

# **Water Safety Plan Update: Project scoping plan**

Prepared as part of a Ministry of Health  
contract for scientific services

by

Chris Nokes

September 2014



## Water Safety Plan Update: Project scoping plan



Rob Lake  
Manager Risk and Response Group  
ESR



Chris Nokes  
Project Leader



Jan Gregor  
Peer Reviewer

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## 1 INTRODUCTION

During the last decade of the 20<sup>th</sup> Century and the early part of this century, international interest in the application of risk management principles to water supply management began to grow. At that time, work initiated by the Ministry of Health (the Ministry) helped put New Zealand near the forefront of these developments.

In 2001, the Ministry contracted ESR to prepare a suite of documents to support water suppliers in their preparation of what were then termed public health risk management plans (PHRMPs). These are now referred to as water safety plans. The development and implementation of PHRMPs by water suppliers was voluntary.

Three types of guidance document were prepared in 2001 and a further document in 2008:

- A. A framework document (*How to Prepare and Develop Public Health Risk Management Plans for Drinking-Water Supplies*; MoH 2001) which suggested an approach to preparing water safety plans and what the plans might contain
- B. A suite of 39 “Guides” to help the water supplier identify risks to different components of a supply with suggested ways of mitigating the risk
- C. Two worked examples for smaller suppliers, showing how the information contained in the framework document and the guides could be brought together to produce a water safety plan.
- D. A simplified guide to preparing water safety plans: *Small Drinking-water Supplies - Public Health Risk Management Kit*, MoH 2008.

Aspects of these documents are now out of date. Several factors have contributed to this.

- a. The Health (Drinking-water) Amendment Act 2007 (the Act), which came into force in 2008, requires water suppliers to prepare and implement water safety plans. The content of the plans is specified in the Act. It differs somewhat from the content provided by the framework developed earlier for the Ministry, as does some of the terminology.
- b. An edition of the *Drinking-water Standards for New Zealand* (DWSNZ) was prepared in 2005. This edition was revised in 2008 to align the DWSNZ with the requirements of the Act. The water safety plan documents make reference to, and contain some of the requirements of, the 2000 edition of the DWSNZ.
- c. Since the original documents were prepared, the need to simplify the worked examples provided has become apparent.
- d. When the guidance documents were prepared high priority was given to managing risks to water quality. Providing sufficient water to meet a community’s demand is also a key function of a water supply. Water shortage can have adverse public health effects and needs to be adequately addressed in water safety plans. To fill gaps in the guidance provided with respect to managing security of supply, the guidance documents need to be reviewed and revised to address any shortcomings regarding security of supply that are identified.

- e. The guidance documents make reference to miscellaneous regulations and standards. These references need to be reviewed to ensure they are still current.

This plan reviews the existing versions of the documents A–D to identify the updates needed to address changes noted in a–e above. From this information, estimates of the time required to make the changes are developed to determine the extent of the work that can be undertaken within the resources allocated to the project in the Water Supply Risk Assessment project brief.

## 2 REQUIRED UPDATES

To assess the updates required, each of the guidance documents was scanned, and the generic nature of needed updates recorded, bearing in mind the factors discussed in a–e of Section 1.

Table 1 lists all the guidance documents, and for each identifies the type of update that is required.

Table 1 Identification of updates required for each of the guidance documents

Document	Updates needed
Framework document (“How to prepare and develop ...”)	<ul style="list-style-type: none"> <li>• Reference to the “Drinking-water Standards for New Zealand” will be left generic without a date or edition.</li> <li>• Revise the definition of “Contingency Plan” to make it clearer that it needs to encompass emergency situations.</li> <li>• Introduce a definition of “critical point” to align with s69G and s69Z and include other requirements of s69Z presently missing.</li> <li>• Check ISO reference is current.</li> <li>• Reference to AS/NZS 4360:1999: reference to this standard (or its update) will be retained where it is referenced for the definition of “Risk”, but other possible references will be used to allow revision of the descriptors for “Likelihood” and “Consequence” in Appendix 2.</li> <li>• <i>Note – there is a need to reformat Figure 2.</i></li> </ul>
S1.1 Surface and groundwater sources	<ul style="list-style-type: none"> <li>• Check whether there is anything that needs to be added to assist with complying with s69S, s69U, s69X and s69Z, and s69ZD of the Act – eg, identify critical points.</li> <li>• Consider inclusion of other requirements of the legislation that play a part in managing risk to water safety.</li> <li>• Change reference to DWSNZ 2000.</li> <li>• Update reference to MAF.</li> <li>• Determine whether reference to the NES is relevant and if so where.</li> <li>• Revise (s1.1.18) to reflect greater knowledge of the occurrence of arsenic.</li> <li>• Revise Table S1.1 using the information from Table 9.5 of the <i>Guidelines for Drinking-water Quality Management for New Zealand</i>.</li> <li>• Modify introductory sentence to Contingency Plans (to make consistent with the Framework document’s definition of contingency plan); check which contingency plan sections require modification in the light of more recent work (eg volcanoes, water shortage, heavy rain), and determine whether any other emergency situations need to be introduced.</li> <li>• Introduce reference to the Capture zone guidelines and Separation distance guidelines (Envirolink projects).</li> <li>• <i>Note – need to reformat Fig S1.1.</i></li> </ul>

Document	Updates needed
S1.2 Roof water sources	<ul style="list-style-type: none"> <li>• Check whether there is anything that needs to be added to assist with complying with s69S, s69U, s69X and s69Z, and s69ZD of the Act – eg, identify critical points.</li> <li>• Consider inclusion of other requirements of the legislation that play a part in managing risk to water safety.</li> <li>• Change reference to DWSNZ 2000 and any requirements of the standard.</li> <li>• Check risk of water shortage is adequately addressed.</li> <li>• Change warning parameters for volcanic ash on roof.</li> <li>• Modify introductory sentence to Contingency Plans (to make consistent with contingency plan definition in the Framework document).</li> </ul>
S2 Development of new supplies	<ul style="list-style-type: none"> <li>• Check whether there is anything that needs to be added to assist with complying with s69S, s69U, s69X and s69Z, and s69ZD of the Act – eg, identify critical points.</li> <li>• Consider inclusion of other requirements of the legislation that play a part in managing risk to water safety.</li> <li>• Check risk of water shortage is adequately addressed.</li> <li>• Change reference to DWSNZ 2000 and any requirements of the standard.</li> <li>• Change reference to HPO to DWA.</li> </ul>
P1.1 Surface water abstraction – rivers, streams and infiltration galleries	<ul style="list-style-type: none"> <li>• Check whether there is anything that needs to be added to assist with complying with s69S, s69U, s69X and s69Z, and s69ZD of the Act – eg, identify critical points.</li> <li>• Consider inclusion of other requirements of the legislation that play a part in managing risk to water safety.</li> <li>• Check risk of water shortage is adequately addressed.</li> <li>• Change reference to DWSNZ 2000 and any requirements of the standard.</li> <li>• Modify lists of DBPs identified to match what is in DWSNZ 2005 (rev. 2008).</li> <li>• Replace advice to check history of water tanker use with the requirement to us a registered water carrier.</li> </ul>
P1.2 Surface water abstraction – lakes and reservoirs	<ul style="list-style-type: none"> <li>• Check whether there is anything that needs to be added to assist with complying with s69S, s69U, s69X and s69Z, and s69ZD of the Act – eg, identify critical points.</li> <li>• Consider inclusion of other requirements of the legislation that play a part in managing risk to water safety.</li> <li>• Check risk of water shortage is adequately addressed.</li> <li>• Change reference to DWSNZ 2000 and any requirements of the standard.</li> <li>• Replace advice to check history of water tanker use with the requirement to us a registered water carrier.</li> <li>• Modify lists of DBPs identified to match what is in DWSNZ 2005 (rev. 2008).</li> </ul>
P1.3 Groundwater abstraction – bores and wells	<ul style="list-style-type: none"> <li>• Check whether there is anything that needs to be added to assist with complying with s69S, s69U, s69X and s69Z, and s69ZD of the Act – eg, identify critical points.</li> <li>• Consider inclusion of other requirements of the legislation that play a part in managing risk to water safety.</li> <li>• Check risk of water shortage is adequately addressed.</li> <li>• Change reference to DWSNZ 2000 and any requirements of the standard.</li> <li>• Update reference to the <i>Guidelines</i>.</li> <li>• Check whether update for NZ drilling standard is necessary.</li> <li>• Replace advice to check history of water tanker use with the requirement to us a registered water carrier.</li> </ul>

<b>Document</b>	<b>Updates needed</b>
P1.4 Groundwater abstraction – springs	<ul style="list-style-type: none"> <li>• Check whether there is anything that needs to be added to assist with complying with s69S, s69U, s69X and s69Z, and s69ZD of the Act – eg, identify critical points.</li> <li>• Consider inclusion of other requirements of the legislation that play a part in managing risk to water safety.</li> <li>• Check risk of water shortage is adequately addressed.</li> <li>• Change reference to DWSNZ 2000 and any requirements of the standard.</li> <li>• Replace advice to check history of water tanker use with the requirement to us a registered water carrier.</li> </ul>
P2 Water transmission	<ul style="list-style-type: none"> <li>• Check whether there is anything that needs to be added to assist with complying with s69S, s69U, s69X and s69Z, and s69ZD of the Act – eg, identify critical points.</li> <li>• Consider inclusion of other requirements of the legislation that play a part in managing risk to water safety.</li> <li>• Change reference to DWSNZ 2000 and any requirements of the standard.</li> </ul>
P3 Pre-treatment storage	<ul style="list-style-type: none"> <li>• Check whether there is anything that needs to be added to assist with complying with s69S, s69U, s69X and s69Z, and s69ZD of the Act – eg, identify critical points.</li> <li>• Consider inclusion of other requirements of the legislation that play a part in managing risk to water safety.</li> <li>• Check risk of water shortage is adequately addressed.</li> <li>• Change reference to DWSNZ 2000 and any requirements of the standard.</li> <li>• Replace advice to check history of water tanker use with the requirement to us a registered water carrier.</li> </ul>
P4.1 Pre-treatment processes – algicide application	<ul style="list-style-type: none"> <li>• Check whether there is anything that needs to be added to assist with complying with s69S, s69U, s69X and s69Z, and s69ZD of the Act – eg, identify critical points.</li> <li>• Consider inclusion of other requirements of the legislation that play a part in managing risk to water safety.</li> <li>• Change reference to DWSNZ 2000 and any requirements of the standard.</li> <li>• Assess whether reference to Section 7 of the DWSNZ is appropriate somewhere.</li> </ul>
P4.2 Pre-treatment processes – destratification	<ul style="list-style-type: none"> <li>• Check whether there is anything that needs to be added to assist with complying with s69S, s69U, s69X and s69Z, and s69ZD of the Act – eg, identify critical points.</li> <li>• Consider inclusion of other requirements of the legislation that play a part in managing risk to water safety.</li> <li>• Change reference to DWSNZ 2000 and any requirements of the standard.</li> </ul>
P4.3 Pre-treatment processes – pre-oxidation	<ul style="list-style-type: none"> <li>• Check whether there is anything that needs to be added to assist with complying with s69S, s69U, s69X and s69Z, and s69ZD of the Act – eg, identify critical points.</li> <li>• Consider inclusion of other requirements of the legislation that play a part in managing risk to water safety.</li> <li>• Change reference to DWSNZ 2000 and any requirements of the standard.</li> </ul>
P4.4 Pre-treatment processes – waste liquor reintroduction	<ul style="list-style-type: none"> <li>• Check whether there is anything that needs to be added to assist with complying with s69S, s69U, s69X and s69Z, and s69ZD of the Act – eg, identify critical points.</li> <li>• Consider inclusion of other requirements of the legislation that play a part in managing risk to water safety.</li> <li>• Change reference to DWSNZ 2000 and any requirements of the standard.</li> </ul>

<b>Document</b>	<b>Updates needed</b>
P5.1 Treatment processes – conventional coagulation/flocculation/sedimentation	<ul style="list-style-type: none"> <li>• Check whether there is anything that needs to be added to assist with complying with s69S, s69U, s69X and s69Z, and s69ZD of the Act – eg, identify critical points.</li> <li>• Consider inclusion of other requirements of the legislation that play a part in managing risk to water safety.</li> <li>• Change reference to DWSNZ 2000 and any requirements of the standard.</li> </ul>
P5.2 Treatment processes – dissolved air flotation	<ul style="list-style-type: none"> <li>• Check whether there is anything that needs to be added to assist with complying with s69S, s69U, s69X and s69Z, and s69ZD of the Act – eg, identify critical points.</li> <li>• Consider inclusion of other requirements of the legislation that play a part in managing risk to water safety.</li> <li>• Change reference to DWSNZ 2000 and any requirements of the standard.</li> </ul>
P5.3 Treatment processes – direct filtration	<ul style="list-style-type: none"> <li>• Check whether there is anything that needs to be added to assist with complying with s69S, s69U, s69X and s69Z, and s69ZD of the Act – eg, identify critical points.</li> <li>• Consider inclusion of other requirements of the legislation that play a part in managing risk to water safety.</li> <li>• Change reference to DWSNZ 2000 and any requirements of the standard.</li> </ul>
P6.1 Treatment processes – rapid sand filtration	<ul style="list-style-type: none"> <li>• Check whether there is anything that needs to be added to assist with complying with s69S, s69U, s69X and s69Z, and s69ZD of the Act – eg, identify critical points.</li> <li>• Consider inclusion of other requirements of the legislation that play a part in managing risk to water safety.</li> <li>• Change reference to DWSNZ 2000 and any requirements of the standard.</li> </ul>
P6.2 Treatment processes – slow sand filtration	<ul style="list-style-type: none"> <li>• Check whether there is anything that needs to be added to assist with complying with s69S, s69U, s69X and s69Z, and s69ZD of the Act – eg, identify critical points.</li> <li>• Consider inclusion of other requirements of the legislation that play a part in managing risk to water safety.</li> <li>• Change reference to DWSNZ 2000 and any requirements of the standard.</li> </ul>
P6.3 Treatment processes – cartridge filtration	<ul style="list-style-type: none"> <li>• Check whether there is anything that needs to be added to assist with complying with s69S, s69U, s69X and s69Z, and s69ZD of the Act – eg, identify critical points.</li> <li>• Consider inclusion of other requirements of the legislation that play a part in managing risk to water safety.</li> <li>• Change reference to DWSNZ 2000 and any requirements of the standard.</li> <li>• Check reference to NSF and AS/NZS documents.</li> </ul>
P6.4 Treatment processes – diatomaceous sand filtration	<ul style="list-style-type: none"> <li>• Check whether there is anything that needs to be added to assist with complying with s69S, s69U, s69X and s69Z, and s69ZD of the Act – eg, identify critical points.</li> <li>• Consider inclusion of other requirements of the legislation that play a part in managing risk to water safety.</li> <li>• Change reference to DWSNZ 2000 and any requirements of the standard.</li> </ul>

Document	Updates needed
P6.5 Treatment processes – membrane filtration	<ul style="list-style-type: none"> <li>• Check whether there is anything that needs to be added to assist with complying with s69S, s69U, s69X and s69Z, and s69ZD of the Act – eg, identify critical points.</li> <li>• Consider inclusion of other requirements of the legislation that play a part in managing risk to water safety.</li> <li>• Change reference to DWSNZ 2000 and any requirements of the standard.</li> <li>• Check reference to USEPA and NSF.</li> </ul>
P7.1 Treatment processes – chlorine disinfection	<ul style="list-style-type: none"> <li>• Check whether there is anything that needs to be added to assist with complying with s69S, s69U, s69X and s69Z, and s69ZD of the Act – eg, identify critical points.</li> <li>• Consider inclusion of other requirements of the legislation that play a part in managing risk to water safety.</li> <li>• Change reference to DWSNZ 2000 and any requirements of the standard.</li> <li>• Assess where FAC (free available chlorine) needs to be replaced by FACE (free available chlorine equivalent introduced in the DWSNZ 2005 (rev.2008)).</li> <li>• Modify lists of DBPs identified to match what is in DWSNZ 2005 (rev. 2008).</li> </ul>
P7.2 Treatment processes – Chlorine dioxide disinfection	<ul style="list-style-type: none"> <li>• Check whether there is anything that needs to be added to assist with complying with s69S, s69U, s69X and s69Z, and s69ZD of the Act – eg, identify critical points.</li> <li>• Consider inclusion of other requirements of the legislation that play a part in managing risk to water safety.</li> <li>• Change reference to DWSNZ 2000 and any requirements of the standard.</li> </ul>
P7.3 Treatment Processes – ozone disinfection	<ul style="list-style-type: none"> <li>• Check whether there is anything that needs to be added to assist with complying with s69S, s69U, s69X and s69Z, and s69ZD of the Act – eg, identify critical points.</li> <li>• Consider inclusion of other requirements of the legislation that play a part in managing risk to water safety.</li> <li>• Change reference to DWSNZ 2000 and any requirements of the standard.</li> <li>• Modify lists of DBPs identified to match what is in DWSNZ 2005 (rev. 2008).</li> </ul>
P7.4 Treatment processes – ultraviolet irradiation disinfection	<ul style="list-style-type: none"> <li>• Check whether there is anything that needs to be added to assist with complying with s69S, s69U, s69X and s69Z, and s69ZD of the Act – eg, identify critical points.</li> <li>• Consider inclusion of other requirements of the legislation that play a part in managing risk to water safety.</li> <li>• Change reference to DWSNZ 2000 and any requirements of the standard.</li> <li>• Check that radiation doses and intensity values are harmonised with the DWSNZ 2005 (rev. 2008).</li> </ul>
P8.1 Treatment processes – pH adjustment	<ul style="list-style-type: none"> <li>• Check whether there is anything that needs to be added to assist with complying with s69S, s69U, s69X and s69Z, and s69ZD of the Act – eg, identify critical points.</li> <li>• Consider inclusion of other requirements of the legislation that play a part in managing risk to water safety.</li> <li>• Change reference to DWSNZ 2000 and any requirements of the standard.</li> </ul>

<b>Document</b>	<b>Updates needed</b>
P8.2 Treatment processes – iron and manganese removal	<ul style="list-style-type: none"> <li>• Check whether there is anything that needs to be added to assist with complying with s69S, s69U, s69X and s69Z, and s69ZD of the Act – eg, identify critical points.</li> <li>• Consider inclusion of other requirements of the legislation that play a part in managing risk to water safety.</li> <li>• Change reference to DWSNZ 2000 and any requirements of the standard.</li> </ul>
P8.3 Treatment processes – softening	<ul style="list-style-type: none"> <li>• Check whether there is anything that needs to be added to assist with complying with s69S, s69U, s69X and s69Z, and s69ZD of the Act – eg, identify critical points.</li> <li>• Consider inclusion of other requirements of the legislation that play a part in managing risk to water safety.</li> <li>• Change reference to DWSNZ 2000 and any requirements of the standard.</li> </ul>
P8.4 Treatment processes – trace organics removal	<ul style="list-style-type: none"> <li>• Check whether there is anything that needs to be added to assist with complying with s69S, s69U, s69X and s69Z, and s69ZD of the Act – eg, identify critical points.</li> <li>• Consider inclusion of other requirements of the legislation that play a part in managing risk to water safety.</li> <li>• Change reference to DWSNZ 2000 and any requirements of the standard.</li> <li>• Modify lists of DBPs identified to match what is in DWSNZ 2005 (rev. 2008).</li> </ul>
P9 Treatment processes – fluoridation	<ul style="list-style-type: none"> <li>• Check whether there is anything that needs to be added to assist with complying with s69S, s69U, s69X and s69Z, and s69ZD of the Act – eg, identify critical points.</li> <li>• Consider inclusion of other requirements of the legislation that play a part in managing risk to water safety.</li> <li>• Change reference to DWSNZ 2000 and any requirements of the standard.</li> <li>• Make reference to the 2014 edition of the good practice guide for fluoridation chemicals were appropriate.</li> </ul>
P10 Treatment processes – pump operation	<ul style="list-style-type: none"> <li>• Check whether there is anything that needs to be added to assist with complying with s69S, s69U, s69X and s69Z, and s69ZD of the Act – eg, identify critical points.</li> <li>• Consider inclusion of other requirements of the legislation that play a part in managing risk to water safety.</li> </ul> <p>Change reference to DWSNZ 2000 and any requirements of the standard.</p>
P11 Treatment processes – plant construction and operation	<ul style="list-style-type: none"> <li>• Check whether there is anything that needs to be added to assist with complying with s69S, s69U, s69X and s69Z, and s69ZD of the Act – eg, identify critical points.</li> <li>• Consider inclusion of other requirements of the legislation that play a part in managing risk to water safety.</li> <li>• Change reference to DWSNZ 2000 and any requirements of the standard.</li> <li>• Replace advice to check history of water tanker use with the requirement to us a registered water carrier.</li> </ul>
D1 Distribution system – post treatment storage	<ul style="list-style-type: none"> <li>• Check whether there is anything that needs to be added to assist with complying with s69S, s69U, s69X and s69Z, and s69ZD of the Act – eg, identify critical points.</li> <li>• Consider inclusion of other requirements of the legislation that play a part in managing risk to water safety.</li> <li>• Change reference to DWSNZ 2000 and any requirements of the standard.</li> </ul>

Document	Updates needed
D2.1 Construction materials	<ul style="list-style-type: none"> <li>• Check whether there is anything that needs to be added to assist with complying with s69S, s69U, s69X and s69Z, and s69ZD of the Act – eg, identify critical points.</li> <li>• Consider inclusion of other requirements of the legislation that play a part in managing risk to water safety.</li> <li>• Change reference to DWSNZ 2000 and any requirements of the standard.</li> <li>• Check currency of references in Appendix 1.</li> </ul>
D2.2 Distribution system – system pressure	<ul style="list-style-type: none"> <li>• Check whether there is anything that needs to be added to assist with complying with s69S, s69U, s69X and s69Z, and s69ZD of the Act – eg, identify critical points.</li> <li>• Consider inclusion of other requirements of the legislation that play a part in managing risk to water safety.</li> <li>• Change reference to DWSNZ 2000 and any requirements of the standard.</li> </ul>
D2.3 Distribution system – operation	<ul style="list-style-type: none"> <li>• Check whether there is anything that needs to be added to assist with complying with s69S, s69U, s69X and s69Z, and s69ZD of the Act – eg, identify critical points.</li> <li>• Consider inclusion of other requirements of the legislation that play a part in managing risk to water safety.</li> <li>• Change reference to DWSNZ 2000 and any requirements of the standard.</li> <li>• Check currency of <i>AWWA Standard for Disinfecting Water Mains</i>, ANSI/AWWA C651-92; Australian Water Industry Technical Standards, <i>Chlorination of Water Mains</i>, 95-092.1; <i>Water Reticulation Disinfection Code of Practice</i>, Manukau Water, February 2001.</li> <li>• Assess the need for more contingency plans and prepare it necessary.</li> </ul>
D2.4 Distribution system – backflow prevention	<ul style="list-style-type: none"> <li>• Check whether there is anything that needs to be added to assist with complying with s69S, s69U, s69X and s69Z, and s69ZD of the Act – eg, identify critical points.</li> <li>• Consider inclusion of other requirements of the legislation that play a part in managing risk to water safety.</li> <li>• Change reference to DWSNZ 2000 and any requirements of the standard.</li> <li>• Check currency of the Building Act 1991.</li> <li>• Check currency of AS/NZS 3500.1.2 (1999).</li> <li>• Check currency of United States Environmental Protection Agency Cross Connection Manual, and AS 2845: Part 3.</li> </ul>
G1 General – monitoring	<ul style="list-style-type: none"> <li>• Check whether there is anything that needs to be added to assist with complying with s69S, s69U, s69X and s69Z, and s69ZD of the Act – eg, identify critical points.</li> <li>• Consider inclusion of other requirements of the legislation that play a part in managing risk to water safety.</li> <li>• Change reference to DWSNZ 2000 and any requirements of the standard.</li> </ul>
G2 General – staff training	<ul style="list-style-type: none"> <li>• Check whether there is anything that needs to be added to assist with complying with s69S, s69U, s69X and s69Z, and s69ZD of the Act – eg, identify critical points.</li> <li>• Consider inclusion of other requirements of the legislation that play a part in managing risk to water safety.</li> <li>• Change reference to DWSNZ 2000 and any requirements of the standard.</li> </ul>

Document	Updates needed
W1 Worked example – small supply using rainwater	<ul style="list-style-type: none"> <li>• Revise the worked example, to provide a simpler, shorter document that uses the terminology in the Health Act s69Z(2) (simplified for the layperson where necessary), based on the <i>Small Drinking-water Supplies - Public Health Risk Management Kit</i> format.</li> <li>• The Guides will still need to be used by the water supplier to help them formulate ideas about what the risks are and how they should be managed. The worked example needs to point out more clearly where this information can be found in the Guides.</li> <li>• Provide further explanation of what is required by s69Z(2) where this appears necessary.</li> </ul>
W2 Worked Example – small supply using chlorinated groundwater	<ul style="list-style-type: none"> <li>• As for W1.</li> </ul>
The <i>Small Drinking-water Supplies - Public Health Risk Management Kit</i>	<ul style="list-style-type: none"> <li>• Replace reference to PHRMPs with “water safety plan”.</li> <li>• Check whether there is anything that needs to be modified to assist with complying with s69S, s69U, s69X and s69Z, and s69ZD of the Act.</li> <li>• Consider inclusion of other requirements of the legislation that play a part in managing risk to water safety.</li> <li>• Change reference to the DWSNZ 2005 to DWSNZ 2005 (revised 2008).</li> <li>• Determine whether reference to the technical assistance programme is still relevant and remove if it is not.</li> </ul>

Points to note with regard to Table 1:

- a. The primary intention of the project is to update the documents rather than undertake an in-depth technical revision. However, during the scan of the documents, two instances were found (in S1) where knowledge of hazards and measures for mitigating the risk they present have improved since 2001. We propose that the opportunity is taken to revise this guide to update these two areas of information.

The first of two examples is section S1.1.18 (of Guide S1) which relates to geothermal contaminants. We now know that arsenic (a geothermal contaminant) occurs in locations where there appears to be no geothermal connection. This knowledge is not provided in the guide. How best to incorporate the new information will be addressed during the updating stage of the project.

The other example is Table S1 (of Guide S1). This provides advice on the ability of various oxidants to destroy cyanotoxins. It will be revised with more recent information from the *Guidelines for Drinking-water Quality Management for New Zealand*.

- b. Diagrams in some of the documents appear to have been distorted, presumably during a revision of the document in the past. These are noted in

Table 1 as the figures will have to be retrieved from the original documents provided to the Ministry.

- c. In addition to the more specific updates included in Table 1, there are some generic issues that will be addressed.
- i. Water Information New Zealand (WINZ) is referred to in several of the documents. In the near future, WINZ is expected to be replaced. The new database planned for development presently has no name. The database will be referred to as the “Ministry of Health’s national drinking-water database”.
  - ii. The medical officer of health is referred to in almost all of the guides. The Act also refers to drinking-water assessors and designated officers. As all are possible sources of help, generic reference will be made to them, and the wording tailored to the circumstance referred to in the document. For example, “contact your local public health unit ...”, or “contact your local medical officer of health, health protection officer or drinking water assessor ...” could be used.
  - iii. In the guide for fluoridation, reference will be made to the Code of Practice for Fluoridation of Drinking-water Supplies in New Zealand, which is presently in preparation.
  - iv. The identification number of the guides needs to be aligned with the numbers used in the framework document.
  - v. The titles of some of the guides need to be revised for consistency.

For example, the title of P7.1 is presently “Chlorination Disinfection”. All other guide titles for disinfection processes refer to the name of the disinfectant, eg, ozone, rather than the process (ozonation disinfection). Because there is no process term for the use of chlorine dioxide, it would make sense to change “chlorination” to “chlorine” to bring it into line with the other guides.

Another example of inconsistency is the title of the guide P4.3, which is simply labelled as “Pre-oxidation”. The title for all other guides concerning pre-treatment processes, such as P4.2 on destratification, include the generic grouping of the process to give, in this case, “Pre-treatment processes – destratification”.

The last example is the guide for “Staff Training”. Staff training is a general activity relevant across the whole of water supply operations. The guide is referred to in all water safety plan guides by the identifier assigned in the framework document, G1, yet the identifier in its title is D3.

Before any changes are made to titles, the Ministry will be consulted.

- vi. Some sections within the guides may not be specifically required by the Act. These will be identified and a note made that while their inclusion in a water safety plan is best practice, and necessary for good risk management, they are not a legislative requirement.
  
- d. Many of the updates identified in Table 1 are the same in each document and are relatively straightforward. Aligning the documents with the Act, needed for all documents, will have to be customised for each and is likely to take more time.

The estimated time to complete the work outlined in Table 1 is 75 hours.

### **3 CONCLUSION**

This report outlines the nature of the updates required for each of the water safety plan guidance documents. It also identifies some questions associated with the updates about which consultation with the Ministry will be required.

Updating most of the water safety plan guides is expected to take relatively little time. The updates taking the largest amount of time are those to produce the revised worked examples.

The estimated time to undertake the outlined work is 75 hours, which is close enough to the 74 hours originally allowed in the project brief to allow the planned scope of work to be undertaken within the existing contract.

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#### 4 REFERENCES

MoH. 2001. *How to Prepare and Develop Public Health Risk Management Plans for Drinking-Water Supplies*. Wellington: Ministry of Health. Available at URL: <http://www.health.govt.nz/publication/framework-how-prepare-and-develop-water-safety-plans-drinking-water-supplies>

MoH. 2008. *Small Drinking-water Supplies - Public Health Risk Management Kit*, Wellington: Ministry of Health.