

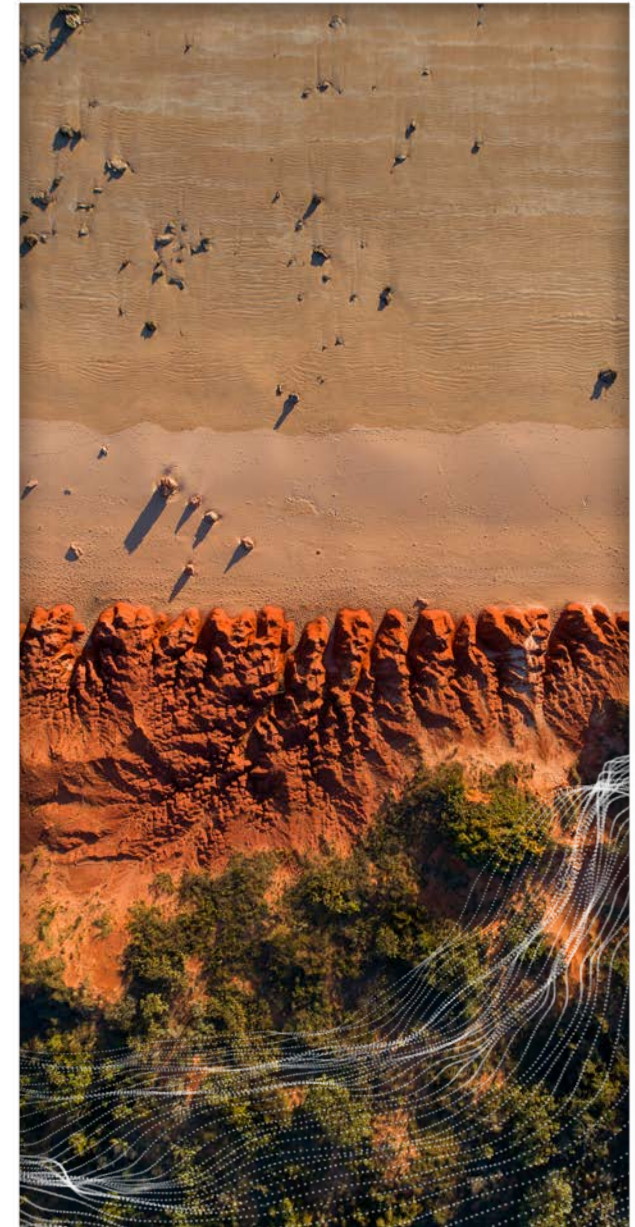


Government of **Western Australia**  
Department of **Water and Environmental Regulation**

# Building water security for Pilbara coastal towns and industry

Status report March 2026

Water supply planning series  
Report no. 22



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## Acknowledgment of Country

The Department of Water and Environmental Regulation acknowledges the Traditional Owners and custodians of the Pilbara region and their deep and continuing connection to the region's land and waters.

We pay our respects to Elders past and present, and those following in their footsteps.

We recognise that Aboriginal people and their culture across the Pilbara region are diverse and that continued custodianship of the land and water is fundamental to their health, spirit, culture and community.

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## Minister's foreword

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**Minister for Water; Climate Resilience  
Hon Don Punch MLA**

Groundwater resources have long underpinned the development of towns and industry along the Pilbara coast, supporting the mining and energy sectors that drive the region's economy. But consecutive years of low rainfall have reduced recharge to local water resources, raising concerns about the region's ability to meet the Pilbara's growing water demand.

The Cook Government is committed to working with regional stakeholders and industry to transition to a more sustainable climate-resilient mix of water supplies that minimises the costs and maximises the benefits for all Western Australians.

Through the 2025-26 State Budget, we have committed \$2.6 million to update water planning information and water allocation plans in the Pilbara region.

A further \$1.7 million was committed for real-time water monitoring infrastructure, including new telemetry systems and groundwater bores.

Those investments will support a range of investigations to guide future climate-resilient water source development and water servicing for strategic industrial areas along the Pilbara coast.

This update on *Building water security for Pilbara coastal towns and industry* provides stakeholders with the latest information into water demand and supplies and outlines how the Cook Government is working to safeguard water security for our communities, industry and long-term regional development objectives.

A stylized, handwritten signature in blue ink, consisting of several fluid, overlapping strokes.

**Minister for Water; Climate Resilience  
Hon Don Punch MLA**

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## Executive summary

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The Department of Water and Environmental Regulation (the department) has developed this report, following a desktop review of potential water source options for the Pilbara coast. It provides an overview of new information since the *Pilbara Regional Water Supply Strategy (2013)*.

Additional groundwater supplies were developed for the West Pilbara, Port Hedland and Onslow town water supply schemes in accordance with the 2013 strategy. However, current projections indicate scheme demand is continuing to grow and will ultimately exceed what can be reliably and sustainably supplied from current surface water and groundwater sources.

The Pilbara coast is water limited and reliant on cyclonic rainfall to recharge the aquifers and dams used for water supply. Climate projections suggest that cyclones may occur less frequently in the future, and that the amount of time spent in dry conditions may increase.

Existing groundwater sources are insufficient to support the future economic growth and decarbonisation objectives for the region. Estimates for Boodarie and Maitland strategic industrial areas suggest that a rapid establishment of green industries in Pilbara coast strategic industrial areas could require up to an additional 260 GL\* of water per year, by 2050. This far exceeds the volume available from local groundwater and surface water sources.

Our evaluation found that groundwater and surface water can continue to provide a critical source for Pilbara coast water needs and may be suitable to service smaller or short-term new water demands. However, new climate-independent sources such as seawater desalination need to be established to meet long-term demand and manage the increased variability in what is available to take from aquifers and dams.

\*1 gigalitre (1 GL) = 1 billion litres



South Hedland Power Station, within Boodarie strategic industrial area. Imagery courtesy of DevelopmentWA.

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## Our challenges

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### Demand for water is growing

- Pilbara coastal towns and ports are projected to need an additional 10 GL per year of reliable water supply by 2050.
- Strategic Industrial Areas could need up to 260 GL per year by 2050 under a 'rapid development' scenario.

### Pilbara has high climate variability

- Recent wet season rainfall on the Pilbara coast has been below average, resulting in less recharge to aquifers and dams.

- Climate projections suggest cyclones may be less frequent in the future but more intense. This, together with increased temperatures and evapotranspiration, will further limit replenishment and use of our rainfall-dependent sources.

### Existing water sources are limited

- With a growing demand for water and changing climate, we will soon reach the limit of how much our current water resources can sustainably provide.
- Planned industrial development on the Pilbara coast requires more water than is available from local sources.

### Transition to climate-independent water sources

- Groundwater can't meet the magnitude of projected water demand on the Pilbara coast, so seawater desalination is the preferred alternative.
- Uncertainty about the timing and scale of industrial water demand means strategic planning must consider whether the new water sources needed for public drinking water supplies can also provide water for industry in a cost-effective way.
- Climate-independent water sources like seawater desalination are often 'high-cost' compared with surface water and groundwater sources, and involve energy-intensive processes.

The department is working across the State Government and with Water Corporation to secure sustainable and climate-resilient water supplies that support the Pilbara's economic development. We are progressing studies to inform the development of new water sources and build water security on the Pilbara coast. We recognise the broad stakeholder interest in water-related matters and the importance of involving community, industry and Traditional Owners in future planning and investigation work.



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## Our strategic direction

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### Sustainable use of groundwater and surface water resources

- Groundwater and surface water can continue to support water needs in the variable climate of the Pilbara, provided their use is balanced with climate-resilient sources like seawater desalination.
- Groundwater can continue to be used by managing abstraction in dry years to minimise impacts on groundwater-dependent ecosystems and cultural values.

### Efficient and productive water use

- By recycling wastewater, minimising losses and investing in efficiency initiatives, we can optimise water use across homes, communities and industry.
- There may be opportunities to use excess groundwater abstracted for mine dewatering to support the Pilbara's green energy and industrial transition.

### Secure climate-resilient water supply options for future growth

- Fit-for-purpose, climate-resilient water supplies like seawater desalination are essential to support the decarbonisation of major industries and enable new industries such as green hydrogen and green iron production.
- The benefits from investing in new water sources and water security must flow to our regional communities, including Traditional Owners.



## Pilbara coast water resources and supplies

Towns and strategic industrial areas along the Pilbara coast are located within the Pilbara groundwater allocation plan area (Figure 1), which encompasses a complex mix of alluvial, sedimentary and fractured rock aquifers. The *Pilbara groundwater allocation plan* (2013) sets out how the department manages groundwater use through allocation limits, water licensing, monitoring and adaptive responses.

Water Corporation is the licensed water service provider (for water supply and wastewater) for all Pilbara coast towns except Dampier, for which Hamersley Iron, a subsidiary of Rio Tinto, is the licensed service provider.

The Port Hedland regional water supply scheme supplies drinking water to Port Hedland, South Hedland, Wedgefield, Finucane Island and the Aboriginal communities of Jinparinya, Marta Marta, and Punju Njamal. Water for the scheme is sourced from the alluvial aquifers associated with the Yule and De Grey rivers. The Boodarie strategic industrial area is within the Port Hedland water service operating area, adjacent to the pipeline from the Yule River borefield.

The West Pilbara regional water supply scheme supplies drinking water to Dampier, Karratha, Port Samson, Roebourne, Cheeditha Aboriginal community and Wickham. It sources groundwater from the Millstream aquifer and surface water from Harding Dam.

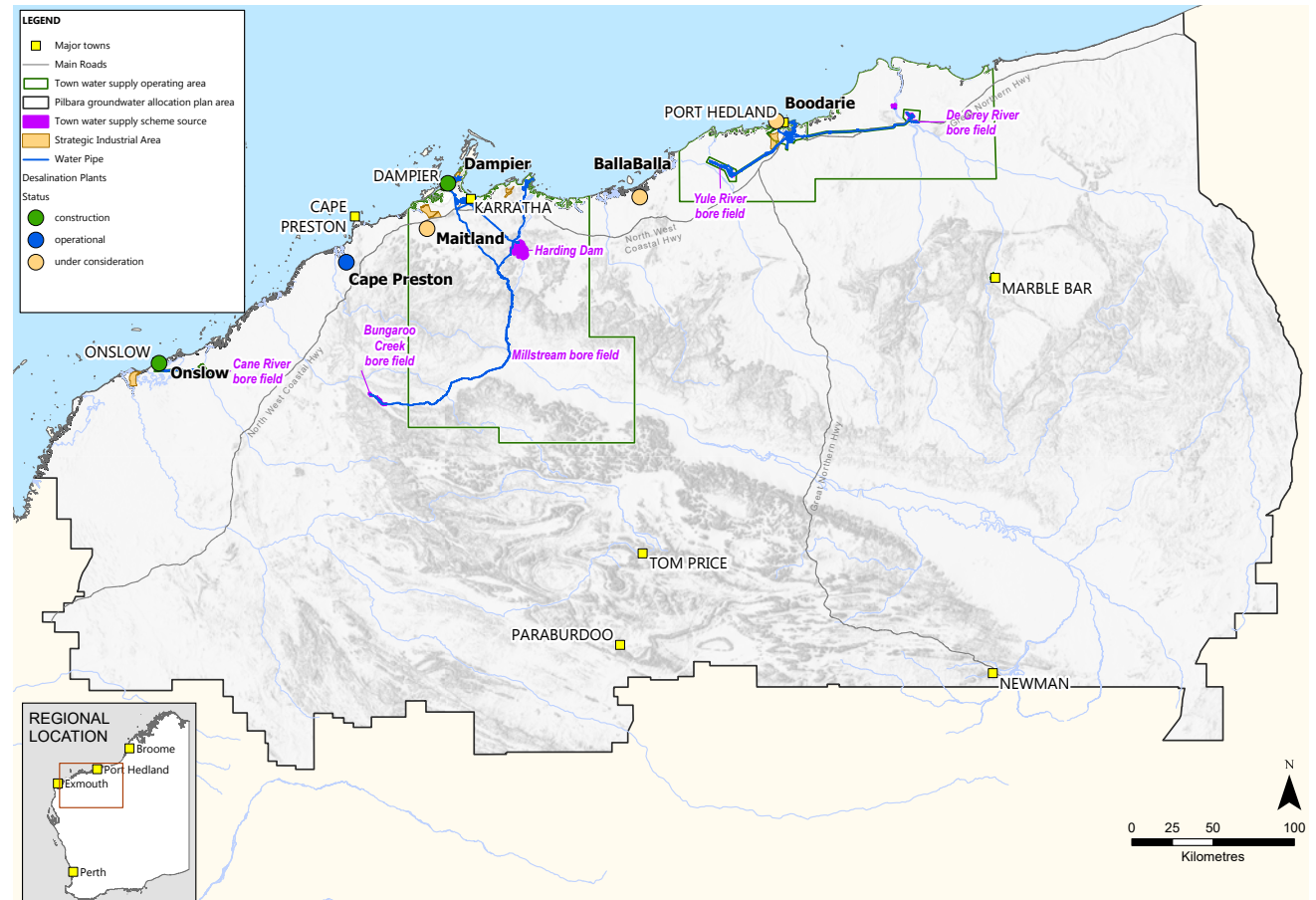


Figure 1 Pilbara coastal town water supply schemes, water sources and strategic industrial areas.

In addition, Rio Tinto supplies groundwater from the Bungaroo aquifer into the scheme to meet its potable and industrial water requirements at the coast. A new seawater desalination plant is under construction by Rio Tinto at Dampier, which will support its coastal water requirements and reduce reliance on the Bungaroo aquifer. Strategic industrial areas within the operating area of the West Pilbara regional water supply scheme are located at Maitland, Anketell and the Burrup Peninsula.

Farther south, the Onslow town water supply scheme sources its water from a borefield along the Cane River. A new seawater desalination plant will also commence supplying water to Onslow in 2026, reducing pressure on the groundwater resource. Ashburton North strategic industrial area is located south-west of the Onslow township but is outside of the Onslow water service operating area.

The town water supply schemes account for less than 5 per cent of the total water abstracted in the Pilbara region. Most of the estimated 650 GL of water abstracted annually in the region is groundwater for mining, with dewatering accounting for about 70 per cent of total abstraction. Groundwater abstracted for mine dewatering is mainly used on-site for mining and mineral processing, re-injected into the aquifer or discharged off-site to the surface environment.

Three privately-owned seawater desalination plants operate on the Pilbara coast, with the capacity to produce about 55 GL of desalinated water per year.<sup>1</sup> The largest of these is a 51 GL-per-year plant at Cape Preston, with smaller plants located near Onslow and Port Hedland.

Water Corporation's wastewater treatment plants in Karratha, Port Hedland and South Hedland have the capacity to recycle about 1.2 GL each year. Water recycled at these facilities is used for irrigating public open spaces and ovals.<sup>2</sup>

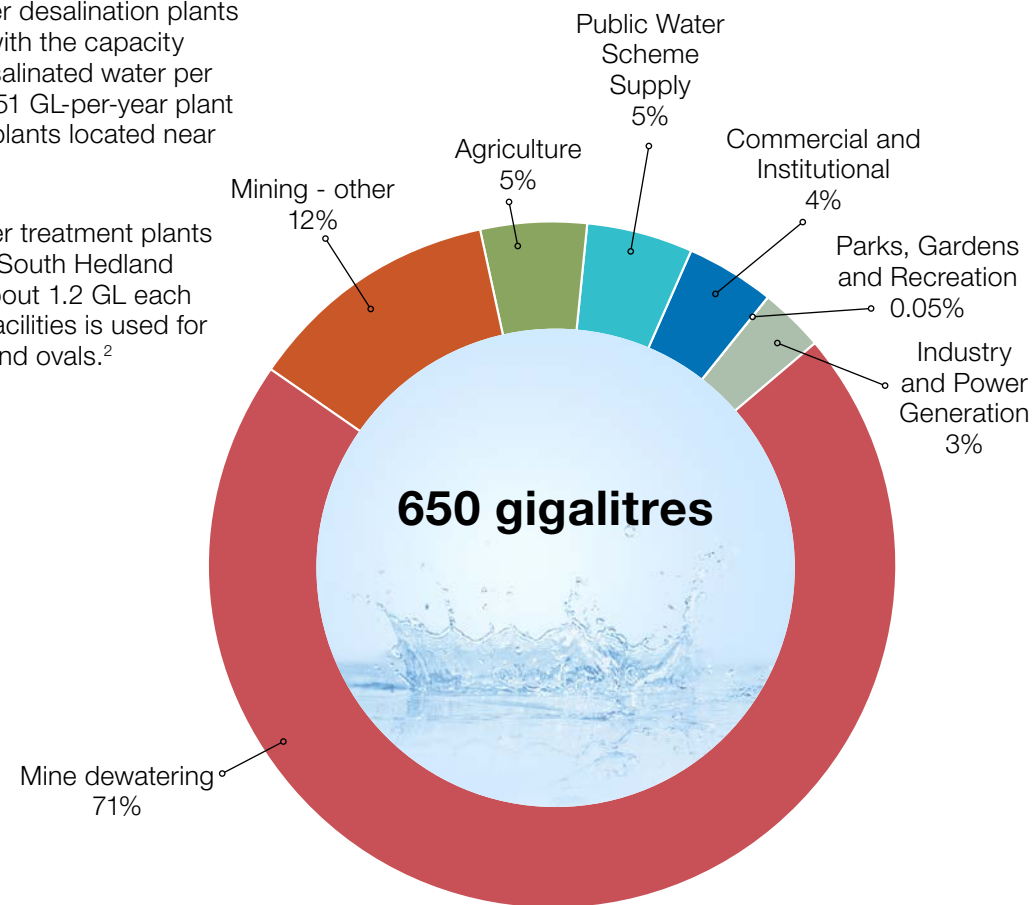


Figure 2 Average total water use (2020–24) for all sectors in the Pilbara region.

<sup>1</sup>Source: [Bureau of Meteorology - Climate resilient water resources](#)

<sup>2</sup>Source: [Water Corporation: North West water supply](#)

## Future water demand for Pilbara coastal towns and strategic industrial areas

Water demand for the Port Hedland, West Pilbara and Onslow water supply schemes combined is projected to increase by about 5 GL per year by 2035 and 10 GL per year by 2050. Of this, the Port Hedland scheme is projected to need an additional 4 GL per year by 2035 and 8 GL per year by 2050, accounting for 80 per cent of the projected demand increase.

While population growth across areas serviced by the West Pilbara Regional Water Supply Scheme is projected to be low, there is a wide range of plausible futures. The Pilbara Development Commission indicates that the residential population in the City of Karratha could grow between 17 and 44 per cent by 2040<sup>3</sup> based

on the additional workers needed for proposed major projects.

The Pilbara coast's strategic industrial areas can accommodate industries such as gas and petroleum processing, electricity production and 'downstream processing' of iron ore.<sup>4</sup> Proposed industries producing green hydrogen, green iron and low-emission ammonia have the potential to become significant water users on the Pilbara coast.

Water demand estimates for Boodarie and Maitland strategic industrial areas indicate the total volume of water needed for industrial demand on the Pilbara coast could approach 260 GL per year by 2050

under 'rapid development' scenarios. This is more than 25 times the additional water volume needed for town water supply schemes and far exceeds the water available from local groundwater and surface water sources.

A range of global and local factors is anticipated to influence the timing and pace at which new industries are established. This means that actual water demands are likely to fall within a broad range of possibilities, as represented by Figure 4. Future industrial developments in strategic industrial areas depend on private sector investment decisions, so a wide range of future scenarios for the timing and scale of new water sources exists.

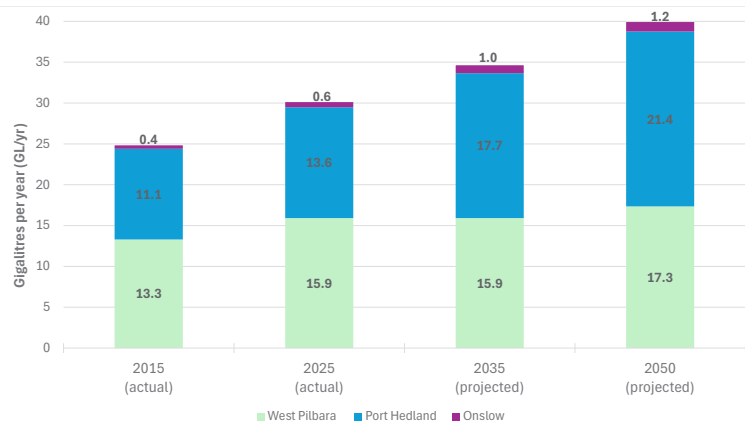


Figure 3 Actual and projected water demand for town water supply schemes on the Pilbara coast (data supplied by Water Corporation).

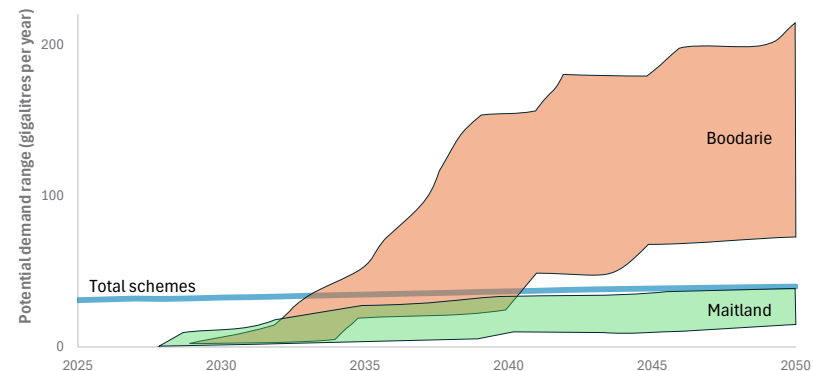


Figure 4 Potential range of strategic industrial area water demand compared to total town water supply scheme demands on the Pilbara coast.

<sup>3</sup>Source: City of Karratha – Cumulative Impact Model (unpublished report prepared by Umwelt for City of Karratha, Pilbara Development Commission and Regional Development Australia).

<sup>4</sup>Source: DevelopmentWA website: [Anketell SIA](#), [Boodarie SIA](#), [Maitland SIA](#).

<sup>5</sup>DWER estimate informed by strategic industrial area planning scenarios (unpublished).

## How climate variability affects Pilbara's water supplies

Rainfall varies across the Pilbara, and events which bring above average rainfall to some parts of the region may not reach the recharge zones of aquifers near the coast used for public water supplies. Figure 5 illustrates this variability, where much of the Pilbara coast received below-average rainfall over the three years to January 2026. In contrast, the Pilbara coast north of Port Hedland and eastern parts of the Pilbara received above-average rainfall

Rainfall also varies from year to year, with catchments supplying the town water supply schemes receiving rainfall ranging from less than 100 mm per year to over 800 mm. Apart from central Australia, the Pilbara experiences the largest variability in annual rainfall of all regions in Australia<sup>6</sup>.

Compared to Western Australia's South West, there is less confidence whether future wet season rainfall will increase or decrease across the Pilbara. Climate projections suggest that cyclones may occur less frequently, but with higher intensity. There is a moderate level of confidence that climate variability will increase, as well as the amount of time in dry conditions<sup>7</sup>. Temperature and potential evapotranspiration are also projected to increase.

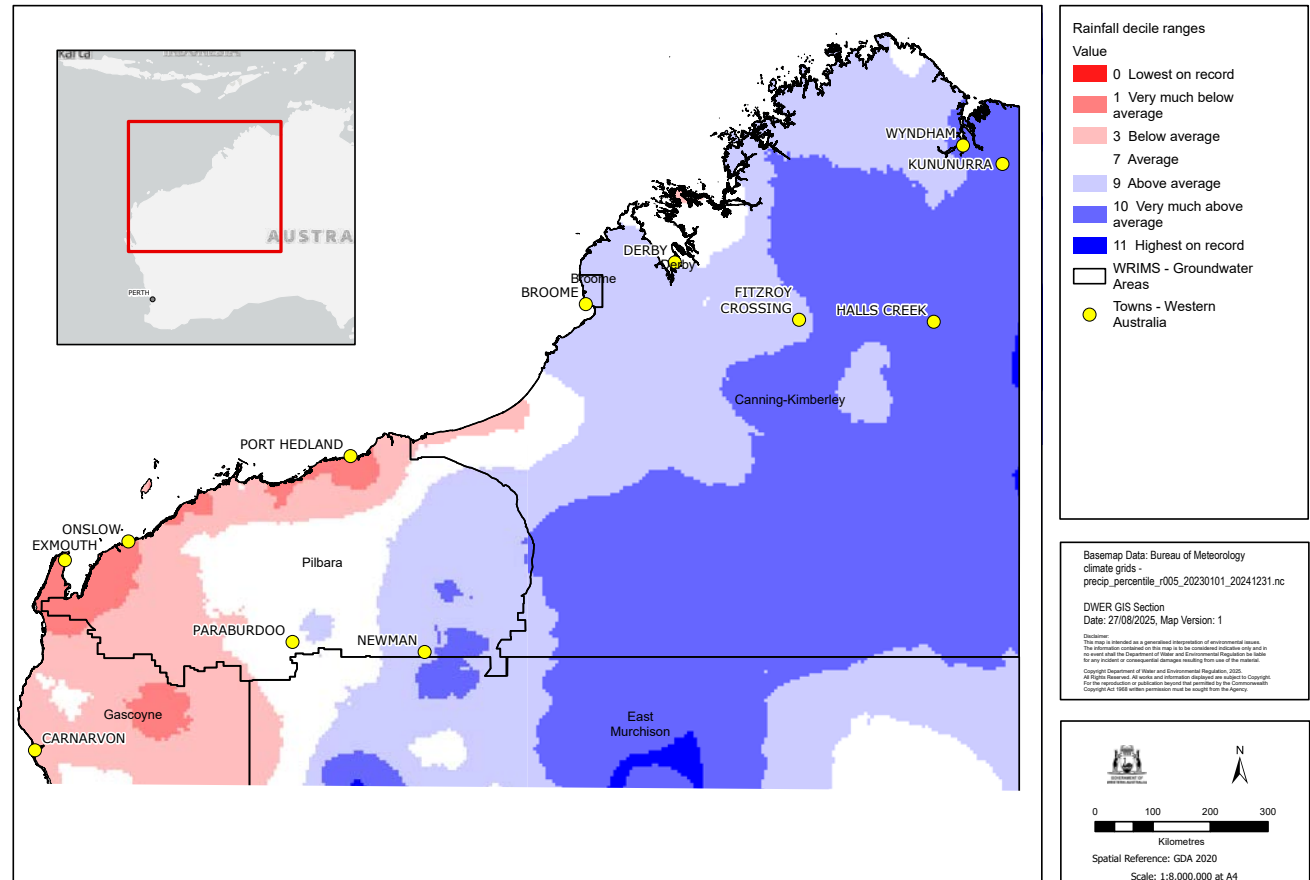


Figure 5 Northern Western Australia 36-month rainfall deciles: 1 February 2023 to 31 January 2026. Basemap data courtesy of Commonwealth of Australia Bureau of Meteorology.

<sup>6</sup>Hydroclimate of the Pilbara: past, present and future (CSIRO Land and Water, 2015).

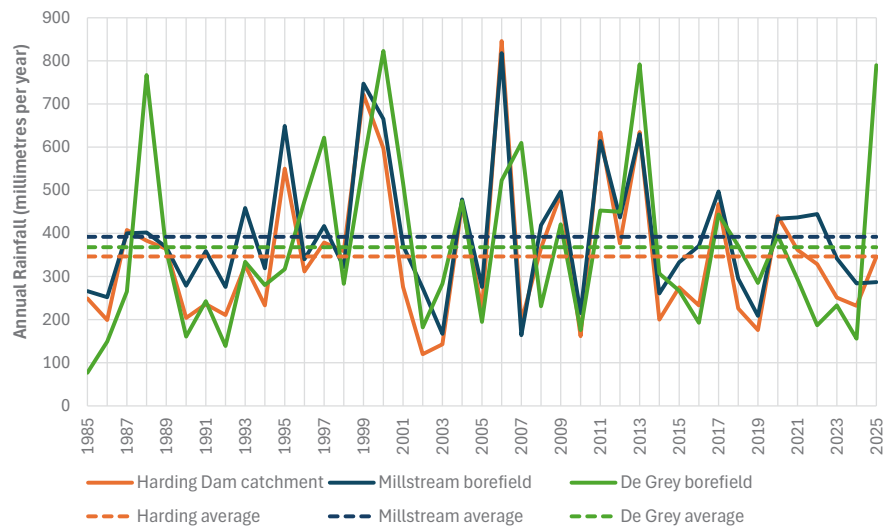
<sup>7</sup>Adapted from [Western Australian Climate Projections Summary 2021: Rangelands](#)

Wet season river flow is the best indicator for recharge to alluvial aquifers that are used to supply the West Pilbara, Port Hedland and Onslow schemes. Catchments that received below average wet season rainfall in recent years had less recharge to aquifers, reducing the groundwater available for public drinking water supplies.

A 2024 assessment<sup>9</sup> found that Harding Dam’s ability to reliably supply the West Pilbara regional water supply scheme would decline under future climate scenarios. The inability to supply water from Harding Dam in dry years has created a greater

dependence on sourcing groundwater from the Millstream aquifer to meet demand.

Recent below average rainfall combined with abstraction of groundwater for town water supply schemes has caused groundwater levels in some monitoring bores to reach thresholds detailed in the *Pilbara groundwater allocation plan 2013*. These thresholds are set to enable groundwater abstraction while managing risks to groundwater-dependent ecosystems, cultural values and the aquifers.



**Figure 6 Comparison of representative annual rainfall and rainfall averages for scheme water sources. Data from Australian Water Outlook<sup>8</sup>.**

<sup>8</sup>[Australian Water Outlook](#) point-data locations: Harding Dam catchment [-21.214, 117.097], Millstream borefield [-21.621, 117.085], De Grey borefield [-20.318, 119.281].

<sup>9</sup>[Application of the Bureau of Meteorology’s National Hydrologic Projections dataset – Harding Dam Supply Reliability.](#)



## Sustaining existing water resources for Pilbara coastal towns

Future climate projections suggest the amount which can be sustainably taken from the surface water and groundwater sources we currently rely on in the Pilbara may become more variable over the long term.

Pilbara coastal water supply schemes have continued to meet customer demands during recent dry years. However, groundwater abstraction for coastal towns and industries caused an increase in the incidence of ecological thresholds being reached during these periods of low rainfall. As a result, the annual volume of groundwater permitted to be abstracted from some sources was less than the licensed water entitlements shown in Table 1. This is likely to continue in the future, particularly during drier years. Similarly, the volume available from Harding Dam may be less than the licensed water entitlement when there is insufficient inflow and water in storage.

**Table 1 Summary of current and committed water sources for Pilbara coastal town water supply schemes**

Source	Annual licensed water entitlement	Minimum, maximum and average volume abstracted 2020–25
<b>West Pilbara regional water supply scheme</b>		
Harding Dam	up to 15 GL/yr <sup>(a)</sup>	1.5 to 5.4 GL/yr (4.2 GL/yr avg.)
Millstream aquifer	up to 6 GL/yr <sup>(b)</sup>	3.5 to 6.2 GL/yr (4.6 GL/yr avg.)
Bungaroo aquifer	up to 10 GL/yr <sup>(c)</sup>	5.5 to 7.4 GL/yr (6.2 GL/yr avg.)
<b>Port Hedland regional water supply scheme</b>		
Yule aquifer	up to 10.5 GL/yr <sup>(d)</sup>	7.8 to 9.2 GL/yr (8.4 GL/yr avg.)
De Grey aquifer	up to 10 GL/yr <sup>(e)</sup>	4.1 to 4.6 GL/yr (4.3 GL/yr avg.)
<b>Onslow town water supply scheme</b>		
Cane River borefield	up to 0.55 GL/yr <sup>(f)</sup>	0.45 to 0.65 GL/yr (0.56 GL/yr avg.)
Seawater desalination	Not applicable (0.54 GL/yr production capacity from 2026)	Not applicable

Notes to table:

- (a) The maximum volume permitted to be taken from Harding Dam is the annual licensed water entitlement, less the volume taken from Millstream borefield.
- (b) When recharge is below defined thresholds, abstraction may be reduced. Excludes temporary licensed water entitlement volumes.
- (c) Volume licensed to Hamersley Iron (Rio Tinto) and used to supply its coastal water demands via the West Pilbara scheme.
- (d) Yule aquifer: Abstraction is restricted to 8.5 GL/yr when recharge is below defined thresholds.
- (e) De Grey aquifer: Abstraction is restricted to 8 GL/yr when recharge is below defined thresholds.
- (f) Excludes temporary licensed water entitlement volumes.

In the 10 years to 2024–25, on average only 24 per cent of water abstracted for the West Pilbara scheme (including for Rio Tinto demands) came from Harding Dam (Figure 7). Water quality and infrastructure damage from cyclones has also limited the ability to source water from Harding Dam at various times. Millstream borefield supplied 32 per cent and Bungaroo borefield supplied 44 per cent of the total water sourced for the scheme. Integrating new climate-resilient water sources like seawater desalination into the scheme can help to manage the variability of supply from existing groundwater and surface water sources and meet the projected growth in water demand.

To make the best use of our existing groundwater and surface water sources, industry, water service providers and communities all have a role to play to ensure water is used efficiently and losses from supply systems are minimised. Demand management strategies including non-visible leak detection are key initiatives for lessening the impact on water resources, particularly in the event of successive low rainfall years.

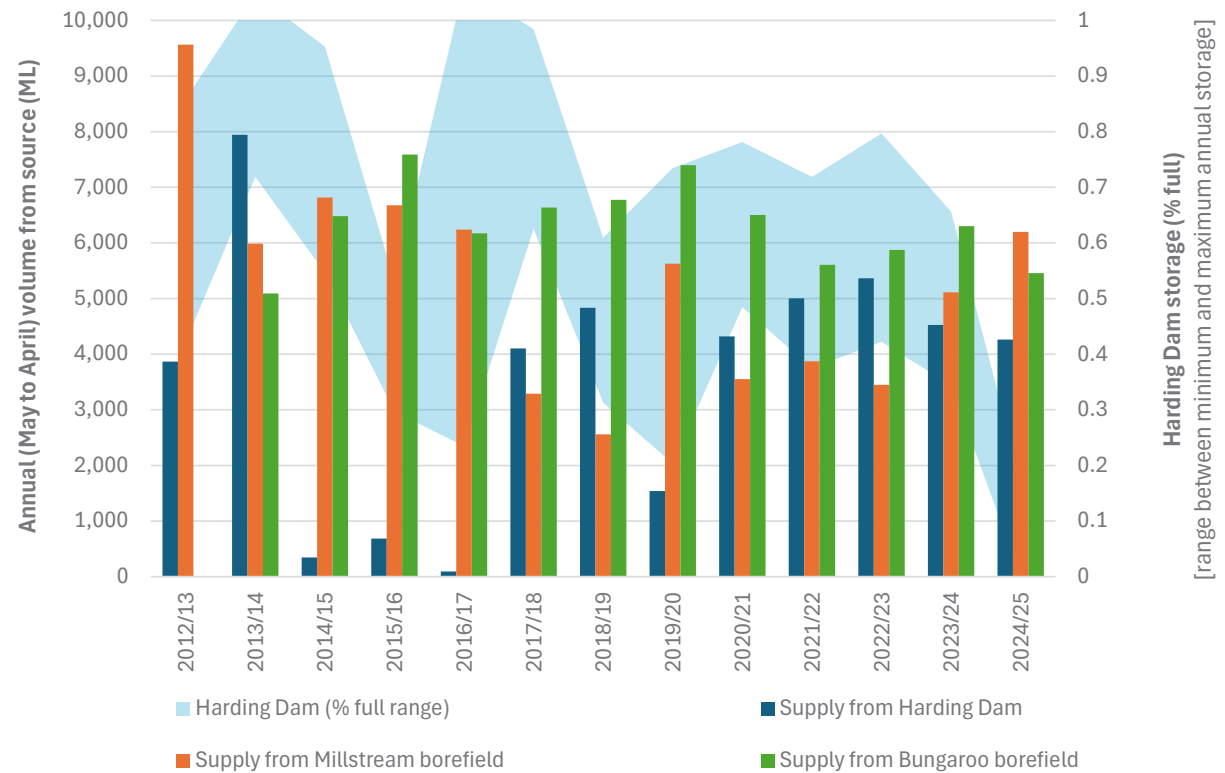


Figure 7 Volume abstracted from West Pilbara regional water supply scheme sources, overlaid on Harding Dam water in storage.

## Evaluation of groundwater options for Pilbara coastal towns and strategic industrial areas

The department has reviewed the groundwater source options identified in the *Pilbara Regional Water Supply Strategy* (2013) (Table 3). We also reviewed further options that were proposed and investigated after the strategy was developed. Our desktop evaluation considered findings from department-led groundwater investigations including for the north-west Hamersley Range (2016) and West Canning Basin (Pardoo [2013] and Sandfire [2016–22]).

Our evaluation of source option viability (Table 2) considered three main elements:

- Estimated supply potential – could the estimated available volume meet projected water demand for schemes and strategic industrial areas by 2050
- Uncertainty – how current and precise our information is about the resource
- Difficulty – how technically feasible it would be to develop the source.

Our evaluation found that groundwater resources are reducing in reliability, quality, sustainability, and viability to meet further significant demands. It may be feasible to service smaller and localised water demands from groundwater sources, but the distance between prospective aquifers and where the water is needed means significant infrastructure can be required to access small volumes. These aquifers are not large enough to meet the long-

term demand for industrial water anticipated from strategic industrial areas, so other water supply options must be considered.

Despite this, some water source options assessed to be unviable for scheme supply may be suitable, for meeting water demands closer to the source, or supplying short-term water requirements for strategic industrial areas, such as for construction and early water needs.

On-ground investigations of individual source options are needed to consider local factors that may affect sustainable yield, water quality, ecological and cultural values to ascertain the suitability for such purposes.

**Table 2 Details of source options ratings for ‘uncertainty’ and ‘difficulty’ in Table 3**

Rating	Uncertainty	Difficulty of developing the source
<b>Low</b>	The source has been recently investigated and/or supply potential is well understood.	Technical, ecological and/or social constraints are unlikely or can be acceptably overcome or managed.
<b>Medium</b>	Further investigations are required to confirm yield or supply potential.	More complex technical solution and/or management of ecological and/or social factors likely to be needed.
<b>High</b>	Limited current information. Significant investigation needed to determine supply potential. Actual supply potential may vary significantly from estimate.	Potential for unmanageable technical constraint, ecological and/or social factor.
<b>Unacceptable</b>	Not applicable	Previous assessment has determined the risks or cost associated with supplying from this source is unacceptable.
<b>None/Unknown</b>	Not applicable	Insufficient information to assign a rating.

Table 3 Desktop evaluation of potential water sources for Pilbara coastal town water supply schemes and strategic industrial areas

	Estimated supply potential	Uncertainty	Difficulty	Potentially viable option
<b>West Pilbara water supply scheme</b>				
1. Hamersley Range investigation area	3–8 GL/yr	High	High	No
2. Lower Robe alluvial aquifer	~5 GL/yr	Medium	High	No (distant source)
3. Upper Harding fractured rock aquifer	~1 GL/yr	High	High	No
4. Millstream North fractured rock aquifer	1–2 GL/yr	High	Medium	Yes (limited supply)
5. Upper Bungaroo Valley investigation area	up to 10 GL/yr	High	Medium	No (high risk)
6. Sholl shear zone	~3 GL/yr	High	High	No
7. Harding River alluvial aquifer	~2 GL/yr	High	High	No
8. Lower Fortescue River alluvial aquifer	6.6 GL/yr	High	High	No (near full allocation)
9. Maitland River alluvial aquifer	Uncertain	High	Unknown	No
10. George River alluvial aquifer	1–2 GL/yr	High	High	No
<b>Port Hedland (East Pilbara) water supply scheme</b>				
11. De Grey alluvial aquifer (Bulgarene)	~2.5 GL/yr	Medium	Unacceptable	No (high risk)
12. Upper De Grey alluvial and paleochannel (borefield expansion)	~2 GL/yr	Medium	High	Yes (limited supply)
13. Yule alluvial aquifer (borefield expansion)	~2 GL/yr	Medium	High	Yes (limited supply)
14. West Canning Basin – Pardoo investigation area	10–20 GL/yr	–	–	No (fully allocated)
15. West Canning Basin – Sandfire investigation area	Uncertain	–	–	No (fully allocated)
16. Turner River alluvial aquifer	less than 0.5 GL/yr	Medium	Unacceptable	No (high risk)

	Estimated supply potential	Uncertainty	Difficulty	Potentially viable option
<b>Boodarie SIA (Port Hedland area), Maitland SIA and Anketell SIA (West Pilbara area)</b>				
Local groundwater aquifers within 100 km (as per Figure 8)	up to 10 GL/yr	High	Medium	Yes (limited supply)
Surplus mine dewater	Uncertain	High	High	Yes (distant sources, uncertain supply)
<b>Onslow town water supply scheme</b>				
17. *Cane River alluvial aquifer (borefield expansion)	Uncertain	Medium	High	No (high risk)
18. *Birdrong aquifer (desalination)	<1.5 GL/yr	Medium	High	No (unsuitable quality)
19. *Lower Ashburton	Uncertain	Medium	High	No (very low yield)
20. *Lower Robe aquifer	~5 GL/yr	Medium	High	No longer required
<b>Ashburton SIA (Onslow area)</b>				
18. *Birdrong aquifer (desalination)	<1.5 GL/yr	Medium	High	Yes (limited supply, poor water quality)
19. *Cane River alluvial aquifer (borefield expansion)	Uncertain	Medium	High	No (very low yield)
20. *Lower Robe aquifer	~5 GL/yr	Medium	High	Yes (limited supply)
Surplus mine dewater	Uncertain	High	High	Yes (distant sources, uncertain supply)

\*Options identified in the Pilbara Regional Water Supply Strategy (2013).

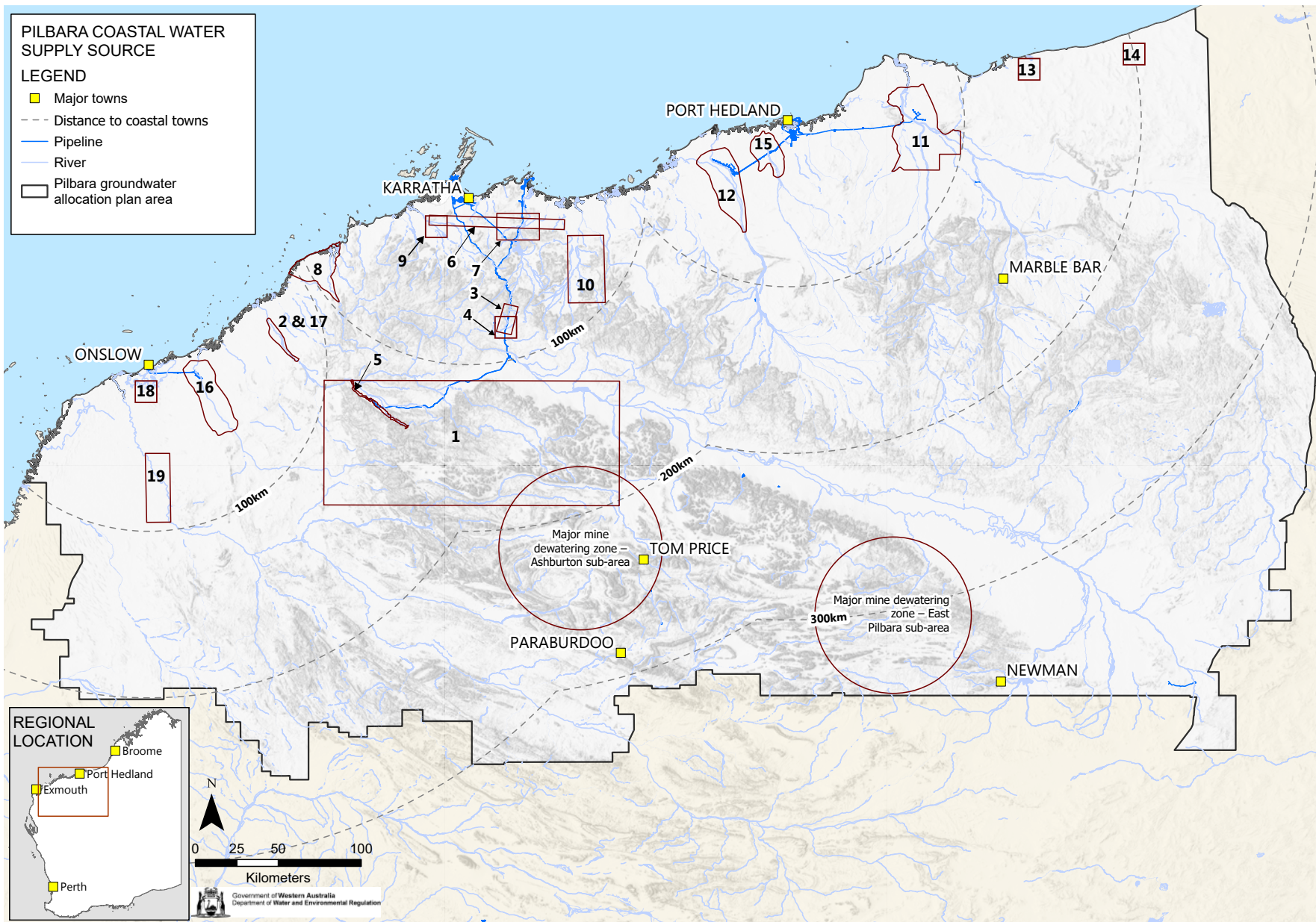


Figure 8 Location of water resources evaluated (Table 3) for Pilbara coastal towns and strategic industrial areas.

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## Transitioning to a climate-resilient combination of water sources

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Groundwater and surface water can continue to provide a critical source for Pilbara's water needs but new climate-resilient sources such as seawater desalination need to be integrated to support growing demand and manage the increased variability in what is available to take from aquifers and dams. Enlarging or building new dams is not considered a viable option due to climate variability, limited yield, lack of suitable sites and significant environmental and heritage impacts. Managed aquifer recharge concepts such as 'underground weirs' have been considered for increasing the volume of recharge to some shallow aquifers; however, this concept remains reliant on sufficient surface water flows to infiltrate the aquifer.

Water Corporation's preferred next major water source option for the West Pilbara water supply scheme is seawater desalination by the early 2030s. A seawater desalination plant for the Onslow town water supply is already underway and due for completion in 2026. New water source options are also being considered for the Port Hedland scheme and include seawater desalination. It will be crucial that potable water supply schemes have sufficient capacity and supply resilience to meet the potentially rapid growth in water demand as workforces are established in the region to construct and operate new industrial facilities.

Seawater desalination is a well-established technology used to produce low-salinity water suitable for a variety of uses. It is becoming a critical source of secure and reliable fresh water in situations where surface water and groundwater availability is declining and where abstraction has reached sustainable limits.

While the use of seawater offers a virtually unlimited supply, desalination plants are costly to build and to operate. For example, Stage 1 of the Alkimos Seawater Desalination Plant in Perth's north is projected to cost \$2.8 billion, with a production capacity of 50 GL per year. The process to remove salt from seawater is also energy intensive, adding further cost compared with water from other sources.

To realise the projected trend-breaking growth in water demand on the Pilbara coast, water sources will initially be needed to service construction and early-stage process water demands for new green industries, which may be met by local sources. In the medium and longer term, scalable and climate-resilient water sources will be essential to meet increasing operational demands and water-intensive activities such as producing green hydrogen through electrolysis.

There are several potential models for developing climate-resilient water supplies to meet long-term water demands. These range from water sources and services developed and established entirely by private proponents to public-private partnerships where the costs and benefits are shared between public, private and Traditional Owner entities.

There are opportunities to advance the circular economy of the Pilbara region including by recycling industry wastewater and using excess groundwater produced by mine dewatering. Factors such as the large distance from mine sites to the coast, coupled with the fluctuating nature of dewatering activity and water users' need for consistent supply volumes, have historically made using mine dewater more complex than other source options available.

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## What the State Government is doing

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In addition to our regulatory functions for water management, licensing and environmental protection, the department is coordinating other State Government agencies to address strategic water issues in the Pilbara. We will continue to support other agencies and stakeholders by providing water and environmental technical advice, including water resource information.

The department is evaluating the *Pilbara groundwater allocation plan (2013)* to provide a more detailed status update on the target resources established in the plan. We will undertake an allocation limit review for priority aquifers within the Pilbara groundwater allocation plan area, including the West Canning Basin resource.

A transition to large-scale seawater desalination in the Pilbara introduces strategic matters for the State Government to address in collaboration with the private sector. This includes identifying the optimal configuration of seawater desalination on the Pilbara coast to meet total water demands, common user infrastructure arrangements, funding and water service provision models. We are also further investigating the opportunities and constraints for using surplus water produced during mining operations to meet water demands.

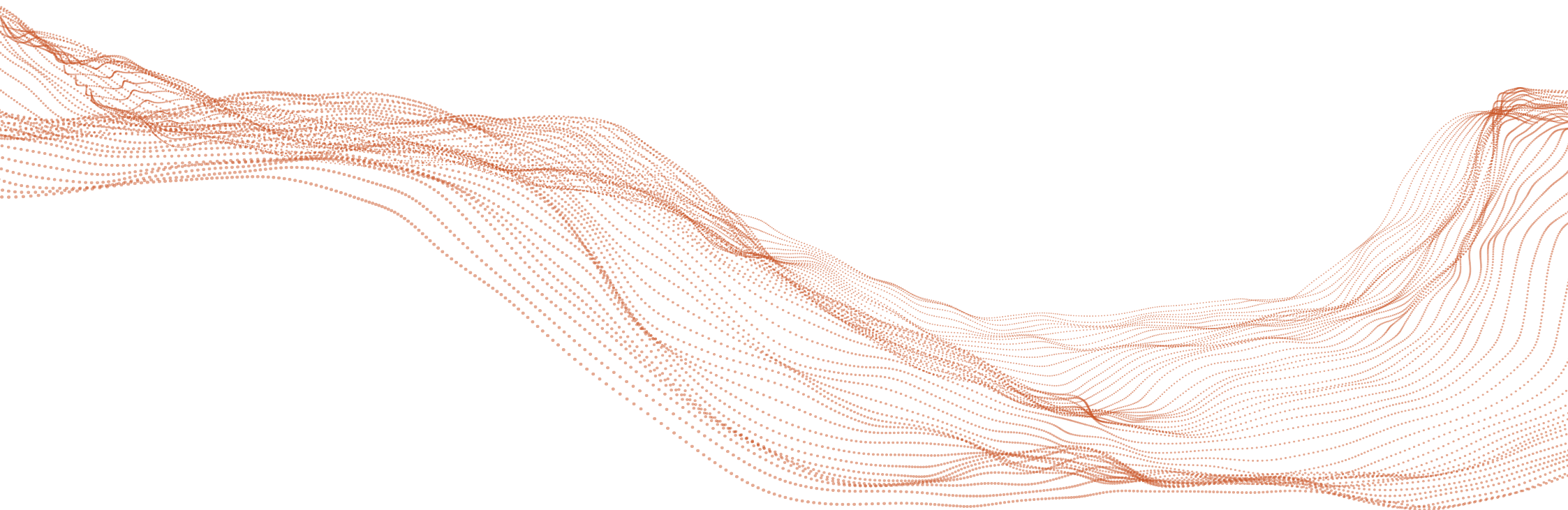
We are working with Traditional Owners to recognise their custodianship of land and water, and to support their growing aspirations for building economic futures through culturally appropriate water source development.

The department will support Water Corporation to plan for a range of water demand scenarios and to understand how climate change might affect water resources in the Pilbara. Increasing climate variability means we need to plan for a range of plausible impacts on water sources and multiple water availability scenarios.

The State Government is collaborating with private industry to supply water needed for local communities and industry on the Pilbara coast. A 2025 Memorandum of Understanding between the State Government and Rio Tinto aims to strengthen water security in the Pilbara, and will see Water Corporation and Rio Tinto assess, and if feasible, consider options to deliver Stage 2 of the Dampier Seawater Desalination Plant. This could make a supply of up to 4 GL per year available to the West Pilbara scheme and reduce pressure on the Millstream aquifer. Construction of Stage 1 of the Dampier Seawater Desalination Plant by Rio Tinto will enable abstraction from the Bungaroo borefield to be reduced from 2026. Reducing groundwater take will help protect sites of environmental and cultural importance.

Water Corporation will continue to exercise its responsibility for the timely planning and development of new water sources for most of Western Australia's public water supply schemes. It is also undertaking water servicing studies for the Pilbara's Boodarie and Maitland strategic industrial areas on behalf of the Department of Energy and Economic Diversification. These studies will identify technical options to source and supply water to strategic industrial areas, guiding proponents and government as infrastructure and water servicing models are established.

Water management plans, approved through the land use planning process for strategic industrial areas, identify the private sector is responsible for establishing industrial water supply sources and services. Coordination of private water infrastructure and servicing proposals is essential to ensure strategic industrial areas are established with adequate water supply while minimising economic costs and environmental impacts. Information provided by us and Water Corporation will help guide the Department of Energy and Economic Diversification as it leads planning for future infrastructure needs for Pilbara industries.



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