

TE KUNEROATANGA: THE EVOLUTION OF STORMWATER MANAGEMENT PLANS – GIVING EFFECT TO TE MANA O TE WAI

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KŌRERO TŪREHUREHU - ABSTRACT

The approach to stormwater management requires a step change in thinking to give effect to Te Mana o Te Wai, but there is no specific road map on how this should occur. The approach taken in developing stormwater management plans for four urban townships in the Timaru District offers insight into how Te Mana o te Wai can be put into practice. A process was established based on adaptive management that can endure beyond both the timeline and geographic limitations of this project. The process was designed to help foster enduring relationships with Mana Whenua and achieve Timaru District Council's (TDC's) vision for stormwater management:

Together we value, protect and restore the mauri of the waterways so that it enables mahinga kai, ki uta ki tai.

The project was driven by the need to obtain resource consents for reticulated stormwater network discharges in TDC's urban centres. Initially, the scope was focussed on delivering prioritised management options for stormwater quantity and quality to meet water quality standards and consent conditions.

The need for an alternative approach for this project evolved out of some early project misunderstanding during Mana Whenua engagement. Learnings from this experience showed us that:

- Ultimately, we all want the same thing and have a unity in purpose (kotahitanga); we all need the same data to understand the extent to which stormwater discharges have impacted the natural environment.
- Having the right advocates to bridge the gap (whanaungatanga), communicate and integrate Mana Whenua values with western science and vice versa cannot be understated.
- Effort put in upfront into relationships that can endure will pay dividends later in the project, but not too hard too fast; Mana Whenua as Kaitiaki of the land must be given appropriate time and space to ensure their Mana and Mātauranga Māori is upheld with integrity.
- Te Mana o Te Wai is a journey, not a destination and the process is just as important as the outcome.

The new way of thinking led to developing a process to implement the stormwater management plans based on an adaptive management approach. Improvement projects are identified and evaluated which consider how well they assist in achieving the objectives and targets of the stormwater management plan which were developed in line with the Te Mana o Te Wai hierarchy of obligations. Mana whenua have an integral role in this evaluation process alongside TDC before any improvement projects are included in the implementation plan. Working within existing funding budgets, an assessment of the benefits of each project assists with the implementation prioritisation.

Monitoring environmental parameters (including water/sediment quality, ecological and cultural) and the associated trigger and response plans are used to evaluate and provide feedback on the management plan. This monitoring assesses the performance of existing projects and identifies further areas for improvement. New projects to improve stormwater outcomes are identified and evaluated, continuing the cycle.

This process demonstrates the next evolution for stormwater management planning in Timaru and provides a tangible example of how giving effect to Te Mana o te Wai can be put into practice.

KUPU MATUA - KEYWORDS

Te Mana o Te Wai, Mana Whenua engagement, Mātauranga Māori, stormwater management plan, stormwater network consent, monitoring

PRESENTER PROFILE

Sarah is a Team Leader and Water Engineer for WSP with 16 years experience specialising in stormwater management, including design of treatment, attenuation and conveyance systems with a particular aptitude for stormwater management plan and strategy development.

Treena is a senior policy analyst at Aoraki Environmental Consultancy (environmental entity representing Te Rūnanga o Arowhenua), with a planning and policy background and over 20 years experience in local and central government including work on the implications of land use on the natural environment, disaster recovery and adaptation to climate change.

Grant is the Principal Three Waters Specialist at Timaru District Council, after 19 years as the Drainage and Water Manager, responsible for overall management and delivery of water, wastewater and stormwater services. He has 35 years' experience over a huge variety of projects, and has developed a close working relationship with local Rūnanga.

1 TAKINGA - INTRODUCTION

The industry approach to stormwater management requires a step change in thinking to give effect to Te Mana o Te Wai, but there is no specific road map on how this should occur. The approach taken in the development of stormwater management plans for four urban townships in the Timaru District offers insight to a way that giving effect to Te Mana o Te Wai can be put into practice.

The paper discusses the early approach to Mana Whenua involvement and how misunderstandings turned into a significant learning opportunity and transformative change. This paper presents the vision and objectives that were co-created and a revised process for stormwater management plan development and implementation based on

adaptive management that can endure beyond both the timeline and geographic limitations of this project. The process was designed to help foster enduring and Mana-enhancing relationships that achieve Mana Whenua and Timaru District Council's vision for stormwater management.

2 TAKENGA - BACKGROUND

2.1 STORMWATER MANAGEMENT PLAN PROJECT SCOPE

The project area covers four townships within Te Rūnanga o Arowhenua in the Timaru District, South Canterbury, each of which needed their own stormwater management plan:

- Temuka
- Pleasant Point
- Waitarakau / Washdyke
- Timaru

The project was initiated with two main objectives. Firstly, to comply with the legislative requirement to obtain resource consents for stormwater network discharges in accordance with Environment Canterbury's Land and Water Regional Plan (LWRP). Secondly, to support the Council in its role as an asset owner, so that it could effectively and efficiently manage stormwater assets and deliver its agreed levels of service.

The project's primary deliverables were stormwater management plans and Assessments of Environmental Effects (AEEs) for each township followed by lodging consent applications with the regional council (Environment Canterbury).

A core project team was established, initially consisting of the client (Timaru District Council), WSP (lead consultant) and Pattle Delamore Partners Ltd (sub consultant).

At the outset of the project, the key stages for developing stormwater management plans for this project were:

- define a vision and high level objectives for stormwater management
- understand the state of the Taiao - environment (through baseline monitoring and investigations)
- identify key issues
- identify options (addressing stormwater quality and quantity)
- set targets
- develop an implementation plan (with costs and timeframes for a prioritised list of options).

At the time of writing, the status of the applications for the four townships is as follows:

- Temuka and Pleasant Point stormwater management plans and consent applications with supporting AEEs have been lodged; resource consents are being processed.
- The draft Timaru stormwater management plan and AEE is due to be lodged by May 2023.
- Work will then start on the Waitarakau / Washdyke stormwater management plan and AEE.

2.2 MANA WHENUA CONTEXT

Timaru District Council sits within the Takiwā of Te Rūnanga o Arowhenua. Arowhenua sits within the tribal council of Ngāi Tahu who hold Mana Whenua status over most of Te Waipounamu – the South Island. The Takiwā of Arowhenua is located between the Rakaia and the Waitaki, and inland to the centre of the Southern Alps.

Arowhenua hapū and iwi are Kaitiaki of the land and waterways, and assert ancestral rights and responsibilities to Mahinga Kai as guaranteed under the Treaty of Waitangi/Te Tiriti o Waitangi (1840) and reserved under the Sales and Purchase Agreement for Canterbury (Kemp's Deed, 1848).

The project areas are part of rich cultural landscapes including Mahinga Kai/Taonga species, culturally significant waterways, historical settlements (kāinga, pa, nohoanga), Arowhenua Marae (Te Hapa o Niu Tirenī), Sacred Sites, Wāhi Taonga, Mātaitai reserves, Māori land and Ara Tawhito (traditional trails).

2.3 REGULATORY CONTEXT

2.3.1 NATIONAL POLICY STATEMENT FOR FRESHWATER MANAGEMENT

The National Policy Statement for Freshwater Management 2020 (NPSFM) provides the most up to date direction to local authorities on how they should manage freshwater under the Resource Management Act 1991 (RMA). Underpinning the NPSFM is the "fundamental concept" of Te Mana o te Wai. The principle of Te Mana o Te Wai reflects the paramount importance of the health and well-being of water. It is not a new concept, as it has been an official part of Aotearoa New Zealand's legislative water policies since 2014. However, the transformation has been the way it has been incorporated into legislation and the NPSFM.

There is a hierarchy of obligations in Te Mana o Te Wai and Objective 2.1 of the NPSFM that prioritises:

(a) first, the health and well-being of water bodies and freshwater ecosystems

(b) second, the health needs of people (such as drinking water)

(c) third, the ability of people and communities to provide for their social, economic, and cultural well-being, now and in the future.

Te Mana o Te Wai also gives effect to two sets of guiding principles:

- Good governance, Kaitiakitanga, care, and respect for water.
- For Tangata Whenua: Mana Whakahaere is how Tangata Whenua make decisions to maintain, protect and sustain their relationship with water; Kaitiakitanga is the obligation of Tangata Whenua to preserve, restore, enhance and sustainably use freshwater; Manaakitanga in this context is the way in which Tangata Whenua nurture, preserve, respect, and care for freshwater..

In simplistic terms the NPSFM requires us to think about the water as a living and breathing Taonga in its own right, that needs looking after for future generations.

2.3.2 CANTERBURY LAND AND WATER REGIONAL PLAN

The LWRP rules requires local authorities to obtain resource consents for discharges from urban stormwater networks; supported by a stormwater management plan. The LWRP has an expectation that water quality outcomes, standards and limits will be met for water

bodies set out in the plan. This includes a high level cultural outcome that: *“Freshwater Mahinga Kai species sufficiently abundant for customary gathering, water quality is suitable for their safe harvesting, and they are safe to eat.”*

The LWRP was made operative in 2015. Changes are now needed to the LWRP to give full effect to the NPSFM and in particular to provide for Te Mana o Te Wai. This requires the regional council to prepare and notify a specific plan change by 2024. This requires the consent authority to:

- Engage with communities and Tangata Whenua to determine how Te Mana o Te Wai applies to the water bodies and freshwater ecosystems in its region
- Develop long term visions for freshwater
- Actively involve Tangata Whenua (to the extent they wish to be involved) in freshwater management; and
- Adopt a **‘Ki uta ki tai’**, integrated approach.

The consents being sought by Timaru District Council, as well as considering the LWRP, also have to consider the NPSFM.

3 WHANAUNGATANGA - EARLY MANA WHENUA INVOLVEMENT

3.1 HISTORIC RELATIONSHIP BETWEEN TDC AND TE RŪNANGA O AROWHENUA

Prior to the establishment of Aoraki Environmental Consultancy Limited (AECL) in 2017, Timaru District Council’s relationship with Te Rūnanga o Arowhenua was largely unstructured and intermittent, and generally based on personal relationships. These relationships were developed through a few key drainage and water projects over a decade ago, including a subsidised sewer scheme for the Arowhenua Marae and community and the consenting of the Timaru district wastewater discharge to the ocean.

AECL was established as the environmental entity for Arowhenua. AECL is mandated to support Te Rūnanga o Arowhenua in environmental issues including resource consents and plan drafting. The establishment of AECL enabled a new era of closer working relationships between Council and Arowhenua.

3.2 APPROACH TO EARLY MANA WHENUA INVOLVEMENT IN PROJECT

The core project team recognised the importance of engaging with Te Rūnanga o Arowhenua at an early stage and involving them throughout the process. The experience of AECL is that typically for most consent applications in Canterbury, Mana Whenua are only consulted as part of the consenting process after lodgement. The approach by the core project team was seen as being more proactive and better able to meet the requirements of the NPSFM and legislation that requires Mana Whenua to be consulted through the consenting process.

To facilitate early engagement with Mana Whenua, the core project team established a project collaboration agreement with AECL that focused on roles, responsibilities, deliverables, and expectations of response times for reviews. Site visits with the core project team and Arowhenua were undertaken, where rich information was shared, albeit not well recorded.

In addition to the site visits AECL were commissioned to undertake Mana Whenua impact assessments for each town and to review project outputs such as the issues reports.

On the surface, this approach appeared to be reasonable. The core project team believed this approach would ensure Te Mana o Te Wai would be adequately addressed and that AECL would give clear guidance around what to do.

3.3 EARLY PROJECT MISUNDERSTANDINGS

The project encountered significant difficulty early on, which was primarily centered around the Mana Whenua impact assessments that were prepared by AECL. The team had anticipated information with specific details about each waterway, similar to the information shared during the site visits, such as the historical significance that were popular Mahinga Kai sites with an abundance of Tuna and other desirable species. What was delivered by AECL was higher level and focused more on the need to establish an ongoing and robust relationship around stormwater.

The reception of the documents led to a reset of understandings and expectations of an ongoing relationship in the management of stormwater. Meetings in this phase were at times uncomfortable and emotionally charged but there was a willingness by all parties to explore differences and navigate ways forward. It also meant that there was an ability to share knowledge and understanding.

4 MANAAKITANGA – TE AO MĀORI LEARNINGS

Working through the initial misunderstandings provided an opportunity for significant learning to take place. Several key insights were gained regarding the importance of effective communication, cultural understanding and building enduring and Mana-enhancing relationships with Mana Whenua. It was realised that, ultimately, all parties recognise the vital importance of water and share a common desire of Kotahitanga – unity in purpose - to protect and improve our rivers, streams, lakes, and wetlands.

The core project team learnt that Mātauranga Māori and western science can depend on and be informed by one another. The integration of Mātauranga Māori and western science helped to understand the extent to which stormwater discharges have impacted the natural environment. To assist with bridging the gap between Mātauranga Māori and western science, AECL brought in Dr Jane Kitson, a specialist in this space who was invaluable in assisting with communicating the value of Mātauranga Māori to the project team, and the importance of western science to Mana Whenua.

Dr Kitson also helped the core project team explore traditional Māori concepts such as Mahinga Kai in the context of science and monitoring, learning that it means more than just the protection of historic food gathering sites, as depicted in Figure 1.



Figure 1: Mahinga Kai as a Concept (Kitson Consulting Ltd, 2022))

The core project team learnt the importance of acknowledging what has been lost, understanding that this does not directly translate to what needs to be recovered, but does require an honesty about events and actions of the past to better guide a prosperous solution forward. For example, Mana Whenua helped the team understand how two ephemeral watercourses were once highly valued spring-fed streams that have been modified and impacted by agricultural practices in the wider catchment, including large scale water abstraction for irrigation. The lack of water, namely the loss of springs, impacted the Taiao, the waterway's ecological values and the viability of Mahinga Kai.

Furthermore, the team learnt that building enduring relationships with Mana Whenua was essential to the success of the project. Given the long-term nature of the consent being sought, which could be as long as 35 years, multi-generational thinking is required along with a process to ensure the voice of Mana Whenua voice continues to be heard beyond the duration of the consent.

Another key learning is that this process does take time. For example, Mana Whenua need to be given appropriate time and space to deliberate and respond. Cultural impact assessments are not a 'one and done' service for giving effect to Te Mana o te Wai and obtaining all relevant cultural information. Reluctance from Mana Whenua to share or document information on paper is understandable where there are concerns there may be no further involvement or discussions in what happens next and how the information may be used and interpreted. Where there are resource-constraints, it is also necessary to be cognisant of availability and any expectations around the timeliness of responses. This may mean a shift to accepting verbal input during meetings and for document review, rather than expecting specific content or documents to be drafted.

Ultimately, providing Manaakitanga for Te Mana o Te Wai is a journey, not a destination and the process is just as important as the outcome.

5 KOTAHITANGA – THE JOINING OF MĀTAURANGA MĀORI AND REGULATION IN STORMWATER PLANNING

The most meaningful change made as a result of these Te Ao Māori learnings was to bring Arowhenua, through AECL, into the core project team as a true partner, not as a stakeholder.

The first collaborative exercise carried out by this new partnership was co-creating a vision and a way to implement this **Error! Reference source not found.** Council worked with AECL to co-create a vision statement that describes the future and hopes for the management of stormwater for the Timaru District and its environment:

Together we value, protect and restore the Mauri of the waterways so that it enables Mahinga kai, ki uta ki tai

A key focus of discussion then turned to the development of objectives and targets informed by Te Mana o Te Wai. The objectives and targets are expressed in the context of the three priorities of hierarchy of obligations in NPSFM (refer section 2.3.1) **Error! Reference source not found.** Table 1 presents a generalised version of the objectives and standard targets and whilst similar, the actual objectives for each stormwater management plan are tailored to the issues of each township.

Initially, the project team was interested in identifying these objectives and targets early on in the process. However, the team later realised it was more important to reflect on the Waiora of each waterway and what its intrinsic values were prior to urbanisation. This allowed a greater understanding of what the Mana of a particular waterbody should be and how this might be provided for into the future.

Most of the objectives address obvious matters, such as:

- progressively reversing diminished ecosystem health,
- prioritising interventions close to source and
- infrastructure that achieves multiple benefits (including environmental, social and cultural).

Two of the more unique objectives also align with what the consent authority needs to achieve with the Regional Plan review to give effect to the NPSFM:

- Council to be an advocate for '**Ki uta ki tai**' during its involvement as stakeholder and regulator in RMA and Local Government processes.
- Recognise and respect Mana Motuhake – the Whakapapa and the relationship Kāti Huirapa have with water ecosystems in their Rohe and actively involve them in stormwater management.

These two objectives can be seen as a progressive move that ensures active involvement of Arowhenua in stormwater management in the Timaru District. This involvement includes developing and review of the implementation plan (including prioritisation of options for meeting the objectives) and involvement in periodic reviews of the stormwater management plan, the targets and the monitoring plan.

In order to implement the objectives there are specific targets. These are relatively ambitious and exceed the current Regional Plan outcomes and limits. Waterways which are more highly valued also have another set of stretch targets to achieve by the end of the consent (not shown in Table 1). It is not yet clear whether some of these targets can be

met within the specified timeframes, or indeed at all in some cases given the current state of the environment (subject to outside influences) and the urban nature of some of the catchments.

There is the ability for the consent holder to amend the targets without the need for a change of conditions application, however, the change to the objectives would require a consent variation application process.

The more holistic objectives and stepped targets anticipate that the review of the Regional Plan to give effect to the NPSFM will reprioritise the health of the waterways, actively involve Tangata Whenua and adopt a '**Ki uta, ki tai**' integrated approach. Aligning the applications with this approach is one way to protect the consents (if granted) against a consent review process and to give the consent authority more confidence that a longer duration of consent is appropriate.

Table 1: Hierarchy of obligations, objectives, and targets for stormwater management

TE MANA O TE WAI - Hierarchy of Obligations	WHĀINGA MATUA - Objectives	ARONGA - Targets
First, the health and well-being of water bodies and freshwater ecosystems	1 Progressively reverse the diminished ecosystem health in the XXX Stream	<p>For XX Stream by 20XXX:</p> <ul style="list-style-type: none"> • Sediment quality \leq ANZG DGV • MCI scores improved from baseline (62.9) to 90 • QMCI scores increased from baseline (2.0) to \geq 4. • Improvements in riparian margins within the stormwater management area where overland flow is an issue • Improvements in F-IBI scores from baseline [to be established) or other agreed fish diversity and abundance targets • Improvements in dry weather water quality from the baseline (to be established after 3 years) and routinely meeting ANZG receiving 90% species level of protection, for stormwater derived toxicants. • A reduction of fine sediment depth and cover over time. <p>Wet weather flows in XX Stream are to meet any national acute toxicant guideline values for stormwater derived toxicants within 10 years of the guideline being published, or within 5 years if MCI and QMCI scores are not $>$ 90 and 4 respectively.</p>
	2 Progressively reduce the cumulative impacts of stormwater discharges on the XX Mātaítai so the coastal habitat is healthy and suitable for safe Mahinga Kai harvesting, and the Mahinga Kai species are safe to eat.	<p>No human source incidents of E.coli concentrations entering waterways or the coast via the stormwater network (e.g. through cross connections or wastewater overflows). Coastal sediment quality \leq ANZG DGV</p> <p>Mussel tissue quality and size targets</p>
	3 TDC advocate for ' Ki uta, ki tai ' (from the mountains to the sea) during TDC's involvement stakeholder and regulator in RMA and LGA processes.	None
	4 Where practicable prioritise addressing effects of stormwater quality and quantity at or close to	<p>95% of new development buildings or structures do not use materials that contribute to stormwater contamination 90% of new subdivision, use and development is to achieve stormwater neutrality on site or improvements towards stormwater neutrality</p>

TE MANA O TE WAI - Hierarchy of Obligations	WHĀINGA MATUA - Objectives	ARONGA - Targets
	their source rather than at the end of pipe into surface water or instream.	Council roading and carpark upgrades and redevelopment projects incorporate as far as practicable treatment of stormwater.
Second, the health needs of people (such as drinking water)	5 Stormwater impacted sediment in public areas as is not a risk to human health	<p>Within public parks ephemeral waterways and the coastal stormwater outfalls and channels, sediment quality \leq nationally recognised parks/recreational soil contaminant standards (SCS)</p> <p>No human source incidents of E.coli concentrations entering XX Creek via the stormwater network (e.g. through cross connections or wastewater overflows)</p>
Third, the ability of people and communities to provide for their social, economic, and cultural well-being, now and in the future	6 Recognise and respect mana motuhake – the Whakapapa and the relationship Kati Huirapa have with water ecosystems in their Rohe and actively involve them in stormwater management.	<p>Refer to associated consent conditions XXX in relation to Kati huirapa contributions to the:</p> <ul style="list-style-type: none"> • Development of the Implementation Plan to achieve the objectives and targets; and, • The periodic reviews of the Monitoring (Trigger Actions and Response) Plan and Stormwater Management Plan.
	7 When investing in stormwater infrastructure environmental, social and cultural benefits are optimised.	Investment is shown to have prioritised options that achieve environmental, cultural and social benefits.
	8 Stormwater is managed so that run-off from urban areas, the primary stormwater network and overland flow paths, does not exacerbate the flooding, erosion or damage to property or infrastructure or cause risks to human safety.	<p>Zero flooding for rain events up to a 1 in 5 year return for residential zones, and a 1 in 10 year return for commercial and industrial zones</p> <p>Zero deaths and notified injuries from stormwater runoff</p> <p>The significant flood risk identified in XXX catchments is progressively reduced</p>
	9 The stormwater management area is more resilient to the effects of flooding and the associated impacts of climate change.	<p>The above targets for Objective 10 will be achieved by considering and designing for predicted climate change increases in storm intensities and depths beyond 2031 for the duration of the consent.</p> <p>Water Quantity modelling for predicted climate change increases in storm intensities and depths beyond 2031 is undertaken within 5 years of commencement and periodically reviewed for the duration of the resource consent to ensure Objective 9 is at least meet.</p>

6 WHAKAPUMAUTANGA - UNITED IN PURPOSE, BUILDING A PATH FORWARD TOGETHER

6.1 OVERVIEW

Giving effect to Te Mana o Te Wai has led to the focus on developing 'processes' that underpin the preparation of stormwater management plans and information for obtaining the necessary resource consents and, more importantly, the processes for implementing the stormwater management plans.

The management approach for the stormwater management plan and the consent strategy are closely aligned. The solution adopted is to undertake a series of baseline studies to understand the issues with the catchment, which in turn support the development of catchment-specific objectives and targets. These objectives and targets, in conjunction with a monitoring plan, then feed into a series of pre-documented triggers and actions. Some of the actions will lead to the identification of possible projects that TDC will fund to improve the health of the water bodies.

The implementation of the stormwater management plan focuses on how the monitoring within the catchments can feed into the selection of projects to improve the management of stormwater within the catchment. Ultimately, the process of identifying and scheduling projects was documented in the implementation planning framework. This framework demonstrates the principle of Mana Whakahaere, where Iwi sit with Council to make recommendations on projects that in turn will maintain and protect the health of the water bodies.

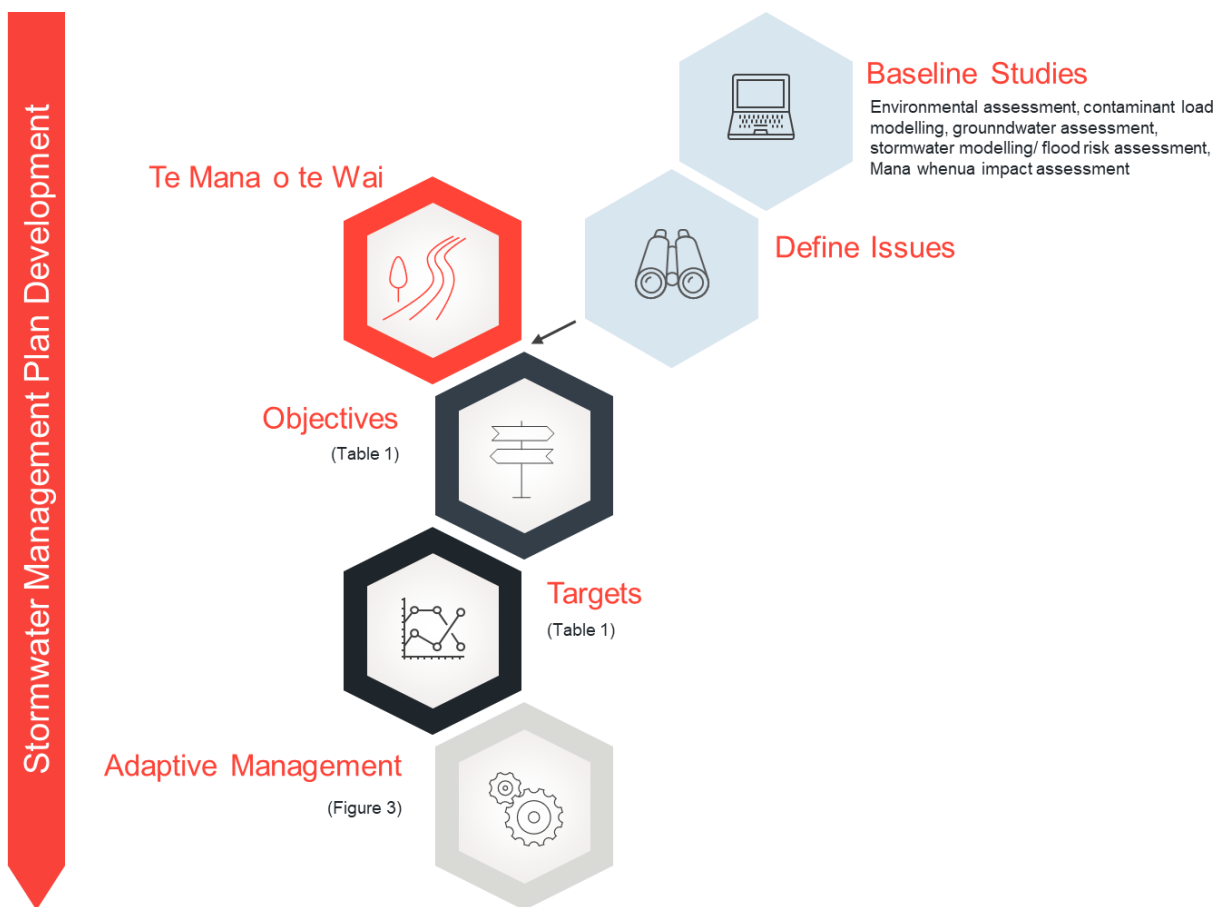


Figure 2: Revised approach to stormwater management plan development

6.2 ADAPTIVE MANAGEMENT

To accommodate the knowledge of the stormwater catchments improving with time, and the issues within the catchment changing during the term of the resource consent, the stormwater management plan and consenting strategy has taken an adaptive management approach (Figure 3). Adaptive management is an investigational approach to management, often defined as 'structured learning by doing'. It has three elements, (1) Aroturuki - monitoring, (2) Ururau - adapting and (3) Akorau - learning.

The stormwater monitoring plan incorporates engineering, science and Mātauranga Māori in a holistic way to assess the performance of TDC's stormwater management systems against the objectives and targets. This evaluation ultimately leads to identifying projects to improve stormwater management or to mitigate the effects urban stormwater is having on the environment, with funding for future projects secured within the current local government funding and planning processes (e.g. Long Term Plans, Annual Plans and Activity Management Plans). Once implemented, these projects will progressively result in improved environmental and cultural outcomes.

An adaptive management approach, with appropriate resource consent conditions, can also readily accommodate changes in community concerns or regulatory requirements e.g through reviewing and updating the targets aligned to the objectives.

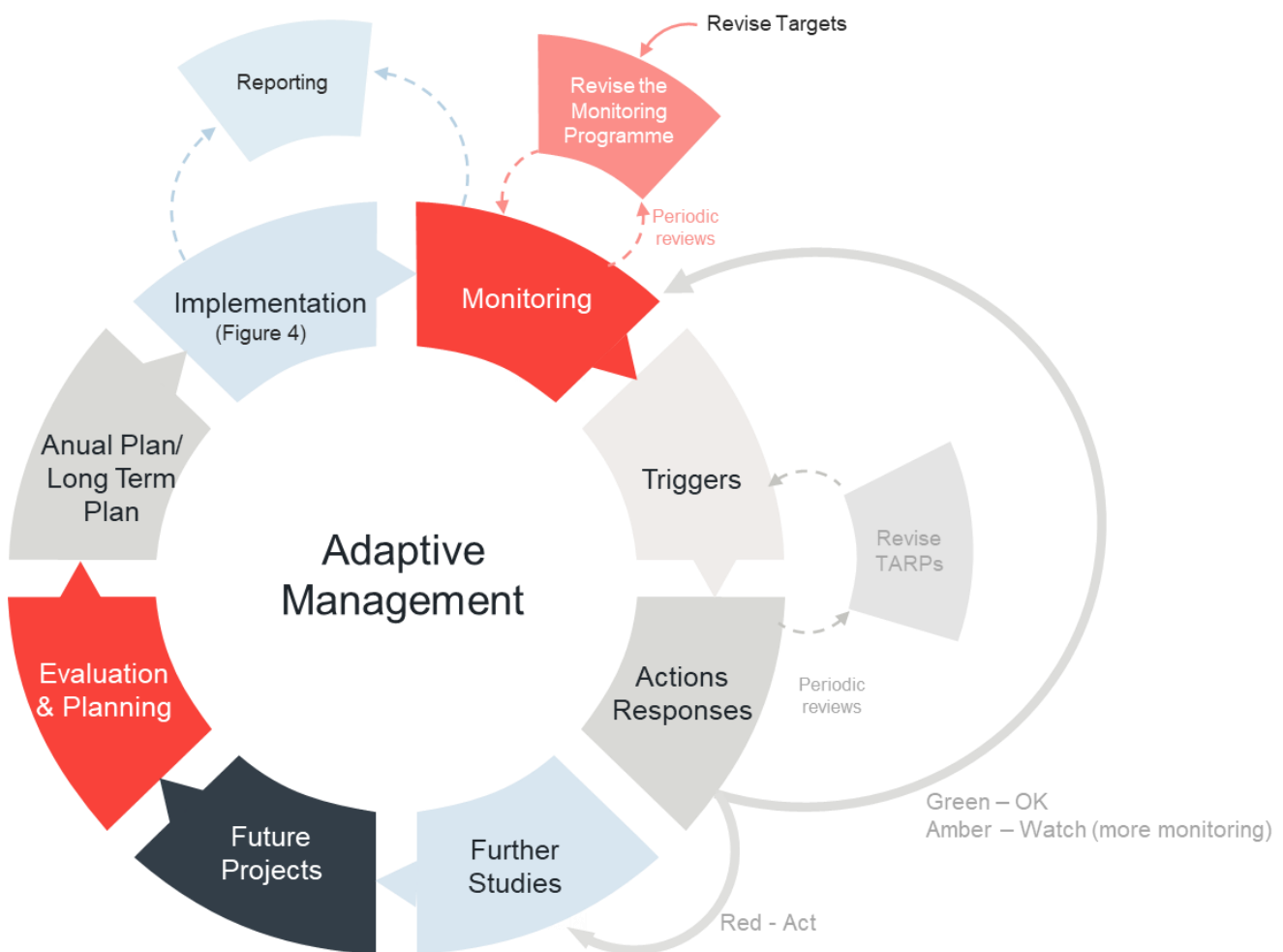


Figure 3: Stormwater Management Plan Adaptive Management Approach

6.3 MONITORING PLAN

The monitoring plan is needed to inform the adaptive management approach. It was designed to monitor the performance and ecological impact of the stormwater discharges on the environment and guide both reactive and proactive management and any additional maintenance of the stormwater infrastructure.

The monitoring plan outlines the frequency of monitoring, parameters to monitor and monitoring locations for:

- Surface water quality and quantity
- Sediment quality
- Ecology
- Groundwater quality
- Flooding complaints
- Commercial and industrial site audits
- Stormwater network outfall inspections
- Mātauranga Māori monitoring.

Mātauranga māori has been defined as 'the unique māori way of viewing themselves and the world, which encompasses (among other things) māori traditional knowledge and culture' (Waitangi Tribunal, 2011). Information has been passed down on the quality and quantity of water and what species could be found where and in what amount; Arowhenua has a clear understanding of what has been lost. The challenge for AECL and Arowhenua is how this then engages with and relates to monitoring and monitoring programmes such as for stormwater. Arowhenua is investigating what it would like to monitor, the frequency and locations and looking at how this information informs whether actions are meeting the vision and objectives.

This is very much a work in progress but it will look at the role Rūnanga would like to take, for example, to monitor the impact of stormwater on Mahinga Kai species and practices, the Waiora of a waterbody and its effect on Mana Whenua. The creation of a monitoring plan which allows this conversation to continue to evolve in conjunction with TDC is a strength.

6.4 TRIGGER ACTION RESPONSE PLANS

A key element of TDC's stormwater management plans and the success of the adaptive management approach is the use of a trigger and action response plan. A trigger and action response plan sets out a process to review and analyse the results and observations from the monitoring plan and identify future improvement projects.

Specifically, the trigger and action response plan applies the results and observations from the monitoring plan. The level of risk to the environment or cultural indicator is pre-identified in the trigger and action response plan, and when a trigger level is reached then the person responsible is required to react in accordance with the pre-determined responses outlined in the plan.

In general, each monitoring parameter (or groups of parameters) has pre-defined actions which fall into three categories (or levels) as summarised below:

- Trigger Level 3 (Green): Parameters are indicative of good quality/performance.

- Trigger Level 2 (Orange): Parameters are showing signs of a reduction in the performance of the stormwater management practices. Actions are likely to be required soon, some further monitoring is likely.
- Trigger Level 1 (Red): Parameters are indicating the poor performance of the stormwater management system or practices, and are likely to be having a noticeable effect on the receiving environment. More urgent stormwater management improvements and investigations of possible solutions are required.

6.5 IMPLEMENTATION PROCESS

Implementation of the stormwater management plan occurs through the stormwater implementation plan. The implementation plan provides the schedule of improvement projects (physical works or management actions) that TDC will implement to progressively improve stormwater management. The plan includes indicative cost estimates for each action or programme as this is useful for planning and setting budgets in TDC Annual Plans and Long Term Plans; similarly, any funding limitations will be reflected in the scheduling of projects or actions. The implementation plan defines who is responsible for implementing the actions and includes an implementation timeline from planning and design through to execution.

As misunderstandings were overcome, the focus shifted from the *improvement projects* to the *implementation process*. This led to development of the implementation planning framework. The framework demonstrates the principle of Mana Whakahaere, where iwi sit with Council to make recommendations on projects that in turn will maintain and protect the health of the water bodies; facilitating a true partnership where Iwi participate in identifying options for addressing issues, to give effect to Te Mana o Te Wai, while still being compatible with local government procurement and funding procedures.

As illustrated in Figure 4, the implementation planning framework is an annual process. During the year, potential improvement projects are identified, either as the recommendation from the trigger and action response plan process or through other sources (e.g. council officers, working group recommendations, etc). Arowhenua can propose projects or management changes into the framework via working groups, help direct the selection of objectives and targets, or raise possible projects as Tangata Whenua with kaitiakitanga of the water bodies.

Arowhenua, alongside TDC, will also evaluate the project schedule and collectively make recommendations to consider as part of Council's annual and long term planning. Annually, the newly identified improvement projects are evaluated, along with the existing projects in the implementation plan. To be evaluated for the implementation plan, the improvement projects must be likely to progress within the next 10 years and have sufficient basic details of the scope and capital/operational budget estimates (or be deferred for re-assessment the following year). The first iteration of the implementation plan draws from an initial long-list of potential improvement projects. The evaluation considers how well the proposed projects or actions will progressively improve the management of stormwater, specifically how they will achieve the objectives and targets of the stormwater management area. Working within existing funding budgets, the prioritisation of the projects will be agreed and the implementation programme determined by Council and Arowhenua.

The annual review process will allow the schedule of improvement projects to adapt to changes in the environment or social issues and regulatory changes during the life of the consent. Whilst, the schedule of projects or actions will be matched to budgetary

restraints, the implementation plan can demonstrate and support the business case for increases in Annual Plan and Long Term Plan funding.

Whilst TDC and Arowhenua have agreed to the implementation planning framework, it has not been fully implemented. The success of the implementation planning framework requires continued collaboration between AECL/Te Rūnanga o Arowhenua and TDC.

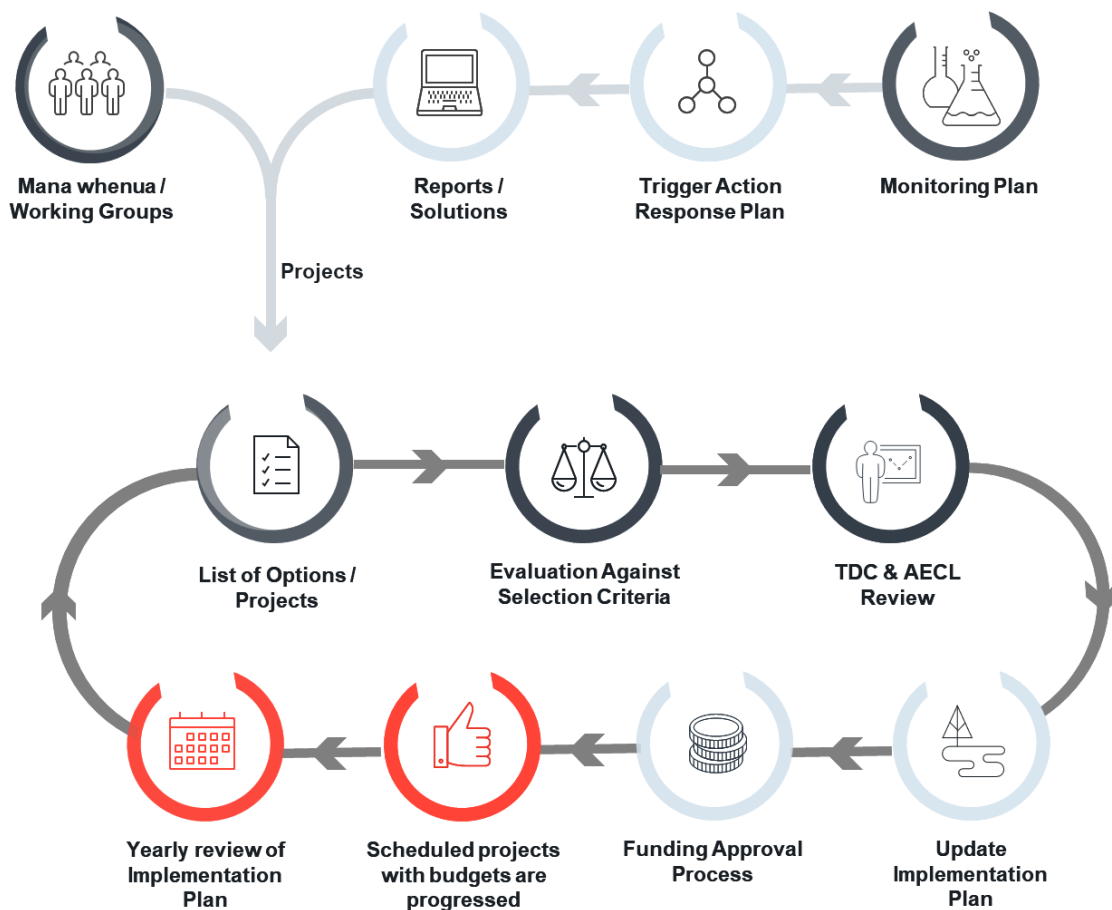


Figure 4: Stormwater Management Plan Simplified Implementation Process

7 CONCLUSIONS

The evolution of stormwater management plans is a step change to give effect to Te Mana o Te Wai. Te Mana o Te Wai is a journey, for the individual as well as the collective, and requires being vulnerable and open to change. Developing a trusting and enduring relationship with Mana Whenua is a cornerstone of success in this journey. This trust comes from having kotahitanga – unity in purpose – and a process that facilitates a continuing conversation with Mana Whenua and allows for change and adaptability. Involving Mana Whenua early to co-create a vision and objectives for stormwater management planning can help foster the relationship and find kotahitanga.

Implementing a stormwater management plan using a process based on adaptive management can provide the mechanism for ongoing engagement and conversation. Mana Whenua’s role is woven into the three elements of adaptive management – Aroturuki, Ururau and Akorau. Mana Whenua advise the Mātauranga Māori needs of the monitoring

plan, jointly evaluate and select improvement projects with council and periodically contribute to reviews of the implementation and monitoring plans, including the trigger and action response plan.

Having the right process that allows for continuous learning, adaptation and improvement builds confidence and support for longer consent durations. This process is designed to endure beyond both the timeline and geographic limitations of this project and help foster enduring and Mana-enhancing relationships that achieve Mana Whenua and TDC's vision for stormwater management.

*Ka ora te wai, ka ora te whenua. Ka ora te whenua, ka ora te tangata.
Ka ora te katoa, ka ora te ao.*

*If the water is nourished, the earth will be fruitful. If the earth is fruitful,
the people will flourish. When there is synergy, the world will prosper.*

WHAKAMIHI - ACKNOWLEDGEMENTS

The authors would like to acknowledge Dr Jane Kitson for sharing her knowledge and working with the project team to communicate Mātauranga Māori, along with Gail Tipa for her contributions towards how Mātauranga Māori engages with and relates to the stormwater monitoring plan. Te Rina Armitt's guidance around the use of te reo and Māori kupu for this paper is also acknowledged. As are the tremendous efforts of the wider project team to make this project a success.

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