MSDI WATER
STRATEGIC DIRECTION
2021 – 2025

Transitioning water systems to advance the wellbeing of people and planet, for current and future generations
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We envision communities and their cities, towns and regions as sustainable, resilient, productive and liveable.

**MSDI Water** is a focal hub for water-related initiatives at Monash Sustainable Development Institute (MSDI). It brings together researchers, knowledge brokers and strategic influencers who span the boundaries between research and practice to drive water system change in Australia and its region.

Specialising in transdisciplinary impact research, **MSDI Water** collaborates with other parts of MSDI and researchers from across Monash to develop enterprising opportunities focused on climate adaptation and thriving communities. Our team combines robust research and analysis, research translation, participatory and strategic engagement, and capability building to provide evidence, guidance and practical tools that help governments, businesses, NGOs and communities create better water outcomes.

Established in 2010 as the Centre for Water Sensitive Cities and rebranded as **MSDI Water** in 2019, we have been instrumental in bringing together interdisciplinary expertise to drive a world-leading program of water sensitive cities research. This resulted in the $120M CRC for Water Sensitive Cities (CRCWSC) and the $42M Wellcome Trust funded Revitalisation of Informal Settlements and their Environments (RISE) project.

The water sensitive cities agenda continues with the CRCWSC’s legacy now returned to Monash as **Water Sensitive Cities Australia** (WSCA), a unit within MSDI Water, whose focus is on mainstreaming water sensitive practice in our region.

This strategy sets the direction for **MSDI Water**, guided by MSDI’s six strategic domains of influence: Climate Action, Sustainable Cities and Regions, Health and Environment, Circular Economy, Inclusive Prosperity and Leadership for the SDGs. Working in collaboration with the wider Monash community, we will play a leadership role in our country and region, and make meaningful contributions to solving the key water challenges of our time.

**Water Sensitive Cities Australia**

Water Sensitive Cities Australia (WSCA) has been established to support the mainstreaming of Water Sensitive Cities (WSC) practice at scale as a business-as-usual activity in line with the priorities of its industry partners and international opportunities.

“WSCA focuses MSDI’s water expertise on advancing future water sensitive cities research, policy and practice”

WSCA draws on expertise from across MSDI Water, as well as other parts of MSDI and Monash, to build on the legacy of the CRCWSC and advance future water sensitive cities research, policy and practice.

MSDI Water, including WSCA, has a national footprint as well as international reach. We are adding value by generating new knowledge on water system transformation, evolving WSC knowledge products, building industry capabilities and connecting people and knowledge across Australia and internationally.
MSDI WATER STRATEGIC DIRECTION 2021–2025

PURPOSE
Advance the wellbeing of people and planet, for current and future generations

5 YEAR VISION
MSDI Water is a globally recognised leader in water system transformation for sustainable development

STRATEGY
We work to understand, influence and transform systems for water sustainable development in Australia and our region, collaborating with partners to build knowledge and capacity, and drive practical change

CLIMATE ACTION
Climate-adapted communities
Net zero water systems

ENVIRONMENT & HEALTH
Healthy & liveable environments
Revitalised informal settlements

SUSTAINABLE CITIES & REGIONS
Water sensitive cities & towns
Nature-based solutions

CIRCULAR ECONOMY
Water-energy-food-waste nexus
Regenerative planning & design

INCLUSIVE PROSPERITY
Social water & climate resilience
Indigenous water rights

LEADERSHIP FOR THE SDGS
Water’s role in achieving the SDGs
Gender & diversity in leadership

CAPABILITIES:
A water system transformation toolkit

Build Capacity & Empower Leadership
Facilitate Collaboration
Create, Synthesise & Translate Knowledge
Experiment & Innovate
Understand & Influence Behaviour
Shape Institutions, Policy & Practice

OPERATIONAL ENABLERS
Good governance
Compelling communications
Developing excellent people
Cross-MSDI collaboration
Finance & fundraising

MSDI Water Strategic Direction 2021 - 2025
02 OUR GUIDING PRINCIPLES

WE VALUE DIFFERENT WAYS OF KNOWING
We embed diverse perspectives and ways of knowing and learning into our research, education, policy and impact work. We make a particular commitment to advancing the inclusion of Indigenous perspectives and knowledge in our work.

WE ARE PRACTICAL AND REAL-WORLD FOCUSED
We translate research and support policy and practice change at local, state, national and international scales. Our work is evidence-based, applied, practical, collaborative and relevant, and delivers impact for policymakers, institutions and the community.

WE ARE TRANSDISCIPLINARY
Our research, education and impact work spans disciplines and sectors, valuing the knowledge and expertise of partners both within and outside academia to address complex problems.

WE PARTNER FOR IMPACT
We do not work alone. Enduring partnerships and collaboration are fundamental to MSDI Water. Our partnerships are built on principles of respect, mutual learning and co-design, enabling us to do more, together.
03 DELIVERING VALUE

- Climate-adapted communities
- Leadership and diversity
- Water system transformation
- Regenerative urban planning
- Indigenous water justice
As part of a University-wide Institute of Monash, MSDI Water benefits from and contributes to advancing the University’s capabilities, reputation, excellence and impact of education and research. We are committed to collaborating widely and deeply across the University, and will continue to develop a critical mass and focus to advance the University’s reputation as a globally recognised institution for water research, education and real-world impact.

MSDI Water will focus on connecting and leveraging Monash’s water research capabilities (Appendix 1) and IP to deliver on Monash’s Impact 2030 Strategic Plan in addressing climate change and creating thriving communities.

Our work with Australian and international cities and communities highlights that a water system transformation is underway, with profound implications for their liveability, sustainability, resilience and productivity. Our research has helped to see this shift as part of a continuum of change and to understand the drivers involved and the responses required to barriers such as governance, policy and cross-sector collaboration.

Our research has highlighted a number of socio-technical themes that will be critical to accelerate ongoing transformations toward visions of sustainable cities and communities.

**Climate-adapted communities:** Supporting communities to cope, adapt and thrive amidst the growing impacts of climate change, including flood, drought and heat. Empowerment of communities and partnerships between citizens, governments and industries are key.

**Regenerative urban planning:** Driving technological and institutional innovation for implementing circular economy, nature-based and cross-sectoral solutions. Ensuring urban development and city servicing has a net positive social, environmental and economic impact is key.

**Indigenous water justice:** Strengthening Indigenous sovereignty, water rights and peoples as part of water governance frameworks. Embracing Indigenous ways of knowing, doing and being in our approach to water planning and decision making is key.

**Leadership and diversity:** Building leadership capabilities for transformation, including leadership diversity across organisational levels, is critical for different perspectives, values and knowledges to inform planning and decision making toward our broad water visions for the future. Creating the conditions for leadership to reflect diversity in, for example, gender, age, ethnicity and discipline is key.
These themes, and the creation of a global water system transformation platform, have become the strategic agenda for the next horizon of knowledge generation and impact work for MSDI Water. This builds on the water sensitive cities foundations laid through the CRCWSC and that continues to be given mainstreaming focus through Water Sensitive Cities Australia.

**MSDI Water Strategic Initiative:**

**Global platform for Water Systems Transformation**

A global platform that brings together existing and emerging knowledge, tools and networks for understanding and influencing water system transformations towards the Sustainable Development Goals (SDGs). The platform will grow from existing building blocks, including WSCA’s industry partner base, international network and toolkits. It will create an international network of partners using Monash knowledge, tools and associated services.

Networked learning between cities and stakeholders will accelerate transformative shifts in water policy and practice. Use of the platform’s tools will grow a database that can inform global insights, reporting and guidance on water system changes, as well as insights on emerging priority topics that require research and innovation. Sustainable funding for the platform will be through subscriptions and sponsorship from global corporates and/or philanthropy.
AMBITIOUS STRATEGY FOR OUR NEXT FIVE YEARS

2021 - 22
Leverage Monash international strategy and WSC Australia foundations to expand uptake of WSC system transformation tools
Grow international network of cities connected with Monash on water system transformation through education, training and strategic advice
Strengthen Monash-wide connections, capabilities and external profile across water in line with strategic priorities
Co-develop programmatic research agendas with Monash researchers and external partners
Secure externally funded research projects that lay foundations for longer-term programs
Expand team of researchers and boundary spanners, including HDR students

2023 - 25
Scale out Platform tools nationally and internationally, through strategic and place-based partners and building global capability in their application
Analyse global Platform data to gain insights on water system transformation and provide thought leadership
Develop new knowledge and tools on water system transformation, climate adapted-communities, regenerative urban planning and Indigenous water justice
Secure funding for programmatic research priorities, including through long-term research, industry, government and community partnerships
Engage, influence and drive global SDG and climate adaptation research and impact agendas

2026 - 30
Foster a team of national and internationally recognised researchers and research leaders working with a global network of partners using our knowledge, tools and associated services to transform water systems
Draw insights from analysis of data from global network to inform new knowledge and practical guidance on water system transformation
Expand national and global partnerships on current and emerging priority topics
Engage, influence and drive global SDG and climate adaptation research and impact agendas
04 CAPABILITIES FOR WATER SYSTEM TRANSFORMATION
MSDI Water brings a powerful set of capabilities to the task of water systems transformation. Our approach centres on deep collaborations, real-world application and co-design, working in close partnership with government, industry and communities to amplify impact.

This expertise is brought to bear on a diverse range of sustainable development initiatives, from education to policy reform. This system transformation toolkit enables a tailored and responsive approach to the issues we tackle.

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**CAPABILITIES FOR WATER SYSTEM TRANSFORMATION**

**Build Capacity & Empower Leadership**
Building the skillsets and mindsets for effective action, enabling people to lead from where they are.

**Experiment & Innovate**
Developing and refining new methods and integrated approaches for complex problem-solving.

**Facilitate Collaboration**
Creating and strengthening partnerships & aligning stakeholders for coordinated action.

**Understand & Influence Behaviour**
Developing tools and frameworks to diagnose problems and guide action.

**Create, Synthesise & Translate Knowledge**
Producing new and applied insights, tailoring application to different sectors and places.

**Shape Institutions, Policy & Practice**
Shaping and creating policy, agenda setting & narrative building, to inform practice change.
Collectively these capabilities support our work to understand complex problems, co-develop solutions, and implement and scale solutions for impact. These capabilities are underpinned by a commitment to transdisciplinary applied research, education and capacity building, and behaviour change — all of which support and are brought to bear in advancing work in each of our domains.

We will build and consolidate this system transformation toolkit further over the coming 5 years. We will assess the maturity and monitor the quality of our capabilities for their suitability in addressing our domain areas, and further develop, diversify or grow our skills in-house and through partnership with trusted experts within and outside of the university sector.

To advance our impact agenda, MSDI Water brings a toolkit of system transformation capabilities, as well as domain expertise. As part of MSDI, with methods and content experts, we value diverse contributions and perspectives on complex system transformation and sustainable development challenges. These approaches help us to advance our shared mission to understand, influence and transform water systems for sustainable development.

**Our System Transformation Approach**

**CAPABILITIES**
- Build capacity & empower leadership
- Facilitate collaboration
- Create, synthesise & translate knowledge
- Experiment & innovate
- Understand & influence behaviour
- Shape institutions, policy & practice

**INSTITUTIONAL CHANGE**
- Transform water systems for sustainable development

**DOMAINS**
- Climate action
- Environment & health
- Sustainable cities & regions
- Circular economy
- Inclusive prosperity
- Leadership for the SDGs

**PRACTICE CHANGE**
Appendix 1: Monash’s Water Capabilities

MSDI Water collaborates with researchers across Monash University to advance its strategic priorities. Through flagship collaborations with industry, government and other academic institutions, Monash University has pioneered world-leading interdisciplinary water research with its expertise brought together across a number of integrated themes:

**Healthy people and liveable places**, through new water solutions that reduce exposure to disease, improve urban amenity and increase community resilience

**Healthy waterways and catchments**, through evidence and management tools that identify diverse water values, reduce water pollution and manage human and climate change impacts on water systems

**Secure and sustainable water resources**, through new water solutions comprising small-scale green technologies, data and tools to improve water resource management and advanced techniques for optimising infrastructure management

**Community action and collaborative governance**, through new data, methods and tools to guide system transitions to sustainable water futures, influence community behaviours and capacities and support participatory planning and design processes

**POLICY INFLUENCE**

Monash University’s research creates practical and evidence-based solutions for improving water policy and management practice. We bring top academics together with former politicians, senior bureaucrats and water sector leaders to synthesise and translate research for real-world impact, and offer valued thought leadership to Australian governments and the water industry.
EXAMPLES OF POLICY INFLUENCE

Driving Water Sensitive Cities policy and practice. Water corporations, state governments and local councils around Australia have utilised the findings of water sensitive cities research by Monash and the CRCWSC. For example, Victoria’s urban water policy for resilient and liveable cities and towns in Water for Victoria is based on this work, led by Professors Tony Wong (FTSE) and Rebekah Brown (FASSA). The $120M CRCWSC interdisciplinary research program, based at Monash, created new evidence, methods and tools to support rapid adoption of water sensitive technologies and practices.

Tools to benchmark and guide water sensitive city transitions. Associate Professor Briony Rogers and Professor Chris Chesterfield led CRCWSC action research with 250 water policy-makers and practitioners in six Australian cities. This developed collaborative methods, and diagnostic and benchmarking tools, for guiding transitions towards water sensitive futures. City policies and strategies were directly shaped, e.g. the City of Gold Coast’s Water Strategy. The implemented processes have established enduring stakeholder networks, e.g. Perth’s influential Water Sensitive Cities Transition Network. The WSC Index has now been commercialised and applied in more than 50 cities around Australia and internationally.

Influencing best practice for Integrated Water Management (IWM). Monash has worked with the Victorian Government’s IWM program, providing evidence, tools, advice and leadership through Chairing its Reference Group and Forums, to shape the highly regarded policy initiative. We have supported and advised the Productivity Commission in their review of IWM, whose report proposed an approach developed and advocated for by Monash. Monash has worked with the Water Services of Association of Australia to develop their forthcoming Guidelines for Best Practice IWM.

Net zero carbon emissions target for water corporations. MSDI Water was instrumental in the adoption of a mandatory net zero target for Victoria’s water corporations in the Water for Victoria Plan. This resulted from advocacy by Professors John Thwaites and Rob Skinner and was based on the net zero research of MSDI’s ClimateWorks Australia.

Victorian legislative changes. Advice by Professor Chris Chesterfield as the chair a number of Ministerial Advisory Committees appointed to recommend water and urban planning reforms, has led to significant integrated water management changes to the Victorian Planning Provisions and the introductions of Victoria’s first environmental legislation to be co-titled in First Nations language. The Willip-gin Birrarung murrorn (Yarra River Protection) Act establishes the Yarra River as a ‘living entity’ and creates the bicultural Birrarung Council as the ‘Voice of the River’.

Victorian Planning Provisions changes. Advice by Professors John Thwaites and Rob Skinner led to the establishment of a 2018 Ministerial Advisory Committee, which changed the VPPs on Stormwater to ensure that stormwater generated from all developments is managed to minimise negative environment impacts.

Leadership on Sustainable Development Goals. MSDI convenes experts for a multi-disciplinary approach to addressing the UN Sustainable Development Goals. MSDI Water’s Professor Rob Skinner is the global focal point for SDG6 Clean Water and Sanitation and the official curator of SDG6 for the Australian Government’s Department of Agriculture and Water Resources. MSDI Water has developed a water utilities SDGs framework for the Water Services Association of Australia and is providing advice on the SDGs to Victoria’s Department of Environment, Land, Water and Planning and the Commissioner for Environmental Sustainability.

Leadership of IWA’s Cities of the Future. Monash is instrumental in the International Water Association’s Cities of the Future program, through leadership by Professors Rob Skinner and Tony Wong (FTSE). Professor Skinner chaired the expert group and was principle author of the program’s Water Wise Cities Principles, which have been adopted by more than 100 cities and institutions globally.
FURTHER DETAIL ON MONASH’S WATER RESEARCH CAPABILITIES

Healthy people and liveable places:

• Improving people’s health through water technologies and management strategies that reduce exposure to disease and improve food security.

• Urban design and greening solutions that harness water to reduce heat vulnerability, enhance neighbourhood amenity and improve mental health.

• Novel approaches for forecasting extreme weather events and designing climate resilience solutions that integrate adaptive water infrastructure, urban designs and community action.

Example:
**Revitalising Informal Settlements and their Environments (RISE)**

Monash is leading this $48M interdisciplinary action research project to co-design and implementation of green water technologies in 24 informal settlements in Indonesia and Fiji. Human and ecological health markers are monitored to develop world-first evidence of planetary health benefits.

Healthy waterways and catchments:

• Understanding the diverse social, economic and ecological values, cultures and uses of water, including through processes of Indigenous collaboration and local empowerment.

• Identifying, mapping and remediating water pollution, including nutrients, pathogens, sediments and novel contaminants such as pharmaceuticals.

• Understanding and managing the impacts of human activities and climate change on environmental systems such as river catchments, aquatic ecosystems and coastal landscapes.

Example:
**Research and Education Field Station, Point Nepean.**

Monash is part of this $25M world-leading interdisciplinary research, education and public outreach facility on marine and coastal ecosystems, climate science and environmental management.
Secure and sustainable water resources:

• New decentralised technologies that provide low-cost, low-energy and nature-based solutions for treating drinking water, recycling wastewater and harvesting stormwater.

• Understanding, planning and managing integrated water resources to strengthen the security of water supplies for urban and agricultural uses.

• Optimising asset management and renewal strategies through advanced techniques for identifying infrastructure vulnerabilities and real-time monitoring and control.

Example:

Water desalination technology for remote communities.

The Oxfam-Monash Partnership has developed portable, solar-powered and cost-effective water desalination technology to provide clean water to communities that are facing water scarcity, remote and off-grid, or affected by local disaster like bushfire.

Community action and collaborative governance:

• Guiding system-wide transitions towards sustainable and inclusive water futures, including innovation in water policy, regulation and governance processes.

• Understanding water cultures and influencing social values, behaviours and capacities to improve water practices.

• Modelling tools and participatory processes to support collaborative decision-making, scenario analysis and co-design initiatives.

Example:

Behaviour and practice change for water sensitivity.

This CRCWSC research examined the social dynamics and community behaviours on water around Australia to identify values, attitudes and practices and develop strategies for strengthening water-saving behaviours and community resilience.
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