Government of **Western Australia**
Department of **Water and Environmental Regulation**

Aligning the domestic garden bore sprinkler roster with the scheme water roster

Consultation summary report

Department of Water and Environmental Regulation

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Contents

Executive summary

Perth's accessible groundwater resources provide a relatively low-cost water source. About 40 per cent of Perth's drinking water is sourced from groundwater. In addition, almost all water that is used for maintaining public open spaces, sporting grounds, supplying industry and agriculture, and for watering more than one in four household gardens, is from our groundwater supplies. Groundwater also sustains the wetlands, lakes, native bushland and large urban trees that help make Perth an attractive place to live.

Climate change has reduced Perth's long-term average rainfall by more than 15 per cent since 1975. Long-term climate modelling indicates that this trend is likely to continue in the future. Climate change combined with groundwater abstraction is having a measurable and visible impact on the groundwater balance. Groundwater levels have been declining for many years, impacting the local environment and bushland and drying Perth's wetlands and caves.

There is a need to respond to the impacts of climate change by reducing the amount of groundwater abstracted. If groundwater abstraction levels are not reduced, our wetlands will become drier and native bushland will continue to decline. Our green spaces and street trees may also become stressed or lost if groundwater levels are not maintained.

Approximately 120,000 to 180,000 households use garden bores for maintaining household lawns and gardens. These households pump about 22 per cent of all the groundwater taken from the aquifers in the Perth and Mandurah area each year. This is about 90 gigalitres annually; about as much water to fill Optus Stadium 90 times.

Under current requirements, garden bore users can irrigate their lawns and gardens three days per week in spring, summer and autumn. Households using scheme water can irrigate their gardens two days per week. A winter sprinkler switch-off applies to both garden bore and scheme water users.

Adopting waterwise irrigation systems and practices have allowed households using scheme water to maintain healthy gardens by watering twice a week. The Government of Western Australia has supported the move to waterwise gardens by providing advice on waterwise plants and working with local government and industry.

To protect our groundwater resources, it has been proposed to align the garden bore sprinkler roster with the two-days-per-week scheme water sprinkler roster. By reducing the garden bore sprinkler roster to two days per week, up to 30 gigalitres of groundwater may be saved every year.

These savings would mean more groundwater would be retained in aquifers and groundwater levels would rise or stabilise across the urban areas. Improved

groundwater levels will benefit the local environment by stabilising and in some cases increasing the water levels in wetlands. The water levels in wetlands such as Perry Lakes, Herdsman Lake (Ngurgenboro), Lake Gwelup, Carine Swamp, Star Swamp, North Lake, Bibra Lake and Lake Forrestdale will benefit from a reduction in the groundwater taken by garden bores. Native vegetation that is dependent on groundwater will also benefit, increasing its resilience to the impacts of climate change.

Separately, through the final Gnangara groundwater allocation plan, licensed groundwater users, including fruit and vegetable growers, industry, local governments and the Water Corporation, will be required to reduce their groundwater abstraction from the Gnangara Mound from 2028.

The proposal to align the garden bore sprinkler roster with the scheme water sprinkler roster was released on 19 November 2021 for a three-month public consultation period closing on 28 February 2022.

A total of 3,049 submissions were received from individual garden bore and scheme water users, industry and community groups, and an online petition was received.

The Department of Water and Environmental Regulation thanks all those who sent submissions and provided comments.

1 Introduction

This paper summarises submissions received on the proposal to align the domestic garden bore sprinkler roster with the two-days-per-week scheme water roster.

The comments received during the consultation process will inform the development of the final policy.

1.1 Consultation

Consultation on the garden bore sprinkler roster proposal commenced on 19 November 2021 for a three-month public consultation period until 28 February 2022.

Presentations were provided to six industry groups to explain the proposed changes and provide opportunities for feedback. Written advice was also provided to a range of key stakeholders, including community groups, agribusiness and industry.

The proposal was advertised on the department's website, in social media and in *The West Australian* newspaper. The Water Corporation referenced the proposal in its water bills.

1.2 Submissions

A total of 3,049 submissions were received from individual garden bore and scheme water users, industry and community groups, and an online petition was received.

2 Garden bores and climate change

2.1 Rebalancing Perth's groundwater systems

Declining rainfall over the past 40 years has significantly reduced groundwater and surface water availability in the south-west of Western Australia (WA). The average annual rainfall for Perth from 1945 to 1974 was 841 millimetres. The average from 1975 to 2020 was 708 millimetres.

This reduction in rainfall has reduced the amount of water flowing into our dams from an average of 420 gigalitres during 1911 to 1974 to an average of 69 gigalitres for 2010 to 2020.

Recharge to our aquifers has also declined. Together with increased abstraction, this has resulted in a loss of more than 1,000 gigalitres of groundwater storage from the superficial aquifer of the Gnangara system since 1980.

The Intergovernmental Panel on Climate Change recently reported that in the future, less rainfall, more droughts and extreme fire risk weather are projected with high confidence in the south-west of WA. Streamflow and groundwater recharge are expected to continue to decline.

Action is needed now to help us manage the expected impacts of climate change into the future. The State Government's *Waterwise Perth Action Plan* outlines the need to reduce groundwater use and promotes waterwise initiatives to improve the liveability of Perth. The plan also focuses on waterwise gardens, which require less water to maintain household lawns and gardens.

2.2 Domestic garden bores in the Perth and Mandurah area

About 70 per cent of the total water used in the Perth and Mandurah area is groundwater. Taking groundwater generally requires a licence under the *Rights in Water and Irrigation Act 1914*. Domestic groundwater use, which includes watering an area of lawn or garden of less than 2,000 square metres, is exempt from licensing.

The use of garden bores for sprinkler irrigation is regulated under the Water Agencies (Water Use) By-Laws 2010. The by-laws include permanent winter sprinkler restrictions. Under the by-laws, domestic garden bores in the Perth and Mandurah area can currently be used to water gardens three days a week in spring, summer and autumn.

The State Government is proposing to align the garden bore sprinkler roster with the two-days-per-week scheme water roster in the Perth and Mandurah Area (Figure 1)

from 1 September 2022. Other watering restrictions in the by-laws will remain in place.

The department estimates there are 120,000 to 180,000 garden bores used to abstract about 90 gigalitres of groundwater per year in the Perth and Mandurah area. This equates to 22 per cent of all the groundwater abstracted.

The estimate of the number of garden bores is based on domestic water use surveys (by the Australian Bureau of Statistics and State Government), Water Corporation data (2009) and the Perth Garden Bore Metering Project (2009–2011).

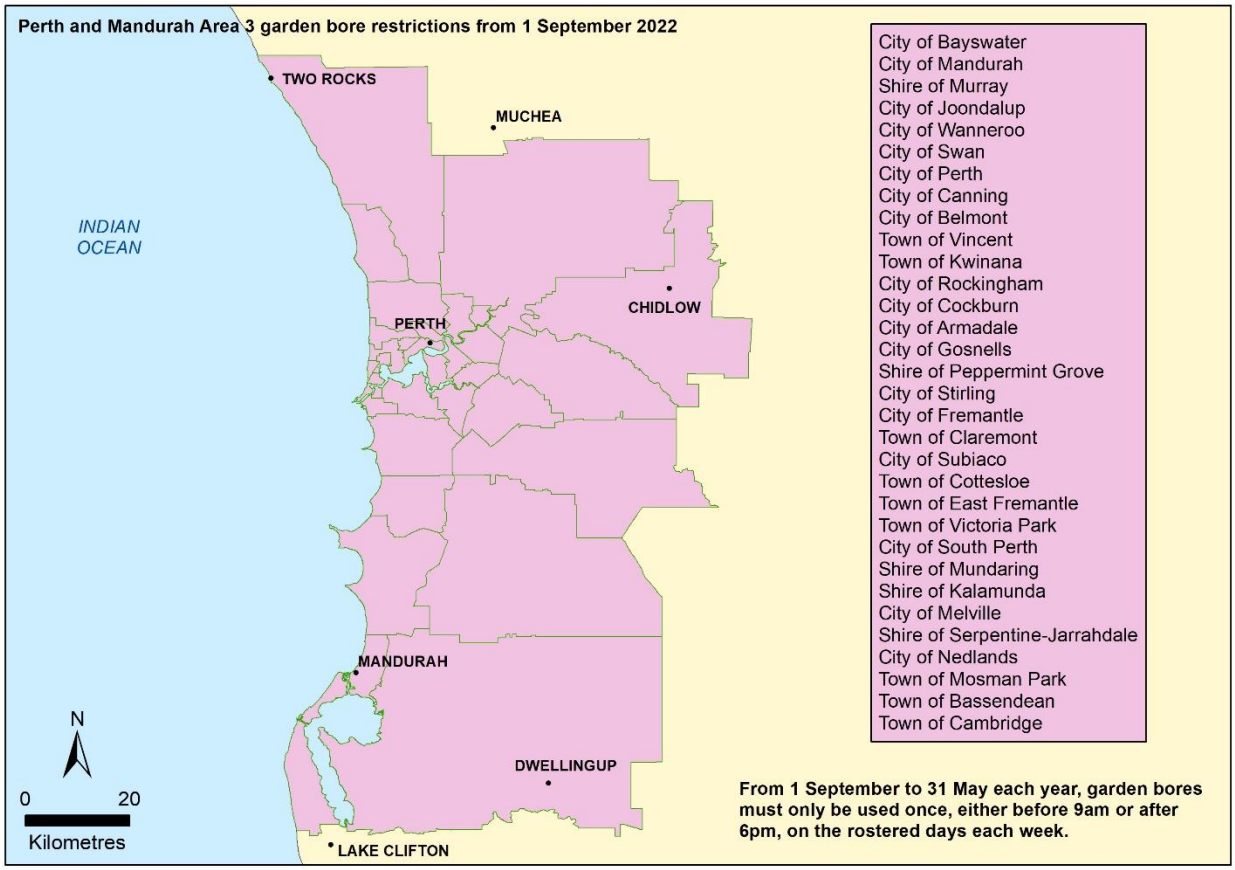

Figure 1 Local government areas included in Perth and Mandurah Area 3

2.3 Benefits of reducing garden bore abstraction

Aligning the garden bore sprinkler roster with the two-days-per-week scheme water roster will save about 30 gigalitres per year across the Perth and Mandurah area. The proposed reduction in the water entitlements of industry, local government, commercial irrigators and the Water Corporation outlined in the draft Gnangara groundwater allocation plan would save an additional 40 gigalitres of groundwater.

Preventing further degradation and loss of groundwater-dependent ecosystems is important for people, for recreation and amenity purposes, as well as the protection

of our wildlife. Where the watertable is shallow, groundwater also helps to sustain the shady trees in our streets and parks that help to cool urban areas.

Figure 2 shows the location of wetlands and trees in urban areas and where depth to groundwater is less than 20 metres (where urban trees are most likely to rely on the watertable). These areas are most likely to benefit from reduced abstraction.

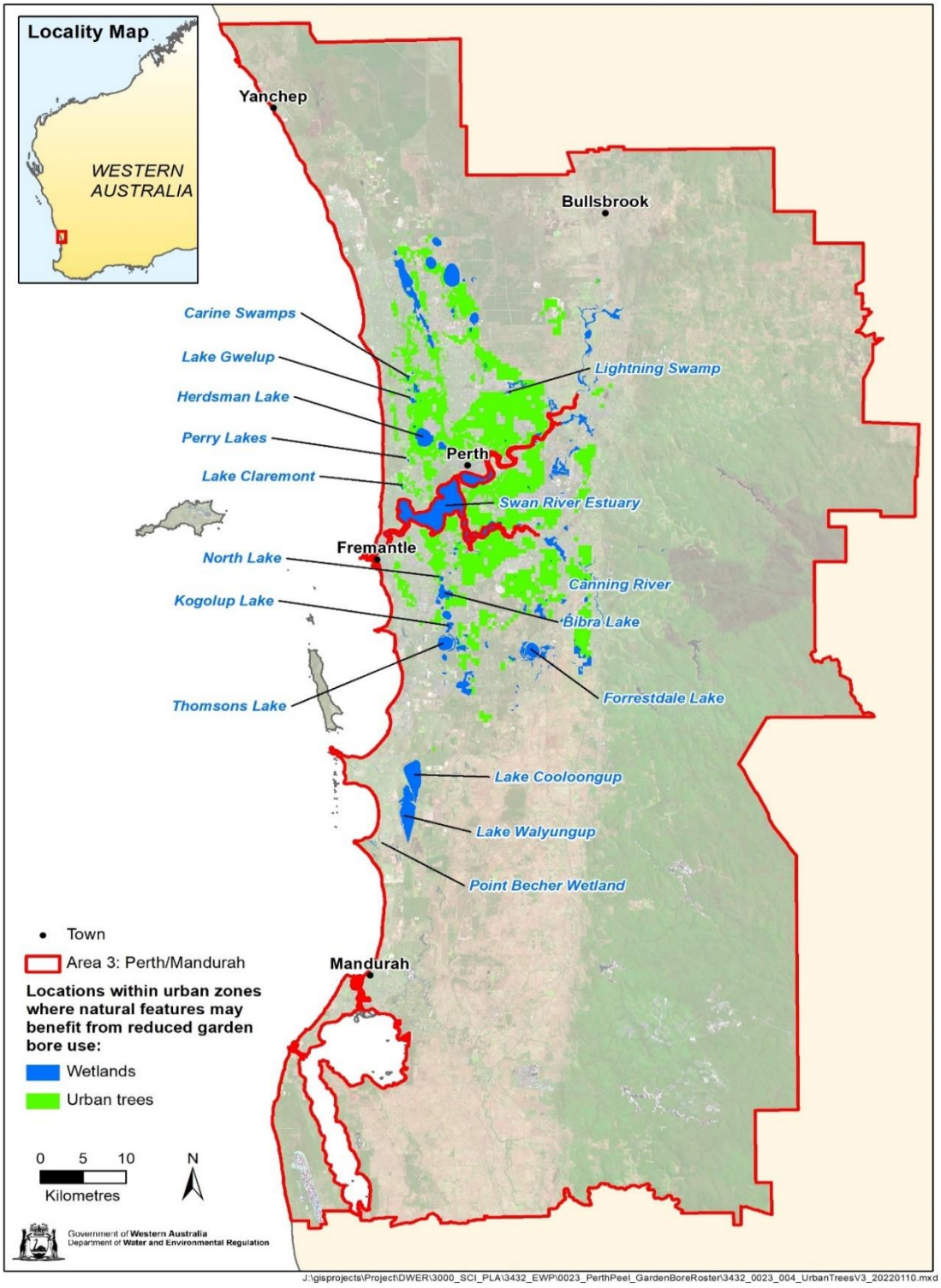

Figure 2 Locations where wetlands and urban trees may benefit from reduced garden bore use

3 Submissions received

3.1 Number of submissions received

A total of 3,049 submissions were received during consultation. The submissions were received through:

The department's Citizen space webpage	2,480
Emails or online directly to the department	333
Through the draft Gnangara groundwater allocation plan consultation process	211
Letters, direct emails to officers	10
Phone calls	15
Total	3,049

The department has considered the submissions and the key views received are presented below. The departmental response is also presented.

3.2 Views received

View	**Response**
Reducing the number of days a garden bore may be used will result in a loss of green spaces and increase the urban heat effect (higher temperatures within neighbourhoods).	Most (70 per cent) of Perth's households that do not have access to a garden bore have adapted their lawns and gardens to watering twice a week using scheme water. The State Government will support garden bore users to adopt waterwise practices by promoting waterwise products and activities. For example, the Water Corporation is providing a rebate for waterwise products, including smart irrigation controllers, and endorsing garden designers, landscapers, garden centres and nurseries which can assist households in watering efficiently and provide advice on waterwise plants. Government is also working with local councils and industry to hold regular waterwise garden workshops. Reducing groundwater taken by garden bores will protect urban trees in wetlands and streets, thereby reducing the urban heat island effect.

View	Response
A reduction in the garden bore watering days will result in householders hand watering their lawns and gardens on some days with scheme water. Many garden bore users commented they had originally installed their garden bores to reduce the use of scheme water for lawn and garden irrigation.	Garden bore users may hand water their gardens, as scheme water users are currently doing, to ensure that vegetation which is unable to cope with the extreme heat during summer months will remain healthy.
Respondents supporting the proposed roster change agreed the change in the sprinkler roster would assist in protecting the environment and support sustainable groundwater levels.	Noted.
Restricting the days of watering will likely result in more householders increasing the time they water per watering day.	The department has publications available at begroundwaterwise.wa.gov.au/garden-bore-rules/ providing tips on being water efficient in the garden, planting a native garden and information on garden bores. Advice is also available from garden or irrigation professionals on how long to water a specific garden and to minimise water wastage.
The proposed reduction in watering days will impact the ability to maintain the household vegetable garden.	Vegetable gardens require more water than lawns or other plants. They usually cover a small area. An increase in hand watering may be needed to maintain vegetable gardens on a two-days-per-week sprinkler roster, as is the case with scheme water users. The amount of water required for vegetables may also be reduced by providing shade and selecting a suitable location.
The proposed roster change will impact the importance people place on gardens and on their mental health.	Household gardens are an important part of Perth's lifestyle, offering mental and physical health benefits to householders.

View	Response
	Most household gardens are already sustained by two days per week of sprinkler watering. The department together with the Water Corporation are actively promoting good gardening practices through publications available from their respective websites, which will enable householders using garden bores to retain the importance of their gardens by watering twice per week. In addition, the State Government is working with local councils and industry to hold waterwise garden workshops providing participants with the practical information needed to obtain the best results from their garden.
Reducing the days of watering is perceived to be a loss of investment to garden bore users. Changing the sprinkler roster will not provide an incentive for householders to construct a new garden bore or replace an existing bore.	Garden bore users are not charged for the water they use and therefore the cost of watering a garden two days per week using a garden bore is generally less than watering the same garden using scheme water. As such, garden bore users will still benefit under the proposed roster change. Individual householders should consider their own circumstances and their projected water use when deciding whether to construct a new garden bore, replace an existing garden bore or replace an existing bore pump.
Garden bore users advised they had constructed the bore on the understanding that bore users will be allowed to continue to water three days per week.	The rules on bore use have changed a number of times over the last 20 years in response to the impacts of climate change on sustainable groundwater use. The policy of allowing garden bore users to irrigate their lawns and gardens three times per week is no longer sustainable in the face of climate change and declining rainfall. Action is needed now to manage the impacts of climate change. Reducing abstraction from garden bores, as well as the groundwater taken by industry, local government and the Water Corporation through the Gnangara groundwater allocation plan, will help to stabilise groundwater levels and sustain our environment.

View	Response
The State Government should direct more resources to increasing the compliance and enforcement of watering restrictions.	The department, in cooperation with the Water Corporation, undertakes a program of compliance checks to ensure householders abide by the sprinkler roster. In the past five years, 829 infringements were issued to garden bore users for not abiding with the sprinkler roster.
Respondents living in semi-rural areas who are not connected to the water supply scheme do not have an alternative water supply, and noted the need to maintain green spaces around their buildings during summer to reduce fire risk.	The Department of Fire and Emergency Services has identified bushfire-prone areas around Perth. These are mainly peri-urban areas around the hills to the east, Gnangara to the north and Serpentine to the south. Households in these areas are expected to have a 20 metre building protection buffer zone around buildings to minimise bushfire risks. Households may choose to meet this requirement by having a well-maintained grassed area. Households that can demonstrate the need to water on a third day to establish and maintain a building protection zone may seek an exemption from the two-day-per-week sprinkler roster.
There should be an increased focus on the management and regulation of commercial/ mining/large groundwater users and local government.	Large water users are regulated and metered, and many are required to implement water-efficiency management plans. Taking more groundwater than their licensed water entitlement results in compliance action by the department. The Gnangara groundwater allocation plan will introduce reductions in the groundwater entitlements of water licensees, including those held by industry, commercial irrigators, local governments and the Water Corporation.
Government should invest more in water infrastructure, increasing water supplies to consumers and fixing Water Corporation leaks.	Perth's water supply network has the lowest rate of leaks and bursts of any Australian capital city, at less than half the average frequency of other major metropolitan utilities. The Water Corporation has an ongoing program to replace old pipework and fix leaks, to ensure water is not unnecessarily wasted. The State Government has provided $1.4 billion to the Water Corporation for the construction of a third

View	Response
	desalination plant to be operational by 2028. It is also working with the department to investigate opportunities for more groundwater replenishment.
The proposal to change the roster will likely impact the gardening and irrigation industries.	The need for gardening and irrigation services will remain. The gardening and irrigation industries will have opportunities to promote more waterwise products and plants, and to provide waterwise garden services, including installation of waterwise irrigation equipment.
To improve oversight of garden bore use, some respondents proposed the formal licensing and metering of garden bores.	Licensing and metering approximately 120,000 to 180,000 garden bores would be very costly to householders. It is not the State Government's intention to licence or meter domestic garden bores in Perth.
Gardening industry proposed that garden bore users who register their bore and have an assessment by a waterwise professional will be able to water three days per week.	The department supports the use of waterwise professionals to assist householders in designing water-efficient gardens and irrigation systems. The cost and regulatory requirements to establish a register of garden bores and maintaining a record of their assessment by a waterwise professional is assessed to be significant. The department is keen to work with industry to develop standards for waterwise gardens and to support industry-led efforts to assist householders in implementing these standards.

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