

In 2015 the City of Yarra established the Embedding Adaptation project to improve climate adaptation outcomes within the organisation and support staff to factor a changing climate into their working roles.

The project included two main stages:

Stage 1 : Identification of key intervention points in Yarra’s decision making process to consider climate change adaptation, and an evaluation of tools and mechanisms to support adaptation decision-making at the identified points.

Stage 2: Development of simple and effective decision making tools and training to support climate adaptation in Yarra.

The project was funded by the Victorian Government under the Victorian Adaptation and Sustainability Partnership. ARUP was commissioned to undertake the project in strong collaboration with Yarra.

This case study provides a qualitative evaluation of the project and process, with a particular focus on drawing out lessons learnt.

Stage 1

Identification of key intervention points in Yarra’s decision making process to consider climate change adaptation, and an evaluation of tools and mechanisms to support adaptation decision-making at the identified points

Introduction/Project Scope

From November to December 2015, Arup were engaged by Yarra City Council to *develop and facilitate a consultative process to develop an evidence-based action plan for embedding adaptation into Yarra’s existing systems and processes.*

The specific outputs sought by Council were:

1. A summary of decision-making points in key systems and processes at Yarra City Council where climate change adaptation considerations could be inserted
2. An evaluation of tools and mechanisms to support embedding of climate adaptation in local government (or similar organisation), and their applicability to Yarra City Council.
3. A recommendations report for interventions for Embedding Adaptation in Yarra City Council.

The purpose of the recommendations report was for it to be reviewed by Yarra City Council to then allow the development of an endorsed project plan to begin the implementation/ embedding phase of the project.

Methodology and engagement process

The approach and specific engagement methods were co-designed by the consultant and Council prior to undertaking any engagement activities. This was a critical process in structuring activities that were appropriate for the culture and organisational structure of the council.

The engagement process was a three-step process:

1. **Planning:** During this process, the project began with a project inception meeting where appropriate Council groupings and workshop timings were discussed. Council units were grouped into the following categories:
 - Strategic future planning
 - Process/decision planning
 - Community/social/heatwaves/emergency
 - Open space
 - Capital works/infrastructure

Specific planning and design of workshop activities and timings were decided separately within the next two steps.

2. **Contextualisation workshops:** Project steering group meetings, facilitated activities workshops with specific departments and groups, and one-on-one meetings were facilitated to understand Council processes and activities (that may be related to adaptation).
3. **Testing of tools:** After a review of Council context, the consultant researched a range of nationally and internationally available tools and frameworks for implementing adaptation. A shortlist of tools were then tested with similar working groups to those in step 1, to understand the appropriateness of these tools for Council use.

The outcomes of the engagement process were documented in a Recommendations Report for interventions for Embedding Adaptation in Yarra City Council.

A small Steering Committee was established to oversee the project and to provide strategic advice. The Steering Committee consisted of a representative from Risk Management, Corporate Performance and the Emergency Management Planning Officer.

Timeframe: The project was completed in 2 months (Nov-Dec inclusive). Below is a brief timeline for the project:

Appropriateness and effectiveness of project approach and engagement methods

The following section reviews the appropriateness and effectiveness of the overall project approach and particular engagement methods applied for this project.

Overall project approach and planning

A co-designed approach for planning workshops and engagement activities was a highly effective approach. The co-design approach required open conversation between consultant and Council in agreeing the best method of engaging staff. This approach also relied on the consultant having direct contact with participants, particularly in providing project background and arranging times and availabilities with key staff.

The co-design process between council and the consultant lead to higher chances of workshop attendance and participant engagement levels.

The overall project approach was structured in a manner to understand and respond to the specific and timely needs of a specific council. In particular, the overall adaptation project approach was to firstly understand Council processes, present potential adaptation opportunities and tools for staff to use, and in the next phase of the project to test shortlisted tools. Regarding this, governance staff positively commented;

“Piloting [a shortlisted] process is therefore key and it is important to trial – don’t just simply mandate things”.

The highly consultative approach for the overall project was useful for Council to achieve staff buy-in at an early stage. The staged workshop format also presented a clear and transparent methodology to staff.

Workshop engagement methods

The general workshop approach was to facilitate small groups (less than 10 participants) of areas that had greatest relevance to each other (or were operationally similar). These groupings included a range of staff with roles impacted/impacting on adaptation, and were decided together by both consultant and Council. Workshops were generally represented by both manager and officer-level staff.

Generally, the workshop approach worked with most groupings, particularly if there were common interests or areas of Council. This was particularly relevant for the groupings of buildings and infrastructure assets.

In some cases, having both manager and officer level staff in the same team was particularly beneficial, as it acted as a forum for the team to discuss strategic issues together. This type of forum worked well due an open and honest relationship in these teams.

As part of project planning, there were a number of one-on-one interviews or meetings with individuals as needed. This was particularly relevant for those staff who were time poor or areas whilst impacted/impacting on adaptation did not work strongly with other groups. This was

beneficial mainly for understanding Council context, but was less useful for getting consistent buy-in from this staff as part of the process.

Business-process mapping (irrespective of adaptation) approach

As part of the contextualisation phase of the project, the consultants facilitated business process mapping exercises with Council staff members. This involved stepping through the stages different work areas went through for different project types from project inception to completion. At the end of the workshop participants used sticky dots to vote on the best points of intervention for climate considerations. Figure 1 provides an example of a decision making map resulting from a workshop.

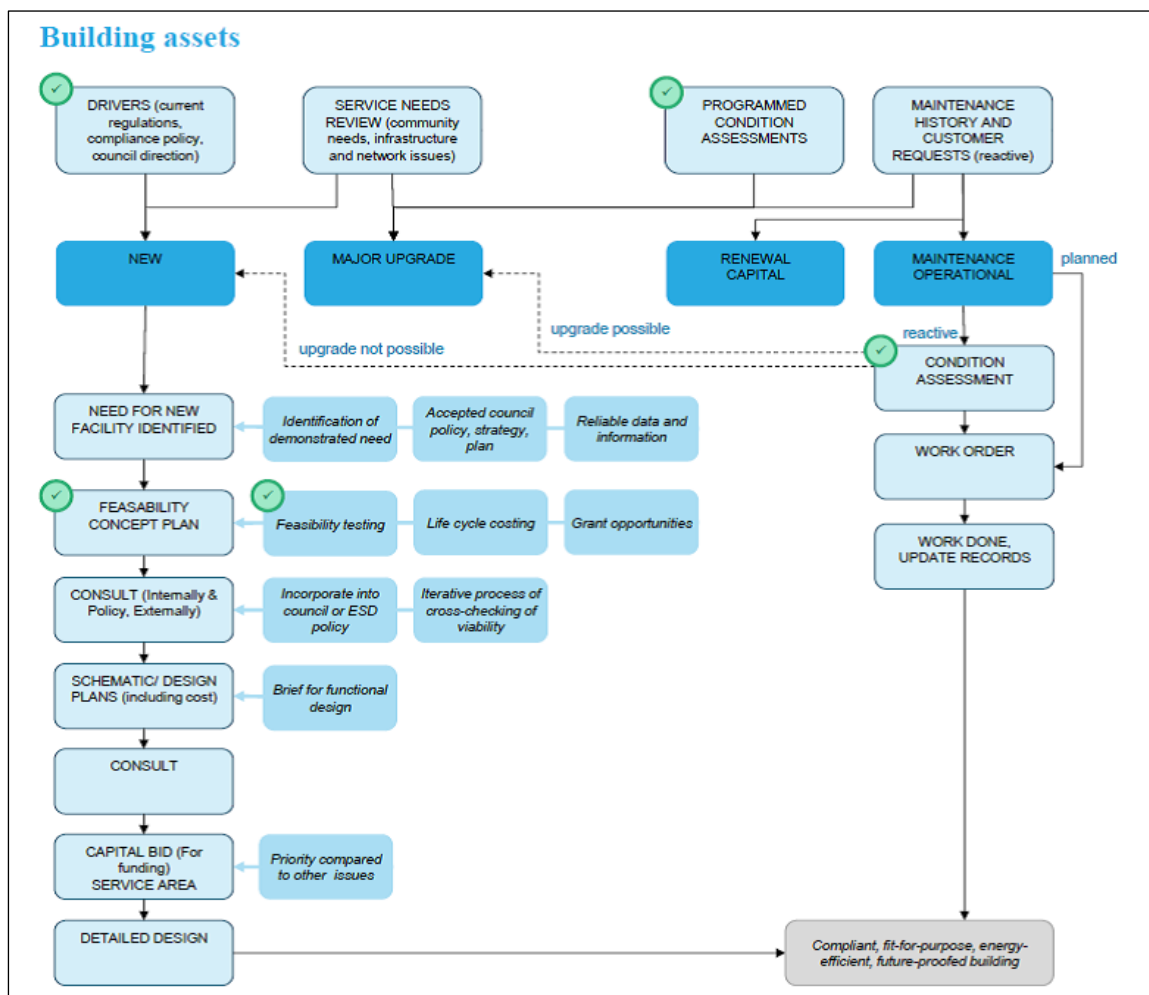


Fig 1 Building Assets Process Mapping documentation

The business-process mapping approach was useful in this project for several reasons:

- It helped to engage staff as they were providing valuable input and knowledge to the project. It also provided them a time and opportunity for staff to think and self-assess current processes.
- It provided rich information to the sustainability team in understanding team-specific decision making and processes (which could also be useful in areas outside of adaptation).

Business-process mapping is a highly strategic-thinking activity, and is more easily applied to particular teams that already follow structured processes. The business-process mapping approach was overall useful for the project. However, some groups in Council were better suited to the business-process mapping workshop model than others. The groups that highly benefited from the process-mapping were buildings and infrastructure assets, open space assets, project management and governance.

The business-process mapping was perhaps less tangible and relevant for teams where decision-making processes were very broad, for instance, policy development and strategic planning staff. In these cases, more time could have been spent discussing more specific issues and barriers faced by these groups, relating to adaptation. Initial screening of proposed workshop structure with a representative from the relevant area would be valuable in ensuring best use of officer's time and maximising outcomes.

Most participants saw the usefulness in undertaking the exercise and identifying how their processes may align with adaptation. Some groups also were pleased to see the end-result of their workshop notes being compiled into structured and clear business process maps.

The sticky dot voting method was an effective way of bringing the group back together and provided a clear visual outcome of the workshop. In most cases the sticky dots represented a clear way forward.

Testing of tools approach

After a review of Council context, the consultant researched a range of nationally and internationally available tools and frameworks for implementing adaptation. A shortlist of tools were then tested with similar working groups to the previous contextualisation workshops, to understand the appropriateness of these tools for Council use.

Officers separated into small groups and were given an assessment sheet to fill out. The small groups progressed through the tools and contributed to the assessment sheet so that by the end of the workshop the worksheets represented a collective assessment of each of the tools.

As with the previous workshop individuals voted using sticky dots at the end of the workshop.

These workshops were less effective than the business-process mapping workshops, due to a number of factors:

- Workshop participants had limited knowledge of the various tools coming into the workshop.
- In some cases tools were being tested without a clear understanding of how they work.
- There was limited time for reflection and exchange of ideas.

Workshop participants need time to understand the particular tools that they are required to assess. Ideally this would occur prior to the testing of tools workshop. However, the time allowance for understanding the tools was not possible given the tight timeframes of the project.

It is important to note that there is not a ‘one-size-fits-all’ tool for a council, and different tools may need to be adopted and/or modified for particular contexts.



Fig 2 Examples of existing climate adaptation tools which were ‘tested’ at the workshops.

The workshops may have led to more defined outcomes if they involved a structured discussion on the applicability of a couple of Tools at the defined decision point, including the consideration of how they may be modified to Council’s unique context.

The voting using sticky dots, although an effective way to summarise the workshops, is only as effective as the process it follows.

However, it was beneficial for workshop participants to be exposed to the range of existing tools for future reference. The continued consultation of relevant areas within Council provided a stronger foundation and buy-in for the implementation stage.

Overall review

The overall aim of the phase 1 was to *develop and facilitate a consultative process to develop an evidence-based action plan for embedding adaptation into Yarra’s existing systems and processes.*

At the conclusion of the project the action plan was delivered to Council, detailing potential implementation actions that:

- Focused on the most relevant areas of Council.
- Leveraged key decision points in Council processes.
- Were identified as opportunities by Council staff.

The development of an independently authored action plan resulting from a process involving key stakeholders across the organisation will assist in legitimising actions/request for resources which require approval from Council executive and other decision-makers not directly involved in the process.

Similarly the establishment of a small Steering Committee, whose membership included key areas, including 'risk management', will assist in establishing confidence in the recommendations.

The recommendations within the report require another layer of consultation to sharpen the focus of the actions and ensure the final action plan contains actions that are effective, adequately resources and timely. This is a necessary action as the nature of having an external consultant means that there will always be limited insight into the organisation. Additionally, as stated previously, the recommended tools need to be altered according to the specific context to the organisation.

The overall workshop process provided a good level of engagement with staff, increasing their knowledge and context of climate change adaptation in relation to their work, in order to pilot initiatives and actions in the next phase of the project.

Key Findings of Stage 1

The following points are included for other councils looking to embed adaptation into their own systems and processes:

- Each council is unique and there is no one-size-fits-all approach to embedding adaptation. A process must be followed to understand the specific context of the council to best apply adaptation actions. An effective method for this contextualisation is a business-process mapping exercise with a range of staff with roles impacted/impacting on adaptation. In this way adaptation interventions can be developed that are compatible with existing council processes, and thus most likely to succeed.
- The contextualisation exercises (e.g. planning workshops and engagement activities) would benefit from a co-design approach between consultant and council, in order to lead to higher chances of workshop attendance and participant engagement levels.
- There should be inherent flexibility in the approach. For example, group exercises may need to be supplemented with individual exercises to cater to different staff members, or particular exercises may work better with some groups compared to others. It is important to recognise that approaches may need to differ even within council teams, and to adopt this flexibility in project design.
- Workshops will be limited in their effectiveness if complex material (such as adaptation tools in the 'testing of tools' workshops) is presented with no prior introduction. Complex material requires time to mentally process and should be made available to workshop participants if they are required to critically analyse this material.
- It is important to note that climate adaptation is often a new concept to staff members, and so even if a particular exercise does not result in achieving its specific goals, engaging

staff and increasing their knowledge and context of climate change adaptation in relation to their work is an outcome in itself.

- The engagement of consultants to undertake the project assists in legitimising outcomes to decision-makers, however the nature of consultancy means that they have limited insight into the organisation and an additional body of work will be required to test out the recommendations with the selected areas to ensure that the resulting project plan is as effective as possible. This process further strengthens staff buy-in which is crucial for the overall success of the project.

Stage 2

Development of simple and effective decision making tools and training to support climate adaptation in Yarra.

Introduction/project scope

To ensure continued high-level support for the project, the ARUP recommendations from Stage 1 were reviewed by Yarra City Council, to create an Implementation Plan which was endorsed by the Executive Management Team.

From April 2016 to December 2016, Arup were engaged by Yarra City Council to *develop simple and effective climate adaptation decision-making tools which are tailored to the Yarra context*. As with the previous stage there was an emphasis on the need for the process to be consultative.

The specific outputs sought by Council were:

1. Development and integration of Triple Bottom Line plus Adaptation 'tool' for incorporation into Yarra's Project Management Framework and Council Report process.
2. Development of a guidance mechanism for consideration of future climates when planning for new Assets or major upgrades
3. Development of a guidance mechanism for consideration of future climates when planning for non-asset projects e.g. strategies and policy development
4. Design and delivery of training to ensure effective implementation of embedding adaptation interventions
5. Development of a guidance mechanism for consideration of future climates linked in with condition assessment of existing assets.

Project Outputs

The project resulted in the following outputs:

1. Quadruple Bottom Line (QBL) Tool

The QBL tool is an excel based tool that enables users to self-score the environmental, social, economic and adaptation aspects of proposed new projects.

The QBL tool has been integrated into Yarra's project management framework. It is an essential part of the budget bidding process, and provides qualitative guidance to staff.

2. Adaptation Guidance Tools

The adaptation guidance tools help staff to understand how climate change will impact their projects and identify actions to make projects more climate resilient.

Two tools were developed – one for new infrastructure projects and another for service review and strategy/policy development. The tools were designed to be used during the project scoping/design phase.

3. Climate Vulnerability Screening Tool

The climate vulnerability screening tool is a simple excel tool to help staff screen for climate change risks during routine building condition assessments.

It has been designed to be integrated into the annual building condition assessment process, and will help ensure Council's buildings are more climate resilient.

4. Adaptation Training 101

The adaptation training provides staff with a general introduction to climate change projections, standard techniques for effective adaptation and how to use the adaptation guidance tools.

The training was piloted with approximately 20 staff, and the training modules will be placed on the Council intranet.

Appropriateness and effectiveness of project approach and engagement methods

Overall project approach and planning

Below is a summary of the main consultative steps for the development of each of the above tools and an evaluation of the process.

Quadruple Bottom Line Reporting Tool (QBL Tool)

The initial focus of Phase 2 was the development of the QBL Tool.

Once again the co-designed approach between Council and the consultant for planning workshops and engagement activities was a highly effective approach.

Steering Committee: A small ‘steering committee’ was developed to guide the project. In addition to the ‘project manager’ and the Sustainability Coordinator, this group consisted of the two key people within council which can inform the QBL Tool from a strategic level being the Senior Governance Advisor and the Senior Project Management from Corporate Planning and Performance.

Given the small membership of the group, it was quite nimble and could meet on ‘as needs basis’ at key points in the project. The strong involvement of the two key people ensured that it was designed according to the Yarra context from a broad strategic context, hence maximising its potential to be adopted for use by council. Of equal importance their input from project inception was invaluable in obtaining executive support for the trial of the Tool within the budget bidding process.

Figure 3: The climate adaptation page (‘pillar’) of the QBL Tool

Workshops: A workshop was held with officers within council as an early stage in the process. This included the Steering Committee as well as identified ‘subject experts’ for each of the four ‘pillars’ of the Tool. The aim of the workshop was to define the specifications for the QBL Tool and to workshop the questions for each of the pillars.

The previous broader workshops and ‘buy in’ achieved in Phase 1 allowed

for a more contained workshop (8 attendees) which enabled targeted discussion and efficient development of tool specification parameters.

The attendees of the workshop appreciated how the QBL Tool would support the development of more holistic projects and were very receptive to providing individual input and feedback throughout the duration of the project.

A further workshop was held after the draft QBL Tool had been distributed to relevant areas within Council for comment. The aim of this workshop was to discuss the feedback obtained from this testing phase. Given previous strong input from the ‘subject experts’, this workshop consisted of only the Steering Committee and the consultant, allowing for detailed discussion involving the design of the Tool but also how it will function within the organisation.

Figure 3 shows part of the page of the QBL Tool addresses climate adaptation aspects of the proposed project.

Testing of the QBL Tool: As mentioned above, the draft Tool was distributed to a broad range of officers (21) for comment. Once again the consultation of Phase 1 proved valuable in that reference to the workshops of Phase 1 provided a context and justification for the QBL Tool.

Feedback was constructive and reinforced that the QBL Tool was aligned to people's expectations in terms of functionality and content.

The Climate Adaptation Guidance Tool

The next focus for the project was the Adaptation Guidance Tool (Figure 4).

This stage of the project also leveraged off the consultative foundation of the overall embedding adaptation project and involved the consultant designing a decision-making tool for new assets and operational projects (service reviews and

policies/strategies/programs). Targeted consultation then occurred in the form of meetings between the project manager and key individuals within Yarra to discuss the functionality of the tool and its content within the context of their particular area within council e.g. Assets, Open space, Aged & Disability Services. Feedback was then provided to the consultant.

This step of individual consultation was very effective in developing ownership of the tool within key areas of council and also ensured that it was to be of use to the area. In particular it ensured that the actions proposed by the Tool are practical and meaningful to the officer filling using the tool.

As with the QBL Tool there was a testing period in which selected officers were asked to provide feedback.

Adaptation Training

Training was identified as an integral part of the project to increase the overall capacity of Yarra to respond to climate change and to support the use of the Tools. The training sessions focussed on general adaptation and how it relates to individual work roles, and then focussed on the Guidance Tool. The existence of the Guidance Tool to support decision-making in regards to the changing climate provided a tangible and practical element to the training.

Figure 4 A sample page from the Climate Adaptation Guidance Tool

Training sessions: Two training sessions were delivered by the consultant. One focussed upon capital works while the other focussed on operational projects. A range of position levels were invited to attend the training including managers, coordinators and officers. The sessions were well attended with the majority of the attendees already engaged in the process.

The delivery of the training by consultants (who also developed the tools) added weight to the training sessions and further demonstrated Yarra’s support for the application of the Guidance Tool and climate adaptation in general.

Each training session lasted for 3 hours which in retrospect was too long. The workshops could have been improved by being shorter and more interactive.

On-line training: A suite of power-point presentations which reinforced and provided a legacy of the information introduced in the training sessions was developed. The images within the training are iconic of Yarra thus reinforcing the Yarra specific nature of the project. The material developed provides a strong foundation for the development of a training module to be embedded in Yarra’s corporate training.

Climate Vulnerability Screening Tool

Due to the specific nature of this tool, consultation was limited to the project officer who has in-depth knowledge of the capital works planning platform, Forecaster. Discussion focussed around how future climate considerations could be incorporated into Forecaster. The consultants then designed a simple and effective tool which links into the condition assessment process and from there, the annual capital works planning process. The Building Assessment Tool also links in with the EAGA Building Vulnerability Assessment Sheets if further consideration of climate adaptation is recommended, thus providing a staged entry to this more complex tool, and capitalising on existing resources.

Table 1 - Building use				
Is the building used for:	Y/N			
i) services to vulnerable people (e.g. childcare, age care facility)?	No			
ii) critical council services?	Yes			
iii) housing valuable items (e.g. artwork)?	Yes			
iv) emergency relief / recovery?	No			

Table 2 - Building components vulnerable to climate change				
			Building type:	Town hall
Does the building:	Y/N	Relevant functional component	Importance of function to building use	Further investigation recommended?
i) rely completely on the electricity grid (e.g. has no backup power options)?	Yes	Power	Medium	Yes
ii) rely on natural ventilation?	No	Thermal comfort	Medium	Yes
iii) have unshaded single glazed windows?	Yes			
iv) have box gutters or internal gutters?	Yes	Weather resistance	Medium	Yes
v) have light weight roof mounted equipment?	Yes			
vi) have trees close enough to fall on the building and/or drop significant amount of leaves in gutters?	No			
vii) have poor drainage behind retaining walls?	No	Structural performance	Depends on potential impact*	Optional
viii) have inadequate drainage of water away from building due to lack of adjacent structures?	No			
ix) use lifts for access to the building?	Yes	Access	Medium	Yes

Table 3 - Importance of functional component to building use					
<i>Note - these are not absolute or fixed - they should be reviewed and adjusted as appropriate in the context of the specific building and service delivery being assessed!</i>					
Building use	Importance of functional component to building use				
	Power	Thermal comfort	Weather resistance	Structural performance	Access
Town hall	Medium	Medium	Medium	Depends on potential impact*	Medium
Administrative offices	High	Medium	Medium		Medium
Library	Medium	Medium	High		Medium
Gallery	Medium	Medium	High		Medium

Fig 5 The Building Assessment Tool

Overall Review of Stage 2

The overall aim of Phase 2 was to develop simple and effective decision-making tools which are tailored to the Yarra context, with reference to the development of 3 tools for embedding within

different decision-making points within Yarra. The Tools were to be supported by a training package.

At the conclusion of Phase 2 the 3 tools and a training package had been developed. Training sessions had also been held. All of the Tools are user-friendly and provided a pathway forward for the inclusion of future climate considerations within project planning. Of particular importance, the Tools are relevant to the Yarra context.

The level of consultation was not as broad as in Phase 1, however it was this broad consultation in Phase 1 which enabled this more targeted consultation of Phase 2. The more targeted consultation allowed for detailed and efficient discussion on the content and functionality of the particular tool.

The continued consultative approach and the training further increased staff's awareness of climate adaptation and how it can be applied in their workplace. However it is the existence of the Tools and their embedding in key processes which will assist in translating this elevated awareness into action.

As with Phase 2 the establishment of a small Steering Committee whose membership included key areas, will assist in establishing confidence in the application of the Tools.

Key findings of stage 2

- Design a level of meaningful consultation in all stages of tool development. Effective staff consultation increases buy-in and means the tool is much more likely to meet staff needs. Staff were involved in developing both the tool specifications and testing the draft tools.
- Align the tools with corporate systems, processes and terminology as much as possible. This helps the tool to be seamlessly integrated into existing processes and increases likelihood of staff uptake.
- Customise the adaptation information the tool provides to users as much as possible – the examples of climate change impacts and solution generated by the Guidance tool were customised based on the asset or project type the user chooses.
- Keep the tools easy to use – the tools deliberately uses no macros to decrease the chance them breaking.
- Customise adaptation training to the participant's individual roles. This helps people understand how climate change adaptation is relevant to them, and empowers them to take action.
- Ensure training sessions balance the need to impart information and maintaining attendee's interest.
- Design the level of consultation according to the particular nature of the project. If broad consultation has already occurred and there is a level of confidence in the direction forward, consultation may be more targeted, even to the level of 1:1 meetings.

- A small and engaged Steering Committee whose membership included key areas can be a very effective method of governing a project.
- In this case the continuity of consultants enabled a smooth transition between phases and allowed for previous work to be constructively built upon.