# Regulatory Impact Statement

# Use of alternative form of regulations on the measurement of water takes

## Agency Disclosure Statement

This Regulatory Impact Statement has been prepared by the Ministry for the Environment.

It provides an analysis of a proposal to use an alternative form of regulation to give effect to a previously agreed policy on measurement of water takes. Instead of developing a national environmental standard (NES) under section 43 of the RMA, regulations will be developed under section 360 of the RMA.

Full consultation and a cost-benefit analysis have been undertaken to inform the proposed regulation. The analysis was based on a 35 year period, at an 8% discount rate. Costs and benefits were based on proposed minimum water measurement accuracy requirements of ± 5% for piped takes and ± 10% for open channel takes. The analysis did not quantify the relative costs and benefits of alternative accuracy requirements.

The cost-benefit analysis has found that allocative efficiency gains in water-constrained catchments need to be approximately 2% for quantified benefits to outweigh the costs. Those gains are expected to be in the order of 5% - 10%. The present value of benefits arising from this proposal are estimated to be $101 million, assuming a 5% allocative efficiency gain and excluding unquantified benefits.

The present value of the cost of the proposal is estimated to be $41 million, of which 98% will be costs to consent holders (businesses) associated with the measuring and reporting of their water usage. The analysis identified and quantified a range of specific costs to consent holders, including initial capital and installation costs, twenty-year replacement costs and ongoing calibration and data reporting costs. These costs were quantified using 2009 figures where possible.

Risks identified with the proposal include potential non-compliance with the regulations arising from a potential shortage of meters and suitably qualified installers. These risks are reduced through the proposed exemption of minor takes and a phased approach to transitioning for existing consent holders. Further work will be required to develop and roll out an implementation package to achieve a high understanding of the regulation and to facilitate compliance with its requirements.

_____ Date:

**Mark Sowden**

Director, Natural and Built Environment

Ministry for the Environment

## Status quo and problem definition

*Status quo*

Demands for fresh water are increasing. The volume of water allocated for uses such as irrigation, domestic use and for manufacturing in New Zealand grew by around 50 per cent between 1999 and 2006. Increasing demand is now leading to water shortages in many regions, most notably in constrained catchments in Otago, Canterbury, Marlborough, Tasman and the Waikato.

The statutory right to obtain and use freshwater is primarily governed by the Resource Management Act 1991 (RMA). The RMA provides a devolved method of governance whereby regional councils are responsible for fresh water allocation and quality, as well as managing ecosystems and natural hazards in those water bodies (section 30). A comprehensive planning and consenting role is given to regional councils for water management, including the responsibility of granting and administering entitlements for the taking, usage, damming and diversion of water.

All regional councils and unitary authorities have operative or proposed regional plans addressing the taking of water (except for the Gisborne District Council). However, there is variability in the extent and status of water plans across New Zealand. The plans all articulate objectives, policies and rules for considering and issuing resource consents to take, dam, divert or use water, but are less prescriptive about measuring and reporting requirements.

While the status quo is likely to see incremental improvements in plans over time, new policies are not able to apply to existing consents until they are replaced or reviewed. Around 35% of consents have a replacement date of 20 years or more. Therefore it may take 20 to 25 years to achieve widespread and consistent measuring and reporting of water takes, assuming all regions aimed to achieve this without direction from central government.

*Problem definition*

In 2006, it was estimated that 66 percent of consented water takes nationally are unmeasured, accounting for an estimated 69% of the total allocated volume (Aqualinc, 2006a).

Specific problems associated with the status quo include:

*Inconsistent information*: specific measurement and reporting requirements on existing consents vary within and between regions. Inconsistencies at the individual consent level are amplified as information is aggregated up to catchment, regional and national levels. The resulting error associated with aggregate information makes it difficult to make higher-level, strategic decisions about water resources with any confidence.[1]

[1] The OECD has noted the scarcity of consistent environmental indicators and trend data that can be aggregated at national level (OECD, 2007: p.26).

*Inability to monitor compliance*: where takes are not measured and usage reported, it is impossible for consent holders, councils and the community to have confidence that water is being taken in compliance with conditions on resource consents (for example, conditions limiting rate of take or otherwise limiting takes when minimum flows or levels are reached)

*Lack of good data to inform water management decisions*: a function of regional councils is deciding how much water to allocate to users, and how much water to leave for environmental and other values. An accurate understanding of the implications of different scenarios (for instance, making more or less water available for allocation) needs to be based on actual water usage, as it is this measure that best reflects the current impact of water takes on environmental values. However in the absence of widespread water measuring and reporting, these decisions must be made on consented amounts (or an assumed percentage), which may not accurately reflect actual usage. This creates uncertainty about whether good decisions have been made on environmental flows and allocation limits.

*Lack of incentive to improve the situation*: currently low levels of water measurement by consent holders at a national level suggest that the purchase and installation of capital items, such as water measuring devices, are not a priority for existing consent holders. Improvements to regional plans cannot be relied upon to improve the uptake of water measurement by consent holders (as previously noted).

*Allocative inefficiency*: resource consents to take water generally include a condition restricting the maximum rate of take, and/or volume of water that can be taken over a specific period. Such conditions are generally imposed after considering the environmental and other effects of abstracting that rate or volume of take. However, where rates of take have been studied, they are often substantially less than the consented rate.[2] The unused portion is not available to other users particularly where a water resource is fully allocated (i.e., where the sum of existing consented allocation already matches or exceeds total allowable allocation). 'Locking up' this resource unnecessarily may incur opportunity costs to the community.

## Policy objectives

Accurate, complete and current knowledge of our water resources is a critical precursor to several elements of the Government's *New Start for Fresh Water* policy programme, including establishing fair and efficient allocation frameworks, addressing over-allocation, setting limits and assessing rural infrastructure requirements.

The policy objectives are:

1. To ensure consistency at national, regional and catchment levels for the measuring and reporting of actual water taken.
2. To enable water users and regulators to easily determine compliance with water take consents.

[2] As reported from regional studies in Aqualinc (2006b), and discussed further in Harris (2008).

3. To provide accurate information about actual water taken in any catchment to inform decisions on the management of water resources.
4. To ensure the comprehensive uptake of water measuring devices in a cost effective and timely way.
5. To improve allocative efficiency[3] through accurate measurement of water abstracted for consumptive uses.

Objectives one to four were previously agreed by Cabinet [POL Min (08) 2/2 refers] and objective five has been included to address the impact the absence of accurate information is having on the efficient allocation and use of water.

## Options

*Voluntary Guidelines and Codes of Practice*

This essentially represents an enhanced status quo option. It would see the Ministry for the Environment and Ministry of Agriculture and Forestry working alongside regional councils and user groups, offering technical assistance in drafting a voluntary guideline, a New Zealand Standard and/or codes of practice for water measuring where needed.

While this option would keep regulations to a minimum, funding constraints and different priorities would mean that implementation could remain inconsistent across the country.

With user uptake being primarily voluntary, it would be unlikely to meet the objectives in a timely manner. It also leaves open the prospect of repeated re-litigation of the need to monitor water use at successive consent and planning hearings where measuring has not been required at a national level. Essentially, roll out would be variable at a regional level, leading to differences in data accuracy between regions. This would prevent consistency being achieved at a national level.[4]

Because the use of voluntary guidelines and codes of practice is unlikely to meet the objective of achieving consistency, this option is also unlikely to meet the other four objectives.

*Legislative Change-RMA Amendment*

The Resource Management Act (RMA) could be amended to make it clear that regional plans require water takes to be measured and for actual use to be reported to councils. A variety of sections of the RMA could be amended to achieve comprehensive measurement of consented water takes, such as section 108

[3] Allocative efficiency in this context refers to the difference between the volumes of water consented and what is actually used by a consent holder.

[4] One example where guidelines failed to achieve national consistency was in the management of air quality. In that case, the Ministry for the Environment issued a series of guidance documents on air quality management covering dust, odour, degraded visibility, inventories, monitoring, dispersion modelling and emissions testing. Unfortunately, gains were inconsistent and significant air quality issues continued in some areas leading to calls (including from industry) to impose national environmental standards for air quality (regulations to this effect were subsequently gazetted in 2004).

(Conditions of Resource Consents). An amendment to this section could have the effect of requiring water take consents to be subject to continuous measurement, with a schedule defining the required measurement and reporting standards. This would provide regional councils with clear guidance on the required actions and keep regulatory complexity to a minimum.

However, there are shortcomings associated with this option. The RMA is an enabling and broad-scale piece of legislation. Amending the head statute to accommodate specific matters as they arise would make the legislation unnecessarily complex. Legislative amendments are also often more expensive and time-consuming than other options. In addition, it is more difficult to amend legislation if changes are needed in future (e.g. if advances in metering technology mean more accurate measuring of water takes becomes feasible). Any such change might also result in the need for changes to some regional plans, which (though not quantified) can be an expensive and time-consuming process.

In addition, such changes to the RMA would also elevate the need to measure consented water use to a special status that would be somewhat anomalous when compared to RMA requirements for measurement of any other environmental service. The RMA provides for more specific matters to be addressed through regulation-making powers for individual resource management issues.

Further, plan change and subsequent consent review processes incur costs on regional councils (and therefore ratepayers). While plan change costs have not been quantified, potential costs from consent review processes are estimated at $3.3 million. These processes would also further delay achieving the objectives.

Overall, the legislative change option is likely meet the objective of *achieving consistency*, although the effectiveness may be reduced where decisions on plans or resource consents are appealed. This option is also likely to meet the objectives of *enabling compliance to be determined easily*, *providing accurate information*, and *improving allocative efficiency*. However the legislative change option may not meet the objective of *ensuring the comprehensive uptake of water measuring devices in a cost-effective and timely way*, due to costs and potential delays associated with legislative change, plan change, consent review and appeal processes.

*National policy statement*

The RMA provides for the Minister of the Environment to issue national policy statements (NPS) "*to state objectives and policies on matters of national significance that are relevant to achieving the purpose of this Act*" (s45).

An NPS could include an objective stating the importance of measuring and reporting of water takes. In isolation, this would be ineffective at *ensuring consistency of measuring and reporting*, as it would leave considerable discretion to councils when giving effect to it in plans, and when making decisions on resource consents.
However, this effectiveness could be improved by accompanying the objective with a directive policy.[5] For instance, a policy could be proposed providing direction on the

[5] Examples of relatively directive NPS policies were recently proposed by the Board of Inquiry into the Proposed National Policy Statement for Freshwater Management. The Board of Inquiry recommended two policies (Policies D10 and E4) requiring resource consent for certain activities,

assessment criteria for resource consents to take water focusing on measuring and reporting requirements. The proposed policy could be linked to a guideline or other document describing in detail the minimum requirements for water measuring and reporting (this would then be incorporated into the NPS via s46B of the RMA).[6] To minimise costs and delays associated with plan review processes, an NPS could also require councils to directly insert that objective and policy into their regional plan without using the consultation process in Schedule 1 (via s55(2) of the RMA).[7]

Such an NPS could be effective at dealing with new consents. However, it would be less effective at dealing with existing consents. Sections of the RMA dealing with NPSs do not contain a provision enabling an NPS to require councils to review existing consents, unlike regulations made under section 43 (see s.43A(1)(f)). Existing consents could still be dealt with by way of consent review, but this would be at the discretion of councils, because the NPS could not specify that reviews must happen, or by when.

Because of its ineffectiveness at dealing with existing consents, the NPS option is unlikely to meet the objective of *ensuring consistency of the measuring and reporting of water taken*. This means it is also unlikely to achieve the other policy objectives.

*Regulations made under section 43 of the RMA (a National Environmental Standard)*

The Ministry for the Environment initially considered that a national environmental standard (NES) would be the preferred option. This option was widely consulted on and Cabinet [POL Min (08) 2/2 refers] gave approval in 2008 for a NES to be drafted into regulation.

The proposed *National Environmental Standard on Measurement of Water Takes* set minimum requirements for the installation and operation of new water measuring devices, including the transfer of data to regional councils. It applied to all water takes that need resource consent. The standard would apply to future consents, but existing consents would need to be reviewed under section 128 of the RMA for this option to take effect.

The review process would allow consent holders to question how the standard should apply, and would provide an opportunity for local and regional conditions to be taken into account. However, the flip-side of enabling local variation is a loss of consistency between (and within) regions, and as a result, national inconsistency.

Previous discussion of the legislative change and NPS options has also highlighted the delays and costs to regional councils associated with the consent review process. The cost of consent reviews is expected to be $5.3 million if all consented takes were

specifying the activity status of those activities, and putting forward two mandatory assessment criteria for consent applications. This report is currently before the Minister for the Environment.

[6] For example, the National Policy Statement on Electricity Transmission (2008) includes a policy requiring that provisions in plans must be based on international guidelines (the title, author and page numbers are provided) or revisions thereof, and any applicable New Zealand standards.

[7] This is also a feature of the two transitional provisions recommended to the Minister for the Environment in the Report and Recommendations of the Board of Inquiry into the Proposed National Policy Statement for Freshwater Management.

subject to an NES regulation, reducing to $3.3 million if consented takes less than 5 litres per second are excluded (exemptions are explained below).

In addition, the NES could not apply to all consented water take consents, since water takes authorised by historic mining privileges cannot be reviewed. The NES could only apply to these takes should they be replaced on their expiry in 2021.

Overall, the NES option is likely to achieve all five policy objectives. However, the likelihood of inconsistent outcomes from the consent review process, and the fact that an NES cannot apply to mining privileges, would impact on its ability to *achieve consistency at the national level for measuring and reporting*. Costs and delays associated with the review process also impact on its ability to achieve the *comprehensive uptake of water measuring devices in a cost effective, timely way*.

*Regulations made under section 360(1)(d) of the RMA (preferred option)*

Section 360(1)(d) of the RMA provides for regulations to be made:

> *"requiring the holders of water permits [water consents] … to keep records for any purpose under this Act, and prescribing the nature of records, information, and returns, and the form, manner, and times in or at which they shall be kept or furnished."*

Under this option, a regulation would be made under section 360(1)(d) setting minimum requirements on the quality of data and reporting that is required. The minimum requirements relate to data recording and data transfer to regional councils and to the installation and maintenance of accurate measuring systems to take and keep water records. The minimum requirements are as set out in the Cabinet Paper.

Section 360(1)(d) regulations (hereafter referred to as s360 regulations) do not need to take effect via consent reviews, as they apply directly to existing resource consents. The effect is that:

- s360 regulations apply to mining privileges
- as explained in the impact analysis, the direct application of s360 regulations results in a cost saving for regional councils of $3.3 million.

The overall effect will be to simplify the regulatory framework by replacing variable or absent rules in regional plans with one set of nationally consistent requirements for measuring and reporting water takes.

*Exemptions*

The s360 regulations would not apply to permitted takes or to consented takes for geothermal or sea water.[8]

[8] In the proposed regulations, permitted takes include takes for an individual's domestic purposes and for animals' drinking water as allowed under RMA section 14(3) (b, c) of the RMA; takes for fire-fighting purposes as allowed under RMA section 14(3)(e); permitted activity takes that are allowed for in a regional plan, and individual connections to a community/urban reticulated water supply.

For consented takes of fresh water, the Minister for the Environment will be able to specify exemptions to the requirements of the regulation by stating exemptions in the regulations or through a Gazette notice.

The detail of all proposed exemptions is outlined in the Cabinet Paper. Specific analysis of the proposed exemption for minor takes is also provided in the consultation section of this statement.

*Transition approach*

All new consents would be immediately subject to the regulations once the regulation becomes effective (28 days after gazettal). For all existing consents, the s360 regulations would provide a transition period of between 2 years and 6 years for existing consent-holders:

- existing takes equal to or greater than 20 litres per second must comply within two years of gazettal.
- existing takes equal to or greater than 10 litres per second (but less than 20 litres per second) must comply within 4 years of gazettal
- existing takes equal to or greater than 5 litres per second (but less than 10 litres per second) must comply within 6 years of gazettal.

This phased approach ensures a significant proportion of the national total consented allocation will be subject to the regulations in a timely manner (92% within 2 years, 96% within 4 years, and 98% within 6 years). The phased approach also manages demand for infrastructure and services.

The option of a s360 regulation achieves all five policy objectives. It is implemented directly on existing consents, avoiding the likely inconsistencies arising from the consent review process. The direct application of the regulations also means it achieves the objective of *ensuring the comprehensive uptake of water measuring devices in a cost-effective and timely way*.

**Impact analysis – costs, benefits and risks**

The following analysis outlines the costs and benefits and risks associated with the s360 regulation, relative to the status quo. Unless otherwise stated, figures provided are for a base case including:

- a 35 year period
- an 8% discount rate
- a 5% allocative efficiency gain
- an exemption for takes less than 5 litres per second
- a phased transition approach for existing consents.

Where relevant, costs are compared with the NES option in order to show the relative cost saving of the preferred approach over the approach initially favoured. Specific analysis is provided of the costs to consent holders, councils and central government. Quantified and unquantified benefits are also assessed and described.

Table 1 below summarises the total costs and benefits of the s360 regulation. Appendix 1 provides a sensitivity analysis for discount rate and for percentages of existing consents that do not meet minimum requirements.

Table 1: Costs and benefits of the s360 regulation

| | | | Magnitude | Affected group |
|---|---|---|---|---|
| **Cost** | $PV_{8\%}$ cost of s360 regulation | Quantified | $40.0 million | Existing consent holders |
| | | | $0.6 million | Regional council |
| | | | $0.2 million | Central government |
| | **Total $PV_{8\%}$ Cost of Scenario** | | **$40.8 million** | |
| **Benefit** | Management of freshwater resources | Qualitative | Improved | Regional council and the wider regional community |
| | Determination of environmental flows | Qualitative | Improved | Regional council and the wider regional community |
| | Compliance monitoring | Qualitative | Significantly improved | Regional council, consent holders and the wider regional community |
| | Transaction costs at consent application | Qualitative | Possible reduction | Regional council, consent applicants and the wider regional community |
| | Technical efficiency | Qualitative | Can provide benefit in some situations | Consent holders |
| | Allocative efficiency | Quantified | @ 2.5% = $50.4 million<br>@ 5% = $100.9 million<br>@ 7.5% = $151.3 million<br>@ 10% = $201.7 million | Applicants for new consents and existing consent holders, where the latter are able to exploit the knowledge that they are not fully utilising their consented allocation |
| | Reporting and understanding actual water take | Qualitative | Significantly improved | Regional council, central government, consent holders and consent applicants |

### *Costs*

The main costs of the s360 regulations are the capital and ongoing operating costs associated with water measuring. Costs for councils under the s360 regulation include reporting and enforcement costs. Central government costs are associated with implementation, development and monitoring costs.

The only difference between the NES and s360 regulation is that the latter provides a cost saving for councils from no longer needing to undertake consent reviews.

*Consent holders*

The costs to consent holders include:

- initial capital costs of, on average, $2,855 to $9,635 depending on the size of water take (and twenty-year replacement costs)
- per annum costs of $200 for data download, processing, and provision to council
- average calibration costs every five years of between $425 and $2,200.

The expected total cost of the regulations to consent holders is $40.0 million. This represents 98% of the total cost of the s360 regulations.

Costs to consent holders were assessed as being identical for the NES and s360 options. However, the cost of the NES would be lower because under that option, no cost would be incurred by mining privilege consent holders (this also means the NES option would achieve lower benefits in terms of allocative efficiency gains). These differences have not been quantified.

*Council costs*

Council costs include a range of costs associated with implementing the regulations. The total cost across all councils is estimated at approximately $600,000.

Under the NES option all qualifying consents to take water would need to go through a formal review process by regional councils to include the requirement for metering as a condition on the consent. Research suggests approximately 11,000 consents may need to be reviewed (includes exemption for takes less than 5 litres per second).

The cost of reviewing 11,000 consents is estimated at $3.3 million.[9] After adding implementation costs, the council cost under the NES option totals $3.9 million.

The s360 regulations apply directly to existing consents without the need for a consent review. This results in the costs to councils being limited to a total implementation cost across all councils of $600,000, representing a total cost saving of $3.3 million when compared to the NES option.

*Central government costs*

Central government costs associated with the implementation and monitoring of the s360 regulations are estimated at approximately $200,000. This is an approximate figure based on Ministry experiences of implementing other national environmental standards.

***Benefits***

*Quantified benefits*

Many of the benefits that would result from the information gained through the requirement to measure water takes are intangible. However, the potential allocative efficiency gains that can be attributed to the collection and use of the information

[9] Uses a figure of $392 per consent reviewed, with costs assigned 50% in year 0, and the remainder spread over the applicable transition period (Harris, 2009). Note feedback from regional councils suggests costs could be up to 40% higher than this (Harris, 2009).

required by the regulation have been assessed. An allocative efficiency gain of approximately 2% would provide a net benefit for the s360 regulation. A slightly higher allocative efficiency gain would be required to provide a net benefit for the NES proposal (to account for the costs of reviewing consents).

On the basis of a 5% increase in allocative efficiency, the benefit of allocative efficiency gains are estimated to be $100.9 million. Note that figures for allocative efficiency gains:

- assume such gains will only be achieved from takes larger than 20 litres per second, and only where those takes are from constrained catchments in Canterbury, Otago, Tasman, Marlborough and Waikato
- do not include any costs incurred in achieving allocative efficiency benefits that involve reallocation of water (for example, regulatory process costs associated with partial transfers of consent).

A 5% allocative efficiency gain from the s360 regulation is estimated to have a positive *net* present value of $60.1 million, excluding the intangible benefits described below.

*Unquantified benefits*

The value of well-managed water to primary production, energy generation and tourism is significant. Intangible benefits associated with the proposal include:

- improvements in the management of freshwater resources and environmental flows
- by providing an accurate picture of water use, aiding the development of an effective water management policy framework that will help balance the needs and returns from competing water demands such as tourism and primary production
- improvements in compliance monitoring and enforcement
- improvements in the ease of reporting at catchment, regional and national scale
- improved confidence in water resource management that is informed by actual water take data
- better capability to measure and demonstrate technical efficiency gains and improved efficiency of use at individual, industry, regional and national levels
- greater ability to assess the effects of environmental policy on the economy, and economic policy on the environment
- providing the necessary evidence base for the development of ecological and environmental flow frameworks.

These benefits will lie at a national, regional and user level. At a national level, accurate water use information will assist the nation in reporting on the status of and changes to its natural environment. At a regional and user level, allocative efficiency gains in catchments considered highly allocated will enable water to be re-allocated to other uses, or to extend productive periods.

**Risks**

The main risks are around the implementation of the proposed regulations.

The phased transition period, and added exemption for minor takes (covering 39% of all consented takes), together assist in managing the risk of non-compliance by spreading and reducing demand for infrastructure and associated installation services.

Central government will also be expected to provide assistance to regional councils to effectively implement the regulations and educate consent holders for compliance with the regulations. Work has already begun on a package of implementation guidelines which will provide specific guidance to regional councils, and other work has already been completed that provides technical guidance to users and contractors on the installation of measuring devices. Officials will continue working with the Implementation Taskforce Group to roll out other guidance aimed at the full range of audiences for these regulations. Efforts will focus initially on providing information for consent applicants and larger existing consent holders, as the latter are the first category of existing users required to comply with the regulations.

This work will require resources and effort to ensure that the regulations are effective (both immediately and longer term) and that there are no unnecessary delays to their implementation. This assistance will be funded from the Ministry for the Environment and Ministry of Agriculture and Forestry baselines.

**Consultation**

*Public consultation*

Consultation on the policy intent of this proposal was undertaken through a public discussion document on the proposed national environmental standard, prepared by a technical working group that included industry, utility and local and central government representatives. The discussion document on the proposed policy (in the form of an NES) was released on 1 December 2006 and submissions closed on 16 February 2007. Seven workshops on the proposal were held throughout the country during December 2006 and January 2007, with approximately 160 people in attendance. A separate meeting was held with senior managers of the regional councils (the Resource Managers Group).

Submissions were received from 73 submitters, including local government, individual water users, professional bodies, irrigation companies, hydro-electricity generators, hardware providers, non-governmental organisations and members of the public.

Submitters' positions on the national environmental standard were split: 56 percent supported or conditionally supported the proposal: 27 percent (primarily water users plus two regional councils) opposed the need for a national regulatory tool (at that time, the proposed NES). The remaining 17 percent did not state their position. Most submitters, regardless of their position on the content of the NES, supported the measurement of water takes and acknowledged the importance of obtaining this data in order to improve the efficiency of water use. Water was recognised as a significant public resource and one that needs to be carefully managed.
A main reason submitters opposed a national regulation was a belief it would not allow for local or regional flexibility. However, some flexibility will need to be traded off to achieve greater consistency of measuring and reporting at a national level. In addition,

the requirements are minimum requirements only. The regulations will allow regional councils to require stricter requirements if they are needed (e.g., to impose requirements on takes less than 5 litres per second).

Public consultation raised several issues leading to a re-appraisal of the initial approach, including:

- costs of consent review (leading to s360 regulation option)
- appropriateness of applying the regulation to all consented takes
- implementation approach
- accuracy requirements for open channel takes.

Changes to the initial proposal in response to submissions on these issues are discussed below with reference to quantified changes to costs and benefits where these have been estimated.

*Costs of consent review*

The initial approach of a NES regulation would require reviewing existing consents in order to bring them in line with proposed minimum requirements. Submissions from regional councils concerned about the costs of consent review processes prompted investigation of the s360 regulation option. Further investigations through the Resource Managers Group were then incorporated into the updated assessment of costs.

The s360 regulation is now the preferred option. As previously noted, the s360 regulation achieves a cost saving for councils of approximately $3.3 million that would be incurred under the NES option by reviewing existing consents. The s360 regulation better achieves the objective of *ensuring the comprehensive uptake of water measuring devices in a cost effective and timely way*. In addition, the greater consistency of outcome achieved by directly applying minimum requirements to consent holders better achieves the objective of *ensuring consistency at national, regional and catchment levels for the measuring and reporting of actual water taken*.

Because mining privilege holders are affected by this form of regulation, they have been informed of the change in proposal.

*Application of regulation to all consented takes*

The initial scope of the NES option included all consented takes.

The West Coast Regional Council opposed the application of the policy in its region given currently low pressures on its water resources. To give effect to this, the proposed s360 regulation now allows councils to present a case to the Minister for the Environment to exempt specific catchments on the basis the allocation status of those catchments will not result in adverse effects on the resource, environmental values or other users, in the foreseeable future. This would be a temporary exemption which would require a stated sunset clause or review at a later date. This is appropriate given resource pressures are only able to be assessed into the ‘foreseeable’ future.

Eight other submitters sought an exemption for minor takes. In response, analysis was undertaken of the cost saving and other implications of various exemption thresholds based on the size (rate) of take. Based on this analysis, the proposed s360 regulation now excludes consented takes of less than 5 litres per second. This reduces total cost to consent holders from $59.3 million (including all consented takes) to $40.0 million, a saving of $19.3 million.[10]

The proposed exclusion of takes less than 5 litres per second potentially affects achievement of two policy objectives, being *enabling water users and regulators to easily determine compliance with water take consents*, and *providing accurate information about actual water taken in any catchment to inform decisions on the management of water resources*. A useful way of understanding those implications is to consider the proportion of total allocation and the proportion of total consents made up of takes less than 5 litres per second.

Nationally, consented takes less than 5 litres per second comprise 2% of the total volume of water allocated. While this is a small proportion nationally, this figure varies widely between regions. For example, 0.45% of the total regional volume in Canterbury is associated with takes of less than 5 litres per second, but this figure is 37% in the Tasman District. In areas with a relatively high proportion of the total allocated volume associated with small consented takes, councils may have sound reasons to apply the proposed regulations to consented takes less than 5 litres per second. To account for this, the proposed s360 regulation allows councils to impose (or continue to impose) requirements on small consented takes via the usual plan, consent and consent review processes.

Consented takes less than 5 litres per second comprise 39% of all resource consents to take water (more than 4000 individual consents). Excluding 39% of all consented takes is likely to reduce the effectiveness of the regulations at *enabling ease of compliance for water users and regulators*. However, the resulting cost saving better achieves the objective of *cost-effectiveness*, and also, excluding this number of consents is likely to reduce pressure on industry to supply infrastructure and services. It is considered appropriate to make this trade-off.

Alternative thresholds for ‘minor take’ exemptions were also considered, including for all consented takes below 10 litres per second and for all consented takes below 20 litres per second. While exemptions at these higher take thresholds provided additional cost savings, they also:

- excluded a higher proportion of the total allocated water nationally from 2% of at 5 litres per second, up to 4% at 10 litres and 8% at 20 litres per second
- increased the number of consents not subject to the regulations, from 39% of at 5 litres per second, up to 51% at 10 litres and 65% at 20 litres per second.

These factors led to higher thresholds for exemption being discounted because they did not strike a suitable balance between achieving cost-effectiveness and other policy

[10] This analysis is based on the revised transition approach, assuming that consented takes 0-5 litres per second would need to comply within 6 years.

objectives, including enabling water users and regulators to easily determine compliance, and ensuring the comprehensive uptake of water measuring devices.

*Approach to implementation*

The initial implementation timeframe (NES option) required all existing consents to comply no later than 5 years after gazettal. One submitter (Christchurch City Council) suggested a phased timetable for implementation, so that those who account for the greatest proportion of water takes are required to comply first.

The phased-in approach that is now proposed for the s360 regulation brings forward costs for some existing (larger take) consent holders when compared to the initial approach,[11] causing an increase in the total present value of costs to consent holders of $5.8 million (from $34.2 million to $40.0 million).

However, the phased-in approach also provides a substantially higher benefit and therefore an overall net benefit. This is because the phased-in approach reduces the timeframe for compliance for larger take consents (i.e., takes equal to or greater than 20 litres per second), which are the consents from which allocative efficiency gains are expected (Harris, 2008; 2009). At a 5% allocative efficiency level, the phased-in transition approach would provide a $100.9 million benefit compared to a $78.1 million benefit under the initial approach. Therefore the phased-in approach has a *net* benefit of $17 million compared to the initial approach.

The phased-in approach may also increase the unquantified benefits described below because large consent holders, which together comprise the majority (92%) of total consented allocation, are required to comply with the regulations earlier.

There is another benefit to a phased-in approach. Under the initial approach many consent holders may wait until the end of the 5-year transition period before taking action. Service providers may find it difficult to meet the ensuing rush leading to significant non-compliance. A phased-in approach spreads demand for infrastructure and associated installation services more evenly across a 6-year transition period. The exemption of takes less than 5 litres per second (39% of all existing consents) also helps manage this issue by reducing demand for infrastructure and services.

*Accuracy requirements for channel takes*

The initial approach was that channel takes would be required to meet a minimum water level accuracy of ± 10mm. Twenty-four submitters commented on this accuracy requirement. A common theme was that the initial approach would result in inconsistent accuracy. Accordingly, Cabinet approved a percentage-based minimum accuracy for open channel takes of ± 10% [POL Min (08) 2/2 refers].

A number of submitters also sought more stringent minimum accuracy for open channel takes, including ± 5% (ARC, ECan, WCRC) and ± 8% (ORC). Relative benefits and costs of more stringent accuracy requirements have not been quantified. However, possible benefits could include:

[11] Existing consents equal to or greater than 20 litres per second would need to comply 3 years earlier (from 5, to 2 years after gazettal) and existing consents equal to or greater than 10 litres per second but less than 20 litres per second 1 year earlier (from 5, to 4 years after gazettal).

- increased allocative efficiency, particularly if future increases in allocation are sourced from large alpine-fed rivers, using open channel takes[12]
- enabling a smoother transition toward any future change toward a market-based approach to water allocation.[13]

Advice from the Ministry of Agriculture and Forestry is that more stringent requirements for channel take consent holders would substantially increase capital and maintenance costs. For that reason, the proposed regulation retains the previously approved minimum accuracy for open channel takes of ± 10%.

**Consultation with departments and Iwi Advisors**

This RIS was circulated with the Cabinet paper for consultation with the Ministry of Economic Development, Te Puni Kokiri, Treasury, Department of Internal Affairs, Department of Conservation, Ministry of Justice and the Department of the Prime Minister and Cabinet. Additionally, the Ministry for Agriculture and Forestry co-led the drafting of the discussion document.

As per the *Protocol of Engagement with Fresh Water Iwi Leaders* between the Crown and iwi on freshwater policy, both papers were also circulated to iwi advisors involved in the relevant policy project of the *New Start for Fresh Water* programme. Iwi advisors support the concept of consistent, accurate and complete monitoring information across all regions to support the decision-making process on managing freshwater resources.

**Implementation**

The regulation will become effective 28 days after being gazetted, with an additional 6-year phased transitional period for existing consents to take water.

An Implementation Taskforce Group has been formed with local government, key stakeholders and industry representatives. The scope of work by the group includes advice and planning around key dates for monitoring the implementation process, education, publicity, industry accreditation, databases, and assessing methods to monitor accuracy over time.

Minimisation of costs, through mechanisms such as bulk purchase deals by regional councils, will continue to be explored in discussions with regional councils, suppliers and relevant industry groups.

Guidance material will be provided to all local authorities and posted on the Quality Planning website. The Taskforce is also looking at the option of setting up a separate web portal to accommodate guidance material. The information will also be made available to all submitters and potentially affected parties (via industry groups).

[12] For example, as signalled in the Canterbury Water Management Strategy.
[13] Further research is needed to verify whether higher accuracy is an important prerequisite for a market-based approach. It may be instructive that federal policy in Australia supports a universal + 5% minimum accuracy requirement. The "The National Framework for Non-urban Water Metering" aims to "provide an acceptable level of confidence that measurement performance in the field is within maximum permissible limits of error of ±5 per cent." This comes into effect on 1 July 2010.

Enforcement of the regulations will be undertaken by regional councils through their current consent compliance programmes.

### Monitoring, evaluation and review

The Ministry for the Environment and Ministry of Agriculture and Forestry, through the Implementation Taskforce Group, will work closely with regional councils to monitor the uptake of the requirements and to evaluate the implementation of the regulations. A stocktake will be carried out by the Ministry for the Environment to ensure compliance and to assess the effectiveness of the regulations in achieving the policy intent.

### Source documents


Aqualinc (2006a). *Water Measuring Devices in New Zealand: Stocktake of existing situation*. Report No. H07000/1. Prepared for the Ministry for the Environment.

Aqualinc (2006b). *Snapshot of Water Allocation in New Zealand*. MfE: Wellington. Available at: http://www.mfe.govt.nz/publications/ser/snapshot-water-allocation-nov06/snapshot-water-allocation-nov06.pdf

Board of Inquiry into the Proposed National Policy Statement for Freshwater Management (2010). *Report and Recommendations of the Board of Inquiry into the Proposed National Policy Statement for Freshwater Management*. Available at:

http://www.mfe.govt.nz/publications/rma/boi-proposed-nps-freshwater-management/index.html

Department of the Environment, Water, Heritage and the Arts. "Non-urban water metering – The National Framework for Non-urban Water Metering". Available at: http://www.environment.gov.au/water/policy-programs/srwui/metering/index.html

Harris Consulting (2008). *Cost-benefit analysis for a National Environmental Standard for Water Measuring Devices*. Report for the Ministry for the Environment. Available at:

*https://www.mfe.govt.nz/publications/rma/cost-benefit-analysis-nes-water-measuring-devices-may08/cost-benefit-analysis-nes-water-measuring-devices-may08.pdf*

Harris Consulting (2009). *Cost-benefit analysis of a policy to require the measurement of water takes*. Report for the Ministry for the Environment.

Ministry for the Environment (2006). *Proposed National Environmental Standard for Water Measuring Devices: Discussion document*. Ref. ME783. Available at:

http://www.mfe.govt.nz/publications/water/proposed-nes-water-measuring-devices-nov06/index.html

Ministry for the Environment (2007). *Proposed National Environmental Standard for Water Measuring Devices: Report on submissions*. Ref. ME803. Available at:

http://www.mfe.govt.nz/publications/water/nes-water-measuring-devices-submissions-apr07/index.html

Organisation for Economic Co-operation and Development (2007). *OECD Environmental Performance Reviews: New Zealand*. Paris: OECD Publishing.

**Appendix 1: Sensitivity testing of costs and benefits for the proposed s360 regulation ($ millions)**

| | Base Case | Discount rate 10% | Discount rate 6% | 10% more consents non compliant than base case | 10% fewer consents non compliant than base case |
|---|---|---|---|---|---|
| **Existing consent holders** | $40.0 | $36.6 | $44.4 | $45.7 | $34.1 |
| **Regional council** | $0.6 | $0.6 | $0.6 | $0.6 | $0.6 |
| **Central government** | $0.2 | $0.2 | $0.2 | $0.2 | $0.2 |
| **Total Cost** | **$40.8** | **$37.4** | **$45.2** | **$46.5** | **$34.9** |
| **Benefit from a 2.5% increase in allocative efficiency** | $50.4 | $39.1 | $65.7 | $50.4 | $50.4 |
| **Benefit from a 5% increase in allocative efficiency** | **$100.9** | **$78.2** | **$131.4** | **$100.9** | **$100.9** |
| **Benefit from a 7.5% increase in allocative efficiency** | $151.3 | $117.3 | $197.1 | $151.3 | $151.3 |
| **Benefit from a 10% increase in allocative efficiency** | $201.7 | $156.3 | $262.8 | $201.7 | $201.7 |