



Government of **Western Australia**  
Department of **Health**

# Management of public health risks associated with aquatic facilities in Western Australia.

In accordance with the *Public Health Act 2016* regulatory framework

September 2018



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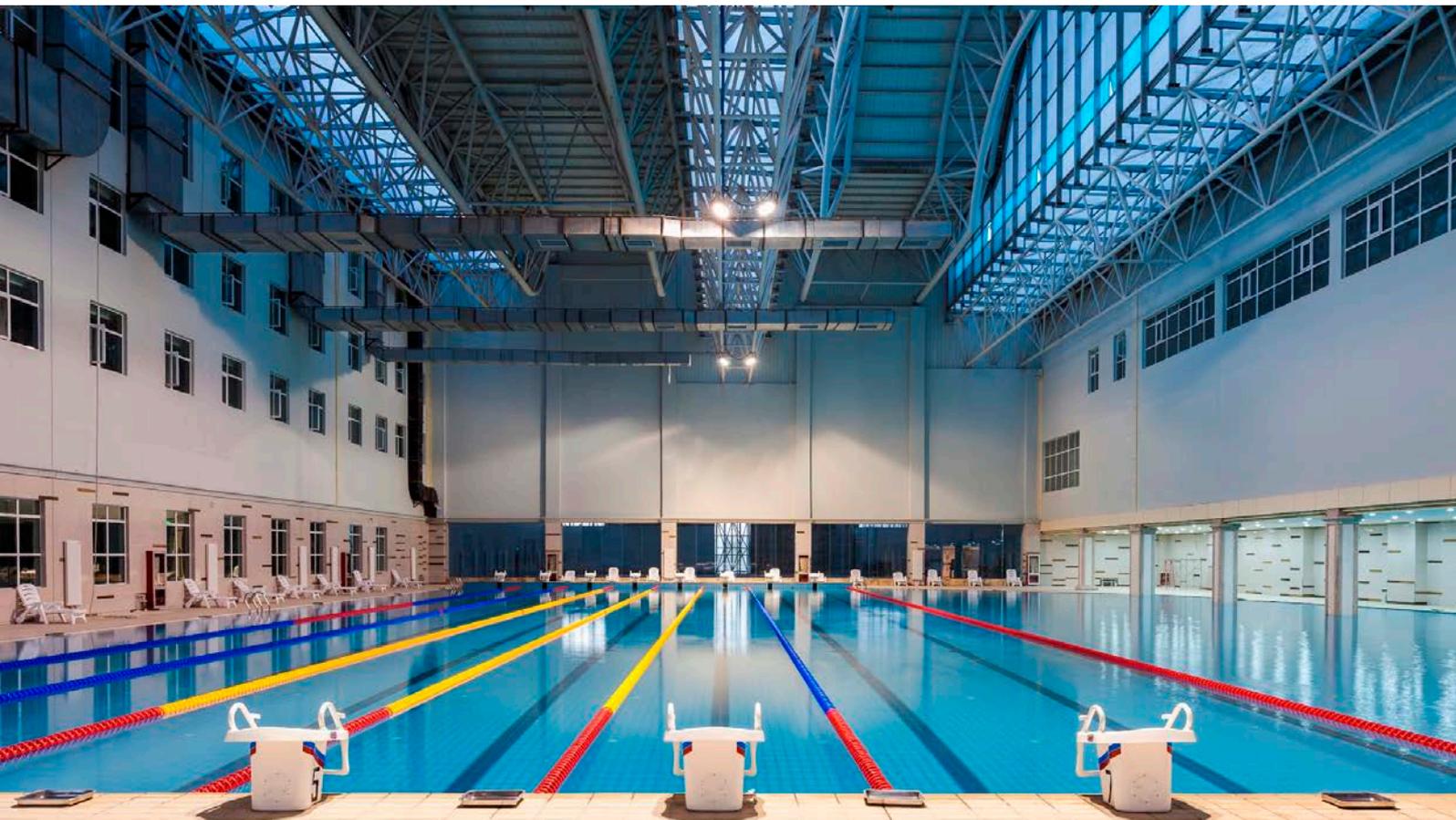
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## Disclaimer

The views expressed in this document may not, in any circumstances, be interpreted as stating an official position of the Department of Health. This document is intended to serve as the basis for further discussion with interested stakeholders.



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## How to make a submission

The Department of Health (DoH) is seeking feedback on this discussion paper and options for the management of the public health risks associated with aquatic facilities in Western Australia.

You are invited to read through the following discussion paper and provide feedback through one of the methods below:

- Completing the [online survey](#), or
- Filling in the [printable survey questions](#) (separate document) and sending it to the DoH by either email or post as per the contact details below.

## Guiding questions

This document contains a series of questions related to the proposal. These are collated in the [printable survey questions](#) (separate document) . You do not have to comment on all the questions, and can focus on those areas that are important to you.

You are welcome to provide additional feedback related to aquatic facilities regulations that may not be related to any of the questions.

Please explain the reasons behind your suggestions, and where possible provide evidence to support your views (such as statistics, examples of effective practice internationally or peer reviewed scientific literature), estimates of any costs that may relate to your proposal, and examples of solutions. This type of information is necessary when submitting the proposal to the Department of Treasury.

## Where to send your submissions

Electronic survey:	<a href="https://consultation.health.wa.gov.au/">https://consultation.health.wa.gov.au/</a>
Email:	<a href="mailto:publichealthact@health.wa.gov.au">publichealthact@health.wa.gov.au</a>
Post:	Review of the Aquatic Facilities Regulations Environmental Health Directorate Department of Health PO Box 8172, Perth Business Centre, WA 6849

## Submissions close

The closing date for submissions is Friday 30<sup>th</sup> November 2018 at 5pm.

## Acronyms

ACT	Australian Capital Territory
AO	Authorised Officer
AS/NZS	Australian/New Zealand Standard
BCA	Building Code of Australia
CHO	Chief Health Officer
CoP	Code of Practice for the Design, Construction, Operation, Management, and Maintenance of Aquatic Facilities
CPR	Cardio Pulmonary Resuscitation
DoH	Department of Health
GSPO	Guidelines for Safe Pool Operation
LIWA Aquatics	Leisure Institute of Western Australia Aquatics Inc.
NAISC	National Aquatic Industry Safety Committee
NCC	National Construction Code
NSW	New South Wales
NT	Northern Territory
QLD	Queensland
RCD	Residual-current device
RLSSA	Royal Lifesaving Society of Australia
RTO	Registered Training Organisations
SA	South Australia
TAS	Tasmania
VIC	Victoria
WA	Western Australia
WAPC	Western Australian Planning Commission

## 1 Executive summary

The focus of this review is to obtain stakeholder feedback on the most effective option for the management of public health risks associated with aquatic facilities in Western Australia. This document presents and analyses various options for managing these public health risks, including the potential advantages (benefits), disadvantages (costs) for industry, small business, and consumers, local and state government.

This paper discusses the current management of aquatic facilities under the *Health (Aquatic Facilities) Regulations 2007* (Aquatic Facilities Regulations), which adopts the Code of Practice for the Design, Construction, Operation, Management, and Maintenance of Aquatic Facilities, and which replaced the previous *Health (Swimming Pool) Regulations 1964*. The 2007 Regulations were developed with significant input from the Aquatic Facilities Working Group, to ensure the legislation reflected the views of industry, enforcement agencies and the public.

With the introduction of the *Public Health Act 2016* in WA, all public health regulations, including the *Health (Aquatic Facilities) Regulations 2007*, must be reviewed and either repealed or replaced with regulations compliant with the new regulatory framework.

This discussion paper proposes the following options for consideration on this matter:

- **Option A:** Retain the status quo, that is, replace the current regulation of the Aquatic Facilities industry with equivalent regulation, as far as practicable, under the *Public Health Act 2016*
- **Option B:** Repeal the existing regulations without replacement and allow the industry to self-regulate
- **Option C:** Develop Aquatic Facilities Regulations in accordance with the *Public Health Act 2016* regulatory framework and continue to adopt the Code of Practice for the Design, Construction, Operation, Management and Maintenance of Aquatic Facilities 2015 with amendments

Aquatic facilities that are not appropriately managed can pose a high risk to public health and as a consequence the preferred option recommended by the DoH is regulation. This is in keeping with the majority of States and Territories across Australia as well as internationally including Canada and the United States of America.

The current *Health (Aquatic Facilities) Regulations 2007* address many of the public health risks in aquatic facilities today but are considered prescriptive and outdated. If updated regulations (**Option C**) are deemed to be an appropriate tool to manage aquatic facilities, the current Regulations and Code will need to be reviewed in accordance with the new regulatory framework.

This paper has identified 7 areas of potential reform under **Option C** and the DoH will be collating feedback on these proposals as well as the opportunity to present any additional proposals.

1. Proposal 1 – Devolve the administration role to local government enforcement agencies
2. Proposal 2 – Prescribe offences for which an infringement notice may be issued
3. Proposal 3 – Adopt a Code of Practice
4. Proposal 4 – Revise the requirements and process for exclusions
5. Proposal 5 – Revise the definition of aquatic facilities
6. Proposal 6 – Revise the requirements for pool sampling and testing
7. Proposal 7 – Revise the requirements that prohibit persons from entering

## 2 Aim

This paper outlines options for the management of public health risks associated with public aquatic facilities in WA, including the transition of the existing *Health (Aquatic Facilities) Regulations 2007* (“Aquatic Facilities Regulations”), into new regulations to be created under Part 19, Division 5 of the *Public Health Act 2016* regulatory framework.

Amendments are anticipated for the accompanying Code of Practice for the Design, Construction, Operation, Management and Maintenance of Aquatic Facilities (December 2015) (CoP).

## 3 Introduction

The introduction of the *Public Health Act 2016* requires all environmental health regulations created under the previous *Health (Miscellaneous Provisions) Act 1911* to be reviewed and then repealed or replaced with regulations created under the new regulatory framework provided by the *Public Health Act 2016*.

The Environmental Health Directorate of the Department of Health proposes to consolidate the existing 22 environmental health related regulations into a streamlined and manageable number of regulations.

This paper will only focus on the management of public health risks associated with aquatic facilities in WA.

Once fully implemented the *Public Health Act 2016* has a number of tools to deal with public health risk management and offences (see Appendix 1 – Regulatory tools provided by the *Public Health Act 2016*). These include the:

1. General public health duty
2. Infringement notices
3. Improvement notices and enforcement orders and
4. Registration and licensing

Regulations can adopt codes of practice and any subsidiary legislation made, determined or issued under any other Act or under any Act of the Commonwealth, another State or Territory. Section 304 of the *Public Health Act 2016* outlines a range of general powers in the making of regulations.

The *Public Health Act 2016* also enables local government enforcement agencies to recover fees or charges in respect of their performance of functions under the *Public Health Act* and regulations. Such fees or charges are to be imposed and recovered in accordance with the framework provided by Part 6 Division 5 Subdivision 2 of the *Local Government Act 1995*.

This paper will review the available evidence and outline regulatory options for managing public health risks associated with aquatic facilities in WA. If the option of regulations is still considered to be the most effective control measure necessary to manage these risks, it is proposed that regulations would be created under the new administrative framework of the *Public Health Act 2016*.

## 4 Overview of public health risks for aquatic facilities

Aquatic facilities include a varied range of non-residential recreational places including swimming pools, water spray parks, spa pools, hydrotherapy pools and floatation tanks. It is important that public health risk is minimised for all patrons of these facilities. The current definition of an aquatic facility does not include a pool or spa that is part of a residential apartment complex with 30 or less strata titled dwellings, nor do the regulations apply to the Crown, for example pools at public schools.

Water safety includes reducing the risk of drowning or injury and the risk of disease (primarily the risk of infection or disease through exposure to water based pathogens and micro-organisms).

The public health risks can be categorised into 5 key areas:

1. Built Environment
2. Drowning
3. Water Quality
4. Electrocution
5. Chemical exposure and ventilation

Physical injuries may include the risk of drowning, falls, collisions (in the water, on, or at the exit of water slides) and spinal injuries. Environmental exposure risks may include sunburn, hyperthermia and hypothermia. Additional physical risks may include electrocution (wiring faults and lightning strike in wet environment), structural collapse, chemical exposure and chemical explosions (mixing wrong chemicals, hydrogen off-gassing).

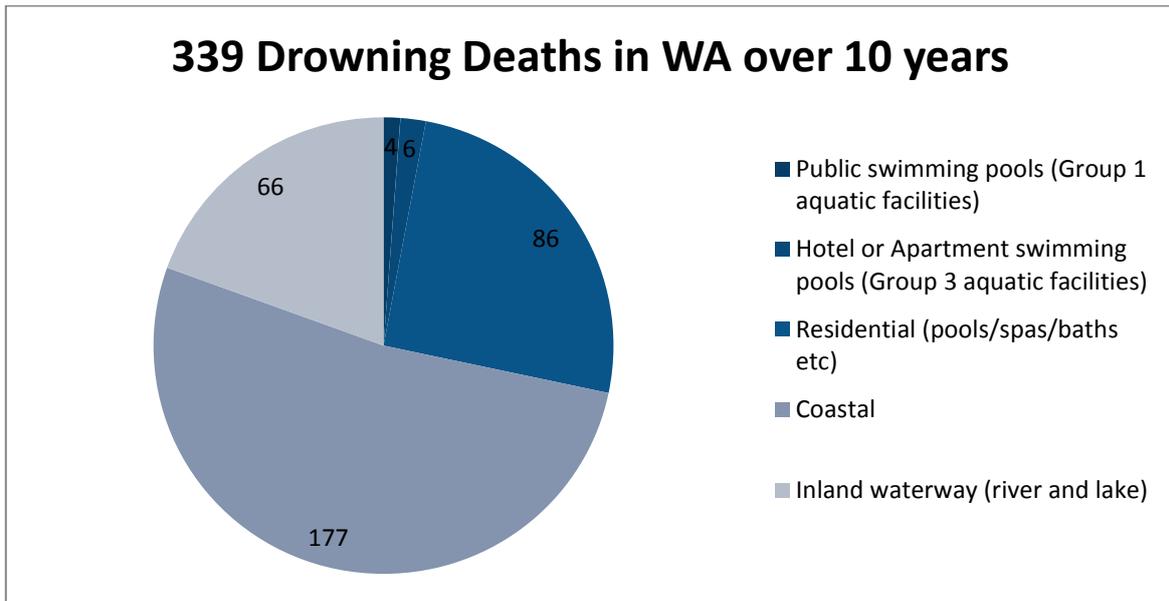
### 4.1 Drowning statistics

Australia wide, between 2004/05 and 2014/15, 137 persons died as a result of drowning in non-residential swimming pools with a further 96 deaths occurring at public aquatic facilities from other related causes(1).

Data provided by the Royal Lifesaving Society of Western Australia stated that in the 10 year period from 2006/07- 2015/16 there were 4 drowning deaths in public pools in WA and an additional 5 in hotel pools and 1 in an apartment pool(2).

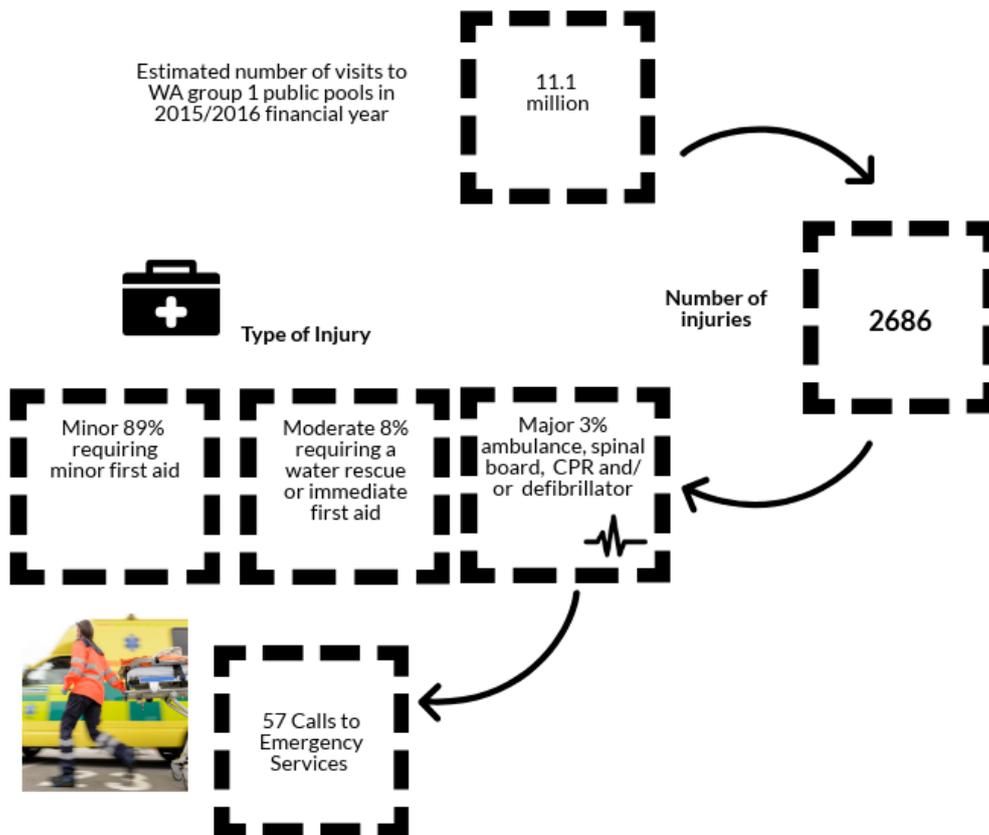
These figures are low compared to drownings in natural water bodies such as beaches and lakes, and private swimming pools, and this is attributed to the stringent risk management practices in place at aquatic facilities. Figure 1 shows the number of WA drowning deaths by location.

Figure 1- Drowning Deaths in WA by location



## 4.2 Injury statistics

Data published in the Bigger Better Safer Report 2016 (2) investigated injuries sustained at 30 high patronage, group 1 aquatic facilities (regional and metropolitan) and extrapolated the incident rate across Western Australia.



In the sampled facilities, no major incidents were observed in the 0-4 age group. The 55+ age group continued to observe the highest rate of major incidents primarily resulting from the exacerbation of a pre-existing injury or condition, low falls or asphyxia. Injuries resulting from these incidents were again wide-ranging, with the most common being asthma and/or other threats to breathing (22%), and suspected fit/seizures (16%).

### 4.3 Disease risk

At an aquatic facility, the risk of disease increases with the number of people using the same facility as well as increasing water temperature. Effective systems to control the levels of disinfection (chlorine, bromine etc.), pH, filtration and circulation will reduce this risk.

The [World Health Organization's 2006 Guidelines for safe recreational water environments](#)(3) provides a comprehensive list of the microbial risks to users. In many cases the risk of illness or infection is a result of faecal contamination of the water including viruses (adenoviruses, Hepatitis A, Noroviruses), bacteria (*Shigella* spp, *E.coli*) and protozoa (*Giardia*, *Cryptosporidium* spp). Other microorganism hazards (non-faecally derived) include fungi (*Trichophyton* spp) and other bacteria (*Legionella* spp), viruses (*Papiloma virus*) and protozoa (*Naegleria fowleri*, *Plasmodium* spp).

There is also a small but serious risk of microbial infection such as [amoebic meningitis](#) which is caused by *Naegleria fowleri*. Commonly found in the environment, *N.fowleri* infections are very rare but usually fatal. There have been four recorded cases of amoebic meningitis in Western Australia to 1985 and none since.

Patrons attending aquatic facilities without adequate disinfection are at risk of these microbial infections such as the fatal case in the [United States Whitewater Center in June 2016](#).

### 4.4 Public health risk assessment of aquatic facilities

Globally, public health is a high priority that in many situations requires legislation to define the roles and responsibilities of individuals, agencies and others, to protect public health by reducing the risk of public health harm or incident occurrence.

The *Public Health Act 2016* introduces the term 'public health risk' which means 'a risk of harm to public health'. *Harm* is defined in the Act to mean 'physical or psychological harm to individuals, whether of long-term or immediate impact or effect'.

These definitions cover a range of potential public health risks including:

- physical e.g. temperature, noise, mechanical hazards, radiation and vibration
- chemical either naturally occurring or synthetic substances or
- biological e.g. fungi, viruses, bacteria and protozoa

The main intention of regulations to be created under the *Public Health Act 2016* is to ensure measures are in place to prevent, control or abate public health risks.

In order to assess the risks associated with aquatic facilities the application of a health risk assessment matrix is important to understand the severity of the risks the DoH and other enforcement agencies must protect the community from.

The Environmental Health Directorate has adopted the risk assessment model provided by the [2011 Health Risk Assessment \(Scoping\) Guidelines, Department of Health WA](#). This model is

based on the principles of the [Environmental health risk assessment: Guidelines for assessing human health risks from environmental hazards. enHealth, June 2012.](#)

The application of this risk assessment model provides greater surety that risks are assessed in a systematic, consistent and transparent manner across different hazards across WA. The application of the risk matrix model to the various risks associated with aquatic facilities is provided in Table 1.

**Table 1 Definition of risk levels**

<b>Risk Level</b>	<b>DoH management requirements</b>
<b>Very Low Public Health Risk</b>	No further assessment required
<b>Low Public Health Risk</b>	Some mitigation/management may be required – no detailed assessment of health hazards required but addressed with routine controls
<b>Moderate Public Health Risk</b>	Substantial mitigation/management required – assessment required of health hazards
<b>High Public Health Risk</b>	Not an acceptable risk. The DoH needs to be involved in the management of high public health risks. Major mitigation/management may be required – assessment required of health hazards
<b>Extreme Public Health Risk</b>	Potentially unacceptable: modification of proposal required

In accordance with the *Public Health Act 2016*, the Chief Health Officer (CHO) has a responsibility to implement the objects and principles of the Act. The objects and principles guide decision making to ensure the Act is administered in a manner that maximises the protection, promotion and improvement of public health and the reduction of preventable illness. They help to recast an Act from being simply reactive – about health protection – to being proactive, looking ahead to the structures and initiatives necessary to avoid problems and keep the community healthy.

Based on the public health risks identified as part of the risk assessment process, the CHO has a responsibility to the people of WA to ensure appropriate controls are in place to protect the community from risks related to aquatic facilities.

Table 1 Definition of risk levels, provides the foundation as to why certain management requirements, such as a regulation or guideline, may be necessary for the higher ranked risk categories.

Table 2 summarises some of the identified risks associated with aquatic facilities using the risk assessment model in Appendix 2 – Risk Assessment Model.

**Table 2 Public health risk assessment of some of the risks associated with aquatic facilities and the built environment**

Public Health Risk	Extreme	High	Moderate
<b>Built Environment</b>	none identified	Supervision (Lines of Sight)	Structural Collapse
		Access of unauthorised persons	Structural Collapse (Fibreglass Pools)
			Slips, trips, falls
			Solar Exposure
			Diving Injury
			Diving Injury (Starting Platforms)
			Spectator Seating
<b>Drowning</b>	Staff Supervision and Training	Supervision (Lighting)	Surface Colour(s)
	High Risk Patrons (Children under 10)	Entrapment	Overcrowding of water body
		Water turbidity	
		High Risk Patrons (Toddlers)	
		Rescue Equipment	
		Resuscitation	
<b>Water Quality</b>	Treatment System	Microbiological Illness	Water Temperature
	Contact Time	Biological (Bather Sanitation)	Untreated Water
	Maintaining Quality	Equipment Maintenance	Off Season Maintenance
		Fouling of Filtration Media	
<b>Electrocution</b>	Electrical Components of Filtration System	Powered Device	none identified
		Pool Lighting	

Public Health Risk	Extreme	High	Moderate
Chemical exposure and ventilation	none identified	Chemical Exposure	Over Chlorination
		Hydrogen Gas Explosion	Exposure to Acidic or Alkaline Water
			Chemical Inhalation
Other/Miscellaneous	none identified	Special Features- e.g. diving facilities, moveable booms, child amusement devices, wave pools and river rides	Automatic Cleaners

The full risk assessment can be viewed in Appendix 3 – Aquatic Facilities Risk Assessment and summarises the:

- various public health risks associated with aquatic facilities
- the potential causes of these risk
- categories of persons who are most at risk e.g. young, old, pregnant women, men, woman, employees, people with disabilities
- severity of the impact of the risk e.g. potentially fatal
- likelihood of impact
- risk level e.g. very low, low, moderate, high, extreme
- whether there is current legislation in place to effectively deal with the risk

## 5 Current management of aquatic facilities

### 5.1 Western Australia

Public health risks associated with aquatic facilities are managed under the *Health (Aquatic Facilities) Regulations 2007* and the associated Code of Practice for the design, construction, operation, management and maintenance of aquatic facilities 2015.

An aquatic facility is defined in Regulation 5.

An **aquatic facility** consists of —

- (a) one or more water bodies; and
- (b) the plant associated with each water body; and
- (c) the concourse for each water body; and
- (d) the toilets, change rooms and similar facilities provided as part of the facility; and
- (e) the lighting for the facility; and
- (f) the fence or fences, and any other structure that excludes access, around each water body; and
- (g) any other structure, building or plant necessary for the operation of each water body.

In WA an aquatic facility includes (but is not limited to):

- swimming pools
- spa pools
- river rides
- water slides
- water playgrounds
- wave parks





The current *Aquatic Facilities Regulations* and the CoP were created in 2007 in partnership with the Aquatic Facilities Working Group, established by the then Executive Director, Public Health. This group consisted of representatives from:

- Department of Health (Chair & Secretary)
- Department of Sport and Recreation
- Department of Education and Training
- Department of Housing and Works Western Australia
- Western Australian Local Government Association
- Environmental Health Australia (WA)
- Royal Life Saving Society
- WA Leisure Institute of WA (Aquatics)
- Chadson Engineering Pty Ltd Pool Controls
- Swimming Pool and Spa Association
- WA Donovan & Payne Architects
- State Swim
- Poolwerx
- Oceanis Pty Ltd
- Shenton Pumps
- Caravan Industry Association
- WA Australian Physiotherapy Association
- WA Retirement Village Association
- WA Ninnes & Fong Architects
- Regional Health & Building Officers

The Aquatic Facilities Working Group expressed the views of industry, local government enforcement agencies and the public in the development of the legislation. The Executive Director, Public Health was able to update the CoP as required which enabled emerging technologies and innovation to be considered. The group last met in 2015.

The 2007 Aquatic Facilities Regulations replaced the dated [Health \(Swimming Pool\) Regulations 1964](#), which served to manage the risks of swimming pools for over 45 years.

The 1964 regulations were introduced in response to an outbreak of amoebic meningitis in which 4 people died after being infected in swimming pools fed by water from the goldfields pipeline.



MOUNT MAGNET MEMORIAL SWIMMING POOL

In addition to disinfection requirements, the 1964 regulations led to upgrades for existing swimming pools and the introduction of swimming lessons. Prior to this there were no enforceable standards.

In the early 1990's there was a push to develop and modernise the regulations to allow for the evolution of aquatic facilities as well as the emergence of new trends including spas and water slides. This was also to tie in with new disinfection techniques as well as emerging scientific discoveries on ways to reduce the risk of pathogens (such as adequate chlorination, ideal pH range etc.). As a result the 1992 regulations were developed.

While prescriptive, many aspects of the *Health (Aquatic Facilities) Regulations 2007* are applicable to the public health risks of today. New regulations would focus on a risk based, rather than prescriptive approach. Proposed regulatory reforms are discussed in Section 6 of this discussion paper: Options for future management of aquatic facilities.

### 5.1.1 Health (Aquatic Facilities) Regulations 2007

The *Health (Aquatic Facilities) Regulations 2007* are used to manage aquatic facilities available for public, commercial and high density residential use in Western Australia, but do not apply to domestic swimming pools. The current Regulations require all captured aquatic facilities to comply with the CoP.

Currently the regulations allow Authorised Officers (AO) to issue improvement notices, however they cannot close a facility or lift the closure of a facility without the CHO's authority.

#### Objectives of the *Health (Aquatic Facilities) Regulations 2007*

The principal objectives are to:

- ensure the proper design, maintenance and operation of aquatic facilities to minimise the sources of infection and injury
- prevent drownings in public aquatic facilities

### 5.1.2 Code of Practice for the design, construction, operation, management and maintenance of Aquatic Facilities

The [CoP](#) was prepared to ensure that public aquatic facilities operate to a consistently high health and safety standard, by minimising the occurrence of disease, injury and other health-related complaints associated with their use. The CoP was developed in conjunction with the 2007 Regulations and was last updated in December 2015.

The CoP addresses issues including:

1. Administration
2. Design and construction
3. Circulation and water treatment
4. Chemical safety
5. Water quality testing
6. Qualification requirements for operators, supervisors and emergency care personnel
7. General sanitation and operational requirements
8. Public spa pools requirements
9. Water spray grounds requirements
10. Safety rules and signage.

The CoP classifies aquatic facilities into four groups and regulatory requirements for the issues listed above may vary between the groups. Examples of facilities captured within these groups are detailed in Table 3 below:

Table 3 Aquatic facilities examples

Group	Aquatic facility examples
1	<ul style="list-style-type: none"> <li>• aquatic centres</li> <li>• waterslides</li> <li>• water-parks</li> </ul>
2	<ul style="list-style-type: none"> <li>• schools</li> <li>• learn-to-swim centres</li> <li>• learn-to-dive pools</li> <li>• nursing homes</li> <li>• hospitals &amp; hydrotherapy/ physiotherapy use pools</li> </ul>
3	<ul style="list-style-type: none"> <li>• community/swimming groups</li> <li>• commercial developments for guests such as hotels, motels, resorts, serviced apartments, caravan parks, health clubs, mine sites, recreational camp-sites, lodging houses, staff/student accommodation complexes</li> <li>• places restricted to adult only access</li> </ul>
4	<ul style="list-style-type: none"> <li>• small temporary accommodation developments such as bed and breakfast and farm-stay facilities</li> <li>• permanent/semi-permanent residential developments with 30 or more dwelling units/apartments</li> <li>• retirement/lifestyle villages that do not allow non-residential based club/member access to aquatic facility.</li> </ul>

### 5.1.3 Regulatory roles and responsibilities

#### Role of the Department of Health

Under the current regulations, any person who intends to install and operate a public aquatic facility in Western Australia (WA) must submit an application to the DoH for approval to construct and operate.

The DoH is responsible for all administrative requirements associated with the *Health (Aquatic Facilities) Regulations 2007* across WA. This role involves:

- Assessing and approving proposed aquatic facility construction or alterations to ensure CoP compliance
- Enforcement of the Act, the Regulations and the CoP
- Undertaking onsite inspections for CoP compliance prior to a newly constructed or altered aquatic facility being approved for operation
- Delegating inspection duties to non-metropolitan local government authorities as appropriate
- Maintaining a database of aquatic facility locations across WA
- Monitoring monthly microbiological testing results for all WA aquatic facilities and following up on non-compliances
- Performing monthly microbiological sampling for facilities with no local government (Rottnest Island, Kings Park)

- Coordinating ongoing management of aquatic facilities with local government enforcement agencies
- Investigating and reporting on serious incidents at aquatic facilities
- Approving Registered Training Organisations (RTO's) to provide appropriate courses of accreditation for aquatic facility technical operations, patron supervision and water rescue
- Reviewing the CoP as required



The DoH has an agreement with PathWest to provide a range of analytical services which include microbiological analysis of water samples taken from aquatic facilities.

The DoH does not charge any fees to recover costs of the assessment and approvals process (outlined in Table 1 Definition of risk levels), and cannot under the *Public Health Act 2016* unless it is prescribed in the regulations. The cost of this service is currently provided for within the budget of the Environmental Health Directorate of the DoH, summarised in Table 4 and is estimated at \$96 000 per annum, which is equivalent to 1.4 full time officers.

Processing times for aquatic facility applications can take between 2 to 8 weeks and each application must be approved by the delegate of the CHO. As part of the approval process, the DoH must also undertake a final inspection prior to the aquatic facility being approved, which involves expenditure costs for travel to complete the inspections.

When an inspection is required in regional or remote areas, the DoH may delegate authority to regional local governments to assist with this inspection process on behalf of the DoH.

**Table 4 Summary of the estimated DoH costs associated with the assessment of aquatic facilities**

Item	Description	Cost Estimate (per annum)
Staffing requirement	1.0 FTE, SC Officer Level 1  Also including ancillary staffing costs (equipment, facilities, training etc.)	\$90 000
Travel expenditure (metropolitan)	Rottnest Sampling Up to 12 times per year.	\$1000
Travel expenditure (metropolitan)	Inspections (metropolitan) as required Approximately 50 per year. Vehicle, parking, equipment, consumables.	\$5000
Travel expenditure (regional)	\$0- Delegate to Local Government	\$0
Total Cost Estimate		\$96000

As part of the State's health reform initiative the DoH will be focusing on a system manager role as opposed to a processing role. This will include devolving operational functions such as approvals, inspections and assessments to the local district wherever possible. Continuing the administrative role under the Aquatic Facilities Regulations does not align with this current system manager role. However, in accordance with the provisions of the *Public Health Act 2016*, local governments will be able to impose a charge for these services on a cost recovery basis.

A system manager role ensures the DoH provides guidelines, develops management systems and provides guidance on the legislative requirements to support enforcement agencies. The DoH will need to provide ongoing support and may also provide training and audit enforcement agencies.

#### **Processing times of aquatic facility applications**

Builders and developers must submit aquatic facility applications to the DoH in addition to standard building and planning applications, which may result in significant duplications and/or delays in building approvals pending the approval of the aquatic facility by the DoH.

A number of local governments have expressed interest in taking on the approvals process for aquatic facilities to streamline the approvals process and ensure faster processing times. However, other local governments may be concerned with the increased responsibilities.

#### **Aquatic facilities register in WA**

Between July 2013 and June 2017 the DoH approved 223 new aquatic facilities.

**Table 5 Aquatic facilities approvals**

Financial Year	Number of New Applications
2016/17	78
2015/16	70
2014/15	43
2013/14	32

The DoH also maintains a database of aquatic facility locations across WA. The database of aquatic facilities currently captures approval and water quality sampling data for over 1700 aquatic facilities across the state. Results from approved facilities date back to 2002 (no data for unapproved or unidentified facilities) and includes data from facilities that have since been closed.

In 2013/14 the number of registered aquatic facilities and sample data was collected. This information is used to ensure aquatic facilities are being managed effectively and to notify local governments when a water sample is found to contain evidence of a public health risk. The local government will then investigate the issue.

**Table 6 Water sampling results**

Parameter	Year			
	13/14	14/15	15/16	16/17
Number of water samples tested	14005	14243	12684	15203
Number of E.coli detections	34	36	37	38
Number of Pseudomonas detections	817	880	872	920
Number of Naegleria detections	34	41	42	47
Total number of controlled organism detections	885	957	951	1005
Combined detection rate of controlled organisms	6.32%	6.72%	7.50%	6.61%

### **Policy support and system manager role**

In addition to assessment processes DoH officers:

- Provide policy advice and support on public health risks associated with aquatic facilities to the public, industry and local government
- Review, maintain, manage and update the regulations and the CoP, by considering emerging and innovative technologies, to minimise the risk of disease and injury
- Maintain operational forms, checklists, industry guidance notes
- Analyse aquatic facility water sample results and provide advice to local government on ways to minimise pathogenic microbial activity and other risks to public health
- Issue media statements about the safety of swimming
- Inspect pools before approval

- Collect water samples from aquatic facilities on Crown land.

### Role of local government

Currently, once the DoH issues a permit to operate an aquatic facility they will notify the relevant local government. Following this, the local government is responsible for:

**Table 7 Local government responsibility**

Enforcement role	Frequency	Average amount charged to Pool operator
Inspection including public building checks (e.g. structural), Worksafe (e.g. chemical storage)	Annual	\$0
Collecting water samples from all aquatic facilities and sending them to PathWest. Officers also check that the operator is complying with the requirements of the permit and the CoP such as completing the daily log books.	Monthly	\$50-100 per pool
Performing inspections for seasonal use changes (e.g. a pool is closed during winter months and is inspected prior to re-opening)	As required	\$0
Performing inspections when modifications have been made to the aquatic facility	As required	\$0

The *Health (Aquatic Facilities) Regulations 2007* allow AOs to issue improvement notices, however they cannot close a facility or lift the closure of a facility without the CHO's authority.

Regulation 31 lists offences and penalties that can be issued:

### Offences and penalties

A person who contravenes regulation 7, 12, 16, 19(1) or (2), 21(6), 22(4), 23(7), 24(1), 25 or 26(1) or (3) commits an offence against that provision.

Penalty:

- for a first offence against that provision — a fine of not more than \$1 000 and not less than \$100; and
- for a second offence against that provision — a fine of not more than \$1 000 and not less than \$200; and
- for a third or subsequent offence against that provision — a fine of not more than \$1 000 and not less than \$500; and
- if that offence is a continuing offence — a fine of not more than \$100 and not less than \$50 for each day or part of a day during which the offence continues.

## Role of industry

### Construction industry

Any person or building company who intends to install an aquatic facility in WA must submit an application to the DoH for approval to construct and operate.

This application must be submitted in addition to other building application processes required by local government and the Western Australian Planning Commission (WAPC).

### Operators

Operators are responsible for:

- maintaining water treatment plant in good working order,
- monitoring water quality,
- adjusting pool chemistry as appropriate, and
- recording of test results and remedial actions taken

Aquatic facility operators must complete an appropriate training course from a Registered Training Organisation (RTO) that has been approved by the DoH.

#### 5.1.4 Cost-Benefit analysis

The DoH has conducted a cost-benefit analysis for management of aquatic facilities in Western Australia. Estimates have been provided for:

- the current system
- no regulation.

The cost-benefit analysis does not include indirect cost benefits such as the recently published report on the economic benefits of Australia's Public Aquatic facilities in Australia(4). The report demonstrated that every visit to a public swimming pool creates health benefits worth \$26.39, meaning that the average aquatic facility creates improved health outcomes worth \$2.72 million each year to Australian society. Analysis shows that Australia's aquatic facilities thus produce \$2.8 billion in health benefits each year, over and above their value as sources of recreation, community and aquatic education.

### Current Regulatory System

Western Australia has the most comprehensive aquatic facility regulations in Australia. This is reflected by a reduced drowning rate in public pools compared to other States. For example there have been 4 drowning deaths in public pools in Western Australia since 2007 and 25 in Victoria(5).

A cost-benefit analysis for the current regulatory system has been estimated. This includes the current water sampling requirements. However please refer to Proposal 6 – Revise the requirements for pool sampling and testing (which details how these requirements are not being met) and the supervision requirement for Group 1 facilities. The analysis does not cover infrastructure or building costs as all registered facilities are in operation and thus required infrastructure is already completed.

### Water testing costs to state government

There are 1705 registered facilities across WA with 1465 operating in August 2017 (some facilities close for part of the year).

Water testing costs are currently paid by the state government and for the 1465 pools open all year annual cost is estimated below:

$$1465 \text{ pools} \times 12 \text{ (monthly samples)} \times \$140 \text{ (cost of sample to be processed)} \\ = \$2,461,200$$

The DoH currently has an agreement with PathWest and pays for \$1,900,000 worth of water testing per year so if all pools complied with the required monthly sampling this budget would be insufficient. Furthermore, this cost is an underestimation as it does not include any of the 240 registered facilities that are open for part of the year.

### **Water sampling costs to pool owners**

The cost to businesses for water sampling varies between local governments. See Table 16 Aquatic fees and charges in Proposal 1 from a sample of local governments. The annual cost paid to local government per pool ranges from \$243 to \$1028 although these charges may also include the annual pool inspection.

### **Pool operator and lifeguard qualification costs**

The qualification requirements for aquatic facility operators, supervisors and emergency care personnel vary across the different classification groups. In the circumstance where a facility is operated and supervised by one person, that person will need to comply with all qualification requirements that apply to that facility.

#### **Group 1 facilities**

It is currently mandatory for all Group 1 facilities to provide on duty lifeguards and qualified pool operators. Of the 1705 registered facilities across WA there are estimated to be 170 Group 1 facilities. Most Group 1 facilities will have multiple lifeguards employed in addition to management or technical operator staff. Lifeguards must be able to provide supervision at all times and not be allocated other duties that may interfere with their ability to respond immediately to an emergency.

The cost to employ one full time lifeguard is estimated below:

Total Cost per business to employ 1 FTE lifeguard per year is

$$\$75/\text{hr} \times 8\text{hrs}/\text{day} \times 365 \text{ days} = \$219,000/\text{year}$$

Typical annual salary for a full time employee is \$116,000 /year

The qualification requirements for operators of Group 1 aquatic facilities are given in Table 8 below:

**Table 8 Requirements for operators of Group 1 facilities**

	<b>Qualification</b>	<b>Cost</b>
<b>1</b>	Evidence of successful completion of a recognised pool operators' training course.	\$900
<b>2</b>	A current Senior First Aid Certificate or equivalent.	\$99
<b>3</b>	A current Pool Lifeguard Award or equivalent.	\$620 (includes First aid and Bronze Medallion) \$150 annual requalification
<b>4</b>	Details of current and past employment in the aquatic industry.	-
<b>5</b>	Evidence of attendance at two professional development seminars over the three-year period.	variable

There are approximately 1800 qualified Pool Lifeguards required in Western Australia to perform the function of a Qualified Pool Manager or Lifeguard(6). All are required to hold the Pool Lifeguard Award from the Royal Lifesaving Society Western Australia or equivalent. This cost may be covered by the employers or the individual.

The cost to individuals or employers for the 1800 lifeguards currently enrolled is:

Initial outlay 1800 lifeguards x \$620 lifeguard course = \$1,116,000

And then annual requalification 1800 x \$150 = \$ 270,000

Note: This assumes that all lifeguards become qualified in a given year. The Leisure Institute of WA Aquatic (Inc) estimate that annual training of new and existing personnel to comply with industry supervision requirements is \$500,000 /annum.

**Group 2, 3 and 4 facilities**

The qualification requirements for operators of Group 2, 3 and 4 aquatic facilities are summarised in Table 9 and are based on the relative public health risk of that facility.

**Table 9 Qualification requirements for operators of Group 2, 3 and 4 facilities**

Group	Participant Supervision	Emergency Care	Patron Rescue	On premises
2	Facilities shall be provided with program supervisors who have completed an approved training program e.g. an Aquatic Rescue Award. This qualification shall be re-assessed annually.	Shall be provided with emergency care personnel who have completed an approved training program (e.g. a valid Senior First Aid Certificate). This Certificate shall be updated every 3 years.	Covered by participant supervision requirements	Personnel holding qualifications in Participant Supervision and Emergency Care are on the premises whenever the facility is open or available for use.
3		The operator of a Group 3 facility shall ensure that there are personnel who hold a current first aid qualification but are not required to be on the premises at all times	The operator of a Group 3 facility shall ensure that there are personnel, who have completed an approved patron rescue training program but are not to be on the premises at all times.	Not required
		or: As an alternative, the Operator of a Group 3 facility may manage their risk and duty of care to patrons by documenting within their Operations Manual precisely how they are providing the same or better health and safety protection to patrons (e.g. only permitting competent swimmers, having persons with adequate safety or first aid qualifications etc.)		
4	Not required	Not required	Not required	Not required

All Group 2, 3 and 4 pools have the same technical operator requirements where the ongoing operation of the facility is undertaken by, or done under the direction of a technical operator who has completed an approved training program.

The estimated cost of the qualifications required for Group 2, 3, and 4 facilities are given in Table 10 below:

**Table 10 Cost of requirements for operators of Group 2, 3 and 4 facilities**

	Qualification	Cost	Group 2	Group 3	Group 4
1	Evidence of successful completion of a recognised pool operators' training course.	\$380	yes	yes	Yes
2	A current Senior First Aid Certificate or equivalent.	\$99	no	yes	no
3	Aquatic rescue.	\$120	no	Yes or bronze medallion	no
4	Details of current and past employment in the aquatic industry.		yes	no	no
5	Evidence of attendance at two professional development seminars over the three-year period.		yes	no	no

Costs for the 170 Group 1 facilities for pool operator courses (assuming at least one employee holds a valid qualification) per pool is \$153 000. Although this number is likely to be at least doubled allowing for more than one qualified pool operator per facility (coverage during leave etc.). This course is a one off and does not require requalification providing the operator maintains their subscription to the Leisure Institute of Western Australia Aquatics Inc. (LIWA Aquatics) (\$120/year).

Cost of the Group 2,3 and 4 pool operators course, assuming one per aquatic facility is estimated to be (n1535)= \$583 300 and does not require requalification or membership to LIWA Aquatics.

### **Death and injury costs to state government**

There have been 4 drowning deaths in Western Australian Group 1 aquatic facilities since the *Health (Aquatic Facilities) Regulations 2007* were introduced. The Royal Lifesaving Society of Western Australia provided data on each of these drownings. All were adults (25-84 years old) and three of these were attributed to pre-existing medical (heart) conditions. The remaining fatality was a 25 year old male who lost consciousness while attempting to increase his breath hold. In all 4 drownings, lifeguards were present and performed Cardio Pulmonary Resuscitation (CPR). The cause of death of 3 of the adults was cardiac arrest followed by immersion. In the case of the 25 year old (who had been holding his breath before losing consciousness), the immersion time was estimated to be 2 minutes. Following CPR a pulse rate was restored but the patient passed away the next day in hospital.

A study assessing data of fatal and non-fatal drowning patients attended by paramedics in Victoria estimates that for every fatal drowning there are 15 non-fatal drownings(7). This has been used to estimate costs of the current system to the state per year in Appendix 4 – Cost Estimators. Based on these numbers, the cost to the state government for hospitalisations and death is estimated at \$5 million per year. See Appendix 4 for detailed financial estimates.

<b>Scenario Cost Summary- current regulations</b>	
<b>Total Cost to Government</b>	<b>\$ 4,882,094</b>
<b>Total Cost to Business</b>	<b>\$ 248,000</b>

### **No regulations**

If the aquatic facilities industry was deregulated the costs to industry would be significantly reduced and the risks to public health would similarly be increased.

### **Death and injury costs to state government**

The most vulnerable population to drownings in public pools are children and it is likely there would be a significant increase in drownings in this age group.

In Victoria, where the supervision requirements are reduced, 3 children under the age of 7 drowned in public pools between 2000 and 2010.

To deregulate the aquatic facility industry in Western Australia would significantly increase the risk to vulnerable populations such as children.

If the aquatic facility industry is deregulated, public pools would effectively be like private pools. Using the Royal Lifesaving's WA drowning report there was 9 drowning deaths in 2015/2016 financial year in private pools in Western Australia, with 117 people admitted to hospital and a further 112 presentations to emergency departments. Using these figures the cost is estimated below; see Appendix 4 for detailed analysis.

<b>Scenario Cost Summary- No regulations</b>	
<b>Total Cost to Government</b>	<b>\$ 110,661,946</b>
<b>Total Cost to Business</b>	<b>\$ 5,580,000</b>

There are also predicted indirect impacts of reducing regulatory requirements that have not been costed in this scenario including:

- Negative impacts to the reputation of the State Government who would be under significant public scrutiny for not having controls in place to manage the public health risks
- Negative media attention – particularly if a person, in particular a child, was to drown in a public pool due to lack of supervision by lifeguards as has happened in Victoria. Recent examples include a [4yr old girl](#) in November 2017 in a public pool in Orange, NSW and the disturbing footage of a [5yr old boy who almost drowns in a public pool in Finland in June 2017](#).

## **5.2 Australia**

National legislation pertaining to aquatic facilities has been summarised in the 2015 discussion paper: 'Regulation of water safety in ACT public pools'(8), stating that "the majority of water

safety legislation in Australia is focused on water quality and safety of chemicals, and restriction of access including fences and barriers for swimming pools.”

The paper stated the following:

- NSW has a public health approach to legislation related to public pools and spas. This includes requirements for water disinfection, frequency of testing and record keeping
- Queensland regulation focuses on the development and construction of pool areas
- Victoria complements their planning and development focus with various water safety campaigns particularly targeted at children
- South Australia also various general regulations complemented by guidelines that are underpinned by public health principles
- Western Australia has the most comprehensive approach

A summary of the Australian legislation and links to relevant Australian aquatic facility legislation is shown in Table 11.

The Western Australian approach is the most comprehensive in Australia as it is the only state where requirements are mandated and actively monitored and regulated.

Table 11 Summary and links to relevant Australian aquatic facility legislation

State/Territory	Legislation and Supporting Documents
ACT	<p><a href="#">Public Pools Act 2015</a></p> <p>The Act states that Director General may determine standards for Pool operators, staff qualifications, operational standards (occupancy loading, safety rules, conditional of entry and removal etc.). These documents are accessible via the Legislative instruments page and focus on operation matters rather than building design and water quality.</p>
QLD	<p>There are no specific state regulations in Queensland regulating the water quality of pools or spas however under the <i>Public Health Act 2005</i> a swimming pool or spa must not pose a public health risk. Local government is responsible for the regulation of swimming pools and spas and can apply local laws to swimming pools and spas within their local government area.</p> <p>The <a href="#">Queensland Health Swimming and Spa Pool Water Quality and Operational Guidelines (October 2004)</a> are available and currently under review.</p>
NSW	<p><a href="#">Public Health Regulation 2012 Schedule 1 Requirements for public swimming pools and spa pools</a></p> <p>This states the water quality requirements and the Public Swimming Pool and Spa Pool Advisory Document 2013 provides advice on sampling, disinfection, water quality and system design but is not mandated.</p> <p>The regulation uses the following definition:</p> <p><b>public swimming pool or spa pool</b> means a swimming pool or spa pool to which the public is admitted, whether free of charge, on payment of a fee or otherwise, including:</p> <p>(a) a pool to which the public is admitted as an entitlement of membership of a club, or</p> <p>(b) a pool provided at a workplace for the use of employees, or</p> <p>(c) a pool provided at a hotel, motel or guest house or at holiday units, or similar facility, for the use of guests, or</p> <p>(d) a pool provided at a school or hospital,</p> <p>but not including a pool situated at private residential premises.</p> <p>Consultation with the NSW Ministry of Health has noted that stating the exemption of private residences has created difficulties in enforcing the legislation (the definition of private residential premises is debated). It has been noted that this exemption need not have been listed. Simply omitting it from the defined list would have sufficed.</p>
NT	<p><a href="#">Draft Public Health Guidelines for Aquatic Facilities 2006</a></p> <p>These draft guidelines have not been finalised. They cover water quality, testing and construction requirements. It is stated that the Building Code of Australia and all relevant standards must be adhered to.</p>

State/Territory	Legislation and Supporting Documents
SA	<a href="#">South Australian Public Health (General) Regulations 2013</a> Part 4 of the regulations covers public swimming pools and spa pools including obligations of owners and managers with reference to water quality and obligations of the public specifying when they are not to enter a public swimming pool.
TAS	<a href="#">Public Health Act 1997 Recreational Water Quality Guidelines 2007</a> These guidelines are currently under review. Tasmania has a compulsory set of guidelines that include water quality and monitoring requirements, signage as well as pool closure and reopening procedures.
VIC	<a href="#">Public Health and Wellbeing Regulations 2009</a> Part 6 of the above regulations, Aquatic facilities specifies the requirements for water quality, testing and record keeping. It also lists exclusions and when a facility is open for use and the maintenance

Consultation with New South Wales, Queensland and Victoria has identified that some States are looking to increase their current aquatic facility requirements, either through regulation or recommendations.

In Victoria, the Coroners Prevention Unit requested a review of the operation and regulation of public swimming pools in Victoria following a coronial enquiry in response to the drowning death of a [23yr old student drowned at WaterMarc Aquatic Leisure Centre](#) in 2014. In response to this inquiry in 2016, Life Saving Victoria published the Drowning Deaths at Public Swimming Pools in Victoria: Working Document(9). This recommends increased supervisory conditions, safety assessments and monitoring and evaluation of aquatic facilities across the state.

Some States recommend that aquatic facilities follow the Royal Lifesaving Society of Australia (RLSSA) Guidelines which can be accessed on a \$99/year subscription. The Guidelines for Safe Pool Operation (GSPO) is a venue based risk management tool provided as a voluntary guide for operators which assists an operator in satisfying their legislative duties and providing a high standard of care for visitors to their centre. Management standards and practices provide the managers of public pools and aquatic facilities with useful information about the minimum requirements and best practices for the operation of their facilities. The GSPO are reviewed by the National Aquatic Industry Safety Committee (NAISC).

### 5.3 Internationally

The World Health Organisation (WHO) has published a Guideline for safe recreational water environments(3) and states the risks to health of recreational swimming pools and similar environments as;

- drowning and injury
- microbial contamination
- exposure to chemicals

The purpose of the WHO Guideline is to ensure that swimming pools and similar recreational water facilities are operated as safely as possible in order that the largest possible population gets the maximum possible benefit and not to deter the use of these recreational water environments.

Table 12 provides links to some international examples of aquatic facility regulations. Similar to Australia, the countries listed do not have an overarching national regulation and as such individual states/regions/territories have specific requirements.

The current Western Australian regulations cover each of the areas identified by the WHO report and are much more comprehensive than the majority of international regulations. This comprehensive approach reflects the high importance of aquatic facilities as an integral part of the Western Australian lifestyle.

**Table 12 Summary and links to relevant International Aquatic Facility legislation**

Agency/Country	Legislation and Supporting Documents
World Health Organisation	<p><a href="#">Guidelines for safe recreational water environments 2006. Volume 2: Swimming pools and similar environments.</a> Areas covered include Drowning and Injury prevention, Microbial Hazards, Chemical Hazards, and Water and Air Quality.</p> <p>The regulations do not cover construction requirements (covered by other legislation).</p>
Canada- District of British Columbia	<p><a href="#">Public Health Act Pool Regulation 2010</a></p> <p>This is one of the more comprehensive regulations which enforce operation and maintenance, water quality and testing and lifeguard requirements.</p>
United Kingdom	No official regulations or standards
United States- Washington DC	<p><a href="#">Model Health Aquatic Code</a></p> <p>This code uses similar prescriptive measures to the WA CoP and includes an Annex with more information on requirements and reasoning. Individual states have prescribed regulations.</p>



## 6 Options for future management of aquatic facilities

The following options have been considered for the management of public health risks associated with aquatic facilities in WA.

The main purpose of this discussion paper is to propose viable options for the inclusion of aquatic facilities in WA's legislative reform. Ideally the proposed regulations will modernise the current management of aquatic facilities and align with the risk based nature of the *Public Health Act 2016*.

This section will detail the advantages (benefits) and disadvantages (costs) of proposing regulations as one option, and a variety of non-mandatory guidance material as other options. Each proposed option provides AOs and others with ways of reducing the risk from aquatic facilities. Each option provides information about how this risk will be reduced and the outcomes achieved if that option were the preferred option to be implemented.

Please complete the online survey to submit your comments and indicate which option is your preferred choice and why. The survey can be accessed at:

<https://consultation.health.wa.gov.au/>

### 6.1 Option A: Retain status quo

Retain the status quo, that is, recreate the current regulatory system with the same requirements under the *Public Health Act 2016*.

**Advantages (benefits)**

- no requirement for any local or state government agency to do anything differently
- no additional regulatory burden or red tape for the public or industry
- no additional regulatory costs for industry or the public
- local, state government and industry familiar with current regulatory requirements
- standard approval process done by DoH

**Disadvantages (costs)**

- current regulatory requirements do not align with the risk based nature of the Act
- current prescriptive regulatory framework will not adapt to evolving technologies and changing practices of the aquatic facility industry
- regulatory overlap between the Health regulation and the NCC and BCA
- the opportunity to reduce the public health risk may be missed
- no opportunity to streamline approvals as all applications required to be evaluated and approved by the DoH

**6.2 Option B: Deregulate the aquatic facility industry**

Repeal existing regulations without replacement and allow the industry to self-regulate. The DoH could provide guidance documents for aquatic facilities to help minimise the public health risks but there would be no requirement for facilities to follow the guidelines.

**Advantages (benefits)**

- can use the general public health duty to manage public health risks
- issue guidelines to assist local government who can then create local laws to follow guidelines
- reduce the regulatory burden

**Disadvantages (costs)**

- increases the public health risk
- no cost recovery for local government. No fines are able to be issued under the general public health duty. Local government can issue improvement notices followed by enforcement orders and if non-compliance then prosecution
- inconsistent enforcement as requirements will rely on the general public health duty without mandatory requirements
- missed opportunity to enhance the current risk assessment and mitigation methods
- more difficult to manage public complaints related to aquatic facilities due to a lack of legislation
- lack of registration of aquatic facilities by local and state government may result in facilities with poor management (leading to a higher public health risk) being overlooked

**6.3 Option C: Update regulation and CoP in accordance with *Public Health Act 2016***

Amend the Aquatic Facilities Regulation in accordance with the *Public Health Act 2016* and adopt an amended CoP for the Design, Construction, Operation, Management and Maintenance of Aquatic Facilities with modifications. Some proposed changes to the CoP and regulations are discussed in further detail below.

**Advantages (benefits)**

- recognition of aquatic facilities as a potential public health risk
- consistency with regulatory requirements of other Australian states and territories.
- regulations will provide consistency in the application and enforcement of the legal obligations in aquatic facilities
- best practice risk management principles can be applied to risk assessments when required under the *Public Health Act 2016*
- AOs will have clarity of the enforcement process and flexibility to determine the suitable resolution based on the risk level
- allows for scalable risk i.e. risk management requirements based on level of public health risk
- allows for corrective action to be required
- allows for infringement notices to be issued
- allows for local and state government to exercise cost recovery mechanisms
- public complaints related to aquatic facilities will be easier to manage as regulatory requirements will provide a tiered system of enforcement
- stronger requirements to investigate and manage aquatic facility non-compliance

**Disadvantages (costs)**

- AOs and others involved in aquatic facilities management will need provision of training and information. However, this can be addressed during the transition period
- industry will need to adapt to new regulatory requirements
- may create inconsistent enforcement across local governments
- some local governments will need to improve their resources (staff, databases etc.) to properly manage their regulatory obligations.

**Questions – preferred option for WA**

<b>Question 1</b>	Which option, do you support? Why?
<b>Question 2</b>	Do you support the use of the Code of Practice?
<b>Question 3</b>	Do you have any further comments or suggestions?
<b>Question 4</b>	Can you identify and other advantages (benefits) or disadvantages (costs) for your preferred option?

# Proposed regulatory changes for Western Australia



## 7.1 Proposed regulatory changes

The following key changes are proposed for the regulations if the preferred **Option C**: Update regulation and CoP in accordance with *Public Health Act 2016* is chosen.

In keeping with the risk based nature of the *Public Health Act 2016* it is important to ensure the regulations are evidence based and that the regulatory requirements are scaled based on the level of risk.

The following seven proposals are discussed and the DoH is seeking feedback on these and any additional proposals that should be considered.

1. Proposal 1 – Devolve the administration role to local government enforcement agencies
2. Proposal 2 – Prescribe offences for which an infringement notice may be issued
3. Proposal 3 – Adopt a Code of Practice
4. Proposal 4 – Revise the requirements and process for exclusions
5. Proposal 5 – Revise the definition of aquatic facilities
6. Proposal 6 – Revise the requirements for pool sampling and testing
7. Proposal 7 – Revise the requirements that prohibit persons from entering



### 7.1.1 Summary of issues identified with the Health (Aquatic Facilities) Regulations 2007

Table 13 Summary of issues identified with the Health (Aquatic Facilities) Regulations 2007

Part of the <i>Regulations</i>	Issues and Comments
<p><b>Part 1- Introduction</b></p> <p>Introduces the regulations and defines the terms</p>	<p>Definition of aquatic facility- See Proposal 5 – Revise the definition of aquatic facilities</p> <p>Exclusions- See Proposal 4 – Revise the requirements and process for exclusions</p>
<p><b>Part 2- Construction, alteration and extension of aquatic facilities</b></p> <p>Defines the requirements when constructing, altering or extending aquatic facilities.</p>	<p>This part has been identified as potentially belonging in the BCA and/or having overlap with the Building Act. Consultation will be required to assess any overlap and determine whether any part/s will need to be requested for inclusion in the Building Act</p>
<p><b>Part 3- Operation of aquatic facilities</b></p> <p>Defines the operation and quality control of an aquatic facility</p>	<p>Division 1- Applying for a permit to operate and applying for a certificate of compliance (Part 2- Division 1) are areas that can potentially be simplified and streamlined</p> <p>These requirements are provided by Part 8 (Registration &amp; Licensing) of the <i>Public Health Act 2016</i>. Part 8 also includes the ability to charge fees</p> <p>Division 2- Operation of aquatic facilities. This section of the Regulations states that operators must conform to the operational requirements of the CoP and does not distinguish application based on the level of risk to the public</p> <p>Recommended changes will be discussed in Table 14</p> <p>Division 3- Quality control requires the local government to ensure water testing is performed monthly by either the AO or a person designated by the AO. See Proposal 6 – Revise the requirements for pool sampling and testing.</p> <p>Regulation 31 sets out fines for various offences. It is proposed to allow for the issuing of infringement notices for specified offences and closure notices as is available when enforcing the <i>Food Act 2008</i>.</p> <p>Improvement notices and enforcement orders, provided by the <i>Public Health Act 2016</i> regulatory framework, will now be useful enforcement tools that can be issued for non-compliance with the Regulations by a local government AO</p> <p>Improvement orders and closing facilities section will be reviewed</p>

<b>Part of the <i>Regulations</i></b>	<b>Issues and Comments</b>
<b>Part 4- General provisions</b>	Stakeholders have identified that Regulation 24 –prohibiting certain persons from entering the water, is very difficult to enforce. See Proposal 7 – Revise the requirements that prohibit persons from entering
<b>Part 5- Transitional provisions</b>	The transitional provisions provide for the transition of certain existing arrangements from the old <i>Health (Swimming Pools) Regulations 1964</i> to the current <i>Health (Aquatic Facilities) Regulations 2007</i> . These provisions are not relevant to this review

## 7.1.2 Summary of proposed changes to the CoP

Table 14 Summary of proposed changes to the CoP

Section of the COP	Proposed changes
<b>Section 1-</b> Administrative provisions	<p>Incorporates the definitions and classifies the facilities into groups. Some of the definitions (as in Part 1 of the Regulations) and classifications will need to be amended</p> <p>One major change is to replace the current Group definitions of aquatic facilities with a risk based approach. See Proposal 5 – Revise the definition of aquatic facilities</p>
<b>Section 2-</b> Design and construction requirements.	<p>This section is prescriptive and it is proposed that it is amended to incorporate risk based principles in accordance with the <i>Public Health Act 2016</i>. Some of these amendments may fit better within the proposed Public Buildings Regulations, the NCC or the Building Act. If updated regulations are deemed the appropriate option, the DoH will consult further</p>
<b>Section 3-</b> Circulation and water treatment systems	<p>It is proposed that this section is captured within the proposed Water Quality Regulations and this discussion paper will be released by the DoH at a later stage</p>
<b>Section 4-</b> Chemical safety	<p>Covered by <i>Dangerous Goods Safety Act 2004</i></p>
<b>Section 5-</b> Water quality and testing parameters	<p>It is proposed that this section is captured within the proposed Water Quality Regulations. This section will be reviewed and relevant areas amended to be in accordance with the WHO guidelines</p> <p>It is proposed that the testing and sampling requirements will be included within the Aquatic Facilities regulations. The current requirements will be amended and based on a risk based approach rather than the current Group definition system. See Proposal 6 – Revise the requirements for pool sampling and testing</p>
<b>Section 6-</b> Qualification requirements	<p>This has been identified as an area that causes some confusion, particularly in terms of requirements to maintain accreditation for technical officers or first aid officers. If updated regulations are deemed the appropriate option, the DoH will consult further</p>
<b>Section 7-</b> General sanitation and operational requirements	<p>It is proposed that occupancy number ratios will be reviewed to remain in accordance with the Public Building Regulations and BCA requirements. Electrical assessments may be removed and remain as part of the existing Electrical regulations</p>
<b>Section 8-12</b>	<p>No major amendments proposed. All sections require review and may have minor amendments such as simplifying language</p> <p>Specific requirements for particular aquatic facilities can be incorporated into previous sections</p>

<b>Section of the COP</b>	<b>Proposed changes</b>
<b>Appendix 1</b>	List of colours- melded into managing drowning risk
<b>Appendix 2</b>	Safety rules signage- useful but may not need to be in the CoP. Could be an information sheet etc. provided by DoH
<b>Appendix 3</b>	Requirements for heating systems- It is proposed that this section is captured within the proposed Water Quality Regulations and this discussion paper will be released by the DoH at a later stage
<b>Appendix 4</b>	Ozone may need to be included in water quality in the water regulations, plant rooms may be captured by <i>Dangerous Goods and Safety Act 2004</i> and if so will be removed
<b>Appendix 5</b>	Stairway and ladder requirements for diving facilities are not covered in building code
<b>Appendix 6</b>	Slip resistance can be covered by the NCC or AS4586
<b>Appendix 7 included in the CoP</b>	Can be incorporated into water quality management
<b>Appendix 8 and 9</b>	References and acknowledgements will be updated if required to keep
<b>Appendix 10</b>	Template could be a DoH info sheet rather than included in the CoP
<b>Appendix 11</b>	Filtration calculation sheet- water quality

### 7.1.3 Proposal 1 – Devolve the administration role to local government enforcement agencies

#### Objective:

Authorise local government enforcement agencies to perform all administrative, assessment and approvals tasks required under the current regulations including the approval to construct, install and operate aquatic facilities within their local district.

#### Proposal:

Currently the responsibility for assessing applications to install and operate a new public aquatic facility across WA is undertaken by the Environmental Health Directorate of the DoH.

This role could be devolved to local government enforcement agencies and AOs designated under the *Public Health Act 2016* to manage the approval and assessment process within their local district.

Local government are already required to take on the ongoing enforcement role under the Aquatic Facilities Regulations. Being involved in the approval process would complement and streamline the process.

This role would require an AO to:

1. Assess applications to construct, alter and operate an aquatic facility
2. Issue an approval to construct
3. Undertake a pre-approval inspection to commence operating
4. Issue an approval to commence operating

As part of this requirement, each local government would be required to keep and maintain a register of aquatic facilities approved in their local district. Many local governments already keep such a register. Currently, the DoH advises a local government each time the DoH approves an aquatic facility in their district. Following this, the local government's AO then takes over the enforcement responsibilities.

Section 294 of the Public Health Act now empowers local governments to recover costs under the *Local Government Act 1995*, Part 6, Division 5. This means local government could charge a fee for any administrative service that is required under the proposed legislative changes. As the new Act binds the Crown, Aquatic Facilities regulations could allow for cost recovery for facilities on Crown land not currently covered by local government.

The number of aquatic facility approvals for each local government would vary significantly across WA, and would be dependent on a number of factors including:

- Population
- Tourism
- Development (including multi story apartment complexes).

There are currently 762 operating aquatic facilities in the metropolitan area and 703 across the regional areas.

Table 15 below provides the numbers of applications the DoH processed for new and altered aquatic facilities across Western Australia for the past 4 years. The numbers of compliance certificates issued are representative of the number of completed facilities.

**Table 15 Number of aquatic facilities applications and compliance certificates processed by the DoH**

	13/14	14/15	15/16	16/17
<b>Number of aquatic facilities applications (for construction/alteration) processed</b>	103	75	128	78 56 metro and 22 regional
<b>Number of certificates of compliance issued</b>	65	38	45	39

Some local governments already charge a fee for inspection and water sampling under the *Local Government Act 1995*, Sections 6.16. The following information was provided to the DoH by the local governments or sourced from their website. See Table 16 Aquatic fees and charges.

**Table 16 Aquatic fees and charges**

Shire	Water Sampling	Annual cost	Annual Inspection
<b>Busselton</b>	\$50 per sample	\$600 per pool	
<b>Cockburn</b>		\$300 per pool and 100 for each additional pool	
<b>Geraldton</b>	All shire pool samples done in one day	\$131 for 12x monthly inspections	\$131 for an annual inspection
<b>Joondalup</b>	\$31 per facility regardless of number of pools	\$372	
<b>Karratha</b>	Monthly courier costs \$480 (for the 60 samples)		
<b>Swan</b>		\$322 for up to 2 pools and \$447 for >2 pools	
<b>Victoria Park</b>		\$1028 for 1 pool \$1129 for 2-3 pools \$1541 for >3 pools	
<b>Vincent</b>	Additional sample due to non-compliance \$79	\$243 for 1 pool, \$364 for 2-3 pools, \$636 for >3 pools	
<b>Wanneroo</b>		\$393 for up to 2 pools and \$502 for 3 or more pools	

**Potential impacts of this proposal to local government**

**Advantages (benefits)**

- faster processing of applications and approval to construct and install aquatic facilities
- keeping the entirety of the approvals process within local government

- as part of the Environmental Health Regulations Review Program, a number of previous functions of local government AOs will be dissolved as old regulations are repealed e.g. proposed repeal of the *Health (Hairdressing) Establishment Regulations 1972*. This will mean that AOs no longer need to inspect and approve hairdressing establishments. Aquatic facility approvals process could be undertaken by AOs, who could be retrained in the assessment process
- aligns with the State Department system manager role

**Disadvantages (costs)**

- there would be increased administrative responsibility and costs associated with approvals and assessment. However, section 294 of the Public Health Act allows for local governments to recover costs under the *Local Government Act 1995*, Part 6, Division 5. This would enable local government to recover a fee for all services associated with the assessment process. This is similar to the requirements for food businesses that are required to register and seek approval from enforcement agencies in accordance with the *Food Act 2008*. Table 17 estimates cost recovery for aquatic facilities based on the model food fees under the *Food Act 2008*.

**Table 17 Estimated cost recover fees that may be charged by local government when reviewing aquatic facilities and applications\***

Application for aquatic facility	Annual Fee
Application to construct	\$175
Approval to construct	\$65
On-site inspection	\$180
Approval to operate	\$65

\*Note these costs are an estimate based on the model food fees under the *Food Act 2008* and may be subject to change

- the BCA “deemed to satisfy” interpretations may cause inconsistencies (this is the same as currently in the *Food Act 2008* where DoH provides guidance and risk matrices)
- DoH currently can provide rapid response to technology and other changes. Local government may not be able to identify issues quickly compared to a centralised DoH system
- some LGs own and/or run aquatic facilities. Potentially this may create a conflict of interest if they are assessing their own applications
- assessment of applications may require specialist knowledge and not all AO’s will have the necessary experience
- AOs will require training to ensure competency in assessment of applications

**Potential impacts of this proposal to industry**

**Advantages (benefits)**

- faster processing of applications and approval to construct and install aquatic facilities
- combination of the approval process. E.g. already applying for building licence, planning approval etc.
- could capture aquatic facilities that are currently being missed. E.g. domestic pools that are then used for swimming lessons

### Disadvantages (costs)

- industry would be required to pay an application fee for assessment and administrative services provided by the enforcement agency. A summary of these estimated costs are outlined in Table 17
- builders would be required to submit applications to various local governments rather than one agency
- different fees between different LGs unless fees are prescribed (as in the *Food Act 2008*)

### Potential impacts of this proposal to State Government:

#### Advantages (benefits)

- reduce the financial costs to the state associated with the approvals and assessment process
- ensure that the DoH can align with the system manager role, and focus attention and expertise in surveillance, policy development, training and education

#### Disadvantages (costs)

- decentralise the approvals process
- loss of knowledge- DoH may not be able to provide advice

### Potential impacts of this proposal to consumers:

#### Advantages (benefits)

There are no anticipated advantages (benefits) of this proposal

#### Disadvantages (costs)

- increased costs may be passed onto consumers (purchaser, agents etc.)

### Questions- Devolve the administration role to local government enforcement agencies

Do local governments currently have the capacity to assess aquatic facility applications?

- If yes, why (low numbers of applications, experienced AOs)?
- If no, is this due to staffing capacity, the experience and capabilities of AOs or other?

Do you agree that local governments would be the appropriate agency to assess aquatic facility applications?

- If yes, would local government plan to cost recover for assessing applications?
- If no, why not?

What resources could the DoH provide to assist local government (training, guidance documents etc.) in these proposed additional roles?

Do you agree with the listed advantages (benefits) and disadvantages (costs)?

- If not, what do you suggest?

Can you think of any additional advantages (benefits) and disadvantages (costs)?

### 7.1.4 Proposal 2 – Prescribe offences for which an infringement notice may be issued

#### Objective

Outline a list of prescribed offences to enable AOs the ability to issue infringement notices for prescribed offences to achieve quick resolution of offences.

#### Proposal

The Public Health Act is a prescribed Act under the *Criminal Procedures Act 2004*. A regulation made under the Public Health Act may prescribe an offence for which an infringement notice may be issued (if appropriate) or prosecution commenced.

Infringement notices can only be served where prescribed by a regulation or local law. It is proposed that infringements will be issue by local government AOs for offences specified in the Aquatic Facilities Regulations.

#### Potential impacts of this proposal on local government

##### Advantages (benefits)

- infringement notices provide AOs with the ability to issue on the spot fines for non-compliant issues
- infringement notices provide a cost effective alternative to prosecution, which acts to increase compliance with the legislation, and minimise cases that must be taken to court by local government
- higher penalties help to deter unlawful conduct
- higher penalties enable local government the ability to recoup the high costs that are associated with prosecuting in a court

##### Disadvantages (costs)

- additional administrative tasks for local government including with the issuing of infringement notices and following up on unpaid infringements

#### Potential impacts of this proposal to industry

##### Advantages (benefits)

- clear distinction on what constitutes an offence
- greater motivation for operators to achieve compliance by engaging with skilled professionals

##### Disadvantages (costs)

- equal application in each local government area may not be possible

#### Potential impacts of this proposal to State Government

There are no anticipated impacts of this proposal for State Government.

#### Potential impacts of this proposal to consumers

##### Advantages (benefits)

- increased consumer confidence knowing that operators who are not complying with the law are being appropriately prosecuted / issued with infringements to deter unlawful conduct

### **Disadvantages (costs)**

There are no anticipated disadvantages (costs) of this proposal.

### **Questions – Prescribed offences for which an infringement notice may be issued**

Do you agree with prescribing a list of offences for which an infringement notice may be issued?

- If yes, can you list offences and penalties that you believe should be captured? And why?
- If no, why not?

Do you agree with the listed advantages (benefits) and disadvantages (costs)?

- If not, what do you suggest?

Can you think of any additional advantages (benefits) and disadvantages (costs)?

### 7.1.5 Proposal 3 – Adopt a Code of Practice

#### Objective

Adopt a Code of Practice for the design, construction, operation, management and maintenance of aquatic facilities.

#### Proposal

Section 305 of the Public Health Act provides the ability for regulations to adopt codes and any other subsidiary legislation made, determined or issued under any other Act or under any Act of the Commonwealth, another State or Territory.

It is proposed that the current CoP be adopted under the newly proposed regulations with modifications. These amendments have been highlighted in the Summary of proposed changes to the CoP. This proposal continues the current arrangement under the existing *Health (Aquatic Facilities) Regulations 2007*.

#### Potential impacts of this proposal on local government:

##### Advantages (benefits)

- this continues with the current arrangement and is familiar to local government and industry

##### Disadvantages (costs)

- the local government manages the industry however they may have no input or control over changes made to the CoP

#### Potential impacts of this proposal to industry

##### Advantages (benefits)

- continues with the current arrangement
- allows for innovation- changes can be made to the CoP to adapt

##### Disadvantages (costs)

There are no anticipated disadvantages (costs) of this proposal.

#### Potential impacts of this proposal to State Government

##### Advantages (benefits)

- DoH (CHO) may make modifications to the CoP without the lengthy government processes required during changes to the regulations. This will allow the CoP to evolve with modern practice e.g. new filtration technologies
- CoP is published by the DoH so stays within the DoH control
- consistency across the state

##### Disadvantages (costs)

- loss of knowledge due to decentralising the process
- state government must rely on the activity of DoH to cover state interests

## Potential impacts of this proposal to consumers

### Advantages (benefits)

There are no anticipated advantages of this proposal.

### Disadvantages (costs)

- potential for confusion about what is required

## Questions – Adopt a Code of Practice

Do you agree that the proposed Aquatic Facilities regulations adopt a CoP?

- If yes, have you found any issues with the current practice of adopting the CoP? And if so why?
- If no, what do you suggest?

Do you agree with the listed advantages (benefits) and disadvantages (costs)?

- If not, what do you suggest?

Can you think of any additional advantages (benefits) and disadvantages (costs)?

### 7.1.6 Proposal 4 – Revise the requirements and process for exclusions

#### **Objective:**

It is proposed to amend the current classification system for aquatic facilities. To align with the *Public Health Act 2016* it is proposed to reclassify all aquatic facilities based on their level of risk as opposed to the current Group 1, Group 2 etc. system. Facilities with a higher level of risk will have a higher level of requirements. For example an aquatic facility with high bather load and/or a combination of high risk activities (such as waterslides) may be classified as a high risk facility and will be subject to more stringent requirements compared to other facilities. See Appendix 3 – Aquatic Facilities Risk Assessment for details.

It is proposed that aquatic facilities satisfying the requirements of a low risk facility will be excluded (or removed) from the application of the Aquatic Facilities regulations and CoP. It is anticipated that a risk assessment of many bed and breakfasts and holiday homes will determine them to be low risk and be excluded from the regulations. Low risk facilities may instead be required to submit a risk assessment to the local government or guidelines may be made available.

Currently, the CoP classifies aquatic facilities into four groups- with Group 1 facilities considered the highest risk and Group 4 the lowest risk.

- The higher risk groups (such as those with high patron numbers e.g. aquatic centres and water parks) have greater regulatory requirements including a technical operator, supervisor (lifeguard) and emergency care to be on-site at all times as well as mandatory first aid requirements
- The lower risk groups such as bed and breakfasts and holiday homes do not require on-site personnel or first aid equipment
- All facilities are required to apply for a permit to operate as an aquatic facility and must send water samples monthly to an approved laboratory. Samples are to be collected by an AO (or person under the direct supervision of an AO) unless they are granted an exemption by the CHO. If an exemption has been granted the operator of the facility ensures that monthly samples are collected and sent to laboratories in accordance with the COP
- All facilities require a qualified technical operator and daily water testing recorded in a log book

#### **Proposal:**

There has been debate about the inclusion and exclusion of some registered aquatic facilities within the defined Groups.

There has been strong objection to the inclusion of short stay accommodation into Group 4 facilities, particularly from regional tourist towns, because of the burden of testing and the performing of unscheduled testing on private residences. Only a small proportion of Group 4 facilities currently comply with the regulations. Many Group 4 facilities have not applied for a permit to operate and AOs do not have the time or resources to perform the required monthly sampling.

The logistics of fulfilling the regulatory requirements including permits to operate, certificates of compliance and including monthly sampling of each pool is difficult to achieve. In addition it is considered inappropriate to inspect a pool on a private residence unannounced and the logistics

of identifying, booking appointments and sampling is a financial and administrative burden for local government enforcement agencies.

Feedback from local government has stated that the current sampling frequency and requirements are onerous and a cost burden to small business operators while the risk is minimal.

Facilities in private residences that are leased out as part of short stay accommodation (including holiday homes, bed and breakfasts and Airbnb); are considered to be a relatively low risk to public health. This is due to the low patron numbers and occasional use of the facilities. In addition, aquatic facilities in poor condition in short term accommodation are likely to be improved rapidly due to consumer complaints. Owners and operators are thus likely to keep the aquatic facilities in a good condition to avoid consumer complaint.

The current CoP excludes strata units with less than 30 residential lots and there has been debate about whether holiday homes should be included or excluded from these regulations also.

The proposed risk matrix in Appendix 3 may be a basis for determining level of risk of any aquatic facility. Operators of these facilities may need to submit a risk matrix in their application to local government and the level of risk will determine the level of management required.

If the proposed risk matrix categorises some of the facilities currently defined as a Group 4 facility as a low risk facility and these facilities have reduced regulatory requirements please consider the following two options:

**Option 1:** Redefine regulatory requirements for low risk facilities to reduce regulatory burden and manage these facilities with guidelines.

**Option 2:** To require a risk management plan, submitted to local government for approval, for some types of low risk aquatic facilities such as short stay accommodation facilities.

Assuming that one of the 2 options is preferred and there is a reduced regulatory requirement for low risk facilities, the following impacts are considered:

#### **Potential impacts of this proposal on local government:**

##### **Advantages (benefits)**

- reduce regulatory requirements including sampling and ensuring compliance for aquatic facilities that have been deemed to have a low public health risk

##### **Disadvantages (costs)**

- reduce the regulatory tool that local government can use to enforce compliance

#### **Potential impacts of this proposal to industry**

##### **Advantages (benefits)**

- reduce the regulatory burden for low risk facilities
- reduce the cost of water sampling by pool operators and owners

##### **Disadvantages (costs)**

- the mechanism to ensure low risk aquatic facilities remain safe may be unclear. E.g. suitable types of filtration equipment may not be listed
- may need to develop risk assessment and submit to the local government

**Potential impacts of this proposal to State Government:**

**Advantages (benefits)**

- the regulatory burden is reduced

**Disadvantages (costs)**

- the DoH may need to provide guidelines or information specific to low risk facilities

**Potential impacts of this proposal to consumers:**

**Advantages (benefits)**

There are no anticipated advantages (benefits) of this proposal.

**Disadvantages (costs)**

There are no anticipated disadvantages (costs) of this proposal.

**Questions – Revise the requirements and process for exclusions**

Do you agree with redefining the current Group system for aquatic facilities using a risk matrix?

- If yes, would you support enforcing a risk management plan or can you provide an alternative option to reduce risk?
- If no, why not?

Do you support reviewing the current regulatory requirements for low risk facilities?

- If yes,
  - Do you support Option 1 (reduced regulatory requirement for low risk facilities) and why?
  - Do you support Option 2 (requiring low risk facilities to provide a risk management plan to local government) and why?
- If no, why not?

Do you agree with the listed advantages (benefits) and disadvantages (costs)?

- If not, what do you suggest?

Can you think of any additional advantages (benefits) and disadvantages (costs)?

### 7.1.7 Proposal 5 – Revise the definition of aquatic facilities

#### **Objective:**

Revise the definition of aquatic facilities so that the definition encompasses a wider range of aquatic venues that are currently not captured by the legislation. Public health risk assessment of each of the captured facilities will determine the level of legislative requirements for each facility accordingly.

#### **Proposal:**

Water based activities are a popular pastime in WA for recreation, sport or rehabilitation. Traditionally water activities included only standard swimming pools. However, in recent times, activities have extended to include water playgrounds, surfing pools, spray parks, spa pools and in the future may include ocean fed pools, wave pools and other activities yet to exist in WA.

Currently the *Health (Aquatic Facilities) Regulations 2007* has a limited definition of aquatic facilities which does not have the ability to encompass all types of aquatic facilities that may present a possible risk to public health now and in the future. Facilities that are currently missing include float tanks, salt plunge pools, spray parks and eco parks. With the increasing popularity in these types of venues it is important to consider whether these venues need to be included in any future regulation.

#### **Potential impacts of this proposal on local government:**

##### **Advantages (benefits)**

- a wider range of aquatic facilities are included and will allow for inclusion of new types of facilities as they emerge

##### **Disadvantages (costs)**

- local governments may have more facilities to manage

#### **Potential impacts of this proposal to industry**

##### **Advantages (benefits)**

- might allow for more innovation due to risk based approach
- more clarity in the way decisions are made regarding aquatic facility risk

##### **Disadvantages (costs)**

- change in established way of doing business
- will require time for industry to adapt to changes in regulatory structure

#### **Potential impacts of this proposal to State Government:**

##### **Advantages (benefits)**

- allows for more efficient exemption of low-risk facilities
- consistent with current public health best practice
- allows new and/or novel interactions with water to be assessed, even if they have no explicit definition in the CoP

##### **Disadvantages (costs)**

- requires training in identifying if a risk assessment has been completed appropriately
- will require restructuring of approvals process

- need to build skills and literature in effectively communication what an appropriate risk assessment looks like for the various types of aquatic facility
- existing database of aquatic facilities uses the Category 1-4 classification system and will need to be realigned to new definitions or will lose data integrity

**Potential impacts of this proposal to consumers:**

**Advantages (benefits)**

- consumers have a greater level of protection
- facility operators encouraged to foster a culture of risk assessment leading to safer operations
- consumers can see the need for various aquatic facility features – what risk is addressed by what feature

**Disadvantages (costs)**

- potentially increased costs
- change to regulatory frame of reference will require time for adaptation by regulators and service providers

**Questions – Revise the definition of aquatic facilities**

Do you agree with redefining aquatic facilities to encompass a greater range of facilities?

- If yes, are there particular facilities that you think need to be regulated or excluded? And why?
- If not, what do you suggest?

Do you agree with the listed advantages (benefits) and disadvantages (costs)?

- If not, what do you suggest?

Can you think of any additional advantages (benefits) and disadvantages (costs)?

### 7.1.8 Proposal 6 – Revise the requirements for pool sampling and testing

#### Objective:

Base the mandatory requirements for monthly microbial water testing and the daily water monitoring regime based on the level of risk of the aquatic facility.

#### Proposal:

Currently, all groups of aquatic facilities are required to log daily chemical tests and send monthly tests to an approved laboratory for sampling in accordance with Regulation 21 of the *Health (Aquatic Facilities) Regulations 2007*.

The DoH is aware that compliance with the mandatory requirement to collect monthly water samples and send for laboratory testing is low. In 2013 approximately 20 000 samples were received from registered public pools in WA. This is less than a quarter estimated based on the number of sites registered in the database. It is noted that some of these pools may have been closed in the winter months and the DoH believes it is the lower risk facilities (some Group 2, 3 and 4 aquatic facilities) that are failing to comply with sampling rates.

For the samples that were analysed, the microbial failure rates were low and were further reduced for samples with adequate chlorination. This indicates the public health risk is low where water samples comply with the chlorination requirements.

In the 2015/2016 financial year, compliance with monthly sampling was estimated to be below 30%. Indicating the level of compliance has not improved in the past few years. An analysis of aquatic facilities across WA for August 2017 and their current sampling status are included in Table 18 and Table 19 and further support the evidence that many aquatic facilities are not complying with the current regulations.

**Table 18 Aquatic Facilities status August 2017**

	Operating	Not operating	Decommissioned/ permanently closed	Total
Number of aquatic facilities	1465	232	8	1705

**Table 19 Sampling statistics for Aquatic Facilities in operation August 2017**

	No data	Overdue by 40 days	Overdue by 80 days	Overdue by 365 days	Total overdue
Number of aquatic facilities	292	806	384	312	1502

Facility non-compliances are usually remedied by Local Government AOs issuing improvement orders to facility operators. Closure orders are only issued if noncompliance is repeated and/or represents a significant public health risk. Five to ten closure orders are issued in a typical year across WA.

Quality control requires the local government to ensure water sampling for laboratory analysis is performed monthly by either the AO or a person designated by the AO.

The 2009 [Reducing the Burden](#) red tape reduction report notes that the costs associated with water testing could be reduced by removing the requirement that local government be the sole entity responsible for water testing(10). Recommendation 16.2 states the Regulations should be amended to allow operators the choice of testers and permit them to send water samples directly to a laboratory by courier, and keep a record of the results. Additionally, the DoH has received feedback that this is an unnecessary requirement and appropriately trained personnel would suffice and thus reduce the burden on local government.

Currently the State Government has an agreement with PathWest and pays the costs of analysis to ensure sampling requirements are met. Local government can charge a small amount for time spent during collection (approximately \$50-\$130 per pool). However sample numbers indicate that only a small proportion of public pools are fulfilling the sampling requirements. In 2013 approximately 20 000 samples were received from what was expected to be greater than 90 000 samples (based on the number of registered public pools).

It would seem an unnecessary cost burden for the State Government to continue paying for the costs of water testing in privately owned pools simply to ensure compliance, particularly when the sample numbers indicate that this is not successful. It is proposed that qualified personnel from private industry be allowed to take the water samples and that these samples be tested by an approved National Association of Testing Authorities (NATA) facility. The Regulations (or CoP) may specify that copies of these results are sent to the DoH. DoH could then notify the local government if a sample has failed testing.

This will reduce the burden on local government AOs and transfer the cost to pool owners and operators. Private sampling from a pool maintenance company currently costs approximately \$140 for collection and sampling combined.

#### **Potential impacts of this proposal on local government:**

##### **Advantages (benefits)**

- remove the sampling burden on local government staff

##### **Disadvantages (costs)**

- local government is less involved in the management of aquatic facilities
- pool owners may not report results to local governments

#### **Potential impacts of this proposal to industry**

##### **Advantages (benefits)**

- allows for competition across NATA sampling companies rather than PathWest monopoly

##### **Disadvantages (costs)**

- the onus will be on the aquatic facility to prove they have taken samples appropriate to the level of risk
- increased cost to the operator for sample testing

## Potential impacts of this proposal to State Government:

### Advantages (benefits)

- reduce costs for water sampling
- centralise results
- improve sampling rates

### Disadvantages (costs)

- the DoH will be responsible for notifying local government of non-compliance issues
- the aquatic facility may not provide results to DoH

## Potential impacts of this proposal to consumers:

### Advantages (benefits)

- improvements to sampling process will ensure great compliance and thus better water quality

### Disadvantages (costs)

- There may be increased costs to consumers

## Questions – Revise the requirements for pool sampling and testing

Do you think that the current regulatory requirement of daily water testing and monthly sampling is appropriate for all groups of aquatic facilities?

- If yes, why?
- If no please provide details of which groups you think may be excluded from these requirements.

Should we allow scope for pool sampling to be conducted by external companies, paid for by the pool owner? And why?

Should the DoH be the centralised point for pool samples data collection and notify appropriate local government of failed results or non-compliance?

- If yes, what do you need from the DoH?
- If not why and who do you suggest?

Do you agree with the listed advantages (benefits) and disadvantages (costs)?

- If not, what do you suggest?

Can you think of any additional advantages (benefits) and disadvantages (costs)?

## 7.1.9 Proposal 7 – Revise the requirements that prohibit persons from entering the water body

### Objective:

Repeal regulation 24 of the *Health (Aquatic Facilities) Regulations 2007* and include a requirement for a facility to install signage advising patrons of hygiene requirements and prohibiting persons from entering the water under certain conditions which would be specified in the regulations.

However, there is now evidence that exposure to chlorinated water in community pools may improve skin conditions such as scabies/skin sores as well as to reduce ear infections(11, 12). It is thus proposed to removed Regulation 24(1)(b) and (c) at a minimum.

### Part 4 — General provisions

#### Division 1 — Hygiene and use of facilities

#### 24. Certain persons not to enter or use water body

(1) A person must not enter or use, or attempt to enter or use, a water body of an aquatic facility if the person is —

(a) suffering from any gastrointestinal disease, skin infection or other disease that is communicable in an aquatic environment; or

(b) in an unclean condition; or

(c) wearing unclean clothes; or

(d) under the apparent influence of alcohol, drugs or alcohol and drugs; or

(e) if the person is a baby or young child who ordinarily wears a nappy — not wearing an aqua-nappy.

(2) Subregulation (1)(a) does not apply to a person who has a written statement by a medical practitioner to the effect that the person will not be a health hazard to other users of the water body.

### Proposal:

Stakeholders have identified that Regulation 24 –prohibiting certain persons from entering the water, is very difficult to enforce. They suggested signage/information may be more effective. It is proposed this may be amended to reduce the regulatory burden.

The DoH could develop a model local law under the *Local Government Act 1995* similar to that by the [City of Mandurah](#). Clauses 5.3(3) refers to refusing entry to people who are in an unclean condition or wearing unclean clothes. Infringement notice penalties exist for failing to comply (\$300). This could be adopted by any local government that wishes to do so.

### Potential impacts of this proposal on local government

- There are no anticipated impacts on local government of this proposal except for the requirement to ensure the signage is installed at the facility

- Local governments who wish to continue prohibiting persons from entering the water under prescribed conditions will need to create local laws

### Potential impacts of this proposal to industry

#### Advantages (benefits)

- no responsibility required to adopt

#### Disadvantages (costs)

- some minimal costs are expected for industry to create a sign and install the sign at the facility. Such costs are estimated between \$50 and \$250 per sign/facility

### Potential impacts of this proposal to State Government

#### Advantages (benefits)

There are no anticipated advantages (benefits) of this proposal.

#### Disadvantages (costs)

- provision of a model local law

### Potential impacts of this proposal to consumers

#### Advantages (benefits)

- there is now evidence that exposure to chlorinated water in community pools may improve skin conditions such as scabies.

#### Disadvantages (costs)

- No costs are expected for consumers. However a person who knowingly enters the water suffering from an infection or disease may be subject to an infringement notice if the act is a prescribed offence or a contravention of a local law

### Questions – Revise the requirements that prohibit persons from entering the water body

Do you agree with completely removing regulation 24 and using signage or information as an alternative?

- If yes, what do you need the DoH to provide (posters, templates etc.)?
- If no,
  - Do you wish for the regulation to remain in its entirety and why?
  - Do you agree with removing sections b and c only?

Do you agree with the listed advantages (benefits) and disadvantages (costs)?

- If not, what do you suggest?

Can you think of any additional advantages (benefits) and disadvantages (costs)?

## Question – Additional proposals

Can you think of any additional regulatory proposals to be considered? Please provide details as well as supporting evidence where possible.

## 8. Consultation

This paper will need to be distributed to the following stakeholder groups for comment:

- Aquatic facility owners and operators
- Australian Physiotherapy Association WA
- Caravan Industry Association WA
- Commercial pool industry
- Department of Local Government, Sport and Cultural Industries - Sport and Recreation
- Environmental Health Australia WA
- Environmental Health Listserver
- General public (including holiday home owners)
- Hotels- accommodation
- Holiday rental accommodation
- Leisure Institute of Western Australia Aquatics Inc.
- Local government
- Pool and chemical testing industry
- Property Management
- Royal Life Saving WA
- Small Business Development Corporation
- State Swim
- Strata Title Management
- Swimming Pool and Spa Association
- Western Australian Local Government Association
- WA Retirement Village Association
- Worksafe WA

## 9. Next Steps

The information gathered from this stage of the review will form the basis for the next stage of the review process. Your input is crucial as it will assist in identifying issues of concern and developing options for reform for consideration by stakeholders during the next stage of the review.

Information provided will be collated into a publicly available report on the Department of Health website. Please note, that because your feedback forms part of a public consultation process, the Government may quote from your comments in future publications. If you prefer your name and organisation to remain confidential, please indicate that in your submission. As submissions made in response to this paper will be subject to Freedom of Information requests, please do not include any personal or confidential information that you do not wish to become available to the public.

The consultation and feedback process will be open until 5pm Friday November 30, 2018.

Please direct any feedback to [publichealthact@health.wa.gov.au](mailto:publichealthact@health.wa.gov.au)

If updated legislation is the preferred option, the DoH feedback report will be discussed with the Aquatic facilities working group and further public consultation will be sought.

## 10. Key dates

03 September 2018	Consultation Period open
30 November 2018	Submissions closed
01 February 2019	Consultation report to be published

## 8 References

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## 9 Appendices

### 9.1 Appendix 1 – Regulatory tools provided by the Public Health Act 2016

Once fully implemented the *Public Health Act 2016* has a number of tools to deal with public health risk management and offences under the Act. These include:

- General public health duty
- Infringement notices
- Improvement notices and enforcement orders;
- Prosecution; and
- Registration and licencing

#### General public health duty

The general public health duty requires that a person must take all reasonable and practicable steps to prevent or minimise any harm to public health that might foreseeably result from anything done or omitted to be done by the person.

Where the general duty is to be applied, there must be some clear *harm* to public health. In cases where matters are a nuisance or amenity problem but no health effect can be proven, such as unsightly yards, neighbourhood disputes and inconveniences, the general duty will not apply.

The general public health duty may cover situations where there are no specific regulations and a public health risk is or might foreseeably result from anything done or omitted to be done by a person. Non-compliance with the general duty is not an offence but may lead to the application of improvement notices and enforcement orders under Part 14 of the Public Health Act. Guidelines may be used to clarify the application of the general public health duty and provide guidance as to the measures that may constitute compliance or non-compliance with the general duty.

#### Infringement notices

An infringement notice is a notice that the person to whom it is directed has committed an alleged specified offence under a regulation, and requires payment of a specified monetary amount for the offence within a set time. Infringement notices provide a cost effective and efficient method of dealing with some offences. Infringement notices can only be served where prescribed by a regulation or local law.

The Act is silent on the ability to issue infringement notices. However, the Public Health Act is a prescribed Act under the Criminal Procedures Act 2004. This means that any regulation made under the Public Health Act may prescribe an offence for which an infringement notice may be issued, along with the relevant form.

#### Improvement Notices and Enforcement orders

An improvement notice is a notice that either requires or prohibits a person from taking specified action. There may be a specified period in which the person has to comply with the improvement notice. While an AO may extend the period given to take action, once that period has elapsed an AO may:

- Issue a notice of compliance if the officer is satisfied, after carrying out an appropriate assessment that the improvement notice has been complied with.
- Issue a notice that sets out the reasons why the officer is not satisfied that the improvement notice has been complied with; and
- Report the non-compliance to the enforcement agency with a recommendation to issue an enforcement order.

An enforcement order is an order that either requires or prohibits a person from taking specified action. A prohibition with respect to specified action may be limited, absolute or conditional.

An enforcement order can be issued by an enforcement agency if it reasonably believes that an improvement notice has not been complied with, or if the issue of the order is necessary to prevent or mitigate a serious public health risk. An enforcement agency may issue an enforcement order in respect of non-compliance with an improvement notice irrespective of whether the improvement notice was issued by a person who was an AO of that or another enforcement agency.

### **Prosecution**

In accordance with Part 18, section 280 of the Public Health Act, an enforcement agency may commence proceedings for an offence under the Act or its regulations. A prosecution is separate from action under Part 14 relating to improvement notices and enforcement orders. So prosecution can be commenced irrespective of any action being undertaken under that Part.

### **Registration and licensing**

Part 8 of the Public Health Act provides a framework for the registration and/or licensing of activities declared by the regulations to be public health risk activities. The regulations will prescribe who the appropriate enforcement agency is for each registrable and/or licensable activity. This may be the local government, the CHO or both. Regulations may prescribe offences in relation to an activity. Regulations may also provide modified penalties for offences for which an infringement notice may be issued.

## 9.2 Appendix 2 – Risk Assessment Model

### 9.2.1 Assessing the Public Health Risks

A health risk is the chance of something happening that may affect a health or well-being outcome. Health or well-being risk is expressed in terms of a particular consequence for a particular activity and the likelihood of that particular consequence occurring. The Department of Health has 5 Public Health Risks levels (Shown Table 20), each requiring a varying degree of DOH involvement in their management.

A Public Health Risk assessment was undertaken and is summarised in Appendix 3 – Aquatic Facilities Risk Assessment. The risk assessment was undertaken using the risk assessment tools summarised in Table 21 and Table 22. The Risk level was then determined using the qualitative risk matrix in Table 23.

**Table 20 Definition of risk levels**

<b>Risk Level</b>	<b>DOH management requirements</b>
<b>Very Low Public Health Risk</b>	No further assessment required
<b>Low Public Health Risk</b>	Some mitigation/management may be required – no detailed assessment of health hazards required but addressed with routine controls
<b>Moderate/Medium Public Health Risk</b>	Substantial mitigation/management required – assessment required of health hazards
<b>High Public Health Risk</b>	Not an acceptable risk. The DOH needs to be involved in the management of high public health risks. Major mitigation/management (including offsets) may be required – assessment required of health hazards
<b>Extreme Public Health Risk</b>	Potentially unacceptable: modification of proposal required

## 9.2.2 Risk assessment tools

The risk assessment tools to help determine the consequence category and risk likelihood are summarised in Table 21 and Table 22.

**Table 21 Health consequence table adapted from the 2011 Health Risk Assessment (Scoping) Guidelines, Department of Health WA**

Category	Acute Health Consequences (per hazard or outbreak)	Chronic Health Consequences (per project lifecycle)
<b>1 Catastrophic</b>	<ul style="list-style-type: none"> <li>• &gt;1 fatality</li> <li>• OR &gt;5 permanent disabilities</li> <li>• OR Non-permanent injuries requiring hospitalisation for 5 – 10 % of populations at risk</li> <li>• OR Acute health effect requiring hospitalisation for 5 – 10 % of populations at risk</li> </ul>	Chronic health effect requiring medical treatment for 10 – 15 % of population at risk
<b>2 Massive</b>	<ul style="list-style-type: none"> <li>• 1 fatality</li> <li>• OR 2 – 5 permanent disabilities</li> <li>• OR Non-permanent injuries requiring hospitalisation for 2 - 5 % of populations at risk</li> <li>• OR Acute health effect requiring hospitalisation for 2 – 5 % of populations at risk</li> </ul>	Chronic health effect requiring medical treatment for 5 - 10 % of population at risk
<b>3 Major</b>	<ul style="list-style-type: none"> <li>• No fatality</li> <li>• AND 1 permanent disability</li> <li>• OR Non-permanent injuries requiring hospitalisation for 1 – 2 % of populations at risk</li> <li>• OR Acute health effect requiring hospitalisation for 1 - 2 % of populations at risk</li> <li>• OR Evacuation is necessary</li> </ul>	Chronic health effect requiring medical treatment for 2 - 5 % of population at risk
<b>4 Moderate/ Significant</b>	<ul style="list-style-type: none"> <li>• No fatality</li> <li>• AND No permanent disability</li> <li>• AND Non-permanent injuries requiring hospitalisation for 1 – 2 % of populations at risk</li> <li>• OR Acute health effect requiring hospitalisation for 1 – 2 % of populations at risk</li> <li>• AND No evacuation</li> </ul>	Chronic health effect requiring medical treatment for 1 - 2 % of population at risk
<b>5 Minor</b>	<ul style="list-style-type: none"> <li>• No fatality</li> <li>• AND No permanent disability</li> <li>• AND Non-permanent injuries requiring hospitalisation for 1 – 5 persons</li> <li>• OR No Acute health effect requiring hospitalisation</li> <li>• AND No evacuation</li> </ul>	Chronic health effect requiring medical treatment for 0 - 1 % of population at risk
<b>6 Negligible/ Slight</b>	<ul style="list-style-type: none"> <li>• No fatality</li> <li>• AND No permanent disability</li> <li>• AND No Non-permanent injuries requiring hospitalisation</li> <li>• AND No Acute health effect requiring hospitalisation</li> <li>• AND No evacuation</li> </ul>	No chronic health effect requiring medical treatment

Table 22 Risk likelihood table adopted from the 2011 Health Risk Assessment (Scoping) Guidelines, Department of Health WA

Likelihood	Expected or Actual Frequency	% Chance of chronic health effect during life of project
<b>Almost Certain</b>	More than once a year	Over 90%
<b>Likely</b>	Once in 1 to 3 years	61 – 90%
<b>Possible/ Occasionally</b>	Once in 3 – 5 years	31 – 60%
<b>Unlikely</b>	Once in 5 – 10 years	6 – 30%
<b>Rare/Remote</b>	Once in more than 10 years	Up to 5%

### 9.2.3 Determination of the Level of Risk

The level of risk is determined using the risk matrix in Table 23 based on the consequence and likelihood of the risk occurring

Table 23 Risk matrix (qualitative)

Likelihood	Consequences					
	Slight/ Negligible	Minor	Moderate	Major	Massive	Catastrophic
<b>Almost certain</b>	Low	Medium	High	Extreme	Extreme	Extreme
<b>Likely</b>	Low	Low	Medium	High	Extreme	Extreme
<b>Possible</b>	Very Low	Low	Low	Medium	High	Extreme
<b>Unlikely</b>	Very Low	Very Low	Low	Low	Medium	High
<b>Rare/ Remote</b>	Very Low	Very Low	Very Low	Low	Low	Medium

### 9.3 Appendix 3 – Aquatic Facilities Risk Assessment

Refer to Appendix 2 for a summary of the risk matrix model applied in the Tables below.

Note that CoP references in Appendix 3 are abridged. This table should not be used as a substitute for the current CoP.

**Table 24 Public health risk assessment of some of the risks associated with aquatic facilities and the built environment**

Public Health Risk Built Environment	Risk Description	Cause	Who is at risk	Consequence	Likelihood	Base Risk Level***	Current legislation and management/mitigation strategy in place	Residual Risk
<b>Structural Collapse</b>	Injury due to structural collapse	Facility design insufficient for forces acting on structures	Patrons and Staff	Catastrophic (1)	Rare (1)	Moderate	National Construction Code (NCC) BF1.1: A building or structure is to withstand the combination of loads and other actions to which it may be reasonably subjected.  CoP 2.1: Aquatic Facility engineered for all designed forces.	Low
<b>Structural Collapse (Fibreglass Pools)</b>	Injury due to structural collapse	Pool shell design or construction insufficient for use.	Patrons and Staff	Catastrophic (1)	Rare (1)	Moderate	CoP 2.2: Fibreglass pools to comply with Australian/New Zealand Standards (AS/NZS) 1838 & AS/NZS 1839	Low
<b>Slips, trips, falls</b>	Minor or major falling injuries from unsafe surfaces, drowning	Wet surfaces, pooling, smooth surfaces, trip hazards, poor lighting.	Patrons and Staff	Minor (5) – Moderate (4)	Likely (4) - Possible (3)	Low-Moderate	CoP 2.17: Concourse non-slip surface minimum 1 m width, no trip hazards, concourse graded to drain away from pool, appropriate floor wastes.  CoP 6: Emergency Care qualifications for staff.	Low - Medium
<b>Supervision (Lines of Sight)</b>	Life guards or other supervisors unable to see patrons in distress.	Columns, walls, alcoves or other design features that obstruct vision.	Patrons	Massive (2)	Possible (3)	High	CoP 2.17: Concourse to enable ease of movement without obstruction of visual supervision of water areas.	Low

Public Health Risk	Risk Description	Cause	Who is at risk	Consequence	Likelihood	Base Risk Level***	Current legislation and management/mitigation strategy in place	Residual Risk
<b>Built Environment</b>								
<b>Access of unauthorised persons</b>	Unsupervised use of facilities by children or incompetent swimmers.	Inadequate fencing and/or security.	General Public	Massive (2)	Possible (3)	High	NCC P2.5.3: Performance Requirement is satisfied for a swimming pool with a depth of water more than 300 mm and which is associated with a Class 1 building, if it has safety barriers installed in accordance with AS 1926 Parts 1 and 2.  CoP 2.18: Group 1 & 2 – deter unauthorised access when not in use. Group 3 & 4 to comply with AS 1926.	Medium
<b>Solar Exposure</b>	Sunburn or dehydration	Inadequate shade.	Patrons and Staff	Moderate (4)	Likely (4)	Moderate	CoP 2.27: Shade structures to comply with Cancer Council WA guidelines.	Low
<b>Diving Injury</b>	Physical injury from diving into a hard surface.	Injury due to diving into shallow water, submerged ledges or unexpected change in floor grade. Inadequate depth marking.	Patrons	Major (3)	Possible (3)	Moderate	CoP 2.10, 2.11, 2.12, 2.13: Specifies configuration for wall slopes, floor slopes, starting platforms, depth marking, steps and submerged projections.  CoP 6: Emergency Care qualifications for staff.	Low
<b>Diving Injury (Starting Platforms)</b>	Uncontrolled fall from diving platform.	Unsafe starting platforms	Patrons	Major (3)	Possible (3)	Moderate	CoP 2.14: To comply with Clause 5.1 of Guideline FD 24 Design of Starting Blocks.	Low

Public Health Risk	Risk Description	Cause	Who is at risk	Consequence	Likelihood	Base Risk Level***	Current legislation and management/mitigation strategy in place	Residual Risk
<b>Built Environment</b>								
<b>Minor Physical Injury</b>	Accidental cuts, scrapes, bruises etc.	Incidental to normal use of the facility.	Patrons and Staff	Minor (5)	Likely (4)	Low	CoP 2.22, 2.23: Details facilities and equipment appropriate to type of facility.  CoP 3.2.2: Wall inlets not to extend more than 25 mm from wall.  CoP 6: Emergency Care qualifications for staff.	Low
<b>Spectator Seating</b>	Unsafe for use.	Structurally unsafe or non-compliant with fire and access requirements.	Patrons	Catastrophic (1)	Rare (1)	Moderate	NCC - Details open spectator stand requirements for Type of construction (C1.1), Fire Resistance (C1.7), Structural Testing (C1.8, 3.1), Access and Egress (D1.2),  CoP 2.26: Safe and fit for purpose.	Low

Table 25 Public health risk assessment of some of the risks related to drowning in public swimming pools

Public Health Risk	Risk Description	Cause	Who is at risk	Consequence	Likelihood	Base Risk Level***	Current legislation and management/mitigation strategy in place	Residual Risk
<b>Drowning</b>								
<b>Supervision (Lighting)</b>	Insufficient illuminance to identify submerged swimmers.	Inadequate lightning.	Patrons	Massive (2)	Possible (3)	High	NCC F2.4.4: (b) A space within a building used by occupants is to be provided with artificial lighting consistent with its function or use which, when activated in the absence of suitable natural light, will enable safe movement.  CoP 2.15: Group 1 & 2 facilities illuminated to 80 lux. Group 3 & 4 facilities illuminated to 30 lux (indoor or night time use).	Very Low
<b>Surface Colour(s)</b>	Visibility of submerged swimmers. Submerged patterns mistaken for a person.	Colours or patterns than interfere with visibility.	Patrons	Massive (2)	Unlikely (2)	Moderate	CoP 2.5: Pool floor and walls to be light in colour, no patterns that may be mistaken for a human form.	Very Low
<b>Staff Supervision and Training</b>	Staff unable to respond to drowning event effectively.	Inadequate training, inadequate staffing levels.	Patrons	Massive (2)	Likely (4)	Extreme	CoP 6: Patron Supervisors to hold appropriate qualification.  CoP 6: Emergency Care qualifications for staff.  CoP 7.10: Minimum lifeguard to patron ratio.	Low

Public Health Risk	Risk Description	Cause	Who is at risk	Consequence	Likelihood	Base Risk Level***	Current legislation and management/mitigation strategy in place	Residual Risk														
<b>Drowning</b>																						
<b>Entrapment</b>	Bathers becoming trapped under water.	Suction or pinch type gaps between components that allow a finger, limb, head or hair to become trapped.	Patrons	Massive (2)	Possible (3)	High	CoP 2.7: Water body not constructed with any obstructions that can cause patron to be trapped or injured (wedge or pinch type fixtures). Standard HB 295.3.21-23 CoP 3.2.3: Floor inlets flush and tamper proof. CoP 3.2.4, 3.2.5, 3.2.6: Design to minimise entrapment risk for perimeter overflow or skimmer box systems.	Low														
<b>Water turbidity</b>	Submerged patron not visible.	Water too turbid.	Patrons	Massive (2)	Possible (3)	High	CoP 3.3: Filtration system appropriate for category of facility. Various requirements for durability, reliability, ease of maintenance. CoP 5.2: Sets water clarity limits.	Low														
<b>Access and Egress</b>	Bathers unable to safely enter or exit water.	Insufficient ladders, ramps or steps.	Patrons	Moderate (4)	Possible (3)	Low	NCC 3.9.1.2: Stairway construction <table border="1"> <thead> <tr> <th rowspan="2">STAIR TYPE</th> <th colspan="2">RISER (R)</th> <th colspan="2">GOING (G)</th> </tr> <tr> <th>Max</th> <th>Min</th> <th>Max</th> <th>Min</th> </tr> </thead> <tbody> <tr> <td>Stairs</td> <td>190</td> <td>115</td> <td>355</td> <td>240</td> </tr> </tbody> </table> CoP 2.13: For pools <12.5 m length, step tread (going) min 200 mm, riser max 300 mm. For pools >12.5 m length, tread (going) min 300 mm, riser max 250 mm.	STAIR TYPE	RISER (R)		GOING (G)		Max	Min	Max	Min	Stairs	190	115	355	240	Very Low
STAIR TYPE	RISER (R)		GOING (G)																			
	Max	Min	Max	Min																		
Stairs	190	115	355	240																		
<b>High Risk Patrons (Toddlers)</b>	Toddlers higher drowning risk near deep water.	Toddlers unable to swim competently.	Patrons	Massive (2)	Possible (3)	High	CoP 2.19: Toddler pools not to be close to deep areas of other pools unless barrier is erected.	Low														

Public Health Risk	Risk Description	Cause	Who is at risk	Consequence	Likelihood	Base Risk Level***	Current legislation and management/mitigation strategy in place	Residual Risk
<b>Drowning</b>								
<b>High Risk Patrons (Children under 10)</b>	Young children with poor swimming skills are a higher drowning risk.	Insufficient swimming skills.	Patrons	Massive (2)	Likely (4)	Extreme	CoP 7.9: Patrons under 10 to be supervised by person 16 years or older or denied entry. CoP 6: Patron Supervisors to hold appropriate qualification. CoP 6: Emergency Care qualifications for staff.	Medium - Low
<b>Overcrowding of water body</b>	Drowning person not visible due to patron loading. Higher risk of accidental injury	Too many bathers limit supervisor lines or sight and make accidental collisions and injury more likely.	Patrons	Major (3)	Possible (3)	Moderate	CoP 7.14: Maximum bather numbers.	Low
<b>Rescue Equipment</b>	Swimmer unable to keep their head above water unaided.	Illness, injury or incompetence	Patrons	Massive (2)	Possible (3)	High	CoP 2.24: Rescue equipment (e.g. reaching poles, throw ropes, tubes, floats, life jackets) required for Group 1, 2 & 3 facilities.	Medium
<b>Resuscitation</b>	Rescuer of a drowned patron unable to perform Cardio Pulmonary Resuscitation (CPR)	Time duration since last first aid refresher, stress of incident.	Patrons	Major (3)	Likely (4)	High	CoP 2.25: Resuscitation notice required. CoP 6: Emergency Care qualifications for staff.	Medium

**Table 26 Public health risk assessment of some of the risks related to water quality issues in public swimming pools**

<b>Public Health Risk</b>	<b>Risk Description</b>	<b>Cause</b>	<b>Who is at risk</b>	<b>Consequence</b>	<b>Likelihood</b>	<b>Base Risk Level***</b>	<b>Current legislation and management/mitigation strategy in place</b>	<b>Residual Risk</b>
<b>Water Temperature</b>	Scalding by hot water, hyperthermia and growth of microorganisms.	Temperature hot enough to burn skin, debilitate or incubate microorganisms.	Patrons and Staff	Major (3)	Possible (3)	Moderate	CoP 5.2: Sets water temperature limit. CoP Appendix 3: Describes requirements for water heaters.	Low
<b>Untreated Water</b>	Bathers contact water that has not been treated.	Top up water entering pool without treatment.	Patrons and Staff	Major (3)	Possible (3)	Moderate	CoP 3.3.6: Top up water to be introduced prior to filter (e.g. into balance tank or skimmer box).	Very Low
<b>Microbiological Illness</b>	Patrons become ill due to ingestion or contact with microorganisms in the water.	Ineffective water disinfection.	Patrons and Staff	Massive (2)	Possible (3)	High	CoP 5.3: Response protocols for E. Coli, Pseudomonas & Naegleria detections.	Low

Public Health Risk Water Quality	Risk Description	Cause	Who is at risk	Consequence	Likelihood	Base Risk Level***	Current legislation and management/mitigation strategy in place	Residual Risk
<b>Biological (Bather Sanitation)</b>	Biological water contamination	Unclean or incontinent bathers due to insufficient facilities.	Patrons and Staff	Major (3)	Likely (4)	High	<p>NCC F2.4.3: Suitable sanitary facilities for personal hygiene must be provided in a convenient location within or associated with a building, to the degree necessary, appropriate to—</p> <p>(a) the function or use of the building</p> <p>(b) the number and gender of the occupants</p> <p>(c) the disability or other particular requirements of the occupants.</p> <p>CoP 2.20: Facilities to be within 90m of pool. Number and type of facilities appropriate for patronage.</p> <p>CoP 7.6: Certain persons not to be permitted entry to water body.</p> <p>CoP 7.13: Hire towels or bathing costumes cleaned between hires.</p>	Low
<b>Pollution of External Environment</b>	Degradation of external surface water quality	Discharge of contaminated pool or filter backwash water to external environment.	Neighbours, General Public	Moderate (4)	Possible (3)	Low	CoP 2.21: Water from filters requiring backwash cycles to be disposed of in accordance with water corporation or local government approval	Very Low
<b>Treatment System</b>	Treatment system unable to effectively treat water.	System inadequately sized for type of facility and bather loading.	Patrons and Staff	Massive (2)	Likely (4)	Extreme	CoP 3.1: Water body loading categorised by loading, type, depth, use and appropriate turnover time.	Medium

Public Health Risk Water Quality	Risk Description	Cause	Who is at risk	Consequence	Likelihood	Base Risk Level***	Current legislation and management/mitigation strategy in place	Residual Risk
<b>Contact Time</b>	Water body not sufficiently mixed and/or dosed to ensure appropriate disinfection contact time.	Poor circulation, insufficient flow rate, inadequate disinfectant dosing.	Patrons and Staff	Massive (2)	Likely (4)	<b>Extreme</b>	<p>CoP 3.2.1: Perimeter overflow system required above 450 m<sup>2</sup> surface area.</p> <p>CoP 3.2.7: Flow rate to be maintained to design specification at all times.</p> <p>CoP 3.4: Must employ a system that maintains water quality and an effective residual disinfectant to rapidly respond to bather introduced microorganisms.</p> <p>Automatic water quality analysis and dosing required.</p> <p>Interlock between chemical dosing and circulation pump.</p>	Low

Public Health Risk	Risk Description	Cause	Who is at risk	Consequence	Likelihood	Base Risk Level***	Current legislation and management/mitigation strategy in place	Residual Risk
<b>Maintaining Quality</b>	Water unfit for use.	Free chlorine, total chlorine, bromine, pH, alkalinity, hardness, TDS or water balance outside of acceptable range.	Patrons and Staff	Massive (2)	Likely (4)	Extreme	<p>CoP 5.1 – Specifies upper and lower limits for chemical water standards.</p> <p>CoP 5.4: Describes water testing frequency, approved brands of test kit, test kit expiry dates and log book maintenance.</p> <p>CoP 7: Cleaning and maintenance, prohibition of entry, prohibition of animals, supervision.</p> <p>CoP 7.7: Animals not to enter water body.</p> <p>CoP 6: Technical operator training requirements.</p>	Low
<b>Off Season Maintenance</b>	Water presents a drowning or illness risk when closed to public.	Turbidity too great to observe submerged person, severe biological contamination.	Staff, General Public	Massive (2)	Unlikely (2)	Moderate	<p>CoP 5.5: Water clarity maintained and algal growth prevented when facility is closed for off season.</p>	Low
<b>Equipment Maintenance</b>	Water treatment system malfunction, water chemistry out of specification.	Poorly maintained equipment, incorrect operation, incorrect water quality testing techniques.	Patrons and Staff	Massive (2)	Possible (3)	High	<p>CoP 6: Technical operator training requirements.</p>	Low

Public Health Risk Water Quality	Risk Description	Cause	Who is at risk	Consequence	Likelihood	Base Risk Level***	Current legislation and management/mitigation strategy in place	Residual Risk
<b>Fouling of Filtration Media</b>	System unable to maintain adequate treatment rate.	Build-up of particulate and/or biological material in filter media reducing flow rate.	Patrons and Staff	Major (3)	Likely (4)	High	CoP 3.3.1: Periodic cleaning of filter media by backwashing or cartridge filter removal.  CoP 3.5: Disinfectant injection prior to filter in uncovered gravity sand filters	Low
<b>Fouling of Surface Finishes</b>	Water contamination from surface finishes.	Toxic, pervious or non-durable construction materials	Patrons and Staff	Major (3)	Unlikely (2)	Low	NCC A2.1, A2.2: Every part of a building must be constructed in an appropriate manner to achieve the requirements of the Building Code of Australia (BCA), using materials and construction being fit for the purpose for which they are intended including the provision of access for maintenance.  CoP 2.4: Non-toxic, impervious, durable, watertight construction materials.	Low

Public Health Risk Water Quality	Risk Description	Cause	Who is at risk	Consequence	Likelihood	Base Risk Level***	Current legislation and management/mitigation strategy in place	Residual Risk
<b>Fouling of Sand Material</b>	Sand material installed in beach-type water bodies may act as a biological growth medium.	Ineffective or insufficient dosing with disinfectant chemical.	Patrons and Staff	Major (3)	Unlikely (2)	Low	NCC A2.1, A2.2: Every part of a building must be constructed in an appropriate manner to achieve the requirements of the BCA, using materials and construction being fit for the purpose for which they are intended including the provision of access for maintenance.  CoP 2.6: Sand material used over an impervious surface with constant positive upflow and no adverse effects.	Low

Table 27 Public health risk assessment related to some of the electrocution risks in public swimming pools

Public Health Risk Electrocution	Risk Description	Cause	Who is at risk	Consequence	Likelihood	Base Risk Level***	Current legislation and management/mitigation strategy in place	Residual Risk
<b>Electrical Components of Filtration System</b>	Pipework and water body become a live circuit.	Faulty pump seal, damaged or poorly maintained equipment,	Patrons and Staff	Catastrophic (1)	Possible (3)	Extreme	Standards Australia Wiring Rules (AS/NZS 3000): The current version of the AS 3000 wiring rules describe equipotential bonding for metallic objects in the vicinity of swimming pools.  CoP 2.28: Equipotential bonding for all metal objects with dimensions over 100 mm in areas likely to be wet and contacted.  Residual-current device (RCD) =< 30 mA devices to be installed to protect outlet	Medium
<b>Lightning</b>	Lightning strike of water body surface or partially submerged patron.	Electrical storm activity and ineffective lightning protection.	Patrons and Staff	Massive (2)	Rare (1)	Low	CoP 2.29: Group 1 and Group 2 facilities to comply with AS 1768 – 2007 – Lightning Protection.	Low

Public Health Risk Electrocution	Risk Description	Cause	Who is at risk	Consequence	Likelihood	Base Risk Level***	Current legislation and management/mitigation strategy in place	Residual Risk
<b>Powered Device</b>	Use of electronic device adjacent to pool area resulting in electrocution.	Electronic device (e.g. stereo, pressure washer, electric cooktop etc.) becomes wet or submerged while energised.	Patrons and Staff	Massive (2)	Possible (3)	High	Standards Australia Wiring Rules (AS/NZS 3000): The current version of the AS 3000 wiring rules describe equipotential bonding for metallic objects in the vicinity of swimming pools.  CoP 2.28: Only outlets required for maintenance to be within 3 m of water body.  Outlets accessible to public to be 1200 mm above ground level  CoP 7.4: No use of concourse outlets while people in water. RCD test every 6 months.	Low
<b>Pool Lighting</b>	Pool energised by submerged lights.	Faulty or poorly maintained seals with light fixtures.	Patrons and Staff	Massive (2)	Possible (3)	High	Standards Australia Wiring Rules (AS/NZS 3000): The current version of the AS 3000 wiring rules describe equipotential bonding for metallic objects in the vicinity of swimming pools.  CoP 2.28: Equipotential bonding for all metal objects with dimensions over 100 mm in areas likely to be wet and contacted.	Low

**Table 28 Public health risk assessment related to some of the chemical exposure and ventilation risks in public swimming pools**

Public Health Risk Chemical Exposure and ventilation	Risk Description	Cause	Who is at risk	Consequence	Likelihood	Base Risk Level***	Current legislation and management/mitigation strategy in place	Residual Risk
<b>Chemical Exposure</b>	Illness due to exposure to concentrated treatment chemicals	Inappropriate storage, handling, use or disposal of bulk chemicals.	Patrons and Staff	Massive (2)	Possible (3)	High	<p>Dangerous Goods Safety Act 2004</p> <p>CoP 4: Chlorine gas installations to comply with Dangerous Goods Safety Act 2004.</p> <p>Chlorine gas detectors.</p> <p>Liquid chlorine and acid to appropriately contained in bunds.</p> <p>CoP 7.5: Hand dosing (high concentration chemical introduction) not to occur when water body occupied.</p>	Low
<b>Over Chlorination</b>	Facility users exposed to high levels of chlorine.	Equipment malfunction or technical operator error.	Patrons and Staff	Major (3)	Possible (3)	Moderate	<p>CoP 3.4: Interlock between dosing and pumping systems.</p> <p>CoP 6: Technical operator training requirements.</p>	Low
<b>Exposure to Acidic or Alkaline Water</b>	Facility users suffer adverse health effects from high or low pH water.	Quality of source water, environmental event, equipment malfunction or operator error.	Patrons and Staff	Major (3)	Possible (3)	Moderate	<p>CoP 5.1 – Specifies upper and lower limits for chemical water standards.</p> <p>CoP 6: Technical operator training requirements.</p>	Low

Public Health Risk Chemical Exposure and ventilation	Risk Description	Cause	Who is at risk	Consequence	Likelihood	Base Risk Level***	Current legislation and management/mitigation strategy in place	Residual Risk
<b>Chemical Inhalation</b>	Respiratory illness	Accumulation of disinfection chemicals in the air near the water body surface.	Patrons and Staff	Major (3)	Possible (3)	Moderate	NCC F2.4.5: A space used by occupants within a building is to be provided with adequate ventilation consistent with its function or use.  CoP 2.15: Indoor facilities to have minimum ventilation rate of 10 L/s per person.	Low
<b>Hydrogen Gas Explosion</b>	Accumulation and ignition of hydrogen gas.	Off-gassing of electrolytic salt chlorinators into an enclosed space.	Patrons and Staff	Massive (2)	Possible (3)	High	CoP 3.6: Appropriate management of hydrogen gas.	Low

**Table 29 Public health risk assessment from other known risks associated with public swimming pools**

Public Health Risk Other / Miscellaneous	Risk Description	Cause	Who is at risk	Consequence	Likelihood	Base Risk Level***	Current legislation and management/mitigation strategy in place	Residual Risk
<b>Automatic Cleaners</b>	Entanglement or injury from automatic cleaner	Interaction between bathers and cleaners.	Patrons and Staff	Major (3)	Possible (3)	Moderate	CoP 7.2: Automatic cleaners not to be used when facility open for use.	Low
<b>Special Features</b>	Risks associated with special features	Specific hazards relating to activity type or special facility configuration.	Patrons and Staff	Various (5-2)	Various (1-4)	Low-High	CoP 8: Risk management features for diving facilities, moveable booms, child amusement devices, wave pools and river rides	Low

\* Health consequence table adapted from the 2011 Health Risk Assessment (Scoping) Guidelines, Department of Health WA (refer to Appendix 2 – Risk Assessment Model )

\*\* Risk likelihood table adopted from the 2011 Health Risk Assessment (Scoping) Guidelines, Department of Health WA (refer to Appendix 2 – Risk Assessment Model)

\*\*\* Final risk rating from the risk matrix (refer to Appendix 2 – Risk Assessment Model)

## 10.1 Appendix 4 – Cost Estimators

<b>COSTS TO GOVERNMENT</b>	<b>Current Regulations</b>	<b>Assumptions</b>	<b>No regulations</b>	<b>Assumptions</b>
<b><u>Deaths</u></b>				
Number of people who drown	8		180	
Death Rate for disease	0.05	Based on 1 of 15 people hospitalised- VIC Stats	0.05	
Number of people who die	0.4	Based on RLSSWA data - 4 deaths in 10 yrs	9	Based on RLSSWA 15/16 Pool data
<b>Cost of death</b>	<b>\$1,680,000</b>		<b>\$37,800,000</b>	
<b><u>EH Investigations</u></b>				
Number of FTE EH Officers Employed for the investigation	1	Based on 1 person and 1 day per death	1	Based on 1 person and 1 day per death
Cost of employees (per hour)	\$75		\$75	
Hours per day	8		8	
Period of investigation (days)	0.4		9	
<b>EH Investigation costs</b>	<b>\$240</b>		<b>\$5,401</b>	
<b><u>Epidemiological Investigation</u></b>				
Number of FTE Employed for investigation	1		1	
Cost of employees (per hour)	\$75		\$75	
Hours per day	2		2	
Period of Investigation (days)	1		8	
<b>Epidemiological Investigation Costs</b>	<b>\$150</b>		<b>\$1,350</b>	

<b><u>Microbiological Investigations</u></b>				
Number of samples taken	5		180	
Analysis chosen	E coli		E coli	
Cost of sample analysis	\$50		\$50	
<b>Cost of Microbiological Investigation</b>	<b>\$400</b>		<b>\$9,000</b>	
<b><u>Hospital and Medical Costs</u></b>				
Cost to treat each patient	\$16,670		\$16,670	
Number of patients	8		229	Based on RLSSWA 15/16 Data
<b>Cost of Hospital and Medical</b>	<b>\$133,366</b>		<b>\$3,817,598</b>	
<b><u>Loss of work income</u></b>				
Number of patients that didn't die	7.6		171	
Number of weeks spent out of work recovering	4		4	
<b>Cost time spent out of work</b>	<b>\$3,067,938</b>		<b>\$69,028,596</b>	
<b>Total Cost to Government</b>	<b>\$4,882,094</b>		<b>\$110,661,946</b>	
<b>COSTS TO BUSINESSES</b>	<b>Current Regulations</b>	<b>Assumptions</b>	<b>No regulations</b>	<b>Assumptions</b>
<b><u>Public Liability Costs</u></b>				
Number of people affected	8		180	Based on the VIC data 15 hospitalisations per drowning
<b>Payout Costs</b>	<b>\$248,000</b>		<b>\$5,580,000</b>	
<b>Total Cost to Businesses</b>	<b>\$248,000</b>		<b>\$5,580,000</b>	

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