



Catchment and River Health Research Strategy

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We acknowledge the Traditional Custodians of the land and water on which we work and recognise the continuing cultural and spiritual connections that Aboriginal and Torres Strait Islander People have to Country. We pay our respects to Elders past and present.

Overview

- 1. Purpose and context**
- 2. Development process**
- 3. Research Goals**
- 4. Research Strategy Approach**

About WaterNSW

We're at the source of the state's water.

WaterNSW is a State-Owned Corporation and one of the main government agencies tasked with managing water in NSW

We expertly operate 41 major dams and hundreds of waterway structures, including weirs and regulators, capturing, storing and delivering water.

We're also the source of river and dam storage level information.

What we do

We follow the government rules and regulatory frameworks, implementing the rules to deliver water when and where it's needed

We deliver water to customers like farmers, local councils and Sydney Water

We protect the Greater Sydney drinking water catchment and manage Special Areas land.

We monitor and store the water in regional dams

We operate some dams in regional valleys for flood mitigation purposes to minimise the impact of floods to the extent possible

We assist the Bureau and SES on flood response

We measure and report on algae

What we don't do

We don't determine water allocations

We don't deliver water to households

We don't treat the water to meet drinking water quality standards

We don't treat the water in regional dams; that's done by the local council or water utility

WaterNSW is not permitted to release water to make additional space in Warragamba Dam for flood mitigation purposes.

We don't issue flood warnings

We don't treat natural algal outbreaks

Research at WaterNSW

WaterNSW Act 2014

The listed functions of WaterNSW are

'...to undertake research on catchments generally, and in particular on the health of declared catchment areas'



1999

Sydney Catchment Authority formed with a core research function

2005

First science strategic plan delivered



2015



WaterNSW established under the Water NSW Act 2014, operating under an Operating Licence issued and monitored by the Independent Pricing and Regulatory Tribunal (IPART)

2016

Science Program formalised under a rolling 5-year structure

2016-2020
2021-2025

2024

WaterNSW Operating License expands WaterNSW's research function to include 'catchment and river health' statewide

2021-2025 Science Program

71 Projects

37 & **34**
Internal External

~\$10m budget
+\$15m co-investment

Catchment Resilience



Integrated Water Management



Risks & Opportunities



Research communication

Technical reports
& presentations
Deep dives
Fact sheets
Media items / posts

Research benefits



Operating License Changes

	Pre-2024	2024-2028
Deliverables	Research Program	Research Strategy Research Program
Scope	Declared Catchment Areas	Catchment and downstream river health (statewide)
Focus	Catchment health	Water security, water quality and biodiversity
Drivers	WaterNSW Act 2014 <ul style="list-style-type: none"> Objectives of WaterNSW Specific functions of WaterNSW related to Declared Catchment Areas 	WaterNSW Act 2014 <ul style="list-style-type: none"> Objectives of WaterNSW All functions of WaterNSW Operating License Clause 1(1)(b) <ul style="list-style-type: none"> conduct operations in an efficient, resilient, reliable, sustainable and equitable manner supports the long-term interests of customers and the community

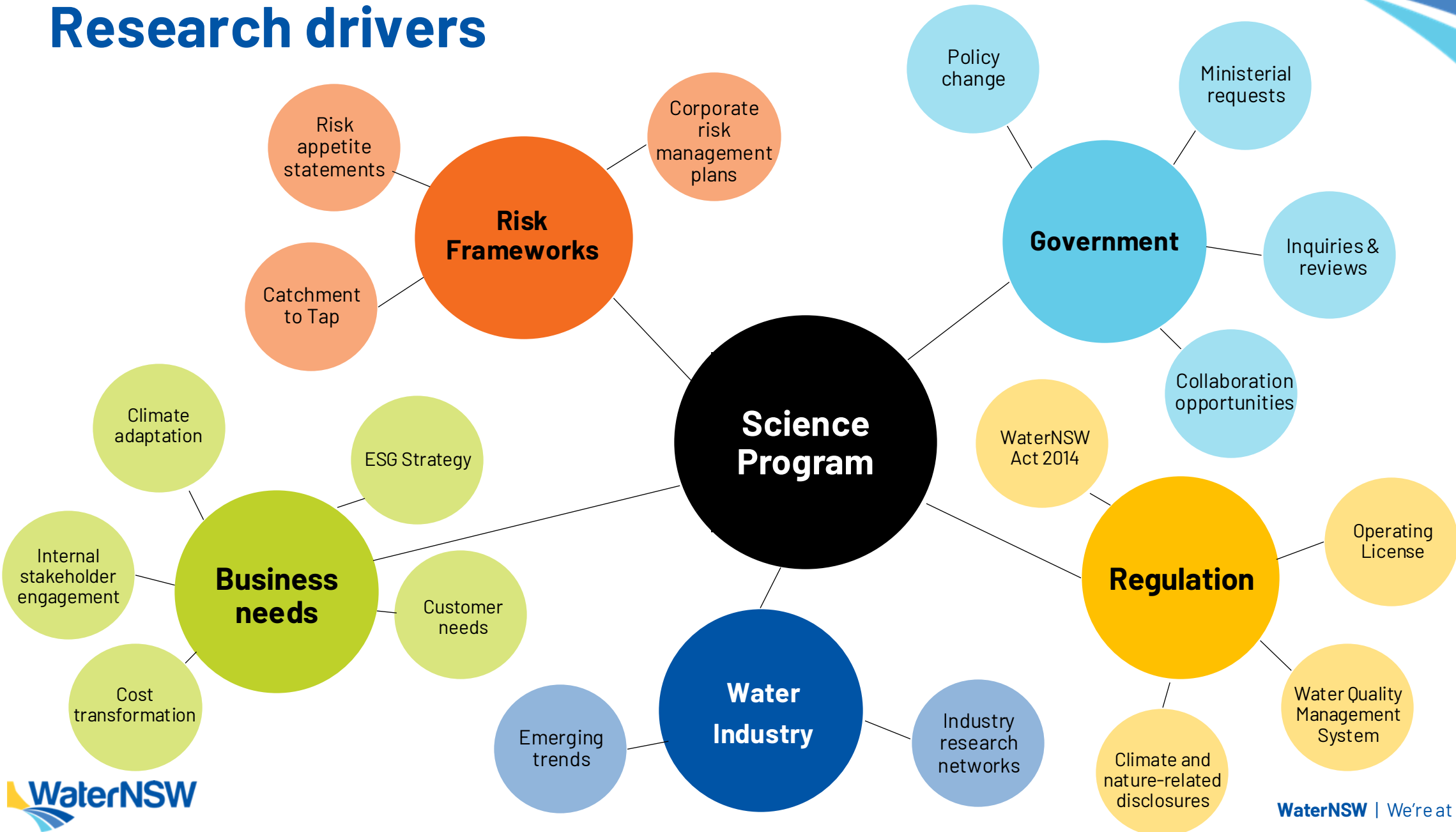
Research Strategy

- This is a new requirement that requires us to define research priorities considering:
 - i. Costs of research and **availability of funding**,
 - ii. opportunities for **collaboration with other stakeholders** (including other State and Commonwealth agencies) and avoiding duplication
 - iii. identifying **geographical priority areas** in its area of operations that are most likely to benefit from research considering:
 - (A) the significance of catchment and river health issues in discrete catchments and downstream rivers, and
 - (B) opportunities to improve water security, water quality and biodiversity in those catchment and downstream rivers.

Benefits to WaterNSW

- More effectively **meets business needs**, by setting strategic research objectives, optimising investment and ensuring benefits realisation
- New opportunities for **customer, community & reputational benefits** from regionally focussed research e.g. nanobubble trial to prevent fish kills
- **Improved relationships** with government agency stakeholders from research collaborations that produce co-benefits and co-investment

Research drivers



Internal stakeholder engagement

- 5 virtual workshops with 50+ internal stakeholders
- Team roles and responsibilities
- Strategic mapping of business needs, drivers and blockers
- Research gaps identified using challenge statements



2021-2025 Program Learnings

Stop



- Ad-hoc and reactive governance practises
- Taking on too many concurrent projects – need to weigh benefit vs effort for minor partnerships.

Start



- Articulate short to medium term research outcomes more clearly
- Investigate research partnership models
- Communicate research priorities externally

Continue



- Maximise research impact through upskilling and communications
- 5-year program duration with an agility budget for emerging priorities

Strategic Research Goals



Sustainable Assets

Understand how WaterNSW assets can be managed to maximise co-benefits and mitigate adverse impacts to customer, community, cultural and ecological values.



Efficient Monitoring

Accelerate the development and uptake of emerging technologies that can improve the efficiency of water monitoring.



Proactive Risk Assessment

Extend the evidence base that informs proactive source water risk assessment and decision making



Healthy Sydney Catchment

Understand how catchment interventions can more effectively reduce source water pollution and protect the health of the Sydney Declared Catchment



Long-term Resilience

Inform long-term transformation pathways towards a climate-resilient and nature positive business.

Research Strategy Approach

Challenge Statements

How do we..... so
that we can.....
statements

Research Outcomes

Research specific
outcomes – our
responsibility to
deliver

Future State Vision

Clarity on what the
business
transformation we
are trying to support

Research Strategy Approach

Challenge Statements

How might we operationalise remote and real-time monitoring of harmful algae to support reliable, fit for purpose risk management and forecasting?

Research Outcomes

A proof of concept real-time cyanobacteria monitoring system is developed and validated.

Future State Vision

We know when and where cyanobacteria blooms are likely to occur and have effective strategies for mitigating the likelihood of bloom impacts to water supply.

Research Horizons

Staged approach: Connects to 5 Year Science Program

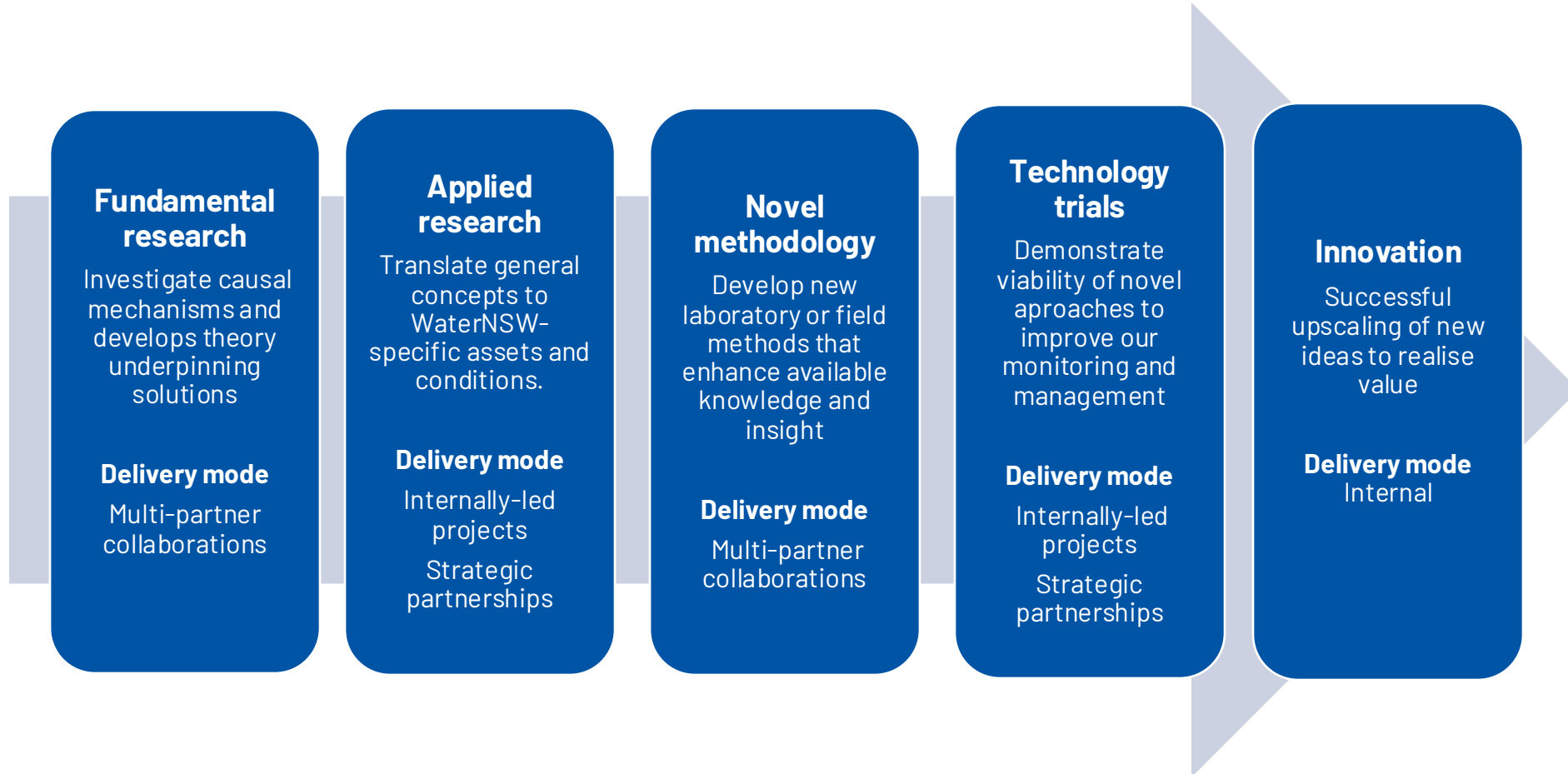
- Adaptable pathways to leverage opportunity and maximise impact
- Build towards achieving future state objectives

Horizon 1: 1-5 years

Horizon 2: 3-7 years

Horizon 3: 5-10 years

Research Continuum



Geographical priorities and shared opportunities



NSW DCCEEW - Water	NSW DCCEEW - Biodiversity & Conservation Services	NSW Fisheries
Environmental Protection Authority	National Parks & Wildlife Service	Murray Darling Basin Authority
CSIRO (Aquawatch mission)	NSW Health	Sydney Water
NSW Water Directorate	BOM	Customer Advisory Committees
MDBA	WaterRA	WSAA

Delivery mechanism – Science Program

2026–2030 Science Program – delivery and budget approval process

Catchment and river health issues paper

- Role and responsibility mapping for catchment and river health NSW
- Identification of geographical priorities?

Proposing introduction of direct research partnerships under an EOI process

Keeping our strength of internal delivery





**WaterNSW
Strategic Research and Innovation team**