Sustainable Communities and Waste

National Environmental Science Program

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Sustainable Communities and Waste Hub

Research Plan 2024

Contents

Introduction

The National Environmental Science Program

The National Environmental Science Program (NESP) is a long-term commitment by the Australian Government to environment and climate research. The program:

- provides evidence for the design, delivery and on-ground outcomes for environmental programs
- helps decision-makers, including from Indigenous communities, to build resilience
- supports positive environmental, social and economic outcomes.

The first phase of NESP invested over **$145 million** (2014–15 to 2020–21) into 6 research hubs and emerging priority research projects. The second phase is investing **$149 million** (2020–21 to 2026–27) into 4 new research hubs. These hubs are:

- Resilient Landscapes Hub
- Marine and Coastal Hub
- Climate Systems Hub
- Sustainable Communities and Waste Hub

The NESP is administered by the Department of Climate Change, Energy, the Environment and Water (the Department). More information on the NESP is available at dcceew.gov.au/science-research/nesp

Department role

The 4 NESP hubs have been formed to conduct applied research within their specific themes. Each activity year the Department will work with the Minister, the hubs and other key stakeholders to identify and refine research priorities and develop projects that align with these priorities.

This annual review and evaluation of research outputs and impact provides the flexibility needed for the hubs to engage in new themes of research in an adaptive manner and ensures that the focus is on the delivery of relevant and practical research. Hubs are responsible for co-design of the research projects in consultation with research-users and in partnership with relevant Indigenous communities. Hubs are also responsible for monitoring and evaluating the research project outcomes during the life of the hub.

The research prioritisation is a rolling process and will be informed by key milestones in each activity year, such as the annual progress report and submission of the next research plan.

Hub role

The Sustainable Communities and Waste (SCaW) Hub is a consortium comprising five world-class research institutions led by the University of New South Wales, Sydney (UNSW), including the Commonwealth Scientific and Industrial Research Organisation (CSIRO), Monash University (Monash), the University of Tasmania (UTas) and Curtin University (Curtin).

The Hub provides a collaboration space for academics, government, industry and the community, with the shared objective of enhancing sustainable community outcomes and reducing negative waste impacts. The Hub is involved in a number of cross hub initiatives with the three other NESP hubs to

provide information and address priority research questions to strengthen policy and decision making by research-users.

Our research agenda is co-designed with the Department and other research-users at all levels of government, industry, non-government organisations (NGOs), national associations and Indigenous and other community groups in urban, regional and remote Australia.

Our Vision

Healthy, resilient, connected and prosperous urban, regional and remote communities with reduced impact on the environment.

Purpose of this Research Plan

This Research Plan 2024 (RP2024) was developed by the SCaW Hub, in consultation with the Department and other research-users, to address key priorities identified during co-design discussions that occurred through RP2021, RP2022 and RP2023. These are summarised in the 'Research' section of this plan, and outlined in Attachments A and B. Most projects commenced in RP2022 or 2023 and span multiple years. These projects will continue to be refined as they are delivered with our research-users over the life of the Hub. Several projects provide opportunity for cross-hub coordination, and activities have been built into projects to work efficiently with key researchers in other NESP hubs to coordinate efforts, especially through the Initiatives. Ongoing engagement with the Department is paramount.

RP2024 will be delivered, in accordance with, and guided by our agreed Hub strategies for Indigenous partnerships, data management, communications and knowledge brokering. These strategies provide direction on Indigenous engagement, data management, communication and knowledge product outputs.

Research Plan 2024 provides:

- the research priorities the Hub is funded to investigate, including those related to crosscutting Initiatives
- research projects that will address these priorities
- how each research project will be co-designed and delivered to research-users
- how the outputs of the research will be communicated with key stakeholders
- how the SCaW Hub will work collaboratively within and across hubs.

This research plan also provides summary information on the management and governance of the Hub, including the broad funding profile, key staff and research organisations, and the risks that need to be monitored and managed to ensure success.

Initiatives

In addition to its hub-level research projects, each hub is also responsible for delivering a cross-cutting Initiative and contributing research to other initiatives where appropriate. The Initiative includes cross-hub collaboration and may include multiple projects to deliver management options, data and information for the themes listed below.

The 4 initiatives are:

Initiative	Lead Hub
Protected Place Management	Marine and Coastal
Threatened and Migratory Species and Threatened Ecological Communities	Resilient Landscapes
Waste Impact Management	Sustainable Communities and Waste
Climate Adaptation	Climate Systems

For the SCaW Hub, the Waste Impact Management Initiative involves cross-hub collaboration and may include multiple projects to deliver management options, data and information. Where appropriate, SCaW projects will also undertake research to support the SCaW-led Initiative as well as other hub initiatives.

To strengthen our delivery on Waste Impact Management Initiative we have created initiative team that includes:

- Professor Matthew Kearnes will join as initiative lead for SCaW hub
- Dr. Heinz Schandl will remain working on IP5 projects, and contribute to the initiative
- Dr. Samane Maroufi will join as an initiative-focused researcher

Emerging priorities

Each year, specific emerging priorities may be identified by the Department, hubs or third parties for delivery as research projects. If endorsed by the Department, a hub will develop research project/s to address the emerging priority.

Hubs are flexible and adaptable to respond to emerging priorities, with the ability to rapidly scale output, bring in external expertise or respond if additional resources are made available. Hubs are required to set aside 10% of NESP funding being spent per calendar year (in any category) so they can respond to emerging priorities; these funds can be rolled into the subsequent year if they are not used. Emerging priority projects are developed outside a hub's annual research proposal process.

Once emerging priority projects have been approved, a hub's research plan and activity budget for the relevant calendar year will be amended, and emerging priorities will be included in the hub's annual progress reports.

Recently, one emerging priority was identified for the SCaW Hub in August 2023 to divert bio-waste (invasive species of plants) from burning / incineration, so it can be investigated and used as a manufacturing feedstock resource, combined with other plastic waste materials with a view to use these waste materials to manufacture Green Ceramics that could be used in housing and other infrastructure opportunities by local Indigenous communities associated with the country concerned. With the project being Indigenous led, it will be Category 1 under the new NESP Three Category approach for Indigenous engagement.

Research priorities

The SCaW Hub is committed to a body of activity that includes short- and long-term research projects, and the Waste Impact Management Initiative.

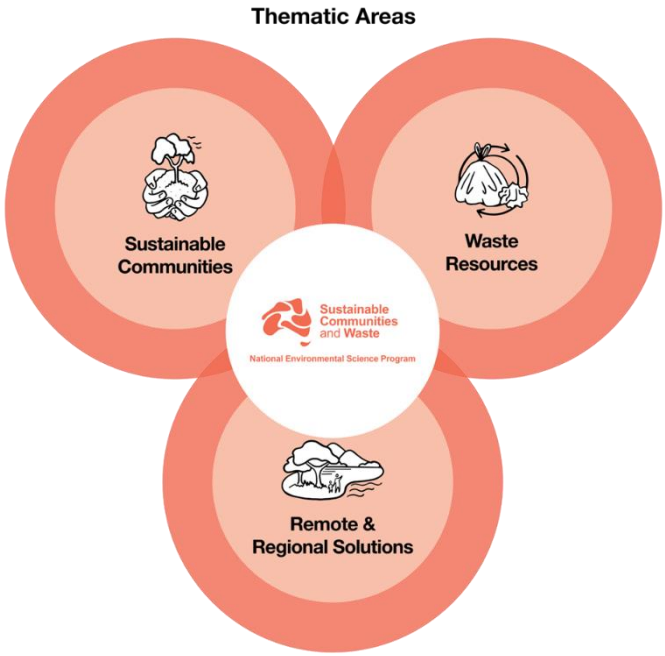
Broadly, the research priorities of the ScaW Hub are:

- applied scenario modelling to support sustainable people-environment interactions in communities, including urban heat island impacts and liveability analysis
- targeted information and management tools to reduce the impact of plastic and other material on the environment

- effective and efficient management options for hazardous waste, substances and pollutants throughout their lifecycle to minimise environmental and human health impacts
- maintained and improved air quality
- cross-hub coordination for the 'waste impact management' initiative to support decision maker policy development, program management and regulatory processes in both marine and terrestrial environments.

Key Thematic Areas

SCaW Hub projects impact across 3 thematic areas:

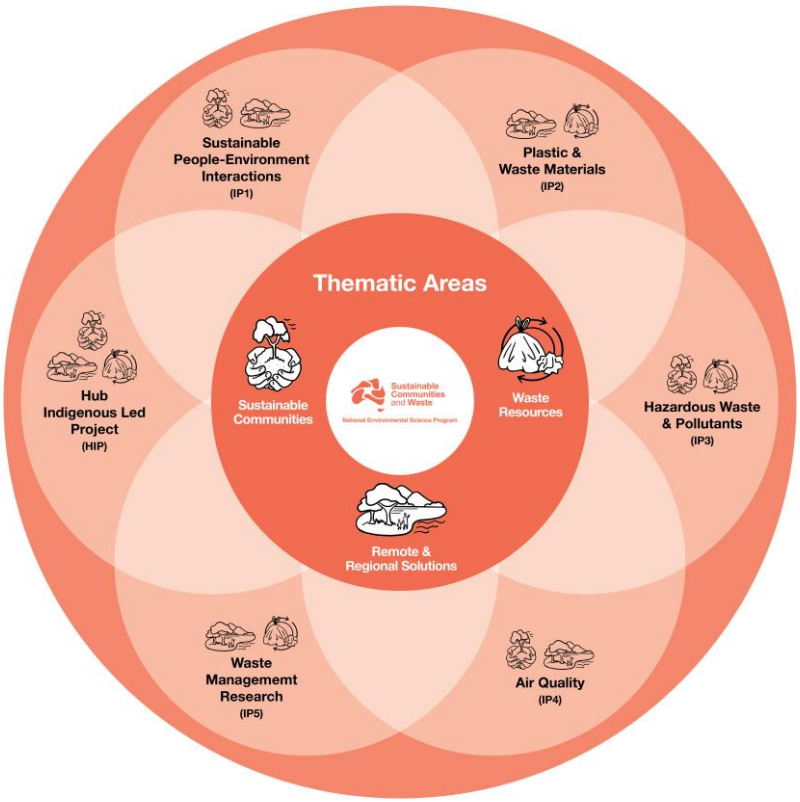


- **Sustainable Communities** explores ways to enhance and inform sustainable social outcomes, policy and cultural challenges, and the health, wellbeing and liveability of Place, including what is needed to protect, preserve and increase prosperity.
- **Waste Resources** explores the ways that a range of materials, such as plastics, tyres and e-waste can be recovered and revalued through innovative technological solutions, and a better understanding of waste flows through society.
- **Remote & Regional Solutions** explores how place-based, fit-for-purpose solutions can be developed as a response to local needs across Australia, in remote and regional communities as well as urban. It focuses on building economies of purpose rather than purely economies of scale.

Research Impact Priority Areas & Projects

The SCaW Hub has 5 Impact Priority (IP) Areas that collectively are delivering outcomes against the 3 thematic areas. Each of these IP areas comprises of several research projects, identified and developed through co-design during RP2021, RP2022 and RP2023, led by collaborations of researchers across institutions. Each of the projects are briefly outlined below, with more detail provided in Attachments A & B. As part of this research planning we are proposing new project under the name of Hub Indigenous Lead (HIP) project and some changed to the current research planning.

All projects, but two was approved under RP2022 and/or RP2023, with some seeking amendments to budget and/or scope for RP2024. There is one new project for RP2024, under IP5 (refer below) and one new project under Hub Indigenous led project (HIP). HIP is in collaboration between First Nations Communities and our hub researchers under the each of the Hub's three overarching thematic areas: Rural and regional solutions; waste resources; and sustainable communities.



IP1.04 - Sustainable People–Environment Interactions

Description

IP1 explores links between human wellbeing, and environmental and ecosystem health. Through research and collaboration with various stakeholders and using a Nature-based Solutions (NbS) lens, this research will develop knowledge and tools to inform and stimulate change for the shared benefit of people and nature.

This Impact Priority area also aims to empower regional, remote and Indigenous communities to become more sustainable and to improve liveability and help support the delivery of *Australia's Strategy for Nature 2019–2030*, *National Climate Resilience and Adaptation Strategy 2021–2025*, and a renewed *National Water Initiative 2004*. In RP2024, existing project details seeking amendment to scope and budget are outlined below.

Key Projects

- *IP1.02.01: Nature connection:*

The Nature Connection Project aims to increase benefits for people and the environment derived from valuing nature, through understanding nature connection in the Australian context, and identifying and supporting strategies to maximise positive impacts on health, wellbeing and sustainability for all Australians. Stream 3 of this project (Indigenous-led research) is a cross-Hub project being co-designed and co-delivered with leadership from the melythina tiakana warrana Aboriginal Corporation (MTWAC). It is expected to focus on improving health of Tebrakunna Country and wellbeing of Coastal Plains Nation.

- *IP1.02.02: Water sensitive and liveable communities*

This research will help respond to the urgent call in the national discourse for research to support regional and remote communities and their local institutions to develop more effective ways to empower their voice and sovereignty in decisions that impact on their way of life, especially around areas such as water management. The research design adopts place based participatory action research and case studies of Indigenous led governance and institutional frameworks and models for Indigenous water outcomes. Stream 2 of this project is Indigenous led research exploring how sovereign water rights, knowledges, practices, values and aspirations of Indigenous peoples transform water governance and scientific frameworks for better water outcomes for Country, culture and community.

Thematic Areas

- Sustainable Communities
- Remote & Regional Solutions

IP2.04 – Reduced Impact of Plastics and Other Materials

Description

IP2 investigates approaches to reduce the impact of plastics and other waste materials.

Key Projects

- *IP2.02.01: Understanding Microplastics*

This project seeks to address the concerns raised by councils, industry, governments and communities over microplastics and component materials to directly address gaps on the prevalence and impact of microplastic pollution. This includes understanding the sources and generators of microplastics and the finalisation of a national protocol for measuring and monitoring microplastics, providing deeper insights for policy.

- *IP2.02.02: Finding fit-for-purpose technological recycling solutions for regional and remote communities across Australia*

This project seeks to identify and trial fit for purpose technological recycling solutions, utilising hub and spoke models for remote/very remote, inner and outer regional communities across Australia. A number of case studies will provide the ground-truthing for solutions and provide lessons learned and stories to build the capacity of other communities. In RP 2024 this project also includes collaboration with Firesticks (if approved). It will be an important process of activating innovation within Indigenous knowledge into mainstream solutions for environmental restoration, improving agriculture, and Aboriginal advancement for employment and cultural practice revival. This is addition is being included as an Emerging Priority and undergoing a separate approval process.

Thematic Areas

- Waste Resources
- Remote & Regional Solutions
- Sustainable Communities

IP3.04 – Management of hazardous waste, substances and pollutants

Description

Through the generation of high-quality data related to the mass and potential availability of chemicals in our waste streams, IP3 will assist safe recovery and reuse of resources obtained from wastes and enable national resource recovery targets. There are no project changes to the IP3 project in RP 2024**.**

Key Projects

- *IP3.02.01: Quantifying mass and potential release of chemicals of potential concern in our wastes and recovered resources*

This project will develop robust and representative sampling and reporting methods, waste characterisation, and environmental and ecotoxicological risk definition for chemicals of potential concern (CoPC) identified in end-of-life tyres and e-waste. The project seeks to generate data that are discoverable, accessible, and reusable, can easily be integrated and interpreted for other applications, and will be used to inform risk-based decisions regarding the management, treatment, and safe reuse of these wastes.

Thematic Areas

- Waste Resources
- Sustainable Communities

IP4.04 – Improved Air Quality, Forecasting and Assessment

Description

IP4 explores how to reduce air pollution and its impacts in Australia.

Key Projects

- *IP4.02.01: Let's yarn about smoke*

Bringing together practitioners from air quality, Indigenous health, and fire and land management domains with government and community stakeholders, this project aims to learn from, and where possible, support existing Indigenous-led actions towards improving air quality and health. It also seeks to identify opportunities to co-design air quality research, resources and tools that address Indigenous identified priorities for managing the impact of landscape smoke on the health of communities. This projects also aims to develop strategies to support air quality monitoring for Yolngu residents and Miwatj Health staff in East Arnhem, NT to prevent multi-morbidity by improving environmental health awareness through fixed and wearable sensor monitoring, tracking and managing health symptoms and potential measures that can be put in place to reduce health impacts.

- *IP4.02.02: How will a changing climate and emissions reduction measures impact sources of air pollution and secondary pollutant formation?*

The project is a modelling study that will provide a lens on how altered we can expect air quality to be under future emission scenarios in Australia. It will leverage modelling capability in the Climate Systems Hub and will contribute to cross hub Initiative activities. The research outcomes will be used by government agencies for managing future changes to air quality and health.

- *IP4.02.03: Wood heaters: developing and testing novel solutions to a persistent problem.*

This multi-year program aims to implement and evaluate novel solutions to wood heater emissions to (a) directly inform policy and (b) support the scaling up of successful interventions. The outcomes will provide practical guidance and solutions for decision makers across Australia.

- *IP4.02.04: Evaluation of interventions to reduce air pollution in safe havens and use of Low-Cost Sensors to identify areas of concern*

This project aims to provide up to date guidance on the choice and use of low-cost sensors and HEPA filters in the Australian context. Part of this project will include working with manufacturers to develop plain-English education material and programs to ensure research users understand the capacities and limitations of these technologies. Project outcomes will help research-users to make better choices over the selection, use of LCS and HEPA and, consequently, reduce the impacts of air pollution on health.

Thematic Areas

- Remote & Regional Solutions
- Sustainable Communities

IP5.04 Waste Impact Management Research

Description

IP5 focuses on providing information, data and management tools; informing design for repurposing waste and circular economy; informing the institutional and governance needs of community-based resource recovery and circular economy initiatives; and waste management and resource recovery opportunities for Indigenous communities.

Key Projects

- *IP5.04.01 - Metrics, data and indicators for material flow and stocks, waste and emissions to monitor progress of Australia's circular economy transition*

This new project will further improve Australia's knowledgebase for measuring progress of circular economy at the national, State and Territory and industry and product level and will investigate opportunities for growing Australia's circularity potential and achievement. The recent report developed under IP5.02.01 on material flows, waste and circularity (Miatto et al. 2023) presented an initial assessment of resource efficiency and circularity for the Australian economy. The availability of a yearly comprehensive report of material flows, waste (and emissions) and circularity will inform the policy process in Australia and will position Australia well internationally in several processes and for specific reporting initiatives.

- *IP5.02.03 - Governing community-based waste management and resource recovery and circular economy initiatives*

This project aims to develop a model for networked circular economy (CE) governance best suited to supporting regional CE in Australia. By prototyping and developing tools this project will extend existing local government networks of regional CE stakeholders and provide a platform to facilitate future CE collaborations between different local government areas that also links regional community-led initiatives with State and Australian government initiatives for CE.

- *IP5.02.04 - Identifying opportunities from waste management and resource recovery and the circular economy for indigenous communities and businesses*

This project aims to identify suitable Aboriginal communities and will engage in a process to identify the magnitude and characteristics of the local waste problem and to explore potential opportunities for managing waste, recovering resources, and creating economic and employment opportunities.

Thematic Areas

- Waste Resources
- Sustainable Communities
- Remote & Regional Solutions

HIP.04- Hub Indigenous-led Project

Description

HIP project is our flagship Indigenous-led project that hardness the collaboration between First Nations Communities and our hub researchers from Impact Priority 2 (Plastics and other wastes). This project is seeking approval for stage 2 of the project. Stage 1 is the Emerging Priority project that will run from October 2023 – March 2024. This stage 2 will start from July 2024 and run for one year.

Key Projects

- *HIP.04.01: Remanufacturing Plant and Plastic Wastes in Regional and Remote Communities*

This project aims at harvesting invasive native and introduced species of plants from landscapes as part of restoring the health and identity of the natural environment and local Indigenous communities. This project will explore the viability and potential use of the selected waste feedstock prototype/s along with estimates of economic viability for potential use within the manufacturing industry.

Thematic Areas

- Waste Resources
- Sustainable Communities
- Remote & Regional Solutions

Expected outcomes and outputs

The expected outcomes of NESP are to produce research that:

- enhances our understanding of Australia's environment and climate
- is communicated clearly to relevant stakeholders and the public
- is discoverable and accessible
- informs decision-making and addresses environmental priorities.

Research under the NESP is expected to inform the Department's policy and program delivery. More broadly, it will engage and inform key stakeholders with an interest in the outputs of environmental and climate science research, including state and local governments, business and industry, community groups, Indigenous land managers, Indigenous communities and education institutions.

Hub outcomes and outputs

The SCaW Hub is enabling a systemic, transformative response to Australia's sustainability, waste and pollution challenges through the integration of key research fields, including ecology, engineering, environmental monitoring, public health, data science, technology, behavioural change, environmental economics, business innovation, design, and regional and urban planning.

The research of the SCaW Hub is being undertaken across many parts of Australia's urban, regional and remote communities and environment. Working closely with all levels of government, private industry, NGOs and communities - including Indigenous - to co-design and co-implement research projects and co-create knowledge products, this research will provide positive outcomes towards

solving the complex waste and sustainability problems that negatively impact society and the environment. Governance, community participation and Indigenous knowledge underpin our co-design approach. We aim to produce actionable knowledge, methods, tools and data for transitions towards circular economies and more sustainable communities.

Key outcomes and outputs of specific Impact Priority areas are outlined in Attachment B and summarised below.

Informing policy and frameworks

- **National Waste Policies**
    - Informing waste management policy design and decision making for the Department and government (at all levels) via community co-designed solutions for addressing waste management, including for microplastics and in regional and remote communities.
- **Nature-Based Solutions Policies**
    - Data and knowledge to enable federal, state and local governments to better report on national and international policies, outcomes and obligations (e.g. *Australia's Strategy for Nature 2019–2030*, *National Climate Resilience and Adaptation Strategy 2021–2025, National Water Initiative, Closing the Gap, Protecting Victoria's Environment – Biodiversity 2037,* Sustainable Development Goals (SDGs), Aichi targets, post-2020 Global Biodiversity Framework, Ramsar triennial reporting to the conference of the Contracting Parties, post United Nations Framework Convention on Climate Change Conference of Parties 26, World Heritage Convention, IUCN).
- **Remote & Regional Water-Sensitive Community Frameworks**
    - Foregrounding Indigenous water research frameworks and methods – developing, identifying, and sharing ontologies, governances and values to better inform and develop water policy, frameworks and management in Australia.
- **Waste Demographic Frameworks**
    - Input to waste sampling, characterisation, and risk assessment methodologies to frame waste management policies around products and articles in Australia.
- **Air Quality & Emissions Planning**
    - Improved guidance on the use of HEPA filters for air quality in public spaces, guidelines on the selection and use of low-cost sensor networks for the management of local air quality problems and a roadmap for interventions to reduce exposure on high air pollution days.
    - Modelling on air quality under future emission scenarios in Australia which can be used by government agencies for managing future changes to air quality and health.
- **Circular Economy Decision Making**
    - Metrics and data on material flows, waste, emissions, resource recovery and circular economy for decision makers in federal, state and local governments and for businesses in the waste management and resource recovery sector.

Community benefits

- **Improving Health**
    - Reduction of exposure of Australian communities to poor air quality, microplastics and other hazardous chemicals from waste stockpiles.

- Plain English guidance for the use of HEPA cleaners and outcomes of the comparison testing and intervention studies, to assist the public and stakeholders to make more informed decisions on purchasing cleaners to reduce their exposure to air pollution.

- **Enhanced Connections to Nature**
  - Quantifying, characterising and mapping Australian experiences and impacts of nature connection and pathways for a more nature-connected society and empowered Indigenous communities.
- **Waste Reduction**
  - Increasing materials circularity in Indigenous, remote, regional and urban Australian communities. This outcome will contribute to the delivery of the National Waste Policy 2018 and the National Waste Policy Action Plan, particularly the goals of "Helping to reduce total waste generated by 10% per person by 2030" and "Significantly increase the use of recycled content by governments, consumers and industry".
- **Community & Indigenous Leadership and Participation**
  - Identification of the governance and water system changes necessary to deliver water outcomes supportive of Indigenous communities.
  - Identification of ways in which local communities can benefit from regional technological solutions to transform waste materials into new products.
  - Greater understanding of knowledge exchange/capacity building for regional and remote communities, including championing Indigenous thought leaders and change champions to challenge the water and land management sectors.
  - Training and leadership to support Indigenous-led transformation in the water sector/industry and land and sea management.
  - Greater participation in research around waste and air quality, and uptake of research outcomes, by community stakeholders, and especially Indigenous researchers and stakeholders.
  - Community based experimentation of solutions for a local circular economy enabled by a sound governance framework and providing opportunities for scaling up and scaling out.

Providing valuable insights to inform policies, programs, and practices for waste management and circular economy initiatives, benefiting Indigenous communities across various locations.

- **Greater Understandings on Circular Economy and Waste**
  - Enhanced circular economy networks among community, government and industry actors in regional Australia and reduced waste generation in regional Australia.

Economic Benefits

- **Wellbeing Benefits**
  - Data and knowledge to support economic evaluations of the benefits of a society that connects with and values nature.
  - Opportunities for Australian Indigenous, remote, regional and urban communities to embrace circular economy solutions to drive social and economic benefits.
- **Circularity Solutions**

- Innovative recycling and re-manufacturing solutions for waste streams, including plastics, tyres, and e-waste.

- **Supply Chain Opportunities**
  - Catalysing waste supply chains and creating new markets.
- **Waste & Emissions Analytics**
  - Providing industry and non-government stakeholders confidence and evidence to make decisions regarding business and investment for treatment, resource recovery and product development from hazardous wastes.
  - Information on what drives individual decision making on wood heater use, HEPA cleaner purchases and low-cost sensor network installations. These can be used to understand potential economic choices.

Environmental Benefits

- **Relationships to Nature**
  - Greater understanding of the characteristics and benefits of nature connection across Australia and the strategies that can support Australians valuing, connecting with and benefiting from nature, while creating positive environmental outcomes.
- **Urban Greening**
  - Knowledge and tools to effectively and equitably support nature connection, urban greening and Nature-based Solutions across rural, regional and remote Australia.

- **Reduction of Waste Impacts**
  - Reducing the impacts of waste materials subject to the export ban as well as the effects of microplastics on the environment.
  - Tangible reductions in material use, waste to landfill and emission and environmental impacts (climate change, natural resource depletion, biodiversity loss, toxic waste issues) for communities and businesses.
  - Accelerating the diversion of hazardous waste from the environment and ensuring safe reuse of waste in new products in ecological settings.
  - Diverting bio-waste from burning, into an economic resource.
- **Improved Air Quality**
  - Understanding which interventions result in increased human and environmental health outcomes. Successful interventions should see an increase in ambient air quality, with a reduction in the pollutants being emitted.

Partnerships & Collaboration

- **Diverse Stakeholder Partnerships**
  - New and strengthened partnerships among researchers, the Department, state environment agencies/departments, Indigenous groups, local communities, NGOs and other research-user partners.
  - Expanded and connected national network of key groups to create greater momentum in addressing state and federal hazardous waste diversion (from landfill) and resource recovery targets.

- **Strengthening Local Capacity**
    - Working with communities to strengthen their capacity for implementing fit for purpose waste management solutions.
- **Participatory Action Research**
    - Better understanding and inclusion of specific community needs, and ensuring diverse perspectives are incorporated into the research process, solutions and decision-making processes.
- **Transferring Learnings**
    - Reflecting on and refining localised research engagement and implementation approaches, so that they can be adapted to fit within other communities.
- **Indigenous Empowerment**
    - Greater understanding of methods that bring together knowledge systems to create frameworks and models for Indigenous-led and bi-cultural water governance and land management.
- **Cross-Hub Collaboration**
    - Deep collaboration with other NESP Hubs, such as Resilient Landscapes Hub, Climate Systems Hub, and Marine and Coastal Hub.

Hub Beneficiaries

The below list outlines broadly the types of research-users who will benefit from the SCaW Hub research.

- National, State, Regional and Local Government agencies and industries in the waste management and resource recovery sector
- Waste management authorities and industry associations
- Local authorities and communities
- Indigenous land and water councils and Indigenous communities
- Department of Climate Change, Energy, Environment and Water
    - Environment Protection Branch
    - Chemicals Management Branch
    - Waste Policy and Planning Branch
    - Waste Action and Modernisation Branch
    - Water and Resource Recovery Branch
    - Waste Policy and Planning Branch
    - Plastics, Packaging and Marine Debris Branch
    - Biodiversity Conservation Division
    - Heritage, Reef and Oceans
    - Biodiversity Policy & Water Science Branch

    - Environmental Science & Nature Based Solutions Branch
    - Protected Species and Communities Branch
    - Science partnership Branch
- All state and territory EPAs, and/or environment and primary industry departments
- Community groups, NGOs, national waste networks, water corporations and peak bodies
- Business and private sector industry partners engaged in conservation, plastics, air quality, wastes, water, agriculture, aquaculture, manufacturing.

Collaboration and partnerships

NESP encourages a collaborative, multi-disciplinary approach to environmental and climate research. Key to the success of the Hub will be the capacity to foster partnerships between hubs and with a wide range of decision-makers across the Australian community, including Indigenous communities, to achieve positive environmental, social and economic outcomes.

Co-design and co-production approaches to engagement and research are at the core of how the Hub collaborates with partners and other stakeholders. In RP2021, RP2022 and RP2023 stakeholder and research-user priorities and needs have helped to shape the focus of SCaW Hub Outcomes. In RP2024, co-design continues to play a vital role in all IP projects, as a way for primary and some secondary stakeholders to help meaningfully inform and evolve the research and improve outcomes for communities and environment.

The SCaW Hub has three main layers of collaboration:

- *Impact Priority Collaboration*, which includes cross-institutional collaboration across Impact Priority research areas
- *Stakeholder Collaboration*, which involves deep collaboration and co-production of research and knowledge with communities, research partners, and other research-users
- *Cross-Hub Collaboration*, which involves collaboration with other NESP hubs on research projects.

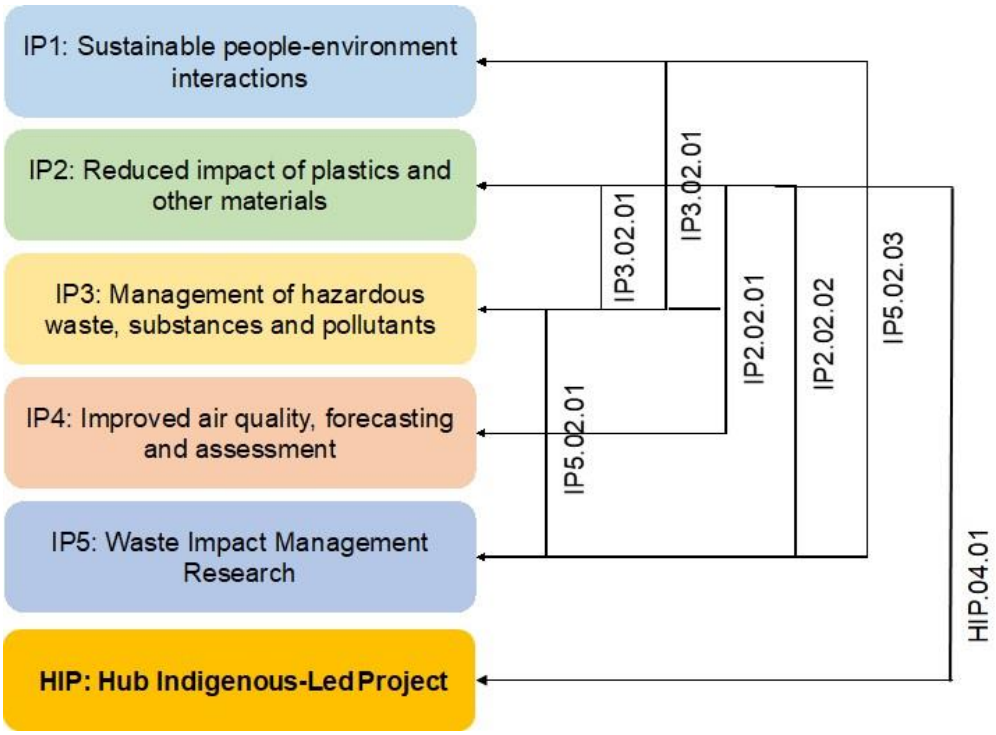
The following is a condensed list of collaborators and partners connected to the SCaW Hub. Detailed lists can be found in IP-specific project plans in Attachment B.

Stakeholder	Description and relationship to SCaW Hub
UTas	The Healthy Landscape Research Group (Heal) that aims to understand the connections between the environment and human health - especially in the context of rural and regional areas and small cities. It uses that knowledge to drive and learn from local initiatives to provide health benefits for Tasmanians and make Hobart a leading “healthy regional city”. Heal is currently undertaking a range of projects, including on urban and regional microbiomes; benefits of biodiversity and nature in small cities; the multiple social and health benefits of ecological restoration programs and community gardens; and dark skies conservation. Also, the Centre for Air pollution, energy and health Research (CAR).
CSIRO	CSIRO has several national programs related to plastics, critical energy metals, emissions issues, and organic waste. These are linked to government, industry and community interests, meshing strongly with the Hub vision. Health and environmental jurisdictions including the CSIRO/Bureau of Meteorology Smoke forecasting system (currently operating for fire agencies in Victoria and New South Wales).
UNSW	Various centres of excellence across UNSW, particularly the UNSW Sustainable Materials Research and Technology (SMaRT) Centre and its MICROfactorie technologies.
Monash	Monash was the lead in the Cooperative Research Centre (CRC) for Water Sensitive Cities, which wound up in June 2021, with the Water Sensitive Cities Institute, a SCaW Hub partner continuing to deliver against its mission to make cities more water sensitive. Monash is also leading two Circular Economy and Waste ARC Linkage and Discovery Projects. Behaviour Works at Monash has been collaborating since 2018 with Victorian and New South Wales -based policy partners to look at the issue of waste and how to encourage Australians to avoid, reduce, reuse and recycle waste and adopt circular economy approaches from a behavioural change perspective.
Curtin	Curtin’s Sustainability Policy Institute and extensive Indigenous Knowledge research expertise.
State Environment Departments and EPAs	Victoria Department of Environment, Sustainability Victoria, Land, Water and Planning, Western Australia Department of Biodiversity, Conservation and Attractions, South Australia Department for Environment and Water, Tasmania Department of Primary Industries, Parks, Water and Environment, NSW Department of Planning, Industry and Environment, Parks Australia,
State Health & Other Departments	Victoria, NSW, Tasmanian, WA Health Departments, Waste Authority WA, Development WA, Melbourne Water, Royal Botanic Gardens Victoria.

Stakeholder	Description and relationship to SCaW Hub
Various Local Governments	City of Knox, City of Melbourne, City of Fremantle, Perth City Council, and regional centres such as Launceston, Brighton (Tas), Ballarat, Shoalhaven City Council.
Aboriginal and Torres Strait Islander groups	Tasmanian Regional Aboriginal Communities Alliance (TRACA), Fisheries Research and Development Corporation Indigenous Reference Group, Arnhem communities, Uraah Innovations and Cultural Services. Whadjuk Noongar community, melythina tiakana warrana Aboriginal Corporation (MTWAC), Various Firesticks locations, Champion Centre (Indigenous Community Organisation in WA)
Environmental NGOs	Conservation Volunteers Australia, TierraMar, Landcare Tasmania, Tasmanian North East Bioregional Network, Australasian Dark Skies Alliance, Health and Environment Alliance, Rethink Waste Tasmania, AUSMAP.
Industry Associations	Water Services Association of Australia, Nursery and Garden Industry Victoria, , Circular Economy Networks and Hubs, Southern Waste Solutions, Asthma Australia, Charitable Recycling Australia, Tasmanian Farms & Graziers Association.
Private Enterprises	Tree Dimensions, Kandui Technology, Environex, Edge Environment, RAWTEC, Blue Environment.
External Linkages	Through the Hub's universities and CSIRO, links with leading external researchers and universities globally. Hub research-users also have research and development (R&D) capability and connections – for example Water Research Australia – who link across all water utilities in Australia and their associated researcher cohorts. Such linkages will be brought to bear on the Hub and other NESP projects of scale and complexity where capability is not housed within Hub partners.

Impact Priority Area Collaborations

Several of the research projects within the Hub are collaborations between Impact Priority teams, with the research outcomes informing other IP areas within the Hub.

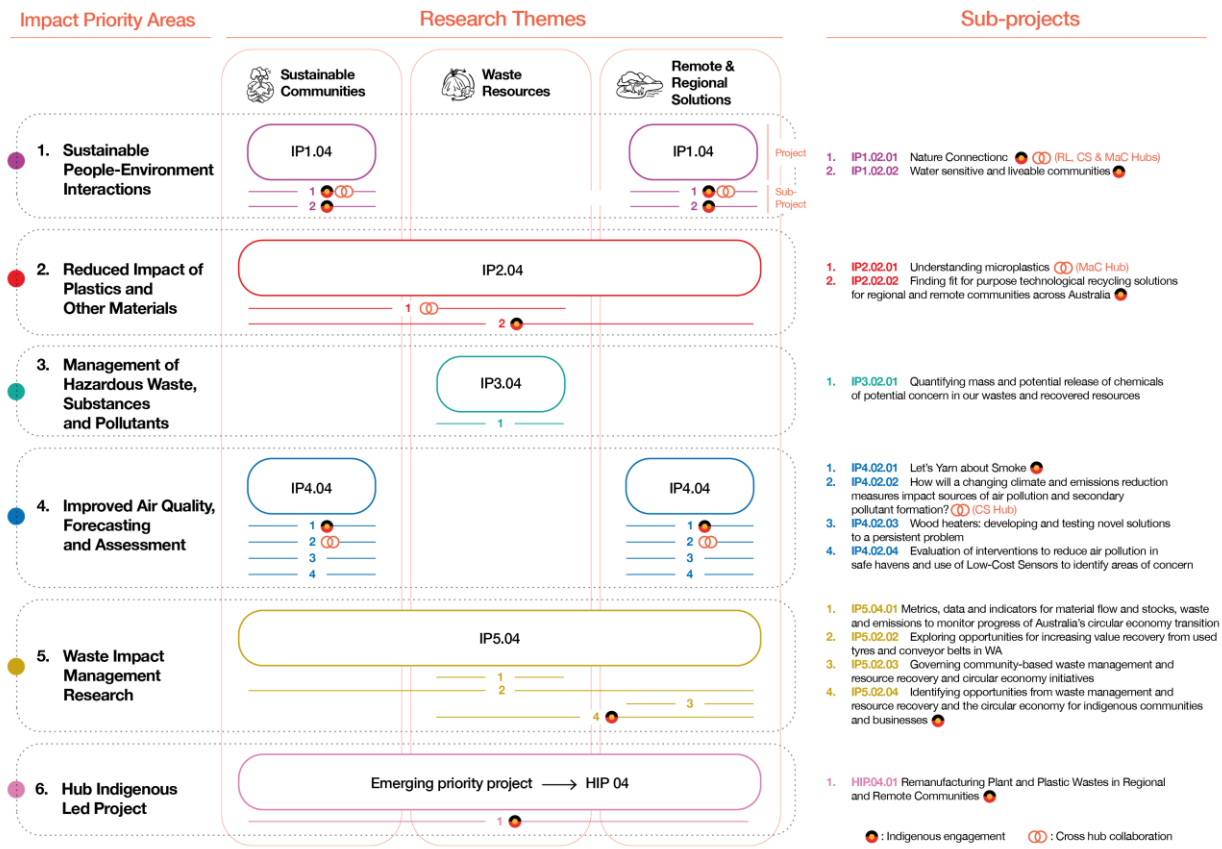


Cross-Hub Collaborations

There are several cross-hub collaborations underway within the SCaW Hub, including:

Hub	SCaW Hub Collaborators
Resilient Landscapes Hub	IP1,
Marine & Coastal Hub	IP1, IP2
Climate Systems Hub	IP1, IP4

Cross hub collaborations, Indigenous engagements and research themes for various subprojects is presented below:



These collaborations are summarised as follows:

Scaw Hub Project Details	Cross Hub Project Details	Cross Hub Linkage Activities
IP1.02.01: Nature connection **Project leader**: Emily Flies, UTAS	**Project:** 3.17. Improving environmental outcomes on conserved and managed lands **Cross Hub:** Resilient Landscapes **Project leader:** Vanessa Adams	• Stream 1: Not an official cross-Hub stream, though there is and will continue to be collaboration with RL Hub on this stream. • Stream 3: Is an official cross-Hub, Indigenous-led project which will have co-investment of funds across all four Hubs, with a collaborative, cross-Hub codesign process led by our indigenous partners (MTWAC) with data sharing as appropriate.
	Project: 4.4: An Indigenous-led approach to advance health and wellbeing of Tebrakunna Country, Coastal Plains nation, North-east Tasmania **Cross Hub:** Marine and Coastal Hub **Project leader:** Alan Jordan (and Mark Harris, as Indigenous lead at partner organisation, MTWAC)	• There will be co-investment of funds across all four Hubs, with a collaborative, cross-Hub codesign process led by our indigenous partners (MTWAC) with data sharing as appropriate.
	Project: 2.5: Regional climate change guidance for local action and proposed project 4.3: Conservation Adapt' - a cross hub biodiversity adaptation knowledge platform **Cross Hub:** Climate Systems Hub **Project leader:** Jennifer Styger	• There will be co-investment of funds across all four Hubs, with a collaborative, cross-Hub codesign process led by our indigenous partners (MTWAC) with data sharing as appropriate.
	Project: 2.5. Regional climate change guidance for local action **Cross Hub:** Climate Systems **Project leader:** Jason Evans	• There will be a co-investment of funds across hubs, a collaborative co-design process, appropriate data sharing and co-production of knowledge products.
I**P2.02.01:** Understanding Microplastics **Project Leader**: Prof. Veena Sahajwalla,	**Project:** 2.4. Ecological outcomes of wastewater discharges in contrasting receiving environment	• The collaboration between these two projects will provide opportunity to undertake appropriate tests which is already occurring under IP2 to measure the ecotoxicity investigations on

UNSW: Anirban Ghose ,UNSW	**Cross Hub:** Marine and Coastal Meeting and discussions with Hub leader Alan Jordan **Project collaborator:** Bronwyn Gillanders	the consequence of contaminants in coastal marine ecosystems. • UNSW and Bronwyn Gillander's Lab at university of Adelaide (collaborator of NESP2.4) initiated working on the investigation and examination of the microplastic samples. • A set of microplastic samples which was collected by Gillander's Lab team was sent to UNSW for further analysis. The received microplastic samples will be investigated via a range of different technique including FTIR, TGA-GC/MS, SEM, UV/VIS spectroscopy and ICP.
IP4.02.02: How will a changing climate and emissions reduction measures impact sources of air pollution and secondary pollutant formation? **Project Leader:** Kathryn Emmerson, CSIRO	**Project:** 2.5. Regional climate change guidance for local action **Cross Hub:** Climate Systems **Project leader:** Marcus Thatcher; Hamish Ramsey	• Project 2.5 is providing IP4.02.02 with the climate change modelling for 2048 -2052 so that IP4.02.02 can calculate changes in air quality. • These data will come from 4 GCMs under 2 SSPs (8 simulations in total for 5 years each)

Indigenous Partnerships

Our Hub aims to create sustained, resilient and strong partnerships with Indigenous Australians through Hub projects. We recognise this enables identification of areas and challenges related to social, economic, cultural and spiritual significance to Indigenous communities. We also recognise the importance truly co-designed research has towards reconciliation and to realise opportunities of mutual benefit to Indigenous and non-Indigenous research. The result is an advantage to Australia from both a research and environmental, social and economic perspective.

Our Indigenous partnership approach seeks to facilitate appropriate participation by Indigenous people, groups, and communities when undertaking research activities. We ensure compliance with Indigenous Cultural and Intellectual Property (ICIP) requirements (Please see the Indigenous Data Sovereignty and Governance section below). Our projects seek to provide investment to enhance Indigenous research capability, including in regional and remote Australia. Our approach embeds skilled transfer to Indigenous people but also Indigenous people sharing Traditional Knowledge and skills about sustainable communities and waste management with non-Indigenous people. Throughout the life of this Hub, we have and will continue to foster increased cultural awareness between members of the Hub, the participating nodes, and the communities who we are conducting our research with.

Our Hub's Indigenous Partnerships Strategy outlines criteria the projects need to address to ensure appropriate engagement with Indigenous Australians. We use the Three Category Approach (2023), a tool developed under NESP, to assess each project and determine the appropriate level of partnership and engagement with Indigenous Australians.

The Hub's approach to ensuring all project and program management staff are cultural capability trained is detailed in the SCaW Indigenous Partnerships Strategy. All staff in the Hub have been given opportunities to engage in a range of cultural capability activities including: Your Mob Learning online training (available to all and participation and completion is monitored and required before research plans are accepted). True Tracks Training has been offered in 2021, 2022 and 2023. However, the development of cultural capability must be demonstrated by researchers within the Hub throughout their research projects.

The SCaW Hub has several projects that are Indigenous-led or collaborating with Aboriginal and Torres Strait Islander communities. While detailed in Annex B under each Impact Priority Research Plan, they are summarised as follows:

Project Title	**Project Leader**	**Indigenous collaboration**	**Collaboration Highlights**
IP1.02.01: Nature connection	Emily Flies, UTAS	Indigenous-led research (Stream 3) of this project being co-designed and co-delivered with leadership from the melythina tiakana warrana Aboriginal Corporation (MTWAC) in the northeast of Tasmania	Expected focus on: • Supporting the development of a Healthy Country Plan for Tebrakunna Country. • Focus on improving health and advancing wellbeing for the Coastal Plains Nation.
IP1.02.02: Water sensitive and liveable communities	Paul Satur, Monash	Indigenous-led research (Stream 2) of this project will inform a nationally consistent approach to the structural empowerment of Aboriginal and Torres Strait Islander peoples relating to how sovereign water rights, knowledges, practices, values and aspirations of Indigenous peoples transform water governance and scientific frameworks for better water outcomes for Country, culture and community.	• The research design adopts place based participatory action research and case studies of Indigenous led governance and institutional frameworks and models for Indigenous water outcomes.
IP2.02.02: Finding fit for purpose technological recycling solutions for	Professor Veena Sahajwalla UNSW	IP2 will collaborate with Firesticks, through the emerging priority mechanism, if approved. (Note this is an Emerging Priority project being developed through a separate process).	• Aim to divert bio-waste (invasive species of plants) from burning / incineration, so it can be investigated and used as a manufacturing

Project Title	Project Leader	Indigenous collaboration	Collaboration Highlights
regional and remote communities across Australia	Anirban Ghose,UNSW		feedstock resource, combined with other waste, primarily plastics, to locally manufacture Green Ceramic tiles and other built environment applications.
IP4.02.01 Lets Yarn about Smoke	Amanda Wheeler, CSIRO Erin Dunne, CSIRO	This project will collaborate with the recently announced MRFF 2022 IH project 2025273, which is a joint Indigenous/non-Indigenous led research project. Dr Wheeler (CSIRO) is a Chief Investigator to support air quality monitoring for Yolngu residents and Miwatj Health staff in East Arnhem, NT	• Improving environmental health awareness by crowdsourcing ground-based air quality, temperature, and humidity data in three east Arnhem communities through fixed and wearable sensor monitoring. • Exploring lived experiences of Yolngu regarding the health impacts of extreme environmental exposures and potential measures that can be put in place to reduce health impacts.
Project IP5.02.04: Identifying opportunities from waste management and resource recovery and the circular economy for indigenous communities and businesses	Heinz Schandl, CSIRO Atiq Zaman, Curtin	The Whadjuk Noongar community in Armadale area (within Swan Canning Catchment) of Western Australia has been identified for collaboration on the IP5.02.04 project. Additional remote and rural Aboriginal communities will be identified in a later phase of the project duration upon consultation with the Hub Senior Indigenous Facilitator and interested community representatives of the Aboriginal communities.	• Engage with Indigenous communities and organisations from the early stages of the project to identify their needs, priorities, and aspirations related to waste management and resource recovery. • Respectfully listen to Indigenous voices, perspectives, and traditional knowledge, ensuring that research outcomes address their unique challenges and opportunities.

Project Title	Project Leader	Indigenous collaboration	Collaboration Highlights
			• Regularly seek feedback and input from Indigenous stakeholders throughout the research process to ensure continuous alignment with their needs and expectations.

Knowledge Brokering, Communication and Data Management

NESP expects that each hub will engage and communicate research outcomes with research-users and the wider public to facilitate uptake and adoption. As part of this, the program is committed to promoting open access to public sector and publicly funded information, including optimising the use and reuse of data. It is expected that each hub will implement its data management plan to provide timely, open access to the data products and research outputs.

Knowledge Brokering

Knowledge brokering is a key function within the Hub, guided by the Knowledge Brokering Strategy to ensure that research projects are co-designed in accordance with the Department guidelines to meet the needs of research-users and knowledge products are delivered in usable and accessible formats to generate research impact and to communicate the program level impact of the Hub. The Strategy is updated annually.

The Hub's lead Knowledge Broker (KB) guides knowledge brokering activities and functions across the Hub, in partnership with the Department, all Hub partners, Indigenous facilitators and other NESP hubs, in accordance with the Hub's KB strategy. There is an active knowledge brokering presence across the Hub, with knowledge brokering roles in all Hub research institutions (also referred to as nodes), and in all Impact Priority projects, via a dedicated Hub KB group that meets regularly to coordinate function and action plans for quality outcomes.

The KB team is involved in research project co-design across the Hub, supporting facilitated co-design workshops, connecting SCaW Hub researchers to research-users within the Department and external partners, communicating Hub research capability to research-users, and ensuring that research-user priorities are well addressed by Hub research plans. In addition, the KB team supports IPs to develop knowledge products via regular meetings, engaging the Department in this process to ensure that the results and findings from research are fit for purpose and presented in a way to suit research-user needs and ready adoption. These meetings also serve to understand KB priorities and to work together to create robust impacts from research outputs, so that individual projects communicate and align with each other and the Hub's broader vision.

At a cross-hub level, the KB team communicates regularly with KBs in the other hubs, to align research across hubs to elevate impact and share experiences and learnings. To strengthen the KB

activities SCaW Hub recently added a new member, Dr. Dixit Prasher who brings indepth experience in working on large projects with multiple stakeholders.

Communications

Hub communication activities – at both Hub and/or Impact Priority project level – are guided by the strategic aims and objectives of the Hub, and in accordance with the Hub's Communications Strategy. Additional advice and guidelines, along with working documents, to assist with the implementation of the Communications Strategy and projects are provided on the Hub's dedicated SharePoint portal.

The Communications Strategy is updated annually and being implemented in conjunction with the KB and data functions of the Hub. It considers other hub strategies and plans, and individual projects, in addition to annual research plans and other considerations of the National Environmental Science Program.

A range of activities, including the ongoing interaction and engagement with the Department and internal Hub stakeholders is undertaken. Regular meetings help to address ongoing and emerging activities, which ensures high- and low-level support across the Hub so resources are used efficiently.

Knowledge products generated through co-design are made publicly available through the Hub website, and in accordance with the Hub Data Management strategy. The co-design process identifies knowledge products to be delivered through RP2024, and data and information management plans are developed for each of these.

The Communications function enables knowledge sharing and engagement through:

- Working with researchers, knowledge brokers and other members of the Hub to identify and prioritise communication needs.
- Developing hub-level content and other required communications activities.
- Showcasing impact from Hub research and project outcomes.
- Ongoing management of communications tools such as website, social channels and other tools and templates for the use of researchers.

Data Management

The Hub's Data Management Strategy provides a framework for how the Hub and its researchers achieve findable, accessible, interoperable and reusable (FAIR) research products when project outputs and outcomes are produced. It is recognised that discipline-specific standards of data management apply, and researchers are required and expected to apply these standards wherever possible.

This data management function:

- guides data wrangling activities in the Hub, in particular outlining how the Hub manages data at all stages of research
- ensures that FAIR principles are embedded in all Hub activities, and that Hub activities are consistent with the NESP data and information guidelines
- provides clarity on the activities of data wrangling actor(s) in the Hub.

Data management in SCaW Hub is guided by several existing programs and platforms, including the Australian National Data Common (ANDC), Australian Urban Research Infrastructure Network (AURIN), and Research Data Alliance groups on data management, physical samples, and research data collections.

The SCaW Hub brings through its members, an experienced and knowledgeable data management team already embedded in the SCaW research community. Additional resources from the ARDC bring standards, infrastructure knowledge and economies of scale. Data and information management planning is essential to achieve the successful delivery of open-access research.

The current data wrangler assumed the role in September 2022 with the recommendation to add CARE principles when planning Data Repository management and when creating data protocols. The Data Wrangler plays a critical role in the transfer of knowledge between researchers and research-users across government, industry and communities, using workshops with IPs to discuss the requirements of individual projects within the SCaW Hub.

- Indigenous Data Sovereignty and Governance

Essential to advancing the Indigenous Partnership Strategy and RP2024 is the collaboration and alignment of activities relating to data, Indigenous partnerships and knowledge brokering, within the broader SCaW Hub and individual research projects.

Research with Indigenous people requires engagement, negotiation, reciprocity and free prior and informed consent. Additionally, there must be an understanding and mutual agreement on the research undertaken. Researchers must inform Indigenous Peoples of the aims, methods, implications, and potential outcomes of research projects, so they can determine their interest in the project and provide appropriate contributions. Further, researchers must convey the intended use of collected data and resulting products developed from this data. Fair consideration must be given to Indigenous Cultural and Intellectual Property (ICIP) and permission for data use in line with the AIATSIS Code of Ethics principles (which include Indigenous data sovereignty and cultural governance).

Furthermore, as part of the SCaW Hub Indigenous partnership objectives and goals - and aligned to the National NESP Indigenous partnership principles - knowledge held by Indigenous peoples must be valued and protected throughout the partnership and arrangements must be made for the ongoing protection of data. The program, hubs and individual researchers must ensure all legal obligations are understood before collecting information (including an understanding of free and prior informed consent) and be guided by the Global Indigenous Data Alliance (GIDA) objectives.

The Hub recommends and implements training with its researchers in the following topics: True Tracks regarding ICIP and the AIATSIS Code of Ethics. Additional training may include the Global Indigenous Data Alliance's CARE principles for Indigenous data governance Hub researchers.

Finally, as per the requirements of the Australian Code for the Responsible Conduct of Research and the AIATSIS Code of Ethics, it is the obligation of each research project team to develop a suitable data management plan which demonstrates how Indigenous data sovereignty, Indigenous Cultural and Intellectual Property and Indigenous cultural governance will be managed. These considerations must be addressed within a research agreement between the institution and relevant Indigenous Australian project stakeholders.

Attachments

- Attachment A – Sustainable Communities and Waste Hub research projects
- Attachment B – Sustainable Communities and Waste Hub project plans
- Attachment C – Sustainable Communities and Waste Hub activity budget
- Attachment D – Sustainable Communities and Waste Hub risk assessment and treatment plan

Annexure 1: NESP project assessment criteria

1. **Identified research priority**
    - Does the project plan incorporate one or more of the research needs identified by the department for the hub?
    - How well does the project align with the NESP research scope overview and research priorities identified for the hub?
        - Does the research approach clearly address one or more of the research priorities (for example, rather than the plan just saying it does)?
        - How strong/direct is the link between the research proposal and the priorities identified? Is there a large proportion of the research that doesn't clearly address a priority?
    - Does the research clearly support policy development, environmental management, regulation and investment?
    - Is there a clear management action or policy development that could be taken as a consequence of the delivery of this project?
    - Does the project plan refer to responsibilities, policies or programs to which the research will be directly relevant?
        - Does the project plan identify one or more departmental contacts, and were they consulted in the development of the draft? Were their suggestions taken on board?
    - At a hub level how much funding is proposed for projects addressing the same research priority? Is the distribution of funds across priorities appropriate?
2. **Outcomes and outputs**
    - Are the outcomes clearly articulated in the project plan and are they directed towards research-user needs/ practical management?
    - Is there is a path to adoption for the research outcomes? Does this include direct links to line areas and the responsibilities of the department?
    - Are the outputs of the project clearly described, with at least some tailored to support management/policy actions (i.e. to assist uptake of the research by the department and other research-users)?
    - If outputs are to be co-designed with stakeholders to directly meet their needs, is this clearly stated?
3. **Project design**
    - Is the project well designed?
    - Do you have any suggestions that would increase the value of the project?

- Is there is a clear link between the research and practical and tangible environmental outcomes (direct links or secondary links with a clear path to outcomes)?
- Could the research question or approach be refined to better suit research needs or the needs of other research-users? Are specific research questions clearly articulated, or is there a clear approach to doing so?
- Does the project leverage other programs or investments?
- Does the proposal refer to current and previous work (for example, previous Australian Government programs, state and territory government research), and clearly build on the outcomes of that work rather than duplicating it?
- Is there a process proposed that will review existing understanding to help identify gaps and specific research questions? Will this scanning or synthesis process consider relevant research beyond that done by the hub partners?
- Does the project intend to have ongoing co-design and implementation with research-users?

4. Indigenous inclusion

- Do the projects have appropriate Indigenous consultation and engagement?
- Is there evidence that the Indigenous Partnership Principles will be applied?
- Does each project include a ranking for the updated Three-Category Approach?

5. Data management and accessibility

- Are the *NESP data management and information guidelines* being followed?
- Do the project proposals list a repository or repositories for data, and indicate timing for publishing of the data? Note: Timing of publication should be not more than 1 year after the end of the project.
- Have metadata standards been indicated? For example, ISO 19115-1, OGC or ISA 19139 MCP.
- If an exception is stated for sensitive data, cultural data or species data, does it align with the *NESP data management and information guidelines*.
- Has the hub indicated that publications will not be made open access? Note: All publications are to be open access at either the point of publication or at a specified future date.
- Has a data contact been specified for each project?

6. Knowledge brokering and communication

- Do the project proposals describe the approach to knowledge brokering and communication?
- Have specific communication and knowledge brokering actions and activities been included in the project proposals? For example:
    - how research-users will be engaged from the outset of the project
    - identified pathways to adoption by research-users
    - target audiences and stakeholders.
- Does the proposal align with the hub's knowledge brokering and communication strategies?

Supported	Supported with minor modifications	Supported with significant modifications	Defer for resubmission	Not supported

- Do the project proposals include a commitment to developing activities in an appropriate timeframe?

7. Time and budget

- What are the risks associated with delivering the project on time and within budget?
- Are the management actions proposed to address these risks appropriate?
- Does the project approach represent the best and most efficient way of addressing the research need?
- What is the scale and scope of the research needed to deliver the research outcomes? Is it commensurate with the budget and time and resources allocated to the project?

8. Project personnel

- Does the project team provide evidence that they have a history of delivering research that is useful and used by managers and policymakers?
- Is there evidence that their project meets the objectives of the program and requirements of the Funding Agreement?
- Has the project team demonstrated previous engagement with the department and other stakeholders in developing and delivering research?
- Is there any feedback from departmental staff involved in previous work delivered by this research group?
    - If this feedback consolidates any concerns with the current project proposal, consider deferring or providing specific feedback.

Recommendation

The proposed project performs strongly against the majority of criteria, and there are no 'red flags'. It is well supported by research-users in the department	The proposed project would perform strongly against the majority of criteria if identified modifications are made prior to final assessment. 'Red flags' are relatively easily resolved or clarified.	Significant changes or significant additional information required. Red flags are addressed with considerable work.	Red flags are identified with significant changes or significant additional information required. Project proposal to be further developed and resubmitted.	Red flags are complex/time consuming to resolve. Project not well scoped/ does not meet department's needs.