



# Catchment Management Plan

An overview of Hunter Water's plan for our catchments

# Introduction

**A SAFE AND RELIABLE WATER SUPPLY** begins in our catchments. The quality of the water stored in our dams and sandbeds greatly affects the quality and cost of the water delivered to the community.

Hunter Water has developed a long term Catchment Management Plan for protecting and improving water quality in our rivers and catchments.

The plan identifies activities that can be better controlled to manage risks to drinking water quality from climate change, development and population growth in a rapidly growing Lower Hunter.

Managing the Hunter's catchments requires effective collaboration between a range of stakeholders including Hunter Water, the Catchment Management Authority, local governments, regulators, the agricultural sector, landowners and the community.

Hunter Water's role is to focus on ensuring our community has access to safe and reliable drinking water. We are focused on building strong partnerships to keep our catchments clean.

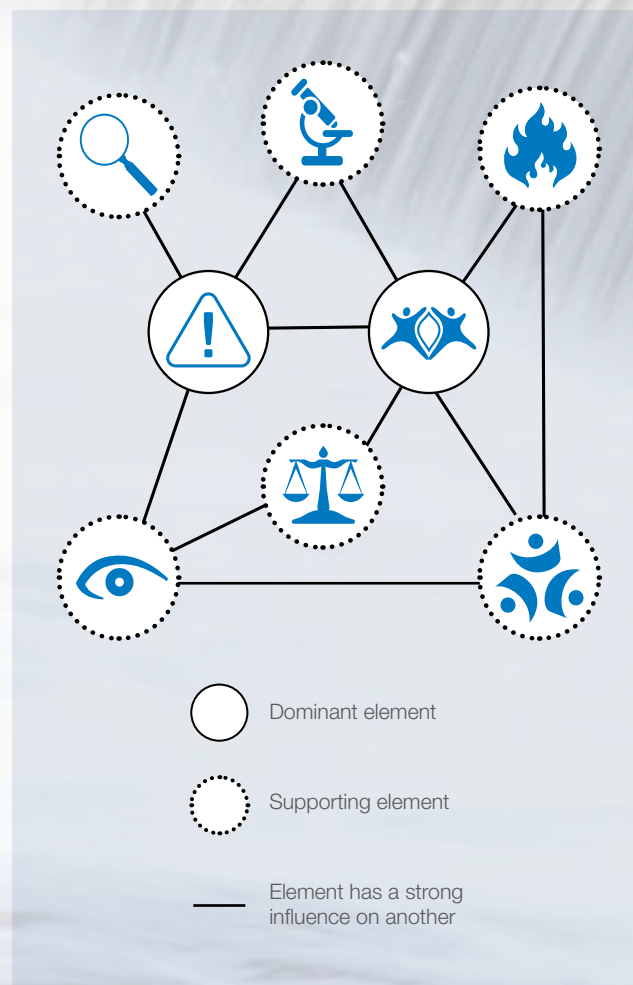
The Catchment Management Plan provides clear priorities for sustainable catchment management and collaboration across stakeholder groups to ensure safe drinking water for our region.

## The eight element Catchment Management Plan

A wide review of other water authorities, regulations and water quality management guidelines revealed that Australian and international leaders in catchment management effectively implement eight principles. Hunter Water intends to implement these elements to minimise water quality risks in our catchments.

The plan promotes future planning in three time horizons – short term, medium term and our vision for the future. It will be reviewed every four years in consultation with catchment stakeholders as understanding of our catchments develops and new recommended practices emerge.

-  **Element 1: Identify the top hazards**
-  **Element 2: Have effective legislation**
-  **Element 3: Work with stakeholders**
-  **Element 4: Monitor high risk areas**
-  **Element 5: Foster research**
-  **Element 6: Perform proactive surveillance**
-  **Element 7: Engage the community**
-  **Element 8: Plan for emergencies**

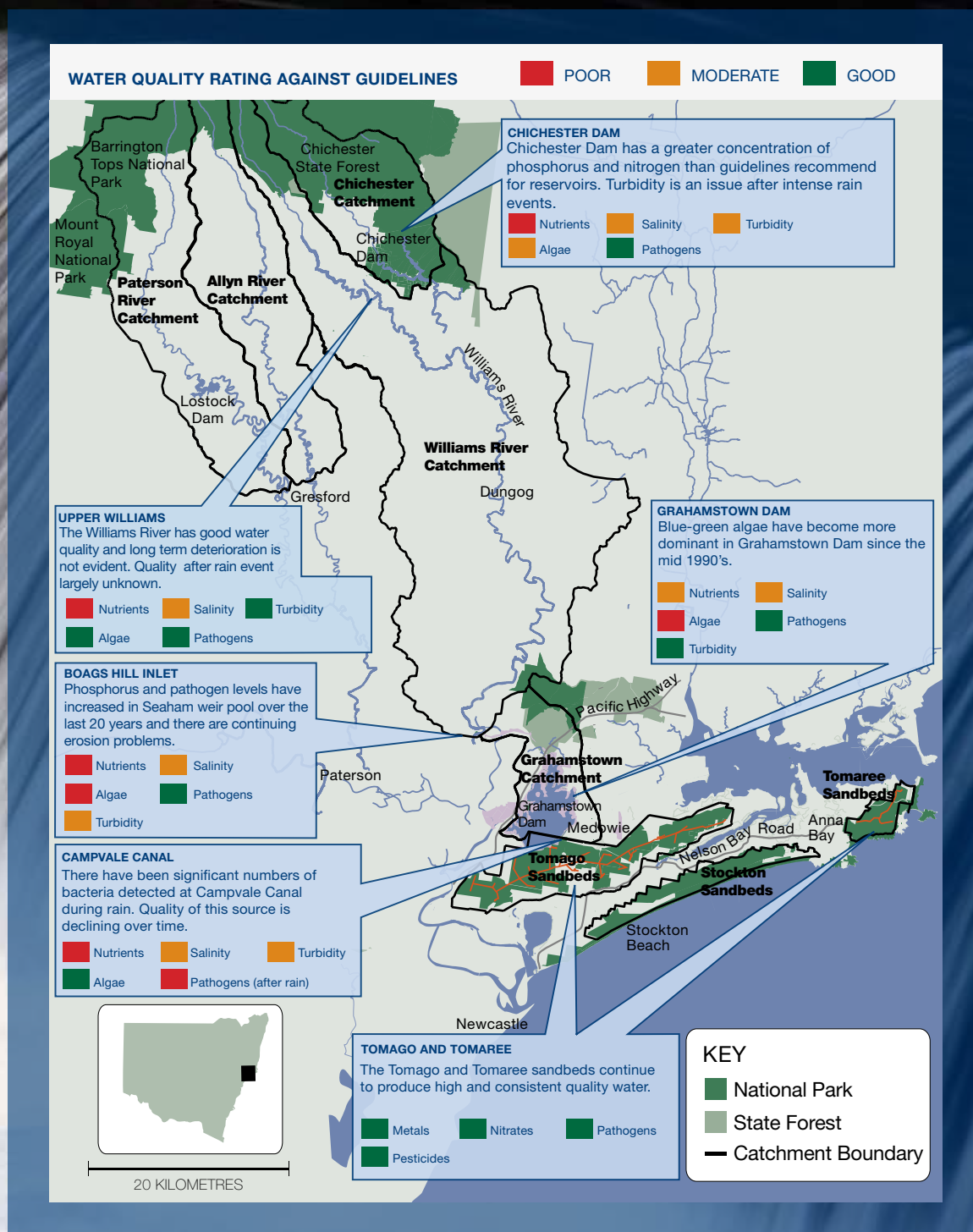


This influence diagram demonstrates the connections between the eight elements in Hunter Water's Catchment Management Plan.

# Water quality in our drinking water catchments

**A SNAPSHOT OF WATER QUALITY** in Hunter Water's catchments shows that water quality varies across catchment sites.

Each catchment has its own risks, characteristics and resulting water quality. Runoff from urbanised areas into surface water catchments currently poses the greatest risk to source drinking water quality.



Water quality in Hunter Water's legislated catchments. (Source: Hunter Water Biennial Water Quality Reports, 2006 until present).



# Element 1: Identify the top hazards

## OUR OBJECTIVE

To develop a better understanding of our catchments so we can make informed decisions about their future management.



*Poultry farms in a catchment.*

## HOW WE WILL DO IT

After researching the various methods to identify and rank the hazards of catchments and the potential impact to water quality, Hunter Water has adopted an innovative GIS based catchment model developed by the Sydney Catchment Authority.

This model is the foundation on which we make decisions about our catchment priorities and will involve a map of areas that theoretically pose the highest pollution risk to water reserves.

The maps are created in a user friendly format with a strong scientific basis. Initial tests on the Grahamstown Catchment have produced maps that are similar to our on-ground experience.

Hunter Water aims to have determined the most significant water quality hazards in catchments, ranked the priorities and scoped remediation work by 2013.

The catchment model will allow remediation effort to be addressed in priority order and ensure that it is cost effective.

## KEY OUTCOMES

The top catchment priorities are ranked using the catchment model and funding to address catchment priorities is requested in Hunter Water's 2013 price submission.

Priority risk areas are sequentially addressed with on-ground work, ongoing stakeholder engagement and community education programs. The model is continually refined and rerun.

The catchment model becomes an industry leading package and is integrated into many land use change decision making processes. Improved land use practices are reflected in reduced hazards identified by the catchment model.

*Short term 2011 - 2013*

*Medium term 2013 - 2017*

*Our vision for the future 2017 - beyond*





# Element 2: Have effective legislation

## OUR OBJECTIVE

To strengthen legislation in the drinking water catchment to ensure that land is managed with a focus on water quality protection to minimise risk.



## HOW WE WILL DO IT

Effective legislation refers not only to the strength and clarity of the rules governing catchment land use, but also their integration into local planning.

The consequences of improper development control in catchments include increased risk and cost to consumers.

Hunter Water will clarify the legislation through improvements to the Hunter Water Regulation 2010. We will also work to integrate this legislation into local planning and processes over the next two years.

We will also continue to investigate other opportunities for increased protection through effective legislation tools.



## KEY OUTCOMES

The Hunter Water Regulation 2010 becomes embedded in planning instruments and source water quality is regularly considered in planning decisions.

Hunter Water, councils and NSW Department of Planning work closely in local and regional land use assessment processes, including implementation of best practice stormwater treatment requirements.

Integration of legislation into local and regional planning instruments means significant land use changes always apply best practice assessment tools to minimise the impact on receiving water.

Short term 2011 - 2013

Medium term 2013 - 2017

Our vision for the future 2017 – beyond

## Possible impacts of inappropriate development controls

Increase in the difficulty of maintaining effective treatment

Increase in risk of pollutants entering treatment system

Increase in health risk to consumers

Increase in cost and complexity of water treatment

Abandonment of catchments in extreme cases

Decrease in the reliability of the water source



# Element 3: Work with stakeholders

## OUR OBJECTIVE

To promote partnerships across stakeholder groups for more effective management of drinking water catchments.



Swamp in the Tilligerry State Conservation Area, within the Tomago Sandbeds Catchment.

## HOW WE WILL DO IT

Stakeholders in the management of the total water cycle, not only the traditional service components such as water delivery and stormwater, must work together in catchments to improve water quality.

Hunter Water currently has good relationships with a diverse range of catchment stakeholders, having representatives on several committees throughout the region.

We will build on current stakeholder relationships through ongoing consultation with the aim of furthering all elements within this plan. New stakeholders will be identified and relationships built upon.



Balikera Pump Station, Grahamstown Dam.

## KEY OUTCOMES

Discussions held between a broad range of stakeholders reveals the connections that can be leveraged in catchments and promotes drinking water catchment issues.

Stakeholder connections are enhanced and Hunter Water begins to influence land use activities in catchments.

Drinking water catchments are considered in all aspects of town planning, from local scale land use planning to regional master planning.

Short term 2011 - 2013

Medium term 2013 - 2017

Our vision for the future 2017 – beyond



Aerial of Grahamstown Dam.



# Element 4: Monitor high risk areas

## OUR OBJECTIVE

To ensure that Hunter Water’s water quality monitoring program effectively detects changes in source water quality.



Campvale Canal, Medowie.

## HOW WE WILL DO IT

Water treatment plants are designed to remove all harmful pollutants from the source water. It is essential to identify and monitor the highest pollution risks in catchments so that treatment plants can be appropriately designed.

A good monitoring program also allows change over time in various parts of the catchments to be tracked.

Hunter Water will continue to maintain widespread baseline sampling, adding targeted samples of runoff from rain events at sites that pose the highest risk in catchments.



Illegal dumping of vehicle in Grahamstown Catchment.

## KEY OUTCOMES

Complete peer reviewed Source Water Monitoring Program that optimises data collection and aligns monitoring with high risk areas.

The Source Water Monitoring Program is fully implemented with the appropriate mix of regular and event sampling; data is easily stored and retrieved using GIS based technology.

Catchment data collection is routinely reviewed to analyse the highest risks; data storage is spatially referenced and easily extracted by all stakeholders.

Short term 2011 - 2013

Medium term 2013 - 2017

Our vision for the future 2017 – beyond



Erosion, Upper Chichester River.



# Element 5: Foster research

## OUR OBJECTIVE

To better pursue collaborative funding opportunities for targeted local catchment research.



Groundwater level research, North Stockton Catchment.

## HOW WE WILL DO IT

Our understanding of catchments changes over time as the population grows and science improves. It is essential to be involved in national and local catchment research to have quality information that enables informed decisions.

Hunter Water will endeavour to direct catchment research towards priority knowledge gaps, in particular land use and water quality data. We will have a research and development program that leverages our local university and those organisations with expertise in catchment management.

It is envisaged that within the next few years the outcomes of the catchment model will significantly inform catchment research priorities.

## KEY OUTCOMES

Research of identified knowledge gaps in catchments is promoted, particularly at the University of Newcastle, focusing on informing the catchment model.

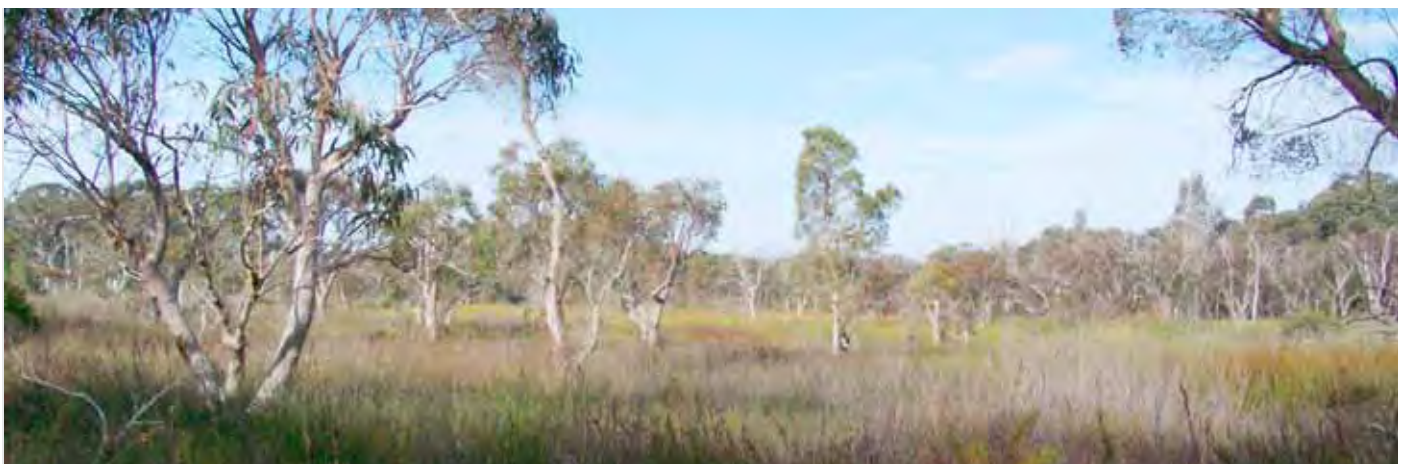
Specific funding is allocated to identified areas of need and the outcomes begin to inform management decisions.

Collaborative funding opportunities are leveraged; drinking water catchment research is a scientific focus at the University of Newcastle.

Short term 2011 - 2013

Medium term 2013 - 2017

Our vision for the future 2017 – beyond



The Tomago Sandbeds is home to some unique vegetation communities.





# Element 6: Perform proactive surveillance

## OUR OBJECTIVE

To perform regular, documented surveillance of catchments.



Catchment survey, Allyn River Valley.

## HOW WE WILL DO IT

Gathering knowledge about catchments is an essential foundation of the risk assessment process.

Hunter Water currently employs Rangers to undertake surveillance of the catchments.

We will implement programmed surveillance of each catchment so that catchment condition information can be recorded and shared. Risk areas will be identified and we will work with the community to reduce these risks and better inform future water planning.

This work will ultimately improve the quality of catchment risk assessments.



## KEY OUTCOMES

Formalised surveillance begins, supported by a record keeping system that allows dissemination of information and actions.

Surveillance becomes routine and embedded into staff duties. Procedures are automatic and information is easily available.

Regular and documented surveillance is routinely performed in catchments, informing operational and planning arms of Hunter Water.

Short term 2011 - 2013

Medium term 2013 - 2017

Our vision for the future 2017 – beyond



Agriculture on the Williams River.



# Element 7: Engage the community

## OUR OBJECTIVE

To inform, connect with and empower the community to make a positive change in catchments.



## HOW WE WILL DO IT

Hunter Water’s catchments are approximately 65 per cent privately owned. It follows that land users have arguably the greatest ability to make a difference to water quality in catchments.

We have begun to implement methods to inform and engage the community, including the development of a Catchment Communication Plan with the assistance of other catchment stakeholders.



## KEY OUTCOMES

Catchment signage and effective media opportunities are identified; opportunities to promote catchment management information are supported.

Catchment signage and effective media opportunities are resourced; community becomes more connected with drinking water catchments.

The community is empowered to make positive change to their activities in catchments and is supportive of Hunter Water’s catchment initiatives.

*Short term 2011 - 2013*

*Medium term 2013 - 2017*

*Our vision for the future 2017 – beyond*





# Element 8: Plan for emergencies

## OUR OBJECTIVE

To mitigate the risk of uncontrolled bushfire causing injury, damage or loss of water supply.



## HOW WE WILL DO IT

In the future, it is likely that South-Eastern Australia will see larger and more frequent bushfires due to the increase in fire-weather risk brought about by global warming.

Water from areas recently burnt by a bushfire can be difficult and expensive to treat to drinking water standard. In addition, the forested catchments have valuable and critical water assets such as borefields treatment plants that need protection from bushfire.

An expanded Bushfire Management Plan (BMP) that sets out best practice in relation to fire preparedness, emergency response and catchment recovery will be developed to address the risk of bushfires.

This plan will complement Hunter Water’s Incident Response Plan and other regional management plans.

## KEY OUTCOMES

A Bushfire Management Plan (BMP) that focuses on three areas – Hunter Water’s bushfire preparedness, response during a fire and post bushfire recovery.

The BMP is accepted and endorsed by all parties in the region; mock incidents are run.

The BMP is integrated into all other regional bushfire plans, other stakeholders are engaged in modifying its structure and it is methodically tested.

*Short term 2011 - 2013*

*Medium term 2013 - 2017*

*Our vision for the future 2017 – beyond*





Cover image: Paterson Gorge, Upper Paterson River.  
Photo above: Aerial of Grahamstown Dam.

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