



Coliban  
WATER

# *Drought Preparedness Plan*

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## Document History and distribution

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# 1. Introduction

## 1.1. Purpose

The purpose of this document is to define actions to both prepare for and respond to water shortages (resulting not only from drought but other extreme circumstances such as water quality and emergency events) in the immediate and short-term. The document applies to urban systems only.

## 1.2. Requirements

This Drought Preparedness Plan has been prepared to satisfy the Statement of Obligations 2015 and guidelines for the development of urban water strategies as they pertain to drought preparedness plans (DELWP, 2021).

Part 6-4 of the Statement of Obligations states that the Corporation must review, and if necessary amend, its Drought Response Plan for Urban Systems at intervals of no more than five years; and within 12 months of either the lifting of any period of water restrictions or any major augmentation.

The Guidelines require that a Drought Preparedness Plan must be provided as an appendix to the Urban Water Strategy and must cover the two components of preparedness and response for each water supply system.

The drought preparedness component must:

- Define how the water corporation has and will continue to engage with customers, communities and stakeholders on planning and preparing for water shortages.
- List the priority community assets that might require water to be made available during periods of water shortage.
- Document how the corporation will work with Local Government to access alternative water sources where available.
- Identify proposed exemptions under each relevant stage of water restriction; and include principles for determining what are exempt users.

## 1.3. Recent water shortage events

Restrictions have not been imposed in any water supply system since the Millennium Drought.

Works undertaken in recent years to improve water security in each water supply system are identified in the Urban Water Strategy.

## 1.4. Key recent events that have led to change of supply

Changes to raw water quality have been experienced in recent years in the Goulburn System including the townships of Mysia, Dingee and Mitiamo as well as Goornong in the Campaspe System. These events have been managed by water carting. Water carting has also been employed in the Trentham system to address temporary treatment capacity shortfalls.

## 2. Drought Preparedness

Coliban Water undertakes the following to prepare for a water shortage:

### 2.1. Prepare an Urban Water Strategy

Every five years Coliban Water prepares an Urban Water Strategy that identifies the best mix of actions to provide water services in our towns and cities now and into the future.

The Urban Water Strategy includes plans for securing water supplies over the next 50 years given uncertainty with population, climate change and climate variability.

It includes both demand management and supply augmentation options, and timing for implementation, to ensure agreed levels of service are satisfied.

The Urban Water Strategy is available on the Coliban Water website.

### 2.2. Prepare an Annual Water Outlook

Each year Coliban Water prepares an Annual Water Outlook to inform our customers, stakeholders and the wider community on the current water resource position; a forward outlook for water resources over the coming year under a range of plausible climate scenarios; ability to meet agreed levels of service; and actions to improve system performance, if required, to meet agreed levels of service as identified in the Urban Water Strategy.

The Annual Water Outlook is available on the Coliban Water website.

### 2.3. Monitor and report on water resource position

Coliban Water actively monitors reservoir levels, inflows, releases and allocations to track the water resource position against the Annual Water Outlook.

Consideration is also given to the forecast supply based on the climate outlook to understand the future water resource position.

Reservoir inflows, levels and releases are reported on the website daily.

A summary of the resource position for each water supply system is published on the website each month.

Coliban Water also monitors raw water quality (including blue-green algae) to identify any risks to supply.

### 2.4. Adopt Permanent Water Saving Rules

Permanent Water Saving Rules are applied at all times unless water restrictions are in place.

Permanent Water Saving Rules are common-sense rules that help everyone to use water efficiently and avoid waste. They are available on the Coliban Water website.

### 2.5. Promote water saving initiatives

Customers are encouraged to save water by promoting programs to save water including:

- Target Your Water Use - a Victorian government water efficiency program for regional Victorian householders. It offers advice and activities to encourage the efficient use of water.
- Smart Water Advice that helps Victorian water corporations provide water efficiency information to customers.

- Smart Approved WaterMark which is an international water efficiency scheme that certifies products and services that save water.
- Water Efficiency Labelling and Standards scheme which can help to save water by purchasing water efficient products.

Other water saving initiatives adopted include:

- Providing advice to customers on wise water use (e.g. Smart Water Advice and Smart Gardens for a Dry Climate booklet).
- Encouraging customers to monitor their water use and check for leaks.
- Using media releases and social media platforms to increase community awareness and encourage customers to use water wisely.

Information on these programs is available on the Coliban Water website.

## 2.6. Maintain systems and infrastructure

Coliban Water's operating systems and procedures are in place to ensure effective and efficient delivery of water services e.g. Storage Operating Rules with triggers to manage water quantity (i.e. fill reservoirs and storage basins at the end of the spring) and quality.

Data loggers have been installed on water meters to identify opportunities to save water through customer leak repairs and improved water use habits.

## 2.7. Carryover to safeguard against possible low allocations

Carryover, which allows entitlement holders to retain ownership of unused water into the following season, is an important tool to ensure that the reserve trigger volumes can be satisfied. This is particularly important early in the water year before significant inflows have been received and where opening allocations are low. Each year, Coliban Water determines the volume to be carried over.

Unused allocation can be carried over in most systems, but the amount that may be carried over is different in each system (**Table 1**).

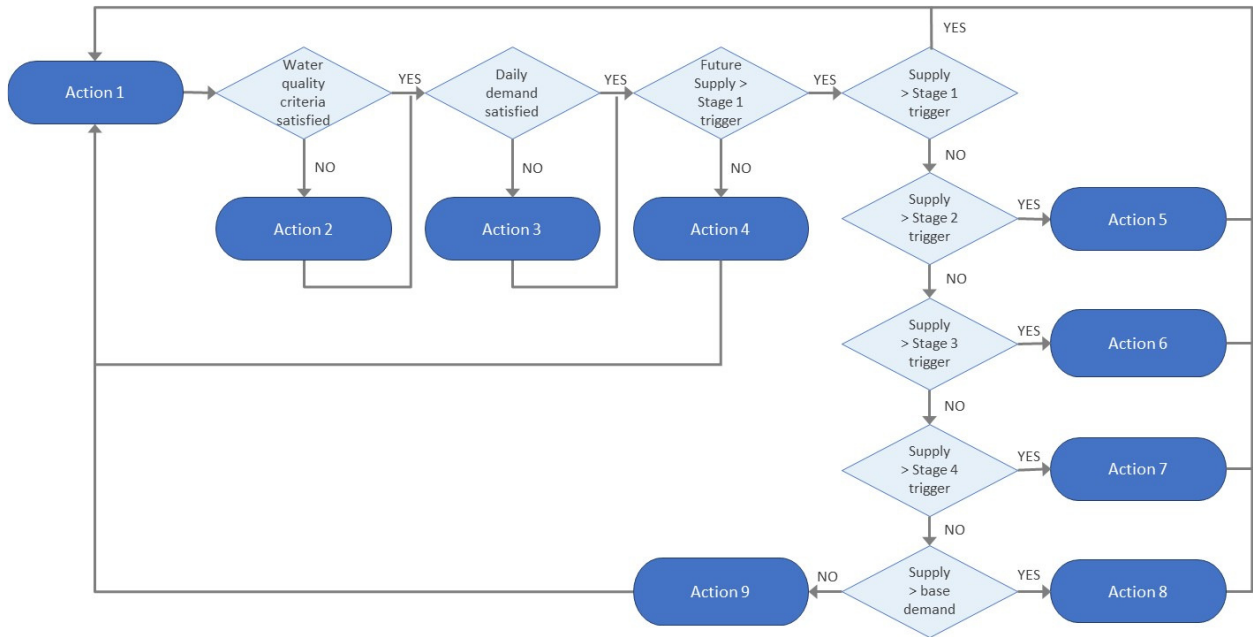
**Table 1 Carryover rules**

Water supply system	Carryover rules
Campaspe	Carryover is limited to 100% of entitlement volume for the bulk entitlement and water shares. There is a deduction of 5% of the volume carried over.
Coliban South	Carryover is not available, however under the bulk entitlement we may take an average annual volume of 50,260 ML over a period of 3 consecutive years
Coliban North	Carryover is limited to 100% of the entitlement volume for the bulk entitlement and water shares. There is a deduction of 5% of the volume carried over.
Elmore	Carryover is limited to 25% of the take and use licence volume.
Goulburn	Carryover is limited to 100% of the entitlement volume for the bulk entitlement and water shares. There is a deduction of 5% of the volume carried over.
Loddon Wimmera	Carryover under our Loddon Bulk Entitlement is limited to having no more than 820 ML each year inclusive of allocations. Carryover under our Wimmera and Glenelg Rivers Bulk Entitlement is unlimited.

Water supply system	Carryover rules
Murray	Carryover is limited to 100% of the entitlement volume for the bulk entitlement and water shares. There is a deduction of 5% of the volume carried over.
Trentham	Carryover is not available, however under the Bulk Entitlement we may take an average annual volume of 120 ML over period of 3 consecutive years

### 3. Drought Response

Figure 1 outlines the process to prepare for, and respond to, water shortage in the immediate to short-term. It identifies key management decisions to be made, and when action is required.



**Figure 1 Plan of Action**

The response for each action is outlined in Table 2 and further described in subsequent chapters.

The appropriate response will be decided by the relevant operational manager.

Coliban Water's Water Resources Committee is responsible for decisions on trade, restrictions and exemptions.



**Table 2: Actions to respond to water shortage**

Action	Trigger	Responses
1	Monitor and report on water resource position monthly	✓ Monitor and report on water resource position as described for drought preparedness (refer chapter 2)
2	Water quality criteria not satisfied	<ul style="list-style-type: none"> <li>✓ Assess impact of water quality on supply (i.e. quantity and possible duration) to determine appropriate response (refer chapter 4)</li> <li>✓ Inform community of issue and expected duration of event</li> </ul>
3	Inability to meet daily demand from water treatment plant	<ul style="list-style-type: none"> <li>✓ Assess impact on meeting demand (i.e. supply, pressure and possible duration) to determine appropriate response (refer chapter 4)</li> <li>✓ Inform community of issue and expected duration of event</li> </ul>
4	Forecast supply predicted to fall below Stage 1 trigger in current water year	<ul style="list-style-type: none"> <li>✓ Consider trading sufficient allocation to reduce the likelihood of restrictions (refer chapter 5)</li> <li>✓ Consider need to source water from alternative water supply (refer chapter 5)</li> <li>✓ Consider need to engage more actively with community to encourage water conservation (refer chapter 5)</li> </ul>
5	Forecast supply below Stage 1 trigger	<ul style="list-style-type: none"> <li>✓ Consider introducing Stage 1 restrictions (refer chapter 4).</li> <li>✓ Inform community of resource position and Coliban Water's response</li> <li>✓ Engage with Local Government and other open space managers on impact of restrictions on priority community assets that might require water (refer chapter 6)</li> </ul>
6	Forecast supply below Stage 2 trigger	✓ In addition to above responses, consider introducing Stage 2 Restrictions
7	Forecast supply below Stage 3 trigger	<ul style="list-style-type: none"> <li>✓ In addition to above responses, consider introducing Stage 3 Restrictions</li> <li>✓ Consider bringing forward longer-term augmentation or demand reduction options identified in the Urban Water Strategy</li> </ul>
8	Forecast supply below Stage 4 trigger	✓ In addition to above responses, consider introducing Stage 4 Restrictions
9	Insufficient available water to satisfy 12 months base demand	✓ Consider emergency measures (refer chapter 4)

## 4. Triggers for action

### 4.1. Water quality criteria not satisfied

Where the water quality criteria are not satisfied, as determined by the water treatment plant operator, Coliban Water will assess the impact of water quality on supply (i.e. quality and duration) to determine the appropriate response.

For example, the water treatment plants have the capacity to manage blue-green algae or black water events, but the output rate can be reduced. In this case the daily demand may not be met and action may be required.

Options to satisfy demand requirements are detailed in chapter 5 for each water supply system.

### 4.2. Inability to meet daily demand

Where there is insufficient supply to meet short-term demand, perhaps due to infrastructure constraints or extended periods of high demand, then action may be required.

Options to satisfy demand requirements are detailed in chapter 5 for each water supply system.

### 4.3. Forecast supply predicted to fall below Stage 1 trigger

The forecast supply is compared to the staged triggers to determine if action is required.

The forecast supply is comprised of the available water (i.e. the volume of water held) plus forecast water (i.e. the volume of water expected to be received by the following February (Coliban Water, 2020b)).

Where the forecast supply is predicted to fall below the Stage 1 trigger in current water year, then consideration is to be given to increased engagement with customers and the wider community and purchasing allocation i.e. trade.

These actions are detailed in chapter 5 for each water supply system.

### 4.4. Staged restrictions

Triggers for staged restrictions in 2020/21 are presented in **Table 3**.

**Table 3 Triggers for staged restrictions in 2020/21**

Water Supply System	Stage 1	Stage 2	Stage 3	Stage 4
Campaspe	85	81	76	72
Coliban North	26,884	25,540	24,196	22,851
Coliban South	32,516	30,890	29,265	27,639
Elmore	130	124	117	111
Goulburn	1,105	1,050	995	939
Loddon Wimmera	640	608	576	544
Murray	4,481	4,257	4,032	3,808
Trentham	146	139	132	124

The decision to introduce restrictions is made by the Coliban Water's Water Resource Committee and is to be informed by available water, climate outlook, forecast supply, time of year, demand trends as well as other economic and social considerations.

The Stage 1 trigger is based on the average annual unrestricted demand under Permanent Water Saving Rules for the previous three water years. Subsequent triggers are based on anticipated reductions in demand, which have been informed by a review of estimated water savings under restrictions (Coliban Water, 2020a).

There is significant uncertainty of water savings under restrictions due to lack of data and observed low bounce back since previous restrictions. However, in general water savings are expected to fall within the ranges provided in Table 4.

**Table 4: Estimated effect of restrictions on annual demand**

Restrictions	Anticipated water savings %
Stage 1	2 to 5%
Stage 2	5 to 10%
Stage 3	10 to 15%
Stage 4	15 to 20%

Triggers are revised annually to account for changes in system demand over time.

Water Restriction By-law 12 details the restriction on water use under each stage of restrictions.

Restrictions may be eased in the reverse order as the available water increases and with consideration of inflow rates, climate conditions, time of year and demand trends to reduce the likelihood of reintroduction of restrictions in the short-term.

#### **4.5. Emergency measures**

In accordance with the Water Restriction By-law, Coliban Water may declare emergency measures to further restrict water consumption in specified areas where it is considered that Stage 4 restrictions are insufficient to reduce consumption to a level adequate to meet future demands at the that level of consumption.

These measures will be determined by the Water Resources Committee as necessary.

The emergency trigger is 12 months of base (i.e. average monthly use in winter) demand. The available water is compared to the emergency trigger to determine if action is required.

## 5. Response to water shortage

### 5.1. Supply options

Immediate to short-term actions to respond to a water shortage include:

#### Water carting

Water carting may be a viable option for smaller towns, or limited parts of larger systems.

Water carting has been employed to provide water to Mysia, Dingee and Mitiamo in the Goulburn System to manage water quality impacts in recent years. Water carting has also been employed at Trentham due to infrastructure constraints in the past.

Water can be carted from other nearby treated water sources. Care is taken not to transfer the water shortage problem to another water supply system by water carting.

#### Trading

Allocation may be traded from a Coliban Water account in a different system, but if this is not possible then allocation may be purchased from the water market subject to trading rules which may be viewed on the Victorian Water Register website.

Water Supply System	Water market
Campaspe	Southern Connected Basin
Coliban South	N/A
Coliban North	Southern Connected Basin
Elmore	Lower Campaspe Valley Water Supply Protection Area
Goulburn	Southern Connected Basin
Loddon Wimmera	Southern Connected Basin Grampians Wimmera Mallee Water Rural Pipeline
Murray	Southern Connected Basin – Allocation can be traded into and out of Murray Zone 7 subject to trade limits
Trentham	Central Victorian Mineral Springs Groundwater Management Area

#### Alternative water supply

Alternative water supply is available as follows:

Water Supply System	Alternative water supply
Campaspe	None
Coliban South	None
Coliban North	Waranga Western Channel
Elmore	None
Goulburn	Campaspe River for Rochester
Loddon Wimmera	Loddon River for Laanecoorie and Bridgewater systems
Murray	None
Trentham	None

Longer-term options to augment supply identified in the Urban Water Strategy, may be brought forward if required.

Readiness options include construction of a connection from the Superpipe to Castlemaine and groundwater augmentation at Trentham and Kyneton.

## 5.2. Demand reduction options

Demand reduction options to address water shortage are presented Table 5.

**Table 5 Demand reduction options**

Option	Description
Community engagement	<p>Undertake community engagement to encourage water conservation.</p> <p>This may include, but is not limited to, reinforcing Permanent Water Saving Rules and other water saving initiatives as listed on the Coliban Water website <a href="http://www.coliban.com.au">www.coliban.com.au</a></p> <p>Increased communications could include, but are not limited to:</p> <ul style="list-style-type: none"> <li>• Media releases and other social media platforms to inform customers of the resource position and need to conserve water</li> <li>• A dedicated web page reporting resource position and customer use</li> <li>• Direct customer communications including letters, emails and SMS</li> <li>• Targeted promotions</li> </ul>
Water restrictions	Water restrictions may be imposed to reduce demand to conserve water when triggered.

Current and future measures to reduce demand are identified in the Urban Water Strategy. Future measures may be brought forward if required.

## 6. Exemptions

Exemptions may be granted in accordance with Water Restriction By-law 12, or as described in an approved Water Use Plan.

Consultation is to be undertaken with Local Government to confirm community assets that might require water to be made available during periods of water shortages and identify integrated water management initiatives to reduce demand on potable supplies. This will include discussion on all supply options for sites, including recycled water.

In times of water shortage Coliban Water will:

- Reconfirm with relevant groups at the time that these assets remain relevant of special consideration
- Use the Water Restriction By-Law 12 and the guidelines for exemptions as the basis for providing water to identified assets.

Community assets will include, at a minimum, watering of ovals under Local Government water use plans during water restrictions, and where possible other assets providing important liveability functions, such as public open spaces / gardens and recreational water bodies that need to be watered.

## References

Coliban Water, 2012. Water Restriction By-law 12. Coliban Water, Bendigo.

Coliban Water, 2020a. Estimated Water Savings Under Restrictions. Coliban Water, Bendigo

Coliban Water, 2020b. Assessing System Performance. Coliban Water, Bendigo

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