The Real Cost of Managing Emerging Contaminants in Queensland's Water Sector

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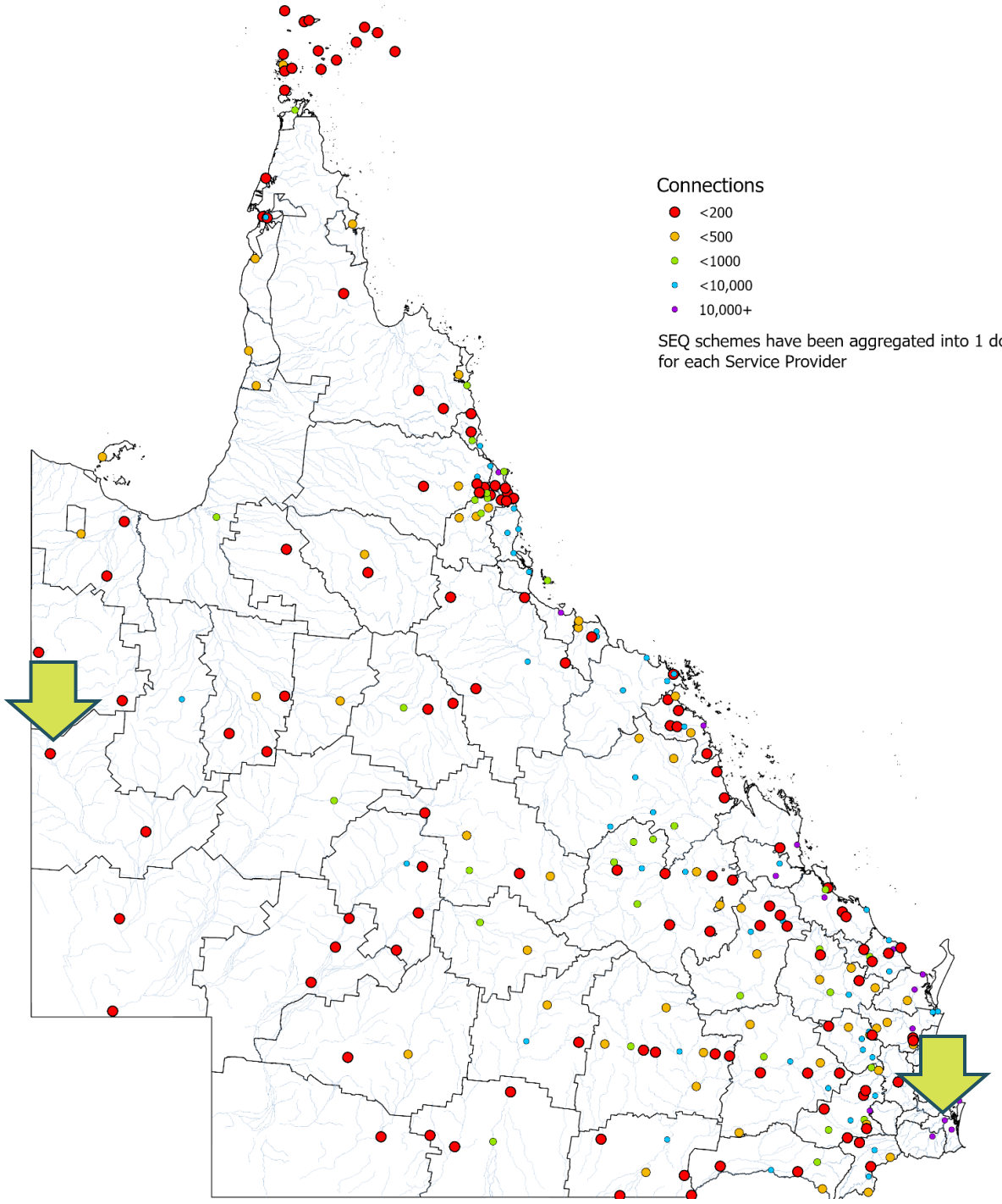
What is qldwater?

- The **Queensland Water Directorate** (*qldwater*) is the central advisory and advocacy body, working with our members to provide safe, secure and sustainable urban water to Queensland communities.
  - 73 urban water service providers, employing ~ 7,000 people
  - 370 water supply schemes
  - 265 sewerage schemes
  - 1,943,244 sewerage connections
  - 2,118,050 drinking water connections.

Queensland
Water Schemes 2023/24



Smallest scheme, Urandangi (<10)

Largest scheme, Brisbane (677,000)

Urandangi to Brisbane

>22 hours
>2,000 km

Context: Where We're Starting From

Regional Queensland already faces major infrastructure deficits.

111 boil water alerts issued over 3 years across 35 providers — average duration 62 days.

Many water treatment plants are decades old, often providing only one microbial barrier instead of the required log-5 reduction.

About 30 communities still supply untreated bore water (>50°C) because chlorination is impractical.

Essential Services Funding Pre-2009

SCAP Funding
Small Councils Assistance Program

Strategic Asset Management Plan
(Ten Year Capital Planning - Pipeline of works)



Planning Report Project 1

Planning Report Project 2

Planning Report Project 3

State Government Funding Support (80-100%)

WASP Program - Water and Sewage Program
Medium and large Councils

Strategic Asset Management Plan
(Ten Year Capital Planning - Pipeline of works)



Planning Report Project 1

Planning Report Project 2

Planning Report Project 3

State Government Funding Support (40-50%)

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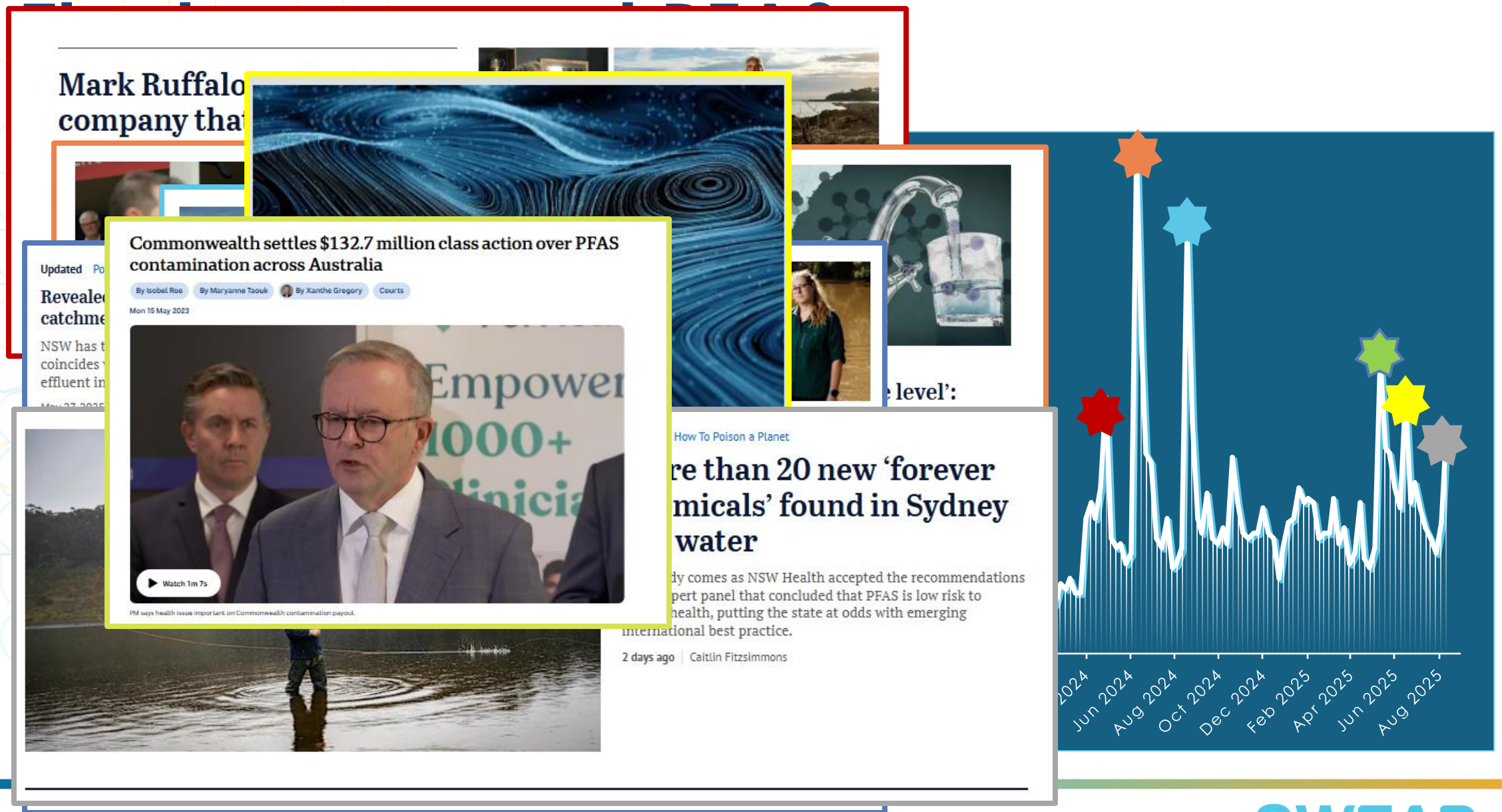
The Infrastructure Cliff

- Chronic under-investment due to end of dedicated state grant programs.
- 48 of 77 councils deemed financially unsustainable.
- Recent study found:
  - 40% of WWTPs, 35% of WTPs, and 75% of sewer networks rated high/major risk.



Data from Google trends

The PFAS Regulatory Burden

NHMRC Updates to ADWG for PFAS	June 2025
• Mandatory lower drinking water limits	
NSW Biosolids Review (draft Order and Exemption)	October 2025
• New community derived contaminants, tighter limits & costly testing	
PFAS NEMP 3.0	March 2025
• Sets low-level soil and biosolids thresholds	
Queensland End of Waste Codes (Biosolids, Biochar)	2019, May 2025
• Low PFAS limits & costly testing	
Queensland Environmental Protection Regulation	2019
• Prohibits discharge to waters of any detected PFAS	

The Real Cost

- Case Study 1 – Regional PFAS Response
  - Groundwater contar
  - Alternative borefield
    $650,000
  - PFAS testing & freigh
  - Total: >$1.1 million, e
    testing

Equivalent to almost a quarter of council's annual operational water budget

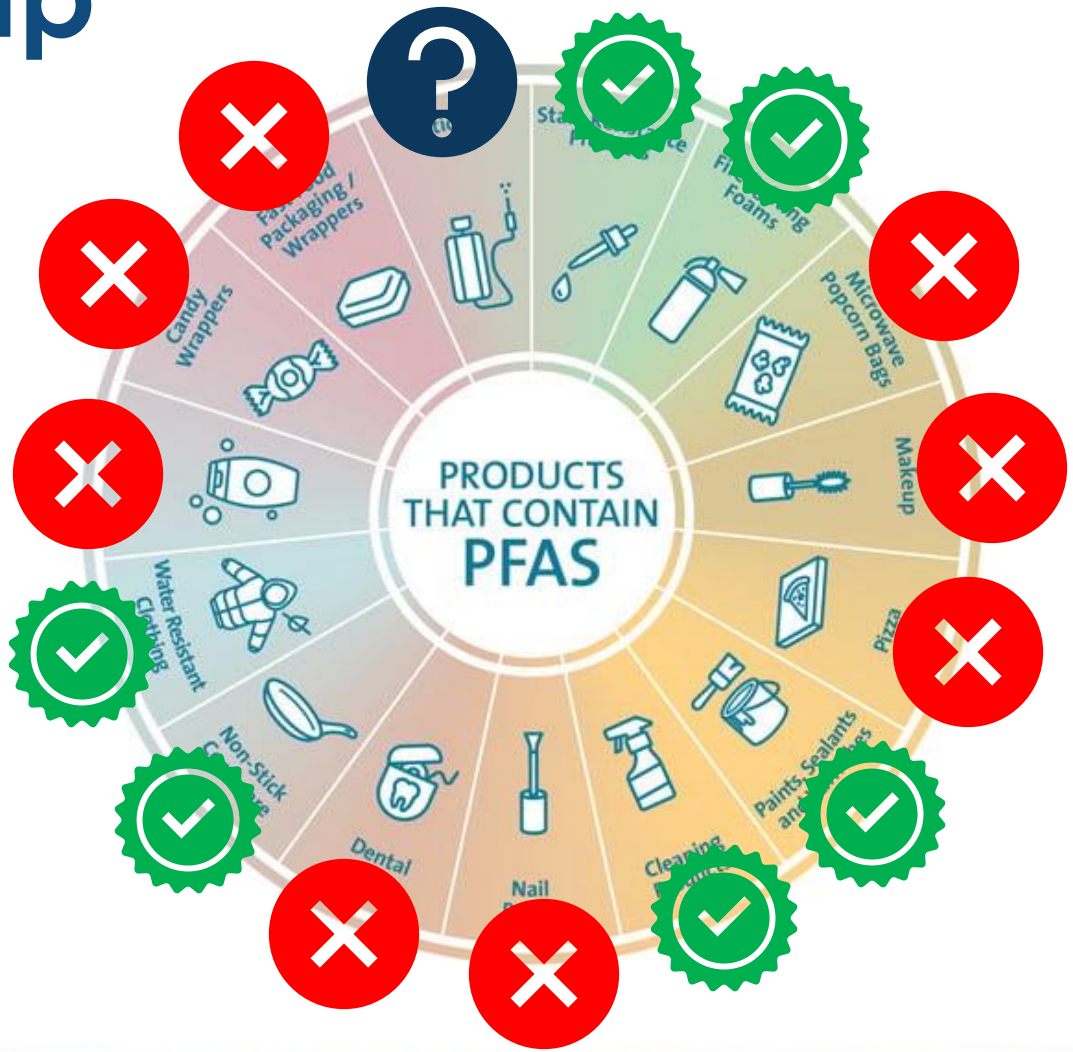
The Real Cost

- Case study 2 – Large Utility Cost Analysis
  - Costs for capital upgrades to remove PFAS from the liquid stream
  - Will **not** remove the PFAS from circulation

WWTP Size	# in QLD	Avg. Capex per Plant	Total Capex
Small (<5k EP)	102	$19M	$1.9B
Medium (5–50k EP)	63	$69M	$4.3B
Large (>50k EP)	19	$367M	$7.0B
Total (184 plants)			**$13.2B**

The Source Control Gap

- NHMRC PFAS review
  - Drinking water not the main exposure pathway.
- IChEMS Schedule 7 (July 2025) is incomplete and unenforced:
  - Excludes many consumer articles.
  - Allows high unintentional PFAS levels.
  - Delegates compliance to end-users, not importers.



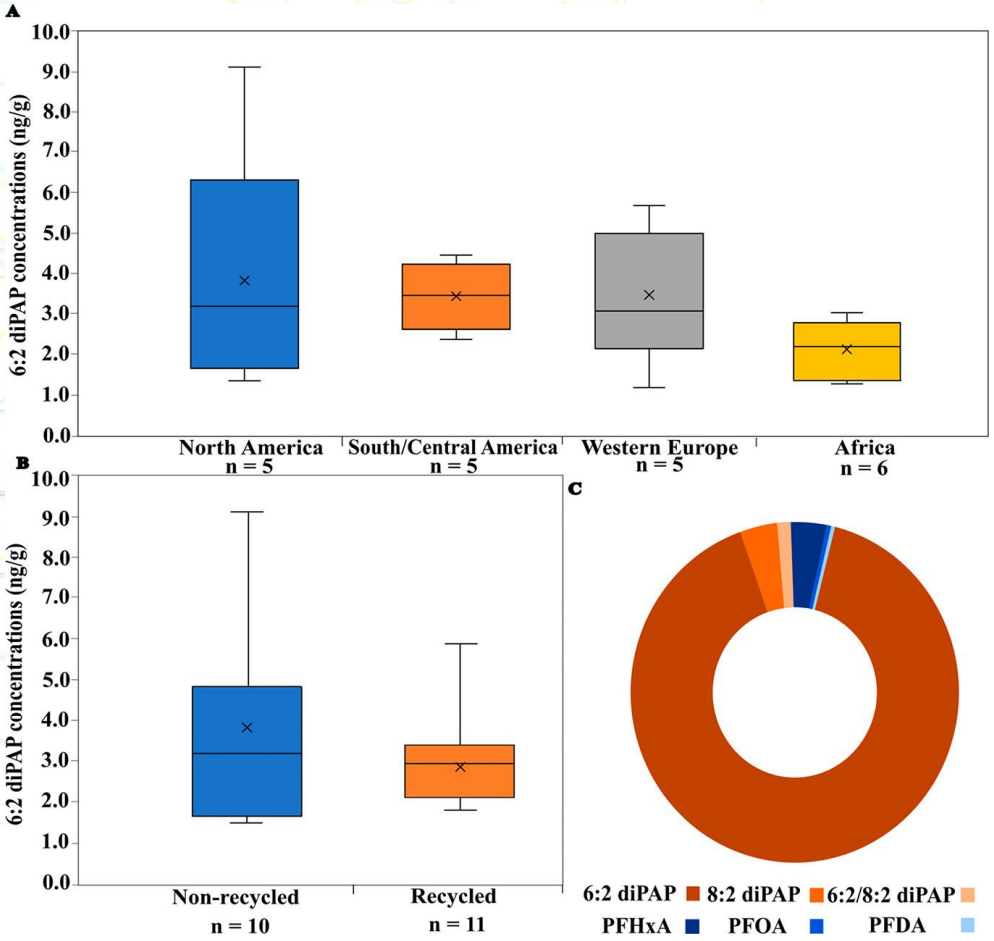
Example: The Joy of diPAPs

- Precursors of PFCAs and PFSAs
- Australian biosolids study
  - 17 WWTP in Vic, SA and WA.
  - Three diPAPs measured
    - 6:2, 8:2 and 6:2/8:2 diPAP
  - diPAPs contributed **56%** of the total measured 44 PFAS mass.

More than half of the PFAS in biosolids was just three diPAPs

https://doi.org/10.1016/j.chemosphere.2020.129143

A Source of diPAPs



"Toilet paper should be considered as a potential significant source of PFAS entering wastewater treatment systems."

In Australia, toilet paper contributed 7.2% of all diPAPs

https://doi.org/10.1021/acs.estlett.3c00094

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Conclusions

- PFAS regulation imposes major costs without reducing total PFAS entering the environment.
- The community currently bears those costs not the polluters.
- The most urgent risks in Queensland are microbiological and infrastructure failure, not trace PFAS exceedances.

Build Resilience

- The sector takes its responsibilities to the communities it serves very seriously.
- Requires commitment and leadership from all levels of government to set good policy:
  - Source control of PFAS – Effective and comprehensive measures to prevent PFAS flow to the community.
  - Polluter pays – Costs should not be borne by the community.