage to infrastructure across the region, particularly those network elements on steeper terrain. • **High temperatures** can increase conductor sag, fire risk, and reduce load ratings. Increased load to power air conditioning and irrigation. • **Wildfires** can damage assets and increase fire risk from arcing/sagging lines. **Telecommunications** • **Severe weather** (high winds and storms) can damage infrastructure, requiring repair leading to loss of power source for communities. • **Flooding** can cause direct damage. • **Fire weather** can cause direct damage.

Risk focus area	Risk overview
Three-waters infrastructure	**Water supply and treatment** • **Flooding and heavy rainfall** can damage in-stream infrastructure, storage dams, and water supply systems. Landslides can contaminate water supplies and increase sediment, putting additional demand on water treatment. **Stormwater and wastewater networks** • **Extreme rainfall and flooding** can damage / overwhelm stormwater networks. This can lead to property flooding, causing damage, and increased insurance costs. Groundwater rise can also reduce capacity within 'leaky' stormwater and wastewater systems and increases maintenance costs. • **Extreme rainfall and flooding** can impact / damage wastewater networks. Flooding and high groundwater can increase inflow and infiltration, leading to overflows and reduced treatment effectiveness. **General infrastructure** • **Higher temperatures** can affect the performance of biological wastewater treatment systems. • **Drought** can lead to dry ground conditions which could damage/crack buried infrastructure.
Community facilities, landfills, parks and reserves	**Public buildings and facilities** • **Flooding** can impact schools, hospitals, social buildings, prisons and Council buildings in low-lying areas, leading to significant financial implications for Councils and government. **Parks and reserves** • **Flooding, coastal inundation and coastal erosion** can impact parks and reserves, especially DOC reserves used for tourism and recreation. **Community facilities** • **Flooding and extreme weather** can cause loss or damage to cultural and heritage buildings such as marae and historic buildings. • **Higher temperatures** can potentially damage community facilities, and cause cracking of paving and degrading of playground materials. **Landfills and hazardous sites** • **Flooding and erosion** can cause leachate and waste exposure at landfills, contaminating waterways and affecting water quality. Similarly flooding can mobilise contaminants at contaminated sites. • **High temperatures** can cause increased odour and fire risk near landfills • **Fire weather** increasing risk of landfill fires

Risk focus area	Risk overview
Private property	• **High winds and storms** can cause damage to buildings and infrastructure. • **Flooding** can impact commercial and residential buildings in low-lying areas, causing significant potential for damage and financial implications. Tūrangi and the shores of Lake Taupō are communities where buildings are exposed to inland river flooding. Additionally, there are smaller communities across the whole region that are exposed. • **Landslides** can impact buildings near escarpments or riverbanks. Communities along the southern shores of Lake Taupō (Waihi landslide) are at risk of landslides impacting buildings. • **Increased temperatures** can lead to higher likelihood of wildfires damaging properties. • **Heatwaves** can lead to soil shrinkage, subsidence, concrete deterioration, and internal overheating of buildings.
Built domain indirect risks	**Increased generation of waste and contamination** • Extreme weather events can damage trees, bridges, buildings, and facilities, leading to significant recovery effort and costs. Also, can create large volumes of disaster waste, posing public health risks and significant clean-up costs. **Road damage and disruption** • Increased climate variability can lead to loss, damage and disruption of roads, leading to higher operation and maintenance costs over time. • Acute climate events can lead put pressure on emergency management services. Communities can become isolated and there could be increased inability of emergency services to access these areas due to safety concerns **Water availability and quality** • Over-irrigation during higher temperatures and drought can further reduce groundwater and surface water availability and quality. • Water quality can be impacted through the combination of reduced flows, higher temperatures, increased sedimentation, nutrient leaching, and agricultural runoff. **Other** • Managing outdated building standards and codes of practice will be ongoing. Also, land use policy can allow development in areas that may be exposed to climate risk. • Damaged infrastructure may make it harder to access and manage storm-affected areas, impacting other activities like pest control. • Increased acute climate events can lead to increased insurance premiums or insurance retreat.

APPENDIX 4 – EXTRACTS FROM 2024 ASSET MANAGEMENT PLANS

Stocktake of risks identified in Council's asset management plans (2024)

Heavy rain and storm events									
	Water	Wastewater	Stormwater	Transport	Solid Waste	Property	Parks and open spaces	Building controls and planning	Emergency management
Flooding	ü	ü	ü	ü	ü	ü	ü	ü	ü
High winds	ü	ü	ü	ü	ü	ü	ü	ü	ü
Lightning	ü	ü		ü	ü	ü			ü
Power outages	ü	ü							ü
Landslip / slide	ü	ü	ü	ü		ü		ü	ü
Erosion							ü	ü	ü

Identified high and medium risks for core Council activities

Area	Risk	Risk level
Flooding impacts		
Water	Wastewater /Stormwater finding its way through to damaged water pipes due to: - Reticulation pipe movement. Public health risk from Water Source, including from Heavy rainfall event.	High
Wastewater	Reticulation system overflows due to: Stormwater finding its way through to sewer pipes, or silting of pipes.	Medium
Stormwater	Damage to private property	Medium
Property	Properties blocked or destroyed due to flooding.	Medium
Transport	Roads or road structures damaged, blocked or destroyed due to flooding.	Medium
Solid Waste	Surrounding environment polluted due to leachate loss from pond or lined landfill cell / Liner Failure.	Medium

High wind impacts		
Water	Power outages causing plant power failure	Extreme
Water	Damage to the reticulation network due to: - Structural/electrical system damage to pump station. Damage to the intake pump station / treatment system due to stormy winds causing flooding of the pump station and structural/electrical system damage of the WTP - Computer system damage Public health risk from Water Source, including from Heavy wind.	Medium - High
Wastewater	Damage to the reticulation network due to Structural/electrical system damage of pump station. Damage to the treatment system due to: Structural/electrical system damage of the WWTP, or Computer system damage.	Medium
Stormwater	Silting of pipes, or silting of water channels.	Medium
Transport	High winds impacts on Transport. Roads or road structures blocks/damaged due to debris (fallen trees and/or power lines) and other objects blown into vehicle paths.	Medium
Landslide / slip impacts		
Water	Damage to reticulation system due to: Pipe fracture, Disconnections in joints, Pump failure, Earth slip, or Land subsidence causing changes of grade in pipe network. Damage to treatment system due to: Electrical system failure, Earth slip failure, Mechanical failure, Structural failure (e.g. Building, Control Room, contact tanks, screen filters, WTP process equipment, etc.), or Pipe fracture. Groundwater contamination due to: - Earth slips in network.	Medium
Wastewater	Damage to reticulation system due to: Pipe fracture, Disconnections in joints, Pump failure, Earth slip, or Land subsidence causing changes of grade in pipe network. Damage to treatment system due to: Electrical system failure, Earth slip failure, Mechanical failure, Structural failure (e.g., Building, Control Room, settling tanks, clarifiers, trickling filters, digester, belt press, etc.), or Pipe fracture. Groundwater contamination due to Earth slips in land disposal sight.	Medium
Stormwater	Silting of primary and secondary network caused from slip, blocking network.	Medium
Transport	Roads or road structures blocked, damaged or destroyed by land slide/slip possible occurring during heavy rain.	Medium
Property	Properties damaged or destroyed by land slide/slip possible occurring during heavy rain or earthquakes.	Medium
Erosion		
Parks and reserves.	The risk of erosion damage to lakeshore reserves is moderate (occurrence with high impact of damage). However, due to the presence of wastewater reticulation assets in some reserves, the priority assigned is high.	Medium

	Foreshore erosion can result in land loss, destruction of infrastructure, and property damage. To mitigate the effects of erosion, several erosion protection assets have been constructed on the shoreline of Lake Taupō. Most of these assets are in Tapuaeharuru Bay (i.e., Taupō township) and have been built and maintained through Project Watershed, a funding initiative where Taupō District Council covers 55% of the costs and Waikato Regional Council covers 45%.	

Stocktake of risks identified in Council's asset management plans (2024)

Hotter drier summers									
	Water	Wastewater	Stormwater	Transport	Solid Waste	Property	Parks and open spaces	Building controls and planning	Emergency management
More hot days									ü
Drought									ü
Water quality impacts (including algal blooms)	ü						ü		ü
Wild / bush fire			ü	ü	ü	ü		ü	ü
Pests / Disease							ü		ü

Identified high and medium risks for core Council activities

Area	Risk	Risk level
Water quality impacts (including algal blooms)		
Water	Public health risk from Water Source, including from: Algae bloom and associated biotoxins Water quality too poor to treat	High
Wild / bush fire impacts		
Stormwater	Drainage secondary network failure affected by reduction in vegetative cover causing erosion and instability in gullies. Greater debris in open watercourse's Primary Drainage network affected by hazardous substance fire or explosion from pollution spill causing structural damage to pipe and manhole network Damage at outlet from system.	Medium

	3rd party damage as a result of fire blow back to various inlets.	
Solid Waste	Landfill fire would restrict dumping and close landfill Potential for structural damage to RTS and Landfill buildings Fill Slumping Liner Failure	Medium
Property	Properties damaged or blocked due to scrub/bush fire	Medium

The Water Asset Management Plan 2024:

Risk	Consequence	Likelihood	Adequacy of existing controls	Level of risk
Flooding - Inaccessibility of the WTP and inability to operate the plant	Minor (Low impact of damage or failure)	Unlikely (Once every thirty years)	Effective (use of big trucks)	Low risk
Damage to the treatment system due to: - Silting of tanks - Tank overflow	Moderate (Medium impact of damage or failure)	Unlikely (Once every thirty years)	Effective (vacuum truck, WTP has 1- day storage capacity for dryweather flow, pump out to the NETWORK which has max of 2-day irrigation capacity)	Low risk
Wastewater /Stormwater finding its way through to damaged water pipes due to: - Retic pipes movement	Major (High impact of damage or failure)	Unlikely (Once every thirty years)	NC	High risk
Lightning Damage to the reticulation network due to: - Structural/electrical system damage of pump station	Major	Rare	Effective (list of local Contractors' details available when needed)	Low
Damage to the treatment system due to: - Structural/electrical system damage of the WTP - Computer system damage	Major	Rare	Effective (built-in generators, staff trained for servicing, list of local Contractors' details available when needed)	Low
High winds Damage to the reticulation network due to: - Structural/electrical system damage of pump station	Major	Unlikely	Effective (list of local Contractors' details available when needed	Medium

Damage to the intake pump station / treatment system due to: - Stormy winds flooding the pump station and Structural/electrical system damage of the WTP - Computer system damage	Major	unlikley	Effective (built-in generators, staff trained for servicing, list of local Contractors' details available when needed)	Medium
Public health risk from Water Source, including from: Algae bloom and associated biotoxins	Major	Likley	NFE	High
Water quality too poor to treat	Major	Likely	N	High
Heavy rainfall event	Moderate	Possible	NFE	Medium
Heavy wind	moderate	Almost Certain	NFE	High
Plant power failure	Major	Almost Certain	Effective	Extreme
Landslide / slip Damage to reticulation system due to: - Pipe fracture - Disconnections in joints - Pump failure - Earth slip - Land subsidence causing changes of grade in pipe network	Major	Possible	Effective (list of local Contractors' details available when needed)	Medium
Damage to treatment system due to: - Electrical system failure - Earth slip failure - Mechanical failure - Structural failure (e.g. Building, Control Room, contact tanks, screen filters, WTP process equipments, etc.) - Pipe fracture	Major	unlikely	Effective (built-in generators, staff trained for servicing, list of local Contractors' details available when needed)	Medium
Groundwater contamination due to: - Earth slips in NETWORK	Major	Possible	NC	Medium

Inaccessibility to network due to footpath/road system failure	Major	Possible	Effective (emergency road repair)	Low

The Wastewater Asset Management Plan 2024:

Risk	Consequence	Likelihood	Adequacy of existing controls	Level of risk
Flooding - Inaccessibility of the WWTP and inability to operate the plant.	Minor (Low impact of damage or failure)	Unlikely (Once every thirty years)	Effective (use of big trucks)	Low
Damage to the treatment system due to: - Silting of tanks - Tank overflow	Moderate	Unlikely	Effective (Vacuum truck, WWTP has 1- day storage capacity for dryweather flow, pump out to the LDS which has max of 2- day irrigation capacity)	Low
Reticulation system overflow due to: - Stormwater finding its way through to sewer pipes. - Silting of pipes	Major	Unlikely	NC	Medium
Lightning Damage to the reticulation network due to: - Structural/electrical system damage of pump station	Major	Rare	Effective (List of local Contractors' details available when needed)	Low
Damage to the treatment system due to: - Structural/electrical system damage of the WWTP - Computer system damage	Major	Rare	Effective (built-in generators, staff trained for servicing, list of local Contractors' details	Low
High winds Damage to the reticulation network due to: - Structural/electrical system damage of pump station	Major	Unlikely	Effective (List of local Contractors' details available when needed)	Medium
Damage to the treatment system due to: - Structural/electrical system damage of the WWTP - Computer system damage	Major	Unlikely	Effective (built-in generators, staff trained for servicing, list of local Contractors' details available when needed)	Medium
Landslide/Slip Damage to reticulation system due to: - Pipe fracture - Disconnections in joints	Major	Possible	Effective (List of local Contractors' details available when needed)	Medium

- Pump failure - Earth slip - Land subsidence causing changes of grade in pipe network.				
Damage to treatment system due to: - Electrical system failure - Earth slip failure - Mechanical failure - Structural failure (e.g., Building, Control Room, settling tanks, clarifiers, trickling filters, digester, belt press, etc.) - Pipe fracture	Major	Unlikely	Effective (built-in generators, staff trained for servicing, list of local Contractors' details available when needed)	Medium
Groundwater contamination due to: - Earth slips in LDS.	Major	Possible	NC	Medium
Inaccessibility to network due to footpath/road system failure.	Minor	Possible	Effective (Emergency road repair)	Low

The Transport Asset Management Plan 2024:

Risk	Consequence	Likelihood	Adequacy of existing controls	Level of risk
Flooding Roads or road structures damaged, blocked or destroyed due to flooding	Moderate	Possible	Effective (Weather warnings, stock banks)	Medium (The existing controls are deemed adequate for this risk)
Fire Roads damaged or blocked due to scrub/bush fire	Minor	Unlikely	Effective (Vegetation control within road reserve, fire restrictions, fire brigade, firebreaks within forest plantations	Low (The existing controls are deemed adequate for this risk)
Lightning Streetlights damaged due to power outages	Insignificant	Unlikely	Effective (Utility Providers have controls such as circuit breakers, etc.)	Low (The existing controls are deemed adequate for this risk)
High winds Roads or road structures blocks/damaged due to debris (fallen trees and/or power lines) and other objects blown into vehicle paths	Minor to Moderate (if power lines down)	Likely	Effective (Utility Providers have controls such as circuit breakers, etc. Vegetation control within road reserve, planning control for tree planting close to road.)	Medium (The existing controls are deemed adequate for this risk)
Land slide/slip Roads or road structures blocked, damaged or destroyed by land slide/slip possible occurring during heavy rain.	Major	Possible	Effective (Waihi Hill known landslide risk, has warning system)	Medium (The existing controls are deemed adequate for this risk)
Climate change Global warming may increase the number and intensity of extreme events i.e., more rainstorms. This may affect the construction timing of projects, material life and usefulness of asset.	Moderate	Likely		Medium

Roads at risk of flooding or slips

(extract from Transport Asset Management plan 2024)

10.13 Roads Risk Assessment

Below is a list of roads which are at risk from flooding or other high-risk factors.

Component / Segment	Vulnerability Ranking								Impact				Comments
		Seismic											
	Importance	Ground Shaking	Liquefaction	Fault displacement	Land slide	Ground settlement	Flood	Volcanic ash fall	Seismic	Flood	Volcanic	AADT	
Low lying roads													
KOROHE ROAD	2	D	D	D	D	D	A	C	1	2	1	267	
WAIOTAKA ROAD	1	D	D	D	D	D	A	C	1	1	1	50	
GRACE ROAD	1	D	D	D	D	D	A	C	1	1	1	157	
AWAMATE ROAD	2	D	D	D	D	D	A	C	1	2	1	62	Access to sewerage plant
WHARF ROAD	1	D	D	D	D	D	B	C	1	1	1	10	
HEUEHU PARADE	1	D	D	D	D	D	C	C	1	1	1	50	
ORUATUA AVE	1	D	D	D	D	D	C	C	1	1	1	125	
Other Roads													
OHAKURI ROAD	2	D	D	D	B	D	D	C	2	2	1	100	Narrow/cliffs/rock
WAIHI ROAD	2	D	D	D	A	D	C	C	2	2	1	255	Prone to land slides
MAPARA ROAD	2	D	D	C	D	D	D	C	2	1	1	170 - 1200	
TUKAIRANGI ROAD	2	D	D	C	D	D	D	C	2	1	1	60-150	
POIHIPI ROAD	2	C	E	D	C	D	D	C	2	2	1	500 - 3300	
WAIPAPA ROAD	2	C	E	D	C	D	D	C	3	3	1	140 - 1230	
ARIATIATIA - NTH OF DAM	2	D	D	D	C	D	D	C	2	2	1	200 - 800	
TIROHANGA ROAD	3	C	D	D	C	D	D	C	3	3	1	266	
ACACIA BAY / WILY TCE	1	D	D	D	B	D	D	D	1	1	1	30	
HUKA FALLS ROAD	2	D	D	D	C	D	D	D	1	1	1	50-700	

Definitions for the above tables are as follows:

Importance Ranking		Vulnerability Ranking		Impact Ranking	
Extremely important	5	Almost certain	A	Catastrophic	5
Very important	4	Likely	B	Major	4
Important	3	Possible	C	Moderate	3
Some importance	2	Unlikely	D	Minor	2
Not important	1	Rare	E	Insignificant	1

The Stormwater Asset Management Plan 2024:

Risk	Consequence	Likelihood	Adequacy of existing controls	Level of risk
Flooding Failure of primary and secondary network by: Blockage from debris	Moderate	Unlikely	Effective	Low
Access to network blocked, contracting staff. cannot remedy	Moderate	Unlikely	Effective	Medium
Silting of primary pipe network by debris and silt	Moderate	Likely	Effective	Low
Damage to private property	Moderate	Likely	Effective	Medium
Fire Drainage secondary network failure affected by: Reduction in vegetative cover causing erosion and instability in gullies	Major	Possible	Effective	Medium
Greater debris in open watercourse's Primary Drainage network affected by hazardous substance fire or explosion from pollution spill: causing structural damage to pipe and manhole network Damage at outlet from system	Moderate	Possible	Effective	Medium
3rd party damage as a result of fire blow back to various inlets	Moderate	Possible	Effective	Medium
High winds Potential for structural damage outlet structures from high winds causing: Damage to structural integrity of outlets	Minor	Unlikely	Effective	Low
Silting of pipes Silting of water channels	Minor	Almost Certain	Effective	Medium
Land slip/slide Silting of primary and secondary network caused from slip, blocking network	Moderate	Possible	Effective	Medium

The Solid Waste Asset Management Plan 2024:

Risk	Consequence	Likelihood	Adequacy of existing controls	Level of risk
Flooding Refuse collection unable to proceed	Moderate	Unlikely	Effective	Low
Access to disposal sites blocked, refuse unable to get to disposal sites	Moderate	Unlikely	Effective	Low
Surrounding environment polluted due to Leachate loss from pond or lined landfill cell	Major	Unlikely		Medium
Fill Slumping	Moderate	Unlikely	Effective	Low
Liner Failure	Major	Unlikely	Effective	Medium
Compaction Plant at RTS damaged	Moderate	Unlikely	Effective	Low
Weighbridge damaged and unable to weigh	Minor	Unlikely	Effective	Low
Computer system damaged and unable to record transactions	Minor	Unlikely	Effective	Low
Damage to closed Landfills	Moderate	Unlikely	Effective	Low
Fire Landfill fire would restrict dumping and close landfill	Major	Unlikely	Effective (Have a water truck on site, site has an emergency evacuation procedure, will monitor potential harmful effects of smoke for the surrounding area and evacuate if necessary, firefighting water storage pond and infrared camera listed as projects in the LTP [these have now been installed].)	Medium
Potential for structural damage to RTS and Landfill buildings	Moderate	Possible	Effective	Medium
Fill Slumping	Moderate	Possible	Effective	Medium
Liner Failure	Major	Unlikely	Effective	Medium
Lightning Compaction Plant at RTS damaged	Minor	Rare	Effective	Low
Weighbridge damaged and unable to weigh	Minor	Rare	Effective	Low

Computer system damaged and unable to record transactions	Minor	Rare	Effective	Low
High winds Potential for structural damage to RTS and Landfill buildings	Minor	Unlikely	Effective	Low
Litter strewn across a wide area	Minor	Almost Certain	Effective (Contractor employs litter fences and has staff available for litter clean up.)	Medium

The Property Asset Management Plan 2024:

Risk	Consequence	Likelihood	Adequacy of existing controls	Level of risk
Flooding Properties blocked or destroyed due to flooding.	Moderate	Possible		Medium
Fire Properties damaged or blocked due to scrub/bush fire	Moderate	Possible		Medium
Lightning Properties damaged due to power outages	Insignificant	Unlikely		Negligible
High winds Properties damaged due to debris (fallen trees and/or power lines) and other objects blown into vehicle paths.	Minor to Moderate (if power lines down)	Likely		Low
Land slide/slip Properties damaged or destroyed by land slide/slip possible occurring during heavy rain or earthquakes.	Major	Possible		Medium
Climate Change Global warming may increase the number and intensity of extreme events i.e. more rainstorms. This may affect the construction timing of projects, material life and usefulness of asset.	Moderate	Likely		Medium

The Parks and Open Spaces Asset Management Plan 2024:

Risk	Consequence	Likelihood	Adequacy of existing controls	Level of risk
Increased Rainfall Intensity and Frequency Causing flooding, unpredictable weather events.	3	3	Contingency measures to reduce damage to sports grounds when wet. Ground restrictions and cancellations	9
Flood event	4	5	Emergency response and business continuity plans	40
Environmental Hazards New/increased pests and diseases, water quality (algal blooms, etc.), faecal contamination.	5	3	Appropriate barriers Alerts to hazards (signage) in place Non routine hazard alerts	15
Trees	5	2	Hazardous trees identified and monitored	
Lakeshore Degradation	4	2	Care groups very active	8
Erosion The risk of erosion damage to lakeshore reserves is moderate (occurrence with high impact of damage). However, due to the presence of wastewater reticulation assets in some reserves, the priority assigned is high. Many Open Spaces are designated as overflow areas or are in places which it would not be prudent to build. Consequently, some parks are susceptible to flooding or are in locations which are likely to be affected by climate change. Council will need to monitor changes to water body boundaries and trends. Parks and sports grounds in low-lying areas may need to have modified use and management practices. Foreshore erosion can result in land loss, destruction of infrastructure, and property damage. To mitigate the effects of erosion, several erosion protection assets have been constructed on the shoreline of Lake Taupō. Most of these assets are in Tapuaeharuru Bay (i.e., Taupō township) and have been built and maintained through Project Watershed, a funding initiative where Taupō District Council covers 55% of the costs and Waikato Regional Council covers 45%.			Erosion protection structures monitored bi-monthly.	

APPENDIX 5 – EXTRACTS FROM WAIKATO CDEM PLANS

HAZARD SCENARIOS – WAIKATO CDEM, 2024[25]

Drought (possible: 1 in 10- to 1 in 100- year event)

Following a previous drought, a particularly dry autumn and winter see's low levels of aquafer recharge and a particularly warm and dry summer results in widespread severe drought conditions occurring across the region. Soil moisture levels are at their lowest ever and river flows in parts of the region are exceeding their lowest ever recorded levels. A drought is acknowledged for the Waikato region and a Regional Drought Committee is established. Full water restrictions are put in place for all activities for extended periods and some towns experience water supply issues as a result of low river and aquafer levels.

Extreme Temperatures (possible: 1 in 10- to 1 in 100- year event)

The region experiences a 2-week spell of continued high temperatures due to a high sitting over the country. Several days see the region hit record temperatures above 35 degrees and sustained temperatures in the early 30's. Overnight temperatures remain warm in the low twenties.

Extreme weather event – cyclone (possible: 1 in 10- to 1 in 100- year event)

A significant cyclone forms in the southern Pacific in Mid-February and moves slowly south-east towards New Zealand. At its peak it reaches Category 5 status, causing devastation in the Pacific Islands of Vanuatu. Although the system gradually loses power and is re-classified as an ex-tropical cyclone, as it moves across the Pacific and into the Tasman the storm still has sustained winds in excess of 140km/h, with gusts in excess of 160km/h. The system is predicted to make landfall north of Auckland late in the afternoon on a Saturday and track South-South-East down the North Island. However, it is preceded by large swells on the West Coast, with storm surge resulting in erosion along Point Rd, Mōkau, Sunset Beach and Port Waikato from late Friday night and early on the Saturday morning. Low-lying areas are inundated, and this continues to occur throughout the storm.

By late Saturday afternoon the storm makes landfall and begins to impact the north of the region. Wind speeds begin to increase across the north of the region with gusts in excess of 140km/h experienced in Port Waikato and Coromandel by the evening. Heavy rainfall starts to occur across the north of the region and within hours many trees have fallen, and power is cut to large parts of the region. Several key roads are closed due to tree fall as the weather intensifies. Central and southern areas begin to feel the brunt of the storm in the early hours of Sunday morning, with strong winds and rain impacting the roading, communications and electricity networks. In Coromandel, coastal flooding and erosion has impacted Te Puru and Tararu on the western coast. Low-lying farmland around the southern Firth of Thames has experienced flooding and saltwater intrusion as the storm surge builds. The storm system slows its progression across the region throughout the Sunday, resulting in intense rainfall over a 24hr period across the main river catchments. At most sites over 400mm of rain is recorded, with some receiving this in less than 16hrs. The hills surrounding Port Waikato receive more than 500mm of rain, and parts of Coromandel record their highest ever 24hr rainfall totals. Ponding occurs in low-lying areas and the river systems throughout the region begin to flood surrounding land. Flooding occurs along the Waikato River

[25] https://www.waikatocivildefence.govt.nz/assets/NEW-WCDEMG/Waikato-CDEM-Group-Hazard-Risk-Assessment-December.pdf

and Waipa Rivers north of Hamilton in Ngāruawāhia and Huntly. The Waitoa and Waihou Rivers flood across the Hauraki Plains and numerous smaller streams and rivers in the area break their banks. A stop bank breach in Paeroa leads to inundation to part of the town. In the Coromandel, many streams within steep catchments experience debris flows as the result of a high intensity period of rainfall, including streams near Thames, which exacerbates flooding of surrounding areas. Widespread slipping occurs in the high country of the region. The worst of these have occurred in the areas to the south of Port Waikato, and around the Coromandel. While these are some of the worst affected areas, the entire region has seen damaging slips. Many small communities are impacted, particularly in the east and west of the region. Several large slips have occurred on the state highways causing closures. By Sunday evening, the storm begins to move over the east coast of New Zealand and into the Pacific. Strong winds continue to occur into the early hours of the Monday Morning for most parts of the region, with Taupō and Tokoroa both experiencing high winds speeds in excess of 120km/h well into the Monday afternoon.

Scenario based on the impacts of Cyclone Gabrielle

Fire – Wildfire (possible: 1 in 10- to 1 in 100- year event)

Continued dry, hot weather through the summer months has created a high level of fire risk across the region. A major fire is burning in a forestry block to the west of Tokoroa covering 1600ha and is spreading rapidly, fanned by strong winds from the northwest. A second fire outbreak has occurred in the Hakarimata Scenic Reserve near to Ngāruawāhia and is also spreading rapidly as a result of the high temperatures and strong winds. In the east of the region several smaller fires have developed. A fire on rural land near Ngatea has developed into a peat fire covering an area of 20ha. Several smaller fires have been lit deliberately in bush north of Whangamatā and are being fanned by the strong winds.

Land instability – Landslides (possible: 1 in 10- to 1 in 100- year event)

After a sustained period of rain widespread slipping has occurred in the high country of the region. The worst of these have occurred in the areas to the south of Port Waikato, and around the Coromandel. While these are some of the worst affected areas, the entire region has seen damaging slips. Many small communities are impacted, particularly in the West of the region. Several large slips have occurred on the state highways causing closures. Several slips have created debris dams in tributaries of the Waikato River and small streams across the region.

River Flooding (possible: 1 in 10- to 1 in 100- year event)

A Rainfall event associated with a significant low occurs in mid-winter, bringing significant rainfall to the entire region over a period of three days. Many areas have already experienced a sustained period of wet weather from a prior low-pressure system and ground water levels and river flows are already high. River systems throughout the region begin to flood surrounding land and flooding occurs along the Waikato River and Waipa Rivers north of Hamilton in Ngāruawāhia and Huntly. The Waitoa and Waihou Rivers flood across the Hauraki Plains and numerous smaller streams and rivers in the area break their banks. A stop bank breach in Paeroa leads to inundation to part of the town. In the Coromandel, many streams within steep catchments experience debris flows as the result of a high intensity period of rainfall, including streams near Thames, which exacerbates flooding of surrounding areas. Based on Regional 1% AEP flood maps, 1998 Waikato Flood event and Report: The potential for debris flows from Karaka Stream at Thames, Coromandel - Feb 2006.

Tornadoes (possible: 1 in 10- to 1 in 100- year event)

During a spell of thunderstorms around the middle of the day a strong tornado forms to the west of Frankton. It touches down in the industrial area of Frankton and continues eastwards towards the

Hamilton CBD, before crossing into Hamilton East and then moving into rural areas to the east of the city. It is on the ground for 10 minutes and has wind speeds of over 200km/h. The tornado cuts a path 200m wide and several kilometres long. Reference event – 1948 Waikato tornado Cambridge event.

WAIKATO CDEM - HAZARD RISK ASSESSMENT, REGIONAL HAZARD SUMMARY, DEC 2024[26]

Very high risk – Extreme weather event – cyclone

Context

Hazard definition

A cyclone consists of high winds and heavy rainfall and is normally associated to a significant low pressure system moving from the tropics southwards to New Zealand in Late spring and summer. These events can result in large accumulations of rain, causing flooding, surface ponding and landslides. They can also result in damage to trees and infrastructure from high wind speeds. Often these events are also accompanied by storm surges, increasing the risk to low-lying coastal areas.

Magnitude and frequency

The magnitude and frequency of storm events within New Zealand is increasing, with a noticeable increase in the severity and magnitude of storms over the past 20 years. On average, New Zealand is impacted by one extropical cyclone each year, however, the location of impact and severity can vary greatly. With climate change the magnitude and frequency of cyclones is likely to increase. Most recently New Zealand experienced Cyclone Gabrielle, which had record rainfall and wind speeds, and was NZ's largest cyclone event to date. The likelihood of a significant cyclone impacting the Waikato region is possible.

Exposure

The region is exposed to cyclones moving onto land from both the northwest and the northeast. Areas such as Coromandel are particularly exposed to cyclone events.

Vulnerability

The region is extremely vulnerable to these types of events, with moderate to major impacts likely across all four of the environments. In particular, the built environment is extremely vulnerable, in particular low-lying and coastal areas prone to flooding and landslides.

Risk Analysis Confidence

Uncertainty / Confidence level in assessment data

The assessment of this hazard is based upon the risk assessment conducted at the risk assessment workshops and has been given a moderate level of confidence.

[26] https://www.waikatocivildefence.govt.nz/assets/NEW-WCDEMG/Waikato-CDEM-Group-Hazard-Risk-Assessment-Regional-Hazard-Summary-December-2024.pdf

Potential Impacts

Built Environment

The built environment would be significantly impacted in a major cyclone event, with damage likely to residential housing, commercial and industrial properties and community facilities. Critical infrastructure, including roads, telecommunications, electricity and 3 waters would likely be heavily impacted with potential loss of services for extended periods of time.

High risk – Drought

Context

Hazard definition

Drought occurs due to significant periods without rainfall and sustained warm temperatures. This results in reduced river and groundwater levels and impacts to plant growth and services that utilise water.

Magnitude and frequency

The Waikato recorded its driest decade from 2011 to 2021. Historically, water shortage and drought within the Waikato region has not been as severe as in others. However, drought events have impacted communities and the Waikato region's economy in the recent past. Areas typically most affected by water shortage and drought conditions are in the north: the Hauraki Plains, lower Waikato Basin, Thames-Coromandel and Pukekohe.

There have been a number of drought events since 2007/08. Six of the seven driest three-month periods on record (1905 to present) have occurred since 2007/08.

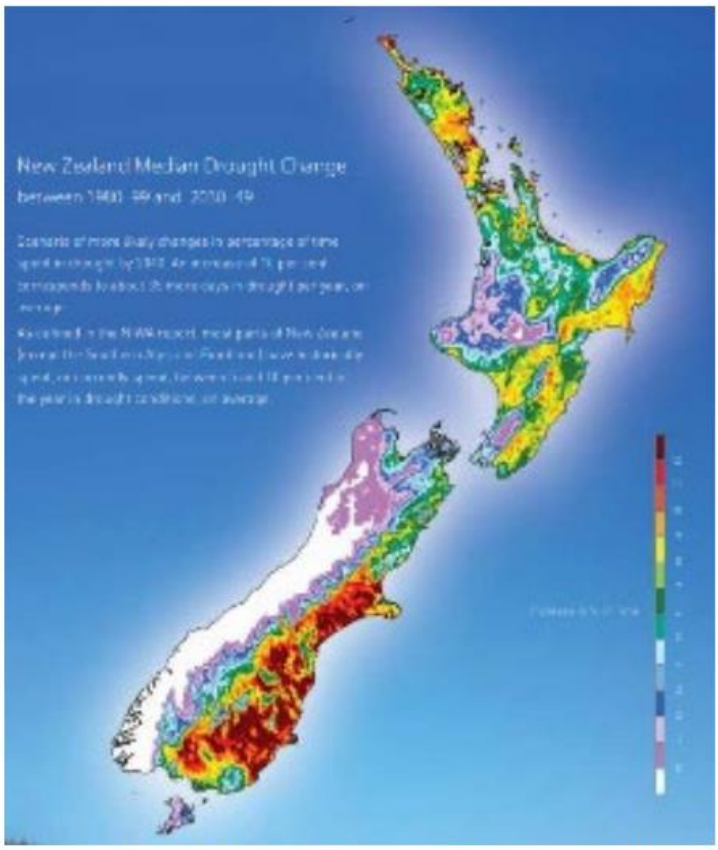
Exposure

All of Waikato is exposed to the consequences of drought. Climate change is likely to bring warmer temperatures, more extreme weather patterns, and rising sea levels. Drought and water security issues are expected to become more intense and frequent in the region (and across New Zealand) with widespread environmental, social, economic, and cultural impacts.

Vulnerability

Any significant drought in the Waikato region poses a threat to regional water security and will severely impact the primary industries including agricultural production and forestry. Both industries are extremely susceptible to the impacts of drought and when affected may also result in job losses, impacts to social wellbeing, and impacts to the natural environment. Additionally, they also can impact the energy and transportation assets resulting in power outages.

Modelling, mapping, and Geospatial analysis 'Drought in a changing climate' – NIWA



'Drought in a changing climate' - NIWA

Risk Analysis Confidence

Uncertainty / Confidence level in assessment data

The assessment of this hazard is based upon the risk assessment conducted at the risk assessment workshops and has been given a moderate level of confidence.

Potential Impacts

Built Environment

The built environment is likely to experience minor to moderate impacts. Moderate to major impacts are expected for potable and wastewater services. Some moderate impacts to electricity supply may occur.

unrated risk – Fire – wildfire

Context

Hazard definition

Wildfire can occur in forestry, agricultural production land and areas of scrub. Fires can be started naturally, by lightning strike, or by arcing from electricity supply lines and acts of arson. Fire is most common when ground moisture levels are low and relative humidity in the air is also low, providing perfect conditions for ignition. High winds can also result in larger fires, providing mobilisation for hot embers and fanning flames.

Magnitude and frequency

The risk of wildfire is at the highest in summer months within New Zealand when ground conditions are at their driest. The Waikato region has large areas of pine forestry that are susceptible to fire in dry conditions. In addition, numerous grass fires can occur in very dry summers.

Among the many consequences of climate change, wildfires are growing in intensity and spreading in range across Earth's ecosystems. FENZ have already seen wildfires occur earlier during the warmer months.

Exposure

Areas in Waikato exposed to wildfire risk include rural areas, native or plantation forest, shrub lands and grasslands. In addition, wildfires can also travel across the rural-urban divide, exposing buildings and infrastructure to this risk.

Vulnerability

Any significant wildfire could have a significant impact on the forestry industry within the region and some key lifeline utilities, such as electricity distribution and transportation networks. It may also have potentially significant impacts to the natural environment, in particular regional parks, forests and bush reserves and significant flora and fauna.

Risk Analysis Confidence

Uncertainty / Confidence level in assessment data

The assessment of this hazard was initially based upon the results of the hazard surveys, with survey data as the only source of assessment there is the lowest level of confidence.

Following a workshop where the survey results were reviewed, by experts within the field, this assessment in alignment with the NEMA Assessment for confidence table, is given a moderate level of confidence.

Potential Impacts

Built Environment

The built environment is likely to experience minor to moderate impacts from this type of event, including potential damage to buildings (residential, commercial & industrial, non-commercial & community facilities), electricity supply and telecommunications.

High risk – land instability / landslides

Context

Hazard definition

Landslides can occur as the result of significant rainfall, extended dry periods or earthquakes. The Waikato region has mainly experienced significant landslides as a result of heavy rainfall events in the past. Parts of the region have been isolated by landslides previously, such as the Coromandel Peninsula, following the January 2023 cyclone event, which created a number of significant slips throughout the region and resulted in significant damage to SH 25. Areas on the West Coast, including Port Waikato and Raglan have also been impacted by significant slips.

Magnitude and frequency

Landslides can occur at any time but are most often related to periods of severe weather. These can have widespread and significant impacts on lifeline utilities throughout the region.

Exposure

The region has a number of areas prone to landslides and debris flows. Predominantly these are on the west coast south of Port Waikato, the King Country, Coromandel Peninsula and other areas of hill country.

Vulnerability

Any significant landslides are likely to impact lifeline utilities, mainly regional transportation routes. They may also have impacts on other aspects of the built environment, including residential and commercial buildings. The impacts of a landslide event may also result in isolated populations and impact key sectors, such as agriculture. That natural environment may also see impacts to freshwater ecosystems and areas of forestry and native bush.

Risk Analysis Confidence

Uncertainty / Confidence level in assessment data

The assessment of this hazard was initially based upon the results of the hazard surveys, with survey data as the only source of assessment there is the lowest level of confidence.

Following a validation process where the survey results were reviewed, by experts within the field, this assessment in alignment with the NEMA Assessment for confidence table, is given a low level of confidence.

This rating should be taken as provisional and may change during the life of the next Group Plan following a full risk assessment for this hazard.

Potential Impacts

Built Environment

The built environment is likely to experience minor to moderate impacts from this type of event. The worst impacts would likely be seen in residential properties impacted by slips and the impacts to key regional transportation links.

High risk – river flooding

Context

Hazard definition

Flooding is Waikato's most common natural hazard and occurs when rainfall events within river catchments exceed the capacity of the system. This results in excess water breaking out of river channels and flowing over adjacent land until the amount of water in the system no longer exceeds capacity of the channel.

The Waikato region has numerous rivers and small streams. The major river within the region is the Waikato River, which is fed by Lake Taupō and several smaller rivers and flows north through Hamilton to Port Waikato. In addition, there are several rivers capable of widespread flooding across the Hauraki Plains, threating townships including Paeroa and Te Aroha.

Magnitude and frequency

Several severe flooding events have occurred in the Waikato region resulting in widespread consequences. Most recently in February 2023, Cyclone Gabrielle caused widespread flooding across parts of the region, including Coromandel, Matamata-Piako and the Waikato District. Other significant floods have occurred on an almost annual basis within the region, with several declarations of emergency made for flooding within the past 20 years.

Exposure

Large parts of Waikato are prone or sensitive to flooding:

Coromandel - due to its short steep catchments (where rain quickly runs into the rivers) and susceptibility to tropical storms. The Coromandel has frequent severe flooding when water levels rise very quickly, with little time for warning and preparation.

Hauraki Plains - low lying farmland and towns are vulnerable to flooding along the Waihou and Piako river systems.

Farmland adjacent to the Waipā River – vulnerable to flooding, especially since the river is uncontrolled by dams.

Lower Waikato River (from Ngāruawāhia north) - properties on low lying land near the Waikato River are at risk. The river carries large volumes of water where the Waipā River joins the Waikato River.

Flooding at the southern end of Lake Taupō - where the Tongariro and Tauranga-Taupō rivers enter the Lake.

Vulnerability

Any high magnitude flood event is likely to cause significant damage to residential and commercial buildings. However, widespread flooding is unlikely to impact highly populated areas within the region and is likely to impact largely rural areas. Utilities are also likely to be impacted in the short to medium term, particularly roading, and access to key services limited. There is also likely to be significant silting and debris in areas that have flooded. Some settlements may also be disconnected from the rest of the region due to significant impacts to roading networks.

Risk Analysis Confidence

Uncertainty / Confidence level in assessment data

The assessment of this hazard is based upon the risk assessment conducted at the risk assessment workshops and has been given a moderate level of confidence.

Potential Impacts

Built Environment

In this scenario moderate impacts to residential and commercial buildings are expected. Damage is also expected to occur to three waters services and transportation networks.

High risk – Tornadoes

Context

Hazard definition

Tornadoes are violently rotating columns of air, extending from a thunderstorm, which are in contact with the ground. The winds inside a tornado spiral inward and upward. For a thunderstorm to produce a tornado it requires warm humid air near the surface with cold, dry air above.

Magnitude and frequency

The Waikato region has experienced several tornadoes in the past, with several passing through urban areas of Hamilton and Cambridge. While tornadoes in New Zealand are not of a magnitude seen in places such as the United Staes of America, they are still capable of causing significant damage and can have sustained winds up to 150km/h+.

Exposure

All of Waikato is exposed to tornadoes, there is no way of predicting where the next tornado may occur.

Vulnerability

Tornadoes are destructive and can lead to injuries and fatalities. Depending on the path they take, they may also damage buildings, infrastructure and utility services resulting in power outages.

Risk Analysis Confidence

Uncertainty / Confidence level in assessment data

The assessment of this hazard was initially based upon the results of the hazard surveys, with survey data as the only source of assessment there is the lowest level of confidence.

Following a validation process where the survey results were reviewed, by experts within the field, this assessment in alignment with the NEMA Assessment for confidence table, is given a low level of confidence.

This rating should be taken as provisional and may change during the life of the next Group Plan following a full risk assessment for this hazard.

Potential Impacts

Built Environment

Localised damage to the built environment is anticipated for this scenario. Depending on where the tornado tracks, this may result in moderate to major damage to residential and commercial properties and critical infrastructure.

Medium risk - Extreme temperatures

Context

Hazard definition

Heatwaves occur during late spring to early Autumn and generally consist of more than three days where temperatures exceed 5°C above average temperatures, although there is no recognised definition within New Zealand. Significant heatwaves can occur over several weeks and even modest increases in seasonal temperatures can have significant impacts.

Magnitude and frequency

Severe heatwaves are not a common occurrence in New Zealand; however, increased temperatures are being observed regularly throughout the country and within the Waikato Region. The past two years have seen record temperatures set and it is highly likely that increased summer temperatures will be experienced as the impacts of climate change begin to impact our weather systems. The likelihood of a significant heatwave impacting the Waikato region is rated as possible.

Exposure

The entire Waikato region could be exposed to this hazard.

The Vulnerability

The main vulnerabilities to this hazard exist within the social and natural environments, in particular the health of the aged population and the impacts to marine, terrestrial and freshwater environments. There is some risk to the economic and built environments, particularly agricultural production and water supply.

Risk Analysis Confidence

Uncertainty / Confidence level in assessment data

The assessment of this hazard was initially based upon the results of the hazard surveys, with survey data as the only source of assessment there is the lowest level of confidence.

Following a validation process where the survey results were reviewed, by experts within the field, this assessment in alignment with the NEMA Assessment for confidence table, is given a low level of confidence.

This rating should be taken as provisional and may change during the life of the next Group Plan following a full risk assessment for this hazard.

Potential Impacts

Built Environment

The built environment is likely to experience minimal impacts from this event, with some minor impacts to three waters infrastructure.

EXTRACTS FROM WAIKATO CDEM GROUP PLAN ACTIONS 2025 – 2030[27]

The purpose of this Group Plan Actions document is to implement our Strategic Group Plan 2025-2030, which was reviewed and approved for public consultation by the Waikato CDEM Group Joint Committee, 24 March 2025.

Group Hazard and Risk Consequence Analysis: - Severe Weather/Flooding Event (Oct 26 – Jun 27)"

- Information gap analysis completed.
- Areas requiring increased hazard and risk understanding identified.
- Hazard and risk understanding increased through research and/or risk assessments.
- Results reported and communicated.

Infrastructure Resilience: - Increase understanding of risks to infrastructure; - Individually and collectively increase infrastructure resilience. (Jul 25 – Jun 30):

- Infrastructure included in impact assessments.
- Results of impact assessments on risks communicated to infrastructure owners and operators.
- Communication of the risk results within infrastructure organisations is reported to stakeholders.
- Mitigation programme is developed, implemented, monitored and reported.
- Individual and collective adaptation, reduction and avoidance activities undertaken are reported.

Operational Response Plans: - Severe weather and flooding (Jun 27 – Sep 28):

- Complete development of a regional operational plan for this hazard.
- Test and exercise the plan to ensure it is fit for purpose.
- Agree and set review cycle.

[27] Waikato CDEM Group, Draft Group Plan Actions 2025 – 2030, May 2025

APPENDIX 6 – DETAILS BEHIND THE MODELLED SCENARIOS

What are RCPs?

The Representative Concentration Pathways (RCPs) were developed around 2010 by the global climate science community. They provide a common set of "concentration pathways": descriptions of the amount of carbon dioxide in the atmosphere, both historically and into the future by year - from 2005 through to 2300. In addition to carbon dioxide, aerosols and other greenhouse gases like methane, nitrous oxide, and organic compounds are also specified.

RCPs refer to differing concentrations of greenhouse gases in the atmosphere and represent four potential futures based on how much greenhouse gas humans continue to emit. The four scenarios are:

- RCP8.5: very high greenhouse gas concentrations – emissions continue to rise throughout the 21st century
- RCP6.0: mid-high concentrations - emissions peak around 2080, then decline
- RCP4.5: low-mid concentrations - emissions peak around 2040, then decline
- RCP2.6: low concentrations - emissions peak around 2020 and decline substantially thereafter

What are SSPs?

Shared Socioeconomic Pathways (SSPs) are a set of five scenarios which were developed by the global climate science community around 2015. Each scenario is characterised by how difficult adaptation and mitigation could be.

Climate change projections are modelled representations of the potential future climate over the next century. NIWA and Ministry for the Environment (MfE) have recently released downscaled climate change projections for New Zealand using the latest AR6 data. These provide the region with the most current understanding of how the climate may change across the region into the future

Three scenarios were used in the NIWA and MfE projections.[28]

- The 'Sustainability' scenario, SSP1-2.6, assumes that the world shifts gradually toward a more sustainable path, emphasising more inclusive development that respects environmental boundaries. It assumes that warming stays below 2˚C, with net zero CO_2 emissions reached by 2050.
- The 'Middle of the road' scenario, SSP2-4.5, assumes that the world follows a path in which social, economic, and technological trends do not shift markedly from historical patterns. It assumes that warming reaches 2.7˚C by 2100.
- The 'Regional rivalry' scenario, SSP3-7.0, assumes the world becomes more focused on national and regional security issues, and there is no additional climate policy. It assumes CO_2 emissions approximately double from current levels by 2100 and warming reaches 3.6˚C by 2100.

[28] Waikato Regional Council, Climate change hazards and risks in the Waikato Region, May 2025

APPENDIX 7 - NOTES OF DISCUSSIONS WITH COUNCIL STAFF

NOTES OF DISCUSSION WITH THE WATER ASSET MANAGER

1. Work through AMP risk register.

(a) Wastewater /Stormwater finding its way through to damaged water pipes due to: - Retic pipes movement

With any water main break there is immediately a contamination risk. The risk scenario would be where there is land movement and a wastewater and a water pipe both break. Water mains are under pressure – so water is forced out of them rather than taking in water, and the most likely scenario is that there would be loss of services. But any break where there could be contamination is taken very seriously, and we have a number of controls that we put in place, for example: Doing a risk assessment, shutting off and/or isolating the service, repairing, disinfection, flushing the pipe and system, and doing water testing.

The main mitigation for this is keeping on top of renewals, and our programme to replace older pipes made out of more brittle materials.

(b) Public health risk from Water Source, including from Algae bloom and associated biotoxins

This is a known risk that exists currently. The risk scenario is if there is a bloom of the toxic algae in the vicinity of one of our lake water intakes.

Our lake intake sites are Hatepe, Taupō, Kinloch, Motuopa, Omori, and Motutere.

We have a cyanotoxin management plan, which includes regular sampling over spring and summer periods to test for any signs of problems or toxins. If risks are identified we will do more frequent testing.

If there are toxins present it is a real problem. They are very unsafe and cannot be boiled out. We would have to stop water supplies and tanker in water to those communities.

With our water treatment plant upgrades Hatepe, Kinloch, Motuoapa and Omori will have built in cyanotoxin treatment systems. For the Taupō water treatment plant we have funding in the Long-term Plan 2024 for upgrades to provide cyanotoxin treatment around 2030. This project hasn't yet been scoped or deigned. There are no plans for Motutere at this time other than providing tankers in the case of an event.

(c) Water quality too poor to treat

In high wind, heavy rain or storm events, water can be stirred up in the lake and cause water quality issues, like high sediment content, that makes it difficult to treat. Currently several of our lake water intakes and treatment plans allow sediment to go through the treatment system. This is not just a quality (clarity and taste) of water issue, but also has potential health risks. Our new treatment plant upgrades will resolve this issue – sediment will not be able to be pass through the plant and will be captured in the treatment process. The Taupō water treatment plant already removes sediment.

Currently if we have water quality issues in other areas, we must rely on reservoir storage, so there is potential service restrictions or limitations if supply is an issue for a sustained period of time.

Heavy rainfall can result in land runoff affecting water quality at our water supplies in Waihaha, River Road, and Tirohanga which are all either stream or spring feed systems, which can be affected by surface water. When this happens we have to turn off the treatment plant, and replace water with tankers. We've not had problems in recent years at River Road or Tirohanga, but often have problems at Waihaha – which is a small restricted rural scheme (32 connected properties), many of which have their own water tanks, and little water is needed for irrigation after heavy rain events.

(d) Storm damage and power loss

In heavy wind, rain or storm events there is the risk of loss of power (e.g. fallen trees taking out power)

There is the potential for infrastructure damage in heavy rain and storm events, for example trees falling on, or flooding of network equipment (like a pump station).

A lighting strike to critical electrical equipment, for example at a treatment plant, could cause significant damage.

When there is power loss there is the potential for service disruption. Most of our main plants are set up to enable generators to be plugged in. In a recent power outage event, the Tūrangi water treatment plant ran on generators for 3 – 4 weeks while power was restored. Hiring large generators and running them is costly.

2. Any risks from drought?

The lake provides some insulation from the impacts of drought as its levels are managed – we have a reasonable secure water take for most of our water systems. However, in a prolonged drought, restrictions are likely to be placed on us – which means that we would have to put in place water restrictions on users.

Some of our rural water schemes may be at risk, but there are no known issues (we've not had any problems in the past).

Drought can also lead to ground movement (e.g. ground shrinking) which poses the risk of pipe breaks. The main mitigation for this is keeping on top of renewals, and our programme to replace older pipes made of more brittle materials.

NOTES OF DISCUSSION WITH THE WASTEWATER ASSET MANAGER

1. What are the main risks to wastewater services and infrastructure?

The risk section of the asset management plan needs to be reviewed, and decisions made on how risks should be best managed.

The biggest risk for our wastewater system as it relates to climate change is likely overflows caused by high infiltration and inflow (I&I) of rainwater / stormwater into the wastewater network. Large flows of rainwater into the network through:

- illegal connections to the wastewater system (e.g. house roof downpipes being plumbed into the wastewater system)
- Low gully traps (examples below), where rainwater will pool and flow into the wastewater system,

- And cracks in the wastewater pipe network.

The result of getting large volumes stormwater in the wastewater network is overflows. These can occur at the treatment plants, or along the wastewater system like manholes, gully traps, or pump stations.

Our treatment plants have a maximum inflow and controlled overflow spill systems, for example the Taupō Wastewater plant will overflow into the Waikato River. Our pump stations and treatment plants are monitored / have alarms systems to indicate an overflow.

Wastewater overflows can result in health and environmental risks. In most instances these risks are low, with stormwater and rainwater washing and dispersing waste downstream fairly quickly. Health risks might be to anyone taking water further downstream, which would be managed through warning and boil water suggestions. There is also reputational and cultural impacts, with people concerned about wastewater ending up in the lake or rivers. These overflows due to inflow and infiltration are low frequency but there is a risk this frequency could increase as rainfall intensifies.

We have an annual budget for works to reduce I&I risks. Currently we are identifying entry points using smoke testing, flow monitoring and visual surveys. But it is a significant problem with a large number of entry points, many of which are on private property.

2. What could we do to mitigate these risks?

The first step is to identify entry areas, as we are doing through our I&I programme. We are also doing some work to increase the hydraulic capacity of the Taupō wastewater treatment plant.

Taumata Arowai has recently consulted on proposed wastewater standards for managing overflows and bypasses and this will likely dictate much of the work we need to do in this space.

Other risks

Power loss

Loss of power is a key risk affecting our treatment plants and pump stations. Most of our key plant is generator enabled (i.e. a generator can be plugged in to provide power) and can operate on reduced capacity for some time. In a large event getting generators to sites is a risk. Taupō wastewater treatment plant has its own generator.

Land movement and pipe breaks

Horizontal infrastructure like pipes are always at risk from land movement. This is a risk in heavy rain events, or event successive heavy rain events. The consequences of a pipe break are some environmental harm, that needs to be cleaned up. And loss of services. For a large break that will take some time to restore, we can contract temporary surface pipes to restore services, while it is fixed, as long as these are available and there is access.

We have started some work to understand the risk to our wastewater trunk main that spans several SWS gulleys. Further work is needed to complete the task.

Storms

There is the potential for infrastructure damage in heavy rain and storm events, for example trees falling on, or flooding of network equipment (like a pump station).

A lighting strike to critical electrical equipment, for example at a treatment plant, could cause significant damage and have an operational impact.

3. Any risks from drought?

There are no particular wastewater concerns in relation to dry spells, heat and drought identified.

NOTES OF DISCUSSION WITH THE STORMWATER ASSET MANAGER

1. What is Council's role and responsibility for stormwater management / what are our service levels / what should people expect?

The Council has determined that our target level of service is to meet a 1:10yr (A 10% Annual exceedance Probability) for its piped networks, and that properties are to provide for onsite disposal for the same event.

For new development areas our code of practice sets out a service level of 1 in 10-year event being contained on private property and road stormwater to be contained by the stormwater network.

Stormwater systems are in place for all urban areas and these are comprised of piped networks, channels and gullies and overland flow paths.

In practice, many historical areas have stormwater systems that are designed for smaller events than what we would currently consider a 1 in 10-year event. This historical network is undersized to provide this level of service.

For a larger event, stormwater is not expected to be contained on private properties, and the stormwater system dealing with stormwater from road corridors is expected to be full, meaning that water will flow through the many existing 'overland flow paths in the urban areas', these are low lying areas and gullies that allow water to flow downhill through to the lake. In new development areas, we ensure that no development or houses occur in these areas. In historic areas, some of these are located in private property, and there has been some houses built in areas where stormwater is expected to flow, sometimes at a significant depth.

Taupō District Council (TDC) commissioned CDM Consultants Ltd (CDM) during late 2017 to develop two-dimensional (2D) Rain-on-Grid (ROG) stormwater models for Taupō Districts urban areas in order to better understand overland flow-paths and how these are affecting properties. The models included the best information made available by TDC at the time, with improvements and field validation subsequently undertaken by various summer students with CDM guidance. InfoWorks ICM (Integrated Catchment Management) software Version 8.03 was used to undertake this hydraulic modelling for TDC.

The current modelling has been limited due to poor quality information and as a result of piecemeal delivery and as such this now needs revising and improvements.

Because of this it is conservative and predicts much wider impacts that we might actually expect in a 1 in 100-year rainfall event. The current modelling indicates approximately 1,400 houses in the district (around 800 of them in Taupō), might be significantly impacted by stormwater flooding.

We are currently tendering for a new SW modeller to develop a new model using the latest information and rainfall data and this is expected to provide more certainty on the potential impacts of overland flows.

Climate change impacts are already being felt – they are more frequent and larger than expected. Some of the events that we have seen happening elsewhere could also happen here.

Taupō is subject to short but very intensity high rainfall events which causes significant amounts of surface water. For example, we had a flooding event on the evening of 7 February 2025. This a short duration event which had very intense rainfall for a 1 – 2-hour period. The level of rain in the period was approximately a 1 in 20-year event. In this event at least 6 homes we impacted by stormwater flooding. The water for these 6 homes was above the level of their floor – that is the point where there is really significant damage done to homes.

This impact on these homes was not because they were the most at risk, but because that was where the rainfall was concentrated. If the rain had have fallen a 1km elsewhere it would have been a different 6 – 12 houses impacted.

So for a 1 in 10-year event, we have some areas where Council's services may not be meeting our level of Service. Upgrading our stormwater infrastructure for these areas is not easy or cheap. It would be a major programme of expenditure over sometime.

And for events greater than 1 in 10-years, like the events on 7 February 2025, or larger events stormwater will not be contained without Council systems or on people's properties through their own systems and so will flow through overland flow paths. Many of those are contained on the road network, on reserves, and in reserve gullies. But in historic areas, many run through private property, and many of these have houses in them.

There is currently not a good public understanding of the limitations of Council's stormwater network and that is not designed to contain water for large rainfall events. For larger events like 1 in 20-year events, people may have to take their own precautions to manage potential flooding risks on their properties. One challenge is that our currently flood modelling is not accurate and had not been made public.

We are working to improve our current flood modelling. We hope to have revised modelling by the end of this financial year that we can have more trust in, make public and put on LIMs. It could also form the basis for district plan controls for new development in overland flow areas. After we have that modelling, we can have a detailed look at what our investment and management options are to reduce the risks and impacts for private property and houses.

In the meantime, the long-term plan provided funding to assess and invest in solutions to reduce the risks in a number of areas identified by the current modelling as likely problem areas.

The 7 February 2025 event also identified some other operational challenges. It was a short event all over in just over an hour, which mean it didn't trigger a civil defence emergency operation. But there were still significant impacts on houses and people, which needed support, and building safety and sanitary inspections and other measures. Since that event we are developing some SOPs (standard operating procedures) for Council and its contractors to respond to such events.

NOTES OF DISCUSSION WITH THE TRANSPORT ASSET MANAGER

1. Work through AMP risk register.

(a) Flooding: Roads or road structures damaged, blocked or destroyed due to flooding

At extreme levels of flooding, our roads become the overland flow paths and some of them may not be passable, impacting service levels and access.

We have a number of bridges around the district which are also at risk of damage during flood events. These risks can be exacerbated by forestry slash.

The more common and frequent impact of high rain events is that our roads that are not in good condition – where maintenance and renewals have been deferred, roads are easily damaged by water ingress causing potholes. Successive heavy rain events can have a dramatic impact on the quality of these roads – like widespread potholes and deeper potholes. Temporary measures to fill potholes can be washed away in successive events.

Permanent measures to repair and fix the roads come from highly constrained budgets, and can take some time. Potholes are not just a level of service (smooth ride) issue, they can damage cars, leave the road exposed to further and greater damage in future and can even cause road safety concerns when divers swerve to avoid them.

The key to mitigating these risks would be increased preventative maintenance (road sealing and kerb and channel improvements) to stop roads being susceptible to potholing in heavy rain events. Almost all the potholing and damage we see from heavy rain events is on roads that have had deferred maintenance and renewals.

(b) High winds: Roads or road structures blocks/damaged due to debris (fallen trees and/or power lines) and other objects blown into vehicle paths

Heavy rain and high wind or storm events can result in trees and power poles falling, or tree branches and debris blocking roads. Individually these are not a large problem, but in a large event where there are overwhelming numbers of these there can be significantly reduced service levels or access, and a significant amount of work is required to ensure safe traffic management, clear them and restore roads.

Power outages impact streetlights and traffic lights.

Lightning strikes are a risk to streetlights and traffic lights.

(c) Land slide/slip: Roads or road structures blocked, damaged or destroyed by land slide/slip possible occurring during heavy rain.

We have a large network of rural roads, which include many road cuttings and banks In Heavy rain and high wind or storm events, banks can be brought down.

A key risk factor is trees or unsuitable vegetation on banks and road cuttings. Much of this vegetation is next to the roadway on private land.

Successive events can also increase the risk, and there can be areas of repetitive slipping.

Individually instances are usually not a large problem, and can easily be cleared. The risk is when there is a large event with multiple slips to be dealt with.

Underlips or washouts are a greater problem to resolve, they take more time and resource to restore the roadway. We have several roads that are cut into slopes that are at risk (for example the roads in to Pukawa, and Omori /Kuratau), but also many of our roads are built up above the surrounding land and can also be at risk of being undermined by slips.

The main mitigation options are preventative rural drain works, and tree and vegetation management. Our budgets for these are very limited and we mostly do reactive work, after a problem has occurred, or an imminent problem is identified.

We don't have strong management and communications plans and protocols in place for large events. There is a significant communications challenge letting everyone know where there are problems or road closures, detours and delays.

There is also a significant management challenging in prioritising and allocating resources to fix the problems. There is also an opportunity to test and manage community expectations – If the community are willing to tolerate their road being closed for a period and accept the delay or taking alternative routes, we can more efficiently resolve the problem, rather than rushing, trying to fix everything at once, and doing expensive traffic management in multiple areas.

2. Are there concerns about high temperature and roads melting?

It is not a significant issue for our district. We do get some softening of bitumen in high temperatures but not significant damage. There are other parts of the country that have more frequent and higher temperatures than us.

This may require changes in materials in future, but we expect that these would be address through updating our planning and management approaches in time.

NOTES OF DISCUSSION WITH THE SOLID WASTE ASSET MANAGER

1. What are the risks to Council's waste management operations?

The biggest risk of impact would be managing disaster waste. In a large event, like a flood of many houses, there are tonnes of waste materials that need to be managed and disposed of.

There is a national system, including disaster waste funding (and waiving of waste levies for disaster waste) that we can call on.

The main problem is how and where to deal with and dispose of a sudden large amount of waste.

We have limited capacity at our district landfill (Broadlands landfill), and we will need to consider if we want to use this space up for disaster waste.

In practice, we would need to find a bit of land, like a farm, somewhere where we could temporarily house all the waste, until it can be sorted and processed and disposal arrangements determined.

2. What about flooding risks at the landfill?

Landfill has a designed stormwater channel – which is appropriately scoped to deal with a large event. We have not had any problems there to date.

We have closed landfill in Tūrangi and Mangakino, both of which are well situated above flood areas.

NOTES OF DISCUSSION WITH THE PROPERTY ASSET MANAGER

3. What are the risks to Council's buildings and facilities?

There are no high risk or significant risks identified. No buildings and property assets have been identified as being in flood risk, slip risk, or wildfire risk areas. No detailed risk assessment has been done for buildings that may be used during Civil defence emergencies – but there have been no identified reasons to need one.

Main risks are storm and wind damage, including from fallen trees. Would expect this to be low level damage, however, when a tree fell on the Acacia Bay Hall it caused significant damage.

Loss of power can impact the provision of services. For example, the pool must be closed if we cannot operate the filter.

Lightning strike to sensitive pool equipment could cause some costly damage but is low risk.

NOTES OF DISCUSSION WITH THE PARKS AND RESERVE ASSET MANAGER

1. What are the key risks for parks and reserves?

Lakeshore erosion is the key risk that is getting worse and is likely to be impacted by climate change.

Erosion happens both long-term, cumulative impacts over time, and in large erosion events like storms. Erosion effects in Kuratau can be significant in high water, wind/wave, storm events.

We are aware of the key lakeshore erosion areas. Erosion in these areas is getting worse. We have identified mitigation engineering solutions and have funding set in the long-term plan (co-funded with Waikato Regional Council) for project watershed to put in these measures. The main problem we have is getting iwi / hapu agreement to these solutions. Delays in putting in place mitigation measures means that erosion continues, and foreshore is lost before it can be protected. While the reserves and land are the are being lost first and this has an impact on the local communities and their resources and amenities, behind these reserves are Council infrastructure and private property and houses, which are also at risks if the reserves are diminished.

Our gully reserves are designed to be overland flow paths. In a large event there is the potential for erosion, or landslips of gully banks. It is important to keep new development well setback from gully banks. There are some houses reasonably close to gullies in historic areas.

We have several gully reserves, and some reserves alongside rivers. We have not done any comprehensive assessments of river reserve or gully reserve erosion risks.

2. Any other comments

In heavy rain events we can have scouring and damage to reserves where overland flows enter onto reserves, including lakefront reserves. This has a cost / repair impact.

In high wind and storm events damage to trees and fallen trees can be a significant impact on our reserves requiring clean up and safety management. We have a small programme of tree assessments but cannot determine which trees might be at risk in a large event.

3. Sports fields

Droughts can have impact on our reserve operations. There might be less mowing, but more maintenance and watering costs, for example for sports fields. Many of our sport fields are not set up for irrigation (Invergarry Rd. end Crown Park, Tūrangitukua Park, Kaimanawa Reserve (outfield area) and we have a Manual travelling irrigator for Mangakino sportsgrounds. Hickling Park and Crown Park (fields 1 to 10) have some irrigation, but limited capacity. In drought conditions there is extra maintenance for sport fields, and there is a risk that the grass dies.

In heavy rain events, we typically have good drainage for our sports fields, but pumice soils still compacts and needs additional maintenance to relieve compaction and support aeration.

NOTES OF DISCUSSION WITH THE DEVELOPMENT ENGINEER

1. How do we manage / mitigate the risks to new development areas?

(a) Flooding

For new development areas, e.g. new subdivisions / greenfield areas, we make sure that there are no overland flow paths on private property. Overland flow paths are contained on the road networks, reserves, and gully reserves.

What are our stormwater concerns in historic areas?

Stormwater management was historically done for a 1 in 5-year event. And that is a historical event. So for a larger event you can expect water not to be contained on people' properties, and the roading stormwater network to be overwhelmed and water to flow on roads and into overland flow paths, some of which cross private property.

Lake Taupō being in a bowl helps. Most water can flow down roads towards low points on Lake Terrace, and then overflow into the lake.

Where there are overland flow paths on private property and where houses have been allowed to build there is where there will be the greatest impacts.

Could the stormwater network be upgraded to cater to larger events, like our current 1 in 10-year expectations?

It is hard to upgrade the stormwater system. It is not like the putting in a larger wastewater main, like the southern trunk main upgrade, where we could put in horizontally long stretches of new plastic piping. The stormwater pipes are large concrete pipes. It would be a major exercise and very costly to replace them with new larger concrete pipes and you would need to start with the largest pipes down by the outlets first. They also tend to be under the roadway pavements, which means that the laying and reinstatement must be done to a very high standard. Changes to outlets within the lake margins require the approval of the lake owner.

(b) Landslips / slides and erosion

For new development areas we deal with these through structure plans and subdivision plans. We ensure good setbacks from gully banks. Geo-engineers do site inspections.

There are lakeshore erosion concerns in historic areas. We have some infrastructure that is at risk if/when lakefront reserves are lost. Including wastewater pipes in Kuratau that were previously a long way from the water and now are not that far away. And in Taupō, there is Council infrastructure around 2 Mile Bay and Copthorne Manuels that is at risk and needs to be protected. Sections of the great lake shared path are at erosion risk. There is some other infrastructure further back, like pumping stations that could be at risk in the long-term if erosion continued, and may need protection.

Mostly these can be protected through engineering means.

Our roading network is exposed to slips and vegetation / trees coming down. This is for both large events and cumulative events that saturate the ground.

Individual events are manageable, clearing small slips and trees is reasonable easy, the big problem is in a large event where there are lots of them all over the place, which takes a significant time to deal with. Power poles and power lines are also a risk. While many roads have alternative routes, some do not, and

multiple slips in many places may create loss of service and access problems until they can be cleared. And if there are many of these there are also cost impacts that become material.

In practice some of these could be mitigated, the main aim would be vegetation and tree clearance. Vegetation and trees are one of the key risks for banks and cutting slip risks too, as they create leverage and torque pressures. But Council's vegetation management budget is low and stretched. We are primarily reactive, responding after problems occur, or imminent problems are reported or identified. And in practice we are not going to cut down all the trees that could be a problem. We do not have plans in the short-medium term to significantly mitigate these risks.

Cumulative impacts of intense rain also impact the road networks service levels. We get a significant number of potholes which take time to repair. And rain washes away temporary measures fill in potholes until they can be permanently repaired. The result is roads in poor condition for a time, and in worst cases these can lead to significant vehicle damage.

In a heavy rain event will stormwater on roads reduce access?

Roads become secondary overland flow paths, so there is potential for reduced access. But in practice there are a few select areas where it is worst. Nothing too major.

Probably more major are the areas of State Highway 1 which are prone for flooding.

What about washouts / slips undermining roads?

We are fortunate that we don't have too many of those. But there are areas where it is a problem.

The most significant risk areas are probably the entrance roads to Pukawa, and to Omori/Kuratau. We have some investment dealing with some weak spots, but there are more risk areas right along the roads so there will remain risk along that road.

2. Any other comments

The regional Council is responsible for flood protection and management. We have some major flood bank and management areas towards the south, in Tūrangi, and Tauranga-Taupō. It is the regional Council's responsibility to maintain flood banks, and do river gravel dredging / removal as appropriate. There are some concerns about how much of that has been done in recent years. We are hearing reports that access to maintain stop banks, for example tree removal, has not been granted since some key areas of land have been transferred from the Department of Conservation to local Iwi / hapu. And there hasn't been gravel removal for several years, which used to be done regularly to reduce flooding risks.

Landfill fire risks are not really impacted by climate change. They are a very real risk at present, often cause by laptop batteries and the like.

NOTES OF DISCUSSION WITH THE SENIOR PLANNER

1. How do we manage / mitigate the risks to new development areas?

The District Plan has river and lake flood risk areas mapped and controls in place to manage new development increasing the risk in those areas.

Overland flow path risks are not currently managed through the district plan. Instead, we apply building controls the manage new development in these areas. We are working to improve our overland flow path risk maps, with the intention that these could then be included in the district plan.

The district plan and our structure planning has setbacks from gullies.

Around the lake we have foreshore protection area, which manages the risk of new development or building close to the lake. This may provide some erosion protection, at least in the medium term.

We have a growth strategy which identified future areas for urban development. National hazard risks and their mitigation is a key factor in determining these areas, and the structure planning for those areas before they are zoned for development.

NOTES OF DISCUSSION WITH THE SENIOR BUILDING CONTROL OFFICER

1. How do we manage / mitigate the risks to new development areas?

(c) Flooding

District plan covers river flooding risk areas.

For urban flooding areas (overland flows) these are not in the district plan and need to be managed by building controls. We use Waikato regional flood maps (hazards) – inundation maps to identify potential flood risk areas, then we use Council's internal maps to identify risk areas and ensure that new building mitigates these risks (for example by building floor heights above potential water depths)

(d) Landslips / slides and erosion

Any new build must provide evidence of suitable ground bearing. This would identify any slop stability issues. E.g. through Geotech assessments.

(e) High winds

Building code has zoning and provisions for high wind areas.

(f) Wildfire

Nothing specific in the building code for wildfire.

2. What is / are the biggest concerns?

Nothing.

3. Any other comments

Our PIM process could be improved. Currently we have to double check for natural hazards to make sure that we are considering everything we need to.

There are national building standards process to adjust and improve things as required over time. E.g. for the gradual impacts of climate change like heat management.

Taupō District Council Audit Improvement Items- Recently Closed

Audit Category	Department	Audit Source	TDC Responsible Party	Audit Date	Audit/review recommendation	Priority given by auditor	September 2025 Management Status Update	Target Completion Date
External	Finance	Audit NZ - Annual Report	Jeanette Paenga	2019/20	**Long service leave calculation (actuarial)** Implement a reporting function within the payroll system to generate data to be able to confirm the long service leave calculation.	Beneficial	We have extracted the data that forms the calculation of the accrual so audit can check the calculation, we do not believe we will need to manually calculate it **COMPLETE pending audit**	Closed pending audit approval - Sept 2025
External	Finance	Audit NZ - Annual Report	Kirstin Fear	2022/23	**Completeness and accuracy of vested assets** We recommend that the District Council implements a robust process to ensure all vested assets are recognised in the correct financial year.	Necessary	The 3 Waters Financial Asset Data Specialist has put in place a robust process to ensure capture of all TDC 224c approvals and the 3 Waters Asset Information Team actions all those that include 3 Waters assets. As a courtesy includes whether any Transport assets also arise for their reference. This includes LINZ lodgement approval dates which has been deemed by Audit NZ - LTP (A3755988) to be the effective transfer of ownership to Council and shall be capitalised in the correct financial year where possible. Finance, in collaboration with other relevant parts of TDC, will develop a plan to ensure the assets of other areas are capitalised in the correct financial year. From Transport: These are notified by the development engineer and notified to asset staff. The date to be recorded as the vesting date will be the date the planner signs off the 224c completion certificate.	Closed pending audit approval - Sept 2025
External	Finance	Audit NZ - Annual Report	Jeanette Paenga	2022/23	**Incorrect accounting treatment for non-current assets held for sale** The District Council should design and implement clear policies and procedures to guide the accounting of assets as held for sale to ensure alignment with the accounting standards to avoid potential errors in the future.	Necessary	We believe our procedures and policy are in line with the accounting standard, this matter arose from interpretation of the standard not a lack of policy & procedure. **CLOSED pending Audit Approval.**	Closed pending audit approval - Sept 2025
External	Community Infrastructure and Services	Audit NZ - Annual Report	Ivan Nikitin	2023/24	**Review process of data inputs into RAMM for roading renewals performance measure** We recommend that management implement enhanced measures in the quality review process for reseal inputs. Additionally, it is crucial to further improve the current system for reviewing the data captured in the Road Asset Maintenance Management (RAMM) system concerning road renewals. These improvements will help ensure the accuracy and reliability of the recorded information.	Necessary	The transport team have improved their processes for data input into RAMM and reviewing the quality of the data.	Closed pending audit approval - Sept 2025
		WaiComply	Nicola Hancock	Oct-24	MOTUOAPA WATER SUPPLY ASSESSMENT - Consider reviewing the contact time demonstration at the Motuoapa Pump Station WTP, in particular the DWQAR option to use a calculated outlet flow based on inlet flow and contact level change. (Findings of results up until 30 June 2024).	N/A	Staff consider this item complete pending audit approval.	Closed pending audit approval - Sept 2025
		WaiComply	Nicola Hancock	Oct-24	OMORI/KURATAU/PUKAWA WATER SUPPLY ASSESSMENT - Review the contact time demonstration at the Omori Pump Station WTP, in particular the contact tank volume(s) used in the WaterOutlook report and the analyser locations as required by the DWQAR T3 requirements to ensure that adequate contact time is achieved before any customer connections. (Findings of results up until 30 June 2024).	N/A	Staff consider this item complete pending audit approval.	Closed pending audit approval - Sept 2025

Taupō District Council Audit Improvement Items- Recently Closed

Audit Category	Department	Audit Source	TDC Responsible Party	Audit Date	Audit/review recommendation	Priority given by auditor	September 2025 Management Status Update	Target Completion Date
Internal	Council	Council MARK	Jeanette Paenga	Apr-22	Improved financial reporting by providing clear explanations as to the reasons for financial variances to budget.	N/A	Improved financial reporting is available to cost centre managers & executive coupled with regular meetings with Finance Business Partners - **CLOSED**	Closed pending audit approval - Sept 2025
External	Environmental Health	JASANZ	Bryan Brett	May-25	Documenting Tamzens work on Dietary Supplements as Continued Professional Development activity.	Observation	We have agreed to document all research activity as CPD points. Staff consider complete pending audit approval.	Closed pending audit approval - Sept 2025
External	Environmental Health	JASANZ	Bryan Brett	May-25	Completing additional peer reviews for contractor competencies when engaged prior to them commencing work.	Observation	Our QMS would require this and as such is something we will complete prior to any contractors coming on board. Staff consider them complete pending audit approval.	Closed pending audit approval - Sept 2025
External	Environmental Health	JASANZ	Bryan Brett	May-25	For those verification scopes that are undertaken infrequently, the team review any changes to legislation, check the internal library and undertake research.	Recommendation	This process is already followed, and the recommendation is therefore understood to be made in error.	Closed pending audit approval - Sept 2025

Taupō District Council Insurance Programme Refinement

Mar 2024
- **Risk Appetite** set

Jul 2024
- **Insurance Strategy**
- **Financial Risk Tolerance** determines Council can absorb losses of between $20M - $145M.#

Aug 2024
- Aon **sensitivity analysis on deductibles vs premium relief** - concludes increasing deductibles not a viable means of significantly reducing premium costs.

Dec 2024
- Council determines to take out **Infrastructure Insurance** to balance overall risk exposure in light of changing liability insurance markets and three waters reforms.

Sept 2025
- **Loss Modelling** – Aon is modelling probabilistic range losses resulting from earthquake. Focus on three waters infrastructure.

Oct 2025
- **Compare** Loss Modelling findings against Council's capacity for financial loss and risk appetite.

Oct 2025
- BOPLASS review Infrastructure & MD&BI **loss limits** in light of loss modelling findings.

Nov 2025
- **Insurance renewed.**

2025/26 Renewal
- **Review & evaluate.**
- Incorporate findings of any site **specific hazard investigations**. E.g. Three Waters Resilience studies.

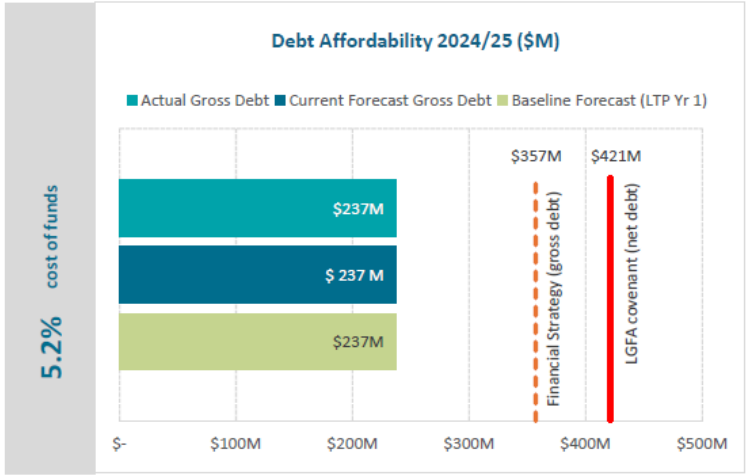
Q1 2026
- **Risk Appetite review** – workshop with Elected Members.

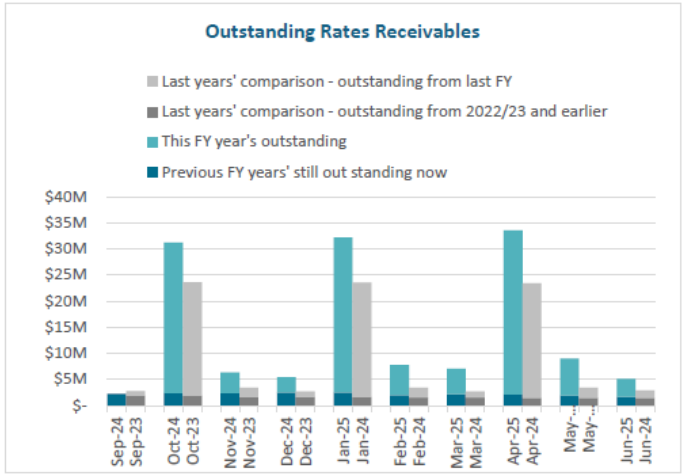
Q1/Q2 2026
- **Asset Selection Policy** – will take into consideration criticality, future asset use, etc.
- Validate if overall financial risk exposure aligned with risk appetite.

Council's capacity to absorb up to $145M in losses is heavily dependent upon its capacity to take on further debt. i.e. incurring losses up to this amount would require the costs of loss to be spread across future generation of ratepayers. Should Council determine it has a low appetite to have future generations take on debt repayment, then Council's tolerance to incur loss reduces down to $20-$40M as it must rely on revenue measures to recoup losses.

ORGANISATION PERFORMANCE - Sarah Matthews

Financial Strategy

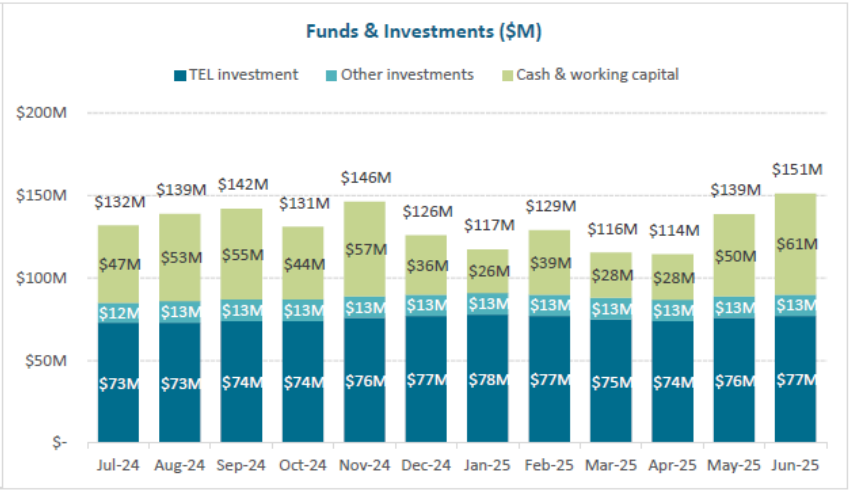




Council's TEL fund has continued to grow, post the global market uncertainty earlier in the year.

Council borrowings increased by $20m in June, which was in line with Council's Long-term Plan projections. This lending has increased cash balances over the short-term, which has been placed on Term Deposit in multiple smaller placements to ensure working capital and liquidity requirements are met. Council officers have been working with Council's treasury advisor to reduce overall cost of funds over time. This has continued to fall and is now sitting at 5.22%. Council is now receiving lower lending rates, but this is balanced with ensuring appropriate cover, as per Council's Treasury Management Policy.

Outstanding rates balances have increased significantly from the same time last year, particularly the current year outstanding. Until rates instalment 3 had been completed, this was hard to compare to previous years. The rates team will be focusing on these outstanding balances post rates setting for 2025/26.



Risk Register

Significant Projects Risk Register — **Risk Register** — **Date Last Updated:** *21/08/2025*

Project	Project Manager	Date updated	Risk Title	Risk Causes	Risk Consequences	Risk Owner	Current Likelihood	Current Consequence	Current Risk Rating	Risk Controls / Treatments	Control / Treatment Owner	Residual Likelihood	Residual Consequence	Residual Risk Rating
Broadlands Road Transfer Station Consent Renewal	Jason Dayne	20/08/2025	Regulatory - failure to renew consent.	Time required for appropriate engagement is limited as available time/space left in the current consented area is coming to a close (Dec 2027).	Without support for a new consent it may impact on Council's ability to obtain Waikato Regional Council approval, there may be implications on the sorting facility, and the district will have to identify alternative landfill options.	Sponsor	Likely	Severe	Extreme	Engagement with iwi/hapū to provide clarity of information provided and gain project buy-in. All groups affected are included in discussions. Sponsor is working through ongoing engagement and project options.	Sponsor	Possible	Severe	*Extreme*
Stormwater Discharge Consents Renewal	Phil Burt	20/08/2025	Regulatory - failure to renew consent.	Lack of key stakeholder support for renewing the consent.	A hearing may be required, extending the project timeline and resulting in additional costs.	Asset Manager	Unlikely	Severe	High	Working with the consultant to understand the consenting plan. Early engagement with wider stakeholders. Iwi/hapū engagement underway.	Project Manager	Unlikely	Severe	*High*
Mangakino Lakefront Upgrade Project (phase 2)	Jason Dayne	20/08/2025	Property Ownership	The property we are working with is owned by LINZ.	Draft agreement has not been signed as there are liability concerns. This means we could be investing in a non-TDC owned property without a formal lease agreement and LINZ and/or Mercury could not agree with our proposed designs.	Sponsor	Possible	Major	High	The project Sponsor is pursuing the finalisation of the user agreement (lease) with LINZ and Mercury. Ultimately, these entities will still have to approve our consent applications.	Sponsor	Possible	Major	*High*
Kinloch Low Zone Reservoir	Jason Dayne	19/08/2025	Location of reservoir	Requirement to reclassify the desired location	Unable to get approval to reclassify would require further investigation and investment into alternate locations	Sponsor	Possible	Major	High	Thorough engagement with local property owners. We have informed and gained the support of the Kinloch Representative Group, as part of the notification process.	Sponsor	Possible	Moderate	*High*
Turangi WW Consent	Michael Cordell	20/08/2025	Regulatory - failure to renew consent.	There is a risk that the consent sought for the discharge to stay at the current site may receive submissions in opposition.	A hearing may be required, extending the project timeline and resulting in additional costs.	Sponsor	Almost Certain	Minor	High	We will continue to work with key stakeholders (hapū) to address as many issues as possible. However, it will be hard to respond to all submissions in opposition.	Project Manager	Almost Certain	Minor	*High*
Drinking Water Standards NZ Upgrade - Kinloch, Omori, Hatepe, Motuoapa	Elijah May	20/08/2025	Financial - insufficient project budget.	Costs have been higher than anticipated since project kick off, and there are a number of unknown scope items that have added additional costs into the project, in order to complete the new plants.	Due to the cost increases and additional scope items, the Kinloch and Omori projects are expected to be over budget at completion.	Sponsor	Almost Certain	Major	Extreme	We expect we should have enough budget based on known contractor variations and remaining contingency. However, now with some unplanned internal costs, there is the risk that we may still go over budget.	Sponsor	Possible	Minor	*Medium*
204 Crown Road - subdivision earthworks & Civil	Pete Bradshaw	20/08/2025	Time - Titles	Titles can't be secured until a drainage reserve is exchanged for other land to enable the Crown Road industrial subdivision. Whilst this proposal has been approved in principle by the Roading and Reserves Committee it is subject to public notice and a final council resolution.	Project delays due to the projected time it will take to secure titles, leading to additional costs and staff capitilisation. However, we aren't anticipating this to have an impact on the sales and marketing programme.	Sponsor	Likely	Minor	High	Tasks to secure titles have been identified and are being actively managed	Project Manager	Possible	Minor	*Medium*
EUL Stage 1A Lot 20 - Earthworks & Civil	Pete Bradshaw	20/08/2025	Financial - projected overspend leading to additional budget requirements.	Additional costs incurred by external legal teams for development agreement wth our build partner, and there is no allowance for staff capitalisation within the original budget. Additional costs were also spent on future stages.	Additional budget may be required to complete work.	Sponsor	Likely	Minor	High	Budget re-forecasting for stage 1b is in progress to allow for more detailed programme level cost analysis - the outcome of this will determine the financial impact on the project.	Project Manager	Possible	*Minor*	*Medium*
District - Universal Smart Water Metering	Tom Swindells	19/8/2025	Reputation - public perception of metering and transition to user pays.	Public misinterpreting the longer plan and project outcomes. This project has been included in our LTP/WSDP and is currently in the investigation phase. Rollout of this demand management system will occur incrementally, site by site.	Lack of support for overall project goals and roll out plan.	Asset Manager	Almost Certain	Minor	High	Comms and engagement work	Project Manager	*Possible*	*Minor*	*Medium*
Drinking Water Standards NZ Upgrade - Kinloch, Omori, Hatepe, Motuoapa	Elijah May	20/08/2025	Regulatory & Service Delivery - operating non-compliant water treatment plants.	Delays with projects.	If there are significant delays, Taumata Arowai may impose legal action and/or the public could be negatively impacted from a health perspective.	Sponsor	Unlikely	Major	High	The asset manager is communicating updates to Taumata Arowai and DWSNZ projects are ongoing.	Asset Manager	Unlikely	Moderate	*Medium*
Centennial - Treatment Compliance Upgrade	Paul Pettman	19/8/2025	Regulatory & Service Delivery - operating non-compliant water treatment plants.	Delays with project.	If there are significant delays, Taumata Arowai may impose legal action and/or the public could be negatively impacted from a health perspective.	Sponsor	Unlikely	Major	High	The asset manager is communicating updates to Taumata Arowai and DWSNZ projects are ongoing.	Asset Manager	Unlikely	Moderate	*Medium*
SCADA FTview Upgrade	Sarah Lealand	20/08/2025	Time - delays with project delivery	Conversion of FTview currently taking longer than planned.	Continued utilisation of multiple SCADA platforms which can be challenging to manage operationally.	Sponsor	Possible	Major	High	The project team and Sponsor are currently working with an external specialist consultant. Several high priority water sites are in the process of being upgraded to FT View. The conversion of other sites will be reviewed as part of the wider SCADA programme.	Sponsor	Possible	Minor	*Medium*
Tauhara Ridge Reservoir & Airport Connection	Peter van Niekerk	19/08/2025	Performance & Service Delivery.	Delays in the project	If the reservoir is not completed in a timely fashion, there will be level of service issues in the new Wharewaka development areas.	Sponsor	Possible	Major	High	The project manager is currently monitoring this closely. Reticulation works completed and the new reservoir construction is well underway	Project Manager	Unlikely	Minor	*Medium*
Owen Delany Park upgrade	Travis Delich	4/08/2025	Reputational - public perception of new changing room	We will be putting out communications to the community regarding the start of construction and benefits of the new facilities.	Lack of support for overall project goals and roll out plan.	Sponsor	Almost Certain	Minor	High	The communications will include statistics on the use of OD Park, the reasons for building the facility, and we'll make people aware the project is primarily being funded by central government and lotteries community facilites fund.	Project Manager	*Possible*	*Minor*	*Medium*
Taupo WW Control gates bridge buffer storage tanks	Michael Cordell	19/08/2025	Financial - insufficient budget	Full cost of delivering the works will be unknown until design is complete and tendered.	Additional funds may be required, resulting in further delays.	Sponsor	Possible	Moderate	High	We are working closely with a consultant and have sought advice from contractors around preliminary design to understand costs better.	Project Manager	Unlikely	Minor	*Medium*
Omori / Kuratau Slip	Ivan Nikitin	19/08/2025	Financial - insufficient budget to complete the full project's scope.	The full cost of delivering the works will be unknown until design is completed and engineering estimates are delivered.	Additional funds may be required, resulting in delays for delivering low-priority parts, meaning uncertainty for the community.	Project Manager	Possible	Minor	Medium	Working closely with the consultant and we have sought advice from contractors around preliminary design to understand costs better. We will be splitting the project into parts based on priority, delivering high-priority parts first within the current budget.	Project Manager	Unlikely	Minor	*Medium*
Turangi Master Plan	Tanya Wood	19/08/2025	Time - Delays	Needing more time than anticipated to progress the project.	We don't have any necessary outputs to inform the Long Term Plan.	Project Manager	Medium	Medium	Medium	The project manager is doing as much possible in the background so that tasks can start as soon as the project brief is signed off.	Project Manager	Medium	Medium	*Medium*
Waters Reform Activities	Jo Walton	8/08/2025	Water Services Delivery Plan not accepted	Potentially, the Department of Internal Affairs could deem our plan unacceptable.	We would have to amend and resubmit our plan. A Crown facilitator or water specialist may be appointed to manage this.	Sponsor	Unlikely	Minor	Medium	Continue to monitor DIA comms, prioritise quality delivery of Water Services Delivery Plan.	Programme Manager	Unlikely	Minor	*Medium*
Te Aonini Carpark Reseal	Jason Dayne	19/08/2025	Time - Potential delays due to weather	Late in the construction season for sealing.	This could result in delays and minor risk of extra costs.	Project Manager	Possible	Insignificant	Low	We will seal when the weather is appropriate and mitigate with additional additive for cold weather, this has been allowed for by the contractor.	Project Manager	Rare	Minor	*Low*
Roundabouts - Taharepa/Crown & Tauhara/AC Baths	Anup Dahal Travis Delich	19/08/2025	Reputational - Public Complaints	Construction noise and disruption to traffic flows.	Increased amount of service requests.	Project Manager	Almost Certain	Minor	Low	We have a dedicated stakeholder manager	Project Manager	Possible	Minor	*Low*

GREAT LAKE TAUPŌ
Taupō District Council

Quarterly Treasury Dashboard

30 June 2025

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Economic Commentary (as of 30 June)

Global

The Vladimir Lenin attributed quote, "*There are decades where nothing happens; and there are weeks where decades happen,*" is strikingly apt for the last quarter. Significant geopolitical events have included US and Israeli strikes on Iranian nuclear facilities (including aggressive missile exchanges between Israel and Iran), continuing Russian and Ukrainian conflict, US tariff and trade tensions, with some tariffs as high as 60%. Tensions between the US and NATO members have continued, but appear to have softened as European members have largely agreed to increase defense spending

Significant economic events include the previously mentioned tariffs and concerns about the growing US budget deficit, which is estimated to increase the size of the US deficits by $3.0 to $4.5 trillion over the 2025–2034 period, raising questions about fiscal sustainability. There have also been concerns around President Trump's attempts to influence the US Federal Reserve "Fed", which threatens its long history of political independence, alarming both investors and economists.

Market volatility has been extreme, with the benchmark US 10-year treasury bond yield touching a low of 3.86% on 7 April, two days later it was at 4.51%, after that trading in a range between 4.18% and 4.61% before finishing the quarter at 4.23%. This level of volatility has not been seen for nearly 40 years. Oil prices, which at one point were 40% higher than their lows on 9 April, fell 15% in the last week of the quarter.

Key US economic data over the last 90 days have continued with the theme of slowing economic growth and with inflation remaining above the Fed's 2.0% goal. Real GDP decreased at an annualised rate of 0.5% in Q1 2025 (January-March), a sharp slowdown from 2.4% in Q4 2024. The Consumer Price Index (CPI) rose 2.4% year-over-year in May 2025, with a 0.1% monthly increase, driven by shelter costs (+0.3%) but tempered by a 1.0% drop in energy prices. The Personal Consumption Expenditures (PCE) index, the Fed's preferred measure, hit 3.6% in Q1 2025, up from 2.4% in Q4 2024. Inflation expectations rose sharply, with the University of Michigan's June 2025 survey showing 1-year inflation expectations of 5.0% (up from 3.3% in January).

New Zealand

	OCR	90 day	2 year swap	3 year swap	5 year swap	7 year swap	10 year swap
31-Mar-25	3.75%	3.61%	3.37%	3.46%	3.66%	3.87%	4.10%
30-Jun-25	3.25%	3.29%	3.20%	3.32%	3.57%	3.81%	4.07%
Change	-0.50%	-0.32%	-0.17%	-0.14%	-0.09%	-0.06%	-0.03%

New Zealand's economy expanded by 0.8% on a quarterly basis in the March quarter, accelerating from 0.5% growth in the previous quarter and slightly beating market expectations of 0.7%. However, the annual rate printed at minus 1.1% for the twelve months ending 31 March. The March quarter marked the second consecutive quarter of growth following two quarters of severe contraction. Economic activity increased across all three major industry groups, with the strongest gains seen in manufacturing (+2.4% vs. +0.1% in Q4), followed by professional services.

The annual inflation rate in New Zealand accelerated to 2.5% in the first quarter of 2025, from 2.2% in the previous quarter. This was the highest inflation rate since June 2024, exceeding market expectations of 2.3%.

The RBNZ cut the OCR by 25 basis points in both April and May to take it to 3.25%, but in the *Monetary Policy Statement* in May, the central bank signaled a more cautious approach to further OCR easing, which markets have taken on board. A final OCR cut is not fully priced in until November 2025, which would take it to 3.00%, a full 250bps below last year's peak however, but only time will tell if it is enough to kickstart a still-struggling economy.

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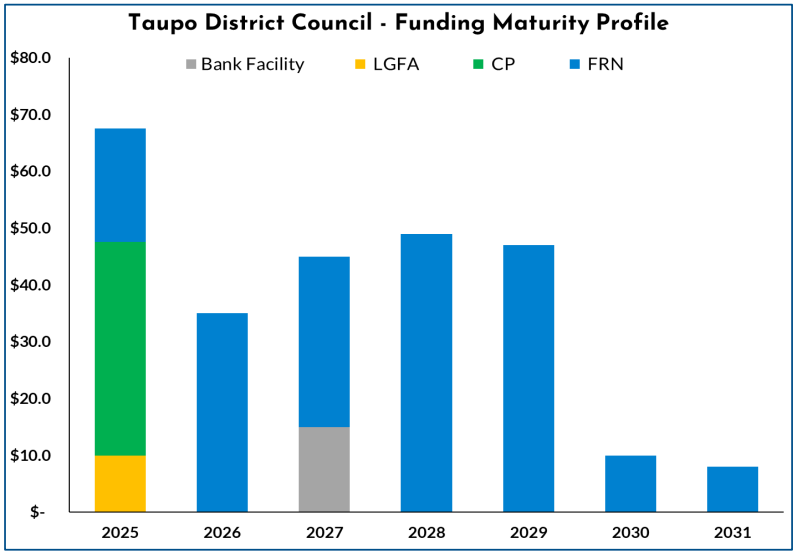
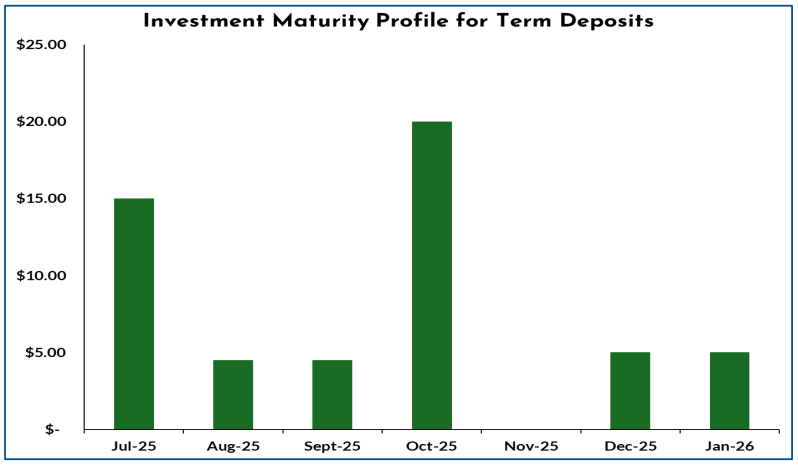
GREAT LAKE TAUPŌ
Taupō District Council

Liquidity and Funding





Debt
$236.5m
External Council Drawn Debt

LGFA
$199.0m
Funds Drawn from LGFA

Headroom
$25.0m
Undrawn Funding Facilities (LGFA and Bank)

Cash, TD'S and Managed Fund
$135.2m

Total Liquidity
$160.2m

Liquidity Ratio
167.7%
(Cash, TD's, Managed Fund + Lines of Credit + Drawn Debt)/Drawn Debt

Funding Maturity

Maturity (Years)	Minimum	Maximum	Actual	Compliant
0 - 3	15%	60%	65.97%	No
3 - 7	25%	85%	34.03%	Yes
7+	0%	60%	0.00%	Yes

Policy Compliance	Compliant
Have all transactions been transacted in compliance with policy?	Yes
Is fixed interest rate cover within policy control limits?	Yes
Is the funding maturity profile within policy control limits?	Yes
Is liquidity within policy control limits?	Yes
Is the investment maturity profile within policy control limits?	Yes

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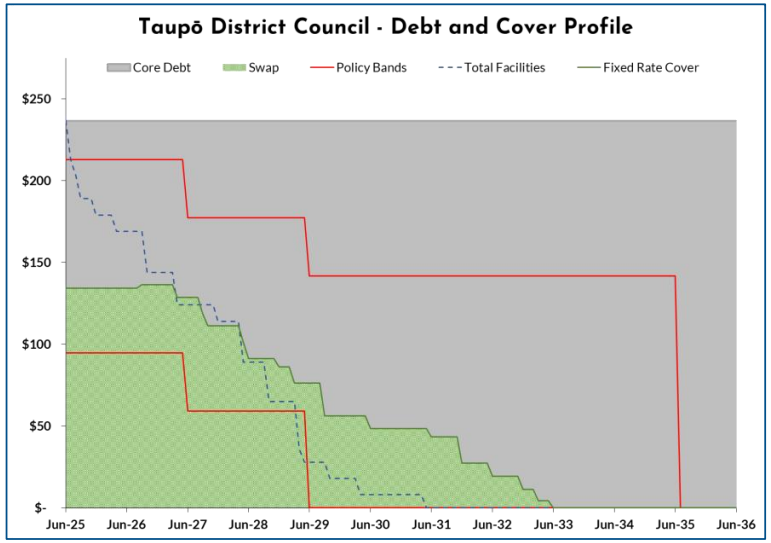
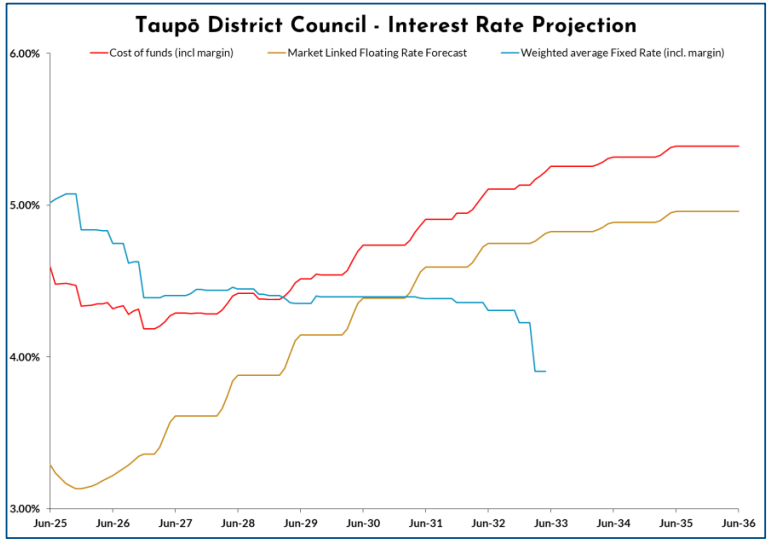
GREAT LAKE TAUPŌ
Taupō District Council

Interest Rate Risk Management





Key Metrics

Current % of Debt Fixed	56.8%
Current % of Debt Floating	43.2%
Value of Fixed Rate (m)	$134.4
Weighted Average Cost of Fixed Rate Instruments	4.53%
Value of Forward Starting Cover	$46.4
Weighted Average Cost of Forward Starting Cover	3.95%
Value of Floating Rate (m	$102.1
Current Floating Rate	3.29%
All Up Weighted Average Cost of Funds Including Margin	4.55%
Total Facilities In Place	$261.5

Policy Bands

Maturity (Years)	Minimum	Maximum	Actual	Compliant
0 – 2	40%	90%	62.1%	Yes
2 – 4	25%	75%	59.5%	Yes
4 - 10	0%	60%	35.2%	Yes

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GREAT LAKE TAUPŌ
Taupō District Council

Interest Rate Swaps and Funding

As at 30 June 2025, TDC had $236.5m of drawn debt facilities and 21 interest rate swaps, 15 of which were current and 6 forward starting, as detailed below:

Swaps				
Start Date	Maturity Date	Rate	Amount	MTM
30-Dec-15	30-Dec-26	6.00%	$16,000,000	-$661,505.73
30-Dec-15	30-Sept-26	6.08%	$8,100,000	-$291,326.15
30-Dec-15	30-Dec-25	6.05%	$16,000,000	-$219,132.71
30-Dec-15	30-Jun-26	6.02%	$4,400,000	-$124,251.99
28-Jun-19	30-Sept-27	3.70%	$10,000,000	-$105,135.48
28-Jun-24	28-Mar-29	4.05%	$10,000,000	-$229,075.09
28-Jun-24	28-Jun-30	3.95%	$7,900,000	-$145,533.49
28-Jun-24	30-Jun-31	3.97%	$5,000,000	-$80,187.95
30-Mar-25	30-Jun-28	4.05%	$10,000,000	-$213,578.10
31-Mar-25	29-Dec-28	4.05%	$5,000,000	-$112,627.83
31-Mar-25	31-Mar-33	4.00%	$7,000,000	-$61,634.90
31-Mar-25	28-Sept-29	3.58%	$10,000,000	-$46,875.48
15-Apr-25	15-Apr-27	3.46%	$7,500,000	-$37,295.04
15-Apr-25	15-Oct-27	3.50%	$7,500,000	-$46,442.70
15-May-25	15-May-28	3.56%	$10,000,000	-$76,794.43
Total Current Swaps			**$134,400,000**	**-$2,451,397.07**

Forward Starting Swaps				
30-Dec-25	31-Dec-31	4.04%	$8,000,000	-$109,772.45
30-Dec-25	30-Jun-32	4.06%	$8,000,000	-$101,774.16
30-Jun-26	30-Jun-33	3.48%	$4,400,000	$141,655.35
30-Sept-26	30-Sept-29	3.95%	$10,000,000	-$95,025.73
30-Dec-26	30-Dec-31	3.96%	$8,000,000	-$10,737.61
30-Dec-26	30-Dec-32	3.99%	$8,000,000	$20,887.16
Total Forward Starting Swaps			**$46,400,000.00**	**-$154,767.44**

Debt Facilities				
Instrument	Maturity Date	Rate	Margin	Amount
CP	10-Jul-25	3.59%	0.11%	$1,982,258
CP	10-Jul-25	3.60%	0.12%	$2,477,761
CP	10-Jul-25	3.58%	0.10%	$1,486,730
CP	10-Jul-25	3.59%	0.11%	$5,946,774
CP	30-Jul-25	3.92%	0.31%	$11,772,706
CP	2-Sept-25	3.45%	0.13%	$4,461,679
CP	2-Sept-25	3.40%	0.08%	$1,983,214
CP	2-Sept-25	3.43%	0.11%	$2,974,600
CP	2-Sept-25	3.45%	0.13%	$4,461,679
LGFA FRN	24-Aug-25	3.71%	0.44%	$10,000,000
LGFA FRN	15-Dec-25	3.75%	0.45%	$10,000,000
LGFA FRN	15-Apr-26	4.07%	0.59%	$10,000,000
LGFA FRN	15-Oct-26	4.06%	0.57%	$15,000,000
LGFA FRN	15-Oct-26	3.97%	0.49%	$10,000,000
LGFA FRN	15-Apr-27	3.97%	0.49%	$15,000,000
LGFA FRN	15-Apr-27	4.06%	0.57%	$5,000,000
LGFA FRN	15-Dec-27	3.86%	0.56%	$10,000,000
LGFA FRN	15-May-28	3.86%	0.50%	$15,000,000
LGFA FRN	15-May-28	3.99%	0.67%	$10,000,000
LGFA FRN	15-Oct-28	4.25%	0.77%	$14,000,000
LGFA FRN	15-Oct-28	4.28%	0.80%	$10,000,000
LGFA FRN	20-Apr-29	3.89%	0.43%	$10,000,000
LGFA FRN	20-Apr-29	4.23%	0.83%	$9,000,000
LGFA FRN	20-Apr-29	4.03%	0.77%	$10,000,000
LGFA FRN	15-May-29	4.01%	0.65%	$8,000,000
LGFA FRN	15-Oct-29	4.09%	0.60%	$10,000,000
LGFA FRN	15-Apr-30	3.92%	0.44%	$10,000,000
LGFA FRN	15-May-31	4.06%	0.70%	$8,000,000
Total				**$236,547,401**

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Term Deposits

As at 30 June 2025, Taupo DC had $54.0 million of Term Deposits in the General Fund, with a weighted average rate of 3.67%, Details of the Term Deposits are as follows:

Term Deposits		
Maturity Date	Rate	Amount
10-Jul-25	3.32%	5,000,000
21-Jul-25	3.32%	5,000,000
31-Jul-25	3.41%	5,000,000
8-Aug-25	3.61%	4,500,000
19-Sept-25	3.83%	4,500,000
10-Oct-25	3.80%	5,000,000
10-Oct-25	3.70%	5,000,000
31-Oct-25	3.75%	10,000,000
24-Dec-25	3.93%	5,000,000
15-Jan-26	3.95%	5,000,000
Weighted Average Rate		**3.67%**
Total Current TDs		**54,000,000**

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LGFA Borrowing Rates

Listed below are the credit spreads and applicable interest rates as at the end of the June quarter for Commercial Paper ("CP"), Floating Rate Notes ("FRN") and Fixed Rate Bonds ("FRB"), at which the council could source debt from the Local Government Funding Agency ("LGFA").

Maturity	Margin	FRN (or CP Rate)	FRB
3 month CP	0.15%	3.44%	N/A
6 month CP	0.15%	3.42%	N/A
April 2026	0.42%	3.71%	3.58%
April 2027	0.56%	3.85%	3.75%
May 2028	0.70%	3.99%	4.02%
April 2029	0.80%	4.09%	4.25%
May 2030	0.88%	4.17%	4.44%
May 2031	0.98%	4.27%	4.68%
May-2032	1.04%	4.33%	4.84%
April 2033	1.12%	4.41%	5.03%
May 2035	1.17%	4.46%	5.25%
April 2037	1.31%	4.60%	5.51%

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Strategic Asset Allocation

Taupo District Council - 6000004 1 July 2024 to 30 June 2025

	Actual Allocation (NZ$)	Actual Weight	Target Allocation (NZ$)	Target Weight
Cash	5,488,418	7.2%	6,135,032	8.0%
Fixed Interest	24,931,802	32.5%	24,540,127	32.0%
Income Assets	**30,420,219**	**39.7%**	**30,675,159**	**40.0%**
Minimum Income Asset Exposure				**30.0%**
Property	3,875,348	5.1%	3,834,395	5.0%
Equity NZ	7,578,574	9.9%	7,668,790	10.0%
Equity AU	8,211,660	10.7%	7,668,790	10.0%
Equity International	26,602,096	34.7%	26,840,764	35.0%
Growth Assets	**46,267,679**	**60.3%**	**46,012,739**	**60.0%**
Maximum Growth Asset Exposure				**70.0%**
Total	**76,687,898**	**100.0%**	**76,687,898**	**100.0%**

Performance Summary

Taupo District Council - 6000004 1 July 2024 to 30 June 2025

Opening Market Value	**70,611,065**
Transfers In	-
Transfers Out	-
Realised Gain/Loss	**380,197**
Realised FX Gain	41,688
Realised Price Gain	338,510
Unrealised Gain/Loss	**3,362,766**
Unrealised FX Gain	- 476,123
Unrealised Price Gain	3,838,889
Net Income	2,510,190
Change in Accrued Income	6,377
Portfolio Fees	- 182,697
Closing Market Value	**76,687,898**
Return Before Tax, After Fees	**8.79%**

Source: SecuritEase

Note: This performance summary is calculated as the portfolio's internal rate of return (IRR) and is shown on a before tax but after fees basis. Asset allocation weightings are shown as at the period ended. Fixed Interest asset class performance may include NZ Fixed Interest and Global Fixed Interest securities.

Disclaimer: This report summarises and groups the main portfolio cash flows for the period specified. Whilst the return provided is a reflection of all cash flows, the report itself should not be treated as a cash flow statement, as not all cash flows may be separately listed.
This report is interim only and some of the figures included may be subject to change due to some data being unprocessed at the time this report is created. The information shown in this report is obtained from various sources believed to be reliable and while every effort has been made to ensure accuracy, no liability is accepted for any errors or omissions.

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NZX Firm

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Taupō District Council

Risk and Assurance Committee Effectiveness

Self-assessment survey report

September 2025

Version 1.0

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Introduction

In August 2025 Risk and Assurance Committee Members, all Elected Members and Council's Executive Team were asked to participate in a self-assessment survey designed to assess the effectiveness of Council's Risk and Assurance Committee.

This report provides the results of this survey.

Survey Development

The survey questions were designed using the Officer of the Auditor General's guidance.

The survey was revised for 2025 and comprised of 27 questions focussed around the following key areas:

- Clarity of purpose;
- Committee independence from management;
- Competence;
- Respect & trust with senior management;
- Induction & support;
- Meetings & administration;
- Effectiveness & impact.

Survey results

Clarity of purpose

1. Do you consider that the Committee has a clear purpose, which is also clearly laid out in the Terms of Reference? More details

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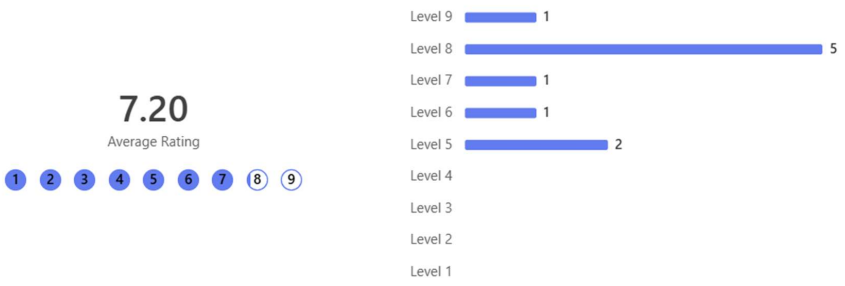
2. The Terms of Reference is still fit for purpose. Please also consider the appropriateness of its membership. More details



Summary of answers to *Question 3 – Feel Free to add any comments relating to the above question* (4 respondents):

Committee Membership Concerns

One respondent expressed a strong view that previous Committee members, especially Councillors, should not be reappointed to ensure transparency and avoid potential bias.

Representation Preferences

Respondents suggest that the Mayor and Deputy Mayor should be included, alongside broad representation from across the district, indicating a desire for diverse and inclusive participation.

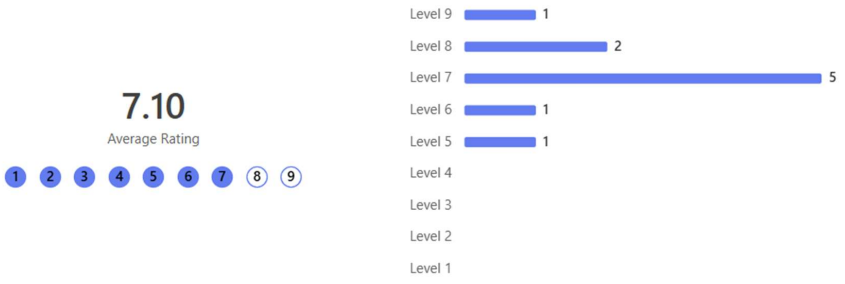
Clarity of Terms of Reference (TOR)

One respondent finds the TOR wordy but clear, appreciating that it defines the Committee's scope and limitations effectively.

Uncertainty About Integration with Council Meetings

There is some confusion or lack of clarity about how the Committee's work relates to monthly council meetings, suggesting a need for better communication or alignment.

4. Do you consider that the Committee has an effective work programme that clearly reflect the Committee's purpose, a nd is being driven by the organisation's most critical risks? More details



Summary of answers to *Question 5 – Fee free to add any comments relating to the above question* (5 respondents):

Transparency and Visibility of Issues

Concern was raised that important internal issues (e.g., the Quantum project) are not being adequately surfaced or addressed.

Council-Wide Engagement

There is a call for a stronger connection between the Committee and full Council, to ensure elected members stay informed and accountable.

Committee Composition

A suggestion was made to include independent members with legal qualifications, indicating a desire for more specialised expertise in risk oversight.

Risk Coverage

Not all risks are being captured—disinformation was cited as an example of a risk that may be overlooked, suggesting a need to broaden the Committee's scope or awareness.

Information Management

Feedback indicates that some reports are too detailed, and would benefit from being elevated to a more strategic level to support clearer decision-making.

Workload and Focus

One respondent (Bruce) reflected on the volume of resolutions and suggested consolidating papers to better focus on core risk and assurance matters. While the quality of papers is acknowledged, the process could be streamlined to enhance effectiveness.

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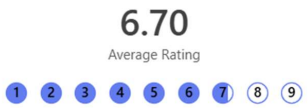
Committee independence from management

6. Overall, the Committee is operating independently of management, in that it is able to test ideas and ask challenging questions in a free and frank way. More details



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Competence

7. Please rate your capability to manage risk in your role for Taupō District Council. More details

Summary of answers to *Question 8 – Feel free to add any comments relating to the above question* (3 respondents):

Lack of Transparency and Information Flow

There is concern that important issues are being withheld from Elected Members.

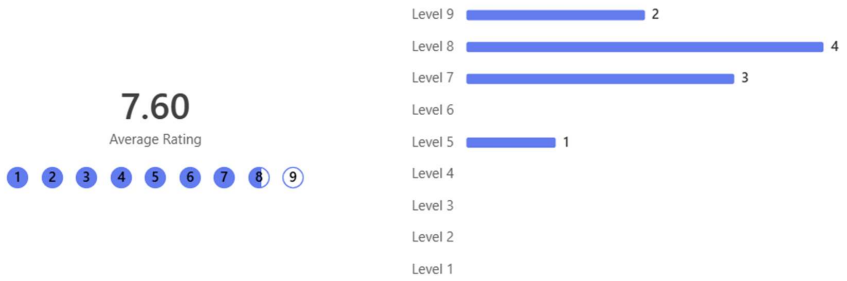
Unclear Role in Risk Management

One respondent expressed uncertainty about their role, suggesting that Elected Members provide oversight, while staff are responsible for managing risk—highlighting a potential gap in role clarity.

Dependence on Staff-Provided Information

Another respondent noted that Elected Members are limited by the information provided by staff, though they personally did not express any issues, suggesting a mix of trust and limitation in the current information flow.

9. How do you rate your knowledge of Council's **Risk Appetite** More details



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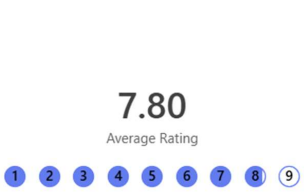
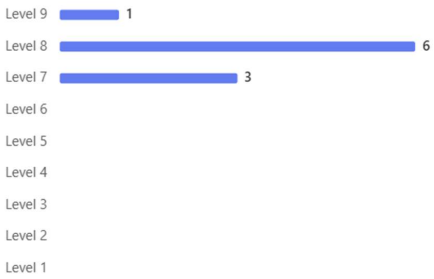
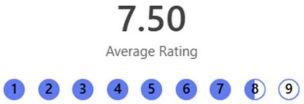
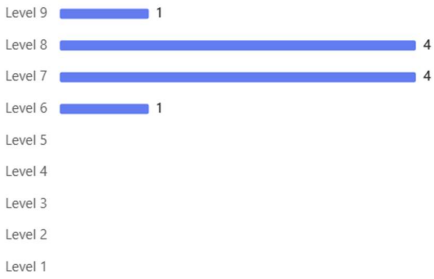
10. How do you rate your knowledge of **external audit/external accountability** as far as they relate to Council. More details



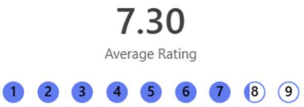


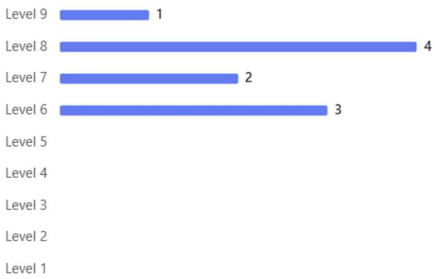
11. How do you rate your knowledge of Council's **Financial management policies.** More details





12. How do you rate your knowledge of Council's **Insurance arrangements.** More details





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13. How do you rate your knowledge of Council's **Treasury management policy.**

More details

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Respect & trust with senior management

14. The Committee, overall, has a respected, trusted, and constructive relationship with the Executive? More details

Summary of answers to *Question 15 – Feel free to add any comments relating to the above question* (4 respondents):

Uncertainty About Member Awareness

One respondent questioned whether Elected Members have been adequately informed or consulted on certain matters.

Positive Functioning of the Committee

Two respondents expressed no issues, with another two highlighting a good level of openness within the Committee, which they value.

Resourcing Concerns

One comment raised a question about the overall resourcing of the organisation, implying that while things may be functioning well, capacity or support could be a limiting factor.

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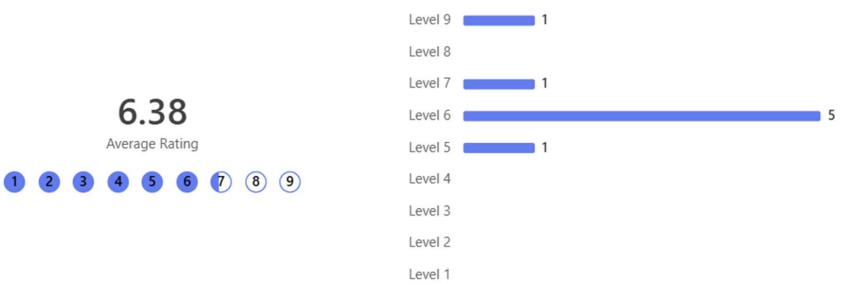
Induction & support

16. My induction sufficiently prepared me for the role. More details



Summary of answers to *Question 17 - Feel free to add any comments relating to the above question* (4 respondents):

Inadequate Induction and Support

There is concern that initial onboarding was rushed and unrealistic, with one respondent noting that loading someone with information over a weekend was insufficient.

The lack of ongoing professional support and discontinuation of district tours was seen as a missed opportunity for continued learning and engagement.

Reliance on Prior Experience

Some respondents indicated they relied on their own prior experience and knowledge, suggesting that the current induction process may not be sufficient for new Committee members.

Poor Recall or Limited Induction

Two respondents admitted they don't remember their induction, implying that the induction process may not have been memorable or impactful.

Value of Independent Committee Operation

A positive note was made about the discipline and effectiveness of the Committee's independent operation, suggesting that structure and culture within the Committee are strong.

18. There is sufficient ongoing support from the organisation, to build your understanding of the organisation's systems and processes, risks, and issues. More details

Summary of answers to *Question 19 – What areas can you identify where the Risk and Assurance Committee should focus more attention or where there is a need for more support?* (5 respondents):

Lack of Access and Inclusion

One respondent expressed strong concerns about poor communication and alleged exclusion of Elected Members.

Sector-Level Risk Awareness

A respondent highlighted the importance of considering policy and central government changes, indicating that external factors are significant risks that need attention.

Confidence in Current Balance

One response reflected confidence in the Committee's current approach, stating that the balance is right and the role is to support Council goals across multiple areas.

Strategic Focus

A suggestion was made to spend more time on strategic issues, rather than getting caught up in management-level matters, pointing to a need for clearer prioritisation.

Positive Staff Feedback

One respondent offered a simple but affirming comment: "You guys – as staff – are great," indicating appreciation for staff support and performance.

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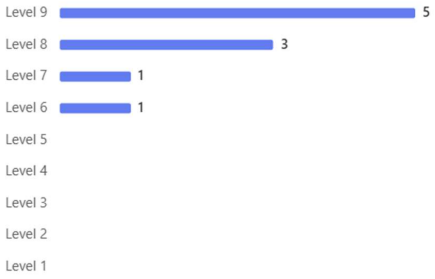
Meetings & administration

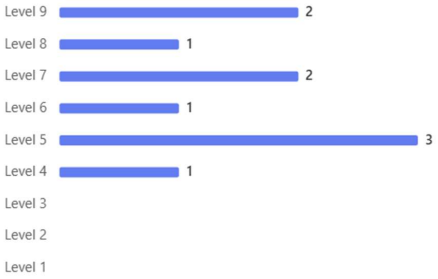
20. I am being well supported by the secretariat (e.g. being provided with papers in a timely manner). More details

8.20
Average Rating
1 2 3 4 5 6 7 8 9



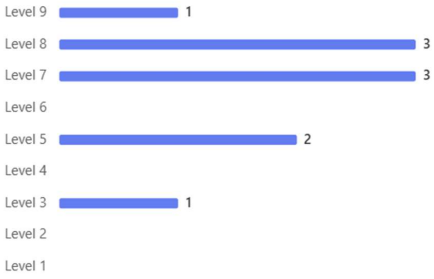
21. Committee meetings are of sufficient length, and frequent enough. More details

6.50
Average Rating
1 2 3 4 5 6 7 8 9



22. Meetings are being efficiently and effectively run, enabling both broad discussions and "deep dives" when necessary. More details

6.70
Average Rating
1 2 3 4 5 6 7 8 9



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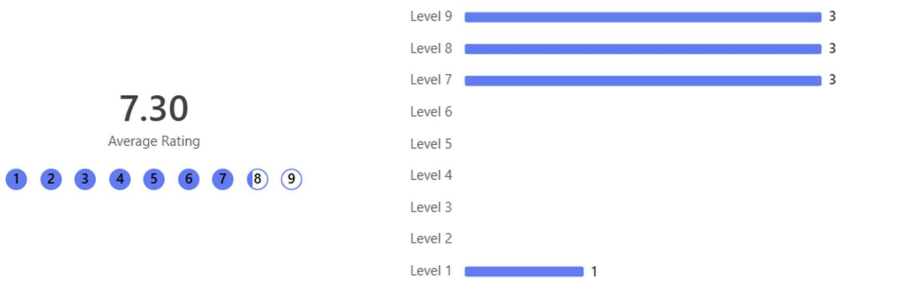
23. Do we have clear processes for managing conflicts of interest and ethical concerns? More details



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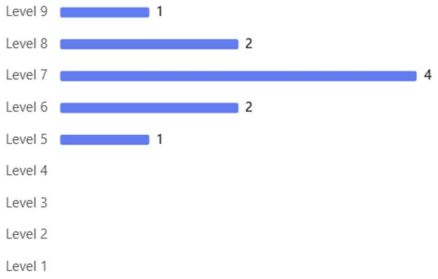
Effectiveness & impact

24. The Committee is, as a whole, adding value to the work of the organisation, rather than just overseeing operations. More details



Summary of answers to *Question 25 – What are the aspects that the Risk and Assurance Committee, and the organisation, is currently doing well at?* (6 respondents):

Effective Risk Oversight

Respondents noted that the Committee is addressing a broad range of risks at each meeting and is providing oversight of externally identified risks, indicating a strong and comprehensive approach.

Strong Leadership and Membership

Multiple responses praised the Independent Chair for being knowledgeable and effective.

The Committee membership is seen as well-rounded and supported by good staff reporting, contributing to its overall success.

Resilience and Adaptability

Despite delays with audits and plans, the Committee is perceived to have performed well under challenging circumstances, showing resilience and commitment.

Strategic Focus and Accountability

The Committee is recognised for challenging key risks and providing accountability, with a suggestion to focus more on strategic issues rather than operational ones.

Gradual Improvement

One respondent noted that the Committee is operating regularly and improving over time, with staff support playing a key role in this progress.

Positive Staff Feedback

Staff were described as helpful and consolidating their work, contributing positively to the Committee's functioning.

Summary of answers to *Question 26 – What are the aspects that the Committee, and the organisation, could most improve on?* (7 respondents):

Conflict of Interest Concerns

A respondent raised concerns around alleged Elected Member conflict of interests.

Emerging and Strategic Risk Focus

Respondents suggested the need for forward-looking risk analysis, including predictive insights and deeper dives into emerging risks, to strengthen strategic oversight.

Risk Register and Reporting

There were calls to review the risk register and reconsider the volume and relevance of regular reports, ensuring the Committee has time to focus on high-priority strategic risks.

Committee Workload and Delegation

The Risk & Assurance Committee's workload was noted as heavy, with significant resources required to produce agenda reports.

Suggestions included refining what goes to the Committee and delegating some reporting to the Executive, especially for business-as-usual (BAU) matters.

Improving Communication and Risk Dialogue

One respondent highlighted the need to enhance risk discussions and improve communication between the Committee and Council, pointing to a gap in alignment and information flow.

Summary of answers to *Question 27 – Do you see any opportunities to improve communication and awareness of risk management between the Risk and Assurance Committee and the wider Council*? (7 respondents):

Need for Formal Reporting to Full Council

Multiple respondents expressed a strong desire for **more structured and regular reporting from the Risk & Assurance Committee to full Council**. Suggestions included:

- A **standing agenda item** at Council meetings summarising Committee outcomes.
- **Formal and consistent reporting mechanisms** to ensure visibility and accountability.
    - **Better communication of Committee outcomes**, which is currently seen as lacking.

Perceived Lack of Council Engagement

There is a sense that **Council is not fully engaged with the Committee's work or its role**, which may be limiting the impact and integration of risk oversight across the organisation.

Chair's Role in Communication

One suggestion was for the **Committee Chair to speak directly to Council twice a year**, to improve visibility and alignment between the Committee and elected members.

Summary of answers to *Question 28 – Any further comments and suggestions* (4 respondents):

Concerns About Conflict of Interest Management

One respondent alleged that conflicts are not being declared or are being denied, with public awareness exceeding internal transparency.

Positive Feedback on Staff Support

One respondent expressed appreciation for the Risk and Assurance Committee is supported, indicating a positive working relationship and staff contribution.