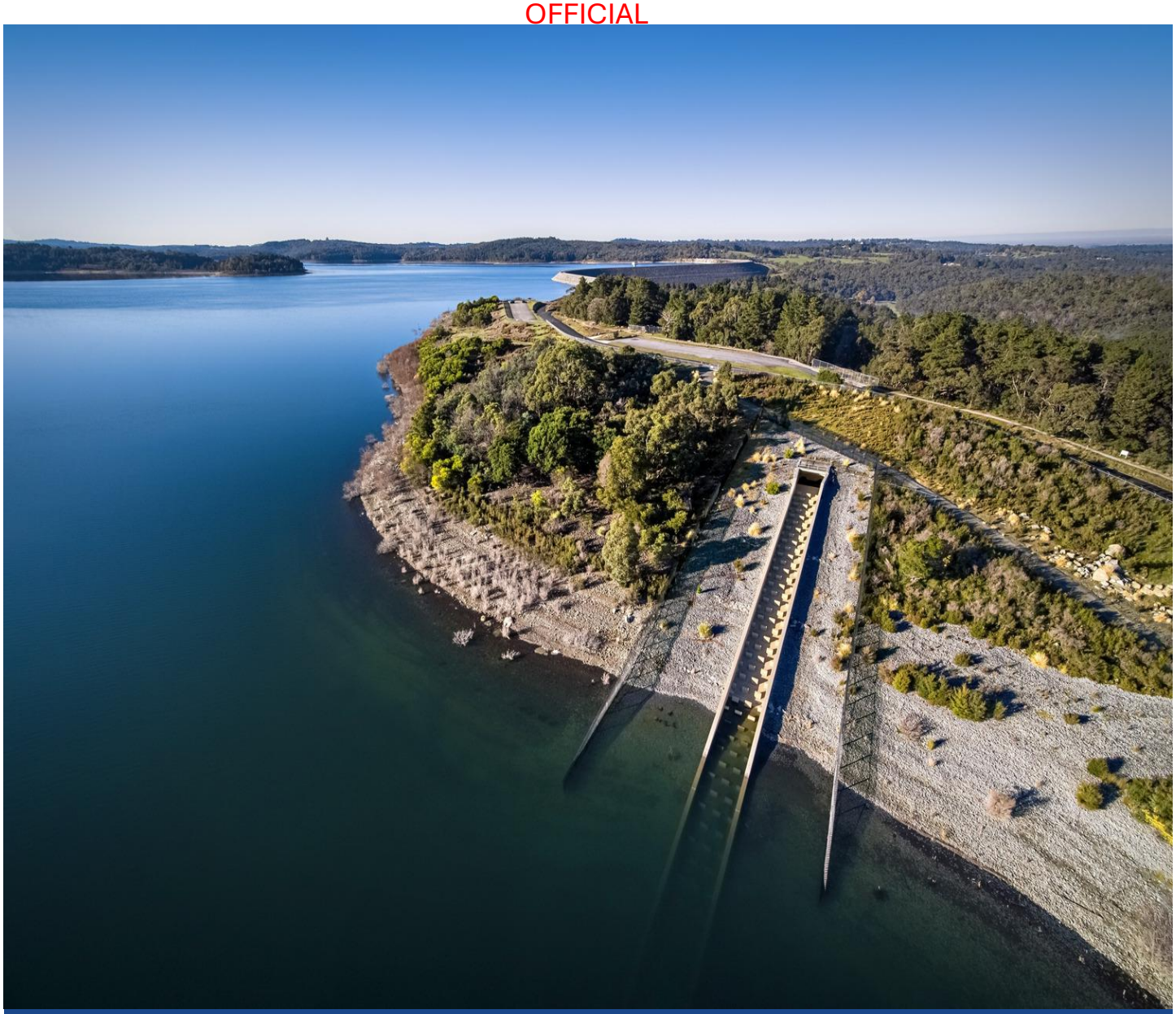

2026/27 Desalinated Water Order Advice

Technical Analysis

March 2026

Table of contents

Summary

1. Melbourne Water is required to provide desalinated water order advice (the Advice) to the Victorian Government via the Department of Energy, Environment and Climate Action (DEECA) by 1 March every year.

2. The Advice is based on an assessment of principles (paragraph 32) and considerations that seek to balance the water security benefits of a desalinated water order volume against the costs and risks given the uncertainty of future inflows into harvesting storages.

3. Melbourne Water worked with the metropolitan water businesses, which hold the Bulk Entitlements to water from the Victorian Desalination Project (VDP), to provide the order advice.

4. The desalinated water order advice provided by Melbourne Water to the Victorian Government was:

    - The required annual water volume for the 2026/27 supply period should be 150 GL.
    - There are no constrained months in the 2026/27 supply period.
    - Non-binding forecasts of 150 GL in the 2027/28 and 150 GL in the 2028/29 supply periods are appropriate.

Purpose

5. This report provides technical analysis supporting the 2026/27 desalinated water order advice.

Context

Background

6. The Melbourne water supply system includes 10 major reservoirs and associated catchments that are used to harvest and store water, a network of pipelines, pump stations, and tanks that are used to supply water to households and businesses across Melbourne and the surrounding region. The total system storage capacity of the 10 major reservoirs is 1,812 gigalitres[1] (GL). The VDP, located near Wonthaggi, is connected by an 84 kilometre underground transfer pipeline to Cardinia Reservoir in the Melbourne water supply system. The VDP is operated by Watersure under contract to AquaSure, and can supply up to 150 GL/year, or around one third of Melbourne's current annual water demand. Bulk entitlements to water produced by the VDP are held by Melbourne's metropolitan water businesses (Greater Western Water, South East Water and Yarra Valley Water).

7. Melbourne's water storages supply water to the metropolitan water businesses; the regional water businesses (including Barwon Water, Gippsland Water, South Gippsland Water and Westernport Water); the Victorian Environmental Water Holder (VEWH) for the environment; and Southern Rural Water's irrigation customers.

8. Desalinated water is an important component in the portfolio of options to manage Melbourne's water security. Ordering desalinated water, alongside the State Government commitment to increase regional access by creating a shared south-central region pooled resource[2], also supports the security of the regional water corporations connected to the Melbourne system.

9. At 1 March 2026, around 53% of the water stored in Melbourne's water supply system was available for greater Melbourne. The rest was held by other water entitlement holders such as regional water businesses, the Victorian Environmental Water Holder (VEWH) and Southern Rural Water or is water that is inaccessible under normal operating conditions.

10. Melbourne's water storages were at 69.6% as at 1 March 2026, 11.2% lower than at the same time in 2025.

11. The contribution of desalinated water orders and above average streamflow conditions over the four years from 2020-2023 resulted in storages increasing over this period of time with storages still at or near their maximum operating capacities at the beginning of 2024. However there has been a significant decline in storage since then due to below average inflows, above average temperature

[1] 1 gigalitre = 1 billion litres (the equivalent of around 400 Olympic swimming pools). In 2024/25, total demand from the Melbourne System was 509 GL of water.
[2] Refer to the Victorian State Government's *Central and Gippsland Region Sustainable Water Strategy (2022)*

and high water demand. Without the delivery of the 50 GL order in the current year (2025/26), storages would be 2.7% lower.

12. During severe drought years such as 2006/07, storage volumes can decline by about 16-24% of total system storage capacity in a 12-month period, depending on the desalinated water intake. Between October 2024 and September 2025 Melbourne's Storage dropped by around 17% (from 90% to 73%) - the biggest annual decline since the Millenium Drought (during which storages fell to about 25%). As the annual supply capacity of the VDP can only meet a proportion of water demand, during drought periods water security is dependent on the volume of water already accumulated in water storage at the start of these periods.

13. The aim of water supply system planning and operations is to use both catchment water sources and the VDP to build and maintain a buffer of water in storage while managing short and long term pricing impacts. A sufficient storage buffer is especially critical during severe drought periods. These periods could last for more than a decade, as experienced in the 1997-2009 Millennium Drought. Thomson Reservoir provides around 60% of total system storage capacity and provides a 'drought reserve' for Melbourne and the surrounding region against dry streamflow conditions. Thomson Reservoir can only fill from natural inflow and is a large reservoir relative to its average annual inflow - the mean annual streamflow into the reservoir is about one fifth of its capacity. As such Thomson has historically only filled to capacity in five of the forty-two years since it was completed in 1984. Operation of the VDP reduces water transfers from Thomson and other reservoirs and therefore is key to enabling the water supply system to manage water volumes from year to year and over extended time frames.

14. Since the VDP was completed in 2012, 505 GL of desalinated water has been delivered from 2017 up to January 2026. Desalinated water orders since 2017 have significantly contributed to the recovery in total system storage since it was at 49.6% in May 2019.

15. Figure 1, on the following page, shows historical water storage levels since 2012. The assessment of which drought response zone the system is in for the next twelve months (see paragraph 28) is undertaken at 30 November each year. The current drought response zones came into effect in 2022, and prior to this there were three zones instead of four.

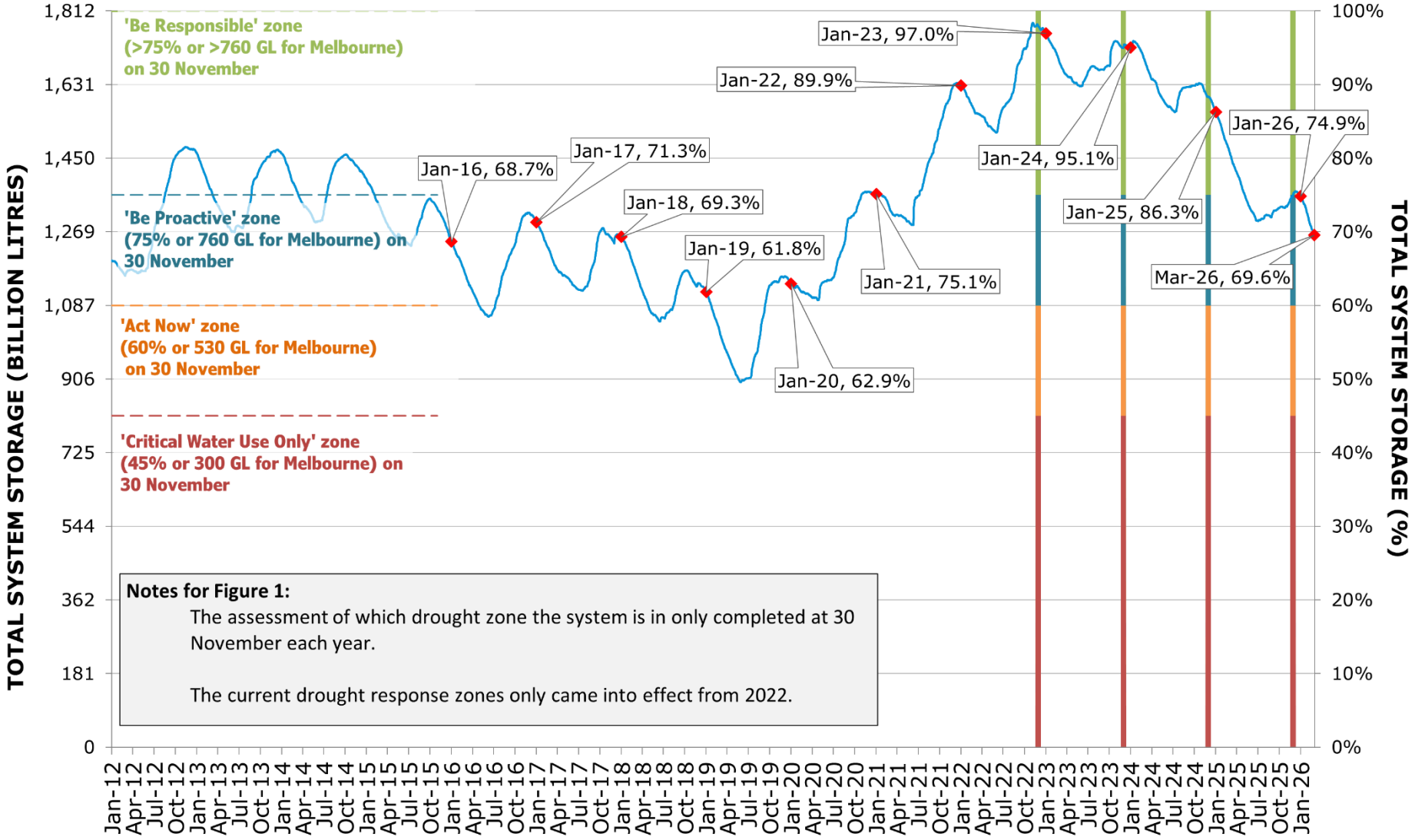

Figure 1: Historical water storage levels from January 2012 to March 2026

16. The 2026/27 desalinated water order advice was prepared in the context of a period of below average inflows since the previous advice was provided in February 2025. This has resulted in storages in the Melbourne water supply system being at their lowest point for the start of year since 2021.

17. Drier conditions and low storages at the start of 2026 have also been observed in other water supply systems of regional areas connected to the Melbourne system.

18. Storages in the larger Greater Western Water supply reservoirs of Rosslynne and Merrimu Reservoirs, owned by Southern Rural Water, were at 55% and 61% respectively as at 15 February 2026, which were 20% and 13% lower than at the same time in 2025. Greater Western Water has an 80% share of storage in Merrimu Reservoir and 86% share of storage in Rosslynne Reservoir.

19. Geelong's water storages, owned and operated by Barwon Water, were at 40.4% on 16 February 2026, which is 7.9% lower than at the same time in 2025. Barwon Water uses the Melbourne to Geelong Pipeline (MGP) to help safeguard year-round water supply to its customers under dry conditions.

20. South Gippsland Water and Westernport Water both have regional areas connected to the 84-kilometer two-way pipeline between the VDP and Melbourne Water's Cardinia Reservoir, and can both be supplied directly with desalinated water when the VDP is in operation. South Gippsland Water's storage volume for their connected Lance Creek system was at 75% as of 16 February 2026, 10% higher than the previous year. Westernport Water's Candowie Reservoir was at 60% as of 10 February 2026, about 12% higher than the previous year.

21. Over the past eleven years (2014-2025):

    - Population in Melbourne supplied by the three metropolitan water businesses has grown to a total of approximately 5 million people, with about 38,000 new connection in the past year.
    - Average daily residential water use has risen from 160 litres per person per day in 2014/15 to 169 litres per person per day in 2024/25.
    - Due to population growth and additional supply needs to regional areas, water demand on the Greater Melbourne system has grown by approximately 17% over eleven years, from 433 GL/year in 2014/15 to 509 GL/year in 2024/25.

22. A greater volume of water in storage improves system resilience against variability in climate, demand and bushfires and enables deferring system augmentations, however, longer term dry conditions do still present a risk for the system. Higher, growing annual demands will result in storages providing less of a buffer to dry conditions over time.

Melbourne's strategic water resource planning

23. In 2023, Melbourne Water and the metropolitan water businesses published the *Greater Melbourne Urban Water and System Strategy*, which presents a system view of water resource management across Melbourne and the surrounding region over the following 50 years. The strategy includes long-term water supply outlooks for streamflow scenarios prescribed in the Department of Energy, Environment and Climate Change[3] (DEECA) *2020 Guidelines for Assessing the Impact of Climate Change on Water Availability in Victoria*.

24. These long-term streamflow scenarios under climate change show that the reliable yield of the water supply system is likely to decline over time. Although storages are currently at relatively high levels, the reliable yield from the surface water catchments within the water supply system is expected to fall. The VDP will be increasingly important in providing water security for Melbourne and connected regional areas for a growing population and in managing the impacts of the changing and variable climate. The timing and severity of future extended drought sequences is uncertain, so preparedness for such events requires planning and operating the water supply system to maintain the buffer of water in storage, subject to pricing impacts.

Desalinated water order advice

25. The State of Victoria is required to place a desalinated water order with AquaSure by 1 April each year under the *Project Deed* between the two parties. Prior to this, the *Water Interface Agreement* (between the Minister for Water, Melbourne Water, and the Secretary of DEECA) requires Melbourne Water to provide the State of Victoria (represented by DEECA) with the following desalinated water order advice by 1 March:

    a. Its opinion of the volume of desalinated water required for the next financial year (i.e. 2026/27).

    b. Its opinion of the constrained months[4] (if any) that it considers should be subject to a constrained month cap and the proposed volume of such caps.

    c. A non-binding forecast of the quantity of desalinated water required for the next two financial years (i.e. 2027/28 and 2028/29).

26. Melbourne Water worked with the metropolitan water businesses, which hold the Bulk Entitlements to water from the VDP, to coordinate the collaborative process to deliver the modelling and technical analysis required to support the development of the 2026/27 desalinated water order advice. Other water entitlement holders across the water grid were also consulted to ensure the advice reflected all forecast demands from the Melbourne system.

[3] The *Guidelines* were published by DEECA's predecessor, the Department of Environment, Land, Water and Planning.
[4] Subject to conditions specified in the *Project Deed*, the State may specify the maximum volume of desalinated water which can be delivered (i.e. a constrained month cap) during the months of August, September, October and/or November.

Water Outlook zones

27. The desalinated water order advice is a key annual planning activity for supporting the short and long-term water security for Melbourne and the surrounding region. The annual preparation of the advice follows the publication of the *Annual Water Outlook* (AWO) by Melbourne Water and the metropolitan water businesses around 1 December each year, and is linked to this process through the use of the Water Outlook zones in preparing the advice.

28. The metropolitan water businesses' Drought Preparedness Plans were reviewed in 2021 and specify a four-zone adaptive framework for monitoring water security based on the volume of water in Melbourne's storages on 30 November each year, as shown in Figure 2.

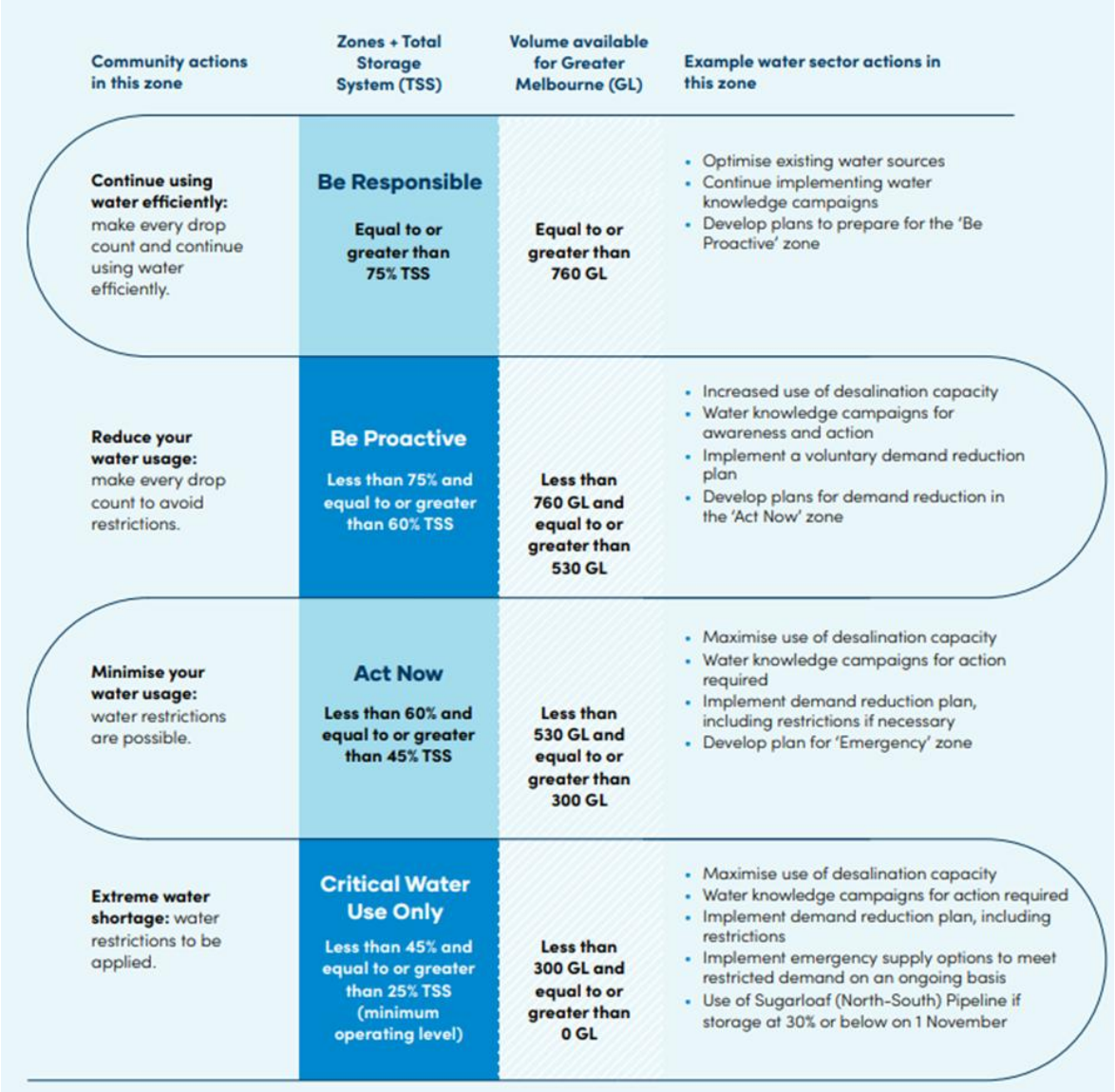

Figure 2: Annual Water Outlook zones from the metropolitan water businesses' Drought Preparedness Plans

As illustrated in Figure 1, the end of spring is typically when Melbourne's water storage volumes transition from filling during the cooler, wetter months, to falling during the warmer, drier months.

Notable features of the framework are:

- An AWO is published around 1 December each year by Melbourne Water and the metropolitan water businesses to document and communicate water security status and actions needed in the short to medium term with reference to the four-zone adaptive framework.
- When storages are in the Be Responsible Zone, storages are managed proactively for possible future drought events including ensuring water is used efficiently and drought response measures are developed.
- When storages are in the Be Proactive and Act Now Zone, actions are taken to ensure supply is available under severe and extended drought conditions for up to five years. Stages 1 and 2 of the metropolitan water businesses' water restrictions by-laws may also be used in these zones. However, given water restrictions can have significant social and economic impacts, other approaches (e.g. voluntary water efficiency programs) may be implemented initially if similar reductions in water use can be achieved.
- Actions are taken to ensure water storages do not enter the Critical Water Use Only Zone except in extreme circumstances. Stages 3 and 4 of the metropolitan water businesses' water restriction by-laws are available to be used in such a severe event.
- Water may be ordered from the VDP in any of the four zones. The amount ordered is based on order advice provided by Melbourne Water and the metropolitan water businesses each year following detailed analysis that considers and balances the five principles and other factors (discussed below).
- In the development of the desalinated water order advice, the Water Outlook zones are used to measure potential future water security by comparing projections of future water storage levels against the four zones.

29. The 2026 AWO for Melbourne, published on 23 December 2025, declared the system to be in the Be Proactive Zone. While total system storage was just above the 75% trigger (storages collectively held 75.1% at 1 December 2025), the total volume available to Melbourne was below the 760 GL trigger (745 GL was available to the Melbourne's metropolitan retail water corporations as of 1 December 2025).

30. In response to dry conditions, the 2026 AWO committed to providing updates at the end of each season. Each update includes an overview of system storage levels, customer water use and the likelihood of restrictions. The first update was released in March and is available to download on the Melbourne Water and metropolitan water businesses' websites.

Principles

31. Consistent with the approach established by the water businesses and used in previous years, the 2026/27 desalinated water order advice is based around five principles. These were developed and assessed by the water businesses to balance the benefits of using the VDP in maintaining the short and long-term security of supply to customers against the costs of placing an order and the potential for foregone water harvest[5]. Short-term water security is maintained by avoiding going into the Critical Water Use Only Zone, and minimising the risk of going into the Be Proactive Zone, while long-term water security is achieved by building storage recovery over a number of years when there is sufficient capacity available in the reservoirs and maintaining higher storage volumes, when storages volumes are high. The advice is based on the water businesses assessing an appropriate balance across these principles. The advice is prepared recognising that while the first year order is contractually binding for the financial year, there is the opportunity to revisit the volume required in each of the second and third years (non-binding advice), as part of the annual planning and ordering cycle. This allows adaptation based on the storage levels and outlooks at the time. The technical assessments of different potential desalinated water order volumes for 2026/27 described later in this document take this ability to adapt subsequent order volumes into account.

32. The intent of the principles is to provide for water security for Melbourne by avoiding storages falling to low levels, and taking into account the potential for foregoing harvest of lower cost water from within the system in wetter years (although this can potentially provide environmental benefits for downstream waterways). In satisfying these, customer impacts should be minimised. The principles are:

    - **Principle 1: Chance of storage volume falling into the Critical Water Use Only Zone**
      Storages should remain above the Critical Water Use Only Zone described in the metropolitan water businesses' Drought Preparedness Plans on 30 November 2026, 30 November 2027 and 30 November 2028 under a severe drought sequence, which is defined as the driest sequence among the modelled streamflow sequences.
    - **Principle 2: Chance of storage volume falling into the Be Proactive Zone**
      Storages should remain above the Be Proactive Zone described in the metropolitan water businesses' Drought Preparedness Plans on 30 November 2026, 30 November 2027 and 30 November 2028 under 90 percent of modelled streamflow sequences.
    - **Principle 3: Storage Recovery**
      Storages should display a recovery trend such that the median (50th

[5] 'Foregone harvest' is defined as the modelled additional flow over dam spillways from the Melbourne water supply system and/or reduced harvest into Sugarloaf Reservoir for each modelled streamflow sequence due to the desalinated water order volumes supplied. Not all water can necessarily be harvested from smaller storages and weirs in average to wetter years, regardless of the desal order volume.

percentile) modelled total system storage levels across the modelled streamflow sequences increase in 2026/27, 2027/28 and 2028/29.

- **Principle 4: Risk of desalinated water causing avoidable foregone harvest**
  Foregone water harvest should be less than 12.5 GL/year for at least 50% of modelled streamflow sequences, and less than 25 GL/year for at least 90% of modelled streamflow sequences in 2026/27, 2027/28 and 2028/29.
- **Principle 5: Customer impacts**
  The impacts on the metropolitan water businesses' customers' bills should be minimised while providing an acceptable security of supply.

33. Potential desalinated water order pathways were assessed against the five principles using detailed technical analysis described later in this report.

Technical analysis inputs and assumptions

Initial water storage levels

34. Water resource modelling for the 2026/27 Advice examines possible future water storage levels for different desalinated water order volumes and operational conditions based on storage volumes observed on 30 November 2025 (1,361 GL or 75.1%). Approximately 158 GL of the water in storage on 1 December 2025 was allocated to entitlement holders other than the metropolitan water businesses, including the regional water businesses, the Victorian Environmental Water Holder, and Southern Rural Water. The distribution of water across the 10 major storage reservoirs in the Melbourne water supply system on 30 November 2025 is shown in Table 1. Water resource modelling supporting the desalinated water order advice considers the range of possible streamflow conditions into the reservoirs and the expected demands associated with all entitlement holders in the Melbourne system for the desalinated water order advice period.

Table 1: Distribution of water across the 10 major storage reservoirs in the Melbourne water supply system on 30 November 2025

Reservoir	Capacity at full supply (ML)	Volume (ML)	% Full
Thomson	1,068,000	795,981	74.5%
Upper Yarra	200,579	144,236	71.9%
O'Shannassy	3,123	3,181[6]	100%
Maroondah	22,179	21,979	99.1%
Sugarloaf	96,253	70,845	73.6%
Yan Yean	30,266	20,303	67.1%
Greenvale	26,839	24,485	91.2%
Silvan	40,445	35,922	88.8%
Cardinia	286,911	207,623	72.4%
Tarago	37,580	36,646	97.5%
Total	**1,812,175**	**1,361,201**	**75.1%**

Streamflow scenario

35. This technical analysis report was based on modelling with the 'Post-1997 step climate change' streamflow scenario described in the *2020 Guidelines for Assessing the Impact of Climate Change on Water Availability in Victoria,* the current guidelines when the modelling assessment was undertaken. The use of the 'Post-1997 step climate change' streamflow scenario is representative of streamflow conditions observed in recent history and therefore appropriate for developing the three year desalinated water order advice. The methodology used to establish this streamflow scenario results in consideration of some potential drought sequences more severe than those that have occurred historically. It always remains a possibility to receive inflows greater or less than what has been observed.

36. The 'Post-1997 step climate change' scales the streamflow model inputs from July 1913 to June 1997 to match the statistical properties of the period July 1997 to June 2025. The 2024/25 streamflow into Melbourne's four major harvesting reservoirs was 305 GL. The difference between the observed historical streamflow (grey bars) and the adjusted streamflow (orange bars) are illustrated in Figure 3. In the water resource modelling, the 112 years of streamflow data, representing post-1997 step climate change, are used to create 112 streamflow

[6] Reservoir was above capacity while water was flowing over the spillway.

sequences that are used to assess the performance of potential desalinated water order pathways against a range of potential streamflow conditions.

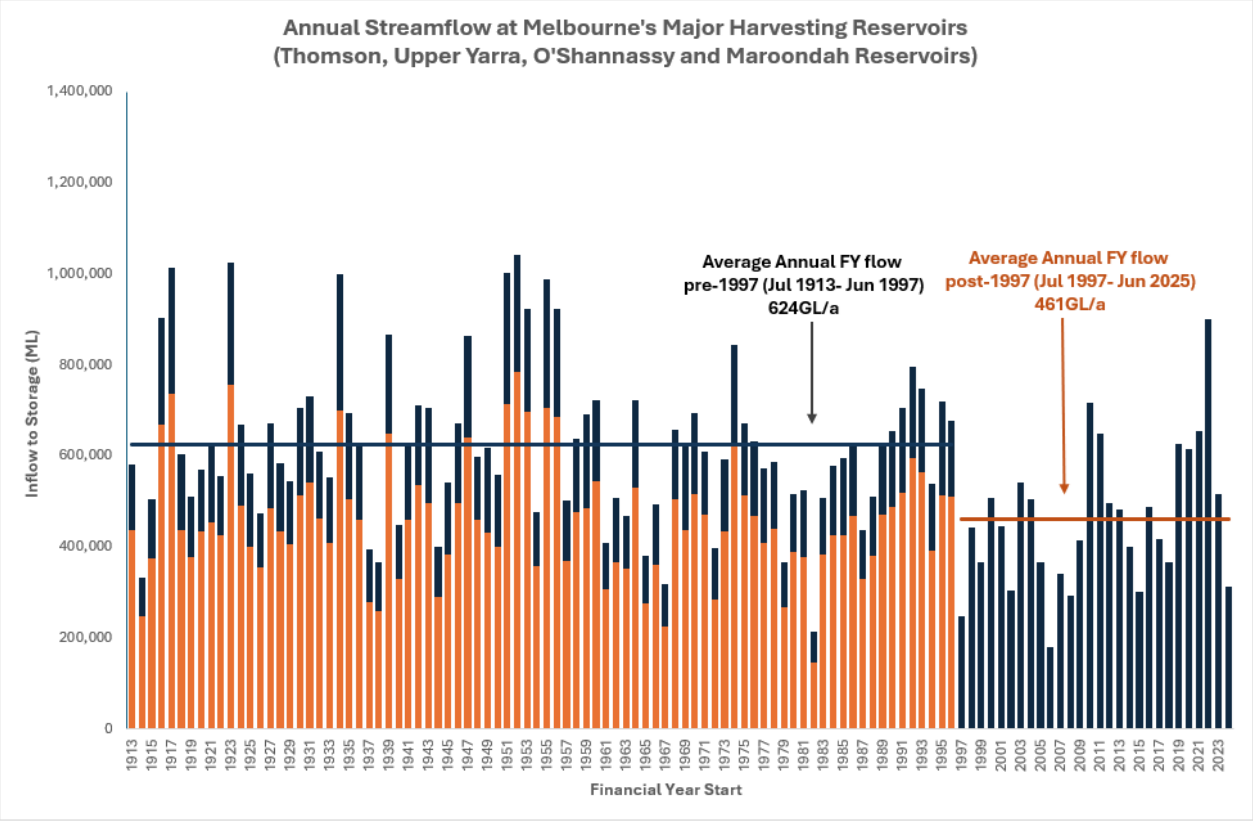

Figure 3: 'Post-1997 step climate change' streamflow scenario

Demand forecasts

37. To support the desalinated water order advice development process, the metropolitan and regional water businesses provided demand forecasts. The demand forecasts for the three years covered by the advice are outlined in Table 2. These demand forecasts include expected water savings from the Target 150 program and Permanent Water-Saving Rules. In the water resources modelling, the metropolitan demand forecasts are adjusted in each modelled year using a climate index algorithm to reflect the variability in demand typically observed in warmer and drier years, cooler and wetter years and seasonal variability in demand during the year. The average annual demand forecasts for the metropolitan water businesses outlined in Table 2 reflect the impact of recent observed and forecast growth in Melbourne's population.

Table 2: Demand forecasts provided by the metropolitan and regional water businesses

Year	Metropolitan water businesses (GL)	Regional water businesses (GL)	Total (GL)
2026/27	469	30	499
2027/28	473	27	500
2028/29	478	30	508

38. The water demand forecasts in Table 2 do not include environmental water minimum passing flows and releases from water entitlements held by the Victorian Environmental Water Holder for the Yarra, Tarago and Thomson basins. For modelling purposes, it was assumed that the Victorian Environmental Water Holder will use 2025/26 planned releases and the annual allocation each year thereafter. The environmental allocations for key modelled river systems include:

    - Yarra River system: 17 GL/year
    - Thomson River system: 10 GL/year plus 3.9% of inflows to Thomson Reservoir (under the 'Post-1997 step climate change' streamflow scenario, 3.9% of inflows to Thomson Reservoir is approximately 7 GL/year on average).
    - Tarago River system: 10.3% of inflows to Tarago Reservoir

39. The water demand forecasts in Table 2 also do not include rural irrigation water releases from water entitlements held by Southern Rural Water. Neither Southern Rural Water's share of inflows to Thomson (SRW are entitled to 6% of inflows to Thomson Reservoir each year) nor their demand from the reservoir is modelled. Their share of Thomson is assumed the stay constant. Under the 'Post-1997 step climate change' streamflow scenario, 6% of inflows to Thomson Reservoir is approximately 11 GL/year on average. As of 1 December 2025, the SRW share held in Thomson was 39 GL.

Operational considerations

40. The technical analysis supporting the 2026/27 desalinated water order advice also takes into account planned asset and operational factors including:

    - **Cardinia Reservoir:** The modelling includes a temporary reduced maximum operating volume of 240 GL (full supply level approximately 287 GL), consistent with dam management operating conditions, and also includes assumptions for temporary drawdown to 208 GL to support future capital works which are modelled as commencing by January 2027.
    - **Upper Yarra Reservoir:** The modelling includes a reduced maximum operating volume of 185 GL (full supply level approximately 200 GL), consistent with system management rules, and also includes assumptions for temporary maximum operating volume of 140 GL until March 2026, to undertake maintenance work on the spillway.

41. All desalinated water order volumes up to 150 GL are modelled assuming delivery from 1 July at the VDP's maximum capacity until the order has been completed. For large orders which are delivered throughout the entire year, a reduced output from the VDP is assumed in February. Subject to the *Project Deed*, deliveries may commence prior to 1 July.

Cost information

42. To support water resource modelling and price modelling, DEECA provided estimates of costs associated with each of the desalinated water order volume options based on the best available information.

Technical analysis results

43. Water resource modelling was undertaken to support the 2026/27 desalinated water order advice, which provides an outlook from 1 December 2025 to 30 June 2029, covering the three financial years for which advice is required under the *Water Interface Agreement*. This modelling process considers all possible desalinated water orders that could be placed under the *Project Deed* during this three year period (including 0 GL), and identifies the desalinated water orders most likely to lead to outcomes consistent with the principles described in paragraph 31.

44. The water resources modelling separately considers each of the seven possible order volumes from 0 to 150 GL[7] in the first year of the three-year desalinated water order advice. For each of these seven possible first year (2026/27) orders, Melbourne's water supply system is modelled over the next three and a half years under 112 different streamflow sequences. For each streamflow sequence, the model selects the second year (2027/28) and third year (2028/29) desalinated water orders that best meet the five principles under that particular sequence.

45. The water resources modelling results are summarised in Table 3. These results reflect, for a given 2026/27 desalinated water order volume, the remaining risks after taking into account the potential to increase or decrease desalinated water orders in 2027/28 and 2028/29 in response to observed conditions.

[7] The seven options for annual order volume under the *Project Deed* are 0 GL, 15 GL, 50 GL, 75 GL, 100 GL, 125 GL and 150 GL.

Table 3: Summary of assessment against the five principles for all potential 2026/27 desalinated water order volumes

2026/27 desalinated water order volume (GL)	Principle 1			Principle 2			Principle 4						Principle 3			Principle 5				
	Percentage of streamflow replicates that fall into the Critical Water Use Only Zone (below 45% on 30 November)			Percentage of streamflow replicates that fall into the Be Proactive Zone (below 75% on 30 November)			10th percentile foregone harvest (90% of streamflow replicates have foregone harvest less than this volume) (GL)			50th percentile (median) foregone harvest (50% of streamflow replicates have foregone harvest less than this volume) (GL)			50th percentile (median) storage recovery (50% of streamflow replicates have greater storage recovery than this volume) (GL)			Average discounted cost of producing desalinated water over the three year outlook period ($M)	Average order volume across all streamflow replicates (GL)		Median order volume across all streamflow replicates (GL)		Average change in order volume between years across all streamflow replicates
	Principle target: 0%			Principle target: Less than 10%			Principle target: Less than 25 GL			Principle target: Less than 12.5 GL			Principle target: More than 0 GL			Principle target: Minimise impacts (magnitude and variability) on customer bills in all three years				
	Year 1	Year 2	Year 3	Year 1	Year 2	Year 3	Year 1	Year 2	Year 3	Year 1	Year 2	Year 3	Year 1	Year 2	Year 3	All three years	Year 2	Year 3	Year 2	Year 3	All three years
0 GL	0	1	1	64	64	47	0	52	93	0	6	21	-42	52	36	181	123	127	150	150	63
15 GL	0	0	1	62	63	46	5	56	95	0	8	21	-27	47	33	190	121	126	150	150	53
50 GL	0	0	1	46	58	43	27	54	95	2	9	13	4	31	26	190	112	107	150	150	32
75 GL	0	0	0	43	52	39	40	56	92	4	11	7	20	15	19	197	103	100	150	150	36
100 GL	0	0	0	43	46	37	44	59	91	4	13	6	43	5	12	210	99	98	150	150	42
125 GL	0	0	0	43	38	29	56	67	93	5	15	10	68	-6	0	226	96	96	150	150	49
150 GL	0	0	0	43	27	25	62	77	90	6	24	11	93	-21	-4	239	94	89	150	150	58

46. Table 3 suggests that:

- **Principle 1 - Avoid going into the Critical Water Use Only zone:** For all water order options in 2026/27 greater than 50 GL, the assessed risk of storages falling into the Critical Water Use Only zone on 30 November is 0% in all three years of the advice period, assuming orders that are appropriate to the prevailing conditions in future years.
- **Principle 2 – Minimise risk of going into Be Proactive zone:** The target result for Principle 2 [<10% of streamflow sequences show storages falling into the Be Proactive zone (below 75% total system storage) at 30 November] cannot be achieved by any water order options in 2026/27, for any year of the three year advice period. Modelling results indicate that better performance against this principle is achieved over the advice period by maximising desalinated water orders.
- **Principle 3 – Maximise storage recovery:** Order volumes of 0-15 GL do not meet this principle in the first year but it can be achieved in subsequent years with adaptive orders. In contrast, orders volumes of 75 GL-150 GL are able to meet this principle in 2026/27, but the two highest order volumes (125 GL and 150 GL) cannot meet this principle in Year 2. This is due to the good storage recovery under these order volumes in Year 1 and the difficulty in maintaining high storage volumes.
- **Principle 4 – Minimise foregone harvest:** the principle for median foregone harvest can be met in Year 1 with all water order options in 2026/27. The principle for the 10th percentile foregone harvest is not met for any order of 50 GL or greater in any of the three years of the advice period.
- **Principle 5 – Minimise customer bill impacts:** There is currently a high likelihood of large order volumes in Years 2 and 3, regardless of Year 1 order volume. So higher Year 1 (2026/27) order volumes have a higher change compared to the current year (2025/26), but a lower change (more stability) in 2027/28 and 2028/29.

47. Figure 4 illustrates a range of potential future water storage levels over the next three financial years for the 112 streamflow sequences. Figure 4 assumes that 150 GL is ordered in 2026/27, followed by orders in 2027/28 and 2028/29 adapted for each streamflow sequence as per paragraph 44.

48. The green line in Figure 4 shows the projected water storage from December 2025 assuming a particularly dry historical streamflows observed between December 2006 to June 2009, but with current system demands and constraints. For this particular streamflow sequence, the modelling suggests that ordering 150 GL in both 2027/28 and 2028/29 would best meet the Principles (see paragraph 32) to respond to falling water storage levels resulting from severe dry conditions.

49. The yellow line in Figure 4 shows how the observed storage level has decreased since 1 December 2025, compared to the modelled range of projected water storage levels.

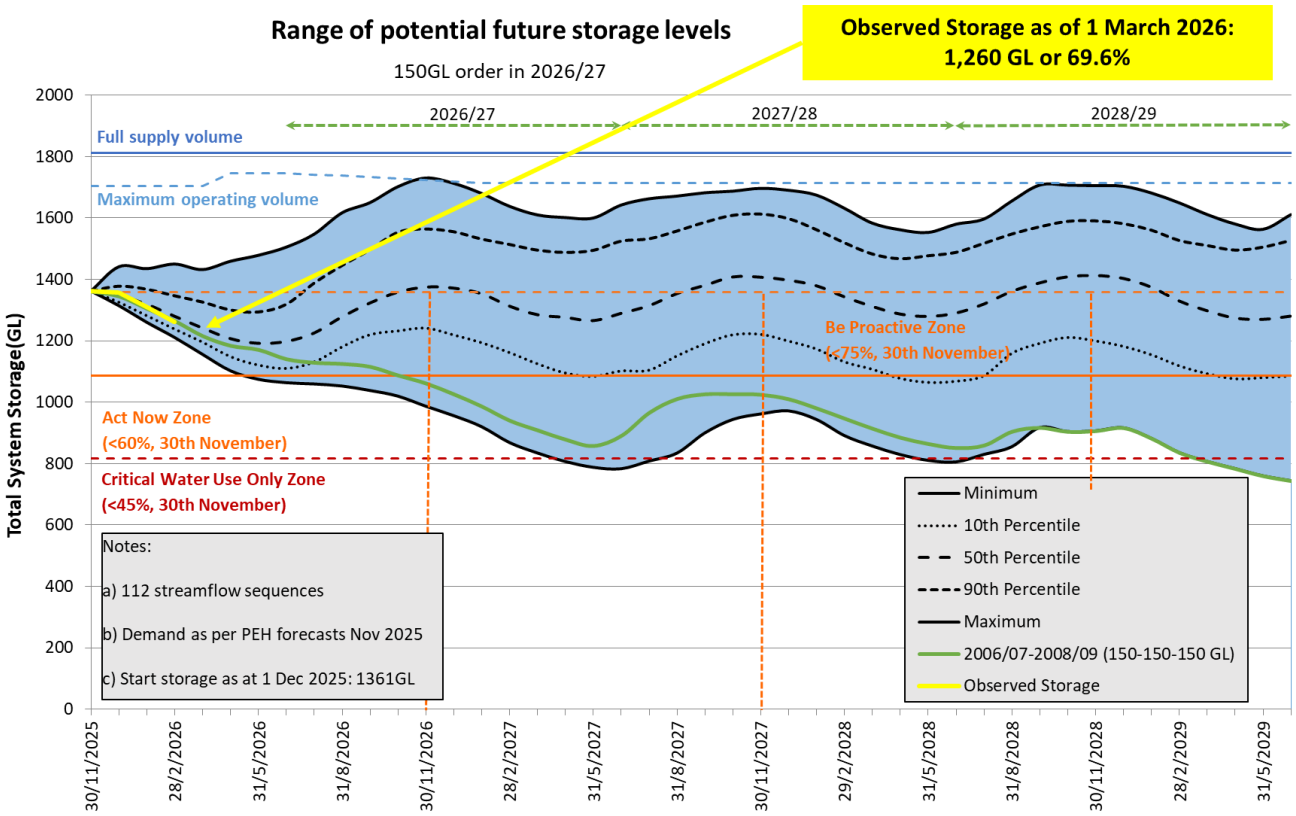

Figure 4: Modelled projection of potential future water storage levels assuming a 150 GL order in 2026/27.

Other considerations

Value of water in storage

50. Over the long term, water supply system yield is projected to decrease as a result of changing climate conditions while demand is projected to continue to increase. As a result:

- Water storage levels will, on average, show a decreasing trend without regular water volumes provided by the VDP.
- Non-zero desalinated water orders will therefore be necessary to maintain or recover storage levels. Depending on the sequencing of future wet and dry years, average orders will reflect an increasing use of the VDP.
- Prior to the VDP's full capacity being regularly required to supply growing demand in future, larger orders when there is storage capacity can be used to build a buffer of water in storage for drought resilience.
- Maintaining high storage volumes increases Melbourne's resilience to extreme climate events such as droughts, reduces the severity and impact of water restrictions, and will assist in meeting the growing annual demand for water while urban water corporations and the Victorian Government undertake early readiness activities for future water supply options.
- Augmentation to the water supply system will become necessary as the difference between water demand and yield diminishes and water security cannot be maintained. *The Greater Melbourne Urban Water and System*

Strategy noted that it is likely that we will need to build the next supply augmentation within the next 10 years. In September 2025, the Victorian Government released the *Water Security Plan* for the South-Central Water Grid.

Reservoir spillway flows

51. Given the moderately high initial water storage volumes and the distribution of water across the major water storages, Principle 4, the risk of desalinated water causing avoidable foregone harvest and reservoir spills, was a key consideration in the technical analysis. In most years, some spillway flows occur from the smaller reservoirs in the system regardless of any desalinated water orders.

52. The 2026/27 order advice gave detailed consideration to order volumes that balanced maintaining drought reserves in Thomson Reservoir while managing the possible risk of the reservoir reaching full capacity and spilling over the order advice period. Analysis highlighted that there is potential, albeit unlikely, for spillway flows from Thomson Reservoir in 2026/27, regardless of any order volume being placed.

Climate outlooks

53. The climate outlooks that were available at the time the Advice was provided to Government are discussed below. These outlooks do not extend over the coming inflow season, nor the three years of the desalinated water order advice period. They only indicate relatively short term conditions, for a period of three months. Therefore, the outlooks have not significantly influenced the advice for 2026/27. However, the advice has considered a broad range of potential climate conditions for the three year period through the use of all observed streamflow sequences (with the adjustment described in paragraphs 35 and 36).

54. At the time that the Advice was provided to Government, the Bureau of Meteorology's 3-month rainfall and temperature outlooks were only available to June 2026. These outlooks, issued on 12 February 2026, indicated:

    - a low chance (25-30%) of exceeding median rainfall for April to June across Greater Melbourne and its water supply catchments.
    - a very high chance (above 90%) to be above median maximum temperature for Greater Melbourne.

55. BoM's southern hemisphere modelling update issued on 3 February 2026 indicated that:

    - The on-going La Niña event was weakening and that the El Niño–Southern Oscillation (ENSO) was expected to return to neutral conditions by late summer. It further stated that some models suggested the possibility of El Niño development from June (the beginning of the next inflow season), though noting predictability beyond autumn is typically quite low for this time of year.
    - The Indian Ocean Dipole is expected to remain neutral until at least the end of autumn 2026.

56. The BoM provides seasonal streamflow forecasts for Melbourne's four major harvesting storages each month. The most recent forecast at the time that the Advice was provided to Government was that issued for the period from February to April 2026. Table 4 shows the forecast flow range for each of the harvesting catchments.

Table 4: Seasonal streamflow forecast for Melbourne's four major harvesting storages for February to April 2025 (Source: Australian Government Bureau of Meteorology)

4 major harvesting reservoirs	**February – April 2026** **(based on forecast provided by the BoM)**
Thomson	Median to High flow
Upper Yarra	Low flow
O'Shannassy	Low flow
Maroondah (Watts River & Graceburn Creek)	Low to Median flow (Watts) Median flow (Graceburn)

Technical outcomes

57. None of the available water order volumes achieve the target model result for the water security principle of minimising the risk of entering Be Proactive Zone (Principle 2) in 2026/27, nor in the following two years despite maximised desalinated water delivery. The median foregone harvest is below the modelled target result for all order volumes in 2026/27. These results favour maximising the delivery of desalinated water, hence a 150 GL order best meets desalinated water order advice principles in 2026/27.

58. A 150 GL order has the biggest bill impact of each required order volume, as would be expected. However there is a high probability of needing to make large orders in 2027/28 and 2028/29. So while there may be a larger increase relative to 2025/26, this may lead to more bill stability in the coming three years.

Conclusion

59. Consistent with the requirements of the *Water Interface Agreement* described in paragraph 25, the following desalinated water order advice has been provided by Melbourne Water to the Victorian Government:

- The required annual water volume for the 2026/27 supply period should be 150 GL.
- There are no constrained months in the 2026/27 supply period.
- Non-binding forecasts of 150 GL in the 2027/28 and 150 GL in the 2028/29 supply periods are appropriate.