



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

# Environmental Health Directorate

## Yearbook 2016-17



**This yearbook outlines the work of the Environmental Health Directorate, in the Public and Aboriginal Health Division of the Department of Health, Western Australia, for the 2016-17 financial year.**

# From the Executive Director

The Environmental Health Directorate (EHD), in partnership with Western Australian local governments, plays a critical role in maintaining a safe environment for people living and travelling in Western Australia (WA). This yearbook showcases a selection of the many roles and responsibilities of the staff of the EHD, who are both passionate and dedicated to promoting good health, managing risks and preventing disease associated with various environmental impacts.

During 2016-17, the EHD underwent a significant restructure by transitioning to the Department of Health system manager role and to accommodate a decrease in the number of staff following a voluntary severance scheme. We worked diligently to overcome a range of challenges, including the emergence of perfluorooctane sulfonate and perfluorooctanoic acid as organic pollutants and the significant rainfall event that led to flooding along the Avon, Swan and Canning Rivers.

Despite these challenges, our outputs were substantial and we celebrated a number of key achievements. In particular, the *Public Health Act 2016* received Royal Assent - a milestone celebrated by the Department of Health, as it comes after many years of hard work and presents an opportunity to revise the outdated *Health Act 1911*. The four-year Funding Initiative for Mosquito Management in Western Australia came to a close, having built significant corporate knowledge, capacity and expertise to deliver risk-based, effective mosquito management programs throughout the State. The *Plumbers Licensing and Plumbing Standards Regulations 2000* were amended, allowing Aboriginal environmental health practitioners the ability to carry out emergency minor plumbing repairs and ensure the maintenance of health hardware and water supplies in remote communities. This is by no means an exhaustive list, so I encourage you to take the time to peruse this Yearbook in order to appreciate the significance, depth and variety of work undertaken by the EHD.

I also thank EHD staff and our stakeholders for their ongoing commitment to managing and minimising environmental risks to health in WA, which in turn plays a significant role in safeguarding the wellbeing of all individuals visiting and living in this great State.



**Jim Dodds**  
**Executive Director**  
**Environmental Health Directorate**  
**Public and Aboriginal Health Division**  
**Department of Health, Western Australia**

# *Our Purpose*

To lead in the management of environmental health risks

# *Our Vision*

Healthy people in a healthy environment

# *Our Values*

*Cooperation*

*Fairness*

*Excellence*

*Integrity*

*Leadership*



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# Glossary of acronyms

AMA	Australian Medical Association
AMRG	Australian Meat Regulators Group
ATDS	Australian Total Diet Survey
CDC	Centre for Disease Control
CET	Centre for Environmental Training
CLAG	Contiguous Local Authorities Group
DAP	Development Assessment Panel
DAWR	Department of Agriculture and Water Resources
DWER	Department of Water and Environmental Regulation
EHD	Environmental Health Directorate
FIMMWA	Funding Initiative for Mosquito Management in Western Australia
IPAA	Institute of Public Administration Australia
NPSC	Nutrient profiling scoring calculator
PFAS	Poly-fluoroalkyl substances
PFOA	Perfluorooctanoic Acid
PFOS	Perfluorooctane Sulfonate
PSP	Paralytic shellfish poisoning
Public Health Act	<i>Public Health Act 2016</i>
OCHO	Office of the Chief Health Officer
QMS	Quality Management System
RRV	Ross River virus
SOP	Standard operating procedure
WA	Western Australia
WACHS	Western Australia Country Health Service
WALGA	Western Australian Local Government Association
WARFSAF	WA Regulatory Food Safety Auditing Framework
WASQAP	Western Australian Shellfish Quality Assurance Program

# Operating structure

Operating structure

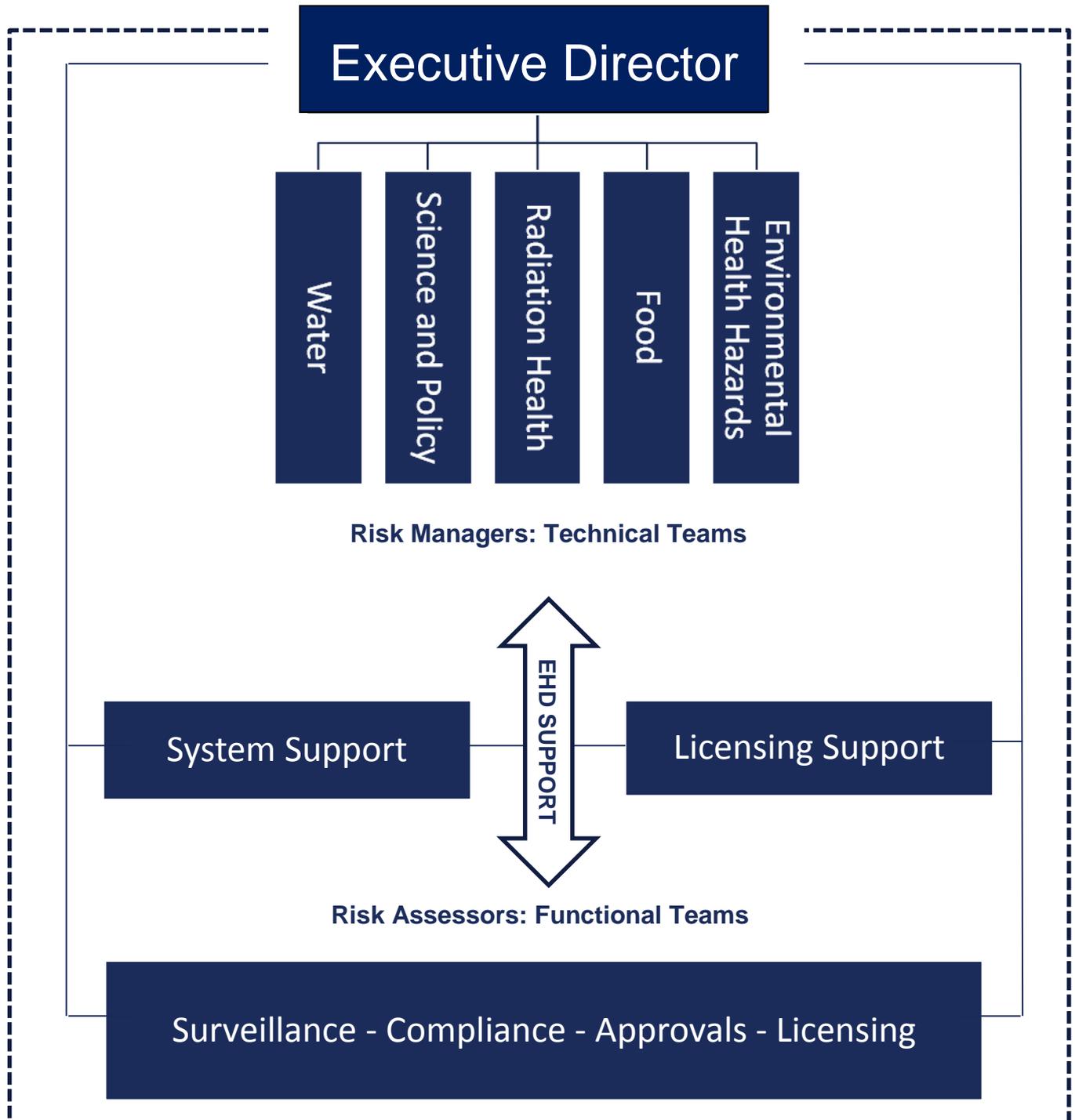
Enabling legislation

Major achievements

Our year in review

Financial overview

The Environmental Health Directorate (EHD), led by Executive Director Jim Dodds, was one of seven Directorates within the Public and Aboriginal Health Division of the WA Department of Health, in 2016-17. During this time, the EHD underwent significant structural change to reflect the Department of Health's transition to the role of system manager and a shift in human resources.



**The EHD administers a wide range of Acts and regulations, including those listed below, as well as relevant by-laws and Codes of Practice:**

*Public Health Act 2016*

*Health (Miscellaneous Provisions) Act 1911*

## **Environmental Health Hazards**

*Health (Air-handling and Water Systems) Regulations 1994*

*Health (Asbestos) Regulations 1992*

*Health (Cloth Materials) Regulation 1985*

*Health Act (Carbon Monoxide) Regulations 1975*

*Health (Garden Soil) Regulations 1998*

*Hairdressing Establishment Regulations 1972*

*Health (Skin Penetration Procedure) Regulations 1998*

*Health (Offensive Trades Fees) Regulations 1976*

*Piggeries Regulations 1952*

*Health (Construction Work) Regulations 1973*

*Construction Camp Regulations*

*Health Act (Laundries and Bathrooms) Regulations*

*Health (Public Buildings) Regulations 1992*

*Health (Rottnest Island) By-laws 1989*

*Fly Eradication Regulations*

*Health (Pesticides) Regulations 2011*

*Health (Prescribed Insect Pests) Regulations 1991*

*Registration, Enforcement and Discharge of Local Authority Charges on Land Regulations*

*Health (Notification of Lead Poisoning) Regulations 1985*

*Health (Section 112(2) Prohibition) Regulations 2006*

## **Food**

*Food Act 2008*

*Food Regulations 2009*

## **Water**

*Health (Treatment of Sewage and Disposal of Effluent and Liquid Waste) Regulations 1974*

*Health (Temporary Sanitary Conveniences) Regulations 1997*

*Health Act (Underground Water Supply) Regulations 1959*

*Health (Aquatic Facilities) Regulations 2007*

*Fluoridation of Public Water Supplies Act 1966*

## **Radiation Health**

*Nuclear Waste Storage and Transportation (Prohibition) Act 1999*

## **Radiation Health as secretariat to the Radiological Council**

*Radiation Safety (General) Regulations 1983*

*Radiation Safety (Qualifications) Regulations 1980*

*Radiation Safety Act 1975*

*Radiation Safety (Transport of Radioactive Substances) Regulations 2002*

## **Science and Policy**

*Tobacco Products Control Act 2006*

*Tobacco Products Control Regulations 2006*

# Major achievements

Stage 3 of the  
*Public Health Act*  
2016

As part of the implementation of the Public Health Act, stage 3 was rolled out across WA

Perfluorinated  
(PFAS) compounds

Risk assessment and management guidance

Funding Initiative  
for Mosquito  
Management in  
WA

Completion of a four-year capacity building initiative, including evaluation of outcomes and future planning

Strategic risk  
approach to  
food-borne illness  
reduction

Delivery of risk management principles: surveillance, research, engagement and partnerships

Changes to  
plumbing  
legislation

Environmental health workers to undertake basic plumbing repairs in remote Aboriginal communities

## ***Public Health Act 2016***

The *Public Health Act 2016*, together with the supporting *Health (Miscellaneous Provisions) Act 1911*, are now law in WA. In 2016-17, the EHD undertook a significant amount of work to assist the transition to the new regulatory framework.

### **Rolling out stage 3 of the Public Health Act**

Stage 3 of implementation of the *Public Health Act 2016* occurred on 24 January 2017. Stage 3 involved key elements of the administrative framework provided by Part 2 of the Public Health Act coming into operation to replace the equivalent administrative framework provided by Part II of the *Health (Miscellaneous Provisions) Act 1911*. The Executive Director, Public Health became the Chief Health Officer and authorised officers were appointed under the new Act. These changes were communicated across WA to ensure local governments implemented the new provisions.

### **Reporting under the *Public Health Act 2016***

Section 22 of the Public Health Act requires local governments provide a [report on their performance of functions under the Act](#). The 2016-17 financial year represents the first year that local government authorities were asked to report to the Department of Health under the Public Health Act, but for only those parts of the Act that are in operation. To reduce the burden on local government, reporting under the Act was combined with *Food Act 2008* reporting, using the online reporting tool 'Citizen Space'.

### **Appointment of staff as authorised officers**

As part of the implementation of stage 3 of the Public Health Act, staff with appropriate experience and qualifications were designated as authorised officers under the Public Health Act, by the Chief Health Officer, allowing them to enforce the new legislation. This process also required certificate of authority cards to be issued to staff as evidence of their authorisation.



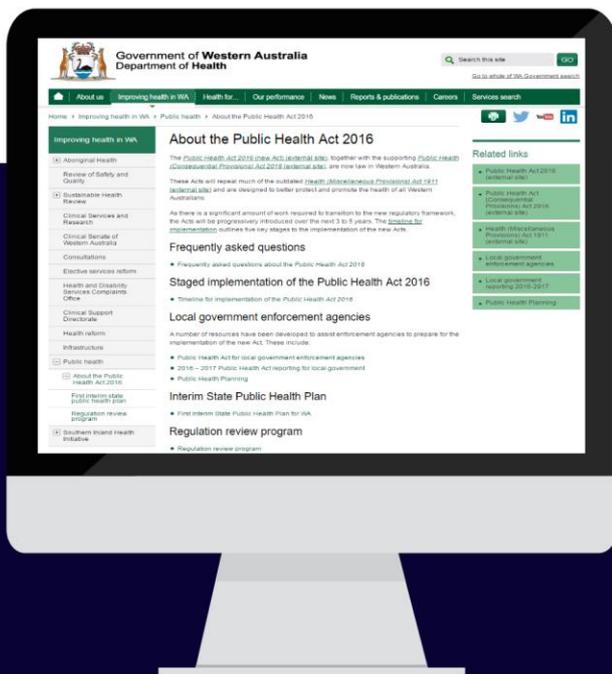
*Authorised officer badge issued to Department of Health staff*

# PUBLIC HEALTH ACT

## Keeping our stakeholders informed

### Public Health Act website

An extensive amount of information was added to the Department of Health website on the *Public Health Act 2016*, including an explanation of what the new Act means for WA and local government enforcement agencies.



3

### Public Health Act information sessions



200

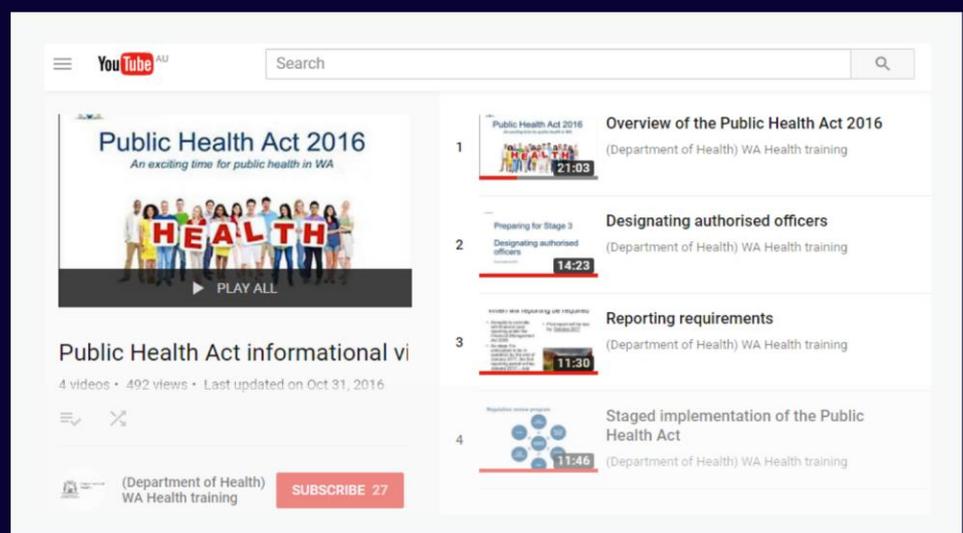
Local government environmental health officers in attendance

### Public Health Act sessions included:

- an overview of each Part of the Act focusing on those applicable to local government
- a timeline for implementing the Act over the next three to five years
- what local government must do to prepare for stage 3 of implementation
- how EHD will communicate with local government during implementation of the Act.

# YouTube

Presentations were also loaded to the Department of Health's YouTube channel about key changes to public health law. This information was considered to be an important resource for stakeholders during the transition to the new regulatory framework.



## Environmental health regulation review program

To prepare for stage 5 of implementation of the Public Health Act, the EHD established a team to commence the review of all environmental health related regulations created under the *Health (Miscellaneous Provisions) Act 1911*, as well as provisions of this Act that will eventually be repealed. The group has met monthly, drafting a process for reviewing and repealing legislation in accordance with the Regulatory Gate Keeping process and developing a regulatory impact assessment template. As part of the regulatory review program, a number of discussion papers are being drafted for public consultation. Once finalised, these will be released for public comment.

## Offensive trades

Offensive trades are currently specified and managed under the *Health (Miscellaneous Provisions) Act 1911* and the fees are prescribed in the *Health (Offensive Trades Fees) Regulations 1976*. This discussion paper investigates the public health risks associated with these businesses and provides a number of options for the management of these risks under the new regulatory framework of the Public Health Act. This paper will be released for comment during 2018.

## Morgue management in WA

Morgues are currently managed under the *Health (Miscellaneous Provisions) Act 1911*. With the introduction of the Public Health Act in WA, Part IV, Division 8 of the *Health (Miscellaneous Provisions) Act 1911* will eventually be repealed. Therefore, this provision must now be reviewed and either repealed in its entirety, replaced with a new

Regulation in accordance with the new regulatory framework provided by the Public Health Act, or managed through other mechanisms such as a local law or Code of Practice. This discussion paper focuses on determining the best option for managing the public health risks associated with the temporary storage of human remains (morgues) in a manner which maintains public health. This document was released for comment in September, 2017.

## Temporary toilet design and construction

Temporary toilet design and construction is currently managed by the *Health (Temporary Sanitary Conveniences) Regulations 1997*. This discussion paper provides a number of options for the appropriate design and construction of temporary toilets into the future. Consideration has been given to both standard and accessible temporary toilets to ensure all members of society have access to amenities that are both appropriate and fit for purpose. This paper will be released during 2018.

## Managing sanitation provisions at construction and work sites

Sanitation provisions at construction sites and mobile, temporary, or remote work sites are currently managed by the *Health (Temporary Sanitary Conveniences) Regulations 1997* and the *Health (Construction Work) Regulations 1973*. Review of these regulations identified that a lot of the requirements are a repetition of the *Occupational Safety and Health Regulations 1996*. Based on these findings the discussion paper recommends repeal without replacement. This paper will be released for comment during 2018.

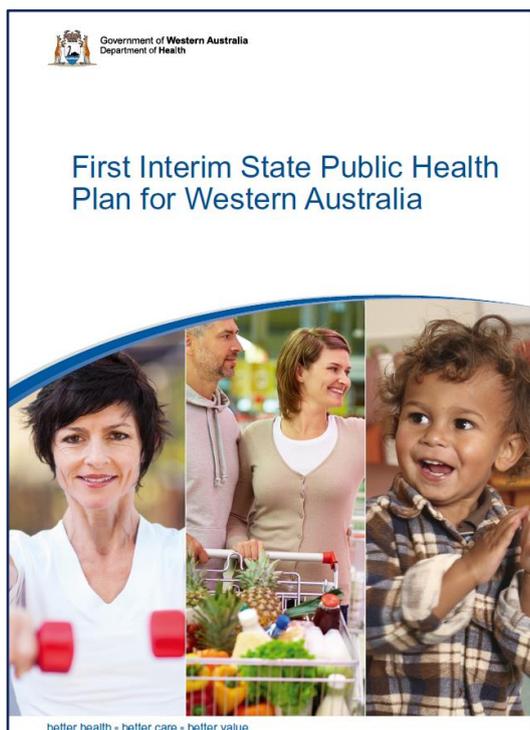
## Public buildings working group

The Public Buildings Working Group was formed to review the existing *Health (Public Buildings) Regulations 1992* and ensure the views of local government enforcement agencies and other stakeholders are represented in the development of future management strategies related to public health risks from public buildings. The group is made up of representatives from metropolitan and regional local government authorities.

## First Interim State Public Health Plan

The EHD supported the Chief Health Officer to collate and release the [First Interim State Public Health Plan](#) which includes a report on the health status of Western Australians and the public health objectives and policy priorities for 2017-2021.

The plan is open for consultation over a six-month period until December 2017.



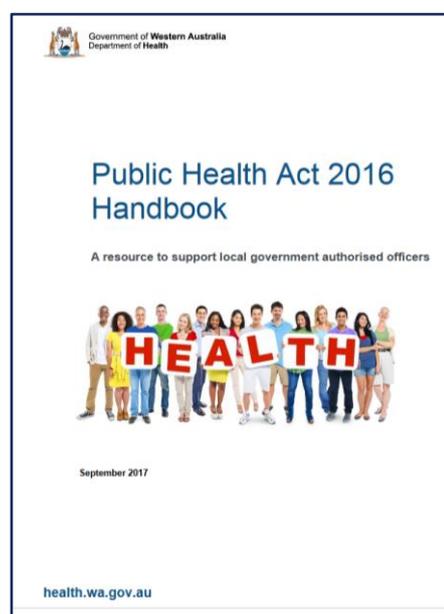
## Public Health Act Reference Group

The EHD formed the Public Health Act Reference Group, whose role is to ensure the views of local government enforcement agencies are represented in resources that are developed to assist with the interpretation and administration of the Public Health Act. The group is made up of representatives of local government and the Western Australian Local Government Association (WALGA).

## Public Health Act Handbook

EHD has produced the [Public Health Act 2016 Handbook](#) to support local government authorised officers to interpret and administer the Act. The document summarises key provisions of the new Public Health Act and also provides practical advice to support persons who are authorised under the legislation. It is anticipated that the Handbook will be updated following the enactment of [stage 5 of the Public Health Act](#), when the Act becomes fully operational. Feedback on the Handbook can be emailed to:

[publichealthact@health.wa.gov.au](mailto:publichealthact@health.wa.gov.au)



## Temporary toilet design and construction survey

As part of the review of the *Health (Temporary Sanitary Conveniences) Regulations 1997*, it was noted that there was no regulation for the design and construction of accessible temporary toilets provided at community events. This includes toilets for people with an ambulant type disability where a person requires a mobility aid, a person is in a wheelchair, or someone who has a profound disability that requires continence aids or assistance with transferring to the toilet.

In response, the EHD commissioned the [Accessible Temporary Toilets Survey](#) to determine how the lack of regulation was impacting the disability community. A total of 69 per cent of respondents reported to have been to an event where they couldn't go to the toilet because it was not suitably designed for them. The data from this survey provides evidence to support the need for regulatory change.

## Amendments to the *Asbestos Regulations*

The *Health (Asbestos) Regulations 1992* were amended on the 24 January 2017 to increase the penalties for offences under the regulations and to enable local governments the ability to issue infringement notices for specified offences. These amendments were enacted as the previous penalties were considered inadequate and the costs of complying with the regulations often exceeded the penalty for non-compliance. The EHD played a key role in communicating these changes to local government enforcement agencies.

## National Construction Code public buildings submission

As a part of the review of the *Health (Public Buildings) Regulations 1992*, and in consultation with the Public Buildings Working Group, it was determined that a number of requirements under the regulations should be included as a WA amendment in the Building Code of Australia, Volume 1. The proposal for change to the National Construction Code aims to reduce discrepancies and any overlap between the regulations and the Building Code of Australia and to ensure building design requirements protecting public health are captured under the Building Code of Australia and therefore considered early on in the building and design process.

## Environmental Health Directorate Quality Management System

The EHD Quality Management System (QMS) was launched in February 2017 as a tool to assist the EHD in its transition to role of system manager. The purpose of the QMS is to improve customer satisfaction, maintain the integrity of the EHD's activities, ensure compliance with relevant statutory requirements, enhance the EHD's reputation with a range of stakeholders and raise community confidence in the safety of the environment in WA. The implementation of the QMS is being supported by the review of existing processes and development of new and revised Standard Operating Procedures (SOPs). Standardising tasks in this manner will help to improve uniformity, efficiency and the quality of outcomes within the EHD.

# DEVELOPMENT ASSESSMENT PANEL

Review and advise on land-use, industrial and other planning proposals to ensure protection of public health

**832**

Total development assessments received

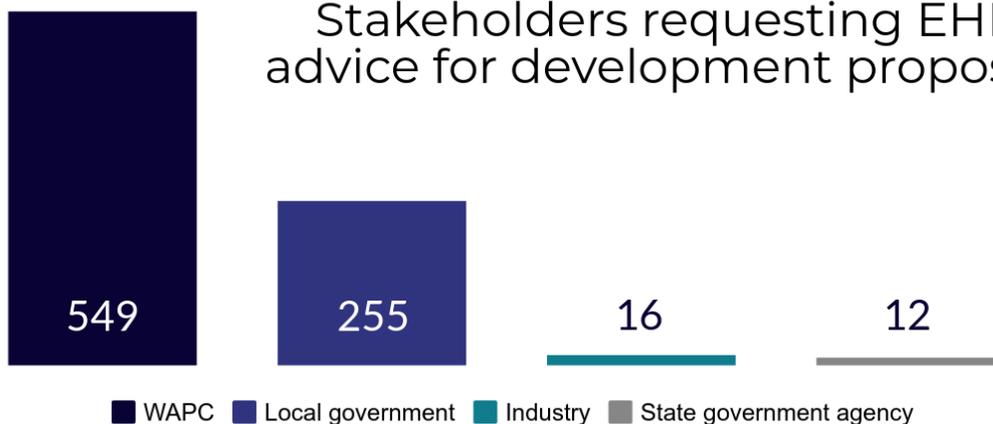
**70**

Average development assessments per month

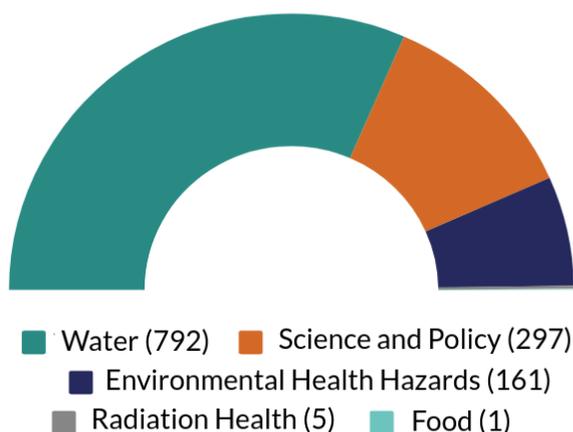
**30**

Development Assessment Panel (DAP) meetings

Stakeholders requesting EHD advice for development proposals



Individual EHD unit responses to development assessments



Types of proposals received

**508** Subdivision  
**108** Local planning strategy  
**102** Structure plans  
**47** Development approvals

# ENVIRONMENTAL HEALTH HAZARDS

**2,233**



Pest management technician  
licences renewed



**EHD licenses the urban pest control industry in WA**

**325**

New pest  
management  
technician licences  
issued

**57**

New pest  
management  
businesses registered

**865**

Pest management  
business registrations  
renewed

## Contaminated sites

**154**

Contaminated site  
applications  
assessed

**15**

Contaminated site  
inspections

**448**

Classified  
contaminated  
sites requiring  
EHD sign-off



**14**

Clandestine drug  
laboratories managed  
for public health risks

## About Asbestos website

Asbestos remains a topic of considerable concern to members of the public. As such, the EHD updated much of the asbestos related information on both the corporate Department of Health and Healthy WA websites.

The [About Asbestos](#) page provides information and guidance material for industry and government, including links to information on recent amendments to the *Health (Asbestos) Regulations 1992* relating to modified penalties and infringement notices, fire damaged material, contaminated sites and guidance notes on asbestos cement roofs and fences.

The general public can access frequently asked questions regarding asbestos related products, information related to home maintenance, removal and renovation concerns or soil contamination, along with the contact details for appropriate agencies to contact for specific asbestos related issues on the [HealthyWA](#) website.

## Contaminated mulch

Mulch refers to any type of material that is used as a soil covering that can be spread or laid. In early 2017, concerned residents reported the use of mulch contaminated with asbestos in a public area.

The EHD responded to a number of enquiries from the media, public and industry on this issue and subsequently developed a new guideline on [Contamination Free Mulch](#).

The EHD recommends that all mulch products be visibly free of asbestos and asbestos-containing materials at the point of sale or supply. The guideline requires that mulch producers and suppliers visually screen all raw materials and remove products such as treated wood, asbestos-containing materials, plastics and glass from the feedstock. Suppliers are also reminded that the sale of mulch containing asbestos can be prosecuted under Regulation 6 of the *Health (Asbestos) Regulations 1992*.



Environmental contamination with asbestos

## Emerging contaminants: Perfluorooctane sulfonate and perfluorooctanoic acid

Perfluorooctane sulfonate (PFOS) and perfluorooctanoic acid (PFOA) are part of a larger group of chemicals referred to as per- and poly-fluoroalkyl substances (PFAS). These substances can be found in a number of consumer and industrial products, such as firefighting foams, non-stick coatings and stain resistant/protective coatings.

PFOS and PFOA persist within the environment and are resistant to typical degradation processes. Studies have also shown that they bio-accumulate in the food chain. These products were added to the Stockholm Convention for protecting human health and the environment from persistent organic pollutants. Consequently, greater consideration is now given to PFAS in contaminated site assessments across Australia.

In 2016, when a number of sites in WA had detected PFAS in groundwater and soil, the EHD's Principal Toxicologist introduced

provisional health guidelines for use in the assessment and management of contaminated sites. This timely advice allowed a proactive approach to contaminated sites assessment and health risk communication in WA. Interim enHealth guidelines for drinking and recreational water, published shortly after, were the same as the WA Department of Health provisional health guidelines. The Commonwealth Department of Health has now published [final health based guidance values for PFAS](#).

The EHD continues to advise landowners, industry, consultants, environmental auditors and other interested parties on specific requirements for PFAS when investigating, assessing, remediating and/or managing contaminated sites and communicating health information in WA. In addition EHD representatives provide input into national guideline development for water, food and soil guidelines.



# Our year in review

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## Asbestos fibre board at Perth Children's Hospital

On 11-12 July 2016, a subcontractor penetrated a unitised insulation roof panel in the upper floors of the atrium area at Perth Children's Hospital. The work was being undertaken to install a smoke exhaust fan system on the atrium roof. The fibre cement debris that was released from inside the roofing panel was recognised by one of the workers to potentially contain chrysotile (white) asbestos. Subsequent testing confirmed a positive result for chrysotile asbestos.

Officers from the EHD visited the Perth Children's Hospital construction site to assess the risk to employees who visited or worked at Perth Children's Hospital during the incident. Following involvement in the incident by the Chief Health Officer, additional advice and feedback was provided by the EHD on the investigation and an interim report associated with the incident was prepared. Further information on the incident is available from the [Department of Commerce](#).

## Classification of contaminated sites in Western Australia

The EHD provided specific and detailed public health advice to the Department of Water and Environmental Regulation (DWER) as required by the *Contaminated Sites Act 2003*. During 2016-17 the number of sites classified increased by 15 per cent, with an additional focus on low risk "grace period" sites where classification was previously delayed due to the overwhelming numbers of sites notified when the Act was first enacted.

Ongoing collaboration with other state and local agencies including LandCorp, Water Corporation, the (then) Department of Parks and Wildlife and several local governments, resulted in effective investigation and remediation of complicated sites contaminated with asbestos, potentially hazardous ground gases and a range of organic and inorganic chemicals. Specific cases include asbestos issues at the old Castledare site and the Wedge and Grey settlements; ground gases common to in-fill development of historic landfills (eg. the new Perth Stadium); per- and poly-fluoroalkyl substances from fire training grounds around the State; and chlorinated hydrocarbons from dry-cleaning and motor vehicle repair facilities.



Perth Children's Hospital

## Health impacts of dust in regional Western Australia

### Port Hedland:

Toxicologists from the EHD have been involved with the Government's Taskforce on dust and noise management in Port Hedland since 2009. In 2016-17, toxicologists reviewed a human health risk assessment of the impacts of air pollution, specifically particulate matter (dust), on the Port Hedland community which was undertaken on behalf of the Taskforce by external consultants.

The EHD provided advice to government on the assessment and made a number of recommendations to government on how exposure to particulate matter might be reduced so that public health is protected. The Taskforce expects to make its recommendations to government by December 2017.

### Newman:

Particulate matter is not regulated in regional mining towns, such as Newman, to the degree that it is in large populated centres. This is because it was reasonably believed to be less harmful than particulate matter in urban regions where it is known to have harmful effects in health, due to differences in particle size and composition. However, the recent review of dust management in Port Hedland indicates that regional dust may in fact have an impact on public health.

In October 2016, the EHD's senior toxicologists visited Newman together with the DWER to brief the Shire of East Pilbara on the potential dangers associated with dust exposure and the data required to further assess the health impacts and better regulate the industry.

DWER are presently validating data from Newman so that it can be used by the EHD for a public health assessment.



*Dust monitor located at Newman*

## Special Interest Group for Asbestos-in-soil

The Australian Local Government Association's (ALGA) Special Interest Group for Asbestos-in-soil (SIGNAL) hosted workshops in Sydney, Perth and Brisbane with presenters from industry, consulting and regulators to discuss a number of controversial asbestos issues. The EHD delivered the keynote presentation, entitled: *When, Where and How to Sample – and How to Interpret the Results for Risk Characterisation*.

Input from the workshops will be used to improve clarity and implementation of the [Guidelines for the Assessment, Remediation and Management of Asbestos-Contained Sites in Western Australia](#), currently being revised and updated. The seminar was well received by both government and industry attendees.

## Delusional infestation

Delusional infestation is a psychotic syndrome characterised by a person's firm and strong belief that their skin, body and/or close environment is infested by pathogens against all medical evidence. It is important to determine if there is any evidence of insects associated with the symptoms being reported by patients to allow general practitioners and mental health experts to make informed decisions regarding the appropriate treatment for rehabilitation.

To support the EHD's release (2016) of a guide to assist general practitioners in the diagnosis and management of delusional infestation patients, the EHD began offering a service to examine specimens for potential organisms of medial significance. In 2016-17, identification reports were provided for a total of 60 pathology samples, submitted by

general practitioners, pathology laboratories and pest controllers. A number of the samples submitted were characteristic of delusional infestation patients, including skin scrapings, dust and lint collected on sticky tape strips and collection jars containing dust and plant matter.



**Characteristic samples submitted by a patient with delusional infestation**

# MEDICAL ENTOMOLOGY



**Mosquito management and mosquito-borne disease surveillance are undertaken regularly in the southwest of WA (Mandurah to Busselton)**

**494**

**Mosquito traps set over 22 nights**

**61,891**

**Adult mosquitoes collected**

**ADULT MOSQUITOES TRAPPED BY REGION**

Peel - 26,648

Geographe - 22,588

Leschenault - 12,655

**38**

**Ross River virus isolates from mosquitoes**

**35 AERIAL LARVICIDE APPLICATIONS TOTTALING**

**4,017 ha**



**24**

**Sentinel chicken flocks managed throughout WA**

**3,807**

**BLOOD SAMPLES TESTED**

**Mosquito-borne virus infections detected in chickens**

**128**



Surveillance efforts throughout WA are used to inform public health warnings and interventions

## Funding Initiative for Mosquito Management in WA

The Funding Initiative for Mosquito Management in Western Australia (FIMMWA) came to a close on 30 June 2017. The initiative was established in 2013 to provide an additional \$1 million a year for four years to enhance mosquito management throughout the State.

A recent evaluation of the initiative indicates that FIMMWA built significant corporate knowledge and expertise within both State and local government authorities to deliver risk-based, effective mosquito management programs in those regions of WA at greatest risk from mosquito-borne diseases. A number of recommendations were also developed from data obtained in the evaluation to ensure the increased capacity for mosquito management is maintained into the future.

As a fitting tribute to a successful initiative, FIMMWA was shortlisted in the Institute of Public Administration Australia (IPAA) WA Achievement Awards 'Best Practice in Collaboration Across Government Agencies' category, although it was not the overall category winner.



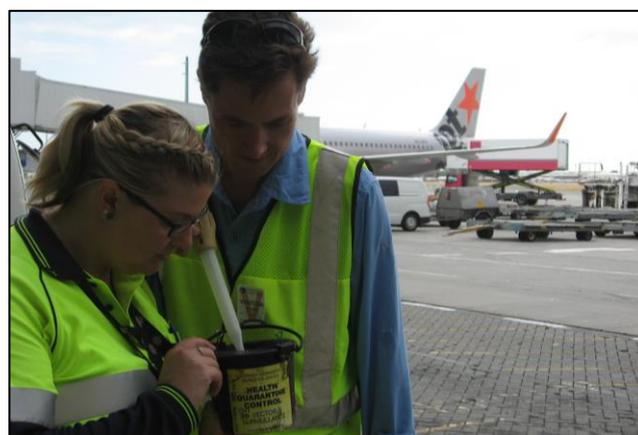
**Jim Dodds, Dr Michael Lindsay and members of the Medical Entomology team at the IPAA WA Achievement Awards**

## Exotic mosquitoes at Perth International Airport

Exotic mosquitoes pose a significant risk to public health in WA. Given some species are capable of transmitting mosquito-borne viruses currently not present in WA, including dengue and Zika, it is important that all first ports of entry into the State are monitored and managed to prevent establishment of exotic mosquitoes.

Several new measures were implemented across Australia by Commonwealth and state agencies and port managers, including at Perth International Airport, following numerous interceptions of exotic mosquitoes in 2014-15 and 2015-16. These initiatives appear to have been successful in reducing the number of exotic mosquito detections at Perth International Airport.

During 2016-17, the EHD confirmed two detections of *Aedes aegypti* (the dengue mosquito) associated with the Perth International Airport. These were collected from Commonwealth Department of Agriculture and Water Resources (DAWR) mosquito monitoring traps at a single freight depot.



**Ground surveillance for mosquito larvae at the Perth International Airport**

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The EHD conducted extensive ground surveillance for mosquitoes around the Airport freight depot at which the detections were made. The team also supervised and provided technical advice for mosquito control treatments and ongoing monitoring by DAWR to ensure that our State remains free of these exotic mosquitoes.

## Combined CLAG Forum 2017

The Department of Health's 6<sup>th</sup> annual combined Contiguous Local Authorities Group (CLAG) Forum was held in Mandurah on 22 June 2017. The forum was convened by the EHD, and brought together a range of stakeholders involved in mosquito management in WA. A total of 55 participants attended the event, including personnel from EHD, Pathwest, MozTrack, Heliwest, Edith Cowan University, South Eastern Regional Centre for Urban Landcare and representatives from 21 different local government authorities.

Key themes discussed at this year's forum included a range of FIMMWA projects, an update on mosquito management in WA and new surveillance techniques utilising unmanned aerial vehicles (UAV's or drones) and other technology. Several local government officers also presented on projects of interest, research studies and mosquito management initiatives recently undertaken in their jurisdictions.

The level of attendance at this one-day event is evidence that mosquito management remains a high priority for many local governments around WA. It is hoped that the information presented at the forum will be used as a tool by participants to improve current mosquito management programs throughout the State. While officers from local government in some regional areas were unable to attend due to travel logistics, many expressed a great interest in the proceedings. In response, electronic presentations and notes from the forum were made available to those who were unable to attend.



Local government representatives attending the 6<sup>th</sup> annual combined CLAG Forum

## Sentinel chicken pen improvements

Sentinel chicken flocks are employed in the north of WA for surveillance of medically important flaviviruses, including Murray Valley encephalitis and West Nile (strain Kunjin subtype) viruses. In an effort to maximise flock health and wellbeing, a risk assessment of sentinel chicken pens was undertaken in 2015-16 to identify several important pen design characteristics associated with lower chicken mortality. These included pen size, pen shade in mid-morning and mid-afternoon and airflow within pen buildings.

In 2016-17, the EHD provided funding grants through FIMMWA to sentinel chicken flock carers to carry out targeted design improvements for those pens identified by the risk assessment as needing upgrading. Whilst sentinel chicken flocks are well cared for, the provision of additional shade, cooling sprinklers, pen expansion and improved pen security to reduce predator entry are expected to further enhance flock wellbeing.



*Inspecting sentinel chicken flocks and trapping mosquitoes in the Kimberley region*

## Aerial larviciding hoppers and calibration

Aerial application of larvicide plays an important role in the effective management of mosquitoes in the State's southwest. To achieve larvicide application at the label rate, uniform on ground deposition and effective larval mortality rates, it is critical to achieve consistent and reliable product flow from the hopper outlets. This had been challenging with a previous hopper system. To enhance the program, the EHD recently negotiated with the current helicopter contractor to purchase a new set of hoppers that integrate GPS technology with an impeller based system to adjust the rate of granular larvicide dispersal based on the speed of the helicopter. This is the first time technology of this nature has been utilised in Australia. Significant time was spent during 2016-17 field trialling the new system to ensure it produced optimal results. The system will significantly improve the aerial larviciding program by allowing accurate application of larvicides within designated treatment zones.



*A helicopter calibration exercise in preparation for aerial larviciding in WA's southwest*

## Fight the Bite – public education campaign

*Fight the Bite* is a communication campaign that aims to raise community awareness of the health risks associated with mosquitoes. The campaign was relaunched over the 2016-17 mosquito season for its second year, achieving significant media traction and stakeholder engagement. Partnerships were established with over 40 local governments throughout State, the WA branch of the Australian Medical Association (AMA), doctors, commercial outdoor cinema providers and a range of employers in the mining/resources sector.

A key initiative for the season involved the supply of repellent in *Fight the Bite* kits to outdoor cinema and event stakeholders. This ensured patrons had access to an effective personal protection measure to prevent mosquito bites during a high risk period.

An evaluation of the campaign's two-year pilot period was undertaken in May 2017. This involved a follow-up phone survey of the general public and an online survey of local government representatives engaged in the campaign. A preliminary analysis of results indicates the campaign reached as many as 26 per cent of the survey population in some regions (Kimberley). Importantly, the campaign increased community awareness and improved prevention practices. The vast majority of local government representatives surveyed felt that *Fight the Bite* had significantly improved their communication efforts.

With FIMMWA ending in June 2017, the EHD will continue to play an overall role in managing *Fight the Bite* to retain campaign consistency, develop new initiatives and maximise stakeholder engagement.



Shire of Carnarvon promotes *Fight the Bite*



*Fight the Bite* presence at Science Week

# EVENTS

EHD plays an important role in approving, planning and assessing events throughout WA, as well as monitoring crowd incidents and event trends worldwide.



Assisted in the planning and approval of

# 35

events throughout WA



# 21

 events attended

Groovin' the Moo (Bunbury) ♦ Listen Out ♦ Adele concert  
Rottneast Castaway ♦ Santa's Magical Kingdom ♦ Sexpo  
ANZAC Day ♦ A Day on the Green ♦ The Compound Party  
Arcadia Australia ♦ Falls Downtown ♦ Perth Royal Show



## Perth Stadium

The EHD provided two representatives to consult on public health and safety matters identified at the new Perth Stadium, set to open in 2018. The EHD's role has been to ensure compliance with the *Health (Public Building) Regulations 1992*, to provide advice regarding access and egress procedures, emergency management and venue design that best facilitates crowd movement and to ensure the players' ice baths and spas comply with the *Health (Aquatic Facilities) Regulations 2007*.

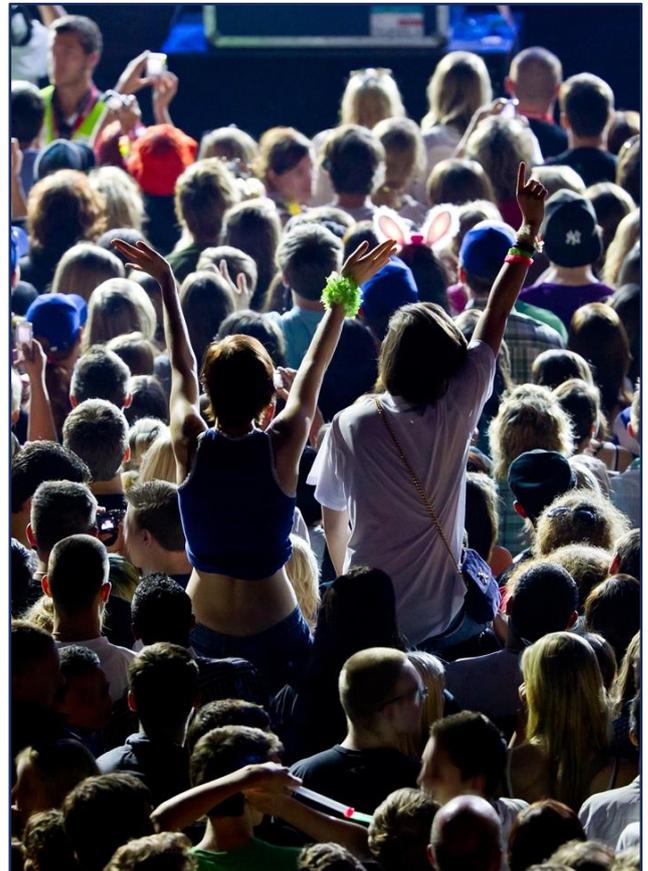
From September 2017, the EHD will be involved in the final assessments and approvals process associated with the Perth Stadium, alongside the Town of Victoria Park and the Department of Racing, Gaming and Liquor.



EHD officers inspecting the Perth Stadium

## Outdoor Festivals Forum

In August 2016, the EHD convened an Outdoor Festivals Forum. The forum provided an opportunity for environmental health officers and event staff involved in large/regular events to come together and discuss emerging event trends, concerns and best practice principles focusing on event safety. Speakers at the forum included representatives from the Civil Aviation Safety Authority and the City of Perth, discussing drone technology regulations and recently-developed local drone laws, respectively. Other speakers included the Executive Director of Environmental Health, WAPOL Sexual Assault Squad, National Drug Research Institute, Public Health Advocacy Institute of WA and an event first aider. The forum was well received by all and will be held annually into the future.



# ABORIGINAL ENVIRONMENTAL HEALTH

**\$8.38 million**

in Aboriginal environmental health expenditure

**22**

Aboriginal environmental health service providers

**69**

FTE staff employed by service providers to deliver program

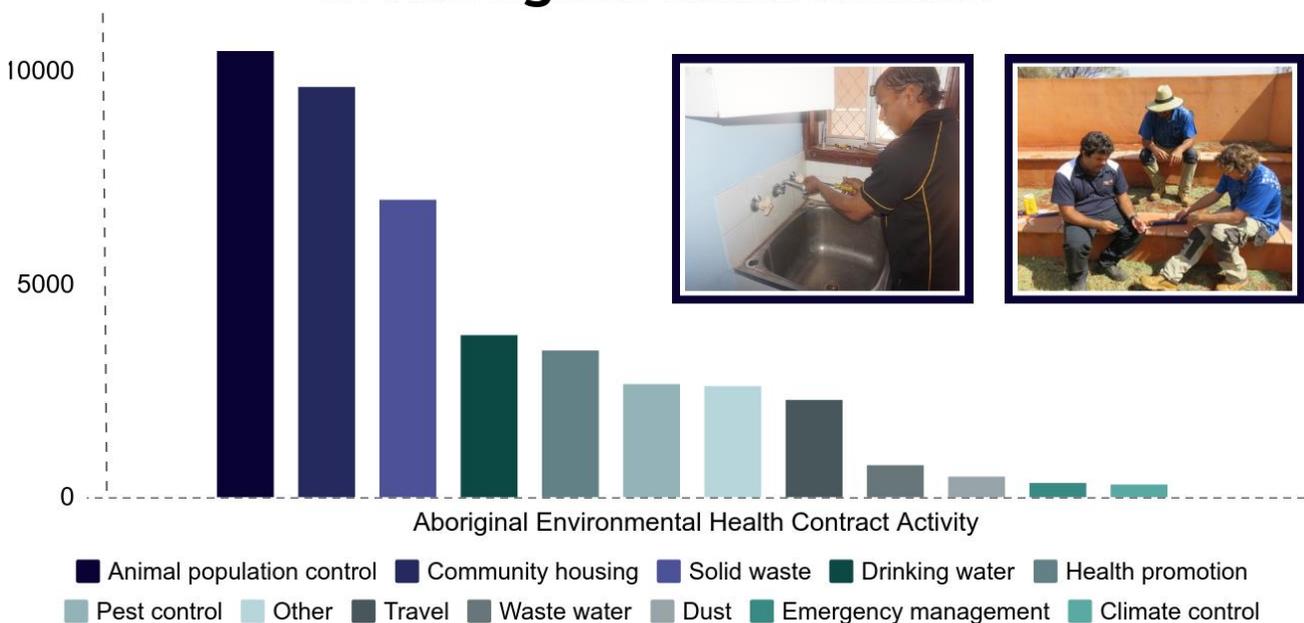
**43,652**

Environmental health actions performed in Aboriginal communities



Plumbing repair undertaken by an Aboriginal environmental health worker

## Environmental health actions performed in Aboriginal communities



## Contracts for Aboriginal environmental health

The EHD contracts 22 service provider agencies to deliver a range of basic environmental health services to the State's regional and remote Aboriginal communities. The services include the assessment, correction, control and prevention of environmental factors that adversely affect human health, in particular the provision of safe drinking water, appropriate management of solid waste, treatment of waste water, community housing, pest control, animal management and related environmental health promotion activities.

Contracted service providers comprise a range of Aboriginal medical services, Aboriginal controlled community organisations and local government authorities. In 2016-17, the EHD invested \$8.38million to provide these support services to regional and remote Aboriginal communities across WA. The program also provides employment opportunities for Aboriginal environmental health workers who have strong local cultural connections with the communities they service, as well as training and mentoring to increase their knowledge and capacity to improve community conditions.

## Aboriginal environmental health workforce development

The EHD partnered with qualified training organisations (Djaringo – Broome, Northern Region TAFE and Empower Education) to develop training courses in Certificates II/III in Indigenous Environmental Health. A key outcome from this collaboration is to build a trained, competent workforce to ensure the long term sustainability of contracted service providers in Aboriginal environmental health.

The training will be rolled out in selected regional centres in 2017-18, at which time it is expected that more than 40 staff from contracted service providers will enrol.

## Plumbing Regulations

The *Plumbers Licensing and Plumbing Standards Regulations 2000* were amended in December 2016 by the Department of Commerce to allow Aboriginal environmental health practitioners the ability to carry out emergency minor plumbing repairs in remote communities. After more than 13 years of lobbying for change, this is a significant step forward. Aboriginal environmental health practitioners employed by eligible service providers, who have attained a Certificate II in Indigenous Environmental Health or a Certificate II in Population Health, are now authorised to carry out [basic plumbing repair](#) work in any of WA's 274 remote communities, provided the work is needed urgently to prevent a risk to health or significant water wastage and a licensed plumber cannot reach the community quickly enough to fix the problem.



Aboriginal environmental health practitioner undertaking plumbing repairs

## Surgical Dog Control Training Program

In November 2016, the EHD assisted in the coordination of four-day Surgical Dog Control Training Program in the Ngaanyatjarra lands. A veterinary team from Murdoch University travelled to the region, conducting 56 sterilisation surgeries and administering over 70 vaccinations to dogs within the community. Whilst the Shire of Ngaanyatjarra runs a three-monthly veterinary health program, the ability to undertake surgical sterilisations has not been possible for many years. This effort was considered a great first visit. The outcomes of the program will assist in better managing domestic animal populations in communities and improving the general welfare of community dogs within the region.

## Dog Health Training Course

The EHD, in collaboration with the Shire of Ngaanyatjarraku, convened a dog health training course in Warburton from 20-23 November 2016. The course coincided with the visit to the Ngaanyatjarra lands by the Murdoch University veterinary team and was well attended by 15 representatives working in Aboriginal environmental health related disciplines. Most communities within the Goldfields region were represented, with attendees travelling from as far afield as Kalgoorlie. A key strategy of the program focuses on educating course participants about the importance of controlling domestic animal numbers in communities and teaching them how to euthanise animals humanely. This is also an important option in reducing suffering in ill and distressed animals.



Aboriginal EH practitioners  
learning euthanasia skills

## Regional forums

To enhance the State's Aboriginal environmental health program, the EHD encourages the 22 contracted service providers to meet within their own regions biannually. Regional forums have now been established in the Goldfields, Kimberley, Mid-West and Pilbara, providing a valuable opportunity for the EHD to develop and maintain a strong rapport with service providers and staff, deliver relevant training, exchange information on new initiatives and mentor individuals/teams, as required.

It is encouraging to see that the forums held in 2016-17 were well attended by a range of stakeholders, including other State government departments and not-for-profit agencies, each keen to coordinate a combined effort to improve the environmental health and general well-being of individuals living in remote communities.

## Squeaky Clean Kids

The EHD assisted the WA Country Health Service's (WACHS) roll out of the *Squeaky Clean Kids* project in communities throughout WA. The core aims of the program are to maximise hand hygiene, and in turn, reduce the incidence of trachoma and other diseases (e.g. skin infections, diarrhoea) influenced by the same environmental health determinants.

This is being achieved through the distribution of health promotion resources to encourage hand and face washing in school children and the provision of free soap for a period of two years, which is a barrier to good hygiene practices in remote Aboriginal communities. Aboriginal environmental health practitioners will perform quarterly safe bathroom assessments, assist in the distribution of soap and installation of soap holders/liquid soap dispensers.



Attendees at the Kimberley Pilbara Aboriginal EH Working Group Forum

# TOBACCO COMPLIANCE

2,558

## Store visits and audits

related to the Tobacco Products Control Act 2006

48



Complaints investigated

50



Infringements written

93



Warnings issued

3



Prosecutions issued



## Tobacco licensing

3,329

Tobacco licences renewed

503

New licences issued

14



Training sessions conducted



## Shisha and the Law

Shisha smoking, or hookah, is a method of smoking tobacco sweetened with fruit or molasses sugar through a bowl and hose. Shisha is growing in popularity and has emerged as a compliance issue in WA. In response, the EHD undertook a planned proactive operation to educate business owners about their responsibilities and obligations, and take strong compliance action where necessary.

The factsheet titled "[\*Shisha and the Law\*](#)" was updated to provide current information to business owners. Educational visits were then conducted to known shisha seller's premises to distribute the factsheet. A number of written warnings were issued at this time for stores not complying with current legislation. Follow-up visits to those stores issued with a warning were later conducted. Twenty-five per cent of stores revisited were then issued with an infringement notice for breaches of the legislation.

## Control Purchase Operation

Controlled Purchase Operations are conducted on targeted tobacco retail stores to determine their likelihood of selling tobacco products to minors and enforcing the law if they do. A Controlled Purchase Operation was conducted in the Perth metropolitan area, between September - October 2016. A male and a female aged sixteen years of age visited stores that were known to have previously sold cigarettes to a minor. The stores included delicatessens, lunch bars, supermarkets, newsagents, service stations and lottery kiosks. A total of 74 retail outlets that had previously sold cigarettes to a minor were visited, and an attempt to purchase cigarettes was made. Of these stores, 25 sold cigarettes to the underage youths, demonstrating the importance of conducting Controlled Purchase Operations. From this operation, 22 infringements (\$1,000) and three written warnings were issued to individuals who sold cigarettes to a minor.



# FOOD

## Roles and responsibilities

As the State government agency responsible for administering the food legislation, the EHD plays a key role in facilitating the implementation of legislative and non-legislative public health functions relating to the safety and suitability of food for human consumption. The EHD undertakes the following:



### National food regulatory system

Provides technical advice to the Minister for Health to support positions on amendments to the Australia New Zealand Food Standards Code, preparing written submissions and participating on behalf of the Minister for Health as a member of a number of national working groups and committees.



### Stakeholder support

Supports stakeholders to promote consistent implementation of the food legislation and food safety management systems through the development of a range of policies, strategies and guidance documents, as well as training opportunities.



### Food monitoring and surveillance

Coordinates food monitoring and surveillance activities at a State and national level for strategic data collection and analysis. Receives and actions pathogen detection reports and receives reports from enforcement agencies on the performance of regulatory functions.



### Regulation of the food industry

During 2016-17, EHD was the enforcement agency for 348 food businesses and controlling authority for 121 meat premises, issuing 48 improvement notices and 2 infringement notices.



### Incident management

Coordinates statewide and cross-jurisdictional food safety incident and outbreak investigations, and is the advisory body to enforcement agencies regarding food recalls.

## Processing of cricket powder for human consumption

The EHD received a proposal from the Shire of Murray in early 2017 regarding the processing of cricket powder for human consumption. This is the first proposal of its kind in WA. Throughout Australia, edible insects including *Zophobas morio* (super mealworm), *Achaeta domestica* (house crickets) and *Tenebrio molitor* (mealworm beetle) are considered non-traditional foods and as with any other food, are subject to a risk assessment that encompasses the *Food Act 2008 (WA)* and the Australia New Zealand Food Standards Code.

The EHD has been working with the Shire of Murray, as the appropriate enforcement agency, to conduct a risk assessment that considers inputs, growing conditions, processing, biosecurity and a thorough analysis of microbiological, chemical and physical hazards. Expertise has also been sought from other state health jurisdictions. The results of the risk assessment have been communicated to the enforcement agency to make a decision on registration of the food business.

## Assessment of food manufacturing businesses in WA

During 2016-17, the EHD delivered five information sessions to Food Act authorised officers from various WA local government authorities, seeking assistance with guidance on assessment of food manufacturing businesses.

Stakeholder engagement indicated that most of the assistance required was specifically in relation to the following topics: general assessment of food manufacturing businesses, particular assessment of medium and high risk food activities such as fermentation, assessment of food business skills and knowledge and general understanding of food recall issues.

Attendees were particularly interested to learn of the different hazards related to manufacturing Kombucha tea. During each session, the opportunity was taken to highlight the development of a new information package by the EHD, designed to provide guidance to local government on the assessment of food manufacturing businesses in WA.



Crickets ground into cricket meal for human consumption



## Unpasteurised milk removed from sale

In recent times, raw or unpasteurised milk products, such as 'bath milk', have been sold as cosmetic products. They are often marketed in this manner to circumvent the national regulatory requirements for the sale of milk for human consumption. As such, they are not required to undergo adequate treatment processes, such as pasteurisation.

The consumption of 'bath milk' has been linked to a number of food related outbreaks, most notably the tragic death of a toddler in Victoria. In response to this growing concern, the EHD investigated the sale of 'bath milk' in WA and found it to be in breach of the *Food Act 2008*. The EHD's investigation was successful and in one instance, facilitated the immediate removal of 'bath milk' from sale, thereby mitigating any further risk to public health and safety.

## Food safety management of *Salmonella*

WA experienced a higher than average number of *Salmonella* illness notifications in the first half of 2017. A key risk factor for *Salmonella* illness is the consumption of uncooked and undercooked eggs.

The EHD produced a suite of resources to assist the food industry and local government enforcement agencies to reduce this public health risk, and to provide guidance on recently introduced Primary Production and Processing Standards of the *Australia New Zealand Food Standards Code*. The suite of resources included information on the [safe handling of eggs and products containing eggs](#) for those in the food service industry. Guidance was also

provided to local government on the recently introduced [primary production and processing standards for eggs, poultry and sprouts](#) and the importance of optimising egg traceability by [stamping them with unique identifiers](#). This has been a successful endeavour, with the EHD register for known egg stamps in WA nearing 100. A final factsheet was written to assist [consumers with food safety at home](#), specifically related to eggs, and is available on the HealthyWA website.

## Australian Total Diet Study

The Australian Total Diet Study (ATDS) is Australia's most comprehensive assessment of consumers' dietary exposure to pesticide residues, contaminants and other substances in food. The ATDS is coordinated every two years by Food Standards Australia and New Zealand with food samples collected by Australian State and Territory food regulatory agencies, including the Department of Health.

The study examines food samples representative of a typical Australian diet and provides invaluable data to assist in determining whether food regulatory measures are providing adequate protection of consumer health and safety. The recent ATDS examined chemicals that may potentially migrate from packaging into food and found very low residues of some chemicals in a small number of samples. Although safety assessments on these levels concluded no safety concerns, it was identified that further work was required for two of the chemicals tested (phthalates). In response to these findings, a wider range of foods will be sampled in the next study, enabling a full dietary exposure assessment to be undertaken.

## Western Australian Shellfish Quality Assurance Program

The Western Australian Shellfish Quality Assurance Program (WASQAP) is a government-industry co-operative program that provides for the food safety of shellfish, specifically bivalve molluscs, commercially harvested in WA. As bivalve molluscs can bio-accumulate pathogens or toxins and are often eaten raw or lightly cooked, they are considered a high risk food product. The EHD manages the program in accordance with its legislative responsibilities through the development of a range of operational guidelines.

In 2017, the EHD and the Department of Primary Industry and Regional Development strengthened its collaborative relationship by partnering on the assessment of proposed commercial shellfish harvesting growing areas, to ensure adherence to the requirements of the WASQAP. The EHD remains committed to supporting the commercial shell-fish industry, whilst working to reduce the potential risk to public health associated with these food products.

## Report on the *Food Act 2008* (WA): 2013-2016

Enforcement agencies are required to report annually to the Department of Health's Chief Executive Officer (the Director General) on the performance of regulatory functions, under Section 121 of the *Food Act 2008* (WA). The EHD compiled a report summarising submissions from 139 enforcement agencies, between 1 July 2013 and 30 June 2016, providing an insight into the implementation of food safety legislation in WA.

This report involved an analysis of data on authorised officers, the registration and assessment of food businesses, compliance and enforcement activities and regulatory food safety auditing, as well as food safety education/training and highlights from enforcement agencies. As the State government agency responsible for administering the Food Act, the Department of Health's roles and responsibilities at a state and national level are also summarised here. This will be available online in the near future.



## Cruise vessel food-borne illness outbreak

The EHD became aware of a suspected food-borne illness outbreak on board a cruise vessel following information received from OzFoodNet WA. In response, an on-board visit was conducted to identify and control the contributory cause(s) and risk factors, which may have led to the reported cases.

The cruise vessel captain and staff were cooperative with the investigation, following direct communication with the vessel whilst it was still at sea.

Investigation outcomes were communicated to both the vessel and cruise operators. In addition, other known jurisdictions and states within Australia where the vessel was destined to port were contacted to share relevant information.

## Food Safety Week

The Food Safety Information Council selected 'raw and risky' foods as the theme for the Australian Food Safety Week which was held 6-12 November 2016. The EHD showed its support by hosting a series of short presentations for Food Act authorised officers at Grace Vaughan House.

Presentations included assessment of food manufacturing businesses, changes in food regulation at State and local level, shisha and the law, temporary and mobile food businesses, WA's response to undeclared allergens in coconut milk, food sampling, auditing framework, roles and responsibilities and emerging trends and risks. The highly successful event was well received by all who attended, providing an invaluable opportunity for the EHD to engage and consult with local government environmental health officers, who are considered one of its major stakeholders.



## Collaborative research with Telethon Kids Institute

The EHD participated in key research projects with the Telethon Kids Institute. This work includes ongoing collaboration with the Telethon Kids Institute on Amped Up, an energy drink study exploring young people's (aged 12-17) experiences, views and opinions of energy drinks; and completing a scoping review on maternal folic acid supplementation in late pregnancy and the potential for a link to the development of early life allergic diseases.

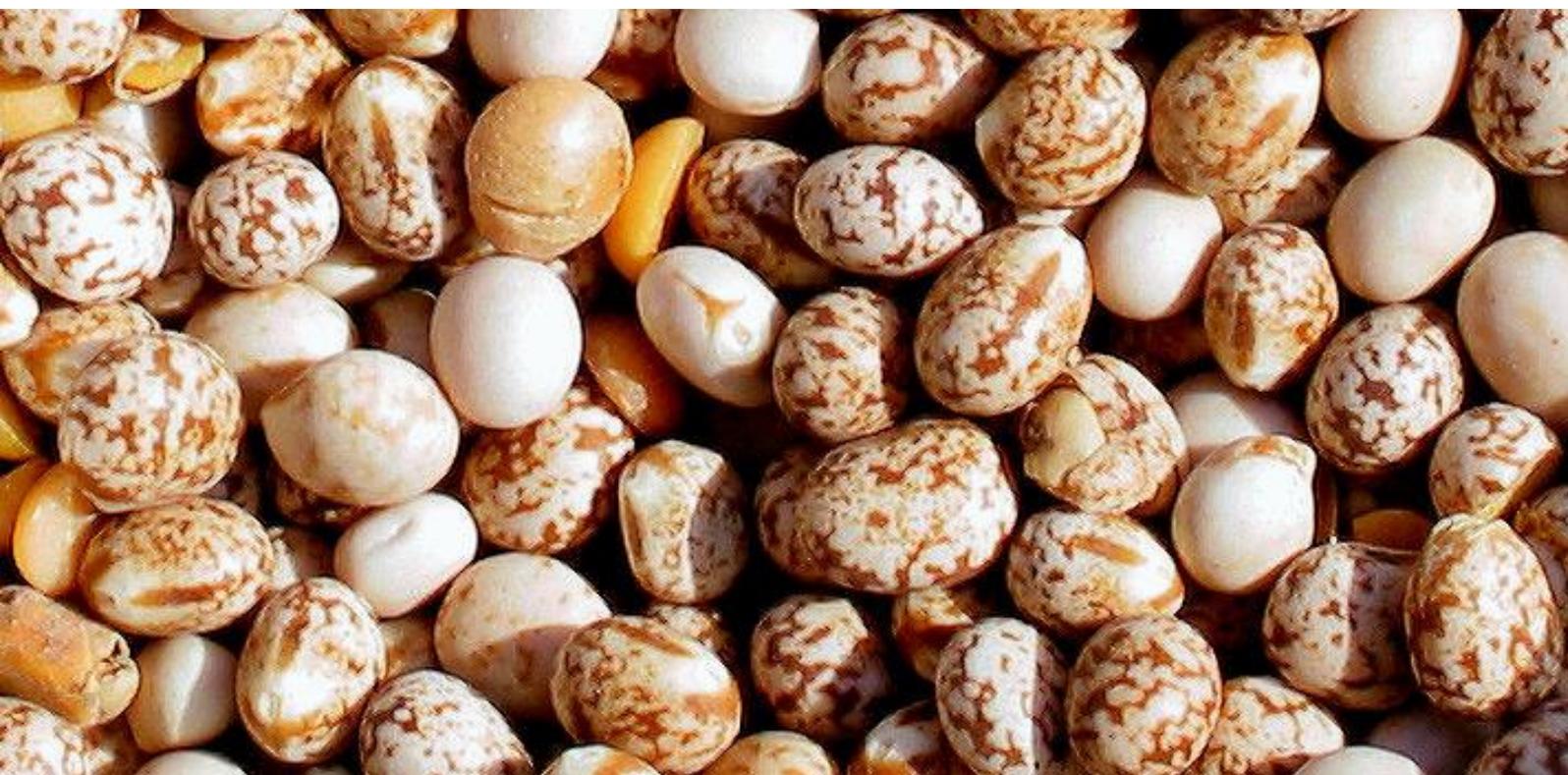
## Foodborne illness reduction strategy

The EHD is leading the development of a strategy focusing on food-borne illness reduction. This strategy will apply across the food chain from primary production through to retail, food service and the consumer. Advice is being sought from other agencies to ensure an across-government approach to implementation. This strategy will be in place until 2021, in conjunction with a proposed national strategy.

## Food Regulation System

The Food Regulation System incorporates laws, policies, standards and processes that cover a range of public health and consumer information matters including safety, labelling, composition and food handling requirements. A key priority of the Food Regulation System for 2017-2021, is to support the public health objectives to reduce chronic disease related to overweight and obesity. The EHD continued to participate in a wide range of these food regulation policy and standard development activities, including the voluntary Health Star Rating System, added sugar and fats/oils labelling of food products, and the energy labelling of alcoholic beverages.

Submissions were also lodged with Food Standards Australia New Zealand on extending the list of allergens requiring mandatory declaration for food products, supporting the inclusion of lupin as an allergen; and the voluntary addition of vitamin D to breakfast cereals, supporting the option of applying the nutrient profiling scoring calculator (NPSC) to vitamin D fortification of breakfast cereals.



# WATER

**37,727**

## Water monitoring samples collected

**18,418**

Aquatic facilities

**12,917**

Drinking waters

**4,706**

Natural environmental waters

**719**

Recycling schemes (Water Corp.)

**681**

Wastewater and recycling schemes

**95**

Abattoir and meat processors

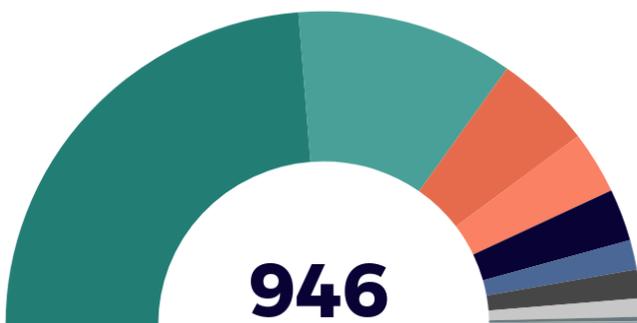
**65**

Legionella monitoring of air-conditioning

**126**

Miscellaneous

## Assessments and approvals



- WAPC application approvals for subdivision (449)
- Install/construct sewage treatment apparatus (209)
- Aquatic facility applications (94)
- Recycled water quality management plans (61)
- Reviews of development approval submissions (51)
- Biosolids applications (29)
- Product assessments for wastewater (28)
- Town planning scheme amendment proposals (18)
- Drinking water quality management plans (4)
- Recycled water scheme proposals (3)

## Responses to waste water overflows and sewage spills

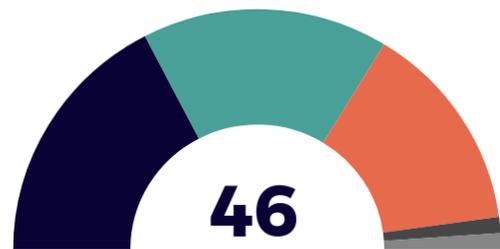
**173**



- Environmental (land) only
- Domestic
- Environmental (water) only
- Environmental and Domestic
- Environmental (minesite) only
- Commercial

## Responses to health events associated with natural environmental waters

**46**



- Algal bloom events (16)
- Fish kills (15)
- Shellfish alerts (13)
- Jellyfish (1)
- Chemical spill (1)

## Elizabeth Quay Water Spray Park

The Elizabeth Quay Water Spray Park was formally opened on 29 January 2016 but was shut down shortly after (22 February) for major upgrades following continuous unfavourable microbiological results. Following the upgrade and incorporation of additional safety controls, the water quality at the water spray park has remained compliant since its re-opening.

From this case study, a number of key factors were identified as playing a significant role in enhancing water quality and safety to patrons. These will be considered for all future water spray park developments. The factors include:

### **Disinfection residual contact time**

The contact time for a water spray park system is determined by the balance tank volume, water feature flow rate and balance tank baffle design. Sufficient contact time will ensure that the disinfection residuals have adequate time to properly disinfect the water before being recirculated back up to the spray pad.



**Elizabeth Quay Water Spray Park real-time water quality monitoring instruments**

### **Real-time fail-safe auto shutdown systems**

Critical control points for water spray parks that should be monitored in real-time include: filtration pumps flow rate, ultraviolet system transmission rate, pH and free chlorine residuals of the water. When any critical control point is out of target range, the water feature pumps should be tripped to shut down the water supplied to spray pad.

### **Shutdown recovery day**

A shutdown recovery day should be in place to enable the technical operators to undertake more extensive maintenance on the plant equipment. This also enables the water quality in the balance tank to re-stabilise and undergo continuous disinfection for a full 24-hour period without the reintroduction of new contaminant load.

The EHD is currently being recognised as leaders in this field and have been tasked by the National Environmental Health Forum to draft a National Water Spray Park Guideline which will be adopted nationally.



**Water filters at the Elizabeth Quay Water Spray Park plant room**

## Risk of cryptosporidiosis in water spray parks

*Cryptosporidium* is a chlorine-resistant protozoal organism that can survive for prolonged periods of time in the natural environment. Numerous confirmed outbreaks of cryptosporidiosis have been reported overseas, associated with water spray parks, highlighting the need for adequate control measures to reduce the risk of transmission at spray parks in WA.

In response to this risk, all new water spray parks in WA are required to have ultraviolet disinfection systems for the control of *Cryptosporidium* and to prevent potential outbreaks. Furthermore, clear signage is required to advise parents of young children on preventative measures that can be taken to minimise the introduction of faecal matter into the water body.

## Recycled water scheme auditing

Using the '[Low risk recycled water schemes audit tool](#)', a total of 18 recycled water schemes were audited by the Water Corporation and the EHD. Overall results indicate that councils need to improve their documentation practices and in some cases, invest in infrastructure improvements. The audit program will continue during the next financial year and the audit recommendations will help councils to improve compliance and allocate resources where required.

Audits of this nature are critical in ensuring management systems are functioning satisfactorily, risk to public health is minimised and the evaluation, sustainable use and continual improvement of a recycled water system remains a priority.



An ultraviolet disinfection system installed at a WA water spray park

## Regional towns benefit from fluoridated drinking water

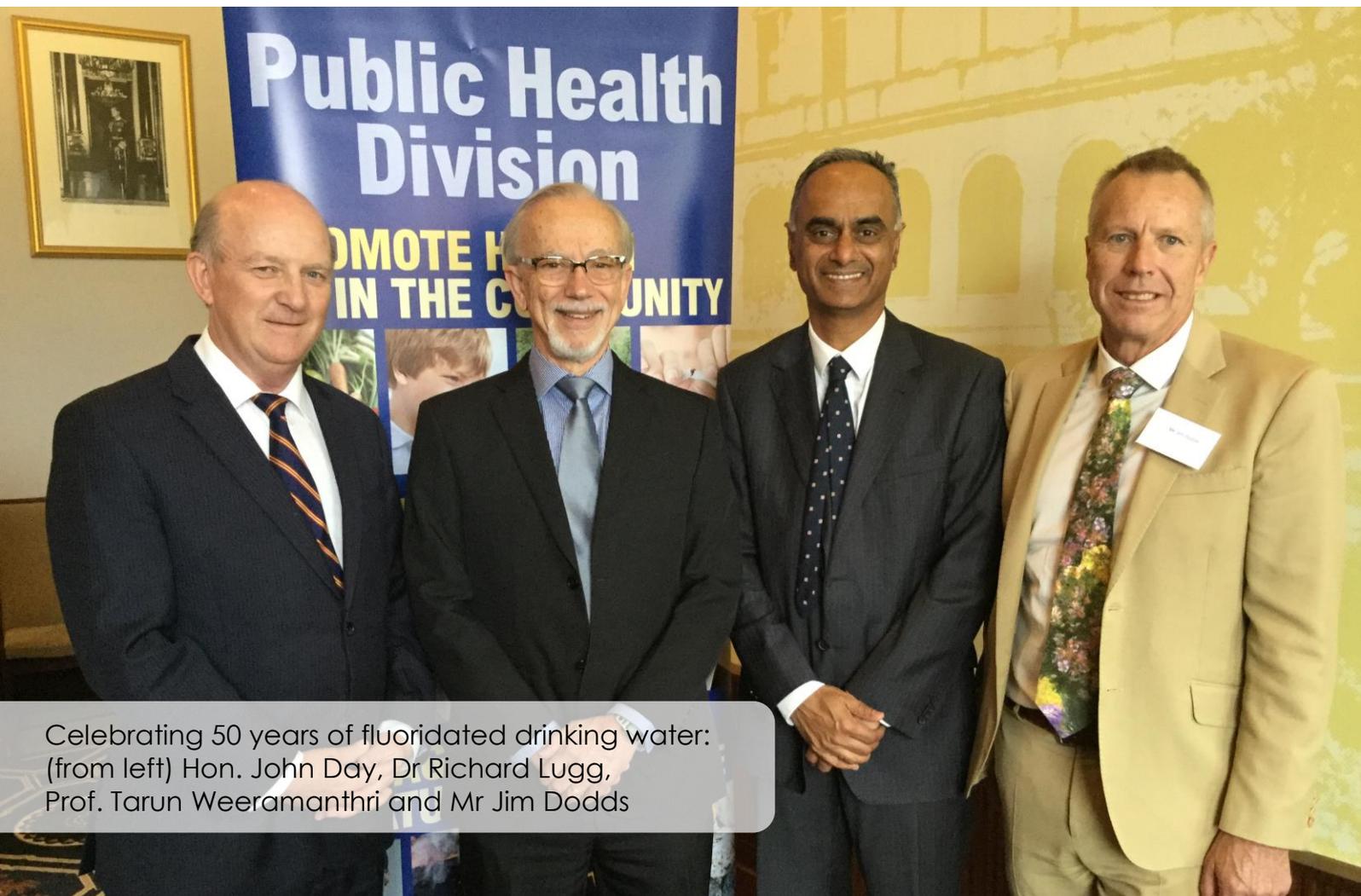
During 2016-17, community water fluoridation was extended to Moora, Dongara, Port Denison and Hedland (including South Hedland).

Water fluoridation is an important public health measure which plays a critical role in reducing dental decay and improving oral health, and is an effective way to deliver fluoride to all members of the community, regardless of age, individual motivation, socioeconomic status or the availability of dental care.

The benefits and safety of fluoridation are supported by overwhelming scientific evidence, including studies by the World Health Organization, Center for Disease Control (USA) and the National Health and Medical Research Council (Australia).

Approximately 92 per cent of the WA population receives fluoridated drinking water, including people in Perth, most Wheatbelt and southern regional communities and the larger centres of Kalgoorlie, Geraldton, Albany, Collie, Karratha, Broome and Derby.

The Department of Health also celebrated half a century of fluoridation, with the *Fluoridation of Public Water Supplies Act 1966* receiving royal assent on 18 November 1966. The anniversary was celebrated with an event at Parliament House, presided by the (then) Health Minister (and former dentist) Hon. John Day, Dr Richard Lugg, Prof. Tarun Weeramanthri (Assistant Director General, Public and Aboriginal Health Division) and Mr Jim Dodds (Executive Director, EHD).



Celebrating 50 years of fluoridated drinking water: (from left) Hon. John Day, Dr Richard Lugg, Prof. Tarun Weeramanthri and Mr Jim Dodds

## Land Capability Assessment for On-site Wastewater Management

To support wastewater professionals and local government environmental health officers, the EHD coordinated a three-day Land Capability Assessment for On-site Wastewater Management training course at Grace Vaughan House, 18-20 July 2016.

While the EHD coordinated the event, venue and catering, the course itself was run by the Centre for Environmental Training. Delegates participated in two practical exercises, involving a field trip to the Shire of Mundaring.

The course was well received by the 20 participants involved. Representatives from a range of local governments between the Shire of Wyndham East Kimberley to Esperance were in attendance.

## Domestic Hot Water Quality Management Plan

During the year the EHD approved an innovative Domestic Hot Water Quality Management Plan for a new development in Subiaco. This is the first time the EHD has been involved in reviewing and approving a drinking water quality risk management plan that applied to hot water supply only.

The plan manages the risks associated with domestic hot water supplied to individual lots in a multi-storey residential development, where the water originated from rainwater harvested from the building's roof surfaces. The plan is compatible with the 12-element risk management framework of the "Australian Drinking Water Guidelines". The cold water for this development was supplied from scheme water.



Course delegates at the Land Capability Assessment for On-site Wastewater Management training course

## Avon, Swan and Canning Rivers rainfall/flood event

During January-February 2017, Northam and the Perth metropolitan area experienced several days of unseasonal rainfall, resulting in flooding to some parts of the Avon, Swan and Canning Rivers' catchment. Following a number of reports of illness associated with recreational water contact activities in the Swan River, the EHD requested local government undertake routine, as well as specific, water sampling at implicated locations and adjacent stormwater drains.

Bacterial water sampling results confirmed high *E.Coli* results at a number of locations. Two extremely high *Enterococci* results were detected from the Inglewood Main Drain and Bayswater Main Drain, and a single high *Enterococci* result was also recorded at Hind Reserve. Extensive discolouration of the Swan River, which extended out into the Indian Ocean was noted throughout February. The EHD issued warnings to the general public to avoid swimming in the river/estuary for up to three days following heavy rainfall events (>10mm) to address the continuing concerns of discolouration and apparent risk.



**Discoloration at Bicton Baths**

Photo courtesy: City of Melville

## Zoonotic bacteria cultured from fish kill at Bowes River, Shire of Northampton

Following the notification of a fish kill event in the Bowes River, Shire of Northampton, in February 2017, the EHD were able to culture two potentially zoonotic bacterial species '*Photobacterium damsela*' and *Vibrio vulnificus* from fish samples collected.

*Photobacterium damsela* is a marine bacterium that can cause fatal disease in marine animals and humans, notably transmitted via skin cuts/abrasions that develop into rapidly fatal necrotising fasciitis. Whilst this location is not commonly frequented for recreational activities, the EHD recommended the Shire of Northampton install health warning signs as a precaution.



**Bowes River fish kill**

Photo courtesy: DWER

## Advisory Committee for the Purity of Water

The EHD operates a Secretariat for a number of important committees, including the [Advisory Committee for the Purity of Water](#).

Amongst other functions, this inter-departmental committee provides advice to the Minister for Health and the Minister for Water on protecting, monitoring and managing drinking water quality in WA and fosters inter-agency co-operation on related matters.

In 2016-17, the committee considered a number of key matters related to drinking water quality, including moving towards adoption of a new edition of the “*Australian Drinking Water Guidelines*” for WA, the Beenyup groundwater replenishment and water recycling project and issues affecting the quality of drinking water in remote communities in WA. The Committee also updated its “Code of Conduct” document during the year.

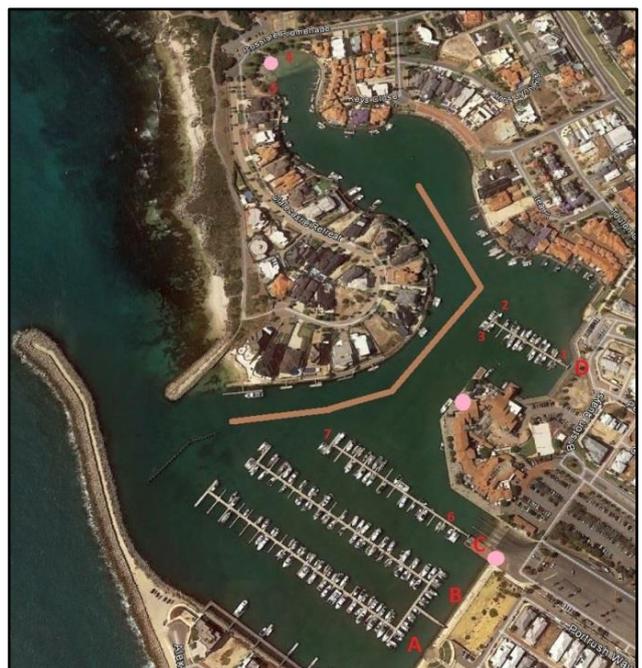
## *Alexandrium* spp. algal bloom at Mindarie Marina

On 16 December 2016, the EHD was advised by DWER of a potentially harmful red-tide algal bloom (*Alexandrium* spp.) at an extremely high level within the Mindarie Marina. *Alexandrium* spp. are a potentially paralytic shellfish poisoning (PSP) species, producing Saxitoxin which can accumulate in bivalve molluscs. Consumption of affected shellfish may result in neurosensory health effects and in rare cases, respiratory paralysis leading to death.

In response, the EHD advised the Mindarie Marina Authority to erect health warning signs around the marina and a [media warning](#) was issued.

The longevity of this bloom was likely extended by a wastewater overflow into the marina (20 December) following the rupture of an adjacent sewer pipe. Bacterial water sampling following this event, confirmed exceedingly high levels of faecal indicator bacteria (*E.Coli* and *Enterococci*). Additional health warning signs were erected by the Water Corporation at the children’s beach area.

In consequence to the severity of this bloom, independent sampling which included mussel collection from pylons within the marina for biotoxin analysis was undertaken. Mussel samples confirmed a biotoxin (Saxitoxin equivalent) for PSP, exceeding the maximum acceptable level by three times (*Australia and New Zealand Food Standards Code*). As high levels of *Alexandrium* spp. persisted for some time, the warnings were not removed until 16 January 2017. Algal blooms within the Mindarie Marina have occurred annually for approximately the past 15 years, but this occurrence has been the most significant to date and the first time a laboratory assessment has been undertaken.



**Algal bloom at Mindarie Marina**

Photo courtesy: Stuart Hellenen

# RADIATION HEALTH

Radiation Health provides the secretariat for the Radiological Council of Western Australia in enforcing the Radiation Safety Act 1975. The aim of the Act is to regulate the keeping and use of radioactive substances, irradiating apparatus (x-ray equipment) and certain electronic products (eg lasers and transilluminators) in order to protect public health and to maintain safe practices in the use of radiation.

## 9,872

### Total Radiation Safety Act applications

#### Registrations

**193** New applications

**843** Renewed

**106** Terminated



## 523

Amendments to registrations and licences (outside renewal process)

#### Licences

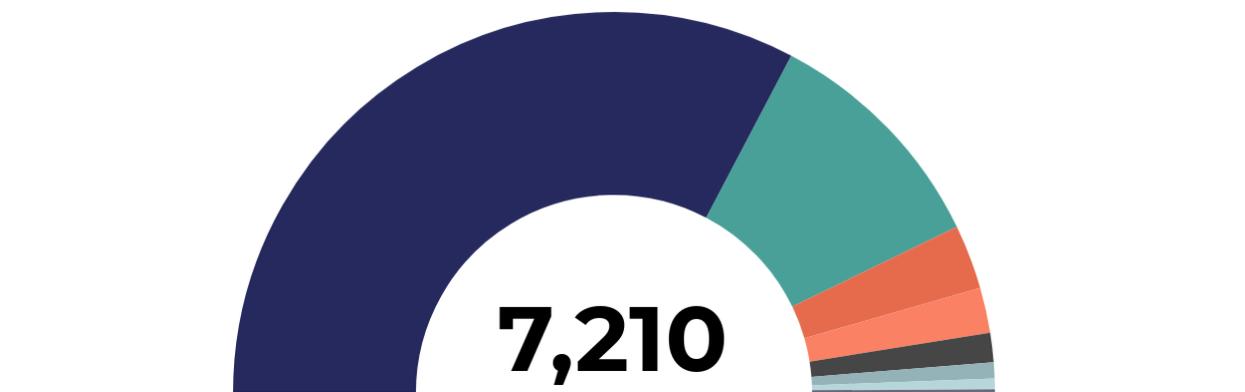
**789** New applications

**3,116** Renewed

**982** Terminated

### Various Radiation Health Unit activities

## 7,210



General incoming correspondence

Radiation safety examination papers assessed

Industrial radiation device compliance tests

Radiation incidents reviewed and actioned

Medical x-ray equipment compliance tests recorded

Applications to import radioactive substances

Building plans assessed for structural radiation shielding

Medical research projects: Patient radiation dosimetry and risk statements reviewed

# COMMUNICATION ACTIVITIES

**7**

Cabinet comments

**6**

Parliamentary questions

**25**

Memos to ADG

**34**

Memos to Executive Director

**42**

Freedom of information

**111**

Letters signed by Executive Director

**37**

Letters drafted for DG signature

**43**

Letters drafted for ADG signature

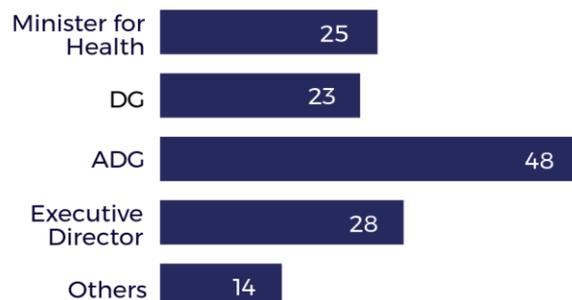
**46**

Contentious issue briefing notes

**138**

Briefing notes

Number of Briefing Notes  
(by recipient)



## Position acronyms

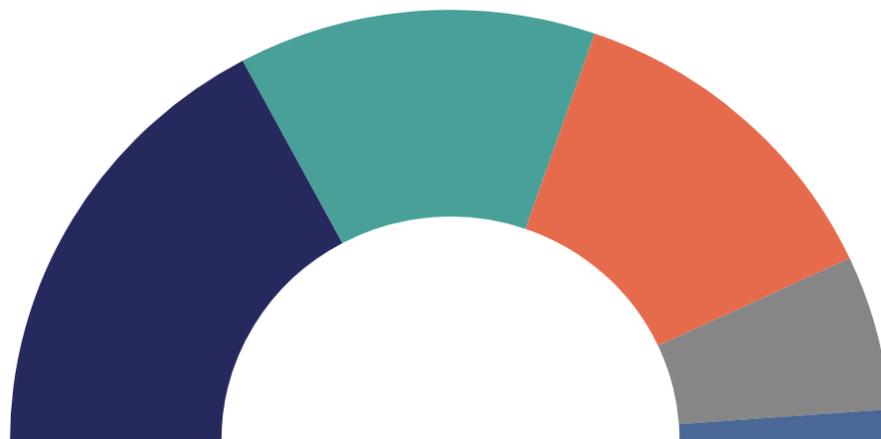
Director General (DG)  
Assistant Director General (ADG)

# COMMUNICATION ACTIVITIES

259

## Ministerials

### Number of Ministerials by EHD Unit



■ Water (89) ■ Food (68) ■ Environmental Health Hazards (66)  
■ Science and Policy (30) ■ Radiation Health (6)

### Common topics requiring a Ministerial response



Food labelling



Air pollution



Smoking laws



Climate change



Fluoridation of public  
water supplies



Chemical and  
pesticide spraying



Asbestos  
contamination



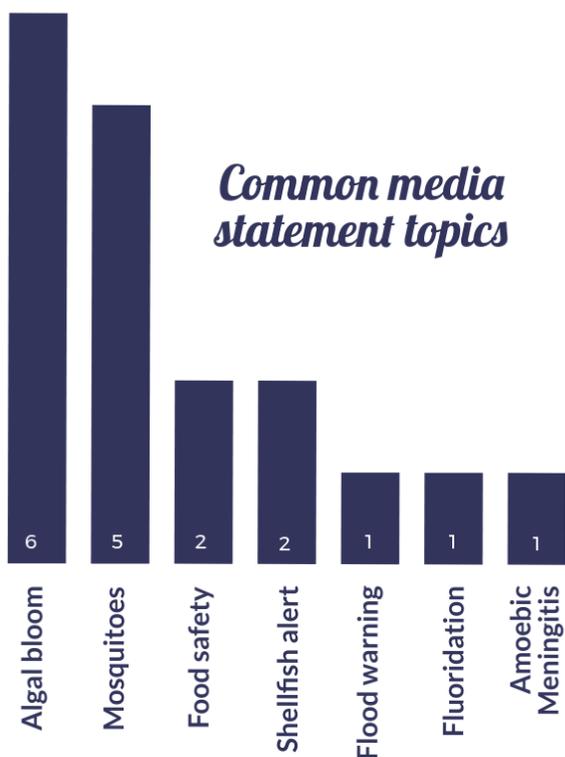
Telecommunication  
towers

# COMMUNICATION ACTIVITIES

18

## Media statements

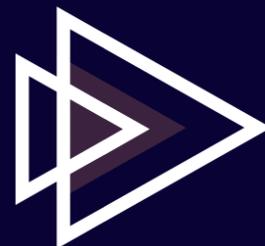
written and issued by the Department of Health



5

## Proactively sourced TV interviews

Significant radio and print media traction in response to media statements



24

## Media responses to journalist queries



- Environmental Health Hazards (14)
- Water (6)
- Food (3)
- Science and Policy (1)

9

## Ministerial media statements

focused on Environmental Health

# COMMUNICATION ACTIVITIES

Environmental Health Directorate

Significant print media attention generated in response to media statements



# FINANCIAL OVERVIEW

## EHD FUNDING

\$21.96 million

### Own source revenue breakdown by EH Unit



### EHD FUNDING SOURCE



- State government (\$18.93m)
- Own source revenue (\$2.03m)
- Minister's directive (\$1.0m)

## EHD EXPENDITURE

\$20.69 million



### Workforce expenditure breakdown by EH Unit



- Environmental Health Hazards
- Science and Policy
- Radiation Health
- Food
- Water
- System Support and Licensing
- Other

### EHD EXPENDITURE



- Employee expenditure (\$9.65m)
- Aboriginal EH expenditure (\$8.38m)
- Other goods and services (\$2.66m)

# FINANCIAL OVERVIEW



**\$8.38 million**

for the provision of environmental health services in Aboriginal communities



**\$1.9 million**

for the testing of water and food samples through PathWest laboratory



**\$1.24 million**

to assist local governments in the management of mosquitoes and mosquito-borne disease



**\$640,000**

to control mosquito populations in the southwest of WA through aerial larviciding



**\$227,000**

for testing of food samples through ChemCentre under the WA Food Monitoring Program

# Committees

During 2016-17, representatives from the EHD participated in the following committees and working groups:

<b>Committee/Working Group</b>	<b>Organisational level</b>
Access to Agricultural Chemicals Working Group	<i>National</i>
Advisory Committee for the Purity of Water (ACPOW)	<i>State</i>
Advisory Committee on Novel Food	<i>National</i>
Air Pollution and Health Network	<i>State</i>
Air Quality Coordinating Committee	<i>State</i>
Asbestos Safety and Eradication Council (ASEC) - for Asbestos Safety and Eradication Agency	<i>National</i>
Australasian College of Toxicology & Risk Assessment (ACTRA)	<i>National</i>
Australian Council of Smoking and Health (ACOSH)	<i>National</i>
Australian Meat Regulators Group (AMRG)	<i>National</i>
Australian Meat Regulators Group (AMRG)	<i>National</i>
Australian Shellfish Quality Assurance Advisory Committee	<i>National</i>
Avian Industries Consultative Group Meeting	<i>National</i>
Cockburn Sound Management Council	<i>State</i>
Contiguous Local Authorities Groups (x17 individual CLAGs)	<i>Local</i>
CRC for Water Sensitive Cities Western Regional Advisory Panel	<i>State</i>
Department Executive Committee (DEC) - Risk and Audit Sub-committee	<i>State</i>
Environmental Health Standing Committee (enHealth)	<i>National</i>
enHealth Advocacy Committee	<i>State</i>
enHealth Technical Working Group on Environmental Health (TWGEH)	<i>National</i>
enHealth Water Quality Working Group	<i>National</i>
Fluoridation of Public Water Supplies Advisory Committee	<i>State</i>
Food-borne Illness Reduction Strategy – Across Government Advisory Group	<i>State</i>
Food Regulation Standing Committee (FRSC)	<i>National</i>
FRSC Primary Production and Processing Working Group	<i>National</i>
FRSC Strategic Planning Working Group	<i>National</i>
Front of Pack Labelling (FoPL) Committee	<i>State</i>
Health Star Rating (HSR) Dairy Alternatives Working Group	<i>State</i>

*Continued overleaf*

# Committees cont.

During 2016-17, representatives from the EHD participated in the following committees and working groups:

<b>Committee/Working Group</b>	<b>Organisational level</b>
Health Star Rating (HSR) Social Marketing Group	<i>State</i>
Implementation Subcommittee for Food Regulation (ISFR)	<i>National</i>
Interagency Collaborative Working Group for Recreation in Water Catchments	<i>State</i>
ISFR Evidence, Data and Information Working Group	<i>National</i>
ISFR Food Safety Management Working Group	<i>National</i>
ISFR Food-Medicine Interface Working Group	<i>National</i>
ISFR Nutrition, Health and Related Claims Working Group	<i>National</i>
Joint Consultative Committee (JCC)	<i>State</i>
Local Health Authorities Analytical Committee (LHAAC)	<i>National</i>
Minimum Training Licensing Requirement Working Group	<i>National</i>
Mosquito Control Advisory Committee (MCAC)	<i>State</i>
Mosquito Control Association of Australia (MCAA)	<i>National</i>
National Arbovirus and Malaria Advisory Committee (NAMAC)	<i>National</i>
National Trachoma Control and Surveillance Reference Group	<i>National</i>
Pesticides Advisory Committee (PeAC)	<i>State</i>
Policy Engagement Group (PEG)	<i>State</i>
Policy Framework Project Advisory Group	<i>State</i>
Public Buildings Working Group	<i>State</i>
Public Health Act Reference Group	<i>State</i>
Smoke Management Liaison Group	<i>State</i>
Special Interest Group for Asbestos-in-soil (SIGNAL)	<i>State</i>
Steering Committee – Western Trade Coast Managed Aquifer Recharge Feasibility Study	<i>State</i>
WA Asbestos Across-Agency Group	<i>State</i>
WA Health Emergency Management Committee	<i>State</i>
Wastewater Services & Groundwater Replenishment Health Advisory Committee	<i>State</i>
Working Group for Aboriginal and Torres Strait Islander Environmental Health	<i>National</i>

# Publications

The following peer-reviewed publications were co-authored by individuals from the EHD:

Boeyen J, Callan AC, Blake D, Wheeler AJ, **Franklin P**, Hall GL, Shackleton C, Sly PD, Hinwood A (2017). *Investigating the relationship between environmental factors and respiratory health outcomes in school children using the forced oscillation technique*. Int J Hyg Environ Health 220(2 Pt B): 494-502.

**Franklin P**, Reid A, Olsen N, Peters S, de Klerk N, Brims F, Threlfall T, Murray R, Musk AB (2016). *Incidence of malignant mesothelioma in Aboriginal people in Western Australia*. Aust N Z J Public Health 40(4): 383-7.

Inglis TJ, Bradbury RS, McInnes RL, Frances SP, Merritt AJ, Levy A, **Nicholson J**, **Neville PJ**, **Lindsay M**, Smith DW (2016). *Deployable Molecular Detection of Arboviruses in the Australian Outback*. The Am J Trop Med Hyg 95(3): 633-638.

**Janes R**, **Jardine A**, **Neville P**, **Nicholson J**, **Lindsay M** (2017). *Mosquito (Diptera: Culicidae) communities of metropolitan Perth, Western Australia, and implications for managing pest and public health risks*. Austral J Entomol.

Available online: <http://onlinelibrary.wiley.com/doi/10.1111/aen.12280/full>

Larcombe AN, Janka MA, Mullins BJ, Berry LJ, Bredin A, **Franklin PJ** (2017). The effects of electronic cigarette aerosol exposure on inflammation and lung function in mice. Am J Physiol Lung Cell Mol Physiol; 313(1): L67-L79.

Mainali S, Lamichhane RS, Clark K, Beatty S, Fatouros M, **Neville P**, Oosthuizen J (2017). *“Looking over the Backyard Fence”: Household and Mosquito Control*. Int J Environ Res Public Health 14(3): 246.

Shi M, **Neville P**, **Nicholson J**, Eden JS, Imrie A, Holmes EC (2017). *High-resolution metatranscriptomics reveals the ecological dynamics of mosquito-associated RNA viruses in Western Australia*. J Virol 10(91): 1-17.

**McStay CL**, Prescott SL, Bower C, Palmer DJ (2017). *Maternal folic acid supplementation during pregnancy and childhood allergic disease outcomes: a question of timing?* Nutrients 9(2):123.

Melody SM, Bennett E, Clifford HD, Johnston FH, Shepherd CC, **Alach Z**, **Lester M**, Wood LJ, **Franklin P**, Zosky GR (2016). *A cross-sectional survey of environmental health in remote Aboriginal communities in Western Australia*. Int J Environ Health Res 26(5-6): 525– 35.

van den Hurk AF, **Nicholson J**, N. W. Beebe, J. Davis, O. M. Muzari, R. C. Russell, G. J. Devine and S. A. Ritchie (2016). *Ten years of the Tiger: Aedes albopictus presence in Australia since its discovery in the Torres Strait in 2005*. One Health 2: 19-24.

# Yearbook contributors

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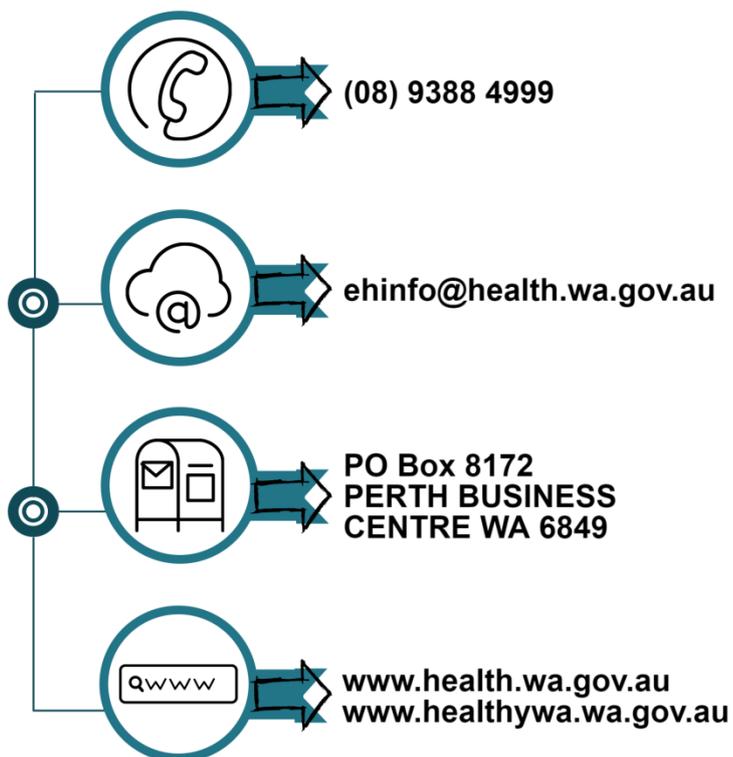
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