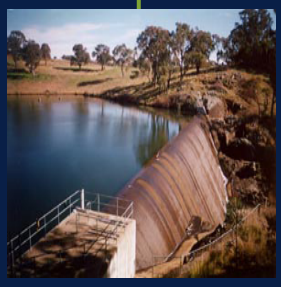

Final Report

Central Tablelands Water
Weddin Shire Council
Blayney Shire Council
Cabonne Shire Council

Joint Integrated Water Cycle Management (IWCM) Evaluation Study

VOLUME 1 & 2

FEBRUARY 2009

HydroScience Consulting

Central Tablelands Water

Weddin Shire Council

Blayney Shire Council

Cabonne Shire Council

Joint Integrated Water Cycle Management (IWCM) Evaluation Study

Final Report

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Document Control					
Revision	Author	Reviewer	Approved for Issue		
			Name	Signature	Date
Rev2	AFR	ARA	Gidi Azar	G. Azar	11th February 2009

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This report was prepared for the express use of Cabonne Shire Council, Weddin Shire Council, Blayney Shire Council and Central Tablelands County Council in preparing their Integrated Water Cycle Management (IWCM) strategy HydroScience Consulting will have no responsibility for any other use of this report or by any other party.

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Executive Summary

A Joint IWCM Evaluation Study

Cabonne, Weddin and Blayney Shire Councils together with Central Tablelands Water (CTW) are Local Water Utilities (LWUs) in the central west of NSW and have completed this joint IWCM evaluation Study. It is the first time an evaluation study has been performed jointly.

This study has been performed following the NSW Department of Water and Energy (DWE) - Generic Scope of Works – IWCM Strategy (August 2007). DWE supported the development of this report.

Cabonne Shire Council provides water (to parts of Cabonne), sewerage and stormwater services. Blayney Shire Council provides sewerage and stormwater services. Weddin Shire Council provides sewerage and stormwater services. Central Tablelands provides water services to Blayney, Weddin and parts of Cabonne and Cowra Shires.

For this IWCM Evaluation report, issues relating to planning and service delivery for urban water supply, sewerage, and stormwater were identified. An issue is a failure of an LWU to meet its service obligation now or up to 30 years in the future.

This was done through a detailed review of Council information, water demand projections and community consultation through a project reference group made up of stakeholders and community representatives. From this a number of gaps in the available data were identified which have been documented in a data gathering plan.

All IWCM issues have been analysed to assess whether they can be addressed by existing or formally adopted actions and capital works described as a "Business as Usual scenario". Where such firm commitments to address the issues are not currently in place, options have been identified to address them as either:

- A Simplified Strategy, where all of an LWU's issues are addressed by Local Best Practice, minor capital works or major capital works in 10 years or more. Only one solution needs to be developed for the simplified strategy.

Or

- A Detailed Strategy involving significant capital works within the next ten years. If significant capital works are required within the next ten years then a detailed strategy involving development and evaluation of multiple scenarios is required.

As indicated in the table on the next page, it is likely that all four LWUs will need to do significant capital works within the next ten years requiring development of detailed strategies.

Future Directions and Solutions

Each Council is focussed on a number of concerns and actions:

CTW is actively considering expanding Lake Rowlands, its major surface water storage, from 4500ML to 26,500ML, to provide a more secure supply. CTW has also developed a $10M capital works program to replace aging trunk mains.

Cabonne Shire is currently implementing a $17M program of sewering Manildra, Cudal, Cumnock and Yeoval. Cabonne provides non potable chlorinated raw water supply to Cumnock and Yeoval which may in the future be upgraded to potable. There is also the possibility of upgrades to Molong, Canowindra and Eugowra sewage treatment plants (STPs) over the next 30 years. Other items under consideration are drought security and internal funding arrangements to ensure support for capital works programs.

Blayney Shire has identified the expansion of sewer services to Carcoar and Mandurama and possibly Lyndhurst in future works programs. There may be a requirement to expand Blayney STP to cater for growth beyond that previously identified.

At Weddin Shire expansion of sewerage services at Greenethorpe and Quandialla and the need to upgrade Grenfell STP and sewerage are being considered.

Drought

Although drought is not considered an IWCM issue, recent droughts (representing short term climate variations) have demonstrated stresses in Councils abilities to deliver water. Overcoming these intermittent drought issues requires financial investment. Water shortages in neighbouring councils can also affect town water supplies.

Outcomes

Non- IWCM Issues

The only non-IWCM issues identified were flood issues at Quandialla in Weddin Shire.

Recommendations

The recommendations from the Evaluation Study are summarised below.

Council/ organisations	Recommendation	Comments
Weddin	Detailed Strategy study	Weddin Shire Council's intention to investigate sewering of Quandialla and Greenethorpe within the next 10 years triggers a detailed strategy study.
Blayney	Detailed Strategy study	Blayney Shire Council's plans to sewer Carcoar and Mandurama by 2016 involves significant capital works which trigger a detailed strategy study.
Cabonne	Detailed Strategy study	Potential significant capital modifications to Molong STP to meet DECC licence requirements trigger the preparation of a detailed strategy.

Council/ organisations	Recommendation	Comments
Central Tablelands Water	Detailed Strategy study	Uncertainties relating to Lake Rowlands yield and long term climate change scenarios combined with future demand projections make significant capital works in the next 10 years likely. Although drought is not considered an IWCM issue recent droughts represent short term climate variations that have had a large impact. Recent drought experiences combined with the emergency drought connection between Central Tablelands Water and Cowra are underlying reasons that this issue requires consideration. The detailed strategy plan should include a yield study which takes into account CSIRO climate change predictions. It must also include identification and yield assessment of other water sources such as stormwater harvesting, effluent reuse, boreholes and other unused water storages.
Joint actions	That Cabonne, Weddin, Blayney and Central Tablelands councils consider progressing their detailed strategies together	
Others (DWE, DECC etc)	Development of Macro Water Sharing Plans and regional strategies	Outcomes will need to be integrated into Council strategies. Councils will need to use outcomes of IWCM to state their communities long term needs in these processes.

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1 Introduction

1.1 The IWCM Process

The NSW Department of Water and Energy (DWE) in its 2008 IWCM Guidelines, states that DWE developed Integrated Water Cycle Management as a 30 year strategic planning tool for local water utilities.

IWCM is:

- A methodical approach for managing urban water services in a holistic and sustainable manner
- Covers water supply, sewerage and stormwater services
- Identifies issues and formulate solutions to address these

IWCM brings together water supply, sewerage and stormwater within the context of catchment, water resources and urban services and assesses the best approach based on triple bottom line (TBL) criteria - financial, environmental and social.

The matrix below shows the 3x3 framework with three water services, three focus areas and three TBL criteria.

Water Supply	Urban services	Financial
Sewage	Water resources	Environmental
Stormwater	Catchment (incl. sustainability)	Social

IWCM Issues

An issue is a failure of an LWU to meet its service obligation now or up to 30 years in the future. A service obligation may be a clearly defined regulatory requirement or less clearly identified community preference. Councils Levels of service may fall in either category.

The IWCM process allows local water utilities (LWUs) to address current and potential future issues.

1.2 A Joint IWCM Approach – This Report

This report is presented in two volumes. Volume 1 provides an overview of the process undertaken to develop the study and the outcomes. Volume 2 contains the detailed supporting information and analysis that underlie Volume 1.

This study represents a new stage in the development of IWCM. For the first time four LWUs have worked together to examine their water issues in a joint study.

In late 2007 Cabonne, Weddin and Blayney Shire Councils together with Central Tablelands Water County Council (CTW) decided that given their mutual interrelationships in water cycle

management there would be advantages in preparing a joint IWCM. The first letters of each Council: Cabonne, Weddin, Blayney and Central (CWBC) were used to name the project.

There was recognition that a joint integrated planning process for water, sewerage and stormwater would provide a balanced approach to addressing these issues. There was also the expectation that working jointly there would be cost savings due to synergies and economies of scale.

It was also recognised that Councils had different geographical/social needs and issues due to different infrastructure and customer bases.

The Councils resolved to progress development of a joint IWCM evaluation study, the first of two stages of the IWCM. CTW's General Manager subsequently met with DWE IWCM staff in Sydney who supported the approach, recommending that the newly developed evaluation study approach might be more suitable than the previous concept study approach.

1.3 Overview of Existing Water Systems and Resources

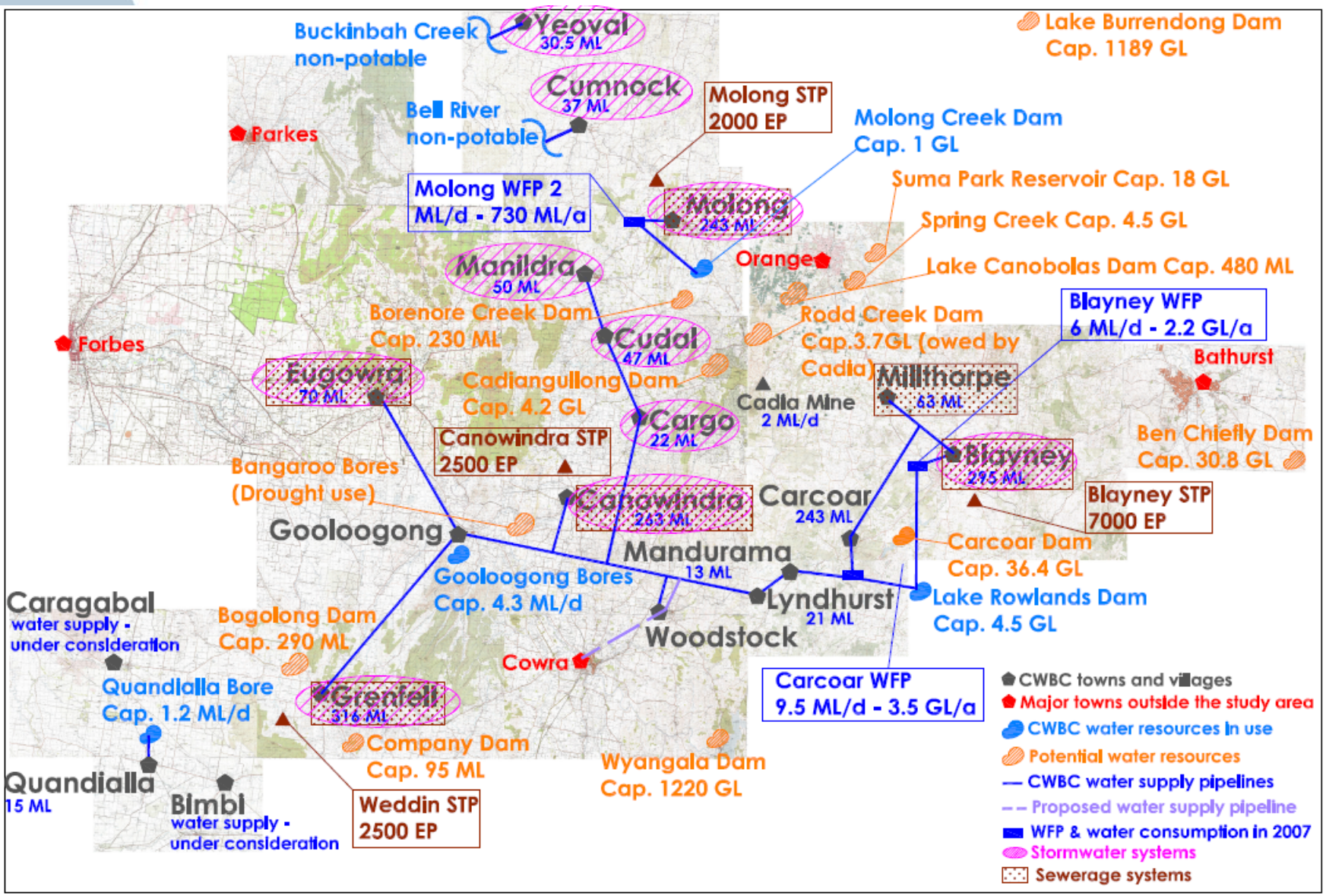

Figure 1: Study Area

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This study covers the four councils LWU responsibilities. Figure 1 above shows the key water resources and infrastructure for the region. An overview of each member councils systems is provided below.

Water Supply Schemes

Central Tablelands Water (CTW) supplies potable water to Blayney and Weddin Shire Councils and some towns and villages within Cabonne Shire Council. Bulk water supply is also provided to Cowra Shire Council to service the villages of Woodstock and Gooloogong.

CTW's major water sources are Lake Rowlands and Gooloogong bores, although Bangaroo bores are used in drought. CTW operates two water filtration plants, Blayney and Carcoar Water Filtration Plants.

Cabonne Shire council (CSC) supplies potable water to the town of Molong and non potable water to the villages of Cumnock and Yeoval and the area known as Delgany Estate. The rural areas of Toogong, Nashdale and Borenore are not supplied by CSC and rely on rainwater tanks.

CSC's major water sources are Molong Creek Dam and Borenore Creek Dam. Water from these sources is treated at Molong Water Filtration Plant, operated by CSC.

Detailed descriptions of each LWU's system boundaries and description of water service infrastructure are presented in Volume 2 in sections 1 and 3, respectively.

Wastewater Schemes

Blayney Shire Council (BSC) provides sewerage services to the township of Blayney and the village of Millthorpe. Sewage from these towns is treated at Blayney Sewage Treatment Plant. Other villages within BSC are serviced by septic tanks. Detailed description of this sewerage scheme is provided in Volume 2 in section 4A.

Weddin Shire Council (WSC) provides sewerage services to the urban areas within the town of Grenfell. WSC operates the Grenfell Sewage Treatment Plant. Detailed description of this sewerage scheme is provided in Volume 2 in section 4B.

CSC provides sewerage services for the towns of Molong, Canowindra and Eugowra. Sewage from these villages is treated at Molong, Canowindra and Eugowra Sewage Treatment Plants, respectively. Other villages within CSC are serviced by septic tanks. Detailed description of this sewerage scheme is provided in Volume 2 in section 4C.

Stormwater Schemes

BSC is responsible for stormwater management within Blayney. A description of the stormwater system in Blayney is provided in Volume 2 in section 4A.

WSC has a primary responsibility for urban stormwater management in Grenfell. A description of the stormwater system in Grenfell is provided in Volume 2 in section 4B.

CSC owns and operates stormwater systems in the towns and villages of Molong, Cumnock, Yeoval, Canowindra, Cargo, Eugowra and Manildra. Descriptions of the stormwater systems in these villages are provided in Volume 2 in section 4C.

Catchments

The study area falls within two major catchments in NSW. To the north, most of Cabonne's systems (e.g. Molong Creek Dam) are in the Macquarie River catchment. To the south Central Tablelands Water (e.g. Lake Rowlands), Blayney and Weddin Shires fall within the Lachlan River Catchment.

Water Resources

Within the region there are a number of water resources. Lake Burrendong and Wyangala Dam are major storages. Suma Park, Spring Creek, Gosling and Lake Canobolas Dams are operated by Orange City Council. Ben Chifley dam supplies Bathurst. Carcoar dam provides water for agricultural use and recreation. Bogolong and Company Dams are located in Weddin Shire and are not in use at present. Yeoval and Cumnock are supplied from the Buckinbah and Bell rivers. The connection of Cowra to CTW's main system will provide drought connection linking the Lachlan River below Wyangala to CTW's system supplied by Lake Rowlands. This pipeline is under construction.

There are numerous bore fields throughout the region.

Reuse schemes operate in Canowindra, Eugowra and Grenfell. Cadia mine utilises the majority of Blayney's STP discharge.

Although Orange City Council is developing and extensive stormwater harvesting scheme there are no stormwater harvesting schemes within the CWBC study area.

2 Methodology

2.1 Scope of Works

Up until recently, IWCM strategies had been developed as a two-stage process beginning with a Concept Study and finishing with a Strategy Study. In August 2007 the NSW Department of Water and Energy (DWE) developed a "draft Generic Scope of Works" that details the new approach. This CWBC study closely follows this 2007 guidance material. In late 2008 DWE issued a revised 2008 IWCM guide. Wherever possible this study has been modified to address the revised guidance material.

The 2008 DWE guidance states that in the new IWCM approach there are two stages:

- IWCM Evaluation (this report): Lists all utility and urban water service targets and identifies all the issues relating to planning and service delivery for urban water supply, sewerage, and stormwater over the next 30 years. It examines what issues
  - can be addressed by existing or formally adopted actions and capital works (Business as Usual scenario)
  - remain to be addressed requiring either a Simplified or a Detailed Strategy
- IWCM Strategy: If there are remaining water, sewerage or stormwater issues; an IWCM strategy is developed. Where significant capital works are not required within 10 years a simplified strategy can be undertaken. Only one solution needs to be developed for the simplified strategy. If significant capital works are required within the next ten years then a detailed strategy involving development of multiple scenarios is required.

2.2 CWBC Evaluation Study

An evaluation study is the foundation document of the IWCM process. It identifies the LWU's obligations and operating circumstances and defines IWCM issues. It considers existing LWU actions and commitments by developing the "business as usual scenario" (BaUS). It defines the remaining issues not solved by the BaUS.

The methodology for completing the joint Evaluation Study for the four Councils had three key stages:

- Form a steering committee and project team, identify members of the project reference group (PRG) and gather all relevant information (with representatives from each Council and DWE). The PRG consists of community and stakeholder representatives.
- Review data, identify data gaps and identify issues (including issues identified by the PRG).
- Develop an understanding of what existing committed actions fall within a BaUS and assess whether, for each Council, all issues could be solved by this, in which case a further Strategy Study will not be required. If issues remain unsolved then recommend the form of the next IWCM stage (simple or detailed strategy).

2.2.1 Receipt and Review of Council Data and Map the System

Initially the four Councils gathered all the available relevant data and information on the catchment, water resources and urban environment. The data was collated, recorded and reviewed by the project team.

2.2.2 Determine System Boundaries

Boundaries of the water and wastewater systems with reference to maps, Local Government Areas, geographical features and other information were then documented (See Vol 2 – Section 1).

2.2.3 IWCM Related Targets, Obligations and Requirements - Issues Identification

The key catchment, water, urban and legislative obligations, targets and requirements were then reviewed and summarised. From this relevant data gaps and IWCM issues were documented (See Vol 2 – Section 2).

2.2.4 Demand Projections and Urban Water Supply - Issues Identification

Descriptions for all key existing urban water supply systems were developed.

- Infrastructure (water source, extraction licences, current secure yield, processes, assets, size, operation maintenance and administrate (OMA) cost, tariffs and charges, performance, rainwater tanks, grey water) identifying asset issues.
- 30 year demand projections were developed.

The demand was projected using the DWE climate correction model. The outcome were summarised in a report which also included a description of water supply and usage, and analyses of:

- Historical Demand
- Future Water Demand Needs
- Rainwater Tank Assessment

An assessment of the benefits of rainwater tanks within the areas was undertaken using the DWE model. From this, relevant data gaps and IWCM issues were documented (See Vol 2 – Section 3).

2.2.5 Catchment, Water Resource, Urban Environment, Sewerage Scheme and Stormwater Review

A detailed review of issues in these categories was performed for Blayney, Weddin and Cabonne shire local government areas (See Vol 2 – Section 4A, 4B and 4C).

This involved the following approach:

1. Catchment

Where data was available, description of the catchments within which the Councils operate was developed, thereby setting a context for urban water availability.

2. Water resources

A summary was developed of water resources available for urban use within the Councils operational areas.

3. Urban environment

A detailed description was developed of:

- The local communities
- Water service infrastructure
- Water service customers
- Water service management for all operational LWU areas.

4. Sewerage scheme

Where data was available, a description of the systems by type, age and condition was documented including sewage treatment plants, on-site and reuse under Council control. This includes details of major customers and flows and current effluent management strategies.

Where possible, future volumes were estimated with an analysis of current infrastructure ability to meet these future needs.

5. Stormwater system

Where information was available, system descriptions were developed and relevant findings of Stormwater Management Plans were summarised. Where information was available stormwater harvesting and water sensitive urban design (WSUD) opportunities were reviewed.

From this, relevant data gaps and IWCM issues were documented.

2.3 Data Gaps and IWCM Issues

The key focus of the Evaluation Study was the identification of the following:

- IWCM issues and their solutions
- Data gaps and suggested solutions.

2.3.1 Identification of Data Gaps

Through the review process above a number of key data gaps were identified. In some cases extra data was identified to fill the gap or reasonable assumptions were used to address the gaps. However in a number of cases the lack of data meant that the status of issues is unknown or unclear.

These data gaps have been identified and an action plan to address these data gaps identified (See section 4.1 below).

2.3.2 Collate IWCM Issues

Through the review described above, current and potential issues in the water cycle systems were identified. This involved comparing information and data assembled above with established catchment, water, urban and legislative targets and objectives. These were found in a number of sources including:

- Australian Drinking Water Guidelines (2004)
- Catchment Action Plans
- Council Strategic Business Plans
- Council's annual TBL Performance Reports
- NSW Best-Practice Management Guidelines, 2007
- Relevant legislation
- Customer levels of service
- Department of Environment and Climate Change (DECC) licensing performance monitoring

From this, a preliminary list of all the urban issues both current and anticipated over the next 30 years was developed for presentation to the project reference group (See Vol 2 – Section 6).

2.3.3 Consideration of Community / Project Reference Group Issues

The IWCM process recommends the assistance of a project reference group (PRG) which represents interested and relevant stakeholder groups. The Steering Committee identified invitees to join this group. This group identified community and customer issues and commented on the issues that emanated from the review described above.

The initial PRG meeting was held at Blayney on 13 November 2008 (Appendix A - PRG Minutes). Dr Pamela Stark, Principal, The Middle Way was the independent facilitator. Group members were asked to:

- Discuss the preliminary list of issues identifying any additional issues
- Rank issue according to priorities
- Where possible, identify current or planned actions to address any of the issues
- Where possible, suggest options for addressing any outstanding issues

The PRG workshop was conducted in two parts held sequentially on the same day. The morning session included representatives of government agencies (inter agency). The afternoon session included participants of the morning session, community representatives, Councillors and staff (community and customer).

The preliminary issues list was modified and added to in the meeting. From this a final issues list was developed.

2.3.4 Opportunities for Solving the IWCM Issues

Draft Evaluation Study

2.3.4.1 Solving IWCM Issues with the Business as Usual Scenario

The final issues list was then considered against the actions that Councils have already formally committed to. Formal commitments are DWE's criteria for such actions addressing issues as "Business as Usual" Scenario (BaUS). By considering to what extent the issues have been addressed by the BaUS, a conclusion has been reached as to what further IWCM work is required.

2.3.4.2 Remaining Issues Unsolved by BaUS

This draft Evaluation Study report documents the issues that the BaUS addresses.

For issues not addressed by the BaUS this report documents proposed identified options where significant capital works appear likely within the next ten years. These issues will trigger a further detailed IWCM strategy study. Examples of such significant capital works that have been identified were new Sewage treatment schemes in Blayney and Weddin for unsewered villages, major CTW pipeline enhancements and the likely need expand Lake Rowlands.

Where IWCM issues cannot be addressed by BaUS and do not require a detailed study, a local best practice scenario was identified and a simplified strategy study was suggested.

Final Evaluation Study

When the steering committee provides final comments, this draft Evaluation Study will be finalised.

3 Data Gaps Action Plan

3.1 Data Gap Status

A number of data gaps have been identified in the preparation of this report. The table below lists all the data gaps, cites the location of the discussion of their context in Volume 2, and ranks the importance of the information and suggests actions to address the gap.

Key:

H = High. Data that was required for this Evaluation Study but is still pending. Required for IWCM strategy.
M = Medium. Data Important - needs to be gathered within 6 to 12 month (generally required to complete IWCM strategy)
L = Low. Data needs to be gathered within next 5 years (before next IWCM study is required)

3.2 Data Gap Action Plan

3.2.1 Blayney Shire Council

Item	Reference	Data Gaps	Importance	Strategy to address the gap / recommendation
1	TN2.2	Performance against SBP levels of service for 2007/8	M	BSC to identify performance and advise
2	TN4A	Up to date vegetation map	L	BSC to request CMA to provide
3	TN4A	whole Blayney zoning map	M	BSC to integrate zoning maps
4	TN4A	economic value of major industries	M	BSC to identify economic value of major industries
5	TN4A	Do the environmentally sensitive areas (shown in the DWE and DECC maps in TN4A) impact LWU ability to meet levels of service now and in the future? Is there any planned development in these areas that might impact water resources and quality?	M	BSC and CTW to identify existing and planned developments within the sensitive areas shown in the maps
6	TN4A	Is there any regional catchment plan?	M	BSC to write to CMA general manager requesting advice on this
7	TN4A	Updated information about Belubula Dam	M	BSC to assess Belubula Dam capacity, and identify dam usage
8	TN4A	Central West specific Water Sharing Plans for Blayney Shire	L	DWE to be contacted by CTW regarding status of relevant water sharing plan
9	TN4A	Has Carcoar Dam water quality improved?	H	BSC to contact State Water regarding dam water quality

Item	Reference	Data Gaps	Importance	Strategy to address the gap / recommendation
10	TN4A	Infill and new development predictions	M	BSC to document this in a infill and new development report
11	TN4A	2006/07 and 2007/08 Blayney land development type figures	M	BSC to update State of Environment Report data
12	TN4A	2006/07 and 2007/08 Blayney type of subdivisions figures	M	BSC to update State of Environment Report data
13	TN4A	Location of Cadia Mine PS and King George Oval PS in the schematic diagram of Blayney PS scheme	H	BSC to update BSC SOIR (2007) schematic diagram to include these pump stations
14	TN4A	Current sewage characteristics based on types of users	M	BSC to develop a annual report including this information
15	TN4A	Latest DWE TBL performance report	H	BSC to provide copy of the report recently provided to DWE
16	TN4A	Description of the stormwater system	L	BSC to prepare a stormwater report to include stormwater system diagrams and description of the system
17	TN4A	Stormwater flows	L	BSC to prepare a stormwater report containing this information
18	TN4A	Stormwater infrastructure capacity	L	BSC to prepare a stormwater report containing this information
19	TN4A	Flood study	L	BSC to prepare flood study identifying flooding issues and costs
20	TN4A	Potential areas that could be utilised for Water Sensitive Urban Design schemes such as stormwater harvesting	M	BSC to prepare water sensitive urban water design report that reviews opportunities including stormwater harvesting
21	TN4A	updated map of the sewerage reticulation system	L	BSC to develop general updated sewerage reticulation map covering Blayney Millthorpe system

3.2.2 Weddin Shire Council

Item	Ref.	Data Gaps	Importance	Strategy to address the gap / recommendation
1	TN2.2	Status of actions concerning Company Dam required by Dam Safety Committee.	H	WSC to provide list of actions and status.
2	TN2.2	Status of 2008 performance against 2004 Levels of Service	M	WSC to advise
3	TN4B	▪ Which stream shows increased salinity level? ▪ Salinity levels	M	WSC to request salinity information from CMA
4	TN4B	Impact of contaminated site on water quality	L	WSC to provide results of contaminated site study, when available
5	TN4B	salinity levels in runoff (in Weddin Shire)	M	WSC to formally request advice on this from CMA
6	TN4B	water quality and macro-invertebrate data for Emu Creek	L	WSC to undertake water quality assessment of Emu Creek and formally request advice from DECC on macro-invertebrate
7	TN4B	Do these environmentally sensitive areas impact LWU ability to meet levels of service now and in the future? Is there any planned development in these areas that might impact water resources and quality?	L	WSC to meet with DECC to identify potential developments in sensitive areas that might impact water resources and quality
8	TN4B	Water degradation issues couldn't be identified because the WCAP (1999) report has not been provided Is there any other relevant catchment plan?	M	WSC to formally request advice on any other relevant catchment plans
9	TN4B	Water resources locations in Bimbi	H	WSC to formally request documentation of water resources in Bimbi from DWE will provide groundwater report to BSC and CTW.
10	TN4B	Is there any water sharing plan and what is it status?	L	CTW to request details of water sharing plans and their existing status from DWE
11	TN4B	Is there any environmental impact regarding water resources within WSC?	L	WSC to request DECC to provide advice of environmental impact of water resources within WSC e.g. Company Dam
12	TN4B	Infill and new development	M	WSC to document this in a infill and new development report

Item	Ref.	Data Gaps	Importance	Strategy to address the gap / recommendation
13	TN4B	Type and number of commercial buildings, subdivision and developments Type and number of industries (including water demand) Recreational interests and areas for recreation	M	WSC to provide detailed information regarding this. CTW to assist.
14	TN4B	WSC Development Servicing Plan for sewerage services	M	WSC to comply with best-practice
15	TN4B	Sewage treatment works units and capacities of each unit	H	WSC to assess STP treatment unit capacities and provide
16	TN4B	Does WSC have sensitive water quality requirements?	M	WSC to contact DECC regarding sensitive water requirements and advise
17	TN4B	Latest DWE TBL performance report	M	WSC to provide
18	TN4B	Information about number of urban properties (assessments) that will be provided with sewerage services	M	WSC to provide
19	TN4B	WSC to confirm sewerage future works and capital works program	M	WSC to review and update 2004 SBP capital works program and provide updated report
20	TN4B	Update growth projection figures	M	WSC to review 2004 growth projections and provide updated projections
21	TN4B	Equivalent population projections (future sewer load) Hydraulic loading assessment Analysis of the ability of the current sewerage infrastructure to meet future needs including collection and disposal of future loads Sewer overflow investigation report Wet and dry weather flows Likelihood of sewer overflow	M	WSC to implement study to identify the information in the list on the left
22	TN4B	Current development (if any) and their impacts on the existing sewerage system. Current and future potential reuse markets	M	WSC to provide short report containing information on this

Item	Ref.	Data Gaps	Importance	Strategy to address the gap / recommendation
23	TN4B	Stormwater flows (volume, location)	L	WSC to prepare a stormwater report containing this information
24	TN4B	Has the 2001 SMP information been updated?	L	WSC to update point sources of pollution table status from 2001 SMP
25	TN4B	Stormwater pollution loading data	L	WSC to identify if there are pollution loading sources in the stormwater system. If unknown then over the next five years this should be studied and reported
26	TN4B	Diffuse source of stormwater pollution in Grenfell	L	WSC to identify if there are diffuse source of stormwater pollution in the stormwater system. If unknown then over the next five years this should be studied and reported
27	TN4B	Stormwater infrastructure capacity	L	WSC to prepare a stormwater report containing this information
28	TN4B	Has WSC included any stormwater work into Council's current capital works schedule since 2004?	L	The answer is No at Jan 2009. WSC to review existing capital works program and provide update Expected to go into FMP process flood study.
29	TN4B	Is the SMP monitoring / reporting mechanism being implemented?	L	WSC to communicate status of this. At Jan 2009 the answer appears to be No.
30	TN4B	Flood study including flooding issues and costs related	L	WSC to progress Emu Creek Flood Study and provide
31	TN4B	Is there any further area where WSUD could be implemented?	M	WSC to prepare water sensitive urban design report that reviews opportunities including stormwater harvesting

3.2.3 Cabonne Shire Council

Item	Ref.	Data Gaps	Importance	Strategy to address the gap / recommendation
1	TN2.2	CSC OH&S plan and performance	H	CSC to provide copy of OH&S plan and performance information
2	TN2.2	Status of DSC and DWE actions regarding Molong Creek and Borenore Dams.	M	CSC to provide advice on status of actions identified by Dam Safety Committee and DWE
3	TN2.2	Detailed 2008 performance against 2008 draft Levels of Service for Water supply detailed above	M	CSC to provide detailed performance information
4	TN2.2	Detailed existing 2008 performance against above 1997 Levels of Service for sewerage above	M	CSC to provide detailed performance information
5	TN3	Latest DWE TBL performance report for water supply	H	CSC to provide
6	TN3	CSC daily water consumption data	H	CSC to implement accurate daily water consumption electronic recording system
7	TN4C	Tourism and population numbers, accommodation and recreational interests	H	CSC to advise on this
8	TN4C	Is there any other major water licence holder within Cabonne? e.g. mining, irrigators	L	CSC to formally request details of water licence holders in CSC area
9	TN4C	▪ Number of wineries in the area and their water consumption, if major ▪ Economic value of these significant industries	L	CSC to formally request advice from NSW DPI and DWE
10	TN4C	Has any of the flood mitigation options identified in the floodplain management studies been implemented?	H	CSC to provide information and status on flood management studies
11	TN4C	Do these environmentally sensitive areas impact LWU ability to meet levels of service now and in the future? Is there any planned development in these areas that might impact water resources and quality?	M	CSC to meet with DECC to identify potential developments in sensitive areas that might impact water resources and quality

Item	Ref.	Data Gaps	Importance	Strategy to address the gap / recommendation
12	TN4C	▪ Are the CAP targets being achieved within Cabonne LGA? ▪ Is there any other regional catchment plan that covers Cabonne Shire area?	L	CSC to formally request advice from the Central West CMA on the status of CAP targets in Cabonne
13	TN4C	▪ Bell River water extraction licence ▪ Buckinbah Creek Weir, Yeoval and Delgany Bores yields, water quality, existing licensing arrangements ▪ Are there any other potential water sources (e.g. rivers, groundwater, and agricultural dams) that need to be considered? ▪ Seasonal and annual variations in flow or availability of all water sources within Cabonne Shire ▪ Cadiangullong Dam information	H	CSC to provide copies of licences listed on the left and to formally request advice from DWE on potential water sources and seasonal variations (including Cadiangullong)
14	TN4C	▪ Are there any environmental impacts regarding existing or alternative water resources within CSC? ▪ Environmental flow requirements for rivers in the Cabonne Shire area	M	CSC to review environmental impacts with DECC and CMA and advise CSC to identify environmental flows with the assistance from DWE
15	TN4C	▪ Holiday and rental accommodation stock ▪ Growth predictions in housing stock (infill and new development areas) ▪ Number and type of commercial buildings	L	CSC to develop growth projections and document
16	TN4C	Infill and new development predictions	M	CSC to document this in a infill and new development report
17	TN4C	Current and future developments water demand	H	CSC to provide advice on this

Item	Ref.	Data Gaps	Importance	Strategy to address the gap / recommendation
18	TN4C	Pricing compliance is unknown	M	CSC to develop best-practice pricing
19	TN4C	Molong STP existing treatment plant process unit's capacities and process abilities. This is needed to identify present and future issues regarding ability of the plant to meet existing and future (30 years) levels of service including DECC licences requirements	M	CSC to assess existing Molong STP treatment unit capacities and review of adequacy of plant capabilities to meet DECC licence requirements present and future. This may require a detailed study.
20	TN4C	Canowindra STP existing treatment plant process unit (s) capacity (ies) and process abilities. This is needed to identify present and future issues regarding ability of the plant to meet existing and future (30 years) levels of service including DECC licences requirements	H	CSC to assess existing Canowindra STP treatment unit capacities and review of adequacy of plant capabilities to meet DECC licence requirements present and future. This may require a detailed study.
21	TN4C	Does CSC have sensitive water quality requirements for Canowindra?	H	CSC to provide data and if necessary contact DECC to clarify sensitive water status
22	TN4C	Description on the Eugowra sewage scheme pumping stations	H	CSC to provide
23	TN4C	Eugowra STP existing treatment unit (s) capacity (ies) and processes abilities. This is needed to identify present and future issues regarding ability of the plant to meet existing and future (30 years) levels of service	M	CSC to assess existing Eugowra STP treatment unit capacities and review of adequacy of plant capabilities, present and future. This may require a detailed study.
24	TN4C	▪ Schematic of Eugowra STP operation and effluent management ▪ Details of the effluent reuse scheme ▪ Potential recycling markets and annual volumes (e.g. new development areas, parks, gardens)	H	CSC to provide a report containing this information
25	TN4C	Current DWE TBL performance report	H	CSC to provide this
26	TN4C	Current and future services provided (ET per town/village)	M	CSC to provide this

Item	Ref.	Data Gaps	Importance	Strategy to address the gap / recommendation
27	TN4C	▪ Hydraulic loading assessment including current growth projections ▪ Analysis of the ability of the current sewerage infrastructure to meet future needs including collection and disposal of future loads	M	CSC to prepare investigation report
28	TN4C	▪ Information on current development and their impacts on the existing sewerage system ▪ Current and future potential reuse markets	L	CSC to provide short report containing information on this
29	TN4C	Are the actions established in the CSC capital works program for stormwater appropriate to address the flooding issues identified on TN 4C?	L	CSC to review
30	TN4C	Stormwater flows in CSC's stormwater systems are unknown	L	CSC to prepare stormwater report containing this information
31	TN4C	▪ Stormwater management responsibilities are unknown ▪ CSC organisation structure	M	CSC to advise on stormwater management responsibilities within Council
32	TN4C	▪ Diffuse source of pollution within stormwater systems ▪ Relationship between urban stormwater work plan and current source of pollution	M	CSC to identify if there are diffuse sources of pollution in the stormwater system and relationship to urban stormwater work plan. If unknown then over the next five years this should be studied and reported
33	TN4C	Stormwater pollution loads	M	CSC to identify if there are pollution loading sources in the stormwater system. If unknown then over the next five years this should be studied and reported
34	TN4C	Point sources of pollution	M	CSC to identify if there are point sources of pollution in the stormwater system. If unknown then over the next five years this should be studied and reported
35	TN4C	Stormwater infrastructure capacity	M	CSC to prepare a stormwater report containing this information

Item	Ref.	Data Gaps	Importance	Strategy to address the gap / recommendation
36	TN4C	CSC Stormwater Management Plan	L	CSC to develop stormwater management plan
37	TN4C	Status of flood studies activities	H	CSC to advise
38	TN4C	Potential areas that could be utilised for water sensitive urban design schemes such as stormwater harvesting	M	CSC to prepare water sensitive urban design report that reviews opportunities including stormwater harvesting

3.2.4 CTW County Council

Item	Ref.	Data Gaps	Importance	Strategy to address the gap / recommendation
1	TN3	Current DWE water supply TBL performance report	H	CTW to provide
2	TN3	Number of tanks, rainwater tank policy, rebate and recommended size in CTW's area of operations.	M	CTW to advise.
3	TN3	Bogolong Dam volume extraction licence	H	CTW to advise

3.3 Data Gathering Action Plan

Councils will need to identify a more specific plan to address the data gaps.

4 IWCM Issues

4.1 Management of Issues in IWCM

DWE's IWCM guidelines identify three different options for managing IWCM issues.

Business as Usual Scenario

The Business as Usual Scenario (BaUS) is applied where the LWU has committed to an action that will resolve the issue. Examples of such firm commitments are where significant preliminary project phase have been completed e.g.

- Formal regulatory requirements have been sought and stated
- Draft options report has been completed
- Above reports have been provided to DWE for approval
- Preliminary community consultation has been performed
- Council has formally resolved to adopt this option

DWE does not consider statements of intention to proceed in a management plan or strategic business plan (SBP) or listing of expenditure in a capital works plan as satisfy the BaUS requirements.

If all IWCM issues for a Council are addressed by BaUS, then no IWCM strategy study is required and IWCM Evaluation Study is sufficient to meet best-practice obligation. The study is therefore completed for this 5 year cycle.

If any IWCM issues cannot be addressed by the BaUS then a further IWCM strategy study is required.

Local Best Practice Scenario

Issues not addressed by a BaUS are then examined to identify whether a local best practice scenario (LBPS) will address them. LBPS applies where there is some confidence the issues can be addressed by:

- some additional locally suitable best practice actions
- some minor capital works
- or significant capital works that can take place ten years or more in the future

If the LBPS solves all remaining IWCM issues then the IWCM process is completed by the development of a simplified strategy plan (SSP) and no comparison of multiple scenarios using Triple Bottom Line Analysis is required.

Detailed Strategy Plan

If Issues remain that cannot be addressed under the BaUS or LBPS then a detailed strategy plan is required. This is required where significant (cost) capital works are required within the next ten years. A detailed strategy plan develops full scenarios including a traditional (stand alone) and integrated scenarios. These scenarios are groupings of options that have been identified by the LWU to address the issues. Details of this approach are provided in DWE's guidelines.

4.2 Non IWCM Issues

WSC stormwater management at Quandialla was identified as a non-IWCM issue. It is a flooding issue as there is no intention to stormwater harvest for reuse at Quandialla. WSC follows the NSW flood management process and will progress this issue within this.

4.3 Recommended Management Approach for IWCM Issues

The following table lists the combined (desktop review and PRG meeting) issues. The recommended Scenario that addresses the issue is ticked and the reasoning behind this and options analysis is presented in the "Explanatory notes and recommended actions" column.

If a Council responsible for an issue has any ticks in the "Detailed Strategy Plan (DSP)" column then the next stage of the study will be a detailed strategy. For the analysis capital works (capex), projects under $150K are considered "minor" and over $150K are considered "significant".

If there are no ticks in DSP but there are ticks in the "Local Best Practice (LBPS)" column then a simplified strategy will be required as the next stage.

If a Council had no ticks in either of these columns then the IWCM would end at the evaluation study with only the need to complete the data gap work and implementation of committed actions.

Issues considered major by the PRG are prefixed with **MAJOR**.

ISSUE	BaUS	LBPS	"DSP" (significant capex in 10 yrs)	Explanatory notes and recommended actions
CENTRAL TABLELANDS WATER				
Level of service targets are more stringent from 2007 onwards for: ▪ Min. pressure for normal service ▪ Max. static pressure ▪ Flow rates for domestic (non rural consumers) ▪ Average frequency of restrictions through a repeat of the worst drought on record		✓		▪ Council's current intention is to address this issue as part of its $0.5M annual reticulation renewals program. Although it is mentioned in the SBP and CWP the commitments are not firm enough to satisfy DWE's BaUS criteria. ▪ To satisfy LBPS a more formal program will need to be developed based on a network analysis to identify deficiencies.

ISSUE	BaUS	LBPS	"DSP" (significant capex in 10 yrs)	Explanatory notes and recommended actions
Some Levels of Service targets from the CTW Management Plan 2007 were not met. ▪ Maximum frequency of unplanned consumer disruptions ▪ Compliance with 2004 ADWG – total coliforms and thermo-tolerant coliforms		✓		▪ At December 2008 CTW did not have any intended actions that would address these issues to satisfy BaUS. ▪ The wide coverage of CTW's services means travel times for staff to address customer service failures is likely to be longer than for other local water utilities. Recommendation is that the LOS target in the next SBP be modified to reflect this. The LOS should be reviewed in consultation with NSW department of Health.
MAJOR In 2005/06 CTW's performance was below the NSW median for : ▪ % population without reticulated water ▪ Water quality complaints		✓		▪ Not BaUS as CTW has no existing firm commitments relating to this issue. ▪ CTW's area covers a number of small villages and in some cases connection to the water supply is not economic. Five villages are included for consideration in the current CWP. Minor capital works are likely within the next 10 years. It is recommended that there is a need for a strategy study to identify the cost of providing this.
2005/06 CTW's performance was below the NSW median for : ▪ Average customer outage time		✓		▪ At 2008 CTW did not have any intended actions that would address these issues to satisfy BaUS. ▪ The wide coverage of CTW's services means travel times for staff to address customer service failures is likely to be longer than for other local water utilities. Recommendation is that the LOS target in the next SBP be modified to reflect this.

ISSUE	BaUS	LBPS	"DSP" (significant capex in 10 yrs)	Explanatory notes and recommended actions
MAJOR Future water security: ▪ Based on historical information and 17 year old Lake Rowlands yield study, there will be 100 ML/year shortfall in supply at 2037 ▪ CSIRO predicts 11% reduction in surface water availability in 30 years time due to climate change. This would exacerbate the shortfall in supply. ▪ Although Drought is not a central IWCM issue recent experiences have indicated that CTW's drought security is a major concern.			✓	▪ Although CTW is strongly in favour of addressing these issues and has prepared a number of studies, BaUS is not satisfied as existing commitments do not address DWEs criteria. ▪ Although the following local best practice options such as, rainwater tanks, retrofit programs, large water user water savings action plans, enhanced unaccounted for water reduction programs, more effective water treatment process management can be considered, it is unlikely that an LBPS will address these issues. The need to do major capital works within the next 10 years e.g. the enlargement of Lake Rowlands remains a likely option that must be considered. ▪ Therefore it is recommended that a detailed strategy plan be undertaken. This study must include a Lake Rowlands Dam yield study which takes into account CSIRO climate change predictions. It must also include identification and yield assessment of other water sources such as, stormwater harvesting, reuse, boreholes and other unused water storages.

ISSUE	BaUS	LBPS	"DSP" (significant capex in 10 yrs)	Explanatory notes and recommended actions
MAJOR Future water security issues: ▪ CENTROC drought security study identifying total audit of the potential water supply in the region and potentially recommending water supply schemes. ▪ Long term efficiency gains in irrigated agriculture ▪ The possibility of a second storage on the Belubula River. ▪ Potential for local sewage reuse schemes as an additional for water source			✓	▪ CTW is a member Council of CENTROC involved in the CENTROC drought security study. This study is a $500K regional study that considers existing water resources and future demands across the region both urban and non urban. Its focus is on ensuring the drought security of key water systems in the CENTROC region. At Jan 2009 the outcomes of this study are as yet unknown. Hence there are no firm CTW commitments and BaUS dos not address this. ▪ Because the CENTROC outcomes are unknown there can be no certainty that LBPS or DSP addresses this issue. ▪ High security status of urban water supply means that efficiency gains in irrigated agriculture are not significant factors in DWE water allocations to CTW. ▪ The storage in the Belubula and the sewage reuse scheme options would be expected to be considered in the detailed strategy study referred to in the issue above.
Cowra pipeline connection to CTW to provide emergency water supply may impact on the timing of drought water restrictions imposed on CTW customers. The capacity for emergency pumping from Cowra to CTW will provide CTW with greater drought security.	✓			▪ This is a BaUS as the pipelines development has been agreed and construction is underway.

ISSUE	BaUS	LBPS	"DSP" (significant capex in 10 yrs)	Explanatory notes and recommended actions
MAJOR Macro water plans for unregulated rivers in the region will establish water sharing rules between competing users including the environment.		✓		▪ DWE intends to fast track water sharing plans for NSW beginning mid 2009 to submit to Murray Darling Basin Authority water planning process. However since urban water supply is considered "High Security" by DWE and it is expected that CTW requirements will be incorporated. ▪ Not BaUS because there is not an existing firm commitment to address this issue. ▪ LBPS will address this by finalisation of Best-Practice IWCM for provision to DWE for incorporation of CTW needs.
MAJOR Demand management initiatives such as community education	✓			▪ BaUS because CTW has commissioned the development of a Demand Management Plan.
MAJOR Land use changes in the catchment		✓		▪ Not BaUS as there are no existing documented arrangements that would be considered as satisfying DWE requirements. ▪ LBPS would address this issue through CTW formal agreements being developed with BSC in its LEP. If satisfactory agreement can not be reached long term capital works modification to CTW WTPs may be required.

ISSUE	BaUS	LBPS	"DSP" (significant capex in 10 yrs)	Explanatory notes and recommended actions
MAJOR Groundwater security.		✓		▪ Not BaUS because there is no formal long term commitment by DWE to provide this. ▪ LBPS would address this through the development of a formalized long term groundwater security agreement based on technical studies that identify sustainable extraction levels. CTW to liaise with DWE.
MAJOR Future non-urban demand particularly from gold mining in Blayney Shire.		✓		▪ Not BaUS because there is no formal firm commitment in place to address this issue. ▪ Development of new or existing mines to utilize CTW water is not expected to occur within the next 5 years without long term notice. LBPS would address this issue through CTW on going liaison with existing mines, NSW Department of Mineral Resources, constituent Councils and DWE. Future revisions of Best-Practice IWCM may be required to incorporate this issue.
CABONNE SHIRE COUNCIL				
MAJOR TBL performance was below the NSW median in 2005/06 for % urban population without reticulated water.		✓		▪ At Jan 2009 CSC did not have a firm commitment that would address these issues to satisfy BaUS. ▪ Two villages (Yeoval and Cumnock) have a non potable water supply. This is under consideration as a longer term issue. ▪ It is recommended that this issue can be addressed by LBPS involving a development of minor capital works plan beginning with a feasibility study.

ISSUE	BaUS	LBPS	"DSP" (significant capex in 10 yrs)	Explanatory notes and recommended actions
MAJOR TBL performance was below the NSW median in 2005/06 for the number of water service complaints per 1000 properties.		✓		▪ CSC recently installed a destratification/ aeration system in Molong Dam and dose activated carbon in the Molong WTP. This has reduced iron, manganese and algal bloom issues. ▪ CSC has also included on going replacement of old water mains in Molong in the CSC capital works plan. This does not satisfy requirements to be considered under BaUS and will need to be included as minor capital works under a LBPS.
MAJOR Molong Water Supply System appears to be secure for the next 30 years. However this may need review in the light of CSIRO's prediction of an 8% reduction in surface water flows in 30 years due to climate change in the Macquarie Catchment.		✓		▪ Not BaUS because there is no firm commitment addressing this issue. ▪ It is recommended that this issue be addressed as a LBPS by commissioning a review of the existing Molong Creek Dam yield study including consideration of the impact of climate change. The outcomes of this study should be considered in the next IWCM study.

ISSUE	BaUS	LBPS	"DSP" (significant capex in 10 yrs)	Explanatory notes and recommended actions
Eugowra local STP groundwater contamination.		✓		▪ Not addressed by BaUS as there is no firm commitment in place. ▪ Council has some monitoring peizometers on 6 locations on the site including the irrigation area. There is evidence of surface seepage however there is no indication of transportation to other areas. At this stage Council will continue to monitor and assess the need for any future improvements such as lining subject to the results of the monitoring undertaken. Subject to monitoring there is a possibility that these ponds may need to be lined at some point in the future.
Dam safety and emergency plans for Molong Creek dam , Borenore Creek Dam and Lake Canobolas dam (owned by Orange City Council)		✓		▪ BaUS is satisfied for Molong Creek Dam because there is an existing dam safety. ▪ There is a data gap regarding the status of Borenore Dam and Lake Canobolas DSEPs which may require LBPS to prepare them.
Residential and industrial land developments at Molong, Canowindra, Manildra and Eugowra will increase water consumption and potentially impact on the catchment.	✓			▪ BaUS as Council has a resolution that no changes are to be made to residential area zonings until water supply yield has been determined.

ISSUE	BaUS	LBPS	"DSP" (significant capex in 10 yrs)	Explanatory notes and recommended actions
MAJOR Molong STP has had licence non-compliances every year from 2003/04 to 2007/08			✓	▪ It is not BaUS as there are no CSC documented firm commitments to address this issue. ▪ Options considered to address this include : 1. Optimising the plant process by modifying the operational regime (approximately $15 – 20K) - preferred option. 2. Improving the existing aeration system – that will include addition of grids of fine bubble diffusers (approximately $200 - 300K) - may be required. 3. Build another channel at the front of the works (approximately $3 - 4M) - this option is unlikely to be required however can not be ruled out at this point. At this stage option 1 can not be accepted with confidence. Since option 2 may be required significant (greater than $150K) capital works may be required within the next 10 years triggering the requirement for a detailed strategy study.
Potential new effluent reuse schemes at Molong golf course and showground will need to meet the new standards for effluent reuse which are higher.		✓		▪ It is not BaUS as there are no CSC documented firm commitments to address this issue. ▪ To address this issue will require modifications to the Molong STP additional to those described in the issue above. This would include disinfection and detailed regulatory approval processes the cost of which would represent significant capital works. However since this action does not appear to be essential within the next 10 years it can be covered under LBPS.

ISSUE	BaUS	LBPS	"DSP" (significant capex in 10 yrs)	Explanatory notes and recommended actions
MAJOR Canowindra STP has licence non-compliances from 2003/04 to 2005/06. Monitoring was not complete in 2007/08.		✓		▪ It is not BaUS as there are no CSC documented firm commitments to address this issue. ▪ Disinfection system needs to be added (minor capital works) covered by LBPS.
MAJOR Reconnection of Lake Canobolas as a water supply for Orange may impact on Molong Creek.		✓		▪ It is not BaUS as there are no formal processes in place between CSC and Orange City Council regarding this issue. ▪ This issue will be addressed through development of a negotiated agreement between Orange City Council and CSC ensuring Molong Creek Yield is unaffected by this. Development of such an agreement would fall within LBPS.
MAJOR Water security and water sharing: ▪ Land use change ▪ High intensity agriculture ▪ Mining developments and water demand ▪ Groundwater ▪ Water demand by neighbouring Orange		✓		▪ DWE intends to fast track Macro water sharing plans for NSW beginning mid 2009 to submit to Murray Darling Basin Authority water planning process. However since urban water supply is considered "High Security" by DWE and it is expected that CSC requirements will be incorporated. ▪ Not BaUS because there is not an existing firm commitment to address this issue. ▪ LBPS will address this by finalization of Best-Practice IWCM for provision to DWE for incorporation of CSC needs. ▪ Water demand by neighbouring Orange will be addressed by CENTROC drought security study and Macro Water Sharing Plan.

ISSUE	BaUS	LBPS	"DSP" (significant capex in 10 yrs)	Explanatory notes and recommended actions
Water security: ▪ The effect of growth in Orange on the catchment downstream ▪ The water demand of Cadia mine (Cadia has two dams, one will be enlarged if approval granted)		✓		▪ See above.
MAJOR Stormwater: There are data gaps about contamination of Molong Creek by urban run-off causing water quality problems		✓		▪ Not BaUS because there is not an existing firm commitment to address this issue. ▪ A Water quality catchment study / strategy will be required to address this issue. See data gaps (Section 3.2.3 items 31, 33 and 34). This falls within LBPS.
MAJOR Regular flooding of Molong, Eugowra and Canowindra impacting Molong pumping station.		✓		▪ Not BaUS because there is not an existing firm commitment to address this issue. ▪ The Molong Flood Plain Management Plan is currently under review and this may identify stormwater improvements. The outcomes of this study are uncertain and will determine if a LBPS or DSP approach is required. ▪ Floods (1:100) in Molong in 2005 flooded the pump station of the Molong STP. Investigate moving or flood proofing pump station. This is likely to cost up to $100K in capital works (less than $150K minor capital works) so it is LBPS.
MAJOR Canowindra STP has opportunities to recycle water on a local golf course and parkland.		✓		▪ Not BaUS because there is not an existing firm commitment to address this issue. ▪ LBPS approach is considered likely as this will involve minor capital works.

ISSUE	BaUS	LBPS	"DSP" (significant capex in 10 yrs)	Explanatory notes and recommended actions
MAJOR Potential extra retirement units for up to 200 people appear to have been proposed.		✓		▪ Not BaUS because there is not an existing firm commitment to address this issue. ▪ There would be an impact on water demand which will need to be reviewed and it may require minor capital works therefore it will be covered by LBPS.

ISSUE	BaUS	LBPS	"DSP" (significant capex in 10 yrs)	Explanatory notes and recommended actions
BLAYNEY SHIRE COUNCIL				
Level of service targets were not met in 2007/08 for: ▪ Sewer overflows ▪ Pump power ▪ Blockages and collapses ▪ Response times for system failures after working hours		✓		▪ Not BaUS because there is not an existing firm commitment to address this issue. ▪ Sewer overflows issue has been identified for work in the SBP and capital works plan this will require development of a strategy and expected small capital works (emergency SPS at Blayney and Millthorpe approximately $60K). ▪ Pump power emergency back up systems are being developed and this will require agreement with power supplier or emergency generators. ▪ Minor works are required to overcome blockages and collapses combined with long term replacement of asbestos cement pipes. ▪ Response times for systems failures after working hours may require review of LOS or operational procedure or resource modifications. ▪ All four items above fall under LBPS.

ISSUE	BaUS	LBPS	"DSP" (significant capex in 10 yrs)	Explanatory notes and recommended actions
MAJOR Numerous mining permits being issued in the shire may affect the environment and water demand. ▪ Cadia currently is under contract to take all the treated wastewater from Blayney STP. There would be implications for the STP should this arrangement cease. Contingency plan discharge to the creek under existing licence. ▪ Exploration permits do not have environmental or water supply impacts. ▪ Newmont and Alkane have drill holes in the area and could have significant water needs in the future.	✓			▪ BaUS as Council has an existing STP licence that allows for discharge to the creek and water supply to new mines would be an issue for CTW. ▪ Mine development would require a development application and Council would address environmental issues through this process.
MAJOR Subdivisions in the Lake Rowlands catchment may impact on water quality	✓			▪ BaUS as Council has resolved (June 2008) to accept the Cabonne, Orange and Blayney Rural and Industrial Land Strategy. This will form the basis of the Blayney LEP which is expected to be completed by the December 2009. CTW and BSC consultation on draft LEP should take place regarding this issue in mid 2009.
Blayney STP complied with its licence in 2007/08 but had some non-compliances in 2006/07	✓			▪ BaUS as Council has implemented procedures to ensure licence compliance
Areas where DWE Best Practice Management Guidelines are not met (LOS): ▪ Development Servicing plan - not completed		✓		▪ As more than 5 lots per year are expected to be developed in BSC over the next 5 years sewerage Development Servicing Plan should be prepared.

ISSUE	BaUS	LBPS	"DSP" (significant capex in 10 yrs)	Explanatory notes and recommended actions
Wet weather inflow and illegal connections		✓		▪ Not BaUS because there is not an existing firm commitment to address this issue. ▪ LBPS because Council needs to do a study to calculate and identify sources of inflow
Asset management: ▪ Maintaining an up- to -date asset register including asset condition and rating ▪ Managing and funding future replacement/renewal of assets	✓			▪ BaUS because there is an asset management plan.
Sewer overflows were identified in the 2007 Investigation Report	✓			▪ BaUS because Council has commissioned DoC for detailed design of pumping stations
MAJOR Environmental sensitivity of Carcoar Dam (LOS): ▪ Carcoar Dam is used for recreational use so health regulations are important. Frequent blue green algae outbreaks occur. ▪ Land use changes could further impact on water quality.		✓		▪ Not BaUS because there is not an existing firm commitment to address this issue. ▪ LBPS because Council needs to develop a strategy in conjunction with DWE to improve water quality into Carcoar dam. It would be expected that minor capital works such as stormwater systems may be required.

ISSUE	BaUS	LBPS	"DSP" (significant capex in 10 yrs)	Explanatory notes and recommended actions
MAJOR Unsewered villages: Carcoar Mandurama Lyndhurst(possibly)			✓	▪ Not BaUS because there is not an existing firm commitment to address this issue. ▪ In Councils Feb 2008 capital works plan $250K (2012-2014) has been identified for feasibility and concept studies in to the sewering of Carcoar and Mandurama and $5M (2015-2016) has been allowed for capital works. This constitutes significant capital works within 10 years requiring DSP to be developed. The options to be considered will include connecting to Blayney STP or local small STPs. ▪ The extension to the sewerage system to Lyndhurst has been provisionally identified for 2019/20. This will require a sewering strategy to be developed followed by significant capital works. The options to be considered include connection to Blayney STP or localised STP. ▪ It should be noted that the possible connection of these villages would potentially increase the load on Blayney STP bringing forward growth and the need for an upgrade.
Future water demand by industry: ▪ Neither Nestle nor Western White Linen foresees increased water demand in the longer term although Nestle will have a temporary increased demand in 2009. Western While Linen will open a new recycling plant in 2009.	✓			▪ BaUS because this is a CTW issue covered in the demand calculations.

ISSUE	BaUS	LBPS	"DSP" (significant capex in 10 yrs)	Explanatory notes and recommended actions
WEDDIN SHIRE COUNCIL				
Level of service targets not met in 2004: ▪ Category one system failures due to rainfall and deficient capacity ▪ Category three system failures due to blockages ▪ Response times to priority one incidents during working hours and to general or minor customer complaints and inquiries		✓		▪ Not BaUS because there is not an existing firm commitment to address these issues. ▪ LBPS review LOS to better reflect ability to meet services. This review may identify need for minor capital works.
The salinity levels in streams in the Tyagong sub-catchment are increasing impacting on infrastructure and the environment.		✓		▪ Not BaUS because there is not an existing firm commitment to address this issue. ▪ LBPS - If stormwater harvesting is considered as an option to assist Weddin water supply then study should be undertaken to consider addressing this issue.
Noxious plants are spreading in the Weddin catchment – potential land and water degradation threat	✓			▪ BaUS as Council has a noxious weed program in place.
MAJOR Contaminated gas works site – potential stormwater pollution.	✓			▪ BaUS as Council has undertaken a contaminated site investigation. The findings of which indicate: ▪ Groundwater flux from the site is likely to be small ▪ The site is not considered suitable for residential, commercial, industrial land use in its current condition.

ISSUE	BaUS	LBPS	"DSP" (significant capex in 10 yrs)	Explanatory notes and recommended actions
Stormwater quality at Grenfell is unknown – stormwater harvesting issue			CTW	▪ Not BaUS because there is not an existing firm commitment to address this issue. ▪ Stormwater harvesting in Grenfell presents an alternative water source that needs to be considered in the CTW detailed strategy plan as an alternative water source.
MAJOR Bimbi and Caragabel are not connected to reticulated water or sewerage		✓		▪ Not BaUS because there is not an existing firm commitment to address this issue. ▪ LBPS because CTW is investigating options to provide reticulated water to these villages. This may lead to minor capital works. Connection to Cowra's water supply has led to increased water consumption and sewerage production. ▪ WSC intends to do feasibility studies on these villages to examine the best options. Council expects these may range from septic tank upgrades to on site treatment to local small STP development.

ISSUE	BaUS	LBPS	"DSP" (significant capex in 10 yrs)	Explanatory notes and recommended actions
MAJOR Grenfell relies on the pipeline from Gooloogong for its water supply and would be at risk if the pipeline failed.		✓		▪ Not BaUS because there is not an existing firm commitment to address this issue. ▪ CTW currently intends to address supply to Grenfell as part of a $10M 10 year CWP expected to commence in 2011. Although it is mentioned in the SBP and capital works plan the commitments are not firm enough to be satisfied by BaUS. ▪ It is recommended that as part of the strategy to develop the CWP CTW together with WSC assess the risk of loss of supply and if appropriate develop contingency plan e.g. larger tank, storage of pipe material, creek crossing concrete encasing etc. Therefore it is covered by LBPS.
Bogolong and Company Dams have been suggested as alternative water supplies but both are silted up and have poor water quality			CTW	▪ Not BaUS because there is not an existing firm commitment to address this issue. ▪ Use of water from Bogolong and Company Dams presents an alternative water source that needs to be considered in the CTW detailed strategy plan.
MAJOR Council estimates that an STP upgrade will be necessary in 2020 but this is based on condition of assets and changes in DECC requirements in the future.		✓		▪ Not BaUS because there is not an existing firm commitment to address this issue. ▪ LBPS – condition of the assets assessment will drive this. A number of OH&S upgrades have been identified as have major maintenance works including the need to replace trickling filter components in the near future.

ISSUE	BaUS	LBPS	"DSP" (significant capex in 10 yrs)	Explanatory notes and recommended actions
There is no Asset Management Plan or Emergency Plan for the Grenfell STP.		✓		▪ Not BaUS because there is not an existing firm commitment to address this issue. ▪ It is recommended that WSC prepare an Asset Management Plan and Emergency Plan for the Grenfell STP.
MAJOR Meeting reuse guidelines now and in the future at Grenfell.		✓		▪ Not BaUS because there is not an existing firm commitment to address this issue. ▪ LBPS - Its is recommended that WSC develops improved system (minor capital works)
Weddin STP licence non-compliances occurred in 2006/07 and 2007/08	✓			▪ BaUS because WSC has received a DECC licence variation (28 April 2008) that modifies the volumetric discharge limit.
The Capital Works Plan for sewerage and drainage services does not match the 2004 Strategic Business Plan		✓		▪ Not BaUS because there is not an existing firm commitment to address this issue. ▪ New SBP required every 3 years. LBPS action is to update the SBP.
MAJOR Stormwater inflow into the sewer mains in Grenfell as a result of illegal connections	✓			▪ BaUS as WSC has commissioned work to investigate Grenfell mains to prepare an investigation report which will lead to mains relining.
Stormwater management at Quandialla	N/A	N/A	N/A	Flood issue not IWCM.

ISSUE	BaUS	LBPS	"DSP" (significant capex in 10 yrs)	Explanatory notes and recommended actions
Grenfell Stormwater Management Plan (2001) issues: ▪ Stormwater pollution sources in Grenfell require management ▪ Lack of water quality data for Emu Creek ▪ Emu Creek is degraded in some places ▪ Stormwater infrastructure is inadequate causing flooding in some locations		✓		▪ Not BaUS because there is not an existing firm commitment to address this issue. ▪ LBPS – Council to prepare a stormwater report addressing these issues and the data gaps listed in section 3.2.2 of this evaluation study report (items 24 – 31).
MAJOR Mitigation works for Grenfell Floodplain Management Plan	✓			▪ BaUS because WSC has commissioned flood study. It will identify mitigation works with possible stormwater harvesting opportunity.
MAJOR Greenethorpe and Quandialla are not sewered			✓	▪ Not BaUS because there is not an existing firm commitment to address this issue. ▪ DSP as WSC is currently investigating this to establish a sewerage strategy for these two villages. It is expected that sewering these villages will cost over $150k and hence require significant capital works. WSC preference would be to undertake these works within 10 years.

ISSUE	BaUS	LBPS	"DSP" (significant capex in 10 yrs)	Explanatory notes and recommended actions
GENERAL CWBC ISSUES				
The CENTROC Water Security Study may have long term impacts on CTW and Cabonne Shire drought management. Should Councils progress actions or postpone them pending the CENTROC study findings?	✓			▪ BaUS as all four Councils are members of CENTROC and stakeholders in this study which commenced in late January 2008. ▪ However the Councils consider that some IWCM actions especially those addressing immediate problems, cannot wait the finalisation of the CENTROC report. ▪ Investigations that will inform the CENTROC study of the water needs and issues of the councils should be undertaken and fed into the CENTROC process. ▪ The CENTROC study recommendations will deal with long term issues and solutions. ▪ The IWCM studies will review progress in the CENTROC study and benefit from this work where possible. ▪ The Ministerial Inquiry into local water utilities is also relevant to the IWCM process. The report was made public in January 2009.

ISSUE	BaUS	LBPS	"DSP" (significant capex in 10 yrs)	Explanatory notes and recommended actions
Growth in Orange will have an important influence on the surrounding region: ▪ Orange is addressing the severe water shortage in a number of ways: ▪ Stormwater harvesting (2000 ML/year) ▪ Reconnecting Lake Canobolas ▪ Reconnecting Gosling Creek Dam ▪ Bore water is being tested as a possible source		✓ CSC	✓ CTW	▪ Not BaUS because there is not an existing firm commitment to address this issue. ▪ DSP - CTW needs to include consideration of Orange City Council requirements in its water detailed strategy plan investigation of alternative sources and their yields. ▪ LBPS – CSC needs to ensure agreements with Orange City Council regarding reconnecting and water harvesting from Lake Canobolas do not impact Molong Creek Dam long term yields.
The water requirements of the Rural Fire Service need to be taken into account by all councils	✓			▪ BaUS as all Councils in NSW have set procedures with the NSW RFS for provision of fire fighting water.

5 Recommendations

5.1 Weddin

A detailed strategy plan is recommended for WSC.

WSC intends to sewer Greenethorpe and Quandialla within the next ten years. As this is expected to cost more than $150K then a detailed strategy plan will be required to be developed for WSC. The Detailed Strategy will need to incorporate all LBPS and BaUS issues.

5.2 Blayney

A detailed strategy plan is recommended for Blayney.

This is required as Council's February 2008 capital works plan has allocated $250K (2012-2014) for studies into the sewering of Carcoar and Mandurama and $5M (2015-2016) for capital works. This constitutes significant capital works within 10 years. The detailed strategy will need to incorporate all LBPS and BaUS issues.

5.3 Cabonne

A detailed strategy plan is recommended as the next stage of the IWCM for CSC.

This is based on the uncertainty that Cabonne's Molong STP can be modified to meet DECC licence requirements without significant capital works. As the plant has had a history of DECC licence breaches there is an urgent need to resolve this issue. The detailed strategy will need to incorporate all LBPS and BaUS issues.

5.4 Central Tablelands Water

A detailed strategy plan is recommended as the next stage of the IWCM for CTW.
Two groups of issues trigger this next stage:

Uncertainty of Future Water yield and use

Based on the uncertainties relating to Lake Rowlands yield and climate change scenarios it is recommended that CTW undertake a detailed strategy plan. This study should include a revised Lake Rowlands Dam yield study which takes into account CSIRO climate change predictions. It must also include identification and yield assessment of other water sources such as, stormwater harvesting, reuse, boreholes and other unused water storages.

Major pipeline upgrades

The other major issue which does not trigger a detailed strategy plan is the $10M ten year mains upgrade replacement plan CTW has flagged in its capital works plan.

The detailed strategy will need to incorporate all LBPS and BaUS issues.

5.5 Joint Approach

As Detailed strategy plans are required for all four Councils, or a subset of them, could progress the next stage in a joint approach if considered appropriate.

5.6 Wider Regional Issues

Within the detailed strategy studies identified above the general issues relating to the outputs of the CENTROC study and Orange City Councils water requirements will need to be considered. Projected water demand outputs from the IWCM need to be presented in the Macro Water Sharing Plan process to ensure LWU "High Security" needs are addressed. If the CENTROC study recommends a regional "water grid" then the CTW pipeline upgrades may need to be reviewed to address the grids requirements.

Appendix A

Project Reference Group Meeting Minutes

Joint IWCM Evaluation Study

MINUTES OF THE FIRST MEETING OF THE PROJECT REFERENCE GROUP

Blayney, 13 November 2008

ATTENDEES:

Morning session:

- Tony Perry, Central Tablelands Water
- Darrell Sligar, Central Tablelands Water
- Grant Baker, Blayney Shire Council
- Bill Twohill, Weddin Shire Council
- Rob Staples, Cabonne Shire Council
- Wayne Beatty, Orange Shire Council
- Tim Long, Cowra Shire Council
- Martin Prestidge, Lachlan Catchment Management Authority
- David Coleman, Department of Primary Industry
- Sharla Seckold, Greater Western Area Health Service
- Chris Marshall, Department of Environment and Climate Change
- Matt Parmeter, Department of Water and Energy
- Andrew Fraser, HydroScience
- Gidi Azar, HydroScience
- Alessandra Razera, HydroScience
- Pamela Stark, The Middle Way

Additional attendees at afternoon session

- Cr John Farr, Chairman Central Tablelands Water
- Cr Lachlan MacSmith, Cabonne Shire Council
- Kevin McNamara, Manildra Flour
- Darren Baldwin, Nestle Purina Petcare
- Ian Hobby, Western White Linen
- Greg Lynch, MSM Milling
- Ross McLean, "The Falls" Neville
- James Williams, Orange Local Aboriginal Land Council
- Tony McPaul, Cadia Valley Operations
- Meg Bannigan, Molong Creek Water Users
- David Cullane, Belubula Water Users Inc
- Michael Payten, Belubula Water Users Inc
- Mary Ewin, Lachlan Valley Users

The first meeting of the Project Reference Group (PRG) was conducted in two sessions - a morning session attended by the Project Steering Committee and representatives of government agencies; and an afternoon session which was also attended by representatives of industry and the broader community.

The meeting was opened by Tony Perry who welcomed the attendees and explained the commitment of the four councils to the Integrated Water Cycle Management process.

The meeting had an independent facilitator Pamela Stark, Principal, The Middle Way Pty Ltd. Technical information on the regional water cycle, and issues which had been identified already by detailed investigation of existing reports and other data sources, was presented by Andrew Fraser of HydroScience Consultants.

The stated aim of the meeting was to provide PRG members with:

- an understanding of the concept of IWCM and the role of the PRG;
- An overview of the local water cycle;
- Presentation of the preliminary list of IWCM issues that have been identified and an opportunity for discussion;

- An opportunity to raise additional water service issues which may go beyond non-compliance; and
- An opportunity to suggest options for addressing IWCM issues.

Participants were invited to comment on each of the issues which had been identified to date and to bring forward additional issues. In identifying issues the meeting was guided by the following definition:

> *Urban water issues are defined as a non-compliance with any urban water service target. These include licences and agreed levels of service, either now or likely to arise during the next 30 years.....A local water utility's targets may be standards, legislation, legal contracts, accepted best practice business planning or agreed levels of service. (Ref: IWCM 3 Issues and Solutions 2008, NSW DWE).*

Participants commented on whether they considered the issues outlined were major ones and noted whether actions were already in train which would address these issues. For example, were works to address the issues included in current budgets and Capital Works Programs?

The issues identified by the consultants through their investigations of available information, and additional issues identified by participants in the meeting are summarised in the attached table. This notes whether the meeting considered the issues to be major and whether they are being addressed through Capital Works Programs or other mechanisms. Other comments by participants about issues are also summarised.

In summary, many of the issues which were identified as major fell under the heading of *regional water security* and, related to this, the impact of climate change. This included additional water sources such as proposals to extend Lake Rowlands and to sink further groundwater bores. It also included land use change, the water needs of industry particularly mining, the effect of growth in Orange on the catchment, demand management, and the CENTROC water study which is to commence shortly.

Other major issues included:

- Supply of services to villages which were not connected to reticulated water and/or sewerage systems.
- Recycling of treated wastewater from sewerage treatment plants (STP) in the region.
- Floodplain management and stormwater management plans.
- The need to improve the performance of some STPs now or in the future

The meeting noted that many of the areas where councils had in the past not met their agreed Levels of Service were being addressed as part of councils' normal operations and were included in councils' 30 year Capital Works Programs.

The meeting was closed by Tony Perry who thanked participants for their extensive and valuable input which will be taken forward into further work to complete the IWCM Evaluation Study.

Table. SUMMARY OF IWCM ISSUES DISCUSSED AT THE PROJECT REFERENCE GROUP MEETING, 13 November 2008

ISSUE **Issues raised by PRG members at the meeting are blue** **Issues identified by consultants' review of existing information are not coloured.**	MAJOR	NOT BEING ADDRESSED	COMMENTS FROM MEETING PARTICIPANTS
CENTRAL TABLELANDS WATER ISSUES			
Level of service targets are more stringent from 2007 onwards for: • Min. pressure for normal service • Max. static pressure • Flow rates for domestic (non rural consumers) • Average frequency of restrictions through a repeat of the worst drought on record			• Targets have not been met in the past for some Levels of Service (LOS). Work to address these issues is included in the $10M 10 year Capital Works Program (CWP) and is being implemented progressively as normal business. • The wide coverage of CTW's services means travel times for staff to address customer service failures is likely to be longer than for other local water utilities.
Some Levels of Service targets from the CTW Management Plan 2007 were not met. • Max. frequency of unplanned consumer disruptions • Compliance with 2004 ADWG – total coliforms and thermo-tolerant coliforms			
In 2005/06 CTW's performance was below the NSW median for : • % population without reticulated water • Water quality complaints • •	✓	✓	• CTW's area covers a number of small villages and in some cases connection to the water supply is not economic. Five villages are included for consideration in the current CWP.
2005/06 CTW's performance was below the NSW median for : • Average customer outage time			• The wide coverage of CTW's services means travel times for staff to address customer service failures is likely to be longer than for other local water utilities.
Future water security: • Based on historical information and 17 year old Lake Rowlands yield study, there will be 100ML/year shortfall in	✓		• CTW has prepared a proposal to extend Lake Rowlands from the current 4,500ML to 26,500 ML to provide a reliable water source to meet forecast

supply at 2037 • CSIRO predict 11% reduction in surface water availability in 30 years time due to climate change. This would exacerbate the shortfall in supply.			demand. Although preliminary actions are in place to progress this issue significant actions must be taken to address this. • Correspondence from a stakeholder who could not attend the meeting reported the concerns of landowners who would lose some land as a result this extension, and also water users downstream who would experience reduced flows. • Competition between different user groups (community, industry, the environment, agriculture) is an important overarching issue. • CTW needs to review 1991 secure yield study and projected future demand in terms of more recent climate data and CSIRO projected climate change impacts.
Cowra pipeline connection to CTW to provide emergency water supply may impact on the timing of drought water restrictions imposed on CTW customers. The capacity for emergency pumping from Cowra to CTW will provide CTW with greater drought security.			• The pipeline has been agreed and construction is underway.
Macro water plans for unregulated rivers in the region will establish water sharing rules between competing users including the environment.	✓		• Councils need to check where relevant macro water plans are up to and to identify impacts and provide as input into these plans.
Demand management initiatives such as community education	✓		• CTW's Demand Management Plan is in development
Land use changes in the catchment	✓		• New residential and commercial developments and new industries will impact on future water demand and the environment • In consultation with BSC and its LEP CTW needs to have input into key proposed developments that could impact CTW water supply quality and security.
Groundwater security.	✓		• Groundwater use needs to be managed by DWE to ensure extraction is sustainable.
Future non-urban demand particularly from gold mining in Blayney	✓		• The opportunities for water trading are relevant.

Shire.			
Future water security issues	✓		• A total audit of the potential water supply in the region is required. This is within the terms of reference of the CENTROC study. • Efficiency gains in irrigated agriculture should be considered. • A PRG member identified a desire for a second storage on the Belubula River has been proposed. • Local reuse schemes for sewage should be considered as an additional water source.
CABONNE SHIRE COUNCIL ISSUES			
TBL performance was below the NSW median in 2005/06 for % urban population without reticulated water.	✓	✓	• Two villages have a non potable water supply. This is under consideration as a longer term issue.
TBL performance was below the NSW median in 2005/06 for the number of water service complaints per 1000 properties.	✓	✓	• Water service complaints are being considered in the context of the CWP.
Molong Water Supply System appears to be secure for the next 30 years. However this may need review in the light of CSIRO's prediction of an 8% reduction in surface water flows in 30 years due to climate change.	✓		
High groundwater contamination vulnerability around Molong and Eugowra due to new developments that have been identified.			
Dam safety and emergency plans for Molong Creek dam , Borenore Creek Dam and Lake Canobolas dam (owned by Orange City Council)			
Residential and industrial land developments at Molong, Canowindra, Manildra and Eugowra will increase water consumption and potentially impact on the catchment.			• These developments are small compared with the impacts that growth in Orange will have on the catchment and can be disregarded as an issue
Potential new effluent reuse schemes at Molong golf course and showground will need to meet the new standards for effluent reuse which are higher.			• These are related issues around STP performance.
Molong STP has had licence non-compliances every year from 2003/04 to 2007/08	✓	✓	
Canowindra STP has licence non-compliances from 2003/04 to 2005/06. Monitoring was not complete in 2007/08.	✓	✓	

Reconnection of Lake Canobolas as a water supply for Orange may impact on Molong Creek.	✓		• This will be triggered only as an emergency supply. • Correspondence from a stakeholder after the meeting raised the issue of whether • Orange City Council has a licence to extract water from Lake Canobolas.
Water security and water sharing: • Land use change • High intensity agriculture • Mining developments and water demand • Water demand by neighbouring Orange • Groundwater	✓		• Land use change can impact on water yields - this is an important issue and councils need to understand the extent of the impact and to build this into the new joint LEP which is under development. • Additional bores are being considered for Molong
Stormwater: • There are data gaps about contamination of Molong Creek by urban run-off causing water quality problems	✓		
Regular flooding of Molong, Eugowra and Canowindra.	✓		• Floods (1:100) in Molong in 2005 flooded the pump station of the Molong STP. The Molong Flood Plain Management Plan is currently under review and this may identify stormwater improvements. • Neither Eugowra nor Canowindra is within the 1:100 flood zone.
Canowindra STP has opportunities to recycle water on a local golf course and parkland.	✓	✓	• Cudal and Manildra are already using recycled water on adjacent farmland
Retirement units for 200 people have been proposed	✓	✓	• Need to consider the impact on water demand.
Water security: • The effect of growth in Orange on the catchment downstream • The water demand of Cadia mine •			• Cadia has two dams, one will be enlarged if approval granted.
BLAYNEY SHIRE COUNCIL ISSUES			
Level of service targets were not met in 2007/08 for • Sewer overflows • Pump power • Blockages and collapses			• Systems failures are being addressed through the CWP

• Response times for system failures after working hours			
Numerous mining permits being issued in the shire may affect the environment and water demand.	✓		• Cadia currently is under contract to take all the treated wastewater from Blayney STP. There would be implications for the STP should this arrangement cease. • Exploration permits do not have environmental or water supply impacts. • Newmont and Alkane have drill holes in the area and could have significant water needs in the future.
Subdivisions in the Lake Rowlands catchment may impact on water quality	✓		• This is being considered through the development of a joint Land Use Strategy by Cabonne, Orange and Blayney Councils.
Blayney STP complied with its licence in 2007/08 but had some non-compliances in 2006/07			
Areas where DWE Best Practice Management Guidelines are not met (LOS): • Pricing – not assessed • Developer plan - not updated			• The Developer Service Plan needs to be updated
Wet weather inflow and illegal connections			
Asset management: • Maintaining an up- to -date asset register including asset condition and rating • Managing and funding future replacement/renewal of assets			
Sewer overflows were identified in the 2007 Investigation Report			
Environmental sensitivity of Carcoar Dam (LOS)	✓		• Carcoar Dam is used for recreational use so health regulations are important. Frequent blue green algae outbreaks occur. • Land use changes could further impact on water quality.
Unsewered villages	✓		• Council has identified the sewering of Carcoar and Mandurama to be completed in 2015/16 and the extension to the sewerage system to Lyndhurst has been provisionally identified for 2019/20.
Future water demand by industry			• Neither Nestle nor Western White Linen foresees

			increased water demand in the longer term although Nestle will have a temporary increased demand in 2009. Western While Linen will open a new recycling plant in 2009.
WEDDIN SHIRE COUNCIL ISSUES			
Level of service targets not met in 2004: • Category one system failures due to rainfall and deficient capacity • Category three system failures due to blockages • Response times to priority one incidents during working hours and to general or minor customer complaints and inquiries			
The salinity levels in streams in the Tyagong sub-catchment are increasing impacting on infrastructure and the environment.			
Noxious plants are spreading in the Weddin catchment – potential land and water degradation threat		✓	
Contaminated gas works site – potential stormwater pollution.	✓	✓	• This is under investigation
Stormwater quality at Grenfell is unknown – stormwater harvesting issue			• The potential of using stormwater as a water source in unknown
Bimbi and Caragabel are not connected to reticulated water or sewerage	✓	✓	• CTW is investigating options.
Grenfell relies on the pipeline from Gooloogong for its water supply and would be at risk if the pipeline failed.	✓	✓	
Bogolong and Company Dams have been suggested as alternative water supplies but both are silted up and have poor water quality			• Bogolong dam is not operating due to poor water quality. The water is high in manganese and there are algal blooms in summer due to shallow silted water.
Council estimates that an STP upgrade will be necessary in 2020 but this is based on predicted population growth rates that are higher than those released by NSW Planning.	✓	✓	
There is no Asset Management Plan or Emergency Plan for the Weddin STP.			
Effluent reused in Grenfell is not chlorinated.	✓		
Weddin STP licence non-compliances occurred in 2006/07 and			

2007/08			
The Capital Works Plan for sewerage and drainage services does not match the 2004 Strategic Business Plan			
Stormwater inflow into the sewer mains in Grenfell as a result of illegal connections	✓	✓	
Stormwater management at Quandialla			
Grenfell Stormwater Management Plan (2001) issues: • Stormwater pollution sources in Grenfell require management • Lack of water quality data for Emu Creek • Emu Creek is degraded in some places • Stormwater infrastructure is inadequate causing flooding in some locations			
Mitigation works for Grenfell Floodplain Management Plan – flood study being undertaken will identify mitigation works with possible stormwater harvesting opportunity	✓	✓	
Greenethorpe and Quandialla are not sewered	✓		
GENERAL CWBC ISSUES			
The CENTROC Water Security Study may have long term impacts on CTW and Cabonne Shire drought management. Should Councils progress actions or postpone them pending the CENTROC study findings?			• Some actions, especially those addressing immediate problems, cannot wait and work needs to get underway. • Investigations that will inform the CENTROC study of the water needs and issues of the councils should be undertaken and fed into the process. • The CENTROC study recommendations will deal with long term issues and solutions. • The IWCM evaluation needs to keep across progress in the CENTROC study and benefit from this work where possible. • The Ministerial Inquiry into local water utilities is also relevant to the IWCM process. The report is expected in December.
Growth in Orange will have an important influence on the surrounding region.			Orange is addressing the severe water shortage in a number of ways:

			• Stormwater harvesting (2000 ML/year) • Reconnecting Lake Canobolas • Reconnecting Gosling Creek Dam • Bore water is being tested as a possible source
The water requirements of the Rural Fire Service need to be taken into account by all councils			

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