

ICONIC URBAN WATERWAY AND STORM-WATER CHANNEL: REVIVING THE MAITAI RIVER.

J. Martin, Nelson City Council, PO Box 645, Nelson 7040

A. Kennedy, Friends of the Maitai, 170 Nile St, Nelson 7010

ABSTRACT

Working in partnership with Iwi, the community and key agencies in the region, Nelson City Council has embarked on a four year restoration project for the Maitai River, called Project Maitai/Mahitahi. The goal is to improve the health of the Maitai River and its tributaries; so that we can swim safely, collect kai and value this taonga (treasure) as an integral part of Nelson's physical and cultural landscape.

The Maitai River has many important roles. It provides the city's drinking water and acts as a storm water and flood channel. It is the tupuna awa (ancestral river) for the Iwi of Whakatu and is important to all the Iwi of Te Tau Ihu. It is also a key recreational asset, and part of Nelson's cultural landscape. There is some tension between these roles which makes the collaborative nature of this project especially important.

At only 18km long, the Maitai River can be divided into three sections each with a different set of impacts: the municipal water supply reservoir in the upper catchment; widespread forestry and recreational activity in the mid catchment; urban activity in the lower catchment where the river runs right through the city and finishes in the sensitive receiving waters of the tidal Nelson Haven. This makes the Maitai River a useful case study to look at a wide range of water quality impacts and possible interventions in a small area.

The project itself provides a good example of how the community can actively be involved in a Council based project from decision making to implementation, and illustrates the importance of internal cross-Council collaboration to address water quality issues.

The structure of the Project Maitai/Mahitahi programme, the ways in which stakeholders and community are involved, and the successes and lessons learnt to date for both water quality outcomes and project processes will be discussed.

KEYWORDS

Project Maitai/Mahitahi, urban waterway, community participation, collaboration, fish passage, infrastructure, values

PRESENTER PROFILES

Jo Martin is a member of the Environmental Programmes team at Nelson City Council and is the Programme Coordinator for Project Maitai/Mahitahi. She has been at Nelson City Council for 8 years in a

variety of roles, and has a background in science, environmental education and project management.

Ami Kennedy is one of the founding members of the current Friends of the Maitai group. Friends of the Maitai promotes collaborative responsibility for the health of waterways, and provides community members with a place to learn about the issues facing our rivers and be involved in taking positive action. This paper has been written collaboratively with several members of the group including David Ayre, Alison Horn and Steven Gray.

1. INTRODUCTION

The Maitai catchment

The Maitai is a beautiful river running right through the middle of Nelson City. It starts in the hills surrounding the city and flows through rural, recreational and residential areas, then past the CBD to the Nelson Haven. On sunny days the banks are lined with people having lunch, walking, running or biking along the riverside path.

The upper catchment is a relatively undisturbed drinking water catchment which includes the Maitai Reservoir and spillway on the North Branch, and the drinking water intake and reservoir backfeed on the South Branch.

Photograph 1: Maitai Dam, Nelson



The mid-catchment has a high level of recreational use based around the Maitai Valley Camp, the Waahi Taakaro Golf Course, an extensive network of mountain biking tracks, and several popular swimming holes. The land use here is largely plantation pine forest.

Photograph 2: Maitai Camp swimming hole, Nelson



In the lower catchment the river runs through the urban area and is impacted by urban pollutants from storm water and periodic *E.coli* contamination. Blooms of *Phormidium* cyanobacteria (toxic blue-green algae) also occur over the spring and summer months and have been linked to several dog fatalities.

Photograph 3: Toxic Algae warning sign, Maitai Riverside, Nelson



The lower reaches of the river are tidal and provide an important Inanga spawning area. There is significant residential development on the river flood plain which may be at risk from the predicted impacts of higher sea levels and increased rainfall intensities in the future.

Photograph 4: Maitai River in flood, 30 September 2010



The Maitai Valley itself has been an important place for people both pre- and post-European settlement; a detailed history of the valley and its people is given in a book written by Nelson resident Gwyneth Venner (Venner, 2002).

Project Maitai/Mahitahi

Project Maitai/Mahitahi came about because of raised community concern about the health of the river. In the 2014 Nelson City Council Residents Survey, 91% of the residents sampled said it was important for Council to focus on water quality in local streams and rivers. Just over three quarters of those who had concerns about water quality identified the Maitai River as the greatest concern.

At the same time and independently of the Council, a community group called Friends of the Maitai was regrouping. The original Friends of the Maitai formed in 1977 and the group has existed several times over the past 39 years. Friends of the Maitai promotes collaborative responsibility for the health of waterways, and provides community members with a place to learn about the issues facing our rivers and to be involved in taking positive action.

Nelson City Council responded to the community by launching a programme to address the issues affecting the health of the river on 1 July 2014. The original funding was for one year before being extended to a four year programme, due to finish in June 2018.

Viewing collaboration as the best chance of success, Nelson City Council and Friends of the Maitai formed a partnership to deliver Project Maitai/Mahitahi. The project has a stakeholder group of approximately fifty people representing Iwi, concerned individuals,

local businesses, the science community, agencies such as the Department of Conservation and Fish and Game, schools, recreational users, forestry industry representatives, Nelson City Councillors and Council staff.

The project title includes the name 'Mahitahi' because it is one of the original names for the river. Mahitahi can mean working as one, or working together. For some Iwi it refers to the Whitebait or Inanga that were once plentiful in the river and who appeared to be swimming as one. For other Iwi it relates to working as one with the precious Pakohe (argillite) which is found in the headwaters and was used to make tools.

The goal of Project Maitai/Mahitahi is to work together with Iwi and the community to improve the health of the Maitai/Mahitahi River and its tributaries, so that we can swim safely, collect kai and value this taonga (treasure) as an integral part of Nelson's physical and cultural landscape.

2. DISCUSSION

2.1 MULTIPLE VALUES FOR URBAN WATERWAYS

Urban waterways have a complex set of values around them, which can change over time as cities develop and cultural and technical norms change. Therefore we need to have ongoing conversations about how to manage our urban waterways to reflect those changing values.

The diverse values for the Maitai River often seem to crystallize into two distinct values sets which can be characterised as 'city infrastructure asset' and 'environmental treasure'.

The Maitai River is an important city infrastructure asset.

The Maitai/Mahitahi is the main source of drinking water for Nelson, a city of approximately 50,000 people. The Maitai North Branch in the upper catchment was dammed in 1987, to create a reservoir of approximately 32 hectares, with a maximum depth of 32.75 m and a total volume of 4 Mm³. Water for Nelson City is usually abstracted from the South Branch (and from the Roding River), and water from the reservoir on the North Branch is then fed back into the river to offset the water take. Municipal water can also be sourced directly from the reservoir itself but is more expensive to treat due to the effect of reservoir stratification on water chemistry, especially over summer.

Photograph 5: Intake weir and backfeed discharge, Maitai River



The Maitai catchment waterways have an important role in flood mitigation for the protection of properties on the river flood plain, which includes a large portion of central Nelson. The river can be dangerous at full flow and if it burst its banks there would be significant flooding of residential and commercial areas. A flood in September 1970 in the Brook Stream caused a fatality and resulted in the later construction of the Brook Stream concrete open channel.

Photograph 6: Brook Stream concrete channel, Nelson



The Maitai River and its tributaries are also an important part of the stormwater network with point discharges draining large catchments throughout the urban area. There is a continuous programme in place to upgrade old in-ground infrastructure to reduce leaks and cross connections between stormwater and wastewater, to help improve water quality in the river and tributaries.

Photograph 7: York Stream culvert, Maitai tributary, Nelson



Nelson City Council considers the Maitai River and its valley to be key recreational assets for the city, and a major walkway and pontoon project was recently completed to improve the amenity and recreational value of the lower Maitai. The Council maintains an 8km long esplanade walking/biking track along the river, riverside plantings and art works, swimming holes and picnic areas, a cricket pitch, a golf course, a camping ground, and fords and bridges across the river to provide access.

Photograph 8: Maitai Walkway and pontoon development, Nelson



The Maitai River is an environmental treasure, and is the tupuna awa for Te Tau Ihu.

The Maitai River is very important to all the Iwi of Te Tau Ihu. It is an historical mahingakai (food gathering) area, a source of Pakohe (argillite) for tool making, and the main route from Whakatu to Te Hoiere and Wairau (Nelson to Pelorus and Marlborough). Seven out of

eight of the Te Tau Ihu Iwi have Statutory Acknowledgement over the Maitai River (Te Tau Ihu Statutory Acknowledgements, 2014).

The Maitai is also widely used by the community for recreation, and a survey of river users was carried out in 2015 to review their recreational values. The major findings of the survey were that: flow levels in the rivers were of less interest to respondents than algae and water quality; flood protection was a lower priority on the Maitai River than most other management issues; the river was highly valued for recreation, natural and scenic values. (Greenaway, 2015)

Friends of the Maitai values

A shared vision including gathering, sharing, learning and taking action for a clear, cool and flowing Maitai River underlies all that group members do. The focus is on protecting the Maitai River from inappropriate land use and exploitation and the group takes a custodial role combined with open enquiry.

Friends of the Maitai community values are:

- We are all implicated in the health and wellbeing of our waterways.
- The rivers and streams in a catchment are connected living entities that bring life force into the urban environment.
- Water connects all life within a catchment.
- People enjoy many aspects of the rural and urban waterways; beauty can be found in the smallest trickle of water.
- Water moves through our rural and urban landscapes and has no boundaries, but is managed carefully as it passes through urban landscapes.
- Waterways connect us to our wild places, forming a link from the mountains to the sea.
- We celebrate peoples' history and relationship with the river.

Mindful collaboration:

- Working with people's strengths and interests builds a resilient group
- Building good relationships within community requires open, clear and courteous communication, trust and good will.
- Focusing on long term solutions rather than quick fixes results in broader community satisfaction.
- Collective process with a focus on fun and enjoyment.

Action based learning:

- Learning by taking action, observing, recording and reflecting on the results. This builds on and deepens the group's knowledge of catchment ecology and civic participation.

- Waterways are an excellent catalyst for getting people talking and sharing ideas. By gaining knowledge and skills as a group, we learn to take appropriate actions that support the wellbeing of the river.

The shared memories below are from the Friends of the Maitai memories book, and they illustrate the long term importance of the river in people's lives:

"Swimming in the Maitai River when I was younger with friends and Whanau, having picnics on the grassy areas, walking along with the children. We do all of those things today with our own children, they love it."

"I remember standing and watching the trout holding their position in the Maitai from the Nile St bridge. They were so graceful and colourful and the water just sparkled as it flowed swiftly downstream (30 years ago)".

"Swimming in Girlies Hole every day after school. Pretending to be mermaids."

"Biking for the first time by myself at the Maitai valley was so refreshing, invigorating and inspiring! Love this place."

"I remember regular family picnics and swimming in the river- from 1950s on. I remember my mother always beat me into the water- she wasn't afraid of cold water- right up to the last years of her life- she still beat me into the river."

"We had lilos, we jumped off high rocks, we swung on ropes from trees. The Maitai was OUR River".

"You warm my heart. You cool my body. You sweet-flowing river."

"Sharing the swimming holes with shags that swim underwater past me and seeing the kingfishers year after year nesting in the same tree"

Finding the common ground

Conflicting waterway values are not a new problem and the management of rural waterways has been widely discussed for a long time. However the conversation has expanded more recently to include urban waterways, partially driven by the National Policy Statement for Freshwater Management 2014. The issues and solutions for urban waterways are different to those for rural waterways. In particular, infrastructure design and the behaviors of urban communities both have a major impact on urban waterways.

Although flood mitigation and natural character, or drinking water takes and environmental flows might seem at first to be conflicting values, there is much common ground to be found. Everybody wants good water to drink and safety from flooding. Most people want to feel civic pride and to have a nice place to walk, swim and picnic. Many people enjoy eating whitebait and want our native fish species to be successful.

If we listen to all the diverse values that are held for our urban waterways we can find the points in common to use as a basis for waterway management and responding to legacy issues. Collaboration is vital to resolve tensions between utilities functions and community aspirations for urban waterways.

2.2 A STRUCTURE FOR COLLABORATION

"Everyone who lives here is responsible – we are all participating in creating the problem but there are not good mechanisms for getting involved in the solutions." Ami Kennedy, March 2016

Most Council works programmes are planned out at least a year before they begin and are approved through the annual plan and long term planning processes. By the time the community is informed that the project is about to start much of the planning has already been done.

Project Maitai/Mahitahi was designed to incorporate community input at the programme development stage and then throughout the whole project management process. The intention was to make a flexible and responsive structure that could allow the programme to respond to community values and priorities the Council may not have recognised.

The issues for the Maitai River are already well documented and Project Maitai/Mahitahi is not about producing more reports telling us what's wrong. The emphasis is on taking action, alongside business as usual, and in collaboration with key stakeholders.

In the first year a programme of twelve projects was developed to respond to the issues identified at a community meeting. Each project was managed by a Council officer and had a team made up of a variety of stakeholders. The annual budget was \$400,000 divided up between projects in consultation with stakeholders depending on project scope.

Nine months through the first year each project was assessed by the wider stakeholder group to decide if it should carry on into the second year, or be replaced with a new higher priority project. Six of the original twelve projects carried on and six were replaced with new projects. The same process will happen nine months through the second year. In this way the programme structure can respond to new scientific information, new stakeholder priorities, or new issues that come to light.

It is important to note that this collaborative process has been as much about building relationships between the different Council business units and contractors working in and around our waterways, as with external stakeholders. Nelson City Council is one of the largest landowners in the river catchment and the Council's activities have the most significant impact on the river; Council needs to change the way we do things in and around the river as well as talking with the community about doing their part.

2.3 PROJECT OUTCOMES TO DATE

Project outputs

There have been a variety of both 'hard' and 'soft' outputs from the project to date. These include: fish passage fixes, riparian plantings, alterations to Council operating and maintenance regimes and infrastructure, scientific research to support decision making, in-stream habitat improvements, and community projects.

Many of these projects have required the resolution of some conflicting values sets before they can progress. This has been especially so where modification to infrastructure is needed, or a change to operational regimes is necessary to improve river health. One such example is the potential removal of a concrete ford on the Maitai River which is used by walkers and mountain bikers, and which is a convenient gravel extraction point to reduce gravel load in the lower Maitai. However it is also the last remaining significant fish passage barrier on the river and is no longer used for its original purpose. User surveys are currently underway to begin the process of looking for a solution acceptable to all.

Photograph 9: Almond Tree Flat ford, Maitai River



Another such example is an urban tributary of the Maitai which has been adopted by a community group who want to clean up and beautify the stream with plants, signage, and lighting. They are also keen to work with Council to implement a behavior change programme to reduce litter in the stream. However the landowner has not agreed and may have plans to pipe the stream.

Fortunately many projects have happy endings. One fish ladder project involved the installation of a 150m long spat rope and small pump at the Maitai Dam spillway – possibly the longest spat rope fish ladder in the country. The project team was unsure if it would prove too long, however spotlight surveys have detected elvers (baby eels) using the spat rope to both aid climbing and as cover for resting. Although it was a long and arduous journey some elvers successfully made it over the spillway crest and into the dam. (Hay, 2016). Prior to this there was no fish passage over the spillway when it was dry.

Photograph 10: Spat ropes and wet margin, Maitai Dam Spillway



For some projects more information is needed to make good decisions about interventions. Benthic *Phormidium* cyanobacteria blooms are a problem in the mid reaches of the Maitai, so an ongoing research programme related to *Phormidium* in the Maitai is underway at the Cawthron Institute to enable better understanding of the drivers (Wood et al., 2015). We will use this information to target our interventions.

Many projects relating to Project Maitai/Mahitahi have been undertaken by community groups with very little Council involvement, including litter clean ups by Whakatu Rotary Club supported by Nelmac, citizen science monitoring of river health parameters by the Friends of the Maitai, assorted community group plantings, a freshwater themed art panel project by Victory Primary School, and the development of a fish migration board game by Friends of the Maitai. We have found the opportunities for community group projects

in and around urban waterways to be quite limited, and most projects have tended to be focused on planting, education, stream monitoring, litter clean ups or advocacy.

Photograph 11: Saltwater Creek clean up, Whakatu Rotary Club



Council learning outcomes

In addition to tangible project outputs, the Nelson City Council Project Maitai/Mahitahi team has learnt a lot. Some of these lessons are not new, but are easily forgotten and are vital to the success of a collaborative approach.

- Clearly identify both the decision maker and the driver.

It's important to clarify who makes the final decision, and also who will actually make it happen. It's easy to have meetings to discuss ideas but harder to turn those ideas into action, especially if the solution involves changing the way things are done. For Project Maitai/Mahitahi it has been necessary for both these roles to sit inside Council, because many of the solutions relate to Council owned land or infrastructure or Council managed utilities operations. Although Project Maitai/Mahitahi was initially community-driven, Council has taken responsibility for the implementation and final decision making which has been important to ensure a Council-wide response. This is in contrast to the original intention which was that all decisions would be negotiated within project teams comprised of internal and external stakeholders, and that some projects would be driven externally.

- The programme needs to be both participatory and efficient.

A balance must be struck between full community participation, and Council process requirements. It's important to find a way to meld community and Iwi collaborative methods and timescales with Council timelines and process constraints. This also relates to the point above,

whereby if the decision making and implementation are done from within Council they can be made to fit Council process and timelines. This is necessary for timely project delivery, but results in a lower level of external stakeholder participation and ownership of the project outside Council. The only real way to fix this might be to adjust the Local Government democratic process (!) but in the meantime Council has taken responsibility for all the Project Maitai/Mahitahi project management, consults with key stakeholders on an as needed basis, and reports back to the wider stakeholder group quarterly. The wider stakeholder group is also still involved in the programme development for each year as described earlier.

- Good science and planning is vital.

It's difficult to fix mistakes in and around waterways easily or predict unintended downstream effects of an action, so it's very important to gather the information needed to ensure we get it right the first time. The original Project Maitai/Mahitahi brief was to take action and not get stuck in paralysis by analysis. The actual pace of delivery has been frustrating for some project supporters who would like to see us 'just get in there and do it!' However when it comes to waterways and balancing different values its better to allow time to look for win/win solutions, and then do it once and do it right. An example of this is the *E.coli* monitoring work we have done at Collingwood St Bridge swimming hole, which has shown that the problem is more complex than we expected and is not just a simple matter of fixing some pipes.

- Align community expectations and feasible participation

There are limited ways in which the community can be tangibly involved in improving urban waterways. People can participate in citizen science monitoring projects, riparian weeding and planting, advocacy, and behavior change projects around litter, stormwater contamination, and water storage and usage. However these activities may not feel very satisfying to solutions focused people who want to effect change immediately. When planning an urban waterway improvement programme it's important to include projects where there is scope for community involvement and also to manage expectations about what level and type of involvement is feasible. The Project Maitai/Mahitahi team is still looking for better mechanisms for inviting the community to be part of the solution.

- It takes a long time to fix a river and stakeholder enthusiasm needs to be supported.

It's vital to engage and support internal and external stakeholder enthusiasm over the long term. Remove barriers when possible and don't create new ones. Expect the best of participants and maintain high standards. It's necessary to give as well as take. Continuity is essential for a long term project such as fixing an urban waterway, because the collaboration is based on relationships and trust. The Project Maitai/Mahitahi team found it was easy to gather support for

short term exciting projects with rapid tangible outcomes, but for complex long term projects the forward momentum is sustained by passion or values so it's very important to nurture these in all involved. Support from the top is vital. This applies to stakeholders both within and outside Council.

- Internal collaboration is as important as external collaboration.

Nelson City Council is a unitary authority so we have both regional and territorial functions. This spread of functions generates a variety of understandings about what is important for the community and what the community wants from our waterways. Working through those differing values sets internally has been important for gaining a Council wide approach to urban water way management, and we are fortunate to be able to do this internally rather than as a conversation between separate regional and territorial authorities. It has been essential to have strong support from both senior management and Councillors to cement and maintain Project Maitai/Mahitahi as a Council wide initiative. The internal collaboration has been necessary to allow Council to work with others as one party and not bring a fragmented voice to the table.

- Engage with those doing the delivery, not just the managers.

The people working in and around our waterways have a big part to play in improving waterway health and minimising negative inputs. The health of the river primarily depends on what people actually do in and around the waterways, and it's important not to rely on 'common sense' or on contractors having the same values or objectives as the programme they are working for. To make real change it is necessary to change the way that things are done on the ground. Often the people signing the contract are not the ones actually doing the work, so it's vital to work with the actual do-ers as well as the stakeholders round the table.

- Change is uncomfortable and difficult for people

People will resist changing the way they do things unless there is a reasonable chance of a positive benefit, either to them or to the bigger picture. There must be trust in both the process and the relationship. Several Project Maitai/Mahitahi initiatives have required considerable negotiation due to internal stakeholders not believing the recommended changes will actually work. It has been possible to overcome this internally through focused conversations; however behaviour change in the community is much more difficult to achieve and needs support from people with experience in successful behaviour change programmes. Education initiatives can raise awareness but may not result in the change needed to actually make a difference.

Friends of the Maitai learning outcomes

For Friends of the Maitai there have been many learning outcomes from this work. Some are related to the ecology of the Maitai/Mahitahi, some are generic to interactions with the Council, and some are related to our own organisation and the way that we work. All of them are very important to us.

- Finding out how the Council works can be difficult.

The Council is a complex organisation with many separate and overlapping areas of responsibility, and many associated organisations and contractors. We learn how the Council works from direct experience rather than from a formal guide, gradually building shared visions and understanding and trust by working through specific issues, and learning how and when to push gently. This can create very positive and constructive working relationships. Doing all of this takes time and commitment.

- There are many communication paths and they are all important.

Informal communications with Councillors, who are political; informal communications with Council staff, who are not; formal Council meetings; information archives; communication with Iwi, who have a separate set of processes and timeframes; communication with a large and diverse set of members, each with their own skills and commitments and availability; communication with other community groups; communication with local media. All of these take time, and evolve with the group.

- Information can be difficult to acquire.

In the early stages of working with the Council, simply finding out what is happening may be as random as hearing about a project because of a chance conversation between two members of Council staff on a corridor.

- Adaptation is vital.

Without that, we have only fixed responses to situations, and fixed responses are not helpful.

- Scale is important.

It is very important to involve all the people and skills that are needed, and also to try to keep groups and activities and meetings as simple and direct as possible so that people are not overwhelmed. Small projects that contribute to the larger vision are excellent places to build from.

- Dreams and details are both very important.

Dreams are the reason we are here, give us direction, and keep us going. Details are all around us, in our entire complex rural and urban

infrastructure and the many levels and disciplines involved. We need to recognise and acknowledge both.

- Working with people helps us to appreciate the work that they do.

As a result of this project, we have a new appreciation of engineers and Councillors and Council staff and community group processes!

- Land use practices have a large effect on the ecology of the river.

We have learnt a great deal about the importance and extent of the impact of forestry and sediment on the health of the river and the run-off into our seas. They will be two of our areas of close focus in the future. We have a chance to set the agenda for the next generations of Nelsonians. We should learn from past mistakes.

Next steps

Project Maitai/Mahitahi has another two years to run and the things we have learnt will be helpful for future planning. In particular we will continue to focus on internal collaboration, nurturing the enthusiasm of all involved, making good science based decisions, engaging better with our contractors, looking for better participation mechanisms and supporting community behaviour change.

As the changes we have already made start to have an effect and we make more changes, our monitoring of anticipated outcomes will become more important too. Going forward there will be an added focus on analysis to chart progress towards achieving the programme objectives.

We anticipate that by the time Project Maitai/Mahitahi ends in June 2018 many of the changes we are making will be embedded and continue on. There will also be an on-going focus on Nelson's urban waterways through the Nelson Nature environmental programme until 2025.

3. CONCLUSIONS

The Maitai River is the main river running through Nelson City; it is both a much loved city river and an important infrastructure asset. Stakeholders hold differing values sets for the river which need to be considered when addressing river and stormwater management.

Lessons from rural waterways do not necessarily transplant well to the urban setting. Improving urban waterways requires a long term coordinated response both within Council, and between Council and the community. The Maitai River provides a good case study because it is a relatively short river flowing right through the city, with a strong

degree of community ownership. Also the city is fortunate to have the passionate and committed Friends of the Maitai community group, who are both active and willing to participate in a partnership programme with Council.

In Nelson, a Council wide response is necessary because Council owns and manages a large amount of land and infrastructure in the catchment, has a resource management role, and is focused on meeting the needs of the community it serves. Community participation is essential because the health of the river largely depends on what people do on the land. In an urban setting the whole community impacts the river in some way.

Project Maitai/Mahitahi provides a case study of a four year Council and community collaborative project aimed at improving the health of the mainly urban waterways in the Maitai catchment. Through collaboration differing values are being explored to find common ground, which can then be used as the basis for a way forward. It has been important for Project Maitai/Mahitahi to be Council-led to ensure a council-wide response, however this has resulted in a lower level of collaborative decision making than was originally planned.

It has also become clear that there are not well established mechanisms in place to allow meaningful public participation in urban waterway improvement projects. A collaborative project such as Project Maitai/Mahitahi can provide a vehicle for community involvement in urban waterways, however opportunities for taking action are somewhat limited by Council processes and the complexities of waterway management. People are interested in engineering; they want to know how their city works and how they can be part of any solutions, so maybe better ways of working with the community can be identified going forward.

"The key to the Project Maitai/Mahitahi is a strong sense of guardianship by people who live, work and play alongside the Maitai River. That community involvement must be reinforced by robust science and ongoing research that supports an understanding of the issues impacting upon the river and its health. There is no single solution for achieving better water quality. Working closely with Iwi and the community, we must introduce a whole raft of measures to make a difference." Brian McGurk, Nelson City Council, Maitai River of the Month story, LAWA website, November 2014.

"Dreams are important, so acknowledge the big visions and big changes the group wants to make. Dreams keep you going and link the group through shared vision. Any community group needs do-ers, planners and also dreamers" Ami Kennedy, Friends of the Maitai, Personal Communication, March 2016

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