



State of Australian Aquatic Facilities 2025

Benchmarking Social, Health & Economic Value, Access Equity & Sustainability



ROYAL LIFE SAVING
AUSTRALIA

Royal Life Saving is focused on reducing drowning and promoting healthy, active and skilled communities through innovative, reliable, evidence-based advocacy; strong and effective partnerships; quality programs, products and services; underpinned by a cohesive and sustainable national organisation.

Royal Life Saving is a public benevolent institution (PBI) dedicated to reducing drowning and turning everyday people into everyday community lifesavers. We achieve this through: advocacy, education, training, health promotion, aquatic risk management, community development, research, sport, leadership and participation and international networks.

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Please contact:

PO Box 558 Broadway
NSW 2007 Australia
Phone: 02 8217 3111
Email: info@rlssa.org.au
Royal Life Saving Society – Australia

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Royal Life Saving Society - Australia acknowledges the traditional custodians and Elders past and present across Australia, with particular acknowledgment to the Gadigal people of the Eora nation, the traditional owners of the lands where our offices are located. We pay our respects to Australia's First Nations cultural and spiritual connections to water, and acknowledge the land where we work, live and play always was and always will be Aboriginal land.

> EXECUTIVE SUMMARY

The State of Australian Aquatic Facilities 2025 report provides a data-driven analysis of the current profile, state, challenges, and opportunities facing aquatic facility planners, owners and operators and governments. Using authoritative data sources this report presents a comprehensive assessment of the sector's impact, recent funding landscape and sustainability challenges.

KEY FINDINGS & INSIGHTS

1. Aquatic Facilities: Social & Economic Value



421 million visits

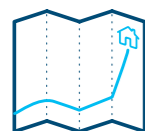
annually to 2,103 publicly accessible aquatic facilities across Australia



The social value of aquatic facilities has increased to **\$12.84 billion per year**, up from \$9.1 billion in 2021, and is inclusive of health, social, and economic benefits



Each visit to an aquatic facility **generates \$30.50** in economic benefits, reflecting improved health outcomes, reduced healthcare costs, and community engagement



Drowning remains a major public health concern, with 323 fatalities in 2023/24.

Community access to public pools has been a key to the Australian approach to water safety and drowning prevention for generations.

2. Infrastructure Challenges & Investment Needs

> There is new data on the average ratios of aquatic facilities to population.

AVERAGE AQUATIC FACILITY TO POPULATION RATIOS (APPROX)

Capital Cities: 1:20,000

Regional Cities: 1: 12,000

National average: 1:13,000

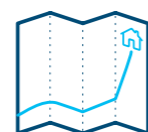
> People living in many regional and outer-metropolitan areas lack access to aquatic facilities for lessons, leisure and fitness. This gap in access contributes to social inequities. New data shows a need for better planning frameworks that account for geographic distribution and population growth projections.

> More than 6 million Australians (24%) must drive more than 10 minutes to reach a public pool; this figure is projected to rise to 7.3 million (29%) by 2032.

> 1.8 million Australians (7%) are more than 20 minutes away, highlighting the growing equity issue in public pool access.

> Analysis of Commonwealth investment shows \$1.79 billion allocated across multiple programs, with \$297.54 million (16.62% of total community infrastructure funding) going towards aquatic infrastructure in 2023 and 2024.

> While previous research identified 500 public pools are approaching the end of their lifespan with no national plan to address this, this report has found local governments are under significant financial pressure, with programs falling short of the demand. A dedicated funding stream for public pool feasibility plans, maintenance, upgrades and new facilities is likely needed.



1 in 4 Australians

must drive more than 10 minutes to reach a public pool

3. Workforce Challenges & Safety Concerns

> Lifeguards responded to a 12.5% increase year-on-year in major incidents responded to by pool lifeguards. While causation is unclear, increased usage, a green workforce, fragmented approaches to training and accreditation and declining swimming skills post-COVID are likely to be influencing factors.

> There is an increasing trend of public aggression and abuse towards aquatic staff, requiring improved workplace protections, training and accreditation systems and support.

4. Sustainability & Climate Action

> Aquatic facilities are major energy consumers, requiring systematic upgrades to reduce environmental impact.

> The majority of pools still rely on natural gas, necessitating more programs for electrification and renewable energy adoption.

> Water waste and energy inefficiency remain key concerns, with leaks, evaporation, and outdated filtration systems contributing to excessive resource consumption.

> Leading facilities showcase the potential for fully sustainable, net-zero energy operations.

> KEY RECOMMENDATIONS

1. Establish a National Public Pool Investment Program

> Secure sustainable, dedicated funding to upgrade, expand, and replace aging aquatic facilities.

> Prioritise equitable access, focusing on growth areas and underserved communities.

> Ensure investment in energy-efficient, climate-resilient pools.

> Support feasibility studies for low-resource councils and disadvantaged communities.

2. Develop a National Public Pool Planning Framework

> Guide state and local governments on equitable planning and investment in aquatic facilities.

> Implement systematic needs assessments to ensure investment decisions are focused on population growth, access through the asset lifespan, and fit for purpose design, and prevent overinvestment in areas with limited demand.

3. Strengthen Workforce Protections & Professional Development

> Strengthen approaches to auditing and assessment of safety and quality outcomes at aquatic facilities and training providers.

> Strengthen industry licensing / accreditation schemes, empowering workers and ensuring quality training and accreditation outcomes.

> Strengthen supports for aquatic workers who may face abuse and aggression through industry-wide measures.

4. Implement National Sustainability Standards for Aquatic Facilities

> Support widescale electrification and energy efficiency upgrades.

> Invest in water-saving technologies such as ultra-fine filtration and leak detection systems.

> Adopt baseline national energy and water benchmarks for public pools, incentivise accelerated improvements to reduce ecological footprint.

> INTRODUCTION

Aquatic facilities hold a unique and indispensable place in the Australian way of life.

They are more than just safe places to swim; they are community hubs that bring people together for relaxation, recreation, fitness, and social connection, enabling significant social impact in communities Australia-wide, while providing state, territory and commonwealth governments with significant social return on investment.^{25 32}

These facilities are places where families and individuals of all ages gather to build memories, foster health, and learn essential life skills like swimming and water safety.

However, the importance of aquatic facilities extends beyond enjoyment and leisure—they play a critical role in drowning prevention and reducing the economic burden on Australia's health and emergency response systems.²⁵

Yet, the viability and sustainability of Australia's aquatic facilities are at a significant crossroads. Royal Life Saving Australia research³² shows that 500 pools are approaching the end of their lifespan, with no national plan to address this.

The rising cost of utilities and workforce challenges introduce additional structural threats to the viability of community pools under current planning and delivery systems. Furthermore, growing urban population and new suburbs mean that many Australians, particularly in disadvantaged areas, are missing out on access to safe places to swim and learn water safety skills, placing additional burdens on rescue, emergency and health systems.

This report details the significant impact of aquatic facilities, maps the availability of public pools against growing communities, and highlights sustainability challenges.

> METHODS

Statistics

This research draws on multiple data sources and frameworks. Key data was sourced from the Royal Life Saving Australia National Aquatic Facility Database, detailing the distribution, classification, and attributes of aquatic facilities nationwide. Operational performance was assessed using CERM PI National Aquatic Facility Performance Indicators, covering efficiency, utilisation, and service quality. In 2024, 212 aquatic facilities participated in the CERM PI Survey, contributing data on visitation, utility usage, incidents, and full-time-equivalent (FTE) staff numbers.

The social and economic contributions of aquatic facilities were evaluated using the PwC & Royal Life Saving Australia National Aquatic Facility Social Value Indicator Framework, quantifying their broader community impact, this methodology has been used, adjusted for increased visitation figures and inflation.

Drowning prevention data was sourced from the Royal Life Saving Australia National Fatal Drowning Database, which tracks fatal incidents and trends.

Workforce data was derived from the Royal Life Saving Australia National Aquatic Workforce Profile, CERM PI data, and an analysis of Lifeguard Rescues reported by major facility operators.

Case studies were sourced from suppliers, designers, and local governments, then adapted for relevance in this report.

Pool Availability & Drive Time Analysis

This analysis is based on the Royal Life Saving Australia National Aquatic Facility Database, cataloguing all publicly accessible pools in Australia. It includes public indoor and outdoor pools, but excludes private fitness centres, commercial swim schools, clubs, theme parks, and educational institutions.

Facility locations were geocoded using latitude and longitude from publicly accessible maps (e.g., Google Maps). Drive time accessibility was calculated using 10-minute and 20-minute isochrone polygons², generated via the hereR package in RStudio 4.4.1, leveraging HERE Technologies API. Traffic variations (e.g., time of day, day of the week) were not factored into drive time calculations.

To estimate population accessibility, we calculated the proportion of each census mesh block within a drive time isochrone, then multiplied it by the block's population. For example:

- If 100% of a mesh block fell within the drive time, its entire population was included.
- If 75% of a mesh block overlapped with the drive time, its population was multiplied by 0.75.

Population projections were sourced from Geoscience Australia's ABS Digital Atlas of Australia, which provides SA2-level projections through 2032 using medium-series ABS capital city/rest-of-state data. High-growth areas were identified by calculating the percentage change between 2022 and 2032.



> A NATIONAL SNAPSHOT

Across Australia, there are 2,103 publicly-accessible aquatic facilities, including outdoor pools, aquatic centres, and swim schools.

These facilities collectively receive more than 421 million visits annually, providing vital opportunities for physical activity, community engagement, and skill development. The facilities are critical not just for urban centres but also for rural and regional areas, where they serve as anchors of community life and access to safety education.



421 million
Australians visited
aquatic facilities in 2024

State / Territory	Total No. of aquatic facilities	No. outdoor pools	No. aquatic centres	No. swim schools / other	% of Total Pools	Total annual visits
QLD	433	177	100	156	21%	86,753,083
NSW	620	307	107	206	29%	124,219,195
VIC	567	180	122	265	27%	113,600,457
WA	225	59	70	96	11%	45,079,546
NT	29	22	5	2	1%	5,810,253
SA	127	55	26	46	6%	25,444,900
TAS	75	30	12	33	4%	15,026,515
ACT	27	2	8	17	1%	5,409,546
National Total	2103	832	450	821	1	421,343,494

State / Territory	Annual Social Value (\$) (inflation adjusted to Jan 25)	Annual Social Value - Average Facility (\$)
QLD	\$2,644,275,644	\$6,106,872
NSW	\$3,786,260,737	
VIC	\$3,462,596,512	
WA	\$1,374,046,235	
NT	\$177,099,293	
SA	\$775,572,764	
TAS	\$458,015,412	
ACT	\$164,885,548	
National Total	\$12,842,752,144	

Economic and Social Value

The value of aquatic facilities to Australia's economy and society is profound.

Adjusted for inflation, and based on an estimated 421 million visits, the social value of Australian aquatic facilities is \$12.8 billion per year measured in social, health and economic benefits.

The average aquatic facility provides a social value of \$6.1 million per year measured in social, health and economic benefits.

By teaching swimming and water safety skills, aquatic facilities significantly reduce the likelihood of drowning incidents. They also alleviate pressure on emergency, rescue and health systems by promoting water safety and physical activity, contributing to better overall public health outcomes. Every visit to an Australian aquatic facility generates \$30.50 in economic benefits, encompassing health improvements, reduced healthcare costs and decreased absenteeism.*

In 2024, for every dollar spent on maintaining and operating aquatic facilities, there is (an inflation-adjusted) \$5.46 social return on investment²⁵ in the form of healthier, safer, and more connected communities.

*This has been revised using the Reserve Bank of Australia's Inflation Calculator²⁸, using previously researched indicators⁷ from \$26.39 in 2017 to approximately \$30.50 in 2024.



Every visit to an aquatic facility generates **\$30.50** in economic benefits



Each dollar spent operating aquatic facilities has a **\$5.46 social return** on investment



\$6.1 million annual social value - average aquatic facility



The national social value of Australian aquatic facilities is **\$12.8 billion per year**

Economic Impact of Drowning

In 2024, drowning accounted for 323 fatalities. Royal Life Saving Australia research⁸ (adjusted for inflation) shows the cost of drowning to the Australian economy is approximately \$5.1 million per incident, amounting to an annual economic burden of \$1.65 billion.

More importantly, each drowning represents the loss of a father, mother, sister, brother, child or grandparent and has a significant detrimental impact on families, friends, community groups, the health and emergency services, the economy, and the social fabric of a community.

Aquatic facilities provide relatively safer places to swim and learn swimming and water safety skills, contributing to improved drowning prevention outcomes. Community access to public pools has been a key to the Australian approach to water safety and drowning prevention for generations.

SAFETY & WORKFORCE CHALLENGES

Workers in aquatic facilities conduct thousands of rescues and preventative actions each year, and are often victims of harassment and abuse.

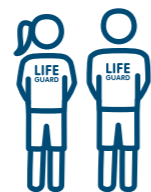
State / Territory	No. of FTE	No. of FTE Lifeguards	No. of FTE receptionists	No. of FTE fitness staff	No. FTE Swim Teachers	Workers	Major Incidents	Lifeguard Rescues	Lifeguard / Staff Abuse Incidents
QLD	8514	2,066	1,418	632	3,143	13,383	3,065	1,622	504
NSW	12,191	2,959	2,030	905	4,501	19,163	4,389	2,323	722
VIC	11,149	2,706	1,856	828	4,116	17,525	3,408	2,124	661
WA	4424	1,074	737	329	1,633	6,954	1,593	843	262
NT	570	138	95	42	211	896	205	109	34
SA	2,497	606	416	185	922	3,925	899	476	148
TAS	1,475	358	246	110	544	2,318	531	281	87
ACT	531	129	88	39	196	835	191	101	31
National Total	41,352	10,036	6,885	3,071	15,267	65,000	14,282	7,879	2,450

In 2024, there were 14,282 major incidents at aquatic facilities, a 12.5% increase from 12,735 incidents in 2023. These incidents include rescues, medical emergencies like heart attacks, and any situation requiring an ambulance or emergency services.

Lifeguards performed 7,879 rescues in 2023,¹⁹ yet only 14.5% of facilities completed a Royal Life Saving Australia endorsed Aquatic Facility Safety Assessment. Areas of concern include gaps in staff training, qualifications, and in-service training, suggesting widespread workforce safety management issues across the industry.

One key concern is the spike in rescues during school swimming carnivals, where lifeguards are three times more likely to perform a rescue. This raises fears that children's swimming skills have declined since COVID-19. Other possible reasons for the increase in major incidents include:

- More people using pools
- An aging population with more health conditions
- A less experienced workforce post-COVID
- Gaps in training and accreditation across the industry
- Insufficient management oversight to ensure lifeguards and swim teachers maintain up-to-date skills



Pool lifeguards responded to a **12.5% increase** in major incidents than the previous year.



Yet only **14.5%** of facilities completed a Royal Life Saving Australia endorsed Aquatic Facility Safety Assessment

More research is needed to confirm these causes and track incident trends.

Meanwhile, the number of training providers has grown significantly.³⁵ There are now:

- 54 registered training organisations (RTOs) offering the Pool Lifeguard Skillset (SIS5500133)
- 52 RTOs offering the Swimming and Water Safety Teacher Skillset (SIS5500132)

Both figures are about 50% higher than a decade ago, largely due to government-funded training programs aimed at addressing workforce shortages following COVID-19. As a result, the rapid increase in training providers within a limited market may be driving downward pressure on training quality, as increased competition forces providers to lower prices. More research is needed to understand how this situation impacts training standards, industry outcomes, and overall safety in aquatic facilities.

The National Aquatic Workforce Framework¹⁸ last year proposed strengthening industry licensing / accreditation schemes as a safeguard to ensure all lifeguards and swim teachers are achieving currency with aquatic safety standards and the Guidelines for Safe Pool Operations. This recommendation should be considered in combination with strengthening auditing schemes of aquatic facilities and training providers.

Furthermore, recent media reports and claims by aquatic facility owners and operators also indicate there has been an increase in abuse and aggression faced by lifeguards and other aquatic facility staff over the last 12 months, with several recent high-profile incidents. However, data on the number of abuse incidents is not available pre-2024.

Overall, workers in aquatic facilities do a great job of keeping people safe and teaching swimming and water safety skills, contributing significantly to healthier and happier communities. However, the rise in abuse incidents from the public towards lifeguards and swim teachers creates additional unnecessary workforce challenges. Recent campaigns have resolved to raise awareness about increased abuse of lifeguards and aquatic staff, however, more support is needed for monitoring, de-escalation training and wider campaign dissemination.

Recommendations – Safety & Workforce

- All publicly accessible aquatic facilities should regularly undertake a Royal Life Saving Australia-endorsed Aquatic Facility Safety Assessment so that owners, operators, community and governments have assurances that safety systems conform to current industry standards
- Owners and operators should ensure they provide in-service training sessions to their workforce which align with the content and frequency recommended in the Guidelines for Safe Pool Operations
- Further research into aquatic industry training and accreditation schemes should be conducted to understand the quality and outcomes of the current approach
- Industry licensing / accreditation schemes should be strengthened and streamlined
- Strengthening supports for aquatic workers who may face abuse and aggression is needed. Supports include proactive public education campaigns and providing de-escalation and conflict resolution training to staff at aquatic facilities.



Read more about the **National Aquatic Workforce Framework:**
<https://www.royallifesaving.com.au/training-development/careers-focus/national-aquatic-workforce-framework>



› INFRASTRUCTURE CHALLENGES

Despite their demonstrable community impact, Australian communities face significant aquatic infrastructure challenges. Many public pools are aging, with increasing maintenance costs and declining usability. Regional and disadvantaged communities often lack access to modern and safe facilities, exacerbating social inequities. Addressing these challenges requires coordinated efforts and sustainable investment models that balance community needs with long-term economic feasibility.

Research³³ has shown most of the pools built during the 1950s, 1960s and 1970s are reaching or have reached the end of their operational lifespan. In Australia, approximately **500 (or approximately 40 per cent) of public swimming pools require replacement in the next 10 years**, particularly in regional areas with 58% of aquatic facilities located in regional Australia.

The scale of the investment needed is significant with even a modest pool costing more than \$10 million to build. Royal Life Saving estimates the scale of the investment needed by 2030 to be \$8 billion to maintain existing facilities. These replacement costs do not include new aquatic facility requirements for those suburbs and towns with significant population growth and warrant further aquatic infrastructure.

Additional research²² has shown that thorough planning is necessary to achieve effective outcomes and a lack of adherence to systematic planning models by Councils often leads to ad hoc approaches. This has resulted in multi-million-dollar facilities that do not fully meet community needs and compromise the potential social value of public pools.²³

Industry feedback tells us that there are many examples of public pools with significant federal and state funding which have over-invested relative to community capacity. Finally, the average lifespan of a facility is 50 years³³ emphasising the importance of appropriate planning.

There are additional problems in growth suburbs across urban centres where population growth has exceeded the capacity of existing aquatic facilities to deliver swimming and water safety programs and to allow the community to become physically active and socially connected. Previous analysis⁹ has shown that areas such as Western and South-Eastern Melbourne, Western Sydney and Southern Brisbane have experienced significant growth yet are lagging behind when it comes to the provision of public pools.

The 2017 report projected that by 2025 an additional 149 aquatic facilities and 151 swim schools needed to be built to meet population growth, a benchmark which has not been met. The gap in pool availability is likely to continue to deepen and become of greater concern due to the continued population growth and increased demands on infrastructure that accompany the development of new areas.

For Councils across Australia, under significant financial pressure, asset management planning and life cycle costing has and is falling behind. Last year the Australian Local Government Association reported⁴⁰ that a quarter (25%) of Councils have low financial sustainability, and that a significant proportion of councils also cannot properly maintain assets due to revenue constraints.

They found that 167 Councils are not meeting target asset sustainability ratios – a measure of whether assets are being renewed and replaced in an optimal way, relative to depreciation. The report found strong indications of shortfalls in capital maintenance for assets and insufficient funding being directed at asset renewal. Furthermore, local governments' per capita expenditure over the last two decades has grown at a slower rate than state and commonwealth governments, another indicator of financial constraints.

› **25% of Councils have low financial sustainability, and are unable to sufficiently maintain assets like public swimming pools.**

› PUBLIC POOL ACCESS & EQUITY

Noting the previous research into areas with population growth requiring new pools, and the state of aging pool infrastructure, this report seeks to understand where Australians have limited access to a swimming pool, irrespective of the condition of the pool or its capacity.

Using a geospatial mapping exercise to assess the accessibility of public pools across Australia relative to Statistical Areas Level 2 (SA2s), as defined by the Australian Bureau of Statistics.⁴ SA2s are medium-sized geographic units representing socially and economically interactive communities and generally have a population range of 3,000 to 25,000 persons, an average population of about 10,000 persons and they include towns with a population in excess of this, making them a relevant scale for assessing public pool accessibility for communities.¹

Using GIS mapping techniques, we:

1. Mapped Public Pools: Plotted the location of all known public aquatic facilities across Australia.
2. Assessed Accessibility: Measured the geographic coverage of pools by identifying SA2 regions where residents cannot reach a public pool within a 10-minute drive.
3. Projected Future Gaps: Incorporated ABS population growth projections³ for 2028, 2030, and 2032 to predict how future demand will align with existing pool infrastructure.
4. Identified Areas of Need: Highlighted SA2 regions where current and projected populations lack reasonable access to a public pool.

This analysis is loosely based on the 20-minute neighbourhood concept. The 20-minute neighbourhood concept is a cornerstone of urban planning in Australia, particularly in Victoria. It focuses on creating liveable, accessible communities where residents can meet most of their daily needs within a 20-minute return walk from home. Hallmarks of a 20-minute neighbourhood include safe, accessible and well-connected communities, thriving local economies, services and destinations, are climate resilient, have high quality public spaces and viable densities. Availability and accessibility of public pools contributes to the stated aims of 20-minute neighbourhoods.

While there is no overarching national policy on 20-minute neighbourhoods, several state and local governments have adopted this framework, with the Victorian Government's Plan Melbourne 2017–2050³⁹ integrating the 20-minute neighbourhood principle, aiming to create accessible, safe, and attractive local areas.

While the authors recognise it is not likely possible or feasible to have public pools within 20 minutes' walk of every Australian, instead we have opted to analyse accessibility of public pools via drive-time, determined at 10 minutes and 20 minutes, to highlight that many Australians are missing out on access to public pools. If this analysis was based on 20-minute walking distance, the numbers indicating lack of access would be much higher – noting the 20-minute walking metric is most applicable to urban areas. The analysis has been conducted independent of traffic considerations and is thus conservative by default. If traffic during peak times is considered, the number of people that cannot access a pool in the timeframe would be much higher, especially in urban areas.

The table below provides evidence to support state, territory and federal policymakers in planning for equitable and sustainable public pool infrastructure investment. It identifies the communities with the most residents that cannot access aquatic facilities now, and projected to 2032 future planning aligns with population needs.

Key Findings:

- › Nearly 6 million (24%) Australians must drive more than 10 minutes to reach a public pool. Without sufficient government intervention, this number will increase to 7.3 million (29%) by 2032.
- › 1.8 million Australians (7%) must drive more than 20 minutes to reach a public pool.

State / Territory	No. of Australians Who Have to Drive More Than 10 Mins To Access A Public Pool				No. of Australians Who Have to Drive More Than 20 Mins To Access A Public Pool			
	2021	Projected 2028	Projected 2030	Projected 2032	2021	Projected 2028	Projected 2030	Projected 2032
QLD	1,581,326	1,754,014	1,799,371	1,843,190	446,745	483,096	492,523	501,802
NSW	1,537,219	1,782,301	1,832,634	1,881,043	430,346	483,808	494,643	505,152
VIC	1,193,209	1,454,854	1,530,455	1,604,437	218,815	241,011	249,058	257,234
WA	654,240	774,358	797,739	820,393	186,755	210,656	215,207	219,933
NT	575,247	618,813	625,088	629,994	168,487	177,096	177,728	178,023
SA	290,389	317,070	321,258	324,534	114,575	124,012	125,422	126,536
TAS	71,112	85,736	87,477	89,080	52,084	62,525	63,577	64,536
ACT	51,453	59,984	62,960	65,750	952	2,434	2,933	3,414
National Total	5,981,112	6,874,403	7,084,595	7,286,437	1,632,833	1,798,472	1,835,046	1,870,744
Percent of Australians >10 mins drive from a public pool	24%	27%	28%	29%	7%	7%	7%	7%

Top 50 Australian Communities Where The Most People Have To Drive More Than 10 Minutes To Access A Public Pool

		Name (SA2)	State	No. Of People Who Have to Drive More Than 10 Mins To Access A Public Pool			
				2021	Projected 2028	Projected 2030	Projected 2032
1		Wollert	Victoria	24,195	42,814	47,755	52,612
2		Baldivis - South	Western Australia	24,149	32,217	34,023	35,749
3		Cranbourne East - North	Victoria	23,292	28,149	29,251	30,241
4		Wallan	Victoria	22,544	45,930	53,511	61,131
5		Kurrajong Heights - Ebenezer	New South Wales	22,099	22,745	22,817	22,835
6		Nelson Bay Peninsula	New South Wales	21,902	22,399	22,480	22,537
7		Redbank Plains	Queensland	21,546	27,767	29,070	30,292
8		Cranbourne West	Victoria	21,527	27,607	28,967	30,216
9		Cranbourne	Victoria	20,606	22,830	23,345	23,789
10		Forest Lake - Ellen Grove	Queensland	20,482	22,459	22,722	22,898
11		Byford	Western Australia	20,076	30,860	33,419	35,946
12		Taree	New South Wales	19,981	20,952	21,229	21,524
13		Mount Martha	Victoria	19,856	20,468	20,487	20,436
14		Ellenbrook*	Western Australia	18,990	21,912	22,385	22,805
15		Bargara - Burnett Heads	Queensland	18,889	21,641	22,065	22,467
16		Point Cook - East	Victoria	18,889	24,015	25,185	26,247
17		Kurri Kurri - Abermain	New South Wales	18,660	23,130	24,351	25,613
18		Narangba	Queensland	18,425	21,711	22,310	22,845
19		Mickleham - Yuroke	Victoria	18,307	32,037	35,328	38,591
20		Aldgate - Stirling	South Australia	18,176	18,383	18,242	18,055
21		Jimboomba – Glenlogan**	Queensland	17,992	23,039	24,047	24,997
22		Ipswich - East	Queensland	17,990	18,700	18,672	18,594
23		Singleton - Golden Bay - Secret Harbour	Western Australia	17,925	21,743	22,499	23,216
24		Gympie Surrounds	Queensland	17,912	20,208	20,632	21,055
25		Cranbourne South	Victoria	17,455	37,982	44,462	50,982
26		Point Cook - South	Victoria	17,045	21,320	22,326	23,207
27		Mount Eliza	Victoria	17,009	17,083	17,011	16,899
28		Lynbrook - Lyndhurst	Victoria	16,982	20,300	20,974	21,557

		Name (SA2)	State	No. Of People Who Have to Drive More Than 10 Mins To Access A Public Pool			
				2021	Projected 2028	Projected 2030	Projected 2032
29		Noosa Hinterland	Queensland	16,876	18,461	18,735	19,003
30		Trinity Beach - Smithfield	Queensland	16,757	20,758	21,626	22,484
31		Caroline Springs	Victoria	16,745	17,978	18,181	18,303
32		Point Nepean	Victoria	16,520	17,546	17,725	17,844
33		Seaton - Grange	South Australia	16,476	17,387	17,480	17,514
34		Doreen - North	Victoria	16,206	17,989	18,329	18,616
35		Munno Para West - Angle Vale	South Australia	16,136	21,663	22,830	23,979
36		Aldinga	South Australia	15,947	16,919	17,044	17,131
37		Cherrybrook	New South Wales	15,815	15,713	15,688	15,619
38		Andergrove - Beaconsfield	Queensland	15,814	17,626	18,070	18,521
39		Aveley	Western Australia	15,666	20,562	21,588	22,563
40		Grafton Surrounds	New South Wales	15,561	16,838	17,186	17,539
41		West Lakes	South Australia	15,201	17,185	17,535	17,826
42		Raceview	Queensland	15,158	16,298	16,418	16,481
43		Mornington - East	Victoria	15,157	15,280	15,228	15,132
44		Ballajura	Western Australia	14,900	15,131	14,934	14,714
45		North Haven	South Australia	14,808	15,782	15,939	16,067
46		Williamstown - Medowie - Karuah	New South Wales	14,803	18,518	19,486	20,448
47		Mona Vale - Warriewood (North)	New South Wales	14,616	15,076	15,110	15,104
48		The Gap	Queensland	14,472	14,785	14,663	14,507
49		Raymond Terrace	New South Wales	14,449	16,791	17,441	18,109
50		Dural - Kenthurst - Wisemans Ferry	New South Wales	14,428	14,928	14,971	14,970

*It is noted that a new aquatic facility is under consideration for Ellenbrook.

**It is noted that the Jimboomba public school has a pool which functions as a community pool.

> PUBLIC POOL GAPS

The following images are taken from the Royal Life Saving Australia National Aquatic Infrastructure Interactive Dashboard.*

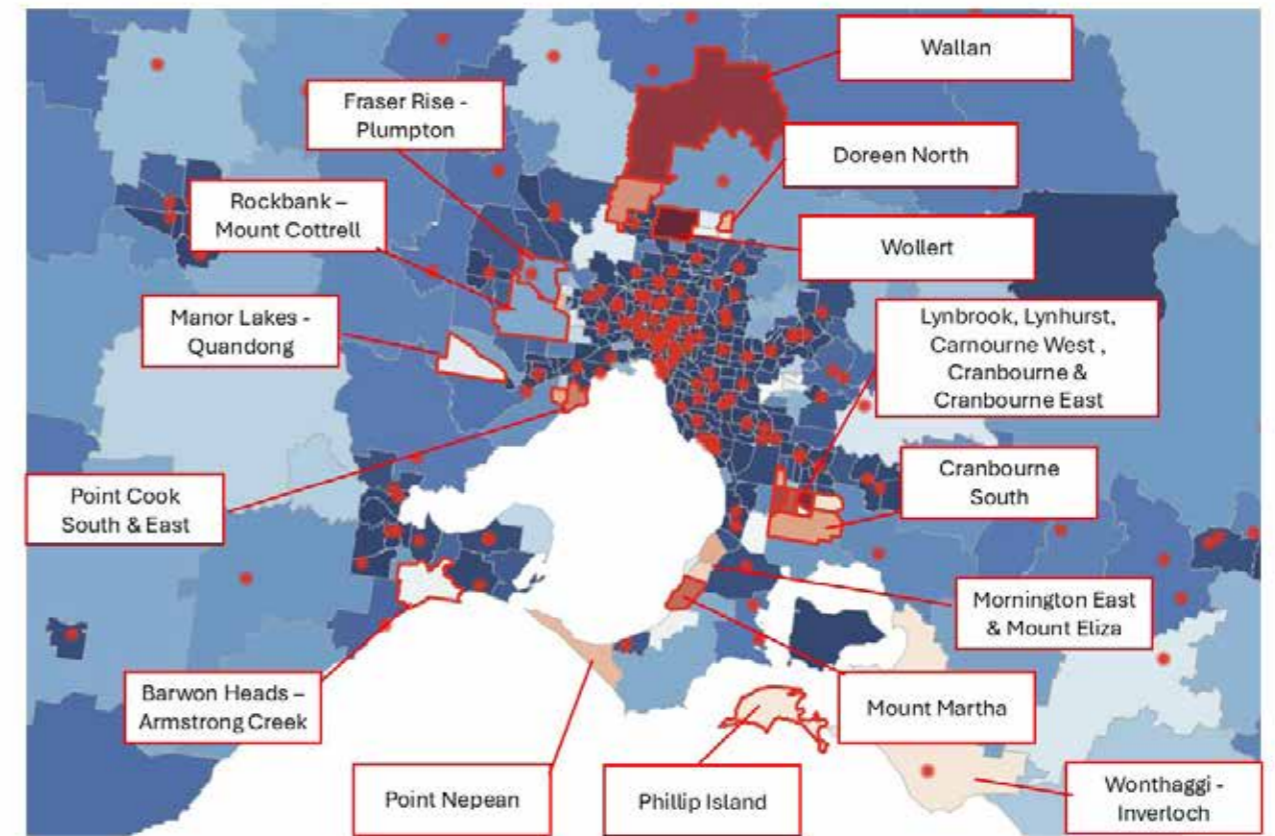
*Royal Life Saving is able to provide partners with more detailed information upon request.

Legend:

- > Colour shading indicates the number of people in each area that cannot drive to a pool within 10 minutes based on current population estimates (2021 census): darker blue means fewer people, darker red means more people.
- > Polygons that are outlined in red show areas of future need, where the most people who cannot drive to a pool within 20 minutes will live in 2032.
- > Red dots indicate where public pools are located.

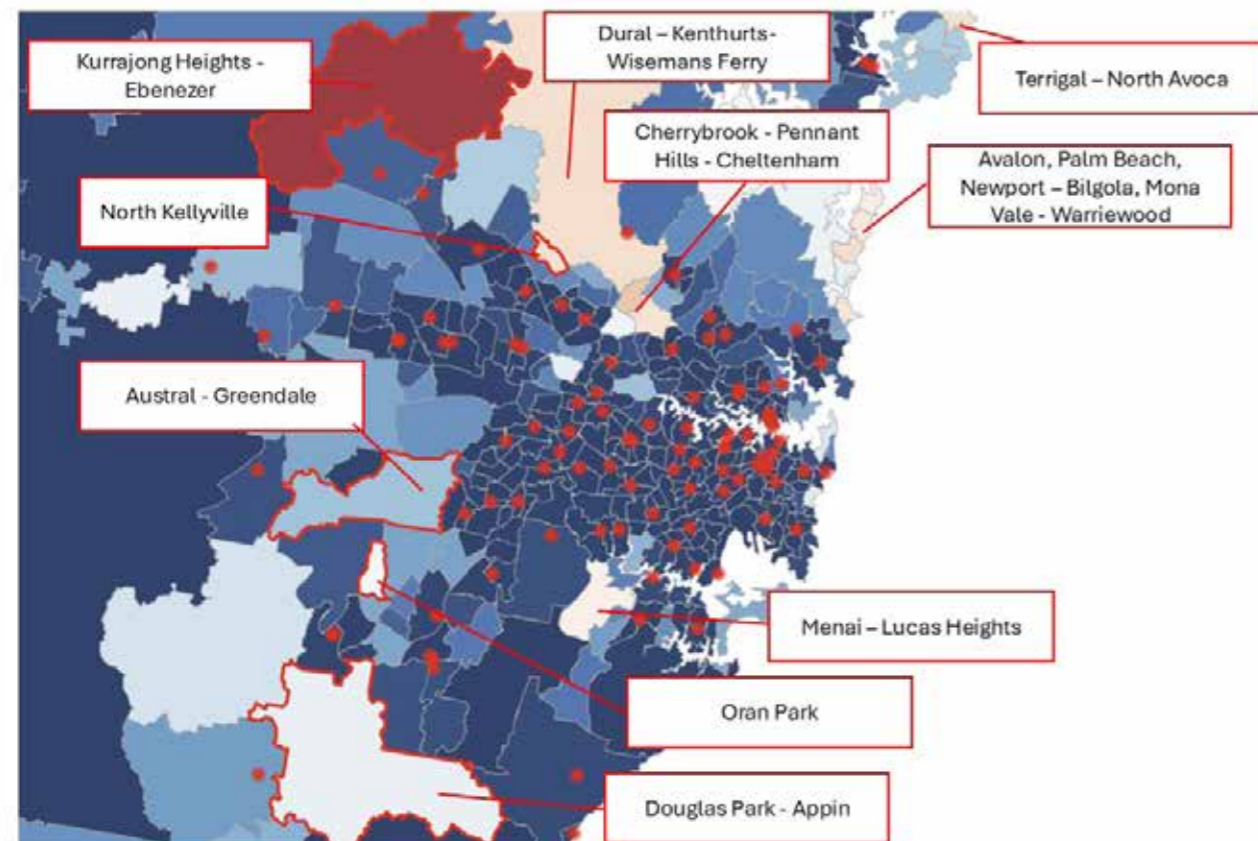
Victoria

Greater Melbourne & Surrounds



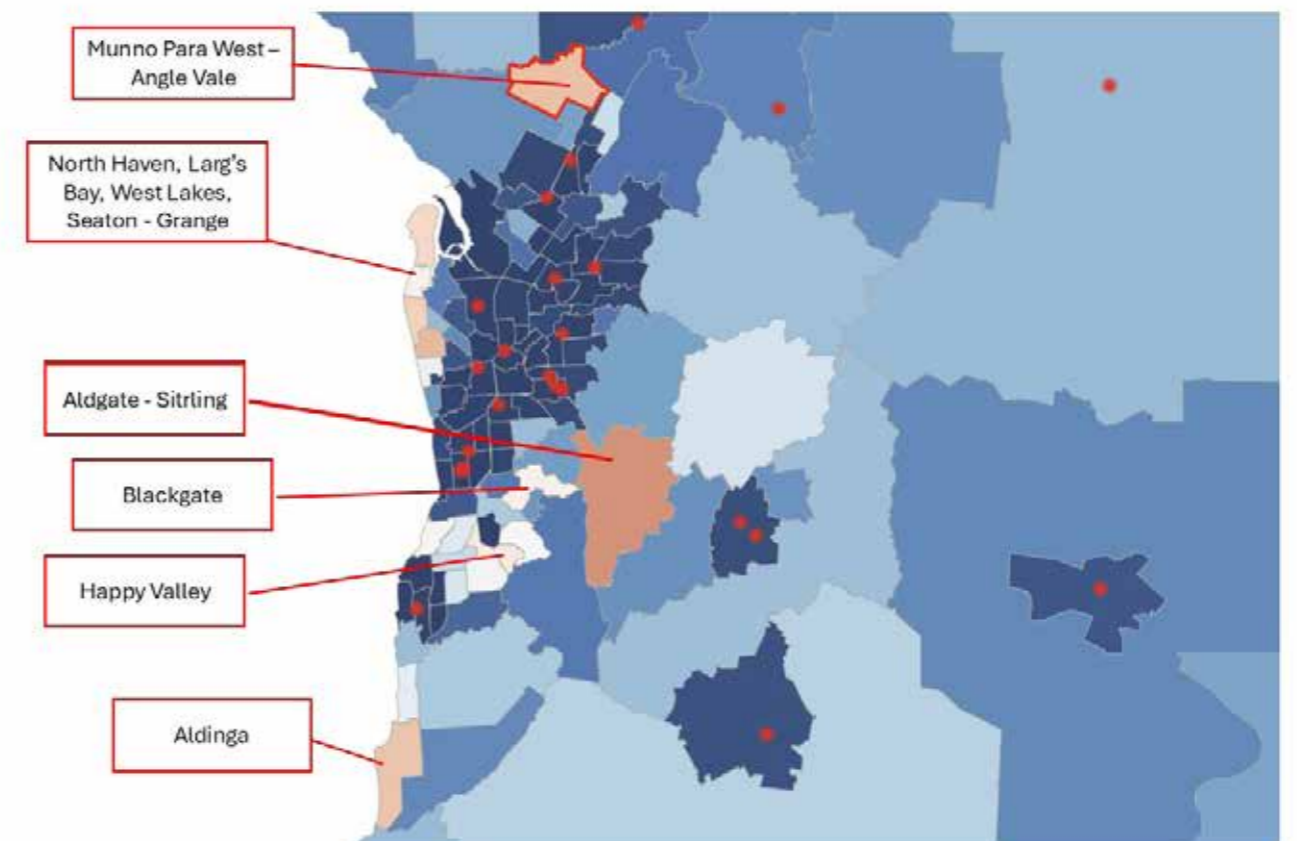
NSW

Sydney & Central Coast



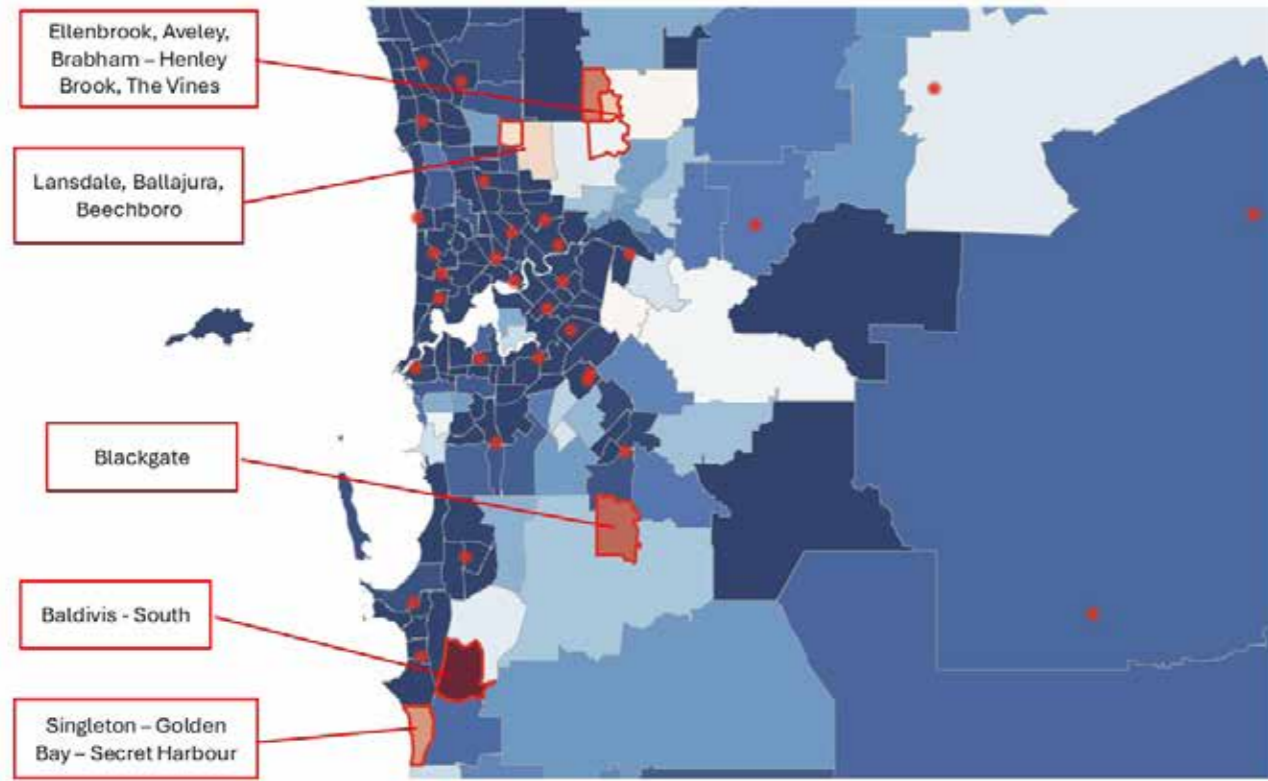
SA

Adelaide & Surrounds



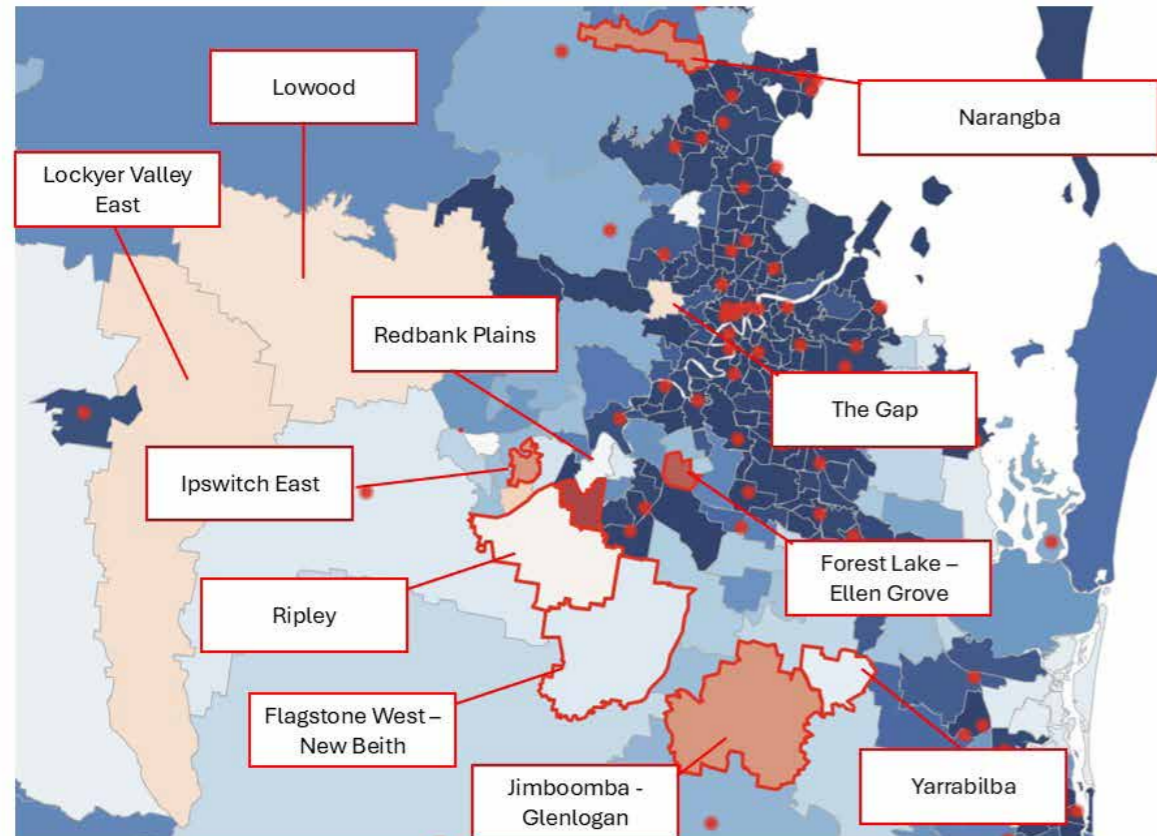
WA

Perth & Surrounds



QLD

Brisbane to Gold Coast



Top 50 Australian Communities Where The Most People Have To Drive More Than 20 Minutes To Access A Public Pool

		No. of People Who Have to Drive More Than 20 Mins To Access A Public Pool				
		2021	Projected 2028	Projected 2030	Projected 2032	
Name (SA2)	State					
1	Ipswich - East	Queensland	16,999	17,670	17,643	17,570
2	Phillip Island*	Victoria	13,773	16,738	17,789	18,843
3	Newport - Bilgola	New South Wales	13,666	13,574	13,537	13,465
4	Lowood	Queensland	13,538	15,112	15,343	15,531
5	Port Augusta	South Australia	13,517	14,129	14,103	14,046
6	Avalon - Palm Beach	New South Wales	13,034	13,154	13,155	13,114
7	Aldinga	South Australia	12,331	13,083	13,179	13,247
8	The Vines	Western Australia	11,897	14,893	15,489	16,052
9	Sarina	Queensland	11,613	12,601	12,832	13,070
10	Taree Surrounds	New South Wales	10,528	11,842	12,187	12,534
11	Goulburn Surrounds	New South Wales	10,450	11,517	11,801	12,088
12	Busselton Surrounds	Western Australia	10,212	12,304	12,726	13,156
13	Williamstown - Medowie - Karuah	New South Wales	10,099	12,633	13,294	13,950
14	Burrum - Fraser	Queensland	9,773	11,018	11,206	11,387
15	Grafton Surrounds	New South Wales	9,200	9,955	10,161	10,370
16	Yass Surrounds	New South Wales	9,181	9,916	10,130	10,350
17	Eimeo - Rural View	Queensland	9,032	10,412	10,755	11,106
18	Queanbeyan Surrounds	New South Wales	8,904	10,022	10,334	10,653
19	Northam	Western Australia	8,900	9,968	10,208	10,471
20	Chinchilla	Queensland	8,773	9,512	9,746	9,988
21	Sorell - Richmond	Tasmania	8,659	10,119	10,454	10,757
22	Dodges Ferry - Lewisham	Tasmania	8,534	9,602	9,808	9,992
23	Lismore Surrounds	New South Wales	8,299	8,662	8,772	8,883
24	Gingin - Dandaragan	Western Australia	7,925	9,016	9,219	9,422
25	Brassall	Queensland	7,862	9,037	9,249	9,429
26	Mona Vale - Warriewood (North)	New South Wales	7,716	7,959	7,977	7,974
27	Yarrabilba	Queensland	7,552	12,490	13,603	14,704

		No. of People Who Have to Drive More Than 20 Mins To Access A Public Pool				
		2021	Projected 2028	Projected 2030	Projected 2032	
Name (SA2)	State					
28	Jimboomba – Glenlogan*	Queensland	7,539	9,654	10,076	10,474
29	Bundaberg Surrounds - North	Queensland	7,516	8,102	8,233	8,360
30	Maryborough Surrounds - South	Queensland	7,507	8,588	8,755	8,911
31	Golden Plains - South	Victoria	7,488	9,028	9,604	10,199
32	Yorke Peninsula - North	South Australia	7,456	7,594	7,565	7,527
33	Old Bar - Manning Point - Red Head	New South Wales	7,411	9,097	9,534	9,965
34	Gympie Surrounds	Queensland	7,363	8,307	8,481	8,655
35	Deniliquin	New South Wales	7,000	7,108	7,119	7,124
36	Flagstone (West) - New Beith	Queensland	6,902	15,001	17,178	19,363
37	Seaforth - Calen	Queensland	6,895	7,439	7,576	7,723
38	Agnes Water - Miriam Vale	Queensland	6,787	7,881	8,074	8,268
39	St Helens - Scamander	Tasmania	6,757	7,186	7,215	7,232
40	East Arnhem	Northern Territory	6,730	8,029	8,137	8,241
41	Wonthaggi - Inverloch	Victoria	6,715	7,974	8,408	8,849
42	Mudgee Surrounds - West	New South Wales	6,699	7,471	7,684	7,900
43	Narrabri	New South Wales	6,684	6,755	6,755	6,754
44	Ipswich - Central	Queensland	6,682	7,175	7,221	7,237
45	Aveley	Western Australia	6,580	8,636	9,067	9,477
46	Flagstone (East) - Riverbend	Queensland	6,527	7,410	7,578	7,728
47	Yankalilla	South Australia	6,367	6,500	6,458	6,401
48	Naracoorte	South Australia	6,318	6,389	6,321	6,231
49	Denmark	Western Australia	6,305	6,842	6,974	7,122
50	Mannum	South Australia	6,298	6,405	6,364	6,311

*It is noted that the Cowes Primary School (Phillip Island) opens their pool to the public every summer.

**It is noted that the Jimboomba public school has a pool which functions as a community pool.

> CURRENT RATIOS AND RATES FOR AQUATIC FACILITY PROVISIONING

Aquatic facilities are distributed all across Australia, including more than a dozen in very remote Aboriginal communities. The following analysis includes state and territory capital cities and an additional sample of cities with a population in excess of 100,000. For the purposes of like-for-like comparison of social and economic 'hubs' that cities function as, local government areas (LGAs) with a population in excess of 100,000 and situated within a broader capital city area have not been used for comparison.

Note: Aquatic facilities include public pools like aquatic centres and outdoor swimming pools, as well as publicly-accessible pools such as learn-to-swim centres and education facilities with pools available to the public. Whereas public pools are only pools owned by state/territory or local governments.

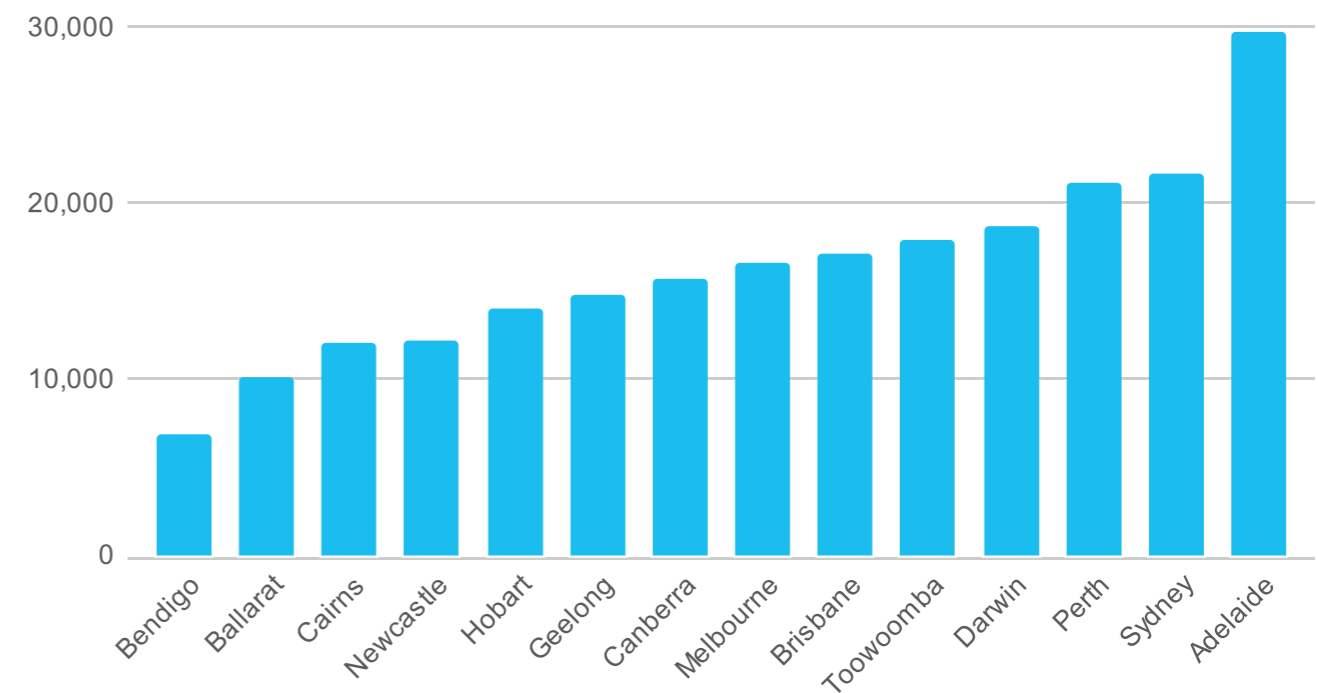
Sample of Aquatic Facility Provisioning by City Areas Across Australia

City	Estimated greater metropolitan population*	No. Of public indoor/aquatic centres**	No. of public outdoor swimming pools**	Total no. Public pools**	No. publicly-accessible pools**	Total aquatic facilities**	Number of people per public pool	Number of people per aquatic facility
Ballarat	111,400	3	3	9	5	14	12,378	10,127
Bendigo	122,551	3	10	13	5	18	9,427	6,808
Darwin	149,582	0	7	7	1	8	21,369	18,698
Cairns	169,312	2	5	7	7	14	24,187	12,094
Newcastle	171,316	2	6	8	6	14	21,415	12,237
Toowoomba	178,590	5	4	9	1	10	19,843	17,859
Geelong	252,217	6	2	8	9	17	31,527	14,836
Hobart	252,693	3	3	6	12	18	42,116	14,039
Canberra#	456,692	8	2	10	19	29	45,669	15,748
Adelaide	1,367,000	12	5	17	29	46	80,412	29,717
Perth	2,224,475	25	2	27	78	105	82,388	21,185
Brisbane	2,628,000	34	35	69	84	153	38,087	17,176
Melbourne	5,031,195	66	23	89	215	304	56,530	16,550
Sydney	5,297,089	63	41	104	140	244	50,934	21,709

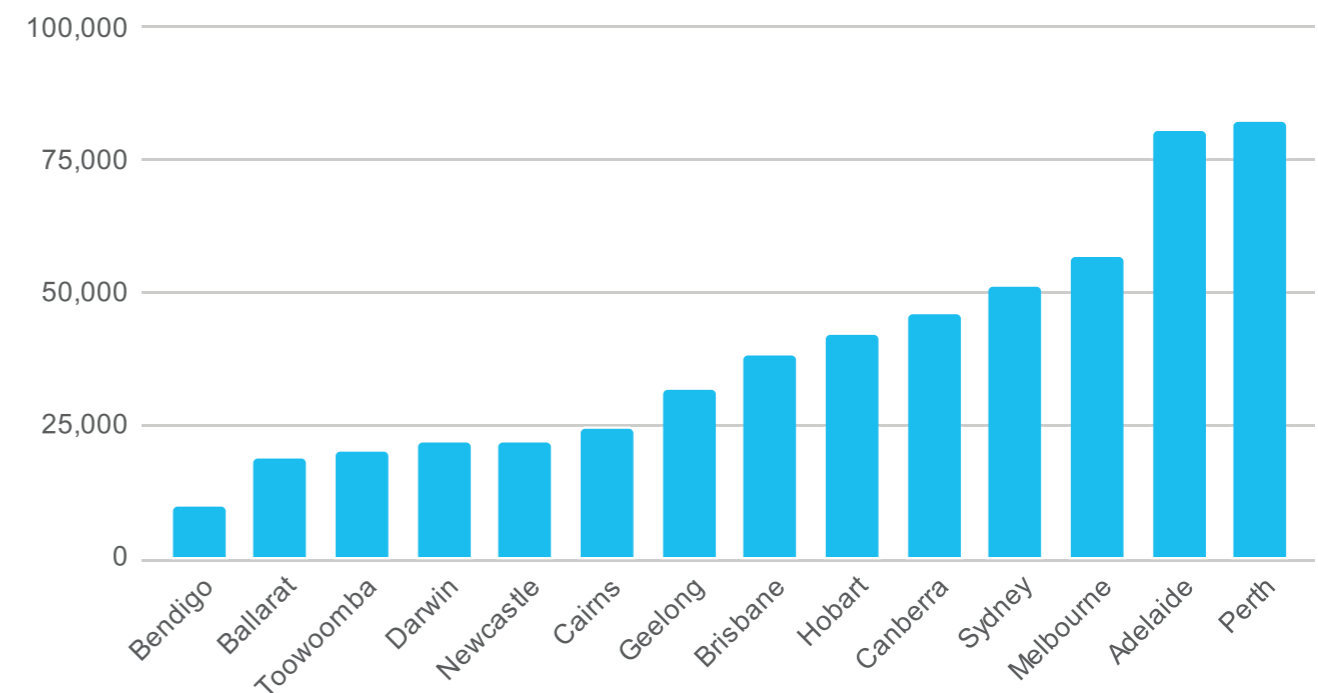
Population data sources: ABS, Google, Profile Id, UN Population data

*Geelong currently has additional aquatic centres under construction, which will bring the number of people per facility down to 13,274

Number of people per aquatic facility by city



Number of people per public pool



On the whole, many regional cities in Australia provide a lower ratio of population per aquatic facility than their capital city counterparts, and this is to be celebrated.

All the major capital cities (with the exception of Darwin) provide relatively fewer public pools than regional cities. Major cities need to build more aquatic facilities in growth areas and account for densification.

Framework Insights

The current Australian national benchmarks for aquatic facility provisioning are:

- › **Capital cities:**
1 aquatic facility per 19,353 population
- › **Regional cities:**
1 aquatic facility per 12,327 population
- › **National average (including regional):**
1 aquatic facility per 12,826 population

An analysis of the Royal Life Saving National Aquatic Facility Database shows that aquatic facility provisioning by regional areas is often variable.

- Most towns with a population greater than 1,000 have a minimum of one outdoor swimming pool (unheated and seasonal).
- Towns with a population greater than 5,000 often have an outdoor, 25m or 50-metre pool (often unheated and seasonal).
- Towns with a population greater than 10,000 often have an indoor aquatic facility.
- Towns over 15,000 typically have an aquatic centre comprising a mix of water bodies and often include a mix of indoor and outdoor pools.

A note on 50m pool provisioning

An analysis of the Royal Life Saving National Aquatic Infrastructure database shows there are around 800 Olympic (50-metre) pools in Australia. This equates to one 50-metre pool per 32,112 population. The UK by comparison has only 19 Olympic-sized swimming pools (The Guardian). This equates to one 50-metre pool per 3,543,684 population.

In the Australian context, 50-metre pools hold some cultural significance following the 1956 Melbourne Olympics and Australia's pride in Olympic success. Every town / suburb wants their kids to have the opportunity to be the next Olympic swimmer, despite some evidence that most recent successful Olympians train where the best coaches are, seemingly clustered around some private schools and pools in Brisbane and the Gold Coast. This makes it difficult for local government planners to work around the local community politics as there is significant social and local political pressure to build 50-metre pools.

In the context of energy efficiency, sustainability and operational feasibility, 50-metre pools take up twice the land, cost twice as much to build, use twice as much energy, emit twice as much carbon emissions and cost more to staff, as they generally require more lifeguards to safely supervise users. They are often under-utilised. These factors and our very high provisioning rate raise into question the ongoing necessity and rationalism of continuing to build so many 50-metre pools. A coordinated strategy that looks at pool type, community need, population and demographics is needed.

Previous research³³ has shown that when it comes to public pool planning processes, these are often politicised or guided by vocal (but minority) stakeholder interests and often results in facilities that are not fit-for-purpose for the community capacity or predominant recreational use. This reality often results in 50m pools being provisioned in communities without a sufficient business case for a 50m pool and inappropriate pool water depths for recreational use, favouring infrastructure suitable for sanctioned swimming competitions over community aquatic recreation.



> FRAMEWORK INSIGHTS

Current analysis of the National Aquatic Facility Database has shown the below typical provisioning across Australia.

Typical Public Pool Provisioning by Head of Population

Public Pool Provisioning	Population Threshold	Additional Considerations
Urban Areas	Minimum 1 facility per 15,840 population	<ul style="list-style-type: none"> Typically have a mix of pool types based on community needs And balance pool types (indoor, outdoor) based on demographics and demand.
Nationwide	Minimum 1 facility per 12,826 population	<ul style="list-style-type: none"> Facilities should consider regional differences in weather, availability of alternative safe places to swim or publicly-accessible pools.
Smaller Communities		
Populations over 1,000	Typically have a 25m outdoor unheated combination pool	<ul style="list-style-type: none"> Typically a basic outdoor facility to meet minimum community standards, such as a combination pool which may be L-shaped and include shallower areas for leisure play.
Populations over 5,000	Typically have a 50-metre outdoor unheated pool, but re-thinking this standard may be necessary.	<ul style="list-style-type: none"> While most towns of this size built 50m pools in the 50s, 60s and 70s, replacements may need to consider down-sizing, or use of moveable bulkheads and flooring to make the pool more adaptable to community needs and operational costs to be more in line with councils' feasibility realities. Planners should consider energy efficiency, land use, and sustainability before committing to 50-metre pool builds. An outdoor combination 25m lap pool (6 lanes) & program pool with ramp access is likely much more appropriate and sustainably responsible.
Populations over 10,000	Typically have a modest indoor aquatic facility	<ul style="list-style-type: none"> Indoor facilities should support year-round use, focus on sustainable design and co-location with other community infrastructure. Typically a modest indoor facility with a 25m pool and a learn to swim pool and often includes a gym, sauna and spa offering a variety of fee-for-service products that are in-demand by large segments of the community.
Populations over 15,000	Typically have an aquatic centre with multiple water bodies	<ul style="list-style-type: none"> Once towns / suburbs reach this threshold, providing there is minimal competition from the commercial sector, it is feasible to run a modest aquatic centre which might include a 25m lap pool, a learn to swim pool, splashpad, and modest warm water exercise pool and/or sauna and spa. There should be some impetus to provide mixed-use aquatic facilities to meet diverse community needs, prioritising multiple functionalities over a particular user-group or aesthetics.
Populations over 40,000	District-level facility which may include a 50m competition pool.	<ul style="list-style-type: none"> Due to the significant running costs and ecological impact of operating 50m pools, a sufficient population catchment is vital to ensure sustainable operations.

Further analysis of typical aquatic facility shows typical aquatic facility components by population.

Population Catchment (within 20 minutes drive)	Development Level											Typical Components											
	Level	Description	50m Lap Pool	25m Lap Pool	Leisure/Prog Pool	Splashpark/Slides	Warm Water Pool	Spa/Sauna/Stream	Dive Pool & Platforms	Marshalling Room	Grandstands	Broadcasting facilities	Plant Room(s)	Fitness Centre	Change Facilities	Reception/Café/Kiosk	Admin Office	Treatment Rooms	Program Room(s)	First Aid Room	Meeting Room	Creche	
Over 1,000,000	9	International	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
Over 500,000	8	National	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
Over 100,000	7	State	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
70,000-100,000	6	Major	Y	Y	Y	Y	Y	Y				Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
40,000-70,000	5	District	Y	Y	Y	Y	Y	Y				Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
10,000-40,000	4	Local		Y	Y							Y	Y	Y	Y	Y	Y	Y	Y	Y			
5,000-10,000	3	Rural		Y	Y							Y	Y	Y	Y	Y	Y	Y	Y	Y			
2,500-5000	2	Remote		Y								Y		Y	Y	Y				Y			
800-2,500	1	Very remote		Y								Y		Y	Y	Y				Y			

Recommendations – Facility Provisioning

- > Due to the frequent politicisation of public pool provisioning (whether at a local, state or national level), a national strategy or guidelines are needed to assist planners and policy makers in adhering to a rational framework that ensures fit-for-purpose community facilities and helps with de-politicising the planning process.
- > Guidelines for the Australian context based on the specified benchmarks and considerations involve balancing the need for appropriate aquatic facility provisioning with considerations of community capacity, usage, sustainability, efficiency, and equity.

› EARLY (DRAFT) PRINCIPLES FOR AN AQUATIC FACILITY INFRASTRUCTURE FRAMEWORK

Building on the findings in this report, Royal Life Saving – Australia is committed to bringing together stakeholders for a National Aquatic Infrastructure Symposium in March 2025. The purpose of this symposium is to develop a shared national framework that will guide planners, policymakers, and industry leaders in delivering well-planned, sustainable, and fit-for-purpose aquatic facilities that meet community needs for the next 50 years.

This framework will be developed in consultation with stakeholders, ensuring that it reflects diverse perspectives, evidence-based planning, and long-term infrastructure requirements. While final settings will be determined through further engagement, the types of elements that could be considered in a national framework include:

1. Equitable & Needs-Based Investment

- Investment in aquatic infrastructure should be guided by evidence and aligned with community needs, ensuring that facilities are appropriately sized, accessible, and financially sustainable.
- Infrastructure decisions should prioritise communities with the greatest need, including growth areas, underserved populations, and regional and remote communities.
- Planning should avoid over-investment in areas with adequate facilities and direct resources to locations with clear demand gaps.

2. Fit-for-purpose for Community Needs

- Aquatic facilities should be designed to be inclusive and support a broad range of community users, including recreational swimmers, families, learn-to-swim participants, fitness users, people living with disabilities, youth, multicultural communities, gender-diverse communities and therapy clients.
- Facility planning should prioritise multi-purpose, flexible-use designs, ensuring infrastructure is adaptable to changing community needs over time.
- Investment should ensure that facility types align with actual community demand, avoiding over-catering or investment in aspirational infrastructure that does not match community needs.
- Design should consider local climatic conditions, ensuring that indoor and outdoor facilities are appropriately planned for year-round accessibility but with a view to environmentally responsible design.

3. Safety and Operational Sustainability

- Facility design should integrate best-practice safety measures, ensuring lifeguarding, supervision, and emergency response can be conducted efficiently.
- Overly large or complex facilities can increase staffing requirements and operational costs, creating long-term financial burdens for councils and operators.
- Design principles should enhance sightlines for lifeguards, separate high-risk areas, and include technology-based safety solutions to improve surveillance and response times.
- Facilities should be planned with efficient operations in mind, ensuring energy usage, staffing intensity and maintenance costs do not become barriers to sustainability.
- Management tenders should encourage universal and/or standardised approaches to aquatic safety, especially lifeguard supervision, so that operators are never put in a position of having to reduce lifeguards in order to provide a competitive tender quote. Ensuring adherence to RLSSA Guidelines for Safe Pool Operations is a good start.

4. Sustainability & Energy Efficiency

- Future aquatic facilities should be designed and operated with a commitment to environmental sustainability, ensuring that energy and water efficiency are embedded in facility design.
- Facilities should be designed to minimise their carbon footprint, with electrification, renewable energy integration, and sustainable water management incorporated as standard practices.
- Retrofitting existing facilities should be prioritised, ensuring that older infrastructure is modernised to meet contemporary environmental and efficiency standards.
- National benchmarks for energy consumption, water efficiency, and emissions reduction could guide sustainability improvements across the sector.

5. Governance & Long-Term Planning

- Aquatic facilities are long-term public assets, requiring clear governance structures to ensure sustainable management, renewal, and investment over time.
- Management tenders for aquatic facilities should include clear guidance on how approaches to asset renewal and upkeep will be managed, and what proportion of revenues will be allocated to asset maintenance and improvements.
- Coordinated governance between local, state, and federal governments could improve investment certainty and streamline planning processes.
- A consistent national approach to facility reporting, performance benchmarking, and best-practice sharing could improve long-term planning and ensure public value is maximised.



> UPDATED ANALYSIS OF COMMONWEALTH INVESTMENT INTO POOL INFRASTRUCTURE

Previous analysis³³ showed that local governments contributed the lion's share of pool infrastructure investment (64%), while the commonwealth government contributed the least (15%), with state and territory governments contributing 23% of pool infrastructure investment.

Our analysis shows an increase in funding allocated to aquatic facilities in adjusted Growing Regions, Thriving Suburbs, Priority Community Infrastructure and Community Energy Upgrade funding programs. However, local councils have to navigate multiple funding programs, investment rules, and face choices around community infrastructure which disadvantages pool investment. Streamlining and simplifying the grant structure for public pools is likely to enable a greater share of investment channelling into community pool infrastructure.

While various state / territory funding programs exist, an analysis of facilities that were funded (in part or wholly) by the Commonwealth Government has been included below.

Funding Program Summaries

Growing Regions Program Summary 2024/25

	Round 1	Round 2
Total funding	\$206,590,135	Total funding \$276,200,200
Total number of projects	40	Total number of projects 68
Aquatic investment	\$16,652,816	Aquatic investment \$28,808,273
Number of aquatic projects	3	Number of aquatic projects 8
Average investment per aquatic project	\$5,550,939	Average investment per aquatic project \$3,601,034
Percentage of total funding allocated to aquatic projects	8.1%	Percentage of total funding allocated to aquatic projects 10.4%
Percentage of projects - aquatic	7.5%	Percentage of projects - aquatic 11.8%

Priority Community Infrastructure Program Summary 2023

Round 1	
Total funding	\$981,150,000
Total number of projects	78
Aquatic investment	\$180,500,000
Number of aquatic projects	12
Average investment per aquatic project	\$ 15,041,667
Percentage of total funding allocated to aquatic projects	18.4%
Percentage of projects - aquatic	15.4%

Aquatic Facility Projects Funded by the Commonwealth⁵

PROJECT NAME	COMMONWEALTH PROGRAM & FUNDING AMOUNT	STATE / TERRITORY PROGRAM NAME & FUNDING AMOUNT	LOCAL GOVERNMENT & FUNDING AMOUNT
Moree Artesian Aquatic Centre (MAAC) Redevelopment	Growing regions program: \$ 9,641,761	NSW – Nil / unknown	Moree Plains Shire Council
Cowra Aquatic Centre	Growing regions program: \$4,890,218	NSW– Nil / unknown	Cowra Shire Council
Copper Coast Regional Aquatic Facility Project	Growing regions program: \$2,120,837	SA– Nil / unknown	Copper Coast Council
Cunderdin Memorial Aquatic and Wellness Hub	Growing regions program: \$2,888,385	WA– Nil / unknown	Shire of Cunderdin
Shire of Dumbleyung Swimming Pool Redevelopment Project	Growing regions program: \$1,600,000	WA– Nil / unknown	Shire of Dumbleyung
Roma Pool Revitalisation: Equitable, Accessible, Community Infrastructure	Growing regions program: \$9,500,000	QLD– Nil / unknown	Maranoa Regional Council
Northern Inland Aquatic, Education and Health Centre of Excellence	Growing regions program: \$9,000,000	NSW– Nil / unknown	Tamworth Regional Council
John Houston Memorial Swimming Pool (JHMS Pool) Replacement	Growing regions program: \$4,191,173	NSW– Nil / unknown	Hay Shire Council
Grafton Regional Aquatic Centre Waterslide Development project	Growing regions program: \$1,628,715	NSW– Nil / unknown	Clarence Valley Council
Doveton Pool in the Park Revitalisation Project	Thriving Suburbs Program \$7,492,000	VIC– Nil / unknown	Casey City Council
Collingwood Leisure Centre Electrification	Thriving Suburbs Program \$2,915,376	VIC– Nil / unknown	Yarra City Council
Plumpton Aquatic and Leisure Centre (Melton)	Thriving Suburbs Program 15,000,000	VIC– Nil / unknown	Melton City Council
Noarlunga Aquatic Centre Upgrades	Thriving Suburbs Program \$5,400,000	SA– Nil / unknown	City of Onkaparinga: \$5.4 million
Kwinana Recquatic Centre Redevelopment	Thriving Suburbs Program \$15,000,000	WA– Nil / unknown	City of Kwinana
Surf Coast Aquatic and Health Centre	Priority Community Infrastructure Program \$20 million	Victorian Government: \$16.68 million	Surf Coast Shire Council: \$9.6 million
North Bellarine Aquatic Centre	Priority Community Infrastructure Program \$20 million	Victorian Government: \$20 million	City of Greater Geelong: \$5.5 million
Katherine Aquatic Centre	Priority Community Infrastructure Program \$10 million	NT: \$0.5 million (?)	Katherine Town Council: \$1.3 million

PROJECT NAME	COMMONWEALTH PROGRAM & FUNDING AMOUNT	STATE / TERRITORY PROGRAM NAME & FUNDING AMOUNT	LOCAL GOVERNMENT & FUNDING AMOUNT
Aquatic, Health and Wellbeing Centre for George Town	Priority Community Infrastructure Program \$15 million	TAS– Nil / unknown	George Town Council
City of Kingston Aquatic Centre	Priority Community Infrastructure Program \$20 million	VIC– Nil / unknown	City of Kingston: \$20 million
Drysdale Sporting Precinct – Pool Complex	Priority Community Infrastructure Program \$20 million	VIC– Nil / unknown	City of Greater Geelong
Casuarina Pool Upgrade	Priority Community Infrastructure Program \$7.5 million	NT– Nil / unknown	City of Darwin
Aquatic Centre for Boyne Island and Tannum Sands	Priority Community Infrastructure Program \$15 million	QLD– Nil / unknown	Gladstone Regional Council
Carnegie Memorial Swimming Pool Redevelopment	Priority Community Infrastructure Program \$15 million	VIC– Nil / unknown	Glen Eira City Council
Major Upgrades for Swimming Centres in South East Melbourne	Priority Community Infrastructure Program \$20 million	VIC– Nil / unknown	City of Greater Dandenong
Alkimos Aquatic and Recreation Centre	Priority Community Infrastructure Program \$25 million	WA– Nil / unknown	City of Wanneroo
Ellenbrook Sports and Recreation Centre	Priority Community Infrastructure Program \$5 million	WA– Nil / unknown	City of Swan
Outdoor Pool in Kalgoorlie	Priority Community Infrastructure Program \$8 million	WA– Nil / unknown	City of Kalgoorlie-Boulder
Total funding	\$291,768,465	\$62,580,000	\$36,400,000
Total percentage of funding	75%	16%	9%

Community Energy Upgrades Fund

The Commonwealth also established a \$100 million Community Energy Upgrades Fund (CEUF)⁴⁶ which is a targeted, competitive grant program that provides co-funding for energy upgrades at existing local government facilities. The program aims to help local governments make their facilities more energy efficient, cut their emissions and reduce their energy bills. The funding targets upgrades like replacing energy-intensive heating in pools with heat pumps and energy-efficient lighting and battery storage at sporting fields, libraries and community centres.

The Commonwealth cites that the CEUF aims help Australia meet its emission reduction targets of 43% by 2030, net-zero emissions by 2050, and support 82% renewable electricity generation by 2030 and to support the National Energy Performance Strategy.

Round 1 supported 58 local government bodies around the nation to undertake energy efficiency and electrification upgrade projects with \$50 million in grant funding. The aquatic facility projects* are listed below.

Community Energy Upgrades Fund

Project Title	Council	State/ Territory	Grant Amount
Leichhardt Park Aquatic Centre Plant Upgrade (Stage 1)	Inner West Council	NSW	\$1,054,000
Ku-ring-gai Fitness & Aquatic Centre 50m Pool Heating Electrification	Ku-ring-gai Council	NSW	\$283,250
Solar Power Upgrades and a Heat Pump to the Swimming Pools in Leeton Shire	Leeton Shire Council	NSW	\$203,006
Electrification of Manly Andrew Boy Charlton Aquatic Centre	Northern Beaches Council	NSW	\$1,389,158
Oasis Regional Aquatic Centre (ORAC) Community Energy Upgrade Project	Wagga Wagga City Council	NSW	\$2,500,000
Electrification of Moss Vale War Memorial Aquatic Centre	Wingecarribee Shire Council	NSW	\$500,000
Energy efficiency upgrades West Lane Carpark, Parap Pool, Casuarina Library	City of Darwin	NT	\$221,872
Unley Swimming Centre Heat Pump Electrification	Corporation of the City of Unley	SA	\$1,055,000
Efficient Electrification at Launceston Aquatic Centre	Launceston City Council	TAS	\$76,976
Ballarat Aquatic and Lifestyle Centre: BIG eco-friendly heat pump install	Ballarat City Council	VIC	\$2,500,000
Australia's first integrated aquatic and office precinct electrification	Banyule City Council	VIC	\$2,347,579
Maribyrnong Aquatic Centre Electrification and Energy Efficiency Upgrade	City of Maribyrnong	VIC	\$2,500,000
Bluewater Leisure Centre Electrification Project	Colac Otway Shire	VIC	\$1,342,955
Electrification of Glen Eira Sports and Aquatic Centre (GESAC)	Glen Eira City Council	VIC	\$2,500,000
Electrification of Oak Park Sports and Aquatic Precinct (OPSAP)	Merri-bek City Council	VIC	\$739,850
Werribee Outdoor Pool Electric Heat Pump Installation	Wyndham City Council	VIC	\$1,252,230
Powering Waves of Innovation: Demonstrating Aquatic Centre Electrification	Yarra City Council	VIC	\$2,500,000
The Heat is On: Monbulk Aquatic Centre Gas Transition	Yarra Ranges Shire Council	VIC	\$1,970,000
Swan Active Energy Management Project	City of Swan	WA	\$1,446,646
Installation of a heat pump system at the Armadale Fitness & Aquatic Centre	City of Armadale	WA	\$175,000

Community Energy Upgrades Fund Summary 2024/25

Round 1

Total funding	\$50,000,000
Total number of projects	58
Aquatic investment	\$26,071,521*
Number of aquatic projects	20*
Average investment per aquatic project	~\$1,303,576
Percentage of total funding allocated to aquatic projects	~52.1%*
Percentage of projects - aquatic	~34.5%*

*It is noted that the available information in some cases cites council-wide upgrades, and is not specific on whether the project includes the aquatic facilities. Minister Bowen's press release 47 cites upgrades at '31 aquatic centres' – meaning that the above percentages and investment into public pools is likely greater.

Key insights

Public aquatic facility infrastructure is a distinct and critical asset, with a strong social value proposition. Consideration should be given to a dedicated and sustainable investment stream, with prioritisation for projects that improve access equity for disadvantaged communities and enhance community outcomes.

Analysis of Commonwealth investment shows \$1.79 billion allocated across multiple programs, with \$297.54 million (16.62% of total community infrastructure funding) going towards aquatic facility infrastructure in 2023 and 2024.

A 2024 ALGA report⁴⁰ found that Commonwealth and State / Territory funding grants are competitively tendered, sometimes 'closed processes', overly resource intensive for smaller local governments, heavily oversubscribed and geared towards 'shovel-ready' projects, which leads to inequities and sub-optimal long-term and regional planning for aquatic infrastructure.

This is consistent with feedback from Councils to Royal Life Saving Australia. Furthermore, ALGA has recently proposed a \$500 million per year community infrastructure fund dedicated to build, maintain and upgrade local facilities.⁴¹

We believe The Commonwealth Government has a critical role and an opportunity to address these concerns by setting a national standard, aligning state and local priorities, and ensuring equitable access to funding. A single, structured, annual aquatic infrastructure investment program, which includes funding for feasibility plans for low-resource councils, would assist in ensuring consistent, fair, and efficient allocation of resources, maximising public benefit.



Recommendations- Aquatic Infrastructure Planning Policy & Programs

The following policy solutions are recommended.

1. Establish a Dedicated National Public Pool Investment Program

Objectives of such a program could include:

- Upgrading aging aquatic infrastructure to meet modern safety, accessibility, and sustainability standards.
- Delivering new aquatic facilities in growth corridors and regional areas where access is lacking.
- Investing in energy-efficient and climate-resilient upgrades for existing public pools.
- Supporting drowning prevention and water safety initiatives through investment in learn-to-swim facilities and programs.
- Prioritising infrastructure audits (including safety, accessibility & sustainability) and feasibility planning to determine greatest need, particularly in growth areas and regional Australia.
- Target Areas: Regional communities, low-resource councils, and ageing infrastructure.
- Mechanisms: Include low-interest loans, co-contributions, and feasibility planning grants.

2. Develop a National Planning Mechanism for New Public Pools & Public Pools

- Create a framework to guide governments in planning fit-for-purpose public pools and streamlining the use of future government resources to target increased social outcomes and community benefits.
- Target investment for new public pools into growth corridors

3. Commission a Comprehensive Gap Analysis

- Conduct detailed research to identify priority projects and communities. Address infrastructure gaps, community needs, safety, and accessibility.

Implementing these recommendations will ensure public pools:

- Meet modern safety and accessibility standards
- Deliver economic, health, and social benefits
- Are sustainable and energy-efficient
- Provide equitable access for all Australians
- Deliver the full capacity of drowning prevention benefits of safe places to swim and water safety education in every community



› ENVIRONMENTAL SUSTAINABILITY

Aquatic facilities require large amounts of energy to heat and disinfect pool water and to keep the lights on and can have a significant environmental footprint if not serviced by renewable energy sources.

Most legacy facilities run on natural gas, highlighting the importance of widescale programs to electrify existing aquatic facilities and increase their energy efficiency.

Through innovative designs and upgrades, many facilities are reducing their carbon footprint, with some even achieving net-negative carbon footprints as a result.

While there have been some limited programs to encourage electrification upgrades, widescale nationally-consistent incentives should be rolled out to encourage national electrification of community pools, increasing viability and sustainability in the long run and contributing to healthier communities.

Investment by Governments, specifically in programs that support measurement, reporting, industry-wide upskilling and learning, adoption and scaling of technologies that reduce carbon and enhance the efficiency of aquatic facilities, are desperately needed. Peak bodies like Royal Life Saving are uniquely placed to gather data, report and bring stakeholders together to collaborate on solutions.

Energy Use, Benchmarking and Energy Saving Measures

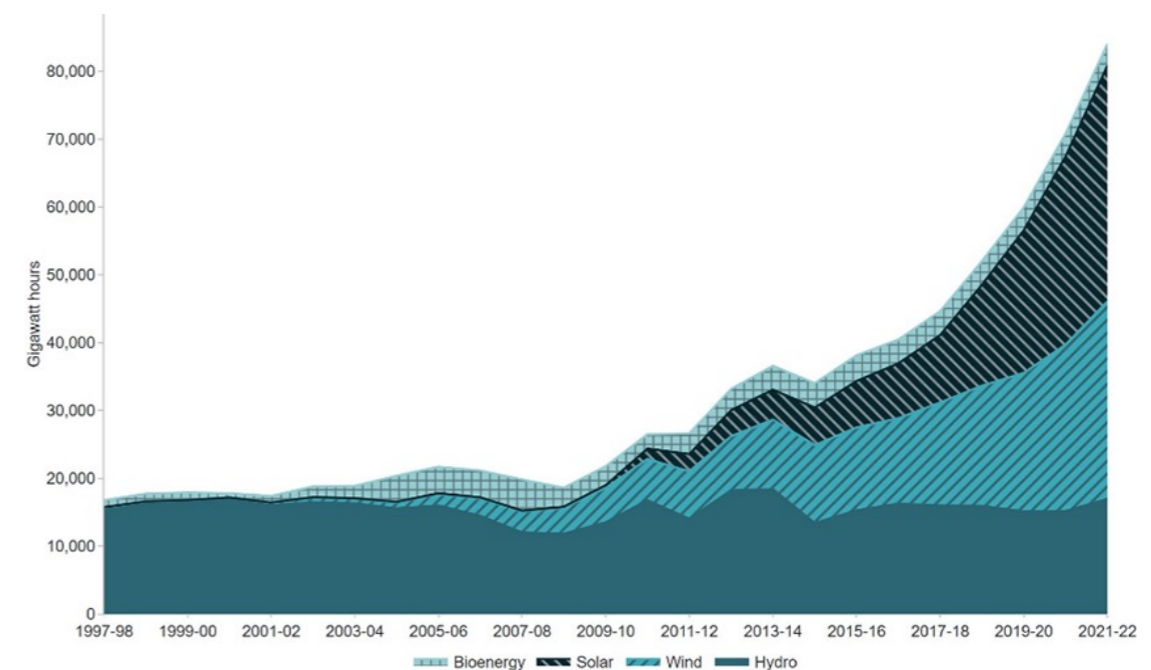
The Department of Climate Change, Energy, the Environment and Water cites that renewable energy sources accounted for nine per cent of Australian energy consumption in 2021/22, including solar (14 per cent), wind (11 per cent) and hydro (6 per cent).¹¹

With electricity generation remaining one of the major causes of greenhouse gas emissions in Australia, targeting the energy performance of one of the most energy-intensive types of buildings (aquatic facilities) can contribute towards reducing these harmful emissions.

A study by Trianti-Stourna et al³⁶ found that a typical indoor swimming facility will use energy as follows:

- 45 per cent for space heating (including ventilation).
- 33 per cent for water heating.
- 10 per cent for regulating the temperature of the building's remaining spaces.
- 9 per cent for electricity powering equipment and lighting.
- 3 per cent for hot water services.

Figure - Australian Electricity Generation from Renewable Sources¹¹



Water Usage

According to Sydney Water Corporation³⁴, council-owned aquatic facilities in Sydney use around 1,000ML of water each year. They cite that an indoor, 25-metre pool with eight lanes can lose around 550kL of water each year through evaporation alone. Hence, a significant amount of water can be lost to evaporation if its rates are not appropriately controlled. The evaporation of water elevates indoor humidity levels, necessitating control through augmented ventilation rates, further compounding energy consumption.³⁴

The report found water consumption in aquatic facilities within New South Wales highlighted a consumption range from 20L/bather to 60L/bather.

HVAC Systems

One of the most important and energy-intensive pieces of equipment in an aquatic facility is its HVAC (air handling) system.¹³ Balancing air and water temperature is crucial, as a significant temperature disparity might lead to elevated evaporation rates and community complaints about low water temperature, resulting in less pool usage by the public. Maintaining a harmonious link between air and water temperature is vital to achieve optimal humidity, user comfort and minimise swimming pool water evaporation. HVAC systems play a crucial role at aquatic facilities by performing various functions, including:

- Regulating the air temperature to create a pleasant environment for swimmers.
- Eliminating chloramines and other air contaminants.
- Managing humidity and evaporation through a stratification process, where faster-moving air molecules force slower-moving water molecules down to the waterline. This safeguards the facility's equipment, infrastructure and building structure from the corrosive impact of chloramine and ammonia-rich air.

The building envelope, including insulation, is considered critical. Many old and new aquatic facilities are insufficiently sealed, have single glazing on windows or are outdoors.



Leaks and Evaporation

Leaks are another significant problem. Sydney Water Corporation³⁴ also found that aquatic facilities experience an average water wastage of 22 per cent due to leaks and base flows alone. They also cite that 70 per cent of heat energy lost by pools is due to pool water evaporation, while a further 27 per cent of heat energy is lost through ventilation systems for indoor pools. They propose that the most effective energy savings can be made by:

- Locating and fixing leaks and/or re-lining leaky pool tanks
- Optimising filter backwash procedures.
- Managing pool water quality.
- Reducing evaporative loss through pool covers and air handling systems.

Filter Backwashing

Filter backwashing is an important aspect of pool water treatment, but is resource-intensive using traditional technologies. Contaminants such as organic matter, dirt, small particles and sediments are typically caught in pool filters during the continuous circulation of pool water. Backwashing unclogs this by reversing the flow of water through the filters and discharging the backwash water to the wastewater system. Importantly, the frequency, duration and types (volume of water used) of backwashing will affect the amount of water consumed by swimming pools. Without proper training and education, it is likely that filters are backwashed more frequently than is necessary. Backwashing only when filter pressures necessitate will result in the best energy, chemical and water efficiencies.

Additionally, new technology, such as ultra-fine filtration provides zero water loss backwash systems, which hold great promise for conserving energy and natural resources as a result of aquatic facility operations. It is understood that no studies have been conducted to showcase the benefits of contemporary ultra-fine filtration, such as Neptune Bensons technology, on water and utility consumption in aquatic facilities. Although, some studies^{16, 34} conducted on older ultra-fine filtration technology showed water savings up to 26kL per day. Replacing shower heads and taps with low-flow systems can also reduce water consumption significantly.²¹

Humidity

Belgravia Health and Wellbeing Green Road Report⁴³ highlights that humidity is another key factor for aquatic facilities to manage. The report cites that humidity is measured by the amount of water vapor in the air. Humidity control and monitoring is particularly important in aquatic and recreation facilities as accurately controlled humidity levels support the:

- Longevity of the building and its components
- Provide visitor and staff comfort
- Ensure efficient water use through reduced evaporation
- Ensure efficient energy usage
- Helps maintain a safe environment for visitors through management of environmental hazards.

The report cites that levels of humidity for aquatic and leisure facilities should be maintained between 50% and 70%, with 55% - 65% being the optimal range. This provides for good bather comfort and optimal energy use.

Humidity levels are influenced by bather activity, pool temperature, air temperature and water movement including infrastructure such as splash pads, spouts, bubble floors and tipping buckets. These play features add water vapour into the air and increase humidity levels.

If humidity is high, condensation will occur when humid air encounters cold surfaces such as windows or other building structures. Due to pool water containing oxidising chemicals such as chlorine, condensation in pool halls is highly corrosive. This condensation can lead to the degradation of assets, wood may rot, metal surfaces begin to rust and mould can grow. High humidity levels lead to a hot or stuffy feeling environment and an increased desire for fresh air. This leads staff and customers to prop doors and windows open to create air flow which then results in unnecessary energy loss.

If humidity levels are too low, this leads to increased water evaporation. Low humidity levels lead to increased energy usage as energy is required to dehumidify the air and heat the cool air brought in from outside. Low humidity levels also cause bathers to feel cold when exiting the pool, as water evaporates quickly from their bodies.

Humidity Levels

Lower than 55%	55% - 65%	Above 65%
High Energy Use	Good control	High corrosive condensation
High Evaporation		Visitors and staff feel hot and stuffy
Bathers feel cold		

Lighting

Standards Australia ⁴⁵ and the Guidelines for Safe Pool Operations (GSPO) ⁴⁴ define requirements for lighting levels in sports and recreation facilities, including swimming pools. Lux level readings can be taken (in line with the methodology in the standard) to determine if over or under illumination is occurring. Where a facility is significantly over lit, energy can be saved through de-lamping.

The lighting recommendations from the GSPO are:

Description	Optimum	Minimum
Any pool under the supervision of a lifeguard	600 lux	150 lux
Any pool where recreational activities are occurring	600 lux	150 lux
Lane Swimming and other competition disciplines	600 lux	600 lux
Swimming & water safety / aquatic programs	600 lux	600 lux
Program / therapy Pool	600 lux	150 lux

Note: The term “average maintained horizontal illuminance” refers to the average level of light (illuminance is measured in lux (lx)) that falls on a horizontal plane or surface over a designated area (for example a 1 x 1 m square box), taking into account depreciation factors like lamp lumen depreciation, dirt on lamps, and other variables that affect lighting performance over time. To calculate the average maintained horizontal illuminance, the illuminance is measured at multiple points across the designated horizontal surface. The measurements are then averaged to get the mean illuminance value. Maintenance factors are also taken into consideration to ensure that the illuminance levels meet the specified criteria throughout the life cycle of the lighting installation.



Electrification Technology

The latest electrification technology such as solar, batteries and heat pumps have developed greatly in recent years. Heat pumps were unimaginable in aquatic facilities five years ago, but thanks to significant increases in gas costs, heat pumps are now standard in any retrofit or new build. Limited studies have been conducted to understand their impact on energy use in aquatic facilities.

An RMIT study by Duverge ¹³ also found that a respective 34 per cent and 20 per cent reduction in energy consumption and greenhouse gas emissions can be achieved by combining several architectural and electromechanical features, such as:

- Double glazing
- Insulation upgrades
- Air and water temperature reductions
- Pool covers
- Used of high-density materials
- Glazed solar pool-water heating systems
- LED lighting

Belgravia Sustainability's Green Road Report also recommends implementing

- Waste and resource recovery methods
- Water efficient fittings and fixtures
- Lower ceiling heights
- Reducing skylights, louvres and vents which allow heat to escape
- Building envelope sealing



Sustainability Benchmarks

Establishing appropriate sustainability benchmarks is a topic of debate amongst pool experts. However, there is limited research targeting aquatic facilities across Australia and taking into account the latest technology and the broad national climate. As such, there is no agreed national benchmark or baseline from which to measure and report on energy efficiency improvements across the national aquatic industry.

Although there are many energy rating systems in the market such as Green Star, LEED, NABERS and BREEAM, they lack specific rating tools to assess aquatic facilities. ¹³ The study proposes new energy unit intensity benchmarks for aquatic facilities which looks at both useable area and water surface as well as water use intensity benchmarks. It is proposed that systematic measurement using these benchmarks may be beneficial. Duverge ¹³ also proposed an energy benchmark for aquatic centres ranging between 648kWh/m2 and 151 2,283kWh/m2 and the proposed water benchmark ranging between 11L/visitor and 110 L/visitor.

However, it should be noted that the presence of stadiums which use significantly less energy and water than aquatic facilities will significantly impact the relevance of benchmarks for aquatic facilities.

There are some key limitations with this approach, mainly that the already widespread kWh/m2 approach is well understood and being measured well through existing data gathering activities. Also, the kWh/useable m2 approach needs to be tested further and may need tailoring to each facility. CERM's kWh/m2 measurement methodology is noted to exclude wet indoor spaces that exceed 32 °C and outdoor play areas, which would skew results if included.

The CERM benchmarking process in combination with the Royal Life Saving National Aquatic Facility Safety Assessment are sector-wide established benchmarking tools with annual reporting providing sufficient information to benchmark industry performance and design policy solutions. All aquatic facility owners and operators are encouraged to undertake these processes annually and to seek out specialist sustainability advice in order to improve performance year-on-year.

It is proposed by this report that kWh/m2, CO2 per visit and L per visit are acceptable starting points for governments and industry to profile and understand the state of energy efficiency, carbon intensity and water usage at Australian aquatic facilities and are suitable metrics to design policy interventions and incentives to assist industry in becoming more sustainably responsible.

Further research and/or peer-review may be needed to clarify appropriate benchmarks. However, regardless of the validity of proposed benchmarks, current actuals can be taken as the current benchmark from which to reduce water and energy usage per visit.

However, detailed research and industry consultation is needed to validate energy usage intensity benchmarks and determine appropriate benchmarks for aquatic facilities, due to the wide variation in facility design and components.

Benchmark	Duverge	CERM average indoor pool 2024	CERM average outdoor pool 2024	CERM average multi-pool aquatic centre 2024
Energy use per metre squared (kWh/m2)	648-2283 kWh/m2	201.3 kWh/m2	87 kWh/m2	229 kWh/m2
Water use per visit (L/visit)	11-110 L/visitor	44 L/visitor	209 L/visitor	58 L/visitor

› SUSTAINABILITY METRICS OF AUSTRALIAN AQUATIC FACILITIES 2024

The below tables have been calculated using data gathered in the 2024 CERM PI benchmarking process, multiplied through the RLS National Aquatic Infrastructure Database, based on aquatic facility classifications and averages. It can be used to estimate the total ecological footprint of the National Aquatic Industry.

State / Territory	Electricity Use (kWh)	Electricity use per visit (kWh)	Gas usage (MJ)	Gas usage per visit (MJ)	Energy Efficiency (kWh/m ²)	CO2 Emissions from electricity (tonnes CO2)	CO2 emissions from natural gas (tonnes CO2)	Total CO2 emissions (tonnes CO2)	CO2 Emissions per visit (kg)	Water Use (kL)	Water use per visit (L)
QLD	326,445,307		2,767,078,885		70,149	116,772	50,049,278	50,166,050		6,287,709	
NSW	467,427,460		3,962,099,096		100,445	167,203	71,664,093	71,831,296		9,003,186	
VIC	427,469,951		3,623,403,528		91,858	152,910	65,537,969	65,690,879		8,233,559	
WA	169,630,933	3.76	1,437,858,543	32	36,452	60,678	26,007,131	26,067,809	0.58	3,267,285	72.48
NT	21,863,542		185,323,990		4,698	7,821	3,352,030	3,359,851		421,117	
SA	95,747,238		811,591,266		20,575	34,250	14,679,580	14,713,830		1,844,201	
TAS	56,543,644		479,286,181		12,151	20,226	8,669,044	8,689,270		1,089,095	
ACT	20,355,712		172,543,025		4,374	7,281	3,120,856	3,128,137		392,074	
National Total	1,585,483,788		13,439,184,514		340,701	567,141	243,079,981	243,647,122		30,538,225	

State / Territory	Equivalent petrol-powered cars driven for one year	Equivalent kg of coal burned	Equivalent wind turbines running for 1 year	Equivalent carbon sequestered by tree seedlings grown for 10 years
QLD	9,447,690	20,451,014,945	12,109	786,360,287
NSW	13,527,870	29,283,208,466	17,338	1,125,966,231
VIC	12,371,455	26,779,966,452	15,856	1,029,714,279
WA	4,909,308	10,626,970,814	6,292	408,616,777
NT	632,755	1,369,698,461	811	52,666,162
SA	2,771,031	5,998,334,637	3,552	230,641,470
TAS	1,636,436	3,542,323,605	2,097	136,205,592
ACT	589,117	1,275,236,498	755	49,034,013
National Total	45,885,662	99,326,753,877	58,810	3,819,204,813

Recommendations- Sustainability

To ensure the long-term environmental sustainability and resilience of Australia's aquatic facilities, a national approach to reducing energy consumption, water use, and carbon emissions is needed. The following initiatives should be prioritised as part of an industry-wide sustainability framework.

Support Widescale Electrification and Energy Efficiency Upgrades

The majority of public pools in Australia still rely on natural gas for heating, contributing significantly to carbon emissions and operating costs. A national electrification and energy efficiency strategy should include:

- Transitioning to electric heating systems, including heat pumps and geothermal energy where feasible.
- Installing rooftop solar panels and battery storage to offset peak energy demand and reduce grid dependency.
- Implementing smart energy management systems, such as real-time monitoring of energy consumption and automated load-balancing systems to improve efficiency.
- Providing financial incentives or grants for local councils and operators to accelerate the adoption of energy-efficient technologies.
- Developing an electrification roadmap to ensure all new and refurbished facilities move away from fossil fuel reliance by 2035.
- Transition energy sources to renewable sources

Invest in Water-Saving Technologies to Reduce Consumption & Waste

Aquatic facilities consume millions of litres of water annually, with significant losses due to leakage, evaporation, and inefficient filtration systems. A national policy program for water conservation should include:

- Ultra-fine filtration systems (e.g., regenerative media filters) to reduce backwashing and lower water wastage.
- Leak detection programs using diagnostics to identify and repair water loss before costly failures occur.
- Evaporation control technologies, such as pool blankets, misting systems, and improved ventilation, to minimise water loss in indoor and outdoor pools.
- Rainwater harvesting and greywater recycling systems to supplement pool top-ups and irrigation needs.
- Encouraging mandatory industry-wide water efficiency targets, requiring all facilities to measure, report, and improve their water use efficiency over time.

Adopt National Energy and Water Efficiency Benchmarks for Public Pools

Further detailed research to establish consensus on baseline sustainability benchmarks could be established to ensure all publicly funded aquatic facilities meet minimum environmental performance standards. This could include:

- Developing National Energy and Water Benchmarks that set measurable targets for energy use (kWh per visitor) and water use (litres per bather load).
- Providing financial incentives for facilities that achieve above-standard reductions in energy and water consumption.
- Incorporating mandatory sustainability criteria into funding applications for new and upgraded aquatic centres.
- Encouraging councils to adopt net-zero commitments for all new aquatic facility developments.
- Conducting an industry-wide audit of current environmental performance to establish a baseline for improvement tracking.

Australia's aquatic industry and governments must prioritise sustainability to ensure long-term viability and affordability of public pool operations while reducing environmental impact. A nationally coordinated approach—supported by strong policy measures, funding incentives, and performance tracking—will enable the sector to lead in energy and water efficiency, ultimately ensuring a more sustainable future for public aquatic facilities.

› Aquatic Facilities' Contributions to Sustainable Development Goal

Aquatic facilities likely contribute to the United Nations' Sustainable Development Goals.

Aquatic Facilities Contribute to the UN SDGs

SDG 3 – Good Health and Wellbeing

- › Aquatic facilities reduce drowning risks and promote physical activity for all ages.
- › They contribute to reducing obesity, cardiovascular diseases, and mental health conditions through swimming and recreational programs.

SDG 4 – Quality Education

- › They provide swimming and water safety education to children and adults.
- › The industry offers vocational training for swim teachers and lifeguards, supporting job readiness.
- › Early childhood development is enhanced by water familiarisation and learn to s

SDG 5 – Gender Equality

- › The aquatic industry has high female workforce participation (58% female workers).
- › Encouraging more female leadership in aquatic centre management is an area for improvement.

SDG 8 – Decent Work and Economic Growth

- › Pools generate employment in roles such as lifeguards, instructors, and facility managers.
- › They support youth employment and jobs for parents and carers. An area for improvement is improving working conditions and pay for some workers.

SDG 9 – Industry, Innovation and Infrastructure

- › Aquatic facilities drive infrastructure innovation, including water treatment, energy efficiency, and automation.
- › Investment in regional infrastructure ensures equitable access to swimming facilities.

SDG 10 – Reduced Inequalities

- › Where pools ensure inclusive access to aquatic facilities for all, regardless of age, disability, economic status, or background.
- › An area for improvement is addressing regional disparities in access to public pools, particularly in underserved areas.

SDG 11 – Sustainable Cities and Communities

- › Public pools provide safe, inclusive, and accessible spaces for recreation and community engagement.
- › Investment in energy-efficient, eco-friendly aquatic facilities contributes to sustainable urban development.

SDG 13 – Climate Action

- › Aquatic facilities can implement sustainable water and energy use practices and provide education opportunities to users of facilities about sustainable practices.
- › Water safety education builds resilience against drowning risks.



> CASE STUDIES: ADDRESSING SUSTAINABILITY & WORKFORCE SAFETY

Wadeye Community Swimming Pool – Re-lined & re-opened

The Wadeye Swimming Pool, located in a remote Northern Territory (NT) community, presents a compelling example of how innovative technologies like Myrtha Pools can significantly extend the lifespan of aging pool infrastructure. Originally constructed in 2003 using Myrtha's modular stainless-steel technology, the pool had been left neglected for five years, exposing it to the harsh environmental conditions of the Australian outback. Unfortunately the pool became unsafe to use and was closed.

Additionally, with the pool closed, residents were forced to find respite from heat by swimming in streams and rivers, increasing risks of drowning or interactions with crocodiles. In remote communities in the NT, being able to use the public swimming pool is a key element in community safety. The community pool in Wadeye offers substantial social connections, improved water safety, long term local employment, promotion of physical activity, improved health outcomes and community well-being advantages. In 2023, a major renovation was undertaken to restore the pool, which has served as a vital community asset for swimming and recreation.

Challenges

The Wadeye pool's design, a common 'L' shape with both beach entry and lap swimming areas, had aged significantly. The remote location, seasonal monsoon cutoffs, and the difficulty of sourcing construction materials and skilled labour in the area posed further challenges. Traditional refurbishment methods, such as concrete-based solutions, were not viable due to logistical issues, high costs, and long project timelines. This led to the exploration of Myrtha's pool technology, which offers an alternative with notable benefits for remote community (and other) settings.

The Solution: Myrtha Pool Technology

Myrtha Pools offers a modular, pre-engineered system using PVC-laminated stainless steel, which can be easily assembled on-site, reducing both the time and complexity of traditional construction. In the case of the Wadeye Pool renovation, the Myrtha structure was refurbished using Myrtha Skin, an innovative new PVC-laminated Stainless Steel Coil technology. This solution not only ensured a quicker turnaround time but also provided a durable, low-maintenance pool structure with a 25-year warranty, a significant upgrade over the limited warranties offered for concrete pools.

Key Benefits

- **Faster Installation:** The Wadeye renovation was completed in just three weeks, well within the 12-week project timeline, ensuring the pool was ready for use before the wet season. Traditional concrete pool refurbishments would have taken at least three months longer due to curing times, additional workforce, and logistical challenges in remote locations.
- **Consistent Quality and Risk Management:** Unlike concrete pools, which often rely on various contractors such as concrete manufacturers, concrete installers, tile manufacturers and tilers, all with different warranties, Myrtha's factory-manufactured components ensure consistent quality. The simplified installation process reduces the risk of errors and delays.
- **Durability and Reduced Maintenance:** The original Myrtha structure remained in excellent condition after 20 years. The stainless-steel construction is highly resistant to corrosion, cracking, and deterioration, which can commonly affect concrete pools. As a result, Myrtha pools require significantly less maintenance and provide long-term cost savings.
- **Cost and Time Savings:** Myrtha technology offers substantial cost savings when compared to concrete solutions. The Wadeye project cost \$600,000 for the pool refurbishment, with the Myrtha system providing a cost-effective alternative to the estimated \$1 million required for a similar renovation using concrete. The savings stem from reduced transportation costs, faster construction times, and lower long-term maintenance requirements.
- **Sustainability:** Myrtha pools are more energy-efficient than traditional concrete pools, with their stainless-steel surfaces helping maintain water temperature more effectively, leading to lower heating costs. Additionally, they require less water for both filling and maintenance, an important factor in a resource-scarce area like Wadeye.
- **Note:** Myrtha Pools has provided this case study, additional detail can be found from Myrtha Pools: <https://www.myrthapools.com/en/projects/wadeye-community-pool/>

BEFORE



AFTER





Project Symphony: Western Australia's Largest Virtual Power Plant, Inclusive of Armadale Fitness and Aquatic Centre (AFAC)

Project Symphony (2022) is a collaboration between Synergy, Western Power, and the Australian Energy Market Operator (AEMO) with support from Energy Policy WA. In addition to WA state funding, Project Symphony has also received funding from the Australian Renewable Energy Agency (ARENA) as part of ARENA's Advancing Renewables Program.

In 2022, the City of Armadale completed a 500kWp solar expansion project at their venue, which is forecast to save 501 tonnes of CO2 emissions each year while also providing for AFAC to operate on 100 per cent solar electricity during peak hours of the busy summer period. Building management efficiencies during the last financial year means that a 41 per cent reduction in gas consumption has also been achieved. In addition, a solar energy storage battery project linking the facility to the broader Project Symphony has been initiated.

Showcasing and highlighting the buy-back on this project would be of immense value to local governments across Australia.



South Australia Aquatic and Leisure Centre (SAALC) – Electrification Upgrade

The South Australian government has set an ambitious target of being 100 per cent renewable by 2030.

In 2019, the total CO2-e emissions produced by the SAALC was estimated at 3,146 tonnes. These emission levels are equivalent to 684 passenger vehicles on the road for one year. This is noting a significant solar installation in 2019, which reduced electricity consumption by 12 per cent and carbon emissions by 697.34 tonnes. The facility cites that this equates to 648,936km of car travel, or the planting of 17,881 trees.

SAALC recently reviewed and benchmarked its existing energy consumption and performance with an energy use intensity (EUI) value using the Duverge methodology. The facility has already upgraded their water treatment system to the Neptune Benson Defender, an ultra-fine low-water-use system.

A six-million-dollar electrification upgrade consisting of heat pumps only has been proposed, which is modelled to reduce energy consumption by 66 per cent without any further upgrades to the building fabric or any increase in solar power generation.

Investing in this system and evaluating the results could prove beneficial to the industry as a whole.



Brimbank Aquatic and Wellness Centre (Formerly St Albans Leisure Centre) – 100 per cent Renewable Energy Aquatic Facility

In September 2022, Brimbank Aquatic and Wellness Centre in Victoria reopened as Australia's first all-electric, renewable-energy aquatic centre after an extensive \$60 million redevelopment. The project was a step towards achieving Brimbank's target of reaching net zero emissions for its operations by 2030.

According to the Australian Renewable Energy Agency Brimbank Aquatic boasts a 500kw rooftop solar system that provides renewable energy around the clock as well as a power purchase agreement that will help the centre achieve a six-star 'Green Star' rating. A cutting-edge, four-pipe heat pump system provides both heating and cooling and is paired with an 88,000-litre thermal storage battery and digital control system that provides an entirely electric alternative to gas boilers.

Insights from the use of new heat-pump technology at this facility could provide valuable learnings to the industry as a whole.



Northcote Aquatic and Recreation Centre's - Six-Star 'Green Star' Rating

In November 2023, the redeveloped Northcote Aquatic and Recreation Centre in Victoria reopened and was awarded a "6 Star Green Star" for its design (the highest rating possible under the Green Building Council of Australia's rating system), reflecting a world-leading level in sustainable design. The Darebin Council is also targeting a "6 Star Green Star – As Built" rating for this facility.

Some of the sustainable initiatives incorporated into the project include:

- Carbon-neutral building operating with 100 per cent green power.
- Rainwater harvesting for swimming pool and landscaping.
- Grey water use for toilet flushing.
- Double-glazed windows.
- Electric heating, cooling and hot water systems using source heat pumps.
- Airtight façades (tested upon completion).
- Timber structure (forest stewardship council) to the pool hall.
- Heat recovery ventilation to reuse otherwise wasted heat.
- Solar panels installed on the roof, with battery storage.
- Predominately native landscaping to reduce water use and improve biodiversity.
- Energy-efficient fixtures, fittings and lighting.
- Approximately 65 bicycle parks.
- LEDs throughout the facility with daylight dimming.

> **SUPPORTING THE SAFETY OF AQUATIC WORKERS:**
KEEP YOUR COOL AT THE POOL CAMPAIGN

Royal Life Saving research shows that there are more than 2,000 incidents of abuse, violence, and aggression directed at staff working in aquatic facilities around the country every year.

To support the safety and wellbeing of staff working in aquatic facilities, Royal Life Saving Australia has launched the 'Keep Your Cool at the Pool' campaign, which sets clear behavioural expectations for patrons and calls for users of aquatic facilities to treat each other and staff respectfully.

The 'Keep Your Cool at the Pool' campaign aims to:

- > Support the safety and wellbeing of staff working in aquatic facilities
- > Improve patron safety and wellbeing by encouraging responsible behaviour
- > Encourage a national standard in appropriate patron behaviour at aquatic facilities
- > Improve the confidence of lifeguards, swim teachers and reception staff in delivering safety instructions to patrons by minimising the instances of aggression and abuse
- > Support the sector in delivering critical support for the aquatic workforce
- > Support improvements to the attractiveness of employment in industry and retention of talent

The campaign has received widespread industry and community support including major operators, councils and recreation and leisure associations.

More information on the Keep Your Cool at the Pool Campaign is available here:

<https://www.royallifesaving.com.au/Aquatic-Risk-and-Guidelines/safety-programs/keep-your-cool-at-the-pool>



> CONCLUSION

The State of Australian Aquatic Facilities 2025 report highlights the critical role that aquatic facilities play in community health, safety, and economic development while also identifying significant challenges that must be addressed to ensure their long-term sustainability.

The industry continues to deliver immense social value, with over 421 million visits annually and a \$12.84 billion contribution to local economies, public health, drowning prevention, and community wellbeing.

However, aging infrastructure, workforce challenges, funding fragmentation, and environmental sustainability concerns present pressing risks to the sector's future viability.

Key Takeaways:

- > **A Dedicated Pool Infrastructure Program is Needed:** Significant gaps exist in access to public pools, while existing pools have significant needs for renewal. Current funding for aquatic infrastructure is fragmented across multiple programs, making long-term planning difficult for local governments and communities. A more streamlined, coordinated approach to investment—aligned with community needs, access equity, and sustainability targets—would enhance the efficiency and impact of public spending in this sector. A dedicated National Public Pool Investment Program is essential to address growing inequities in facility access and ensure communities—particularly in regional and high-growth areas—retain access to safe, modern aquatic facilities.
- > **Workforce Pressures Require Structural Reform:** Workplace aggression towards staff continues to rise. Industry-wide strategies to attract, train, and retain talent must be prioritised, alongside stronger workplace protections and accreditation systems for frontline aquatic workers.
- > **Sustainability Must Be a Core Priority:** With aquatic facilities among the largest energy and water consumers in place-based community infrastructure, transitioning to electrification, energy-efficient designs, and sustainable water management is critical. The industry must align with net-zero policies through incentivised upgrades, national efficiency benchmarks, and dedicated funding for sustainability improvements.

Pathway Forward

The State of Aquatic Facilities is at a crossroads. Without strategic intervention, many communities risk losing access to safe places to swim, undermining efforts in public health, water safety education, and social inclusion. A coordinated national approach to investment, workforce development, and sustainability can future-proof aquatic facilities, and ensure they continue to serve millions of Australians for generations to come.

By embracing streamlined and targeted investment, and forward-thinking infrastructure planning, Australia can maintain its reputation as a global leader in aquatic safety, equity, accessibility, and innovation. The recommendations outlined in this report provide a clear blueprint for policymakers, industry leaders, and stakeholders to drive meaningful, lasting improvements in public aquatic facility provision and management.



› REFERENCES

1. Australian Bureau of Statistics. (2024). Australian Bureau of Statistics. Retrieved December 2023, from <https://www.abs.gov.au/>
2. Australian Bureau of Statistics (2021). Mesh Blocks - 2021 – Shapefile. Available from: <https://www.abs.gov.au/statistics/standards/australian-statistical-geography-standard-asgs-edition-3/jul2021-jun2026/access-and-downloads/digital-boundary-files>
3. ABS Digital Atlas of Australia (2024). SA2 Population projections 2022 to 2032. Geoscience Australia, Canberra. <https://digital.atlas.gov.au/datasets/digitalatlas::sa2-population-projections-2022-to-2032/about>
4. Australian Bureau of Statistics (2016). Australian Statistical Geography Standard: Volume 1 – Main Structure and Greater Capital City Statistical Areas. Geoscience Australia, Canberra. Retrieved from: [https://www.abs.gov.au/ausstats/abs@.nsf/Lookup/by%20Subject/1270.0.55.001~July%202016~Main%20Features~Statistical%20Area%20Level%202%20\(SA2\)~10014](https://www.abs.gov.au/ausstats/abs@.nsf/Lookup/by%20Subject/1270.0.55.001~July%202016~Main%20Features~Statistical%20Area%20Level%202%20(SA2)~10014)
5. Australian Water Safety Council. (2020). Australian Water Safety Strategy 2030. Australian Water Safety Council, Sydney.
6. Audera, C. (1999). Swimming pools in remote Indigenous communities: Health related issues. National Centre for Epidemiology and Population Health, Australian National University. Retrieved from <https://openresearch-repository.anu.edu.au/bitstreams/88bb9e4b-4928-4f4f-b0a3-591088021a7f/download>.
7. Barnsley, P. D., Peden, A. E., & Scarr, J. (2017). Economic benefits of Australia's public aquatic facilities. Royal Life Saving Society – Australia, Sydney.
8. Barnsley, P. D., Peden, A. E., & Scarr, J. (2018). Calculating the economic burden of fatal drowning in Australia. *Journal of Safety Research*, 67, 57–63. <https://doi.org/10.1016/j.jsr.2018.09.002>
9. Barnsley, P. Peden, A. Scarr, J. (2017) Growth In Demand For Aquatic Facilities, Royal Life Saving Society – Australia, Sydney.
10. CERM PI. (2025). Operational Benchmarks For Australian Public Aquatic Centres 2024. University of South Australia.
11. Department of Climate Change, Energy, the Environment and Water. (2023). Renewables. Accessed 1 December 2023. <https://www.energy.gov.au/data/renewables>
12. Department of Finance. (2024). FOI 23-24/150 – Document 2. Retrieved from: <https://www.finance.gov.au/sites/default/files/foi-23-24-150-document-2-priority-community-infrastructure-program.pdf>
13. Duverge, J. J. (2019). Energy performance and water usage of aquatic centres (Doctoral dissertation). RMIT University.
14. Environmental Protection Agency. (2023). Greenhouse gas equivalencies calculator. <https://www.epa.gov/energy/greenhouse-gas-equivalencies-calculator>
15. Hall, G., & Sibthorpe, B. (2003). Health benefits of swimming pools in remote Aboriginal communities. *BMJ*, 326(7380), 415–416.
16. Hazell, F., Nimmo, L., & Leaversuch, P. (2006). Best practice profile for public swimming pools: Maximising reclamation and reuse. Royal Life Saving Society Western Australia.
17. Hendrickx, D., Stephen, A., Lehmann, D., Silva, D., Boelaert, M., Carapetis, J., & Walker, R. (2016). A systematic review of the evidence that swimming pools improve health and wellbeing in remote Aboriginal communities in Australia. *Australian and New Zealand Journal of Public Health*, 40(1), 30–36. <https://doi.org/10.1111/1753-6405.12433>
18. Houston, R, Craigie T & Jackson, S. (2024) National Aquatic Workforce Framework, Royal Life Saving Society – Australia, Sydney
19. Houston, R., Moran, M., Miller, L., & Crockford, M. (2023). State of aquatic facility safety report 2024. Royal Life Saving Society – Australia, Sydney, Australia.
20. Jackson, J., Houston, R., & Pickles, K. (2023). Royal Life Saving national aquatic industry workforce report 2023. Royal Life Saving Society – Australia.
21. Maglionico, M., & Stojkov, I. (2015). Water consumption in a public swimming pool. *Water Science & Technology: Water Supply*, 15(6), 1305-1311.
22. Marriott, K., Tower, J., & McDonald, K. (2020). Community leisure and recreation planning (3rd ed.). Routledge. <https://www.taylorfrancis.com/books/mono/10.4324/9780429324857/community-leisure-recreation-planning-ken-marriott-john-tower-katie-mcdonald>
23. McDonald, K., Tower, J., & Hanlon, C. (2023). Planning for local government aquatic and recreation centres: The influence of new public management (NPM) components. *Leisure/Loisir*, 47(2), 134–151. <https://www.tandfonline.com/doi/pdf/10.1080/23750472.2023.2267057>
24. McDonald, K., Hanlon, C., & Tower, J. (2024). Leisure planning process: Systematic adhocrcy. *Managing Sport and Leisure*. Advance online publication. <https://doi.org/10.1080/23750472.2024.2420064>
25. PricewaterhouseCoopers. (2021). The social health and economic benefits of the national aquatic industry. Royal Life Saving Society – Australia.
26. ProfileID. (n.d.). Community profiles. Retrieved December 2023, from <https://profile.id.com.au/>
27. Rajagopalan, & McIntosh. (2016). A guide for benchmarking energy and the indoor environmental quality of aquatic centres in Victoria. Aquatics and Recreation Victoria.
28. Reserve Bank of Australia. (2025). Inflation Calculator. Retrieved from: <https://www.rba.gov.au/calculator/>
29. R Core Team (2024). R: A Language and Environment for Statistical Computing. R Foundation for Statistical Computing, Vienna, Austria. <https://www.R-project.org/>.
30. Royal Life Saving Society – Australia. (2024). National drowning report 2024. Sydney, Australia. <https://doi.org/10.62977/85070>
31. Royal Life Saving Society – Australia. (2025). National Aquatic Facility Infrastructure Database. Royal Life Saving Society – Australia.
32. Sherry, E., Karg, A. J., Storr, R., Yeomans, C., Houston, R.J. (2021). Social Impact of the National Aquatic Industry. Swinburne Sport Innovation Research Group and Royal Life Saving Society - Australia.
33. Summers, J., & Houston, R. J. (2022). The state of aquatic facility infrastructure in Australia: Rebuilding our aging public swimming pools. Royal Life Saving Society – Australia. <https://doi.org/10.62977/85118>
34. Sydney Water Corporation. (2011). Best practice guidelines for water management in aquatic leisure centres. Available at <https://www.sydneywater.com.au/content/dam/sydneywater/documents/best-practice-guidelines-for-water-management-in-aquatic-leisure-centres.pdf>. Last accessed 5 September 2023.
35. Training.gov.au, retrieved from: <https://training.gov.au/training/details/SISS00132/rto>
36. Trianti-Stourna, E., Spiropoulou, K., Theofilaktos, C., Droutsas, K., Balaras, C. A., & Santamouris, M. (1998). Energy conservation strategies for sports centers: Part B: Swimming pools. *Energy and Buildings*, 27(2), 123–135.
37. Unterfinger M (2023). `_hereR: 'sf'-Based Interface to the 'HERE' REST APIs`. R package version 1.0.0. <https://CRAN.R-project.org/package=hereR>
38. Victoria State Government. (2024). 20-minute neighbourhoods. Department of Infrastructure and Planning. Retrieved from: <https://www.planning.vic.gov.au/guides-and-resources/strategies-and-initiatives/20-minute-neighbourhoods>
39. Victoria State Government. (2016). Plan Melbourne. Department of Transport and Planning. Retrieved from: <https://www.planning.vic.gov.au/guides-and-resources/strategies-and-initiatives/plan-melbourne>
40. Australian Local Government Association (2024). Financial sustainability in Australian local government. Retrieved from: <https://alga.com.au/app/uploads/SGS-report-Long-term-trends-in-Australian-local-government-financial-sustainability.pdf>
41. Australian Local Government Association (2025). Put Our Communities First. Retrieved from: <https://putourcommunitiesfirst.com.au/>
42. Australian Government. National Greenhouse Accounts Factors (2023). Department of Climate Change, Energy, the Environment and Water. Retrieved from: <https://www.dcceew.gov.au/climate-change/publications/national-greenhouse-accounts-factors-2023>
43. Morgan, A (2025). Belgravia Sustainability: Venues Green Road Report. Unpublished.
44. Royal Life Saving Australia (2023). Guidelines for Safe Pool Operations Facility Design 5- Lighting of Pool Halls. Retrieved from: <https://www.royallifesaving.com.au/subscribers/GSPO/facility-design/fd5-lighting-of-pool-halls>
45. Standards Australia (2021). Australian Standard 2560.2:2021 – Sports Lighting – Part 2: Swimming Pools.
46. Australian Government (2025). Community Energy Upgrades Fund Program. Department of Climate Change, Energy, the Environment and Water. Retrieved from: <https://www.dcceew.gov.au/energy/programs/community-energy-upgrades-fund>
47. The Hon Chris Bower MP (2025). Joint media release: Solar pools and libraries with first \$50 million for bill busting upgrades. Retrieved from: <https://minister.dcceew.gov.au/bowen/media-releases/joint-media-release-solar-pools-and-libraries-first-50-million-bill-busting-upgrades>



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