



Australian Government  
Department of Defence

# A Program Perspective

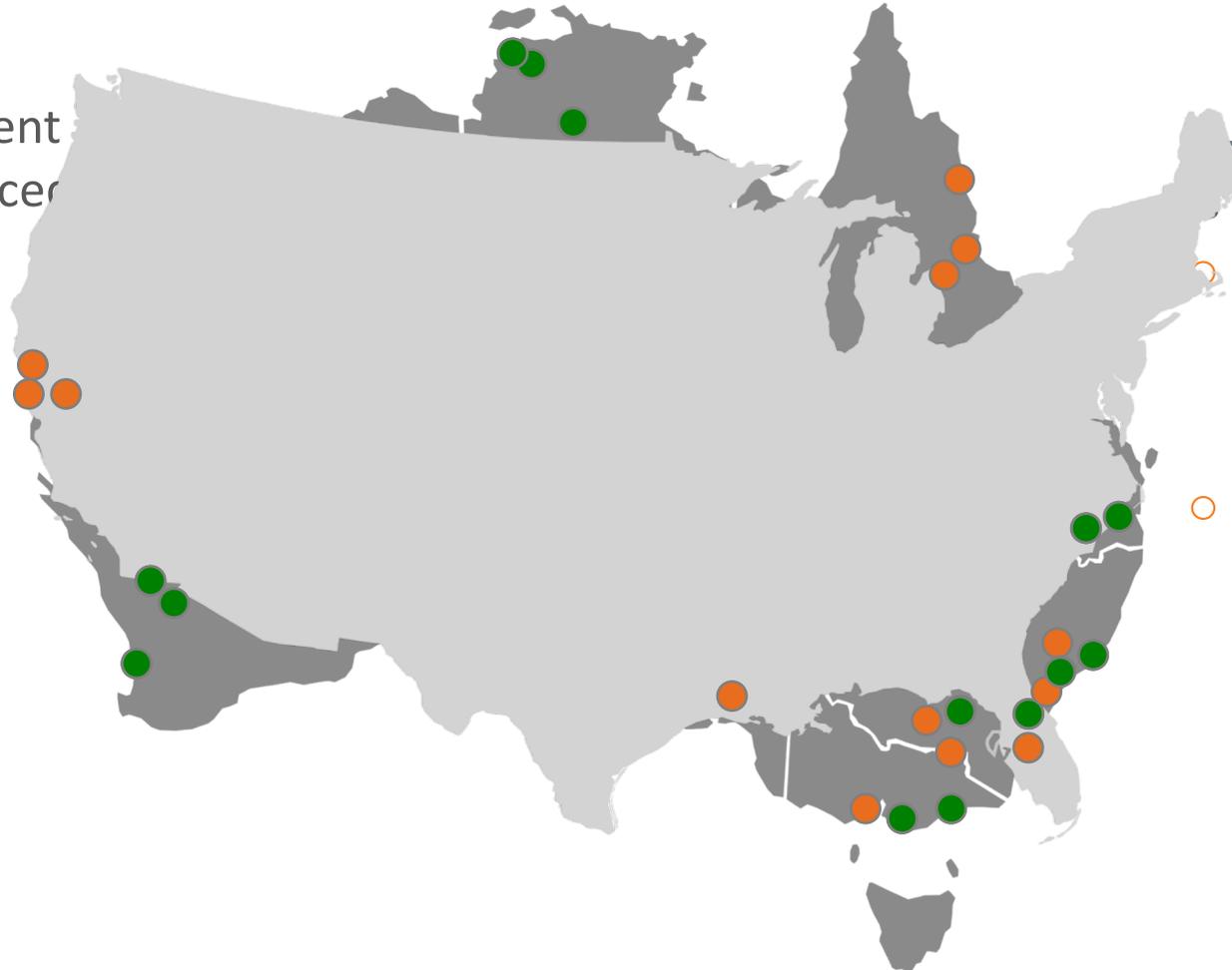
**Luke McLeod, Assistant Secretary**  
**PFAS Investigation and Management Branch**

SERDP • ESTCP  
**SYMPOSIUM**  
2018 | Enhancing DoD's Mission Effectiveness

# About the Program

The Australian Department of Defence has commenced environmental investigations at 27 properties around the country.

- Investigation Sites
- Management Sites



The purpose of the program is to:

- identify the nature and extent of PFAS on and around Defence properties.
- research and implement remediation and management activities to reduce the impact of PFAS contamination.

# Why

## Science

Persistent and Bioaccumulative

Potential for Migration

Precautionary Principle



## Public Policy

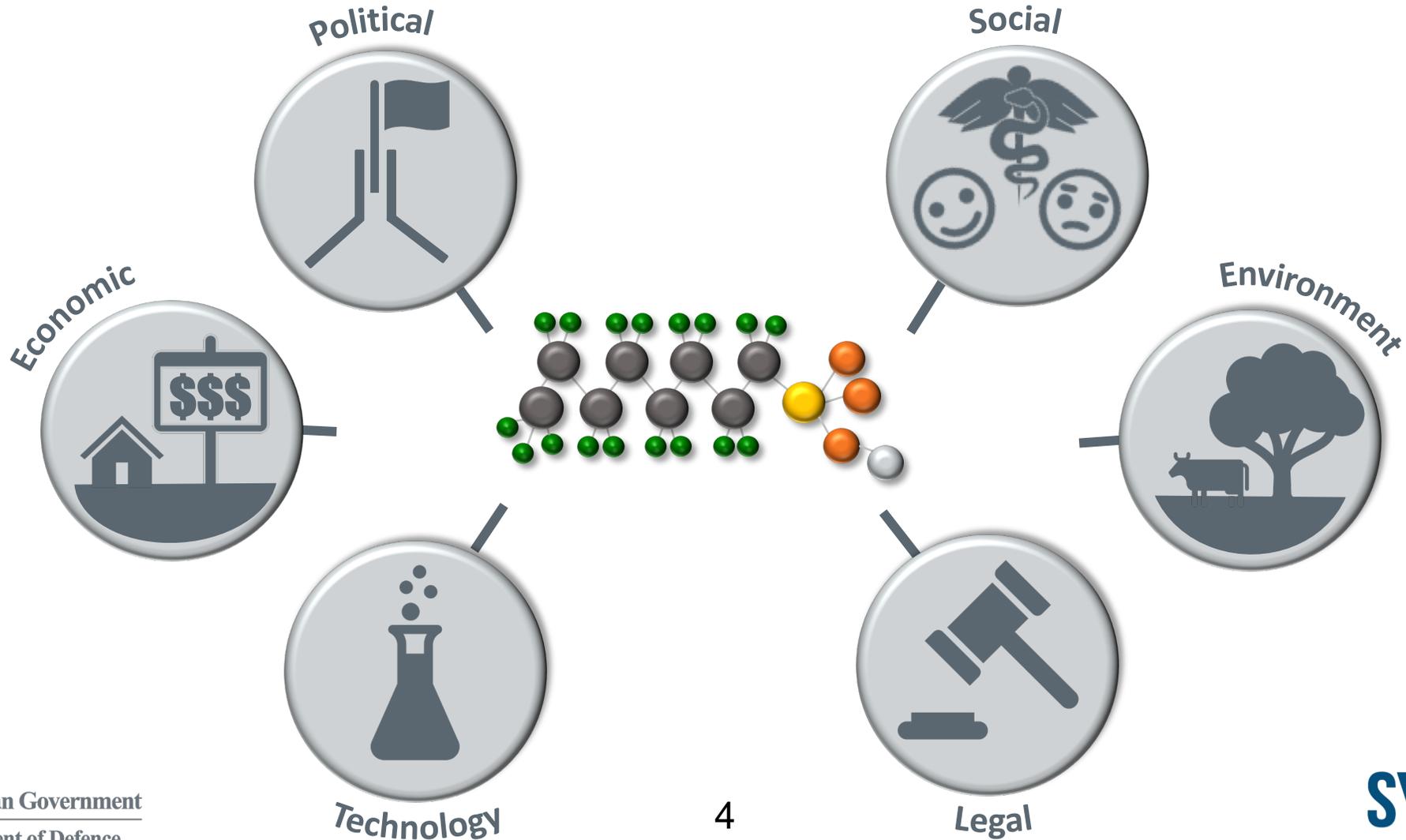
Responsible Management  
of the Environment

Perception

Accountability



# Influencing Factors



# Functions of the Website

The screenshot displays a website interface with a navigation menu on the left and a main content area on the right. The navigation menu is organized into three columns: 2018 Responses, 2017 Responses, and 2016 Responses. Under the 2018 Responses column, there are three expandable sections for the months of October 2018, September 2018, and August 2018. The August 2018 section is currently expanded, showing a list of 12 items, each with a red bar on the left and a date on the right. An orange arrow points from the 'Forest Hill Sewerage Treatment Facility - 9 August 2018' item in the list to a detailed view of a response on the right. This detailed view is titled 'Own Drainage Study' and includes a 'Response provided to journalist' dated 09 August 2018. The response text discusses PFAS contaminants in the effluent at Wagga City Council's Forest Hill Sewerage Treatment Plant and lists three questions from a journalist. The response text explains that Defence has reached an agreement with Wagga City Council to address the issue within 18 months and provides a link to a detailed environmental investigation report. The response also mentions that Defence has commenced a Human Health and Ecological Risk Assessment (HHERA) report and has met with the Wagga City Council to discuss the matter. The response concludes by stating that Defence is committed to reducing exposure pathways from PFAS to affected communities through management activities based on the findings of the environmental investigations.

2018 Responses	2017 Responses	2016 Responses
▶ October 2018		
▶ September 2018		
▼ August 2018		
Jervis Bay Investigation Update - 31 August 2018		
Bandiana Investigation Update - 30 August 2018		
Port Stephens Council Submission to the Parliamentary Inquiry - 30 August 2018		
Katherine Water Supply - 28 August 2018		
Salt Ash Sampling - 17 August 2018		
RAAF Williams Water Use Survey - 14 August 2018		
Follow-up Questions on Salt Ash Investigation - 14 August 2018		
Salt Ash Air Weapons Range Investigation - 10 August 2018		
Gingin Investigation - 10 August 2018		
Katherine Class Action and Management Activities - 10 August 2018		
Forest Hill Sewerage Treatment Facility - 9 August 2018		
Forest Hill Sewerage Treatment Facility and Kapooka Drainage - 9 August 2018		

**Own Drainage Study**

**Response provided to journalist**  
09 August 2018

**Questions:**

We are seeking a response from Defence regarding the issue of PFAS contaminants in the effluent at Wagga City Council's Forest Hill Sewerage Treatment Plant.

1. Wagga City Council states that it has reached an agreement with Defence that it (Defence) will come with a solution to the contamination issue within 18 months.
  - a. What might this solution involve?
  - b. How achievable is the 18-month timeframe?
2. What steps will Defence be taking now to address the contamination issue?
3. Had the EPA made Defence aware of the Order it had place against Council regarding the discharge of effluent from the Forest Hill Sewerage Treatment works?

**Response:**

In May 2017, Defence commenced a detailed environmental investigation to better understand the nature and extent of per- and poly- fluoroalkyl substances (PFAS) contamination on and around RAAF Base Wagga. A detailed report containing all investigation findings was published in June 2018, and is available for download from the Defence website:

<http://defence.gov.au/environment/pfas/Wagga/>

As part of the detailed environmental investigation, samples were taken at RAAF Wagga and in the surrounding area, including the Forest Hill Sewerage Treatment Facility. This investigation detected PFAS in the treatment facility's effluent ponds. As a result, Defence committed to undertake additional sampling to better understand the nature and extent of PFAS concentrations.

The next step of the detailed environmental investigation is to conduct a Human Health and Ecological Risk Assessment (HHERA) report. The report will consider the results of all sampling undertaken to assess a range of exposure risks in the vicinity of RAAF Wagga, including in association with the Forest Hill Sewerage Treatment Facility. The risk assessment report is expected to be finalised and presented to the community in the fourth quarter of 2018.

Defence met with the Wagga City Council on Monday 6 August to discuss this matter. During the meeting, Defence advised it would continue to update the Council and local community as additional information becomes available. Defence committed to cooperating with the Council to understand the nature and extent of any PFAS in the sewage system that might have originated from RAAF Wagga.

Defence is committed to reducing the exposure pathways from PFAS to affected communities through management activities based on the findings of the environmental investigations. Where required, Defence will consider any potential management decisions which are technically sound and take the findings of the HHERA report into consideration.

Questions regarding the Council's actions should be directed to the council.

**Response provided to journalist**  
09 August 2018

# Operating in the Media Spotlight

Defence  
silent on  
off-base  
clean up

Toxic foam debacle in national spotlight

**Chemical  
tests are  
alarming**

**Fears of more  
tainted sites**

**ALP irate at  
toxin report**

Aussies endangered  
by **secretive** Defence

**Shock** blood results meet wall of silence

Coalition  
against  
**toxic taint**

**Contradictory maps  
muddying the waters**

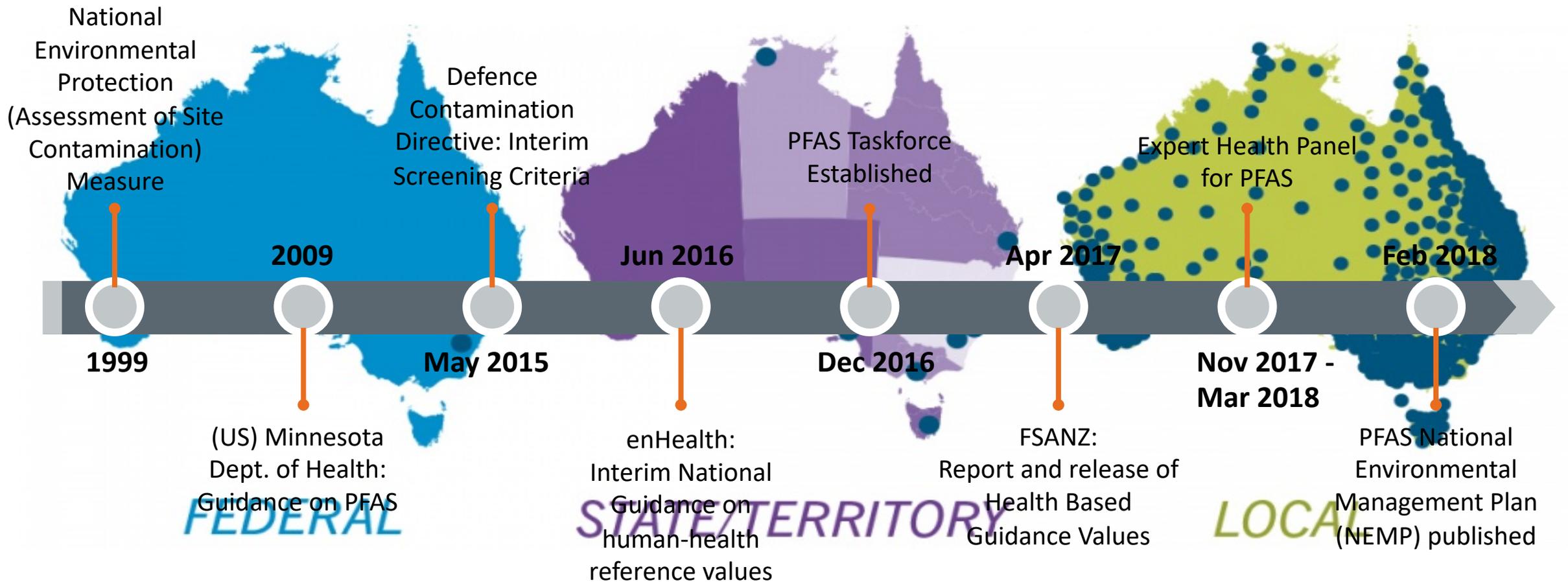
When the buck stops,  
**just point the finger**

**“**  
OUR COMMUNITY  
EXPECTS  
**TRANSPARENCY.**

Experts demand clarity amid the confusion



# Australian Regulatory Environment

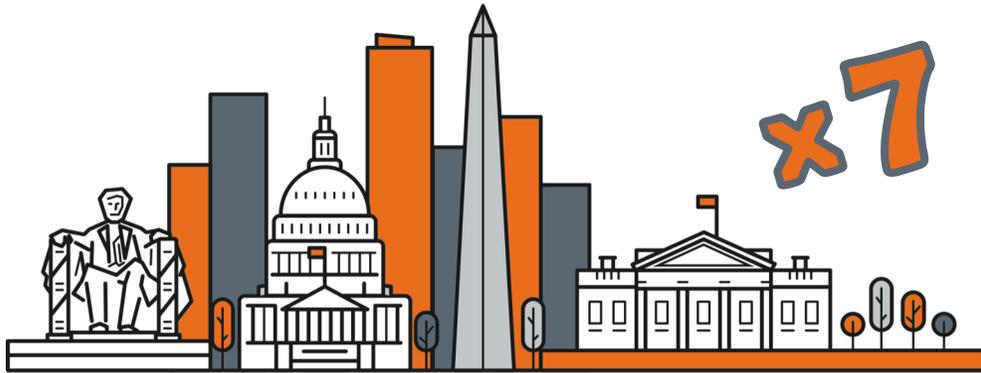


# Status of Investigations

Preliminary Site Investigation	Detailed Site Investigation	Human Health and/or Ecological Risk Assessment	PFAS Management Area Plan
Oakey	6 Years, 2 Months		1 Qtr 2019
Williamtown	3 Years, 4 Months		1 Qtr 2019
Pearce	3 Years, 2 Months		1 Qtr 2019
East Sale	2 Years, 3 Months		Complete
Albatross	2 Years, 9 Months		1 Qtr 2019
Edinburgh	2 Years, 1 Month		
Jervis Bay	2 Years, 1 Month		
Townsville	1 Year, 11 Months		
Darwin	1 Year, 11 Months		1 Qtr 2019
Tindal	1 Year, 11 Months		1 Qtr 2019
Amberley	1 Year, 11 Months		
Stirling	1 Year, 9 Months		1 Qtr 2019
Richmond	1 Year, 9 Months		1 Qtr 2019
Wagga	1 Year, 9 Months		1 Qtr 2019
Cerberus	1 Year, 5 Months		Complete
Holsworthy	1 Year, 8 Months		
Robertson	1 Year, 4 Months		4 Qtr 2018
Bandiana	1 Year, 8 Months		
Harold E Holt	1 Year, 8 Months		
Learmonth	1 Year, 8 Months		
Lavarack	1 Year, 7 Months		
Gingin	1 Year, 4 Months		1 Qtr 2019
Williams	1 Year, 3 Months		
Kapooka	1 Year, 3 Months		
Singleton	1 Year, 1 Month		
Cairns	1 Year		

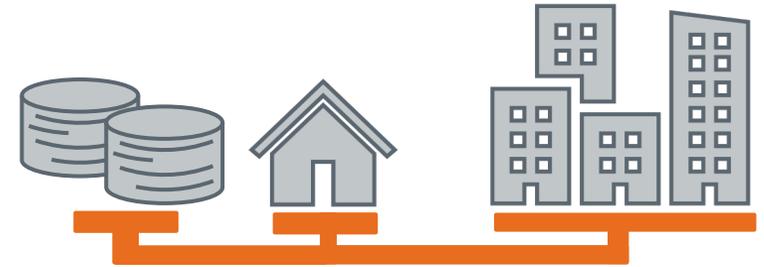
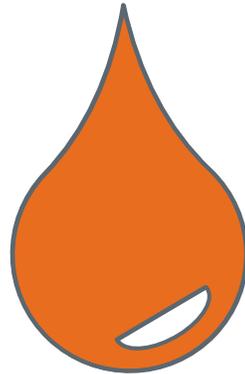


# Program Dashboard



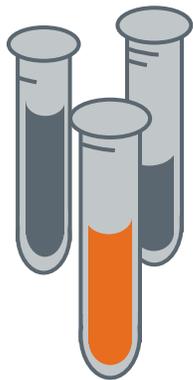
Sum of Investigation Areas spanning **408 square miles**  
(over 7 times the size of Washington D.C.)

**264 Million Gallons**  
of water treated to  
below L.O.R.



**87 Rainwater Tanks**  
installed  
(32,000 Gallons)

**394 Town Water**  
Connections completed  
and planned



**+38,000**  
Samples  
collected



**78 Environmental**  
Reports Published



**4 miles**  
of stormwater  
drains remediated



**Nine-figure**  
investment by  
Department of  
Defence



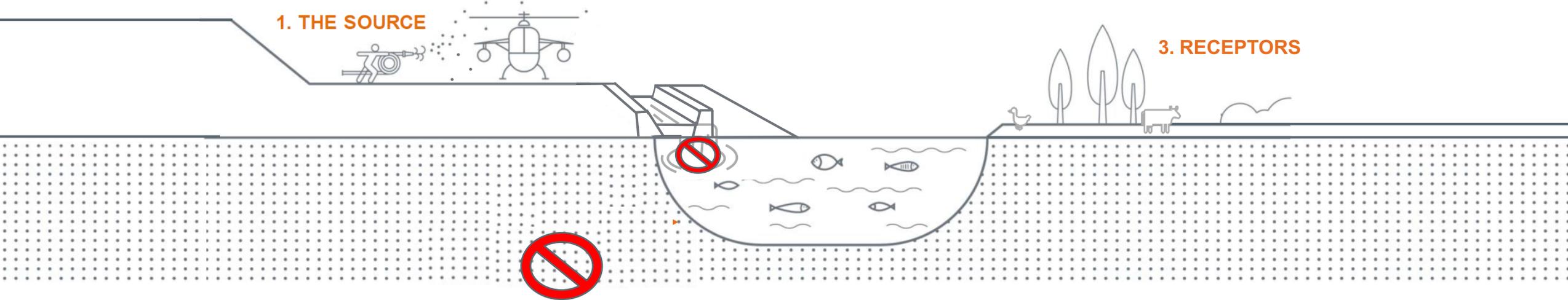
**120 Community Engagement**  
Events conducted



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Department of Defence

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**SYMPOSIUM**  
#SerdpEstcp2018

# Management Strategies



# PFAS Management Area Plan (PMAP)



# Management Activities

## National Initiatives:



Workplace Health & Safety



Legacy AFFF Project



Water Treatment (Groundwater)



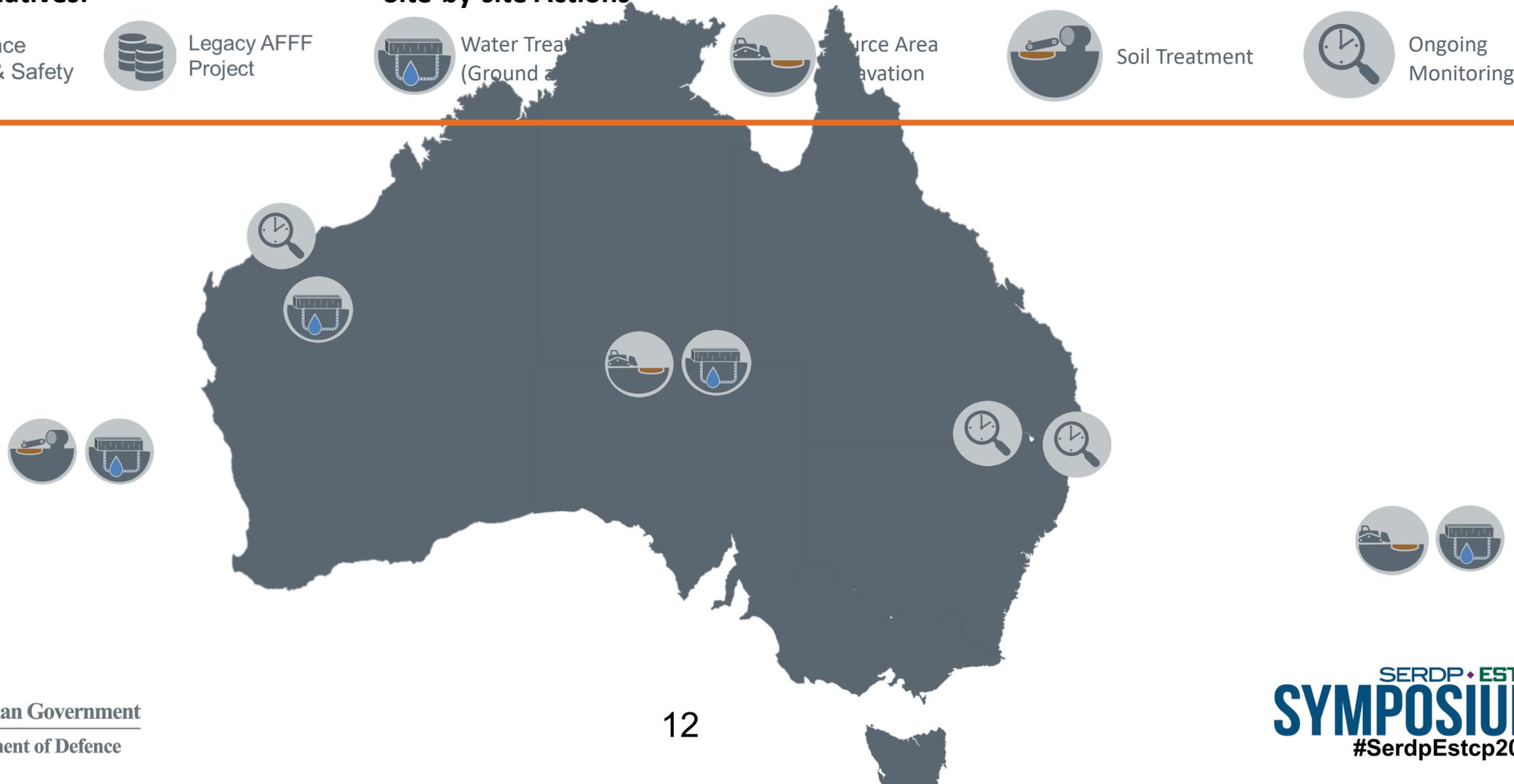
Source Area Remediation



Soil Treatment



Ongoing Monitoring



# Research and Remediation Collaboration



## Soil

- Treatment
- Source Area Excavation
- Stockpiling



## Water Treatment

- Ground & Surface Water Treatment Plants
  - Passive Treatment Options
  - Minimal War



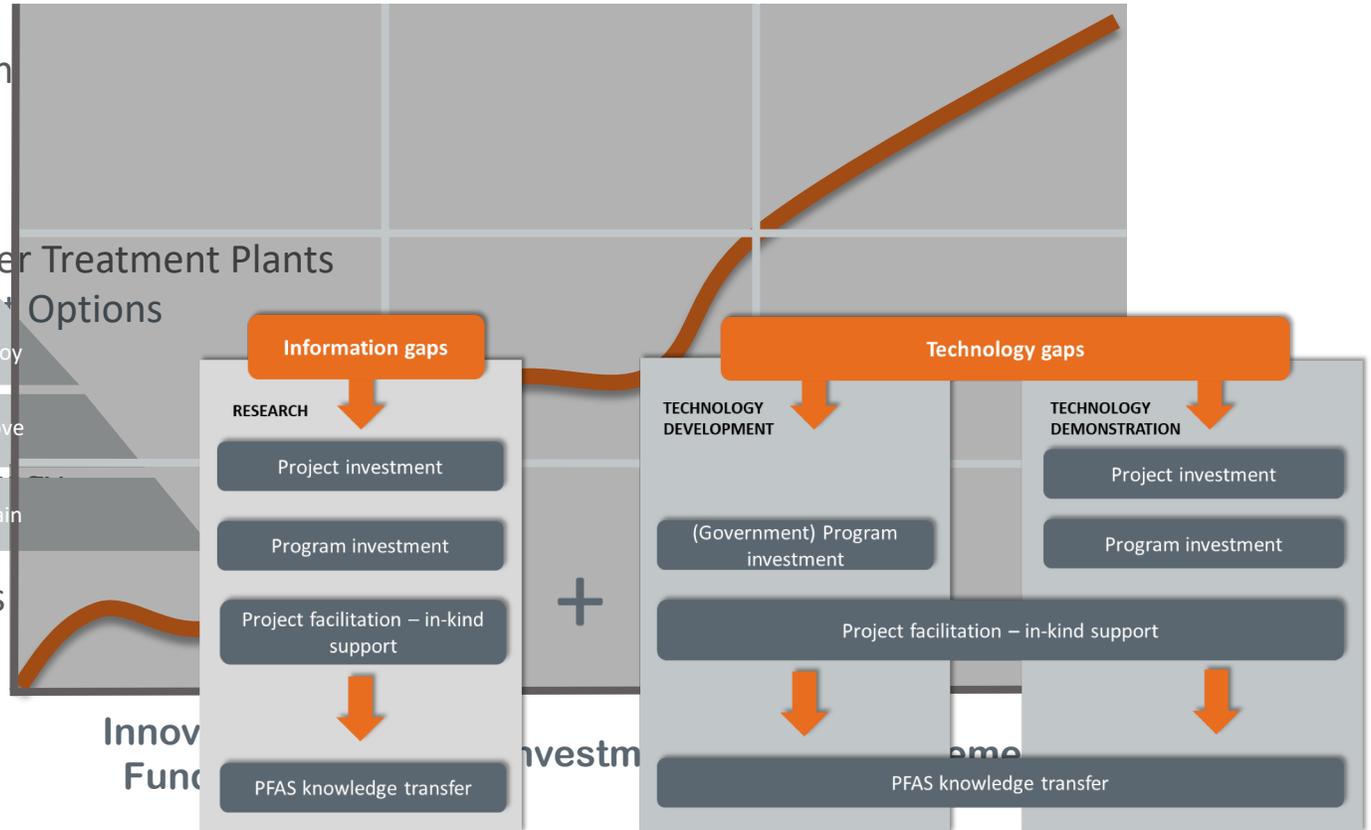
## Research 'Needs'

- Applied Research Strategies
- Potential Applications
- Promising Applications
- Proven Methods



## Data Sharing

- Making data available to support research



# Questions

Australian Government  
Department of Defence

**PFAS Investigation & Management Program**  
Home

Department of Defence > Environmental Management > PFAS > Home

**PFAS Investigation & Management Program**

Home  
What is PFAS?  
Investigation Process  
Investigation & Management Sites  
Management Activities  
Publications  
Frequently Asked Questions  
News & Media  
Support  
Related Links  
Financial Claims  
Glossary  
Contacts

**Notice: PFAS National Environmental Management Plan**

Australia's Environment Ministers have endorsed the country's first PFAS National Environmental Management Plan (NEMP). The PFAS NEMP provides governments with a consistent, practical, risk-based framework for the environmental regulation of PFAS-contaminated materials and sites. The PFAS NEMP has been developed as an adaptive plan, able to respond to emerging research and knowledge.

Visit the [Environment Protection Authority Victoria website](#) to download the plan or read more.

**PFAS Investigation & Management Program**

Defence is undertaking a national program to review, investigate and implement a comprehensive approach to manage the impacts of per- and poly-fluoroalkyl substances (PFAS) on, and in the vicinity of, some of its bases around Australia.

From 2004, Defence commenced phasing out its use of legacy firefighting foam containing specific types of PFAS - perfluorooctane sulfonate (PFOS) and perfluorooctanoic acid (PFOA) - as active ingredients. The legacy fire-fighting foam was used extensively worldwide, and within Australia, from about the 1970s by both civilian and military authorities due to its effectiveness in extinguishing liquid fuel fires. Defence now uses a more environmentally safe product. Furthermore, Defence has made changes to the way it uses firefighting foam to ensure that the risk of releasing the products into the environment is minimised.

Defence is taking a proactive approach to this matter and is working with Commonwealth, state and local authorities in the conduct of its investigations.

[www.defence.gov.au/Environment/PFAS/](http://www.defence.gov.au/Environment/PFAS/)

**Luke McLeod**

Assistant Secretary  
PFAS Investigation and  
Management



+61 439 036 087  
(+16 Hours on EST)



Luke.McLeod1@defence.gov.au