

**KNOWLEDGE
EXCHANGE &
IMPACT
FRAMEWORK
2018-2023**

**Melbourne Waterway
Research-Practice Partnership**

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Our knowledge exchange vision: *To provide opportunities for individuals to collaborate, engage and share ideas for the facilitation of a strategic research program that leads to adoption of research findings and improved outcomes for waterways and wetlands.*



**WATERWAY ECOSYSTEM
RESEARCH GROUP**



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1. The Melbourne Waterway Research-Practice Partnership

The Melbourne Waterway Research-Practice Partnership (hereafter referred to as the Waterway Research Partnership) is a long-term, collaborative industry-research agreement between Melbourne Water and the Waterway Ecosystem Research Group (WERG) at the University of Melbourne. Operating since July 2013, the Waterway Research Partnership represents a unique, integrated approach to waterway management, with a dual focus on:

- a. applied research aimed at understanding the drivers of waterway ecosystem condition in urban and rural environments and identifying appropriate management options; and
- b. knowledge exchange that integrates research findings with Melbourne Water activities (and other industry stakeholders).

Research priorities and themes for the Waterway Research Partnership are co-designed by Melbourne Water practitioners and university researchers prior to the commencement of the five-year research program and revised annually. Research themes for 2018-2023 are:

- Waterway health planning tools
- Waterway hydrology and geomorphology
- Urban stormwater and rural runoff management for waterway health
- Riparian and wetland vegetation management
- Community participation in waterway management.

Details of the Waterway Research Partnership, including active research projects, can be found online at: mwrpp.org.

2. Purpose and scope of the plan

This Knowledge Exchange & Impact Framework (KEIF) guides the exchange of knowledge generated by the research of the Waterway Research Partnership. Central to the KEIF is the understanding that knowledge exchange activities are not simply the 'communication' or 'translation' of research ideas, but the active integration into policy and practice. It identifies pathways and processes for maximising research adoption and implementation, ensuring that knowledge exchange activities are strategic and coordinated. Importantly, the KEIF also identifies the process for evaluating the progress and effectiveness of knowledge exchange activities, and most importantly, the extent of impact on Melbourne Water business (and the industry more broadly).

More specifically, the KEIF guides the development of Project Proposals (Figure 1). A proposal is developed at the commencement of each project. It describes the rationale, research aims, methods, project team members and budget of the proposed research, ensuring all stakeholders of the Waterway Research Partnership have a shared understanding. Specifically, the KEIF directs the proposals to also identify the anticipated users and beneficiaries, outputs, outcomes (early impacts) and impact domains and indicators (see Section 8.1), all of which contribute to the exchange of knowledge and ultimately, research adoption.

Additionally, the KEIF directs the development of an Annual Knowledge Exchange Agenda (Appendix II), which is a collation of the expected activities and outputs described in the Project Proposals (Figure 1). The Annual Knowledge Exchange Agenda includes: i) knowledge exchange actions specific to research projects; and ii) knowledge exchange activities to be delivered across the partnership more broadly. The KEIF also requires the preparation and continual refinement of a Business Benefits and Impact Table for each project. This table (Appendix IV) is initially compiled using information contained in the Project Proposals (Figure 1), and then reviewed and updated each meeting of the Project Team.

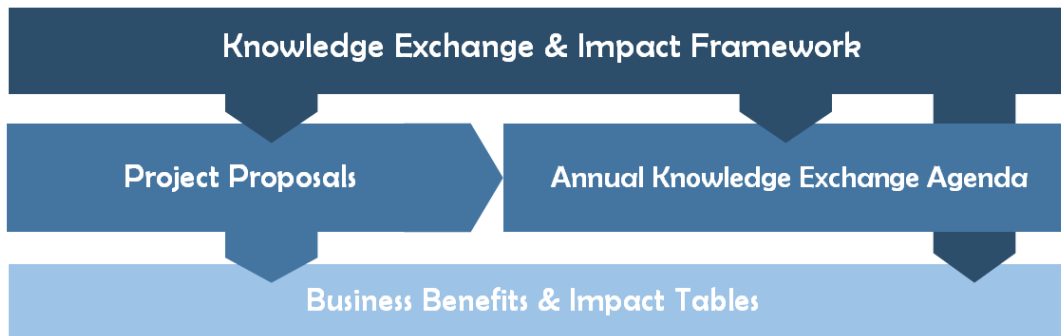


Figure 1: Relationship of the KEIF to other knowledge exchange documents prepared for the Waterway Research Partnership.

While the KEIF’s primary audience are the knowledge exchange personnel (Section 6) and UoM researchers, it has relevance to all that participate in the research program by providing a high-level overview of activities and strategies to support knowledge adoption and the assessment of research impact. In doing so, the KEIF supports the delivery of the knowledge exchange objectives of the Waterway Research Partnership, which are:

- a. Encourage integration of research findings and broader science into the activities of Melbourne Water and other stakeholders, including influencing the decisions and actions of policy makers.
- b. Build awareness and understanding of the partnership’s research projects, including the research objectives, timelines, findings and opportunities for involvement;
- c. Encourage stakeholders (including other agencies and research institutions) to interact with the partnership and individual researchers, collaborating on all aspects of research projects and building stakeholder capacity and willingness to adopt research findings;
- d. Establish a culture of knowledge and data sharing between researchers and practitioners;
- e. Generate a shared understanding of the organisational processes and context in which research will be adopted (including timeframes); and
- f. Promote the partnership within Melbourne Water, its purpose and contribution to the management of Melbourne’s waterways;

3. Knowledge exchange in the project delivery cycle

The annual program of research of the Waterway Research Partnership is developed and delivered via a strategic process, commencing with the setting of a strategic research direction and finishing with the identification and assessment of business benefits (Figure 2). This ‘research value chain’ recognises knowledge exchange occurring at two levels.

First, as an overarching contribution across the entirety of the research value action chain, commencing with the foundation of the research project. The two-way exchange of knowledge is critical to the foundation of a valuable and viable research program. The continual exchange of knowledge, much of which is unstructured, allows for ongoing refinement of the research and ensures a comprehensive understanding of the research needs and deliverance capacity by all stakeholders.

Second, as a distinct step in the value action chain (Step 5 – Adoption Implementation and Impact), following the completion of the project or generation of specific research outputs (achievement of research milestones). This knowledge exchange typically involves structured activities to deliver specific outputs to targeted users and beneficiaries.

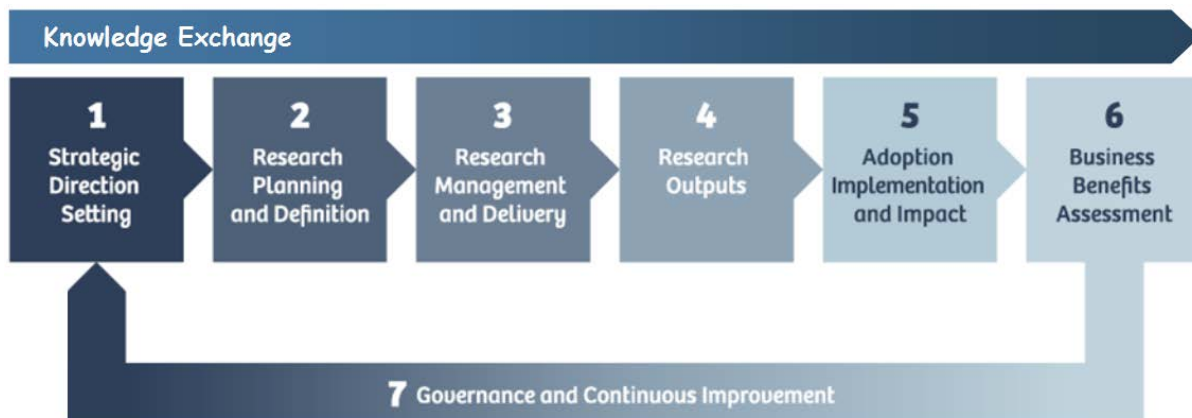


Figure 2. Knowledge exchange in the *Research Value Chain* (adapted from Cox & Birch 2017)

4. Informing (and responding to) Melbourne Water policies, strategies and activities

The Waterway Research Partnership’s research program responds to, and assists in, the development of Melbourne Water policies and strategies, as well as informing activities from planning to on-ground works. Melbourne Water has several time critical reporting, policy & strategy development requirements that research from the Waterway Research Partnership can contribute to. The knowledge exchange program considers these significant milestones to facilitate the adoption of relevant knowledge. These strategic documents and dates include:

- Healthy Waterways Strategy
- Price Submission - Essential Services Commission (ESC) (Next due 2021)
- MERI framework reporting system (MW) + monitoring and evaluation plans for wetlands, rivers and estuaries (2019)
- Yarra Strategic Plan (MW) (2019)
- Integrated Water Management Framework for Victoria (DELWP) (2018-2019)
- Actions arising from new SEPP (WoV) e.g. Catchment Management Plan for sediments into Western Port (2019-2020).
- Waterways and Drainage Investment Plan (2019- 2020)

5. Principles for effective knowledge exchange

The Waterway Research Partnership adheres to a number of principles that are recognised as being important to achieving successful knowledge exchange. These principles are applied through all stages of the Waterway Research Partnership’s research value chain (Figure 1), and include:

- **Open relationship built on trust.** Melbourne Water and the University of Melbourne operate within a relationship of trust (Meagher et al. 2008, Reed et al. 2014, de Wit-de Vries et al 2018).

How is this achieved? The Waterway Research Partnership is operated under an ideology of open, two-way communication between researchers and practitioners. Its success relies heavily on establishing strong networks and collegial relationships amongst participants, with a commitment by researchers to communicating outcomes and Melbourne Water to work with researchers to adopt these outcomes. There is recognition that both parties are working towards common goals, as well as the needs and demands that each organisation is subject to. The formation and regular occurrence of

Project Team meetings is seen as a key activity in building relationships, a shared understanding and trust.

- **Co-development of research questions.** Both partners contribute to the developed of the research program (Reed *et al.* 2014, Cvitanovic *et al.* 2016).

How is this achieved? Research priorities are co-developed by Melbourne Water practitioners and University of Melbourne researchers, through: i) regular Project Team meetings; ii) a major workshop at the start of each 5-year program; and iii) the release of an annual Research Prospectus document, for broader business input. This co-design approach allows research projects to be tailored to meet Melbourne Water's strategic priorities whilst accounting for the research capacity and interests of the University of Melbourne. It also enables researchers to be responsive to more immediate and unplanned information or research requests that may arise.

- **Participatory research.** Both partners are active in the delivery of research projects (Cvitanovic *et al.* 2016).

How is this achieved? While project delivery is the primary responsibility of the research team, regular liaison through project team meetings and other informal interactions, as well as data sharing, leads to close collaboration. The Waterway Research Partnership also encourages Melbourne water staff to undertake both formal (e.g. sabbatical) and informal contributions to the research program.

- **Knowledge exchange designed into research.** Recognition during the project design phase of the role knowledge exchange will play and how best to achieve this (Reed *et al.* 2014).

How is this achieved? Knowledge exchange actions are discussed at preliminary project meetings, with anticipated knowledge exchange activities written into the project descriptions. Project Proposals outline the project's expected outputs and consider the activities necessary to ensure knowledge exchange.

- **Stakeholder mapping.** Potential users and beneficiaries of the research are identified (Reed *et al.* 2014, Cvitanovic *et al.* 2016).

How is this achieved? Internal stakeholders are identified as each project is developed, with potential collaborators, users and beneficiaries identified in the Project Proposals. Appendix III contains a list of potential stakeholders, which are grouped according to their typical level and nature of their engagement, distinguished as primary users & beneficiaries, secondary users & beneficiaries, external partners and research collaborators (Appendix III).

- **Use of knowledge brokers.** Employment of dedicated knowledge exchange staff to oversee, facilitate and guide the knowledge exchange program (Meagher *et al.* 2008, Cvitanovic *et al.* 2016, de Wit-de Vries *et al.* 2018).

How is this achieved? The University of Melbourne Knowledge Exchange Co-ordinator is funded through the partnership to fulfil this role, with the support of the Melbourne Water Waterways and Wetlands Knowledge Broker (see Section 6: Knowledge Exchange Personnel) .

- **Flexibility in knowledge exchange actions.** Be adaptable to trial new approaches and adjust existing ones (Reed *et al.* 2014)

How is this achieved? The knowledge brokers assess the efficacy of knowledge exchange actions from target groups and individuals and adjust their actions where required. They undertake environmental

scans in the knowledge exchange field – including in disciplines other than waterway science and management - and identify emerging technologies and methodologies that could be adopted. They also seek feedback and review of their activities from other practitioners in the knowledge exchange field. Finally, Melbourne Water staff are also surveyed biennially about their awareness of the partnership and projects, along with their preferences for knowledge exchange activities and tools.

- **Evaluation of knowledge exchange activities.** Monitor, review and reflect on knowledge exchange activities implemented through the partnership to inform future knowledge exchange programs (Reed et al. 2014).

How is this achieved? A detailed comprehensive monitoring program is overseen by the knowledge exchange coordinators, details of which are outlined in Section 8 (Page 8).

- **Knowledge and ownership of the KEAP by researchers and practitioners.** Knowledge exchange activities are identified collaboratively to ensure they are effective, are tailored to the stakeholders and ensure effective uptake of research findings and outcomes.

How is this achieved? Researchers (including students) and practitioners collaborate during the design and delivery of the research project to identify research outputs and relevant knowledge exchange tools and activities for each project, for each research year. This information is incorporated into the Project Proposals and compiled by the Knowledge Brokers into the Annual Knowledge Exchange Agenda.

6. Knowledge exchange personnel

Oversight and coordination for Knowledge Exchange activities is provided by The University of Melbourne Knowledge Exchange Co-ordinator and the Melbourne Water Waterways and Wetlands Knowledge Broker. These key roles are in place specifically to strengthen the capability and capacity for translation leading to impactful project outcomes.

- **Knowledge Exchange Co-ordinator (University of Melbourne).** The partnership contributes funding for the position of KEC based at the University of Melbourne. This position provides oversight to knowledge exchange activities, working with the research investigators to: i) ensure principal research outputs are effectively translated in a timely manner; and ii) that Melbourne Water staff are involved in the development and implementation of research projects. Typically, the KEC will be involved in coordinating 'special' events: those that involve a wider audience, are across different MW teams, or specifically focus on translation of research outputs. The KEC also plays a key role in monitoring the impact of research outputs.
- **Waterways and Wetlands Knowledge Broker (Melbourne Water).** The Waterways and Wetlands Knowledge Broker (WKB) sits in Melbourne Waters' Applied Research team, shares and translates waterway health science to build staff capacity, informs effective waterway management decisions and facilitate adaptive management by promoting learning from monitoring & research. The WKB supports the KEC to meet the knowledge exchange goals for the partnership by providing a point of contact within MW and supporting the formal and informal knowledge exchange activities outlined in the Annual Knowledge Exchange Agenda.

In addition to these dedicated Knowledge Brokers, the Waterway's Research Partnership recognises that knowledge exchange is a shared responsibility of all involved in the research program.

- **Research Investigators (University of Melbourne).** The research investigators maintain regular contact with MW staff (especially the Project Sponsor) through all stages of the research project. As such, they have an ongoing role in the dissemination of knowledge, through both formal (e.g. seminars) and informal (e.g. project meetings and planning workshops) knowledge exchange activities. When required, the research investigators can obtain support for specific knowledge exchange activities from the KEC and WKB.
- **Project Champion (Melbourne Water).** The Project Champion is the primary contact for a research project within Melbourne Water and is central to facilitating the exchange of knowledge leading to research adoption within the business, and externally where relevant. The project champion is part of the project team and attends scheduled meetings but would likely have more regular interactions with researchers and other project team members. The champion is not responsible for coordinating meetings or other project-related activities. They may, however, advise the knowledge exchange practitioners (KEC and KB) on the delivery of relevant knowledge exchange events and promote project outputs through their networks.

As the emphasis is on ensuring the adoption of research outputs, they would have some understanding of the knowledge and research needs of users and beneficiaries. The Project Champion may be identified during the development stage of the project. It is a voluntary role that is filled by a person with a high level of interest in the research project and its implementation and who has the capacity within their work program. Not all projects will have, or require, a project champion and the role could potentially be shared by individual staff.

- **Project Team Members (Melbourne Water and partners).** The project team members are mostly MW staff but may also be from other agencies (e.g. Parks Victoria, EPA, local government) who are most likely to apply knowledge and use research outputs, and as such are consulted about and involved in (e.g. contribute to project design, participate in Project Team meetings) the research program. They work closely with researchers and have a significant role in knowledge exchange activities, especially in guiding and supporting research projects to ensure that the knowledge can be adopted and will support MW operations and those of the broader industry.
- **Development Project Lead (Melbourne Water).** At the completion of some research projects there may be a need for an additional piece of work to transition the research into business practice. This role seeks to integrate research outcomes into on-ground practices through a range of pathways targeted to the relevant personnel and processes. These may include:
 - Capacity building through training, demonstration and seminars;
 - Establishing networks, communication and procurement pathways with all relevant stakeholders to facilitate research uptake;
 - Advocacy of research findings and their benefits to senior managers and stakeholders;
 - Preparation and input into work practice notes and strategies;
 - Assist in the development of communication materials – written and graphic;
 - Assist in monitoring success of research uptake; and
 - Influencing key business processes and guidelines.

The need for a development project depends on the research objective and the type of impact domains.

7. Tools for knowledge exchange

A range of 'tools' (Appendix I) can be used to facilitate the exchange of knowledge both within the Waterway Research Partnership (between Melbourne Water and The University of Melbourne), and between the

partnership, research partners (e.g. La Trobe University) and external stakeholders (e.g. local government and other agencies). The type of tool used will depend on the status of the research project (eg. inception or implementation) and the project's objectives, target audience (primary & secondary beneficiaries) and outcomes. These tools are identified (where possible) in the proposal for each research project and then incorporated by the Knowledge Brokers into the Annual Knowledge Exchange Agenda (Appendix II). The Annual Knowledge exchange agenda is an adaptive plan that can respond to new events, opportunities and business needs as they arise.

The communications tools used for knowledge exchange can be either formal or informal.

- **Informal communication tools** are typically unstructured, personal communications that help facilitate an effective exchange of ideas. They play a vital role in the partnership's knowledge exchange activities, especially during the inception phase for research projects (when research objectives are being identified) and to ensure research outcomes are understood and adopted. They can also be used for opportunistic knowledge adoption, for outcomes not previously identified.

Informal communications are difficult to plan for or schedule. However, they can be cultivated by having project participants embrace the 'communications culture' of the partnership, as well by encouraging the participation in formal communications (especially project meetings) and engaging in 'hot desking' and research internships.

- **Formal communication tools** are those that are planned to achieve a specific objective and outcome and include tools that occur at regular intervals (such as eBulletins or seminars) and those that continue for the duration of the partnership and beyond (such as the webpage). A list showing the full range of formal communications tools employed by the Waterway Research Partnership is provided in Appendix I.

Structured tools used regularly by the Waterway Research Partnership include meetings, presentations and publications. Their use is dictated by the formal agreement underpinning the Waterway Research Partnership, which specifies a minimum number of engagement activities to be undertaken each year (Table 1).

- **Meetings:** includes project team meetings and attendance at MW strategic meetings. Project team meetings are recognised as being a critical tool for knowledge exchange in the Waterway Research Partnership. These meetings bring together relevant members from both organisations (de Witt et al. 2018) and encompass many of the principles for good knowledge exchange (Section 4, Lyall et al. 2004). The attendance at strategic meetings by researchers allows for informal exchange of ideas and research findings.
- **Presentations:** includes both internal and external presentations to stakeholders on research progress and findings.
- **Publications:** includes the production of technical reports, management guidelines, facts sheets and research articles, as well as electronic updates to stakeholders.

A recent survey by MW's Applied Research team assessed the preferences of MW staff for obtaining research knowledge. The results showed that 'reading', followed by 'attending seminars', are the primary choice across teams, with 'talking to researchers' a third preference for the Integrated Planning group, and 'attending training' a third preference for the Service Delivery group. The Customer and Strategy group preferred 'watching videos' followed by 'reading information' and 'attending seminars'.

Feedback by MW staff collected as part of an independent review by Inxure consultants (2017) highlighted that training courses, seminars and the annual update are highly regarded and valued, as well as the provision of readily accessible advice. It is recognised that some of these tools are Docklands-centric, and that people in other offices have a valuable contribution to make to the Partnership. People outside Docklands should have greater opportunities to contribute and get involved either: i) directly through joining a project team or attending seminars and/or training in regional offices; or ii) indirectly through webinars and other online tools.

8. Monitoring knowledge exchange activities

The efficacy of knowledge exchange activities is measured quantitatively (number) and qualitatively (descriptor). These metrics enable us to track progress of the research program, across research outputs, outcomes and impacts (see the Business Benefits & Impact Table, Appendix IV). **Outputs** are the direct and immediate products of the research program (e.g. the number of seminars and attendees). **Outcomes** are the changes in understanding, behaviour, relationships and actions of users and beneficiaries that result from research outputs (e.g. improved understanding of natural systems and corresponding changes to work practices). **Impacts** relate to the consequences of the outcomes (e.g. healthy waterways), including both short- and long-term consequences.

Knowledge exchange actions are continually assessed, with consideration given to the diversity of activities offered, the level of outreach/coverage and participant feedback. This evaluation includes:

- i) formally reporting quarterly at the RMC against the Performance Targets identified in the Partnership Agreement that relate to knowledge exchange (Table 1);
- ii) an annual report presented to the Research Management Committee summarising knowledge exchange activities; and
- iii) a biennial survey of Melbourne Water and University of Melbourne Staff.

Larger and intermittent knowledge exchange activities, such as workshops, catchment tours or training events are evaluated after they are run (immediately or within 48 hours), with feedback sought from participants via a short survey. Survey results to date indicate that partnership projects and outputs are considered directly relevant and assist in people's roles at MW, and that access to scientific expertise is of significant value.

Table 1: *Formal performance target obligations of the Waterway Research Partnership (from Schedule 3 the Research Agreement) that are relevant to knowledge exchange.*

Performance Target Description	Target
Project team meetings	At least 3 annually/per project
Annual Research Update Seminar to Melbourne Water and other stakeholders	31 July annually or as practicably close
Stakeholder Research Update Publications/Newsletters	At least 4 annually
Internal stakeholder presentations (in addition to project team meetings and annual research seminar)	At least 4 annually
External stakeholder presentations	At least 20 annually
Technical publications	At least 10 annually
Attendance at strategic Melbourne Water project meetings	At least 20 annually
Project teams and project champions established for all MWRPP projects funded under this agreement	Established by 1 st Nov each year

Performance Target Description	Target
Training seminars/short courses	At least 2 annually
External collaboration	At least 1 combined research forum every 2 years
Evidence of research adoption in target impact domains.	All projects show evidence of business benefits consistent with agreed milestones and targeted impact domain within each project agreement.

8.1 Research adoption and impact

For the Melbourne Waterway Partnership to be effective, its research must be adopted by Melbourne Water and achieve impact through informing decisions, changing business practices and ultimately affecting the assets (both natural and constructed) managed by Melbourne Water. Research impact can be defined as changes in whichever economic, environmental or social conditions a research project or program aims to affect (NSOR 2017). The impact of the Waterway Research Partnership’s research will be measured across different areas of the Melbourne Water business. These ‘Research Impact Domains’ (Cox & Birch 2017) are:

- i) Academic knowledge;
- ii) Policy & regulation;
- iii) Integrated planning;
- iv) Service delivery;
- v) Capability; and
- vi) Reputation.

The research impact domains for each project are identified early in the project planning process and recorded in the Proposal for each project. This is done to: i) ensure there is an up-front understanding of the potential business benefits from projects; ii) identify the likely users and beneficiaries of research outcomes; and iii) ensure that the research being planned is appropriate. The contribution to impact domains is regularly reviewed, including discussion at Project Team meetings (as a standing agenda item), which helps to ensure the resulting benefits are acknowledged and recorded appropriately (by the KEC and WKB).

A standardised table (Business Benefits and Impact Table, Appendix IV) is used to support the mapping of the project’s impact domains and the pathway to achieving them; how project activities and immediate results of the activities (outputs) relate to short-term or intermediate changes (outcomes) as well as the longer-term developmental changes (impact). The table also includes possible indicators of research impact and is included in the proposals for each project. A version of this table is used in the Project Proposal to identify the *expected* outcomes.

Research conducted through the Waterway Partnership can develop on a continuum from “Foundation” studies through to “Translation” research and to eventually to “Implementation” research. Not all research projects will impact all domains and there may be a shift in impact domain focus as the research progresses. In addition, effective approaches to research adoption (impact pathways) are likely to vary depending on the targeted impact domain. It is also important in the project development phase that there is clarity over the change requirements for stakeholders in each of the impact domains to change business practice.

8.2 Collective impact

While the impact of the Waterway Research Partnership’s activities is largely focussed at an individual project level, it is recognised that projects can have a collective impact on a Melbourne Water business area. This can occur, for example, when multiple projects provide synergistic outcomes or conversely, when Melbourne Water is delivering a complex, integrated project.

To help identify opportunities for collective impact and drive supporting actions, the impact domains will be 'mapped' for each project to identify commonalities. This collective impact mapping will be completed annually as part of the Annual Knowledge exchange agenda (Appendix II). Potential knowledge exchange activities tailored to the collective impact can then be developed and included as part of the Annual Knowledge Exchange Agenda. For each project, a one-page summary of research outcomes will be developed toward the end of the project and when combined, these will be used to illustrate the collective outputs of the research partnership.

9. Knowledge and data management

It is important that any research knowledge or data generated is effectively managed and is stored and maintained so that both Melbourne Water and the University of Melbourne can draw upon the information as needed. Knowledge of, and access to, research data is an important factor in ensuring knowledge adoption by Melbourne Water. Cvitanovic et al. (2016) suggest that an effective knowledge management system must allow for knowledge and data to be discovered, accessed and comprehended by those that require the information. It must also be maintained and updated as new information and data is generated.

Web-based interfaces have been used successfully by the partnership for environmental and GIS datasets (e.g. stream network spatial data), as portals for exploring and searching data as well as extracting whole datasets and associated documentation (tools.thewerg.unimelb.edu.au).

Melbourne Water's Data Exchange Program is the current platform for sharing data between Melbourne Water and Universities, although greater clarity is required around meta data, storage of the data and access to it. Current and future actions for improving storage and sharing of knowledge and data include:

- Documented pathway and process for storage and sharing of knowledge outputs and data that considers relevant Intellectual Property rights and identifies responsible individuals included in all research project planning.
- Increased availability of reports, technical guidelines and journal articles on MWRPP website and Melbourne Water intranet (Inflo) and library catalogue.
- Environmental and spatial datasets (ecological and physical) created by University of Melbourne migrated to MW as required and stored on Inflo and Q Drive.
- Creation of Waterways and Wetlands Knowledge Hub (MW internal, searchable research portal) to store outputs for all waterways research programs and projects, including from the Waterway Research Partnership.
- Knowledge Broker and Knowledge Exchange Coordinator raise and maintain awareness in Melbourne Water about location and access datasets and knowledge outputs.

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Appendix I: Knowledge exchange tools: structured communication tools to facilitate knowledge exchange

- Web-based Apps and on-line tools for the analysis and management of stream ecosystems (tools.thewerg.unimelb.edu.au)
- Conferences. Poster and oral presentations at industry and academic conferences.
- Annual seminars providing research updates and networking opportunities between the Waterway Research Partnership and stakeholders. Opportunities for synergies in with other research partnership and programs (e.g. ARI, A3P and ARC) to be explored.
- Field/Demonstration days.
- Training courses – e.g. Stormwater 101, Stream Ecology 101, Riparian Vegetation Ecology and Management.
- Industry newsletters. For promotion of projects and outcomes to specific interest groups.
- Journal articles. Publication of articles in referred journals. This media is used for outcomes of interest and relevance to the wider research community.
- Newspapers. Local or state, when outcomes are of interest and/or relevance to the wider community.
- Technical notes. Short, 1-2 page document providing a summary of findings for a research project/program. This format can be distributed to targeted audiences or used more generically at/via other communication mechanisms (such as: workshops, seminars and the webpage).
- Guidelines for monitoring, modelling and the design of technologies.
- Technical reports. Detailed reporting on the findings of the research project, usually for a small, target audience, in particular the group(s) or agency providing financial support or commissioning the research.
- Webpage. A dedicated partnership webpage is a central contact point for the partnership providing information and updates on projects, events and contact details for investigators and is updated regularly.
- Workshops. Tailored workshops designed for specific audiences (both internal and external). This format is well suited to communicating technical research outcomes (including the use of demonstrated examples), or when two-way communication between participants and presenters is desirable.
- Case studies – useful for demonstrating to a wide audience including MW board how research has been successfully adopted, the benefits to the business and thus the value of Partnership research.
- Secondment opportunities for both MW people and researchers – part-time or project based.
- Research Higher Degree program: the Partnership will provide the opportunity for MW staff (subject to eligibility criteria) to undertake higher degree training within areas focussed on Melbourne Water's needs.
- Create development projects to facilitate adoption of research into practice, particularly in the Service Delivery area.
- Direct input to Melbourne Water committees e.g. Waterways Advisory Committee (WAC) and Healthy Waterways Strategic Science Panel, MERI framework.

Appendix II: Annual Knowledge Exchange Agenda.

A program of knowledge exchange activities is developed by the KEC and WKB at the start of each research year (October 1-Sept 30) in consultation with the Research Coordinators and includes: i) regular activities, those that occur each year of the partnership (Table A); and ii) annual activities those that are implemented for the current year only (Table B). Table C maps the Impact Domains across projects to support the identification of collective impact.

Table A: Regular activities. Actions implemented on an annual cycle and are most applicable to the Primary and Secondary users and beneficiaries.

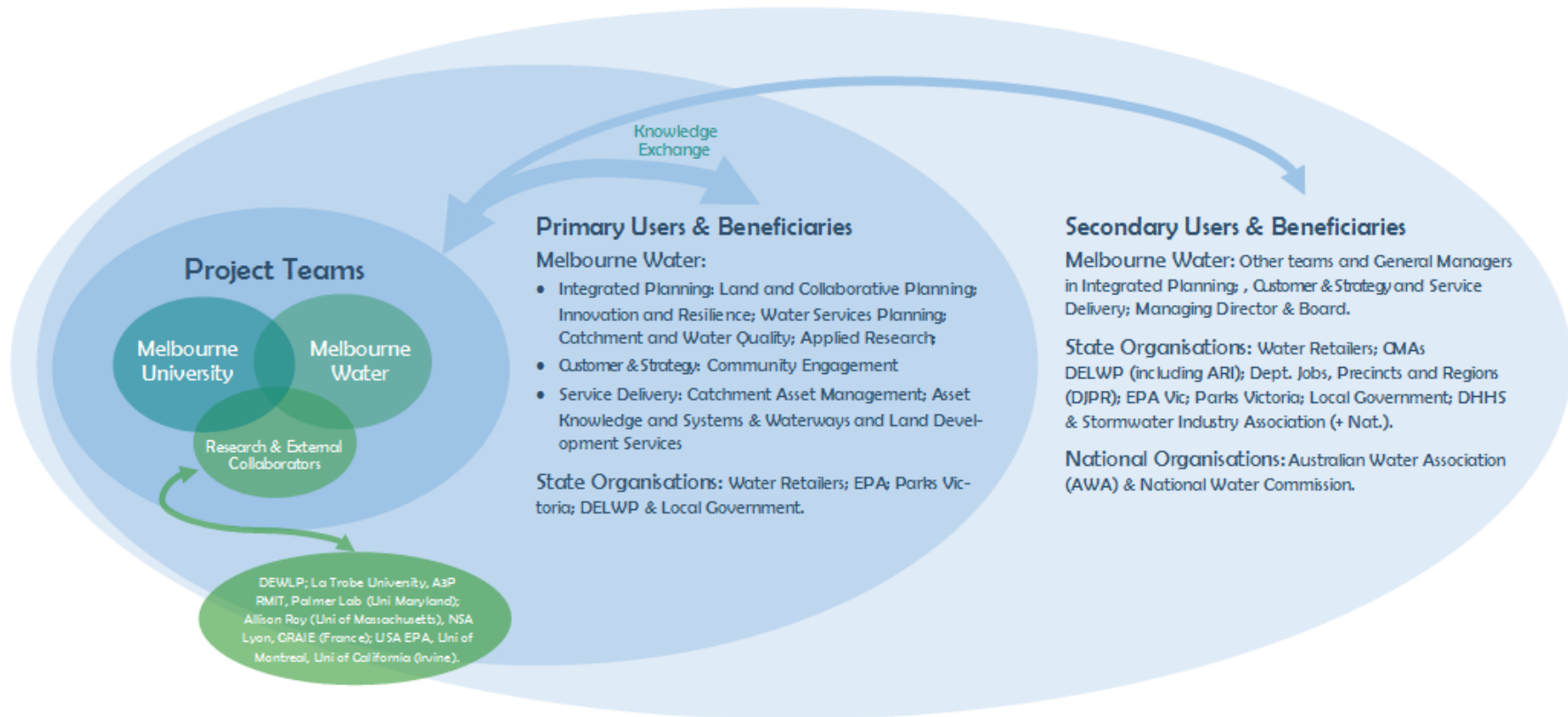
Action	Timing
Project Team meetings. For each project, support the establishment of a 'Project Team' and encourage the nomination of a MW project co-ordinator. Meetings to provide an update on the project's progress and facilitate an exchange of ideas.	From Nov (at least 3/yr)
Knowledge Exchange planning. Discuss with project researchers potential key Knowledge Exchange opportunities for coming 12 months, identifying where support from knowledge exchange personnel will be required.	From Nov
Project Summaries. Prepare and place on the website, summaries or fact sheets of projects for the year.	From Nov
Annual Research Workshop. Deliver a joint (with A3P) research forum showcasing recent outcomes or the research program.	Sept-Oct
Annual training course. Deliver at least two training courses to MW staff per year.	Ongoing
Seminars. Run a regular lunchtime seminar series at MW, aimed at a wider audience than those directly involved in the research.	Ongoing (quarterly)
Email bulletins. Regular (tri-monthly) bulletin that will include: general updates on the partnership; notifications of KE activities; recent research outputs or outcomes; links to project updates and notifications of updates to website.	Ongoing
Publications Bulletin. Distribute on a regular or as needs basis, an email bulletin detailing recent publications (articles or technical reports) resulting from the partnership's research	Ongoing
Website maintenance and promotion. Maintain and update website as required, including: details of current year projects; new journal papers and project updates. Promote website through the email bulletin, general promotions and KE activities and at seminars.	Ongoing
Hot Desk. Encourage co-location of partnership staff at both MW and Burnley, once project teams for each year are established.	Ongoing
General promotion. General promotion of partnership through existing MW mechanisms, including: Weekly Update, On Tap, signage around the building, banner on intranet page, display in foyer.	1/year
Research Impact. Maintain a Business Benefits & Impact Table for each research projects, and discuss at all Project Team meetings.	Ongoing
Assessment of knowledge transfer. Assess the impact of past knowledge exchange activities, either through a survey of MW water staff of other initiatives.	Ongoing or as needed

Table B: Annual Activities. Activities that are generally once-off actions implemented within the current year and include actions specific to research projects and/or the partnership or new actions to be trialled. *Where: KEC = Knowledge Exchange Co-ordinator; WKB = Waterways Knowledge Broker; ● = action is complete; ● = action is in progress or partly completed; ● = action is pending and ● = action is postponed or aborted.*

Description	Lead person	Comments

Appendix III: Melbourne Waterway Research-Practice Partnership stakeholders, structure and active knowledge exchange.

University of Melbourne researchers and Melbourne Water teams (mostly from Primary Users & Beneficiaries) work collaboratively in project planning and implementation and form project teams. Researchers also collaborate with other national and international institutions for certain projects and occasionally, external (non-research organisations) join the Project Team. Knowledge exchange activities (arrows) are tailored for both Primary and Secondary Users and Beneficiaries, with consideration given to the relevant impact domain.



Appendix IV: Business Benefits & Impact Table.

Activities What's been done	Outputs What's been delivered or produced	Users & Beneficiaries Primary & Secondary	Outcomes Awareness and use of the Outputs (early impacts)	Impacts Realise/expected consequences of the use of Outputs	Indicators of impact	Impacts Domains

Examples

Activities What's been done	Outputs What's been delivered or produced	Users & Beneficiaries Primary & Secondary	Outcomes Awareness and use of the Outputs (early impacts)	Impacts Consequences of the Outputs	Indicators of impact	Impacts Domains
<ul style="list-style-type: none"> Development of a spatial dataset that includes all headwater streams. 	<ul style="list-style-type: none"> A GIS spatial layer. 	<ul style="list-style-type: none"> Integrated Planning; Service Delivery 	<ul style="list-style-type: none"> A clear understanding of the location of important headwater streams that should be considered for strategic planning and land development decisions. 	<ul style="list-style-type: none"> Land development decisions can now incorporate requirements for headwater streams, so their values can be protected and maintained. 	<ul style="list-style-type: none"> Headwater streams incorporated into drainage schemes and precinct structure plans; land development referrals for headwater streams are sent to MW from local government 	<ul style="list-style-type: none"> Policy & regulation; Integrated planning; Service delivery.
<ul style="list-style-type: none"> Explore and test a range of cost-effective sensors for monitoring constructed wetland performance. 	<ul style="list-style-type: none"> Definition of a robust protocol (e.g. types of sensors, data collection, data management and analysis) for cost effective and efficient monitoring of stormwater wetland performance. 	<ul style="list-style-type: none"> Integrated Planning; Service Delivery. 	<ul style="list-style-type: none"> Improved wetland design; Optimised operation and maintenance of existing stormwater assets. 	<ul style="list-style-type: none"> Improved flow and water quality discharges from stormwater wetlands; Cost savings on monitoring, operation and maintenance; Improved designs in MW Constructed Wetlands Design Manual. 	<ul style="list-style-type: none"> Improved stormwater wetland treatment, for new and existing systems; Improved water quality in the receiving waterway; Reduced expenditure in wetland rectification program budget. 	<ul style="list-style-type: none"> Integrated planning; Service delivery.

