



Commentary on the consultation document, *Next Steps for fresh water*

April 2016

1. Introduction

Water New Zealand is a not-for-profit organisation that promotes and represents water professionals and organisations. It is the country's largest water industry body, providing leadership and support in the water sector through advocacy, collaboration and professional development. Members are drawn from all areas of the water management industry including regional councils and territorial authorities, consultants, suppliers, government agencies and scientists.

The sector includes those who:

- set policies and rules on water quality and quantity;
- provide the knowledge to allow those policies and rules to be appropriately set, applied and monitored;
- help those parties needing to use water (either for out of stream uses or for its assimilative capacity) to understand and satisfy regulatory requirements;
- provide water-related services to industries and communities. This includes, but is not limited to, those who design, install, maintain and or operate water related infrastructure in the:
 - urban and industrial sectors, across the so-called three waters - being wastewater, stormwater and potable water for domestic and municipal supply; and
 - rural and energy sectors (including hydroelectricity assets and irrigation schemes).

Hence the water sector comprises those with a range of roles and disciplines including regulators, service providers and technical (science and engineering) specialists. It is a diverse group with diverse perspectives of, and interests in, water and water management.

2. General comments

There was considerable expectation that the Government's consultation paper on water issues would include both an understandable and clear long-term vision for fresh water, and direction and guidance on how an effective national water management system to deliver that vision would operate. While a long-term vision has been enunciated, the paper is silent on the form and function of a water management system.

The National Policy Statement on Fresh Water Management (NPS-FM) includes a National Objectives Framework (NOF) that describes mandatory limits that are to apply to all water bodies. Many expected the consultation document would describe roles and responsibilities, provide direction and guidance on regulatory instruments, and incentivise change. This is required to provide the overarching framework so that roles and responsibilities are clear and the system works consistently across the country.

Recent public comment from one regional councillor illustrates why such a system is critical if we are to effectively and efficiently move to an improved state for the fresh water environment. The councillor in question claimed that the freshwater standards (i.e. the NOF) would, 'destroy the livelihood of this region'.¹

¹ As reported in the Manawatu Standard (Stuff), OPINION: Can you believe we're fighting for fresh water in New Zealand?, 14 April 2016

The lack of a clearly defined, overarching system encourages emotive comment such as this and it also encourages increasingly frequent commentary that, 'nothing is being done', or assertions that, 'rivers and lakes are being systematically poisoned'. A number of surveys have shown that New Zealanders value water quality highly, and thus a clear and consistent framework is long overdue.

It is notable the Land & Water Forum in its first report made recommendations in this regard, but they are yet to be acted on.

3. The NPS-FM and the NOF

The paper proposes amending the NPS-FM so that 'maintain and improve' applies within a Fresh Water Management Unit (FMU), rather than across a whole region. We note this will mean that if FMUs are identified on a catchment or part catchment basis, urban areas will be included. The paper is almost completely silent, however, on how urban areas will be dealt with. All urban areas will be impacted and for those smaller provincial centres this could potentially mean unaffordable costs.

This is not to say urban centres should be exempt from the 'maintain and improve' requirements but little work has been done to date on what the impacts may be. Many territorial authorities do not have an ideal relationship with their regional regulator, so in determining how and to what extent the provisions of the NOF apply it is critical Government details a water management framework that takes account of the realities of urban water management and urban waste treatment and disposal.

The fourth report of the Land & Water Forum devoted several pages of discussion and made a number of recommendations in reference to water quality management in urban environments (see Appendix 1). The consultation paper includes one brief paragraph on this and no specific proposals.

4. Technical Efficiency Standards and Good Management Practice

The paragraph noted does say, 'GMP and technical efficiency can apply as equally to an urban environment as to a rural one'. The consultation paper, however offers limited direction on how this is to occur. If there is to be equity and national consistency in reference to GMP and technical efficiency, central government needs to set the parameters and drive implementation in all sectors involved in water management.

5. Iwi rights and interests in water.

It is clearly understood that there are still several issues yet to be resolved in relation to iwi rights and interests. It is important to note that this not just a regional council matter. Particularly in relation to waste water consents and discharges, local councils often find themselves at the forefront of this discussion. It will be important that capacity and capability issues are addressed if iwi and hapu are to be given greater involvement in the decision making process.

6. Council funding for freshwater management

Proposal 2.6 states it will, 'increase the ability of councils to recover costs from water users for monitoring, enforcement, research and management'. The consultation paper offers no

detail on how such costs will be recovered or what criteria apply to when, where and how costs should be applied. Section 36 of the RMA already allows for cost recovery so it would be a concern that in the absence of specifics around this proposal uncertainty and acrimonious debate, the antithesis of collaboration, will result.

7. Freshwater funding

Water New Zealand supports the commentary of the Land & Water Forum in reference to freshwater funding. Small projects for small communities, such as developing a new water source, may be compromised by the minimum government contribution of \$250,000. It would be a useful exercise if the applications to the now closed Drinking Water Subsidy Programme were examined to see what type of situations are out there and the applicability of the proposed freshwater funding.

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Appendix 1:

Water quality management in urban environments

154. Urban New Zealanders often have a very limited day-to-day experience of freshwater environments and, accordingly, they may not feature as a management priority. Cities in New Zealand are all in or include catchments that have both urban and rural uses. The requirements of the NPS-FM apply to all catchments, in both rural and urban environments. The changes required to manage within freshwater limits will, however, be quite different in urban environments.

155. Urban areas must contribute to achieving the requirements of the NPS-FM and should not be exempt from reducing contaminants and improving ecological health. It is particularly important that urban water managers have flexibility to implement new and innovative approaches to improving water quality and habitat conditions that support ecological health. In some cases setting limits will need to take account of both habitat and water quality effects on intended ecological, recreational and amenity outcomes, including making use of realistic timeframes and interim targets to achieve community objectives. Urban water managers also need to be able to focus management efforts so they can build 'critical mass' and give themselves a chance to make real improvements in water quality in targeted areas.

156. The responsibility for managing water quality in urban environments largely falls to the owners and managers of transport, stormwater and wastewater networks, and the owners of commercial enterprises that result in trade waste and point source discharges of contaminants. It can be difficult

to isolate the impacts of individual households' actions as stormwater and wastewater networks are designed to manage and treat contaminants at a collective level. In addition, allocating diffuse contaminants that enter stormwater to individual households would be challenging as the activities that generate contaminants and the associated adverse impacts are difficult to quantify or locate. These difficulties can complicate monitoring and compliance, and dilute the incentive of individuals to take responsibility for their actions. This is quite different to rural environments where the relationship between individuals' and farm-level actions and their effects on freshwater quality, in particular, are in most cases more obvious and direct.

157. Urban land developers tend to carry all or part of the capital cost of developing infrastructure and stormwater management networks, but the ongoing maintenance and renewal costs tend to fall to councils. Water sensitive approaches that rely on 'green infrastructure' such as swales and rain-gardens often require regular and ongoing maintenance that are different or additional to the current responsibilities of asset operators. This change in the profile of operational responsibilities can discourage councils from promoting new and more water sensitive approaches to water management.

158. The scale of urban environments tends to require specialisation in service delivery, meaning that multiple institutions or operations within one institution will be responsible for different aspects that impact on water quality (e.g. town planning, coastal planning, and the development and operation of roads, wastewater and stormwater networks). Each of these institutions or operations has their own objectives and obligations, and is required to comply with different planning processes, investment protocols and decision-making criteria. For example, public green spaces, parks and recreational grounds may be managed by one part of a council, with stormwater assets managed by another with the primary aim of flood management. If the planning of these two parts was aligned, such public green spaces could be used for stormwater management in high rainfall as part of a water sensitive approach, reducing environmental impacts on urban streams.

159. Many of New Zealand's urban environments are located on or near the coast, with rivers and streams in these environments flowing directly into harbours, estuaries and oceans. Urban New Zealanders are often more aware of coastal water quality than the quality of urban streams. The NPS-FM requires councils to have regard to the connections between fresh water and the coast, including the effects of land and water use. In urban areas, the alignment of plans will be particularly important, as publicly recognised coastal water issues may provide the impetus for strengthened freshwater planning, asset management and land use controls.

160. Historical investment in network infrastructure can also limit appetite for new and innovative management approaches in urban environments. The National Infrastructure Unit has noted that conventional economic analyses will often conclude the marginal cost of incremental investment to extend existing networks is the cheapest option. The assumptions underpinning these analyses potentially discourage investment in alternative approaches to land and water management that could deliver better water quality or more resilient outcomes over longer timeframes. Renewal and replacement cycles for three waters infrastructure present an opportunity to improve water management in urban environments, either through the introduction of more efficient conveyance or treatment infrastructure, or the adoption of water sensitive design approaches.

161. The cost of maintaining and renewing water management infrastructure will be particularly challenging for some councils and communities, especially those with small urban centres, declining populations and rates bases. This may encourage conservative management responses or conversely discourage innovative approaches to delivering improved water management outcomes. The limit-setting process will need to consider these challenges when determining the timeframes to achieve community objectives for fresh water in these areas.

162. Current investment frameworks do not take full account of the environmental services from green infrastructure provided by water sensitive design (e.g. the amenity or biodiversity gains associated with reduced stormwater piping and increased raingardens). Local authorities may need to establish systems to create and maintain blue and green assets similar to ones to well-established local authority systems for creating and maintaining built assets.

Recommendation 19: Regional councils and territorial authorities should prioritise the alignment of the planning, investment and delivery of ‘three-waters’ infrastructure, roads, residential development and land use controls to meet water quality objectives in regional plans for freshwater and coastal environments.

163. Traditional approaches to urban development, stormwater design and flood protection, have had a significant impact on the health of urban streams and their ability to sustain functioning natural ecosystems. The speed at which rain runs off impervious surfaces and into urban streams causes unnaturally fast flows during even ‘normal’ rainfall events and scours stream beds. At the same time impervious surfaces reduce infiltration and contribute to lower than natural base flows. This water runs over land picking up zinc, copper and other heavy metals and transporting them into aquatic environments that are particularly sensitive to these contaminants. It is very difficult to intercept and remove these contaminants from stormwater before they reach urban streams or the coastal environment. Water sensitive approaches to urban design and stormwater management can help address these issues, but dealing with diffuse urban contaminants as close as possible to their source is the most effective and cost-effective way to address the effect of many urban contaminants on water quality (e.g. using alternatives to galvanised iron for roofing can significantly reduce zinc contamination and using ceramic brake pads can reduce copper contamination).

164. Population growth can also create water management issues in urban areas. Brownfield intensification can put pressure on existing stormwater and wastewater networks potentially increasing the volume and velocity of water in streams during rainfall events, further reducing baseflows and increasing the number of controlled and uncontrolled wastewater overflow events. Traditional approaches to greenfield development tend to release significant amounts of sediment during development and rely on piping streams, draining wetlands and lowering flood plains to maximise returns from residential properties. It is significantly more expensive and difficult to remediate impacts on stream health and water quality in urban environments. Given that the requirement to maintain or improve water quality applies equally in urban and rural environments councils should avoid following approaches to development that create more legacy water management issues and defer the cost of meeting limits to future generations.

165. The need to develop and articulate good water management practices is equally important in urban and rural environments. These practices need to allow urban water managers to focus on ‘hot spots’, prioritise investment in the areas where most gains can be made, and take steps to prevent

water quality getting worse as urban environments grow. New 'water sensitive' approaches to urban design and development should be adopted, especially in growth areas and where traditional approaches to land development and water management have been shown to degrade water quality. Water sensitive urban design minimises adverse impacts on urban streams by relying on natural hydrological systems in land use and infrastructure design before resorting to hard engineering approaches.

Recommendation 20: A "Water sensitive urban design" process must be adopted in the building and upgrading of stormwater and roading infrastructure and residential urban development (and redevelopment).

166. Some of New Zealand's urban environments are serviced by antiquated combined wastewater and stormwater systems. In these systems, constructed wastewater overflows routinely divert wastewater into stormwater networks or the coastal environment during high rainfall events. Even those wastewater systems designed with the latest technologies expect to overflow into stormwater or directly into coastal environments once or twice per year. While phasing out overflows entirely may not be practicable given current infrastructure and technology, wastewater managers should still aim to minimise these overflows to reasonable levels and work towards phasing out overflows over specified timeframes.

167. In areas where infrastructure and bylaws allow, trade waste may be discharged into municipal wastewater systems. This can place significant strain on municipal wastewater treatment plants. To increase the longevity of wastewater treatment plants, councils should review or revise trade waste by-laws and make use of similar tools to encourage sectors to pre-treat and recycle trade wastes before disposal into municipal wastewater systems. As part of this review, councils should consider the comparative efficiency of pre-treatment or recycling of particular contaminants against their discharge and management in municipal wastewater systems.

Recommendation 21: Where wastewater systems overflow into stormwater or directly into waterbodies, in either a controlled (designed) or uncontrolled manner, local authorities should be required to report publicly on:

- a. the maximum acceptable frequencies that are set through consent conditions or plan rules, and the actual number of overflows
- b. planning and progress towards phasing out overflows
- c. how overflows will be managed to achieve objectives and limits.

Recommendation 22: Territorial authorities should review or revise trade waste by-laws to encourage or require the pre-treatment and recycling of trade waste before disposal into municipal wastewater systems.

168. Given urban New Zealanders' limited day-to-day experience of freshwater environments, in some situations the public may place more emphasis on the attractiveness of streams and adjoining parks, than on the recreational value of fresh water or the health and functioning of freshwater ecosystems. In these instances general litter and other 'gross pollutants' (e.g. shopping trolleys and plastic shopping bags) and the attractiveness of riparian planting may be key community concerns.

Community stream clean-up and planting programmes can both increase urban residents' connection with and awareness of the issues facing urban streams. Increasing awareness of the individual and cumulative effect of urban activities on fresh water should continue to be an area of work for councils, including supporting community clean-ups and restoration of urban streams.

169. Urban catchments, or the urban portion of catchments, are generally hydrologically modified and often highly degraded. There are few examples, globally, where highly degraded rivers passing through urban areas have been able to be remediated to meet the level of quality or ecosystem expectations set by the NPS-FM. Research into cost-effective tools for the restoration and remediation of highly degraded urban streams is needed to give councils the tools they need to improve water quality in urban areas. Case studies and demonstration sites where urban streams have been successfully restored will be extremely useful. Research to this effect will need to be prioritised as part of the information framework (recommendation 5) and rationalising funding relating to fresh water (recommendation 60).

