



Auckland Drought Management Plan

June 2026

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Why do we need a Drought Management Plan

A robust drought management plan (DMP) is needed to ensure reliable drinking water supply, protect public health, and maintain environmental sustainability during prolonged dry periods—concerns that are especially acute for Auckland. The city relies heavily on water storage dams that are vulnerable to rainfall variability, while population growth is putting pressure on demand, and climate change is expected to increase the possibility of more severe droughts. Although Taumata Arowai does not explicitly require a standalone drought management plan, its regulatory framework obliges water suppliers to maintain a safe, reliable, and sufficient supply, identify and manage risks, and respond effectively to supply disruptions—expectations that inherently include drought as a key risk. Similarly, the Water Supply and Wastewater Network Bylaw 2015 does not mandate drought planning, but it provides the legal authority to restrict water use during periods of shortage, making it an essential mechanism for implementing drought response measures.

Without a clear plan, water shortages can escalate quickly into emergency restrictions, economic disruption, and ecological harm to rivers and catchments. A comprehensive drought management plan allows Watercare to proactively manage these risks by monitoring storage levels and climate indicators, triggering staged demand-reduction measures early, coordinating with councils and emergency management agencies, communicating clearly with the public, and safeguarding critical services such as hospitals and firefighting. It also ensures that any restrictions introduced under the bylaw are applied in a planned, consistent, and equitable manner. In the Auckland context, such planning is essential to build resilience, avoid crisis-driven decisions, and ensure the city can continue to function safely and reliably during extended dry spells

Context for drought management

Watercare defines drought as a shortage of rainfall that has caused or threatens to cause depletion in water storage dams or other raw water sources to levels that may lead to a situation where demand exceeds supply. An extended meteorological drought that affects urban water supply is termed ‘hydrological drought’.

Drought management is a challenge for all water utilities, particularly as weather patterns are becoming warmer and more unpredictable. Every drought is different in terms of its duration, severity and frequency. Therefore, Watercare constantly monitors supply levels, daily demand, and network operations to allow sufficient preparation time should periods of low rainfall persist.

Being a short-term tactical plan, the drought management plan is based on prevailing supply, demand and operational parameters, and updated when they change. This section provides an overview of the water supply system that services Auckland’s metropolitan and non-metropolitan customers.

Levels of service

The Auckland’s metropolitan water supply system is designed and operated to meet the following two levels of service (LoS):

- **LoS 1** – often referred to as the “Drought Standard”
Annual average demand within the metropolitan supply area can be met in a severe drought (modelled to have a 1% probability of occurring in any year or 1-in-100 year drought) while leaving 15% residual capacity in its water supply lakes. Watercare can supply the required

volume of potable water to meet demand during a severe drought while keeping the combined storage volume of all Auckland's water supply dams (total system storage or TSS) above 15%. Watercare would expect to introduce some restrictions during this event (see LoS 2).

- **LoS 2 – demand restrictions**

Proactive demand restrictions will be required no more frequently than that required for an event with a 5% probability of occurring in any given year. The modelled peak supply/demand balance is designed to show the forecast peak demand (without restrictions) during a dry summer with a 5% (1 in 20) probability. Under drier conditions (leading to higher demand), Watercare could introduce restrictions to reduce demand while continuing to meet the LoS.

Options for managing drought

Drought management refers to the cycle of planning and preparing for droughts as well as responding to and recovering from droughts. Any management options must aim to enhance 'drought resilience', which means the combined capability and capacity of Watercare, Auckland Council, and the community to manage through future droughts by taking a collaborative approach.

Three potential levers

Resilience to drought can be enhanced through adjusting one or more of the three interdependent components (often referred to as 'levers') of the water supply system, i.e., increasing supply capacity, optimising system operation, and managing (i.e., reducing) demand (Figure 1). Supply-side measures, demand-side measures and operational measures work together to achieve the LoS.

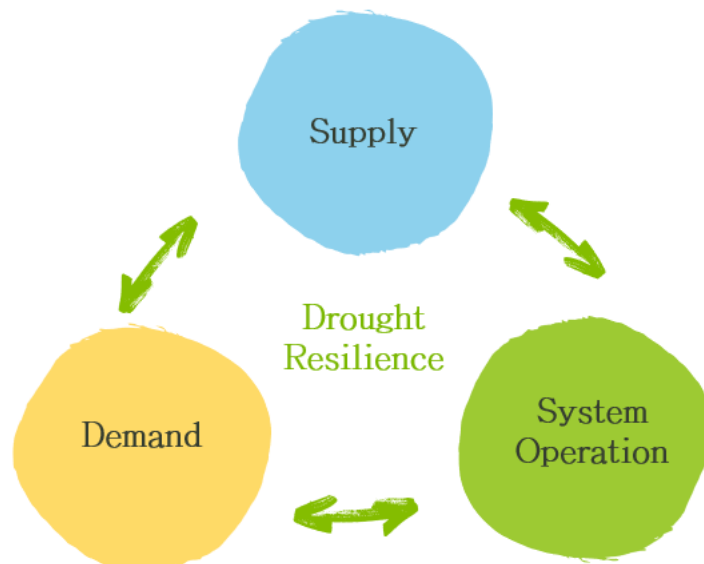


Figure 1: Three interdependent levers to enhance drought resilience

Increase supply capacity

Investigation into upgrading existing infrastructure and feasibility of expanding existing or introducing new sources. Appendix 1 summarises the current drought yield available from the system as identified within the *Asset Management Plan 2021-2041*, including any sources accelerated in response to the 2019-2020 drought.

Optimise system operation

Watercare optimises the proportion of raw water taken from different sources on a daily basis via the Integrated Source Management Model (ISMM). This model is a key tool and during hydrological drought it is used to optimise the total volume of water in Auckland's storage lakes to ensure the supply lasts for as long as reasonably practicable.

Operators of the water treatment and distribution system can adjust Water Treatment Plant (WTP) production in real time to meet demand variations. This flexibility in the operating system also optimises the movement of water around the network and use of network reservoirs (tanks) in certain supply zones to store treated water in anticipation of higher demand than in other zones, particularly the peak demand at certain times of the day. Ring mains also provide supply resilience and greater operational flexibility.

Reduce demand

Reducing demand is the responsibility of all water users, even though the specific actions for each sector may be different. Watercare takes two approaches to facilitate the reduction of demand:

- 1) Demand management programs, e.g., implementation of the **Auckland Water Strategy 2022-2050**, mass media messaging on how to reduce water use, targeted education programs, direct engagement with large water users.
- 2) Formal water restrictions are implemented when **Total System Storage** (TSS) reaches certain trigger levels.

Managing **residential** demand requires reductions both inside and outside homes. Most indoor water uses are essential for health and sanitation, but there are many ways for customers to reduce their water use. For example, replacing old and inefficient shower heads, toilets, taps, and washing machines with newer, more efficient ones can save hundreds of litres per week per household. Alongside those technological solutions, changing water-use behaviour also has a significant impact on water consumption. Shortening the time spent in the shower, turning taps off while brushing teeth, and only washing clothes when there is a full load all help to save water.

Outdoor water use is often 'discretionary' and is typically more of a lifestyle choice, rather than being an absolute necessity, especially when water becomes scarcer. Greater scope exists to reduce outdoor use and is the reason that formal water restrictions address these uses first.

Reducing **non-residential** demand requires methods that are tailored to different sectors because their end water use varies. Some businesses and industries have greater scope than others to reduce consumption, while maintaining their core business.

Watercare focuses efforts to encourage water savings through engagement with customers who have the highest water usage. During the 2019-2020 meteorological drought that resulted in restrictions from May 2020 to October 2021, these customers were supportive of investigating ways to reduce their consumption. As with residential customers, discretionary uses by non-residential customers are also subject to mandatory water restrictions.

Drought triggers

Watercare has a drought warning system in place for its bulk water storage system. The combined TSS level for its metropolitan surface water storages is used as an indicator of drought risk and is routinely monitored against drought trigger levels¹. Figure 2 shows the seasonally adjusted trigger levels for each phase of drought response, including an initial phase (drought preparedness) for Watercare to ramp up drought planning, preparation and communication. This graph is revised regularly as part of normal planning cycles to reflect changes in population and supply sources. These trigger levels may be updated independent of this drought management plan. Drought triggers for applicable non-metropolitan customers on stand-alone supplies are provided in **Appendix 4**.

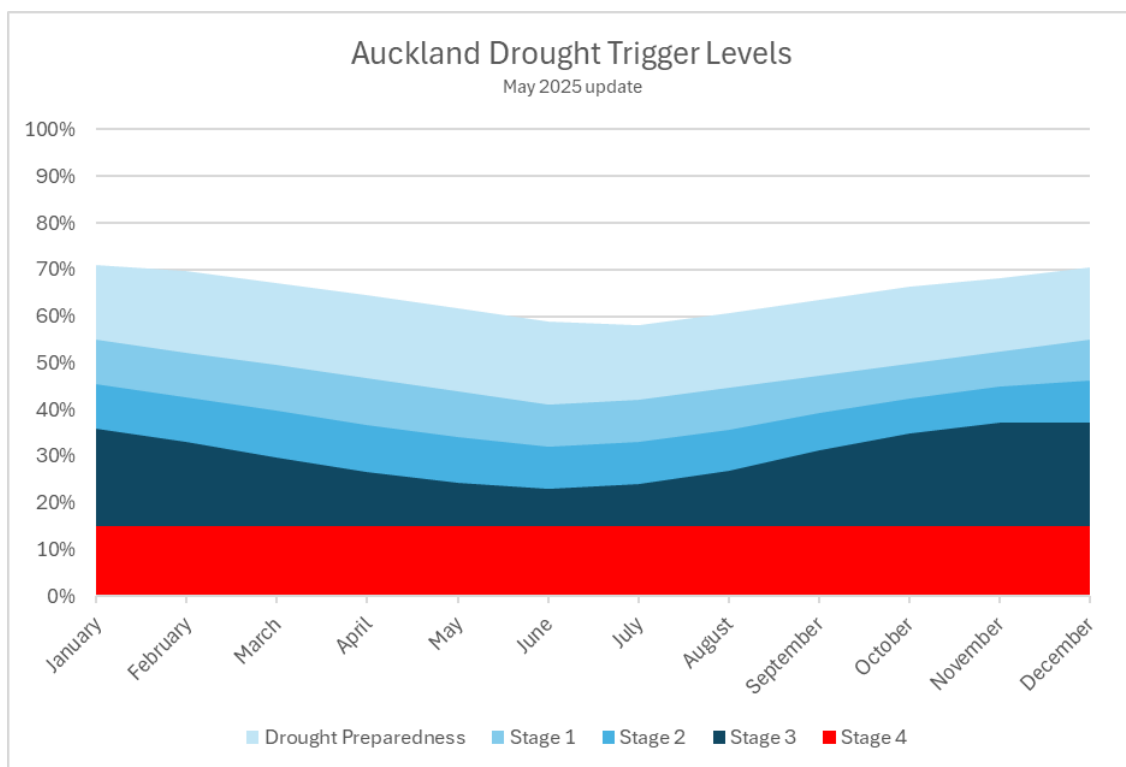


Figure 2: Auckland metropolitan drought trigger levels based on total system storage
(updated May 2025)

The TSS trigger levels incorporate the reduction in demand required to ensure there is no system failure due to shortage of water. The following assumptions were made in the calculation of these trigger levels.

- Dry weather demand is higher, including increased demand for tankered water for non-reticulated domestic use.
- The Waikato WTP, located at Tuakau, follows historic reliability.
- There is variation during summer/autumn historical low flow periods.
- There are four weeks of lead time for savings attributable to particular water saving measures to be realised.
- Current maximum outputs of storage lakes and WTPs were used.

¹ Although the TSS percentage is the metric used for drought response triggers, water from other sources, e.g., Waikato River, is part of the model and therefore factored into the rate of TSS depletion during hydrological drought.

Objectives and targets

The Auckland Water Strategy (AWS) 2022-2050 aims to sustainably reduce water demand to a lower baseline for Auckland by improving water use data, optimising network pressure, reducing losses, and increasing residential, community and commercial water efficiency. Overall, the AWS is targeting a gross per capita consumption² of 247 L/p/d by 2030. This DMP assumes that the AWS savings will be achieved as part of the Business-as-usual (BAU) and drought preparedness phases, outside of water restrictions.

As dam levels can fall very quickly in dry periods, a phase of ramped up drought preparedness activities is triggered first. Drought preparedness includes communications campaigns aimed at raising awareness of impending water scarcity and encouraging the voluntary uptake of water saving measures. The more successful the voluntary stage is, the longer Aucklanders can defer, or even avoid, the introduction of mandatory water restrictions, should the drought continue. The performance objectives and total savings target of 5% per drought stage remain unchanged from the previous DMP, as summarised in Table 1. Water savings realised at each phase may exceed these targets, and if so, place the community in a better water security position.

In Stage 1, **mandatory** outdoor water restrictions are introduced for **residential customers** and **voluntary** demand reduction targets for **non-residential customers**. In Stages 2 and 3 more restrictions are introduced progressively. The savings are incremental and cumulative. The 5% steps in savings targets appear uniform but it is acknowledged that reducing demand becomes progressively harder, once the more discretionary savings in outdoor water use have been achieved. Restriction measures and their expected outcomes must be easy to implement, measure, monitor and communicate widely, demonstrating effectiveness, equity and fairness. The accuracy of measuring savings over such short time steps, combined with the low resolution of end-use demand, are inadequate to fine-tune restrictions.

Stages 2 and 3 will trigger:

- introduction of **mandatory** restrictions for **non-residential** customers,
- further restrictions on *outdoor and/or non-core-business related uses of potable water* for **all customers**, and
- strong promotion of *indoor water use efficiency* to encourage behaviour change and wise water use.

² Gross consumption is the volume of treated water produced each day divided by the Auckland population. As it includes non-residential consumption and non-revenue water, it is not a measure of everyone's domestic consumption per day. The Auckland Water Strategy's longer-term target is to achieve 225 L/p/d gross consumption by 2050.

Table 1: Savings targets per drought stage

Phase	Performance objective	Water saving measures	Savings target per stage	Cumulative savings
BAU combined with drought preparedness	AWS targets	Voluntary	No target due to savings being voluntary	New baseline
Stage 1 restrictions	5.0% probability of occurring	MILD Mandatory residential and voluntary non-residential	5%	5%
Stage 2 restrictions	2.0% probability of occurring	MEDIUM Mandatory residential and non-residential	5%	10%
Stage 3 restrictions	1.0% probability of occurring	HIGH Mandatory residential and non-residential	5%	15%
Stage 4 restrictions	0.5% probability of occurring	CRITICAL	TBC	TBC

Note: Stage 4 restrictions are implemented as an emergency response when the drought standard (LoS 1) cannot be met. In this scenario, Stage 4 would be classified as an *infrastructure disruption* under the Civil Defence Emergency Management Act 2002 or its successor. This would result in Auckland Emergency Management (AEM) becoming the lead agency, supported by Watercare (outlined in Appendix 4). If Stage 4 were triggered, detailed planning for restrictions would be jointly led by AEM and Watercare. Community engagement on minimum acceptable levels of water supply led by Watercare would be critical to informing the scope and nature of any restrictions imposed.

The metropolitan drought management approach will also be applied to those non-metropolitan communities supplied from local stand-alone sources. The formal schedule of restricted water uses will be implemented in a consistently staged approach, using tailored drought response triggers to match the localised risk of shortfall.

Water Restrictions are outlined in Appendix 3.

Implementation of the DMP

This section provides a greater level of detail on the summary of drought management responses and phases to be adhered to before, during and after the drought.

Roles and Responsibilities

- **Watercare** – Responsible for implementing the Drought Management Plan. Table 2 shows who from Watercare should be involved in the implementation.
- **Auckland Council** – Has the legislative power to implement restrictions based on Watercare’s advice and issue warrants for Watercare staff. Table 3 outlines who from Auckland Council needs to be involved in the implementation.
- **Auckland Emergency Management (AEM)** – Responsible for planning and providing for emergency management in the Auckland Region
- **Taumata Arowai** - Requires water suppliers to have drought response plans included in the water supplier’s Drinking Water Safety Plan (DWSP). There is also a legislative requirement to provide a sufficient quantity of drinking water, and notify Territorial Authorities³ where the sufficient quantity of drinking water is at imminent risk.

Table 2: Watercare representatives to include but not limited to.

Incident controller
• Coordinates and controls the response.
Operations
• Head of Water/Water representative ○ Oversees water supply operations at treatment plant, transmission and network levels. • Water Resources ○ Responsible for optimising water supply system, weather forecasts, and TSS forecasting.
Communications representative
• To lead communication campaigns to public, communication with Auckland Council comms team and key stakeholders, advertising.
Strategic Relations
• To lead communication with elected members and other key stakeholders.
Planning Representative
• To outline any opportunities to pull forward current planning projects that will help from a supply point of view.

³ In the Local Government Act 2002, territorial authority means a city council or a district council named in Part 2 of Schedule 2. It includes unitary authorities, such as Auckland Council.

Iwi/Mana Whenua liaison
To communicate with relevant iwi/mana whenua about current situation and forecasting.
Commercial Customer Representative
Engagement with commercial customers and key non-residential water users.

Table 3: Auckland Council representatives

Healthy Waters and Flood Resilience
- Manager Regional Operations - Manage Auckland’s response to meteorological drought incidents in rural communities not connected to Watercare’s water supply network. - Work in partnership with Watercare on access to water supply points.
Auckland Emergency Management (AEM)
- AEM, General Manager - Auckland Emergency Management (AEM) would become progressively more involved as the total supply storage declines, participating in cross-agency planning at Stage 3, with provision to for the Controller assume the lead role if Stage 4 is triggered. Prior to Stage 3, AEM would be kept informed through communication channels but would not be actively involved in planning or decision-making as set out in Appendix 4.
Licencing and Compliance
- Manager Compliance - Responsible for administering compliance of Auckland Council bylaws⁴. - Can issue warrants for Watercare staff if needed during drought incident.
Parks and Community Facilities
- Head of Project Specialisation Office - Technical and specialist support on their asset sustainability. - Work in partnership with Watercare to reduce water consumption for watering parks and sports fields.

⁴ Under s.263 of the Local Government (Water Services) Act 2025 there is a requirement to review the Water Supply and Wastewater Network Bylaw by 27 August 2027 and implement the outcome by 27 August 2030.

1. Preparedness phase (Business-As-Usual)

The preparedness phase outlines what is needed under business-as-usual practices and to build resilience and reduction in vulnerability to drought. Tasks include but are not limited to the following:

- Drought Management Plan is up to date and been reviewed by interested parties
- Short and long-term forecasting of demand and source use to identify when the system may be susceptible to drought
- Investment in technologies such as smart meters for customer consumption and at key nodes in the distribution network to detect leaks
- Summer communication campaigns for using water wisely.

Whilst the preparedness phase is BAU, early identification of when the DMP may need to be implemented is key in managing dam levels, which are the trigger for Auckland's drought response. The earlier Watercare identifies the risk of water supply vulnerability to drought, the better prepared the city will be.

2. Monitoring and Early warning phase

The monitoring and early warning phase is triggered internally within Watercare before the Drought Response phase is reached. Actions to be completed are below:

- Assess water demand trends
- Short term forecasting of weather patterns
- Outline when trigger levels may be reached
- Establish early communication with Auckland Council and other stakeholders outlining potential susceptibility and when first drought preparedness trigger level may be reached.

NB: Auckland Council's Healthy Waters Department may identify a potential drought incident before Watercare's drought trigger levels are reached. This is due to the fact the Watercare is reliant on current TSS, not rainfall totals. It is possible for Auckland to have a significant hydrological drought without the need for Watercare to implement restrictions if TSS is near full capacity at the start of the drought.

3. Response phase

The Response phase begins when the first drought trigger (Drought preparedness) is reached and encompasses the entire period of the drought until it is exited. An incident management team will be stood up (as per Watercare's Incident Management Plan) when the trigger level for the drought preparedness phase is reached. Actions to be considered are outlined in Table 4.

Table 4: Actions to be considered, but not limited to, under each role.

Roles	Actions
Operations/Monitoring	• Optimise system operation through use of modelling and ISMM • Increase frequency of monitoring water availability data (weather, rainfall forecasts, storage levels, flow rates, groundwater, abstraction) and demand (consumption, leakage) during drought stages. • Increase monitoring of compliance sites (stream flow gauging etc)
Communications	• Increase consumer messaging around saving water based on current demand levels • Ensure our communication strategy accommodates forecast uncertainty and the interests of key stakeholders • Establish paid advertising campaign • Proactive media engagement
Commercial Customer Insights	• Initiate engagement with key and strategic non-residential customers • Regular monitoring of customer consumption • Targeted campaign to higher users
Stakeholder Engagement	• Continue engagement with stakeholders outlining current situation and forecasts • Conduct Executive walkover through current situation, planning and forecasting with revisits if needed.
Resourcing	• Identify gaps in resourcing to help accommodate increased workloads (for example: Water Treatment Plant operator capacity) • Establish the need for warranted officers with Auckland Council
Non-potable Sources	• Promote existing non-potable sources • Encourage on-site capture/reuse to enhance resilience • Mandatory use for certain commercial activities in later stages.
Planning	• Investigations into new sources/upgrading existing infrastructure • Fast track any current projects that may help reduce demand on the current water supply system.

Water Restrictions - Governance and Implementation

Auckland Council holds the legislative authority to implement water restrictions under its Water Supply and Wastewater Network Bylaw. It does so based on advice provided by Watercare.

Watercare acknowledges the importance of promptly communicating any potential need for restrictions to Auckland Council and key stakeholders. Early notification is essential to ensure timely and effective decision-making and more effective support for public health and emergency services.

To streamline this process and avoid rushed or reactive decisions, it is proposed that the Governing Body approve in principle the Drought Management Plan, which will include an outline of potential restrictions and other mitigation activities to be enacted during a drought.

This advance approval will provide Watercare, Auckland Council, and other key stakeholders with the certainty needed to prepare for these measures ahead of an active drought. It also enables the early implementation of certain activities in emergency situations, even before formal approval to implement restrictions is granted.

Under Clause 12 of the Water Supply and Wastewater Network Bylaw 2015 (as amended 25 November 2021)⁵, any restrictions must still be formally approved by the Governing Body through the appropriate reporting process. This reporting should include the following key points:

- Purpose of the restrictions
- Key context
- Current situation/analysis and advice
- Date restrictions will be imposed
- Geographic area of Auckland where restrictions will apply (Appendix 5)
- Estimated timeframe for lifting restrictions (if known)
- Responsible parties for enforcement

Once this Drought Management Plan is approved by the Governing Body, Auckland Council's Compliance and Regulatory team will begin issuing warrants to, and training key Watercare staff to enforce water restrictions under Clause 12(4) of the Bylaw. This will occur regardless of whether Stage 1 restrictions are imminent, ensuring warranted officers are ready when needed.

Mandatory restrictions will initially focus on education and public awareness, in line with Auckland Council's Compliance Policy. If stricter measures are required, Watercare will draw on the expertise of Auckland Council's Compliance and Regulatory team to support more robust enforcement.

⁵ Under s.263 of the Local Government (Water Services) Act 2025 there is a requirement to review the Water Supply and Wastewater Network Bylaw by 27 August 2027 and implement the outcome by 27 August 2030.

4. Exiting phase

The Exiting phase is initiated by an increase in dam storage, determined by using an adaptive management approach. Due to uncertainty in forecasts in weather, demand, and when the drought will be declared over, this phase does not have a prescribed trigger and requires an adaptive approach. It may be different each time depending on the circumstances and nature of the drought. The incident team will need to consider the following factors before recommending restrictions are removed:

- recovery follows a staged exit approach, specific triggers are not defined (although likely to follow the trigger levels, confidence in staying above trigger levels must also be taken into account)
- storage levels and hydrological conditions
- short and long-range weather forecasts
- time of year and historical seasonal trends
- trends in demand and consumption behaviours
- likelihood that restrictions will have to be reintroduced over the subsequent months to avoid de-activating and re-activating drought response measures
- economic impact of easing or continuing restrictions
- close collaboration between Watercare and Auckland Council is needed for formal declaration changes
- recovery actions include community engagement, public communications, and evaluation of the drought response.

5. Post drought evaluation

The DMP should be evaluated each time it has been implemented and updated so that it remains relevant, responsive, and improves over time. Business needs will determine the type of evaluation Watercare undertakes. Options include:

- Outcome evaluation – the degree to which the actions achieved their desired outcomes
- Impact evaluation – the degree to which implementation of the DMP met its overall objectives
- Process evaluation – the extent to which the DMP was implemented as designed.

All phases of the staged Implementation Plan are to be evaluated, including BAU/drought preparedness where planning work is important to the success of the drought stages. Sample questions Watercare may use for each of the above evaluation types are provided in Appendix 6. Watercare will tailor the evaluation questions to those where quantitative and qualitative data (if appropriate) are obtainable in the required time and quality. Watercare has the option of conducting evaluations internally or outsourcing the task.

To carry out an evidence-based evaluation, appropriate data must be available. By having clear links between the objectives of the DMP and the questions to be answered during the evaluation, the required monitoring and data collection becomes apparent.

Data on overall daily consumption are readily available via WTP production volumes adjusted for network storage changes. As Watercare undertakes further research into the breakdown of residential and non-residential consumption, better data will be able to inform evaluations of the effectiveness and impact of demand management on specific water use behaviours. Already, the rollout of smart meters is enabling real-time consumption data to be recorded.

Reporting of the water security situation throughout a drought is embedded in each stage. In other jurisdictions this has been shown to be successful in keeping the decision-makers, as well as the community, focused on water scarcity and how they can play their part. It often becomes part of daily conversations about the weather.

Evaluation reports will be the basis of continual improvement in drought management and water security more broadly. In support of the partnership approach, Watercare will share key evaluation findings with stakeholders.

Future updates

The DMP is to be reviewed every two years and/or after each drought event and/or after changes in Watercare's operating environment or planning framework or significant investment is made in infrastructure or the system. This provides assurance that the DMP remains relevant and effective.

Future DMP updates will address the objectives, targets and performance measures identified in the Auckland Water Strategy 2022-2050.

Information Sources - public

- Auckland's Water Supply Overview 2026 (*currently updating in conjunction with DMP*)
- Auckland Council: *Auckland Water Strategy 2022-2050*
- Auckland Council: *Auckland Water Strategy Implementation Plan 2022*
- Auckland Council: *Review of Auckland Council Controlled Organisations*, Independent Panel appointed by the Governing Body of Auckland Council, July 2020.
- Auckland Council: *Water Supply and Wastewater Network Bylaw 2015 (as amended 25 November 2021)*, Governing Body of Auckland Council, Resolution number GB/2021/149, 25 November 2021.
- BRANZ: *Auckland water use study – monitoring of residential water end uses*, Building Research Association of New Zealand (SB10, Paper 51) 2008.
- Watercare: *Asset Management Plan 2018-2038 (1 July 2018 to 30 June 2038)*.
- Watercare: *Asset Management Plan 2021-2041 (1 July 2021 to 30 June 2041)*.
- Watercare: *Auckland Metropolitan Drought Management Plan February 2020*.
- Watercare: *Demand Management Plan 2013-2016*.
- Watercare: *Incident Management Plan*, 25 November 2019.
- Watercare: *Statement of Intent 2020-2023*.
- Watercare: *Water Efficiency Plan 2021-2025*.
- Auckland Council: *Healthy Waters Drought Incident Plan v3.0*
- Department of Internal Affairs: *Water Services Act 2021*
- Department of Internal Affairs: *Civil Defence Emergency Management Act 2002*

Appendices

Appendix 1: Auckland Water Supply System Drought Yield⁶ (Current)

Supply source	Current drought yield (MLD)	Notes
Surface Water Storages		
Dams – Waitākere Ranges	97	Reflects the sustainable yield of the Waitākere dams
Dams – Hūnua Ranges (incl Hays Creek)	231	Reflects the sustainable yield of the Hūnua dams
Groundwater		
Kaawa Aquifer (Pukekohe)	5	
Run-of-river		
Waikato River	200	This is currently limited by plant capacity, max capacity is currently 225MLD but sustained flows are more likely to be 200MLD. There are currently two 150 MLD resource consents which reduce by 15% during low flow periods. Until the new Waikato A WTP and pipeline are constructed there are no restrictions on the take.
Conjunctive Use⁷		
Conjunctive use	~10-20	The yield increases when the system is used as a whole (i.e. treated as one source).
Total	553	See notes above

NB: Onehunga aquifer has not been included in the current yield as it is out of service due to water quality issues, and will be included when it is back to being operational. There is also a reduction yield from the recent DMP at Waikato due to the operational limits currently in place at Waikato WTP (unable to treat more than 225ML/d).

⁶ The yield of Auckland's metropolitan water supply system under a 1/100 year drought event with 15% residual storage at the end of the drought event.

⁷ The metropolitan water supply system is interconnected, meaning that source abstraction can be determined based on source availability and cost rather than localised demand.

Appendix 2: Drought Restrictions table - Outdoor

Category of Response	Sub-Category	Drought preparedness	Stage 1	Stage 2	Stage 3	Stage 4
Water Savings Target	From baseline	Voluntary	5%	10%	15%	TBC
Water Use Restrictions – Outdoor	Residential		Cannot Use an outdoor hose unless it has a trigger nozzle and is attended	Cannot - Use an outdoor hose or water blaster unless it is for a health, safety, emergency or biosecurity reason - Use an irrigation system	Cannot - Use an outdoor hose or water blaster unless it is for a health, safety, emergency or biosecurity reason - Use an irrigation system	Cannot Use potable water outdoors
	Commercial		Voluntary savings Commercial water savings through voluntary water-use audits, efficiency improvements, leak detection, and adoption of water-saving technologies	Cannot - Use an outdoor hose or water blaster unless it is for a health, safety, emergency or biosecurity reason - Operate a vehicle wash unless it uses 100% recycled water or non-potable water - Water sports fields or plants unless an irrigation system is fitted with soil moisture or rain sensors	Cannot - Use an outdoor hose, water blaster or irrigation system unless it is for a health, safety, emergency or biosecurity reason - Operate a vehicle wash unless it uses 100% recycled or non-potable water - All outdoor water use is to be non-potable water	Cannot - Use an outdoor hose, water blaster or irrigation system unless it is for a health, safety, emergency or biosecurity reason - Operate a vehicle wash unless it uses 100% recycled water or non-potable water - All outdoor water use is to be non-potable water

Appendix 2: Drought Restrictions table - Indoor

Category of Response	Sub-Category	Drought Preparedness	Stage 1	Stage 2	Stage 3	Stage 4
Water Savings Target	From baseline	Voluntary	5%	10%	15%	TBC
Water Use - Indoor	Residential		Voluntary Reduce indoor water use	Increased Reduce indoor water use by at least 24 litres per person each day (2 minutes less per shower)	Increased Reduce indoor water use by at least 36 litres per person each day (3 minutes less per shower)	Significant Reduce indoor water use by at least 40 litres per person each day (4 buckets)
	Commercial		Voluntary Reduce indoor water use	Increased Reduce indoor water use by at least 5%	Increased Reduce indoor water use by at least 15%	Significant Reduce indoor water use by at least 20%

General provisions:

- Managers of public open spaces, e.g., sporting fields, parks and gardens, are assumed to already be engaging with Watercare to reduce potable water consumption for watering and other outdoor uses.
- No unattended hosepipes for any purpose once restrictions are imposed.
- These restrictions also apply to the use of water from cisterns and tanks filled from Watercare's drinking water supply network.
- Alternative water sources such as rainwater, stormwater, and recycled water may be used for the restricted water uses at any time.
- 'Vehicles' include all types of cars, trucks, buses, rolling stock, trailers and boats.

Appendix 3: Non-metropolitan area drought triggers

Of non-metropolitan supplies, only Wellsford and Helensville/Parakai have drought triggers defined by river flow rates or dam storage capacity (see tables below). The other non-metro communities – Warkworth, Snells/Algies, Muriwai, Bombay and Waiuku – draw their supplies from groundwater under allocation regimes and generally are not susceptible to short- or medium-term drought conditions. However, should the impact of dry weather lead to consumption that exceeds their specified allocation regime, Watercare may introduce measures to manage demand. There will be the need for discussion and agreement with interested stakeholders such as AEM, Healthy Waters and emergency services for when these thresholds/triggers may be met. Such discussions should be undertaken at the earliest identified moment possible.

Wellsford

Phase	Definition/Trigger	General Response
BAU / Drought preparedness	Inferred flow* in Hōteio River of 0.290 m ³ /sec @ Wilsons Road based on Gubbs Flow Station	Weekly review of the situation, incorporating data from Oldfields rainfall gauge, Hōteio flow gauge at Gubbs and weather forecasts. Flow gauging at Wilson Road to confirm inferred relationship.
Stage 1 restrictions	Inferred flow* in Hōteio River of 0.175 m ³ /sec @ Wilsons Road based on Gubbs Flow Station	As per Auckland Drought Management Plan.
Stage 2 restrictions	Inferred flow* in Hōteio River of 0.112 m ³ /sec @ Wilsons Road based on Gubbs Flow Station	As per Auckland Drought Management Plan.
Stage 3 restrictions	Inferred flow* in Hōteio River of 0.085 m ³ /sec @ Wilsons Road based on Gubbs Flow Station	As per Auckland Drought Management Plan.

* 7 day rolling average continuously below inferred flows for ten days.

Helensville and Parakai (subject to new consent requirements that may arrive April 2026)

Mangakura Dam 1 and Sandhills Spring supply raw water to the Helensville Water Treatment Plant, which supplies treated water to Helensville and Parakai. The storage lake behind Mangakura Dam covers about four hectares and has a catchment area of about 200 hectares.

The drought triggers apply if the Sandhills groundwater source is unavailable for a period exceeding four weeks. The most critical activity for this community is the re-instatement of the Sandhills source. The following table only applies if the Sandhills groundwater source is not available.

Phase	Trigger (Mangakura Dam storage)^
BAU / Drought preparedness	100%
Stage 1 restrictions	95%
Stage 2 restrictions	87%
Stage 3 restrictions	83%
Stage 4 restrictions	78%

^ Owing to short timeframes for storage depletion, multiple restriction stages could be triggered and implemented simultaneously.

Appendix 4: Watercare and AEM coordinated response.

Auckland Emergency Management (AEM) would become progressively more involved as the need for restrictions increases, participating in cross-agency planning at Stage 3 with provision to assume the lead role if Stage 4 is triggered. Prior to Stage 3, AEM would be kept informed through communication channels but would not be actively involved in planning or decision-making

In preparedness and Stages 1 and 2, Watercare will share information, insights, projects and anticipated escalation with Auckland Council (including AEM) and stakeholders.

In Stage 3 AEM will participate in joint drought response planning in preparedness to lead coordination of the response in Stage 4. Watercare will commence community engagement to support development of minimum acceptable levels of water supply under emergency conditions for recommendation to AEM.

In an Auckland metropolitan drought, Stage 4 restrictions are implemented as an emergency response when TSS falls to 15% as shown in Figure 2, or if thresholds are met within the Helensville/Parakai supply area as outlined in appendix 3. Stage 4 is classified as an infrastructure disruption under the Civil Defence Emergency Management Act 2002 and the Emergency Management Bill.

Auckland Emergency Management (AEM) becomes the lead agency when Stage 4 is triggered. Watercare will fully support AEM.

Lead Agency and Governance

Lead Agency: Auckland Emergency Management (AEM)

Controlling Authority: Auckland CDEM Group Controller (TBC) / Auckland Emergency Committee Regional Controller

At stage 4, AEM becomes responsible for coordination of the response with Auckland Council and central government partners.

Watercare's Role - Stage 4

At Stage 4, Watercare's Incident Management Team (stood up in Drought preparedness stage) will support the AEM-led response. These responsibilities will include, but are not limited to:

- Providing authoritative, real-time data on bulk water storage levels, inflows, demand, and forecast trends.
- Analyse and communicate system risks and time-critical thresholds.
- Advise AEM on the implications of restriction options on supply resilience.
- Support development of a shared operating picture for decision-making.
- Operate and optimise the water supply network under Stage 4 conditions.
- Implement agreed water restriction measures.
- Manage operational impacts across metropolitan and non-metropolitan supply areas.
- Identify and support prioritisation of critical customers and essential services.
- Watercare's recommendation on minimum acceptable levels of water supply under emergency conditions

AEM Role – Stage 4

AEM leads and coordinates the emergency response while relying on Watercare's technical leadership for water system-specific matters. Responsibilities include response coordination, emergency management decision-making, public information management, communications coordination, welfare considerations, and management of lifeline interdependencies.

Public Information and Community Engagement at Stage 4

Public information and engagement are coordinated through CIMS Public Information Management (PIM) arrangements. Auckland Council Communications form the core delivery arm, supported by Watercare communications and technical input.

Watercare leads engagement with communities on minimum acceptable levels of restrictions. AEM coordinates messaging and engagement across agencies and the relevant media platforms.

Watercare will lead public information and community engagement until the move to Stage 4. Planning for this engagement will begin at Stage 3.

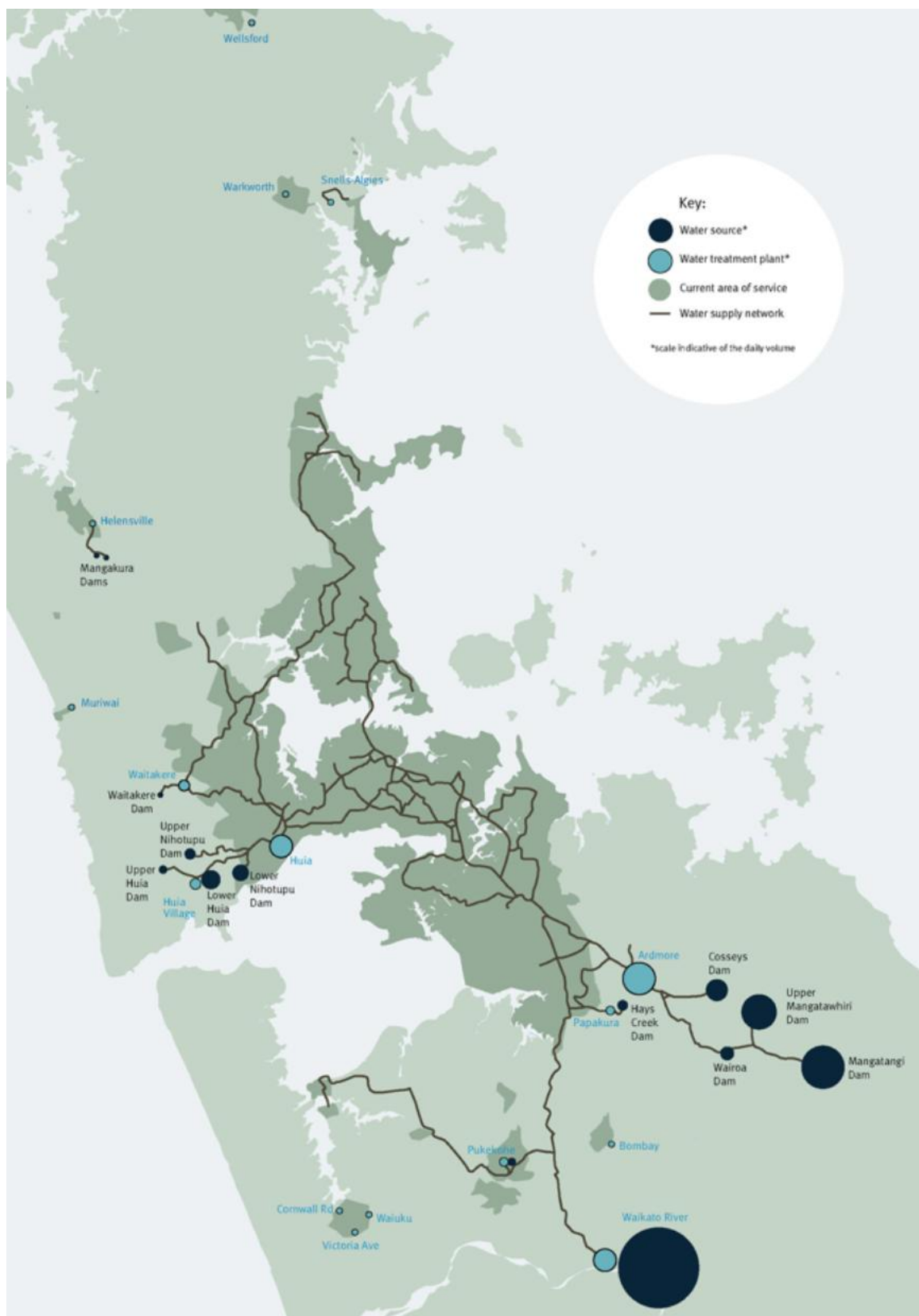
Staged Involvement Summary

- Drought Preparedness stage – Watercare IMT stood up
- Stage 1 –Information sharing between Watercare, Auckland Council (including AEM) and
- Stage 2 – Auckland Council and AEM informed of drought progression;
- Stage 3 – AEM included in planning discussions;
- Stage 4 – AEM becomes lead agency.

AEM stand down

AEM will stand down their incident team by using an adaptive management approach. Due to uncertainty in forecasts in weather, demand and when the drought will be declared over, this phase does not have a prescribed trigger and requires an adaptive approach as It may be different each time depending on the circumstances and nature of the drought.

Appendix 5: Auckland Bulk Water Supply System



Appendix 6: Post Drought Evaluation Options

Evaluation type	Sample evaluation questions
Outcome evaluation	Has a water end user analysis study been conducted and how effective will the outcomes be in informing future demand management programs?
	Have the staged engagement campaigns been developed and tested on a pilot group of customers for feedback and improvement? What was the feedback and how have the campaigns been improved?
	How appropriate were the trigger levels?
	How well did Stage 1 restrictions achieve 5% savings?
	How well did Stage 2 restrictions achieve a further 5% (overall 10%) savings?
	How well did Stage 3 restrictions achieve a further 5% (overall 15%) savings?
	Could the level of compliance with restrictions be improved and how?
Impact evaluation	How well did the implementation of restrictions prevent a worsening of water security?
	How well did residential customers respond to restrictions?
	Were there social impacts of restrictions that could be better managed in future droughts?
	Were there economic impacts of restrictions that could be better managed in future droughts?
	Were there environmental impacts of restrictions that could be better managed in future droughts?
	Were there cultural impacts of restrictions that could be better managed in future droughts?
Process evaluation	Did the drought management team find the DMP straightforward to implement or are there areas for improvement?
	How well did the community respond to messaging about water savings?
	How well did early engagement with Council result in restrictions being imposed when needed?
	Was Watercare adequately resourced to manage the drought in accordance with the Plan?