



Ballina Shire Council

Drinking Water Management System – Improvement Plan





Ballina Shire Council Drinking Water Management System

Improvement Plan

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1 Introduction

1.1 Purpose

This is the Improvement Plan for the Ballina Shire Council Drinking Water Management System (DWMS). It has been developed to address identified needs for the full implementation of the DWMS and compliance with the *NSW Guidelines for Drinking Water Management Systems* (Draft 2012) (the Guideline).

This Improvement Plan demonstrates how Ballina Shire Council will address the risks identified in the risk assessment and areas requiring improvement to implement the 12 Elements of the Australian Drinking Water Guidelines 2011 (ADWG). The Plan outlines the management measures, timeframes and responsibility for implementation.

1.2 Scope

This Improvement Plan encompasses the improvements that have been identified through the development of the DWMS including the water quality risk assessment process or to improve compliance with the Guideline.

1.3 Objectives

The ADWG specifies a risk management approach to managing drinking water quality. Guiding Principle Six states ***ensuring drinking water safety and quality requires the application of a considered risk management approach***. *Risk management is about taking a carefully considered course of action. As the obligation is to ensure safe water and protect public health, the balancing process must be tipped in favour of taking a precautionary approach.*

This Improvement Plan prioritises resources on high risks, ensuring the safest possible drinking water. It also sets out a framework for continual improvement in water quality.

2 Regulatory Framework

The *Public Health Act 2010* (the Act) requires each drinking water supplier to prepare a quality assurance program for their drinking water service in the form of a DWMS that addresses the 12 elements in the ADWG.

The Guideline outlines the actions that must be undertaken to address the 12 elements. Following completion of the actions for each element, areas for improvement must be identified and recorded in an Improvement Plan

The Guideline states that the actions for improvement can be identified from a range of sources, for example, areas of improvement identified when developing or reviewing the drinking water management system, including:

- actions from the risk assessment (Elements 2 and 3)
- the water supplier's continuous improvement system
- *Local Government Act 1993* (NSW) Section 31 (1)(b) Corrective Actions (a direction from the Minister)
- water quality actions from the water supplier's Annual Action Plan to Council following review of the documents made under the *NSW Best Practice management of water supply and sewerage framework*.

3 Improvement Actions

3.1 Identification

Improvement actions were identified through the risk assessment process and during the development of the DWMS. The risk assessment identified residual risks that are considered significant (unacceptable) which require additional risk treatments as described in the Risk Assessment Report (Appendix A DWMS). To optimise system performance or gain increased understanding of system performance, additional risk treatments were identified for certain acceptable risks. During the development of the DWMS, additional improvements were also identified in response to the guideline requirements. It is also noted that under the *Local Government Act 1993* (NSW) Section 31 (1)(b) the Minister can also direct a water supplier to make improvements to the water treatment and supply works.

All improvement actions, including the priority and responsibilities are identified in Appendix A.

3.2 Prioritisation

The priority of each action was determined using level of risk, as follows:

- Level 1 priority was assigned to hazardous events with a residual risk of High or Extreme and must be actioned within 12 months of acceptance of this DWMS.
- Level 2 priority was assigned to hazardous events with a residual risk of Medium (9) or Medium (8) and must be actioned within 24 months of acceptance of this DWMS.
- Level 3 priority was assigned to hazardous events with a residual risk of Medium (6) or lower where improvements were identified. These improvements are intended to optimize system performance or assist gain greater knowledge of supply. They are to be actioned within 48 months.

Level 2 priority is also assigned to all deficiencies identified in the DWMS to meet the Guideline requirements or to strengthen the DWMS.

3.3 Improvements

The improvement listed in Table 1 is identified as a Level 1 priority and will require action within the next 12 months.

Table 1 Level 1 Improvement Item

Ref	Scheme Component	Improvement Action
WQ16	Distribution	Review of Service Level Agreement between Rous Water and Ballina Shire

3.4 Funding

All projects will be internally funded through either the Annual Capital Program or the Operations and Maintenance budget, depending on the nature of the project.

4 Review

It is the responsibility of the Strategic Engineer, Water and Wastewater to ensure that this document is up-to-date and is communicated to employees. The support, commitment and ongoing involvement of the Group Manager, Civil Services is essential for the continual improvement of the organisation's activities related to drinking water.

Progress against the *Improvement Plan* will be monitored by the Strategic Engineer Water and Wastewater every six months. This *Improvement Plan* will be reviewed as appropriate and at least annually.

Details of the improvement actions in Appendix A are to be updated in the spreadsheet as and when required, it is to be treated as a live document.

Appendix A

Improvement Schedule

Water Quality Improvements

Ref	Source	Improvement actions	Residual Risk	Responsibility	Priority	Timeframe	Status	Outcome
WQ1	Risk Assessment 2012/T-2	Investigate installation of online raw water turbidity to alarm and trigger plant shut down.	Medium (8)	Andrew S	2	24 months	To start	
WQ2	Risk Assessment 2012/T-3	Investigate data collection options to allow for review water quality results (turbidity vs rainfall) to determine impacts.	Medium (5)	Andrew S	3	48 months	To start	
WQ3	Risk Assessment 2012/T-3	Develop a well head protection zone for each boresite and investigate policy options.	Medium (5)	Simon S	3	48 months	To start	
WQ4	Risk Assessment 2012/T-4	Investigate operator testing of aluminium in flocculation pond.	Medium (5)	Besim S	3	48 months	To start	
WQ5	Risk Assessment 2012/T-8	Review auto backwash to avoid media blow out.	Medium (8)	Tony P	2	24 months	To start	
WQ6	Risk Assessment 2012/T-8	Investigate online turbidity testing on filtered water turbidity.	Medium (8)	Andrew S	2	24 months	To start	
WQ7	Risk Assessment 2012/T-8	Investigate quality of media and options for improvement (core sampling).	Medium (8)	Tony P	2	24 months	To start	
WQ8	Risk Assessment 2012/T-9	Investigate linking dose pumps to SCADA and alarms.	Medium (5)	Andrew S	3	48 months	To start	
WQ9	Risk Assessment 2012/T-9	Investigate online chlorine and pH on finished water.	Medium (5)	Andrew S	3	48 months	To start	
WQ10	Risk Assessment 2012/T10	Investigate options for recording and reviewing water quality data (e.g. database).	Medium (5)	Andrew S	3	48 months	To start	
WQ11	Risk Assessment 2012/T10	Develop control strategy for operating Marom Creek WTP and bores.	Medium (5)	Tony P	3	48 months	To start	
WQ12	Risk Assessment 2012/T10	Start up an operation procedure for bringing bores back online (include provisions for fluoridation and notification when dosing commences).	Medium (5)	Tony P	3	48 months	To start	
WQ13	Risk Assessment 2012/T10	Investigate installation of telemetry at bores (dosing pumps).	Medium (5)	Tony P	3	48 months	To start	
WQ14	Risk Assessment 2012/T10	Investigate C.t for first customers from bores.	Medium (5)	Tony P	3	48 months	To start	
WQ15	Risk Assessment 2012/T12	Investigate feedback loop to improve surveillance of chlorine dosing and manage risks from overdosing.	Low (2)	Andrew S	3	48 months	To start	
WQ16	Risk Assessment 2012/D-1 & 2	Review of Service Level Agreement between Rous Water and Ballina Shire.	High (10)	Rous Water	1	12 months	To start	

Ref	Source	Improvement actions	Residual Risk	Responsibility	Priority	Timeframe	Status	Outcome
WQ18	Risk Assessment 2012/D-2	Contact Richmond Water Labs to gain access to Rous Water results.	Medium (8)	Andrew S	2	24 months	To start	
WQ19	Risk Assessment 2012/D-2	Investigate options for allowing review of chlorine residuals in a water quality database and calculation of C.t to ensure adequate disinfection.	Medium (8)	Andrew S	2	24 months	To start	
WQ20	Risk Assessment 2012/D-4	Investigate options for database to review water quality results.	Medium (5)	Andrew S	3	48 months	To start	
WQ21	Risk Assessment 2012/D-8	Determine and implement testing requirements following repairs to pipelines.	Medium (8)	Tony P	2	24 months	To start	
WQ22	Risk Assessment 2012/D-10	Investigate options for maintaining a backflow prevention device register to ensure devices are installed and tested in accordance with ASNZS:3500.	Medium (6)	Gavin S	3	48 months	To start	
WQ23	Risk Assessment 2012/D-12	Investigate options for implementing existing procedure within BSC wo ensure all new assets undergo chlorination and bacteriological testing prior to handover to Council.	Medium (8)	Malcolm T	2	24 months	To start	
WQ24	Risk Assessment 2012/A-2	Formalise, implement and monitor compliance with codes and specifications.	Medium (6)	Andrew S	3	48 months	To start	
WQ25	Risk Assessment 2012/A-3	Investigate telemetry options for Water Wheels at time of upgrade. (e.g. BSC may be able to assume operation of valve with Rous Water maintaining ability to override when needed).	Medium (5)	Tony P	3	48 months	To start	
WQ26	Risk Assessment 2012/A-3	Agreement on chlorine targets as part of Service Level Agreement with Rous Water.	Medium (5)	Rous Water	3	48 months	To start	
WQ28	Risk Assessment 2012/A-6	Develop database to allow for review of water quality results, trends and complaints..	Medium (8)	Andrew S	2	24 months	To start	
WQ29	Risk Assessment 2012/A-6	Investigate options for direct input from labs and field staff into database.	Medium (8)	Andrew S	2	24 months	To start	
WQ30	DWMS Development	Implement a procedure for the ordering and receipt of water treatment chemicals.	N/A	Gavin S	3	48 months	To start	
WQ31	DWMS Development	Implement a procedure for the calibration and maintenance of water treatment and monitoring equipment.	N/A	Tony P	3	48 months	To start	
WQ32	DWMS Development	Develop formal emergency and incident repsonse protocols that include internal procedures for the management of incidents and eergencies, communication requiriements, reporting and review.	N/A	Andrew S	1	12 months	To start	
WQ33	DWMS Development	Develop a procedure for internal and external auditing of the drinking water system.	N/A	Andrew S	N/A	Following idetnification of requirements by NSW Health	On hold	
WQ34	DWMS Development	Review and optimise current operational and verification monitoring processes, including sample locations, frequencies and parameters to address statistical significance, minimum NSW Health Monitoring requirements and improvement of operational control.	N/A	Andrew S	N/A	48 months	On hold	