

National Environmental Science Program

Sustainable Communities and Waste Hub
research plan 2026 – Attachment B
project plans



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Project SYN.05 – SCaW hub Synthesis report

Project type: SCaW hub synthesis reports	
Project status: New project submitted for approval	
Cross-cutting initiative:	No
Project start date: 01/10/2025-TBC Upon DCCEW approval	Project end date: 30/12/2026
Project leader details:	Name: Associate Professor Farshid Pahlevani Organisation: UNSW Sydney Name: Dr Samane Marouffi Organisation: UNSW Sydney

Pathway to impact

Outcomes
<p>Outcome Statement</p> <p>The synthesis report will consolidate and translate the SCaW Hub’s diverse research outputs, stakeholder insights, and documented outcomes into a strategic, accessible knowledge product. It will serve as a foundational resource to inform policy development, guide framework creation, and support community-led solutions across the Hub’s three thematic areas: <i>Regional & Remote Approaches</i>, <i>Sustainable Communities</i>, and <i>Waste and Circular Economy</i>.</p> <p>Alignment with SCaW and NESP Objectives</p> <p>This project directly supports the SCaW Hub’s mission under the National Environmental Science Program (NESP) to research ways to reduce the effects of plastic, enable sustainable people–environment interactions, and minimise impacts of hazardous substances and pollutants. By synthesising findings and leveraging SCaW’s technical capabilities in waste and materials processing, the report will provide actionable knowledge that advances NESP’s overarching goal of delivering science to inform environmental management and sustainability across Australia.</p> <p>Key Benefits and Value</p> <ul style="list-style-type: none">• Policy and Framework Development The report will provide evidence-based insights to support the design of regional and national policies, regulatory frameworks, and strategic planning documents. It will highlight actionable recommendations for government agencies, local councils, and industry bodies.• Community Impact By synthesising outcomes relevant to regional and remote communities, the report will empower local stakeholders—including Indigenous communities—with knowledge that supports sustainable practices, circular economy initiatives, and environmental resilience.• Broader Stakeholder Engagement The synthesis will deliver value to a wide audience including researchers, industry partners, educators, and civil society organisations. It will offer plain-language summaries and visual tools to ensure accessibility and usability across sectors.• Catalyst for Future Impact The synthesis will serve as a launchpad for future research collaborations, funding proposals, and innovation pathways, ensuring that the Hub’s legacy continues to shape sustainable development beyond its operational timeline. <p>To ensure the synthesis report is not only academically rigorous but also practically relevant, this stage focuses on engaging the diverse users of SCaW Hub research, those who will apply, interpret, or benefit from the findings in real-world contexts.</p>

This synthesis is designed to maximise the impact of SCaW’s research by combining technical excellence with stakeholder-driven translation. By engaging research leaders and partner organisations across the Hub, the project ensures that outputs are scientifically robust, culturally inclusive, and strategically aligned with policy and community needs. This collaborative model guarantees that the synthesis report will deliver measurable benefits beyond what individual reports can achieve.

Stakeholder Impact Table

Stakeholder Group	Specific Benefit	Example Outputs
Remote Indigenous Communities	Culturally appropriate waste solutions; health insights on pollutants	Plain-language summaries; TEK-integrated case studies
Local Councils & Regional Communities	Guidance for infrastructure planning and circular economy initiatives	Policy-ready recommendations; visual opportunity maps
Industry Innovators & Waste Processors	Insights into advanced recycling technologies and innovation pathways	Technical briefs; thematic infographics
Policy Makers (Local, State, Federal)	Evidence-based frameworks for waste reduction, air quality, and circular economy	Executive summary; policy briefs; stakeholder packs
NGOs & Sustainability Educators	Accessible knowledge for advocacy and education	Interactive web content; video explainers

Research-user	Engagement and communication	Impact on management action	Outputs
In addition to science partnership team here are the list of potential research users: Policy Makers: Local, state, and federal government agencies involved in sustainability, waste management, and	Engagement Strategy <ul style="list-style-type: none"> Stakeholder Co-Design: Involve key stakeholders—including community representatives, industry partners, and government agencies—in shaping the synthesis themes, validating findings, 	Key Areas of Impact Policy and Governance <ul style="list-style-type: none"> The report will provide evidence-based insights to support the development of policies and frameworks in areas such as waste reduction, circular economy, microplastics, and air quality. 	Primary Outputs Synthesis Report Comprehensive document structured around the Hub’s three thematic areas: <i>Regional & Remote Approaches</i> <i>Sustainable Communities</i>

Research-user	Engagement and communication	Impact on management action	Outputs
<p>regional development.</p> <ul style="list-style-type: none"> • Industry Stakeholders: Waste processors, circular economy innovators, infrastructure developers, and technology providers. • Community Organisations: Regional and remote community groups, Indigenous organisations, and local councils. • Environmental Advocates: NGOs, citizen science groups, and sustainability educators. • Academic and Research Institutions: Collaborators and future users of synthesized knowledge for further research and innovation. 	<p>and co-creating recommendations.</p> <ul style="list-style-type: none"> • Inclusive Participation: Ensure representation from Indigenous communities, regional stakeholders, and underrepresented groups through targeted outreach, culturally appropriate engagement methods, and multilingual options. • Feedback Loops: Use surveys, interviews, and workshops to gather input at key stages and integrate feedback into the synthesis process. <p>Communication Channels</p> <ul style="list-style-type: none"> • Hub Website: Central platform for publishing the report and related knowledge products. • Webinars and Briefings: Thematic sessions tailored for policymakers, industry, and community audiences. • Newsletters and Partner Platforms: Dissemination through SCaW Hub networks and collaborators. • Media Outreach: Press releases, opinion pieces, and interviews to raise public awareness. <p>Formats and Accessibility</p>	<ul style="list-style-type: none"> • It will help align local, regional, and national strategies with sustainability goals. <p>Community and Regional Development</p> <ul style="list-style-type: none"> • Synthesised findings will empower communities—especially in regional and remote areas—with knowledge to support local initiatives, infrastructure planning, and environmental stewardship. • Indigenous perspectives and lived experiences will be integrated to support culturally responsive decision-making. <p>Industry and Innovation</p> <ul style="list-style-type: none"> • Businesses and technology developers will benefit from insights into emerging challenges and opportunities, helping guide investment, product development, and operational improvements. • The report will highlight scalable solutions and innovation pathways relevant to waste management, resource recovery, and sustainable design. <p>Education and Capacity Building</p> <ul style="list-style-type: none"> • The synthesis will serve as a resource for educators, training providers, and knowledge brokers to support lifelong learning 	<p><i>Waste and Circular Economy</i></p> <p>Includes executive summary, thematic chapters, case studies, and recommendations.</p> <p>Plain Language Summary</p> <p>Condensed version of the report for non-technical audiences.</p> <p>Designed for community groups, local councils, and general public engagement.</p> <p>Visual Knowledge Products</p> <p>Infographics, charts, and diagrams to communicate key findings.</p> <p>Opportunity maps and thematic visualisations to highlight future directions.</p> <p>Interactive Web Content</p> <p>Web-based version of the report with clickable sections, embedded media, and downloadable resources.</p> <p>Hosted on the SCaW Hub website and partner platforms.</p> <p>Video Explainers</p> <p>Short videos summarising key findings and recommendations.</p> <p>Tailored for use in webinars, stakeholder briefings, and social media outreach.</p> <p>Stakeholder Presentation Pack</p>

Research-user	Engagement and communication	Impact on management action	Outputs
	<ul style="list-style-type: none"> • Report Formats: Full PDF report, executive summary, and plain-language versions. • Interactive Tools: Web-based visualisations, infographics, and video explainers to enhance engagement. • Multilingual Options: Key sections translated into relevant languages to support regional and Indigenous access. <p>Expected Outcomes</p> <ul style="list-style-type: none"> • Increased visibility and uptake of SCaW Hub findings • Strengthened relationships with stakeholders and communities • Enhanced credibility and influence in shaping sustainability policy and <i>practice</i> 	<p>and professional development in sustainability-related fields.</p> <p>Research and Collaboration</p> <ul style="list-style-type: none"> • By identifying knowledge gaps and future research directions, the report will foster new collaborations and inform funding proposals across academia and applied research sectors. 	<p>Slide deck and talking points for use in briefings, workshops, and dissemination events.</p>

Project description

Overview

This synthesis report directly supports the SCaW Hub's mandate under the National Environmental Science Program (NESP) to research ways to reduce the effects of plastic, enable sustainable people–environment interactions, and provide options to minimise impacts of hazardous substances and pollutants. By consolidating Hub outputs into actionable knowledge, the report will leverage SCaW's technical capabilities in waste and materials processing to inform policy, guide frameworks, and empower community-led solutions. This alignment ensures that the synthesis contributes to NESP's broader goal of delivering science that informs environmental management and sustainability across Australia.

Although SCaW Hub outputs are publicly available, they are dispersed across multiple reports, datasets, and platforms. This synthesis will integrate these resources into a single, curated knowledge product that highlights cross-cutting insights, emerging trends, and actionable recommendations. It reduces information overload, improves accessibility for non-technical users, and creates strategic linkages between research themes—ensuring stakeholders can apply findings effectively in decision-making and innovation. This approach transforms fragmented data into a coherent, user-focused resource, delivering impact beyond what individual reports can achieve.

This project will deliver a comprehensive **Synthesis Report** for the **Sustainable Communities and Waste (SCaW) Hub**, designed to consolidate and translate the Hub's diverse research outputs, stakeholder insights, and documented outcomes into a strategic knowledge product. The report will serve as a cornerstone for informing policy, guiding practice, and supporting innovative sustainable solutions across the Hub's three thematic areas:

- **Regional & Remote Approaches**
- **Sustainable Communities**
- **Waste and Circular Economy**

Methodology: 7-Step Approach

The synthesis process will follow a **refined, stakeholder-driven methodology** that integrates SCaW Hub's thematic expertise, addresses diverse user needs, and ensures actionable outcomes. Each step embeds subject-matter insights, stakeholder-specific strategies, and linkages between emerging topics (microplastics, urban waste, air quality).

Step 1: Define Purpose and Scope

- **Objective Alignment:** Establish the synthesis as a strategic tool to advance SCaW Hub's mission under NESP—reducing plastic impacts, enabling sustainable people–environment interactions, and mitigating hazardous substances.
- **Stakeholder-Specific Goals:**
 - **Remote Indigenous Communities:** Identify culturally appropriate waste management solutions and health implications of pollutants.
 - **Urban Circular Economy Innovators:** Highlight advanced recycling technologies and infrastructure planning.
 - **Policy Makers:** Provide integrated frameworks for air quality, waste reduction, and circular economy adoption.

Step 2: Gather Source Material

- **Comprehensive Data Collection:**
 - **Hub Outputs:** Final reports, milestone summaries, peer-reviewed publications, datasets, and technical briefs.
 - **Stakeholder Insights:** Feedback from previous SCaW workshops, Indigenous consultations, and industry roundtables.
 - **External Inputs:** Policy documents, industry standards, and global best practices.
- **Mapping Relevance:**
 - Tag each source by stakeholder group and thematic area.
 - Example: Microplastics → community health risk; Urban waste → infrastructure planning for councils.

Step 3: Engage Stakeholders

- **Differentiated Engagement Strategy:**
 - **Remote Communities:** Virtual workshops with Indigenous facilitators; culturally appropriate formats.
 - **Industry Innovators:** Technical roundtables in metropolitan hubs; focus on innovation pathways.
 - **Government Agencies:** Policy briefings and targeted consultations.
- **Inclusivity Measures:**
 - Representation from underrepresented groups.
 - Multilingual options for key outputs.
- **Success Metrics:**
 - Number of consultations, diversity of participants, and integration of feedback into synthesis.

Step 4: Analyse and Synthesise

- **Thematic Analysis:**
 - Identify cross-cutting insights across SCaW's three thematic areas.
 - Cluster findings by stakeholder relevance.
- **Quantitative Integration:**
 - Use data analytics to highlight trends (e.g., correlation between urban waste and air quality).
- **Opportunity Mapping:**
 - Visualise actionable pathways for each stakeholder group.
 - Example: Indigenous-led waste initiatives; industry-driven recycling innovations.

Step 5: Draft the Report

- **Structure:**
 - Executive summary, thematic chapters, stakeholder-specific case studies, and actionable recommendations.
- **Visualisation:**
 - Infographics, thematic maps, and stakeholder impact charts.
- **Accessibility:**
 - Plain-language summaries for communities.

- Technical briefs for industry.
- Policy-ready recommendations for government.

Step 6: Review and Validate

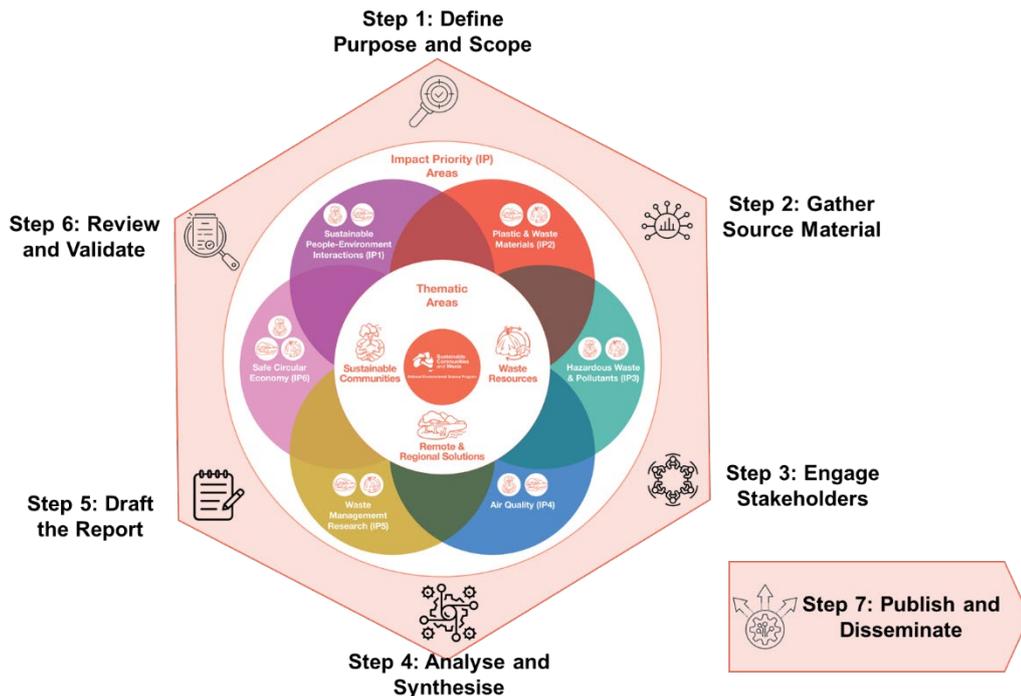
- **Internal Review:**
 - Peer review by SCaW research leaders.
- **External Validation:**
 - Indigenous knowledge holders ensure cultural appropriateness.
 - Industry representatives confirm technical feasibility.
 - Policy experts validate alignment with national frameworks.

Step 7: Publish and Disseminate

- **Tailored Outputs:**
 - Full synthesis report.
 - Plain-language summaries.
 - Interactive web content with clickable sections and embedded media.
- **Engagement Channels:**
 - Hub website, webinars, newsletters, and partner platforms.
- **Accessibility Enhancements:**
 - Multilingual options.
 - Video explainers and stakeholder presentation packs.

Additional Enhancements

- **Benefit of Synthesis:**
 - Consolidates dispersed outputs into a single, curated resource.
 - Reduces information overload and improves usability for non-technical audiences.
- **Impact Measurement:**
 - KPIs: stakeholder uptake, policy citations, and number of collaborative initiatives triggered.
- **Value Proposition:**
 - Transforms fragmented data into actionable insights, ensuring SCaW's research informs real-world decisions and innovation.



Leadership and Collaboration

The synthesis process will be led by a **multidisciplinary team** with proven expertise in sustainability research, stakeholder engagement, and knowledge translation. The core team includes Associate Professor Farshid Pahlevani and Dr. Samane Maroufi, supported by the SCaW Hub's research leaders, communications manager, and data wrangler.

To ensure the highest quality and relevance, the project will **actively collaborate with research leaders across all SCaW thematic areas** and draw on expertise from partner organisations within the Hub. This includes specialists in:

- **Waste and Materials Processing** – for technical rigor in circular economy solutions.
- **Environmental Health and Pollution** – to integrate findings on microplastics and air quality.
- **Social Science and Indigenous Partnerships** – to ensure culturally appropriate engagement and inclusion of Traditional Ecological Knowledge (TEK).
- **Policy and Governance** – to align outputs with national sustainability frameworks and regulatory priorities.

By leveraging this breadth of expertise, the synthesis report will not only consolidate scientific outputs but also translate them into **actionable insights for diverse user groups**, including policymakers, industry innovators, and remote communities. This collaborative structure ensures that the report is technically robust, culturally sensitive, and strategically aligned with SCaW's mission under NESP.

Supported by:

- **Communications Manager**
- **Data Wrangler**
- Strategic input from research leaders across the Hub

This collaborative structure ensures that the synthesis is both technically robust and strategically aligned with the Hub's mission and stakeholder needs.

Expertise and Capability

The project team and collaborators bring a **comprehensive skill set** that spans technical research, policy engagement, and community co-design:

- **Research Translation Beyond Industry:** The team will work closely with SCaW's knowledge broker and communications specialists to produce outputs tailored for government, community organisations, and educators—not just industry stakeholders.
- **Policy Integration:** Hub experts in governance and regulatory frameworks will ensure recommendations are actionable and aligned with national priorities.
- **Community Engagement:** Indigenous facilitators and social scientists will guide culturally appropriate consultation and integration of TEK, ensuring relevance for remote communities.
- **Technical Depth:** SCaW thematic leaders will contribute insights on waste systems, circular economy innovation, and environmental health, ensuring scientific rigor.
- **Impact Delivery:** The team has a track record of producing high-impact outputs, including synthesis reports, policy briefs, and stakeholder engagement frameworks under previous NESP phases.

This approach **mobilises the full breadth of SCaW's expertise**, ensuring that the synthesis report is not only comprehensive but also **practically relevant and transformative** for diverse stakeholders.

Timeline

- **Planning Phase:** Committee formation, scoping, and initiation – Q4 2025
- **Execution Phase:** Synthesis report development – 2026
- **Dissemination Phase:** Knowledge product creation and launch – Q1–Q2 2027

Strategic Value

This synthesis report will:

- Inform **policy and framework development**
- Deliver **community benefits** through inclusive and accessible knowledge
- Provide value to a broad **stakeholder audience**
- Address **emerging challenges** such as microplastics and air pollution
- Support **future collaborations**, funding proposals, and innovation pathways

This synthesis is not an additional layer of reporting; it is a strategic integration tool designed to maximise the utility of SCaW outputs. By translating technical findings into actionable insights for specific user groups, the report ensures that research informs real-world decisions, accelerates innovation, and supports culturally appropriate solutions for Indigenous communities. It will also identify knowledge gaps and future research priorities, positioning SCaW as a thought leader in sustainability and waste innovation.

Is this a cross-hub project?

No

Does this project contribute to a cross-cutting initiative?

No

Indigenous consultation and engagement

The SCaW Hub synthesis report recognises the **deep cultural, ecological, and custodial connections** that Aboriginal and Torres Strait Islander peoples have with land, water, and waste systems across Australia. This project prioritises **meaningful, respectful, and inclusive engagement** with Indigenous communities, particularly through the engagement that are already happening as part of SCaW Hub.

Strategic Approach

The synthesis will integrate Indigenous perspectives and knowledge through a multi-layered engagement strategy that aligns with the **National Environmental Science Program (NESP) Indigenous Partnership Principles** and the **SCaW Hub’s Indigenous Partnership Strategy**, which emphasise:

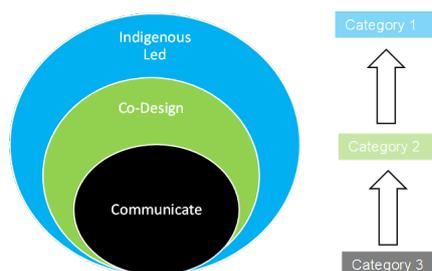
- Respect and mutual benefit
- Protection of Indigenous Cultural and Intellectual Property (ICIP)
- Co-created research and Indigenous-led governance
- Relationship-focused and individualised engagement

Engagement Activities

- **Culturally Appropriate Consultation:** Conduct targeted interviews, workshops, and focus groups with Indigenous knowledge holders, businesses, and community organisations that have been part of SCaW Hub activities.
- **Integration of Traditional Ecological Knowledge (TEK):** Ensure TEK is respectfully incorporated into thematic analysis and opportunity mapping, especially in areas such as waste management, land stewardship, and circular economy practices.
- **Storytelling and Accessible Communication:** Adopt Indigenous storytelling formats in reporting and develop plain-language factsheets and visual summaries to support knowledge sharing.

This approach ensures that Indigenous voices are not only heard but actively shape the synthesis report’s content, structure, and impact. It supports the creation of a knowledge product that is inclusive, respectful, and transformative contributing to sustainable futures for all communities.

Which updated Three-category approach the project meets	Communicate (3) <input checked="" type="checkbox"/>	Co-design (2) <input type="checkbox"/>	Indigenous led (1) <input type="checkbox"/>
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Project milestones

The following project milestones are specific to RP2026. Each subsequent research plan will elaborate on the annual milestones for multiyear projects.

SYN.05: SCaW hub synthesis report.

Milestones	Due date	Responsible person
Milestone 1 – Planning - Committee formation, scoping and start of synthesis report development	30 Jan 2026	Farshid Pahlevani / Samane Maroufi
Milestone 2 – Execution - Synthesis report development	30 Dec 2026	Farshid Pahlevani / Samane Maroufi

Data and information management

Knowledge products, co-designed with stakeholders and the Hub knowledge broker, that are generated through the project phase may be made publicly available through the Hub website, and in accordance with the Hub data management and communications strategies, and subject to ethics approvals and any relevant Indigenous Cultural and Intellectual Property (ICIP) arrangements. The co-design process identified, and will continue to identify, detailed knowledge products to be delivered over the life of the projects and detailed data and information management plans will be developed for each of these.

Project output	Data management and accessibility
<p>Synthesis report/brief/outcomes reviewing the current state of knowledge on the multiple benefits arising from the project</p>	<p>According to the Hub's data management strategy, information will be made publicly available on website.</p> <ul style="list-style-type: none"> It is expected that these will be derived from publicly available information, and there should be limited sensitives
<p>Reports and other written documentation</p>	<p>According to the Hub's data management strategy, information will be made publicly available on-website.</p> <ul style="list-style-type: none"> The report / document will be identified by a unique code for identification. Dates and other metadata should follow ISO standards. Key words should also be included in the title and included as 'tags' to improve findability. Metadata should also clearly define the type of document, such as whether it is a report, a fact sheet etc. The metadata may include a preview picture to improve findability if appropriate. Each type of document (report, fact sheet, etc) will follow relevant standards in terms of structure, identification, and format. This will streamline how the documents are presented and increase interoperability. The reports should include publicly available information to prevent sensitive information from spreading and to maximise accessibility. A data usage license should be included on the website and referenced at the beginning of the document to clarify reusability. Where data cannot be accessed without authorisation, a clearly defined procedure will be outlined to provide a methodology for requesting authorisation and providing the data securely. Specific safeguards will be implemented to protect privacy and data security. A data usage license should be included on the website and referenced at the beginning of the document to clarify reusability. A separate spreadsheet will be included providing raw data in an organised and clearly defined format, following a selected standard in terms of data organisation and identification. All documents will be communicated under the relevant sections on the website in consultation with the knowledge broker and communications manager. A title page should be appended to the beginning of each document, providing detailed metadata including globally unique and persistent identifier, related data spreadsheet with its own unique and persistent identifier, data usage license reference, domain-relevant community standards and detailed provenance. Indigenous data gathered for regional and remote communities will be co-designed with the Indigenous facilitator to ensure compliance with CARE principles and ICIP.

Project output	Data management and accessibility
Annual Technology forecast for evaluated technologies	To ensure proper identification, reusability, and referencing, the Annual Technology Forecast should be accompanied by well-structured metadata, similar to the approach used for data management and the accessibility of documentation such as reports and fact sheets. Whilst data may not be required to be included via a separate, uniquely identified spreadsheet, appropriate referencing must be included following the same standards as selected for all documentation on the website.

Location of research

The majority of work will be undertaken remotely using online facilities to conduct co-design workshops and meetings and desktop-based activities.

SYN.05: SCaW hub synthesis reports.			
At which spatial scale is the project working	National <input type="checkbox"/>	Regional <input type="checkbox"/>	Local <input checked="" type="checkbox"/>
Location(s) – gazetted region /place name	Desktop Studies: UNSW Sydney, Kensington		

Project keywords

Sustainability; Circular economy; Knowledge Integration; Stakeholder Engagement; Indigenous Partnerships; Policy Impact