

THE NATIONAL POLICY STATEMENT FOR FRESHWATER MANAGEMENT AND THE THREE WATERS SECTOR

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ABSTRACT

The National Policy Statement for Freshwater Management is a part of the Government's ongoing reforms to improve the way that fresh water is managed. The bulk of the responsibility for implementing these requirements falls upon regional councils. However, the Ministry for the Environment recognises that there will be impacts on the three waters sector as major water users and as managers of stormwater, sewerage and drinking water infrastructure.

This paper outlines some of the implications that the Freshwater NPS may have on the three waters sector. It then describes the Ministry's project, as part of the wider guidance and implementation programme, specifically targeted to help territorial authorities as water users, land managers and operators of three waters infrastructure. It describes how a design thinking approach has been used to identify three key issues facing the three waters sector in relation to the Freshwater NPS, and outlines the general approach being considered for supporting territorial authorities to address these.

KEYWORDS

freshwater policy, policy implementation, three waters

1 INTRODUCTION

Fresh water is New Zealand's greatest natural and economic asset. It is a feature of our landscape that is enjoyed by locals and tourists alike as a crucial part of the New Zealand way of life. Water as a resource is vital for our agricultural and horticultural exports, and therefore our economy.

The National Policy Statement for Freshwater Management (Freshwater NPS), first introduced in 2011, is a part of the Government's ongoing reforms to improve the way that fresh water is managed, in recognition of its importance to the success of New Zealand's communities.

The Freshwater NPS provides national direction on how fresh water should be managed by directing the content of regional plans and providing direction for assessing resource consent applications. It requires councils to set objectives and limits for fresh water quality and quantity, reflect local values and interests, and to ensure that land use and water are managed in an integrated way. It requires that iwi/hapū be involved in freshwater management and their values reflected in decisions about the management of fresh water. Furthermore, water quality must also be maintained or improved within a region in order to give effect to the Freshwater NPS.

The bulk of the responsibility for implementing the Freshwater NPS lies with regional and unitary councils. However, as major water users and managers of stormwater, sewerage and drinking water infrastructure, there will also be impacts on the territorial authority three waters sector. It is therefore vitally important that the three waters sector is involved in the implementation of the Freshwater NPS at both local and national levels.

Improving the management of fresh water resources is no easy task. In recognition of the complexity involved in effectively implementing the Freshwater NPS, the Ministry for the Environment has an extensive programme of

guidance and implementation support underway to help build the capacity and capability of those involved in the management of fresh water.

This paper outlines some of the ways that the Freshwater NPS could impact on the three waters sector. It then introduces the Ministry's project, as part of the wider guidance and implementation programme, to provide targeted help to territorial authorities (TAs) as water users, land managers and operators of three waters infrastructure. For this project, the Ministry has used a 'Design Thinking' approach to guide the development of a work programme. This paper outlines how this new approach has influenced the direction of the project.

2 DISCUSSION

2.1 THE FRESHWATER NPS

The Freshwater NPS was first introduced in 2011 as part of the Government's 'Fresh start for fresh water' policy reforms. It was always intended that the Freshwater NPS would be updated over time as better information became available. The policy was further amended in 2014 with the addition of a National Objectives Framework, and the Ministry intends to publically consult on further changes to the policy later this year. The general direction of these next changes was signaled in the 'Next steps for fresh water' document that was consulted on in April of this year.

As it stands, the Freshwater NPS provides national direction on how fresh water should be managed by directing the content of regional plans and providing clarification around the assessment of resource consent applications. A fundamental requirement of the Freshwater NPS is the requirement for councils to set freshwater objectives or aspirational future states for fresh water, and limits on resource use in order to work towards these. These objectives and limits must be set in order to manage both fresh water quality and quantity. They must also reflect the values and interests of local communities.

Other key requirements of the Freshwater NPS include:

- taking an integrated approach to managing land and water, and considering the impacts on downstream receiving environments when making management decisions in a catchment,
- iwi/hapū be involved in freshwater management and their values reflected in decisions about the management of fresh water, and
- water quality must be maintained or improved within a region.

Although the quality of New Zealand's water is generally good by world standards, there are areas where substantial improvement is required. The Freshwater NPS is a tool intended to help do this.

While we all stand to benefit in the long term from improved fresh water management that the Freshwater NPS is seeking to achieve, the changes that need to be made to get there can have significant impacts for those users of water. In many cases, difficult decisions involving trade-offs must be made where communities hold competing values for fresh water. As experts in the operation of major water infrastructure and key players in the use and management of fresh water, it is vitally important that the three waters sector is involved in these decisions.

2.2 IMPACTS OF THE FRESHWATER NPS ON THREE WATERS SECTOR

The majority of the requirements for implementing the Freshwater NPS lie with regional and unitary councils. There will however be flow on effects from the implementation on other water users, including the three water sector.

The Freshwater NPS allows for flexibility in approach as to how it is implemented. The specific impacts on the three waters sector are therefore likely to vary across New Zealand due to the differences in the approach chosen by regional/unitary council to accommodate local circumstances. There are however some common areas where impacts are likely to be experienced.

For example, the setting of limits on contaminants such as sediment, nutrients, and E.coli may create constraints on discharges, particularly those discharges that are direct to water. To date, much of the focus around improving fresh water management has focused on the rural areas targeting predominantly agricultural land uses to reduce the discharge of nutrients in particular. While initial gains could relatively easily be made by targeting intensive farming, discharges associated with urban areas are also contributors to poor water quality. Tighter controls on wastewater and stormwater discharges can therefore be expected.

Working within a limits regime might require changes in controls on land use that could directly or indirectly impact on the activities of the three waters sector. Increased standards for discharges to water are one way to reduce contaminant loads however, the Freshwater NPS is also likely to drive moves towards better management of the sources of contaminants as well. For example, in areas where limits on sediment are set there may be increased restrictions on sediment generating activities like earthworks. Similarly, limits on contaminants may create a need for the application of water sensitive urban design principles in land developments.

The Freshwater NPS requires limits to be set to manage water quantity as well as quality. The ability to abstract water for domestic supply may be affected by the introduction of environmental flow limits or levels. This could make it challenging to accommodate increased demand due to population growth, particularly in catchments where water is over or nearing full allocation. In catchments where competition for water resources exists, it may also mean that municipal suppliers may need to implement better demand management practices to demonstrate that water is being used efficiently.

2.3 THE PROJECT

The previous section describes some of the possible impacts on the three waters sector arising from the implementation of the Freshwater NPS. The degree to which these occur will be influenced by the values each community chooses to address at the local or regional scale.

In recognition that these impacts could be significant for the three waters sector, earlier this year the Ministry initiated a project to develop non-regulatory guidance and implementation support targeted to TAs, specifically in terms of the three waters.

The Ministry does not traditionally have close relationships with council staff in the three waters sector. It was therefore decided to use this project to trial a new end-user led ‘design thinking’ approach in order to better understand where to focus the support to maximise the benefits for both the Ministry and the sector.

2.4 DESIGN THINKING APPROACH

The conventional approach for the Ministry would involve creating a problem definition based on a series of assumptions about the end user, developing some possible solutions, identifying the best one and then perhaps testing this with the end user before implementing it. This approach can be problematic in those situations where close relationships with the end users do not exist and assumptions are required to be made with little real life understanding.

The design thinking approach as promoted by Trade and Enterprise New Zealand through their Better by Design programme is based on the Stanford University d.school approach (Better by Design, 2016). It is intended to place the end user at the centre of the process, rather than on the periphery. Through understanding the issues facing the end user and their needs, the design thinking theory states that it is easier to focus on the areas where the end user’s needs most closely match those of the provider, enabling the best outcome for both parties.

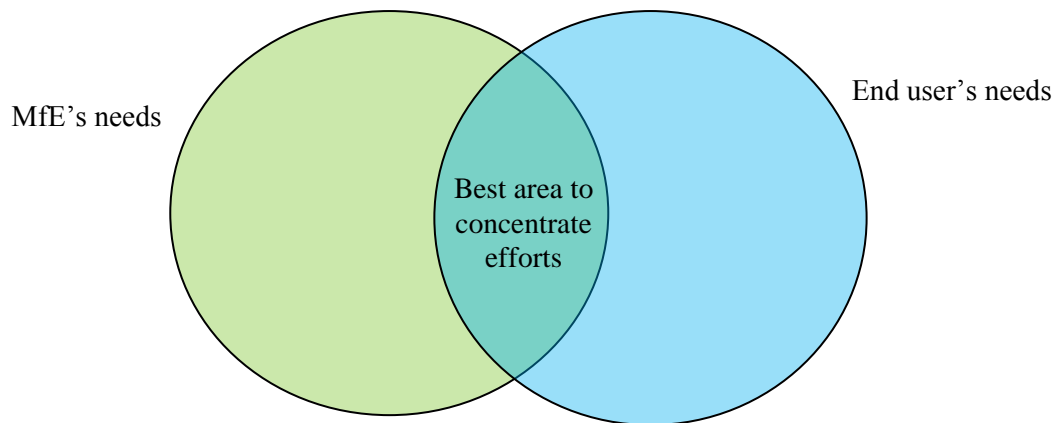


Figure 1: Design thinking approach

The design thinking approach follows five steps of alternating divergent and convergent thinking, beginning with developing empathy for end users by talking to them to understand their needs and motivations. Insights gained from these conversations are used to develop problem definitions. Ideas are generated towards solving the problem, followed by iterations of prototyping and testing to gain feedback from the end users to help refine the solution.

As described in section 2.2, at the outset of this project, the Ministry had an idea of what some of the impacts of the Freshwater NPS could be on the three waters sector. However, without a good understanding of the key issues facing the sector, it was difficult to know where guidance and implementation support should be focused. Design thinking offered an approach for addressing this.

2.5 INSIGHTS

Adopting the design thinking approach for this project, the project team initially set out to better understand territorial authority staff involved in the three waters.

Acknowledging that not all councils are facing the same issues, the team spoke with 28 staff from a range of councils. Within this group the councils ranged from small, largely rural based councils through to metropolitan cities within the Wellington, Waikato, Otago and Southland regions. The insights that we gained from these initial conversations have acted as a reference point from which the project has developed. Three main areas of focus have been identified as outlined below.

2.5.1 THE FRESHWATER NP... WHAT?!

It was identified through the conversations held that amongst TA staff, there is a range of awareness of what the Freshwater NPS is and what it may mean for the operations of three waters infrastructure. In some areas staff had a high level of understanding of the policy, the potential impacts of it for the operation of three waters infrastructure and how their regional council was planning to implement the policy. However in other areas, the awareness of the Freshwater NPS was low or it was seen as something that only affected regional councils.

The fact that there is a lack of awareness amongst some TA staff is concerning nevertheless for multiple reasons:

- TA three waters staff may not be adequately involved in regional planning processes to ensure that the provision of three waters services is considered and provided for,
- There could be implications for long term planning if a new limits regime is introduced that requires infrastructure upgrades, and
- Any implementation or guidance support offered by the Ministry will likely have low uptake if the target audience is unaware of what the Freshwater NPS is.

This lack of awareness of the Freshwater NPS is likely a reflection in part of the lack of relationship between the Ministry for the Environment and the operational staff within TAs, particularly those involved in the three waters. Addressing this lack of awareness is therefore a priority for the Ministry.

2.5.2 “PIPES AREN’T SEXY”

While speaking to TA staff, it was apparent that they feel that they are much closer to their communities than regional councils and that they are therefore more reactive and responsive to their community’s concerns. This is particularly the case for the urban populations who often have little interaction with regional councils at all.

However, it was also noted that the wider public are generally not engaged with the three waters. As much of the three waters infrastructure is hidden from view below ground, it is easy for people to ignore it on a day to day basis. “Pipes aren’t sexy” and the perception is that the public largely doesn’t really care about the three waters except when services fail to work causing an inconvenience.

This lack of engagement and understanding of the three waters can create challenges for council staff having to prioritise spending of finite budgets across competing demands. Those areas where the greatest number of complaints are received from the community may receive more attention from staff than other less visible, but more significant, areas requiring improvement.

A common example that was provided to the project team to help demonstrate this point was around stormwater management. Flooding in urban areas during high intensity storm events due to the capacity constraints of the stormwater network tends to generate complaints. Flooding is visible, inconvenient and has the potential to damage private property, therefore the public wants action taken to address the issue. Investment in reducing the likelihood or impact of flooding is therefore likely to be perceived more favourably by the community than say investing that same money in improving water quality in an urban waterway where the effects are not as easily seen.

There was also a perception amongst some TA staff that this lack of understanding of the three waters by the public was contributing to a reluctance to try new approaches to managing the three waters.

2.5.3 “AMBULANCE AT THE BOTTOM OF THE CLIFF”

Another common theme that came through in the conversations was a feeling amongst TA staff of being an “ambulance at the bottom of the cliff”.

Land use is generally controlled through district planning and consenting, processes through which the council can generally only influence the initial shape and form of a development. Three waters staff do not typically have a great deal of involvement in these types of decisions. There is also limited ability for councils to have an ongoing influence on land use once it is developed as it tends to be in private ownership.

The combination of these factors has led to a perceived lack of ability to influence contaminant generating activities at the source, constraining staff to bottom of the pipe treatment solutions for managing these contaminants. This is particularly the case for staff involved in stormwater management.

2.6 USING INSIGHTS TO DEVELOP NEXT STEPS

The insights described here are just some of the learnings of the project team from talking to council staff. The project team has decided to focus on these three due to the frequency with which they came up in the conversations held.

Following the design thinking methodology, these insights were used to develop problem definitions. The project team then worked through various brainstorming exercises to find possible solutions to these. Many solutions were proposed at this stage ranging from the expected business as usual approaches commonly used at the Ministry, through to the completely outlandish. In the spirit of the design thinking approach, these outlandish solutions were encouraged on the basis that it is easier to come up with something new and innovative by working backwards from an outlandish idea to what is feasible, than it is to create something new working from what has been done before.

From all of the solutions proposed to address the three key issues described, the project team is now developing a work programme for delivering guidance and implementation support targeted to TA staff working in the three waters. Based on the work that has been done so far, the work programme will cover three main areas, in line with the three key issues identified through the insights.

The details of exactly what will be delivered through the work programme are still to be determined. The project team is continuing to work with council staff to test and refine these ideas before the work programme is finalised and the team shifts to delivery of the programme.

RAISING AWARENESS OF THE FRESHWATER NPS

Any guidance and implementation support that the Ministry provides will likely have poor uptake if the target audience does not see the Freshwater NPS as relevant. Raising awareness of the Freshwater NPS has therefore been identified as a priority. Preparing this paper for presentation at the Water New Zealand Conference is one part of this. Other mechanisms being explored by the project team include:

- Revising and better publicising existing guidance on the Freshwater NPS written for TA staff,
- Holding regional workshops to enable TA staff the opportunity to learn more about the Freshwater NPS,
- Webinars or other online learning opportunities.

Ensuring that the right staff are reached at each council will be the main challenge with this.

PROMOTING COLLABORATION

The lack of understanding of the public around what the three waters are and the important role they play in enabling communities to function can be a challenge for TA staff tasked with operating this infrastructure. With financial constraints being a fact of life for all councils, investment needs to be prioritised amongst competing demands. Making difficult decisions around prioritising spending can be difficult when the end users, the public, who are also the source of the funding, are not engaged in the process. For instance, the public often react negatively to potential rates rises without truly understanding what rejecting the rise might mean for the provision of ongoing services.

Collaboration is becoming increasingly common in regional planning processes where difficult trade-off decisions need to be made between competing community values (e.g. water for environmental flows vs availability for consumptive takes for irrigation). The theory behind the collaborative approach is that those affected by a decision, should be involved in the decision making process (IAP2, 2016). Involvement in the process enables the end users to understand the challenges associated with making a decision, as well as getting their buy in through their involvement in the decision making process. The public are more likely to be willing to accept a rise in rates if they understand why it is occurring (e.g. to improve wastewater treatment to reduce degradation of the environment) and have had influence on the outcome (e.g. helping to choose the treatment upgrade design).

Collaborative approaches could potentially have the benefit of helping the public better understand the three waters and the constraints that they are operated under. If this is successful, then TA staff are better placed to have conversations about tradeoffs (e.g. lower rates rise but less benefit to the environment vs larger rise with greatest benefit to the environment).

The project team has been exploring how collaboration could be used to help TA staff operating under limits regimes set under the Freshwater NPS and how the Ministry could support this. Mechanisms being explored further include:

- Developing guidance on how to collaborate,
- Preparing case studies outlining where collaboration has been successfully used by TAs,
- Developing resources to better explain the three waters to the wider public.

WHOLE OF CATCHMENT APPROACH

The Freshwater NPS promotes an integrated whole of catchment approach to water management. Land use, fresh water and coastal water should all be considered together when making management decisions for fresh water. Expecting stormwater to be managed through end of pipe treatment solutions is therefore not well aligned with the more holistic intent of the Freshwater NPS.

Exploring how the Ministry could help to move stormwater management away from the “ambulance at the bottom of the cliff” approach, it became apparent to the project team that the principles of water sensitive design closely aligned with both the integrated management approach of the Freshwater NPS and the need for better control of contaminants at the source. Water sensitive design is an approach to development that protects and enhances the values and functions of natural ecosystems, addresses stormwater effects as close as possible to the source, and makes use of natural and ecosystem services to manage stormwater (Auckland Council, 2016).

Similar to the work on collaboration, the project team has been exploring how the Ministry could better support TA staff to incorporate the principles of water sensitive urban design to help with the implementation of the Freshwater NPS. Mechanisms being explored further include:

- Developing guidance and/or providing a library of existing technical documents on water sensitive urban design,
- Preparing case studies outlining where water sensitive urban design has been successfully used in different contexts,
- Working with industry to ensure that the skills needed to design, maintain and operate water sensitive infrastructure are available.

3 CONCLUSIONS

Improving the management of fresh water in New Zealand is not an easy task. Although the requirements for implementing the Freshwater NPS lie with regional and unitary councils, the success of the implementation will rely on all water users and managers to do their bit. The introduction of limits regimes as a result of the Freshwater NPS is likely to have impacts on the three waters sector by placing further constraints on discharges to and abstractions from water bodies.

In recognition of the role that the three waters sector plays in fresh water management, the Ministry for the Environment has initiated a project to provide guidance and implementation support to the TA staff who manage the three waters. Using a design thinking approach, the project team has identified three main insights from conversations with TA staff to use as the basis for the development of a work programme. Using these insights, the team is focusing on three key areas for providing support; raising awareness of the Freshwater NPS, promoting collaboration, and promoting whole of catchment management through water sensitive urban design.

The project team is continuing to explore how the Ministry can best deliver guidance and implementation support covering these three areas.

ACKNOWLEDGEMENTS

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