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28 September 2012

Mr Marcus Crudden  
Acting Director – Water  
Essential Services Commission  
2/35 Spring Street  
Melbourne, VIC 3000

Dear Marcus,

**Re: Water Plan 3: Central Highlands Water - Water Plan Final Submission**

I am pleased to submit Central Highlands Water's (CHW) Final Water Plan Submission, as approved by the CHW Board, for your review.

The submission contains what CHW believes to be in the main, a return to a 'business as usual' level of capital and operational expenditure, in-line with the Essential Services Commission's (ESC) guidance paper and the current water resource situation. The significant recovery in water resources seen in recent years, along with the major capital investment in water augmentation projects across our fifteen (15) supply systems, has resulted in CHW forecasting a much more stable operating environment for the third regulatory period.

As you are aware, CHW has operated in a challenging environment in Water Plan 2 in which water demand and therefore revenues have been significantly lower than forecast. However in spite of these challenges CHW has continued to deliver a high level of service to its customers, through targeted capital and operation expenditure, particularly in providing additional water resources and security of supply. Throughout this time CHW has delivered these services within the agreed expenditure levels of the ESC's 2008 pricing determination. However the reduction in revenue, due to the factors highlighted above, has meant an increase in debt beyond the original pricing determination.

For the upcoming regulatory period both the CHW Board and Business have a strong focus on managing and reducing debt, to ensure the long term financial viability of the business. CHW's Water Plan Submission proposes a one-off 8.5% real price increase in year 1 of WP3, with CPI only rises thereafter. The proposed tariff pathway will enable CHW to maintain its financial sustainability whilst at the same time limiting price increases for our customers. CHW's financial modelling for WP3 has shown that with the proposed price increase, along with forecast demand and connection growth, that the Business will become cash flow positive in the outer years of WP3. This will be a significant milestone as it will allow CHW to begin the process of debt reduction in the transition to WP4.

CHW is not forecasting a rapid rise in demand levels, with detailed demand modelling showing a gradual rise in demand over the Water Plan period. Demand may however be subject to a range of external influences from year to year and CHW has made allowance for these if they occur.

CHW welcomes ESC feedback and review of the Water Plan Submission and we look forward to working with you between now and July 1 2013, as we deliver a fair and equitable Water Plan for the next five years.

Yours sincerely,

A handwritten signature in black ink, appearing to read 'Paul O'Donohue', with a stylized flourish at the end.

Paul O'Donohue  
Managing Director

# WATER PLAN 2013-2018

FINAL SUBMISSION



CENTRAL  
HIGHLANDS  
WATER

# TABLE OF CONTENTS

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Executive Summary	4
1.0 Introduction	5
2.0 Overview of Water Plan Process	7
3.0 Service Outcomes	8
3.1 Proposed Customer Service Standards	8
3.2 Maintaining Water Quality Standards	11
3.3 Maintaining Wastewater Standards	12
3.4 Maintaining Environmental Standards	13
3.5 Maintaining Water Supply Standards	14
3.6 Guaranteed Service Levels	15
3.7 Customer Service Processes	15
3.8 Non-Prescribed Services	16
4.0 Operating Expenditure	17
5.0 Capital Expenditure	20
6.0 Revenue Requirement	26
7.0 Supply and Demand	29
7.1 Demand	29
7.2 Supply	31
7.3 Living Victoria	32
8.0 Tariffs	34
8.1 Tariff Increase	34
8.2 Tariff Structure	34
9.0 Tariff Choice	38
10.0 Customer Consultation	39
11.0 Allocating and Managing Risk	41
12.0 Regulatory Period	43
13.0 Incentive Mechanisms	43
14.0 Form of Price Control	44
15.0 New Customer Contributions (Developer Charges)	45
Glossary of Terms	46
Appendices	47

# TABLE OF FIGURES

---

<b>Figure 1</b>	Central Highlands Water Service Region	6
<b>Figure 2</b>	Water Plan Process and Timings	7
<b>Figure 3</b>	CHW Customer Survey Results – Services	8
<b>Figure 4</b>	List of Core Service Standard Targets for Water Plan 3	10
<b>Figure 5</b>	Additional Service Standard Targets	11
<b>Figure 6</b>	Supply System Levels of Service Criteria	14
<b>Figure 7</b>	Projected Operating Expenses	18
<b>Figure 8</b>	CHW Asset Summary List	20
<b>Figure 9</b>	Top 10 Capital Expenditure Projects / Programs	21
<b>Figure 10</b>	Capital Investment Profile	25
<b>Figure 11</b>	Regulatory Asset Base Projections	26
<b>Figure 12</b>	Maximum Allowable Revenue	27
<b>Figure 13</b>	Projected Revenue	28
<b>Figure 14</b>	Historical and Projected Total Retail Water Demand	30
<b>Figure 15</b>	Projected CHW Retail Demand	31
<b>Figure 16</b>	Current IBT Structure	35
<b>Figure 17</b>	Proposed Two-Tier Structure	35
<b>Figure 18</b>	Proposed Tariff Structure	36
<b>Figure 19</b>	Proposed Tariff changes	37
<b>Figure 20</b>	Change to Average Residential Bill (125kL/annum) for 2013-14	38
<b>Figure 21</b>	Summary of Feedback received on Draft Water Plan	40
<b>Figure 22</b>	Trade Waste Charges	47
<b>Figure 23</b>	Miscellaneous Charges	47
<b>Figure 24</b>	New Customer Contributions	48
<b>Figure 25</b>	Core Service Standard Targets and Performance for Water Plan 2	49
<b>Figure 26</b>	Additional Service Standard Performance – WP2	50
<b>Figure 27</b>	CHW WP3 Communications and Engagement Matrix	50
<b>Figure 28</b>	Customer Survey Results – Service Standards	53
<b>Figure 29</b>	ESC's Proposed NCC Negotiating Framework	55

*Please note – this document has been written based on the information available to CHW as at September 2012. Changes to the information set out in this document can occur between September 2012 and the final pricing determination, which is expected to be finalised by the ESC, in May 2013.*

# EXECUTIVE SUMMARY

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**Central Highlands Water (CHW) provides urban water and wastewater services to approximately 130,000 residents and businesses through 15 water supply and 12 wastewater systems in the Central Highlands region of Victoria.**

Under the Water Industry Regulatory Order (WIRO) which establishes the Victorian Government's economic regulation framework, CHW is required to submit a Water Plan to its economic regulator, the Essential Services Commission (ESC) prior to the commencement of each regulatory period. The next regulatory period commences on 1st July 2013 and will conclude on 30th June 2018. This is the third Water Plan (WP3) prepared by CHW, under the ESC regulatory model.

The key objective of the Water Plan is to outline the service standards that CHW intends to deliver and detail the revenue required to efficiently achieve these standards over the regulatory period. CHW's key objective is to provide customers with water and wastewater services that meet their needs at a fair and reasonable cost, whilst continuing to meet relevant regulatory drivers.

Taking into account the revenue required to provide its water and wastewater services, CHW will increase tariffs by a total of 8.5%, in real terms, across the WP3 period. This will see a price increase of 8.5% plus CPI (Consumer Price Index) in the first year of the regulatory period (2013-14), followed by increases by CPI only in the following four years of the Water Plan. This results in prices increasing by an average of 1.7% (plus CPI) per year across the five year regulatory period.

CHW plans to simplify its billing process in WP3 with a move to a two tier volumetric tariff system. This is in-line with direction from the ESC and the State Government's Ministerial Advisory Council (MAC) and the new structure will also ensure greater equity across user groups. During WP3 CHW will continue to investigate tariff models that further simplify billing and change the ratio of fixed versus variable charges for customers.

Through efficient operational and capital expenditure, CHW plans to maintain and in some instances improve a range of service standard targets to continue to deliver its services to customer expectations. CHW will also maintain and improve its customer service systems, including hardship assistance and payment options, to ensure a continued high level of customer service.

**CHW plans to invest \$100M<sup>1</sup> in capital works across the 2013-18 Water Plan period, with a strong focus on the renewal and replacement of assets and to ensure that all CHW's systems are able to meet the demands of future growth across the region.**

CHW also forecasts direct operational expenditure of \$270M across the regulatory period, to ensure that service standards to customers continue to be met.

CHW has made significant investment across the current Water Plan (2008-13) in order to secure water supplies for its customers, during a period of unprecedented drought. This investment has resulted in greatly increased water resource security across CHW's supply systems. During this time CHW has also seen a fundamental shift in its customers approach to water use resulting in a significant reduction in consumption per connection, with CHW customer's usage being the third lowest in Victoria.

<sup>1</sup> Please note, all amounts shown in this document are in 2012-13 dollars, unless otherwise stated.



**Central Highlands Water (CHW) is a Victorian State Government-owned corporation that provides urban water and wastewater services to approximately 130,000 residents and businesses through 15 water supply and 12 wastewater systems in the Central Highlands region of Victoria (see Figure 1).**

CHW operates in a regulated environment with a clear focus on delivering urban water and wastewater services to residential and non-residential customers. The Board of CHW reports to the Minister for Water via the Department of Sustainability and Environment (DSE), which provides water policy and strategy support.

Under the Water Industry Regulatory Order (WIRO) which establishes the Victorian Government's economic regulation framework, CHW is required to submit a Water Plan to its economic regulator, the Essential Services Commission (ESC) prior to the commencement of each regulatory period. CHW's next regulatory period commences on 1st July 2013 and CHW is proposing to maintain a five year regulatory period which will conclude on 30th June 2018.

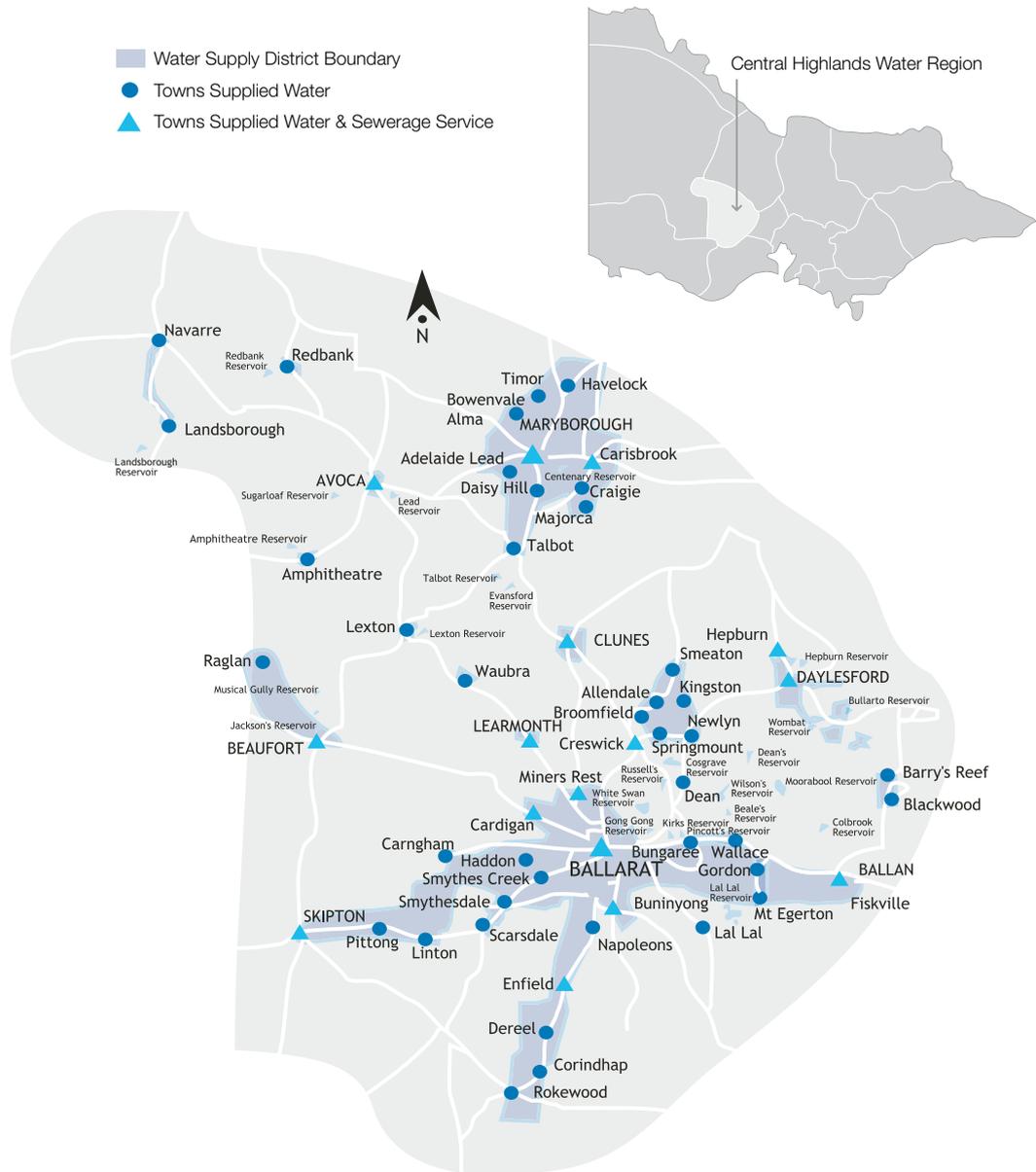
The ESC, under the WIRO, has the powers to determine and approve the prices to be charged for services and/or the manner in which those prices are to be applied. In making its 'pricing determination', the ESC must consider the efficient revenue requirements for CHW in providing the required services whilst ensuring CHW remains financially viable.

The key objective of the Water Plan is to outline the service standards that CHW intends to deliver and detail the revenue required to efficiently achieve these standards over the regulatory period. In preparing this submission, CHW has applied the ESC's Building Block approach to define the required revenue to be recovered to meet the objectives set out above.

**CHW's Water Plan 2013-2018 (Water Plan 3) is structured around the following key principles:**

- Delivery of service outcomes that provide value, meet customer requirements and satisfy regulatory obligations
- Engaging with and maintaining strong relationships with customers and the community
- Ensuring prudent and efficient expenditure across the regulatory period
- The revenue requirement for the business is in-line with the delivery of the service outcomes
- Pricing impacts on customers are minimised
- The organisational resilience and financial sustainability of CHW is maintained

Figure 1: Central Highlands Water Service Region Map





The key steps in the Water Plan process are outlined in Figure 2 below.

This shows the timings for the WP3 process, from the submission of the final Water Plan document to the final pricing determination and implementation of new pricing from 1st July 2013.

Figure 2: Water Plan Process and Timings

Planning Step	Date
Final Water Plan submitted to ESC	28 September 2012
ESC Review of Final Water Plan	October - December 2012
Draft Price Determination released by ESC	February 2013
Final Price Determination released by ESC	May 2013
New pricing takes effect	1 July 2013

# 3.0

## SERVICE OUTCOMES



### 3.1 PROPOSED CUSTOMER SERVICE STANDARDS

The ESC specifies a range of core service standards against which CHW must propose target values and report its performance, throughout the Water Plan period.

In order to better understand customer views on CHW's services, CHW engaged the University of Ballarat to undertake an extensive customer survey. The survey, conducted in October 2011, surveyed 420 CHW customers which included representative numbers of customers from across all of CHW's service area. The survey was focussed on the areas of service standards, value for money and tariffs.

In relation to services and service outcomes, the survey asked respondents to rank a list of services in terms of their importance and their perception of CHW's performance. The overall results for the five most important services are shown in Figure 3 below, with the full table of results from the survey found in Figure 28 in the Appendices.

Figure 3: CHW Customer Survey Results – Services

Service	Importance Ranking (Scale 1 = not important, 10 = extremely important)	Performance Ranking (Scale 1 = poor, 5 = excellent)
Prompt response to emergencies	9.3	4.0
High quality drinking water	9.0	3.4
Reliable water services	8.9	4.1
Prompt phone service	8.6	3.9
Reliable wastewater services	8.4	4.1

This table shows that response to emergencies, quality drinking water and reliable water services were clearly the top three most important services to CHW customers. In terms of CHW's performance in the delivery of these services, customers across all areas ranked CHW's performance very highly for reliable water and wastewater services, with response to emergencies a very close third. This demonstrates that CHW's service standard targets are able to deliver on customer expectations in regard to water and wastewater network performance. The lower ranking for performance in delivery of water quality is attributable to water quality issues faced by some customers during the drought and by those customers on regulated or non-potable supply (currently 3 out of CHW's 15 supply systems). CHW has undertaken a range of work in WP2 to address these water quality issues and has plans in place for WP3 to further improve the delivery of quality water supplies (see Section 7).

CHW's performance against the service standard targets set for the current Water Plan has been very good, particularly when considering the wide range of climatic factors that have impacted performance. This has included dealing with the wide range of issues associated with severe drought followed by needing to manage extreme wet weather and flood events in the 2010-11 year. A full list of the current water plan targets and CHW's actual performance can be seen in Figure 25.

The core list of service standards is found below in Figure 4, along with CHW's proposed targets for the Water Plan period. In-line with CHW's current performance and proposed expenditure for the upcoming regulatory period, nine of the proposed service standards will see an improvement in the target, compared to the current Water Plan. The remainder will see a continuation of the targets established during the current regulatory period, which will maintain current service levels.

**The review and update of the service standards for WP3 was undertaken using the steps outlined below:**

1. Performance assessment
  - Determine CHW performance over previous 5 years
  - Determine 5 year average performance
  - Determine relevant factors which affect performance including CHW specific factors
  - Consider variability of performance and possible reasons for variations
2. Review the targets and performance of other water businesses to benchmark CHW
3. Determine performance improvement opportunities for each service standard and identify relative costs and benefits of improving performance
4. Nominate target for WP3
5. Consider what actions are required in WP3 to achieve these outcomes

The ESC reviewed the list of core service standards and reportable key performance indicators (KPI's), in order to refine the performance indicator framework. In summary, the core service standard list remains unchanged, but 11 KPI's have been removed, 8 KPI's have been modified, 16 KPI's have been clarified, and 5 KPI's have been added. The ESC has also foreshadowed future work on potential partial productivity measures and customer responsiveness and service measures.

Figure 4: List of Core Service Standard Targets for Water Plan 3

Service Standard	2012-13	2013-14	2014-15	2015-16	2016-17	2017-18
<b>Water</b>	<b>WP2</b>	<b>WP3</b>				
Unplanned water supply interruptions (per 100km)	<b>37.1</b>	26.5	26.5	26.5	26.5	26.5
Average time taken to attend bursts and leaks (priority 1) (minutes)	<b>60</b>	45	45	45	45	45
Average time taken to attend bursts and leaks (priority 2) (minutes)	<b>120</b>	90	90	90	90	90
Average time taken to attend bursts and leaks (priority 3) (minutes)	<b>720</b>	720	720	720	720	720
Unplanned water supply interruptions restored within 5 hours (per cent)*	<b>98.7%</b>	98.7%	98.7%	98.7%	98.7%	98.7%
Planned water supply interruptions restored within 5 hours (per cent)	<b>87%</b>	87%	87%	87%	87%	87%
Average unplanned customer minutes off water supply (minutes)	<b>18</b>	18	18	18	18	18
Average planned customer minutes off water supply (minutes)	<b>12</b>	12	12	12	12	12
Average frequency of unplanned water supply interruptions (total number per total customers per year)	<b>0.2</b>	0.15	0.15	0.15	0.15	0.15
Average frequency of planned water supply interruptions (total number per total customers per year)	<b>0.1</b>	0.1	0.1	0.1	0.1	0.1
Average duration of unplanned water supply interruptions (minutes)	<b>120</b>	120	120	120	120	120
Average duration of planned water supply interruptions (minutes)	<b>240</b>	210	210	210	210	210
Number of customers experiencing 5 unplanned water supply interruptions in the year (number)*	<b>0</b>	0	0	0	0	0
Unaccounted for water (per cent)	<b>10%</b>	11%	11%	11%	11%	11%
<b>Sewer</b>						
Sewerage blockages (per 100km)	<b>32</b>	25.4	25.4	25.4	25.4	25.4
Average time to attend sewer spills and blockages (minutes)	<b>60</b>	45	45	45	45	45
Average time to rectify a sewer blockage (minutes)	<b>150</b>	120	120	120	120	120
Spills contained within 5 hours (per cent)*	<b>100%</b>	100%	100%	100%	100%	100%
Customers receiving more than 3 sewer blockages in the year (number) *	<b>0</b>	0	0	0	0	0
<b>Customer Service</b>						
Complaints to EWOV# (rate per 1000 customers)	<b>0.6</b>	0.6	0.6	0.6	0.6	0.6
Telephone calls answered within 30sec	<b>86-90%</b>	90%	90%	90%	90%	90%

\* Items shown with an asterisk are also subject to a Guaranteed Service Level (GSL – see section 3.6)

# EWOV is the Energy Water Ombudsman of Victoria – Victoria's independent complaint resolution body

**In addition to the core list, CHW will retain the following additional service standards:**

- Recycled Water – volume of treated wastewater utilised for recycling purposes
- Biosolids reuse – quantity of biosolids (solid / sludge waste from wastewater treatment process) reused per annum as a percentage of total tonnes produced
- Environmental discharge indicators – percentage of wastewater samples taken that comply with agreed standards
- Drinking Water quality indicators - percentage of drinking water samples taken that comply with agreed standards

Targets are proposed for these (as seen in Figure 5) in line with proposed expenditure and regulatory obligations. CHW's performance against these standards for WP2 can be found in Figure 26 in the Appendices.

**Figure 5: Additional Service Standard Targets**

Additional Service Standard	2013-14	2014-15	2015-16	2016-17	2017-18
Recycled Water (target reuse volume ML)*	1,790	1,820	1,870	1,890	1,900
Biosolids reuse	100%	100%	100%	100%	100%
Environmental discharge indicators	100%	100%	100%	100%	100%
Drinking Water Quality indicators	100%	100%	100%	100%	100%

\* Reuse volume target derived from established and forecast recycled water demand, shown in Millions of Litres (ML) / annum

## 3.2 MAINTAINING WATER QUALITY STANDARDS

The most important service that CHW provides to its customers is the provision of high quality, safe drinking water.

The Department of Health (DoH), via the Safe Drinking Water Act and Regulations, monitors the compliance of all water businesses in relation to drinking water quality. DoH issued all water businesses with a guidance paper for the preparation of their Water Plans which detailed their requirements for the Water Plan period.

**CHW reviewed this paper and included the following items in the Water Plan to ensure it meets the DoH requirements:**

- Continued catchment management works to ensure the quality of water derived from CHW controlled catchment areas remains high – works to include fencing, re-vegetation and catchment monitoring
- Ongoing expenditure to ensure CHW's water treatment and supply network assets continue to meet drinking water quality requirements – funds allocated for equipment upgrades / replacements, monitoring, SCADA and mains cleaning
- Monitoring and assessment of water quality risks from catchment to tap, via CHW's Water Quality Risk Management Plan
- Planned works to address supply systems experiencing issues with elevated levels of total dissolved solids (TDS or salt) including: a water quality improvement project for Maryborough and an alternative supply source for Lexton

- Maintaining training budgets for water treatment plant operators to ensure all operators meet the required competency level under the DoH competency framework
- Funding to ensure maintenance of CHW's existing systems relating to:
  - Monitoring and alarming of Critical Control Points (CCP's) in its water treatment processes via remote telemetry (SCADA)
  - Turbidimeters on individual filters at filtration treatment plants
  - Compliance of all fluoridation plants to DoH's Code of Practice for fluoridation plants

In addition to the above, CHW also noted DoH's proposed changes to the Safe Drinking Water Regulations (due to sunset in 2015) and will provide feedback to DoH via the consultation process for the new Regulations. The DoH also indicated that it will continue to implement its fluoridation program across the state. CHW, as it has done in the past, will comply with directives from DoH on the inclusion of fluoride into supply systems.

### 3.3 MAINTAINING WASTEWATER STANDARDS

**Collecting and treating wastewater is an essential part of CHW's commitment to protecting and enhancing both public and environmental health.**

Throughout WP3, CHW will continue to develop, operate and maintain its wastewater collection and treatment systems in accordance with prescribed standards. The EPA Corporate Licence and the Victorian State Environment Protection Policies are key drivers. In addition, CHW has referenced EPA's WP3 guidance in the preparation of this Water Plan.

**In doing so, CHW has plans that:**

- Ensure wastewater treatment plants continue to be developed, maintained and upgraded where necessary in order to achieve 100% compliance with EPA licence requirements. This will include \$9.6M invested in an upgrade of the Ballarat South Wastewater Treatment Plant
- Beneficially utilise reclaimed water products in accordance with EPA and Department of Health reclaimed water guidelines
- Beneficially reuse 100% of biosolids generated from wastewater treatment processes and reduce existing stockpiles of biosolids
- Address the requirement for containing 1 in 5 wet weather events by implementing a risk-based sewerage system improvement program, including \$3.0M allocated to the Ballarat sewer flow containment program

### 3.4 MAINTAINING ENVIRONMENTAL STANDARDS

CHW is committed to best practice environmental management and to the principles of environmental sustainability.

**The key environmental drivers for CHW include:**

- EPA Corporate Licence Sustainability Commitment
- Statement of Obligations
- Victoria's State Environment Protection Policies (SEPP)
- State and Federal Environmental Protection legislation
- State and Regional Catchment Management and River Health Strategies
- Victoria's Living Melbourne, Living Victoria Implementation Plan

These drivers guide the focus, objectives and delivery of CHW's environmental programs, whilst day to day business activities are also guided by an Environmental Management System certified to AS/NZS ISO 14001.

**CHW's ongoing environmental programs include:**

- Source Water Protection – maximising surface water and ground water quality by improving catchment health and reducing contamination hazards
- River Health – maximising benefits of environmental flows and delivering improved health and resilience to riparian areas, eg Moorabool and Yarowee Rivers
- Biodiversity – protecting and enhancing our native flora, fauna and natural assets
- Biosecurity – reducing the threat posed by pest plants and animals
- Fire Prevention – reducing the risk of wildfire by appropriately managing vegetation fuel loads, maintaining fire breaks and operating a Forest Industry Fire Brigade
- Sustainability – implementing the waste hierarchy in order to maximise the efficient use of resources, recycle energy and materials and minimise waste
- Demand Management - continuing to work with communities and businesses to promote the efficient use of water
- Recreational Areas – continued management of CHW's recreational assets (including Kirks Reservoir, Gong Gong Reservoir and Moorabool Reservoir for community use) in accordance with water quality, health and safety and environmental obligations. CHW will also continue to provide limited access to a number of reservoirs for recreational fishing

Central Highlands Water's commitment toward maintaining environmental standards will continue throughout WP3 and beyond.

### 3.5 MAINTAINING WATER SUPPLY STANDARDS

Provision of a secure water supply of adequate quantity to meet expected demands is fundamental to CHW's operation. The experience of recent years with unprecedented drought reinforces this requirement.

CHW has seventeen separate Bulk Entitlements (BEs) which define the right to extract and supply water for its fifteen water supply systems. CHW actively manages this program and continues to invest to ensure it meets its obligations within each of these BE's as outlined in the BE Metering Plan, as approved by the Minister for Water. CHW has thirty two reservoirs that must be managed in accordance with dam safety guidelines as outlined by DSE and the Statement of Obligations. The Ballarat and District system is also connected to water resources in the north of the state where CHW manages and utilises a portfolio of high reliability and low reliability water shares, to meet its water supply level of service to customers.

In addition to surface water supplies, CHW has made a significant investment in groundwater as either the primary source of supply in many systems as well as for the provision of backup and/or drought response resources in other systems. Southern Rural Water and Goulburn Murray Water remain key stakeholders for CHW in relation to groundwater licensing.

The sustainable provision of these services places significant ongoing responsibilities, regulation and obligations in relation to catchment and land management, river health protection and water quality monitoring and protection, on CHW. A large component of the total CHW asset base is associated with the collection, treatment and supply of water including diversion weirs, groundwater bores, reservoirs/dams, pump stations, superpipe and other raw water pipelines.

Water resource security is defined in terms of an agreed level of service for water supply. CHW has developed agreed criteria for this level of service in consultation with its customers. The level of service (LOS) criteria varies between systems, with generally more complex criteria being adopted for the larger systems (Ballarat and Maryborough). The adopted LOS standards are shown in Figure 6 below.

Figure 6: Supply Levels of Service Criteria

System	Level of Service trigger	Level of Service
Ballarat	Frequency of stage 1 restrictions	1 year in 20
	Frequency of stage 3 restrictions	1 year in 1,000
Maryborough	Frequency of stage 1 restrictions	1 year in 20
	Frequency of stage 3 restrictions	1 year in 1,000
Others	Frequency of stage 1 restrictions	1 year in 10
	Meet base supply level	At all times

Some expenditure is required in the water plan period to enable these standards to be met. The main areas are system upgrades at Maryborough and Redbank, and operational expenditure for pumping from the Goldfields Superpipe for Ballarat supply. More details for water supply requirements are provided in Section 7.

### 3.6 GUARANTEED SERVICE LEVELS

CHW introduced a Guaranteed Service Levels (GSL) scheme in WP2 which provided customers with a guarantee that where services are not met, an agreed payment or rebate is paid to each affected customer.

**As per CHW's Customer Charter, GSL rebates apply if CHW fails to meet the following service standards:**

1. Rectifying any unplanned interruption to a customer's water supply within five hours of CHW becoming aware of the interruption
2. Not more than five water supply interruptions for each customer in any twelve month period
3. If a water service pipe, for which CHW has responsibilities to maintain under the Customer Charter, is leaking, CHW will fix it within five business days of becoming aware of the leak
4. Rectifying any interruption to a customer's sewerage service within five hours of CHW becoming aware of the interruption
5. Not exceeding three sewerage service interruptions for each customer in any twelve month period

The ESC has recently rolled-out to all sixteen urban retail Water Corporations a Hardship related GSL from 1st July 2012. This new GSL includes a payment to customers if water businesses have not followed due process in relation to the restriction of supply in the event of non-payment. CHW has adopted the GSL as reviewed by the ESC, from 1st July 2012. CHW is proposing to maintain the current GSL's for the WP3 period.

The level of payment / rebates which apply to each of the GSL's, is listed in CHW's Customer Charter which can be found on the CHW website at:

<http://www.chw.net.au/about-us/customer-charter>

### 3.7 CUSTOMER SERVICE PROCESSES

**CHW has a range of customer service systems and processes which will be maintained and further refined during WP3.**

CHW has a range of customer service systems and processes which will be maintained and further refined during WP3. CHW manages a local customer contact centre and service counter that results in customers dealing directly with CHW staff for a range of services including: billing enquiries, bill payment, technical customer service inquiries and planning issues. CHW is undertaking further work to provide options for payments on-line, flexible payment arrangements as well as expanding direct debit facilities to make it simpler and easier for our customers to pay their account.

CHW was one of the first water corporations in Victoria to employ a Customer Assistance Officer and introduce a Hardship Policy for customers experiencing difficulties in bill payment. Part of this process has also seen CHW partner with a local organisation, Community and Family Services (CAFS), to provide programs of additional support to customers experiencing financial hardship. This support includes providing customers with a contact point to discuss any financial hardship related issues, provision of payment options and access to CAFS financial advisors and planning services. This process has provided benefit to both CHW and its customers and these services will continue to be provided across WP3.

### 3.8 NON-PRESCRIBED SERVICES

Supporting the core services of water and wastewater delivery, CHW also operates the CHW Laboratory and CHW's Forestry services.

The CHW Laboratory is accredited by the National Association of Testing Authorities (NATA) to ISO17025 (quality standard) for both Biological and Chemical with a number of staff also holding Victorian Department of Health approved analyst status. The CHW Laboratory provides both sampling and analytical services to support CHW's environmental, water and wastewater operations. The Laboratory also provides sampling and analytical services for external clients (non CHW).

CHW's forestry operations are an important component of CHW's overall catchment and environmental management systems. CHW manages some 6,000 hectares of land which includes approximately 1,500 hectares of forestry plantations, actively managed under CHW's silvicultural program. The forestry plantations are primarily managed for the protection of water quality in CHW's water supply catchments. These plantations provide riparian vegetation buffers for waterways and reservoirs to protect them from contamination from neighbouring land. The silvicultural management of the Corporation's plantations aims is to produce high quality timber. This is achieved through applying best management practices, such as; multiple thinning operations, pruning programs for the production of high value knot-free timber, quality tree planting of genetically improved stock, noxious weed control, appropriate fire protection strategies, and detailed planning and scheduling.

Both the services above are classified as 'non-prescribed' under ESC definitions, therefore the costs and revenues for laboratory and forestry operations are excluded from the regulatory pricing model.



Operation expenditure covers all expenditure required by CHW to run the business and includes costs related to: labour, power, chemicals, fuel and materials. The regulatory model establishes a baseline or 'business as usual' level of operational expenditure, based on the final audited 2011-12 accounts. Future new or additional costs are categorised as 'new initiatives' (as per the ESC's definition) and are considered separately to the business as usual costs.

**The forecast business as usual operational expenditure for WP3 contains significant cost pressures, which are driven by a number of factors including:**

- Headline labour costs will increase in line with the Enterprise Agreement. However, under the agreement, efficiencies must be delivered across the business to cap the effective nominal increases at 2.5%.
- Growth in the customer base of 1.8% which in turn drives increased costs relating to increased treated water volumes, maintenance, billing and customer support.

However, growth in business as usual expenditure will be capped at approximately 1% p.a. plus CPI as a business efficiency improvement program is implemented to drive greater efficiency across the organisation while ensuring improved service standards are met.

Changes to expenditure from WP2 to WP3 as a result of new initiatives, changed obligations or structural changes in the cost of existing obligations are added to business as usual expenditure to arrive at total prescribed operating expenditure.

**These increased costs will be incurred in the following areas:**

- Power costs – increasing from the 2011-12 due to a number of factors including:
  - Carbon tax impact
  - Infrastructure upgrades within the power sector being passed on by electricity distribution companies
  - Utilisation of the Superpipe to deliver agreed service levels
  - Total power costs estimated to increase by approx. \$1.4M per annum average
- Environmental Contribution increasing by \$1.1M per annum
- Country Town Sewerage Program \$1.4M per annum
- Biosolids Strategy implementation \$0.3M per annum
- Sewer inflow and infiltration abatement \$0.25M per annum
- Intelligent Water Network Initiatives \$0.25M per annum

When taking these significant additional costs into account, total prescribed operational expenditure will grow at approximately 3% p.a. during Water Plan 3 plus CPI.

The levels of operating expenditure forecast for the period and the components of total prescribed expenditures are shown in Figure 7.

**Figure 7: Projected Operating Expenditure**

Operating Expenditure Summary	WP2	WP3				
	2012-13	2013-14	2014-15	2015-16	2016-17	2017-18
Water	<b>24.32</b>	24.30	24.65	25.06	25.45	25.98
Sewerage	<b>18.32</b>	18.46	18.74	19.05	19.37	19.76
Recycled Water	<b>0.49</b>	0.55	0.56	0.56	0.56	0.56
<b>Total Business as Usual</b>	<b>43.13</b>	43.32	43.95	44.67	45.38	46.30
New initiatives and obligations	<b>2.57</b>	4.26	4.57	5.04	5.35	6.06
External bulk water charges (excl. temporary purchases)	<b>0.56</b>	0.56	0.56	0.56	0.56	0.56
External temporary water purchases	<b>0.20</b>	0.20	0.20	0.20	0.20	0.20
Licence fees	<b>0.27</b>	0.28	0.28	0.27	0.28	0.28
Environment Contribution	<b>2.00</b>	3.12	3.12	3.12	3.12	3.12
<b>Total Prescribed Operational Expenditure</b>	<b>48.74</b>	51.74	52.68	53.85	54.89	56.52

**CHW has a number of measures in place to ensure operational expenditure is prudent and efficient, such measures include:**

**1. Procurement Australia (PA)** – CHW has used PA since 1997, to competitively source consumables such as:

- Electricity
- Gas
- Bulk fuels
- Chemicals for water and wastewater treatment processes
- Uniforms
- Stationery

PA is an organisation which competitively procures goods and services for a range of public entities such as councils and water corporations. Savings are generated through bulk purchasing, negotiated contracts and benchmarking.

**2. State Purchasing Contracts** are used for:

- IT equipment
- Network equipment

**3. CHW's Public Private Partnerships (PPP's)** - this form of project delivery has a demonstrable efficiency gain over the Public Sector Comparator (PSC). CHW has utilised PPP's for a range of projects including:

- 2006 Ballarat North Water Reclamation Plant
- 2010 Country Town Sewerage Project

**4. Competitive Procurement Policy**

- Ensures competitive prices are obtained for goods and services and the carrying out of works

**5. Operational Efficiencies**

- Customer growth of 1.8% will be absorbed into the current business structure with existing staffing numbers - (this equates to approximately 1,100 additional connections per year to be managed and maintained by CHW)
- CHW will undertake a business efficiency improvement program to review operational activities within the business and identify efficiency opportunities – commencing in December 2012 and continuing into WP3
- Delivering ESC-driven 1% efficiency each year
- New CHW Enterprise Agreement contains provisions requiring nominal annual salary increases to be offset by efficiencies to ensure the net cost to the business is capped at 2.5% p.a. (In-principle agreement as at July 2012)

**6. Energy Efficiency** - CHW is focused on its energy demand and is seeking to minimise cost through a combination of:

- Reducing energy consumption through the cost effective use of technology
- Utilising flexible demand management and contract demand mechanism

CHW is also participating in the State Government's Greener Government Building (GGB) Program. This program, administered by the Department of Treasury and Finance, aims to reduce the Government's environmental impact and operational costs by improving the energy efficiency of existing government infrastructure. CHW will work with energy services company Honeywell to retrofit energy efficient technologies and solutions to wastewater treatment plants, pumping systems and buildings. The first stage of the GGB project is a Detailed Facility Study, which will identify ways that CHW can further reduce its energy consumption. The study will also provide direction for the implementation phase of the project. The timelines for the project are to complete the facility study by November 2012 with a view to undertaking retrofit works in 2013 and beyond. The GGB project will complement energy efficiency works already undertaken by CHW, including a mini hydro generator at White Swan Reservoir, solar aerators and solar generation at remote sites.

# 5.0

## CAPITAL EXPENDITURE



**CHW manages a significant array of assets which includes:**

**Figure 8: CHW Asset Summary List**

Water	Wastewater
Over 2,400km of water mains	More than 1,250km of sewer mains
14 water treatment plants	10 wastewater treatment plants
31 reservoirs and dams	95 sewer pump stations
32 ground water bores	
53 water service basins and tanks	
53 water pumping stations	

In total CHW's asset base is valued at approximately \$1 billion. The age and condition of these assets varies across the region and CHW has a range of processes in place to monitor and assess asset life. These processes feed into CHW's capital expenditure program which covers replacement and renewals of assets as well as new assets for growth areas or improved regulatory requirements.

CHW plans to invest \$100 million across the five year WP3 period on a range of projects which will ensure continued service reliability to our customers. The program will focus on maintaining and renewing CHW's assets, as well as the planning and delivery of new assets to meet the demands of growth across the region. Investment will also be made to improve CHW's capacity to treat a range of source waters, ensuring high quality water is available under a range of future climate scenarios. A breakdown of the planned capital expenditure for WP3 can be seen in Figure 10.

During WP2, CHW made significant investment in a range of projects that focussed predominantly on securing water supplies across the region.

**This included completion of:**

- Securing access to additional groundwater sources for Avoca, Landsborough, Maryborough, Daylesford, Ballarat and Beaufort
- The Goldfields Superpipe - Ballarat Link, which secured the water supply for the Ballarat system
- State Government water quality projects involving construction of advanced water treatment plants at Landsborough and Avoca
- Water Treatment Plant upgrades in Maryborough and Daylesford

**In addition there were also significant investments made in wastewater systems which included:**

- Roll out of the State Government's Country Town Sewerage Program to Waubra, Smythesdale, and Gordon
- Continued investigations into the appropriate wastewater option for Blackwood
- Sewer flow containment works in Ballarat and Daylesford
- Wastewater treatment process improvements in Ballarat and Maryborough
- Reuse upgrades to facilitate greater beneficial use of recycled water at Ballarat, Maryborough, Ballan and Clunes

The Top 10 projects/programs (by total expenditure) to be started or completed over the third regulatory period and the total project value are listed in Figure 9. A description of each project/program including drivers, outcomes and expected delivery dates is provided below. Capital works that will continue into WP3 include CHW's water and sewer main replacement and renewals program.

**Figure 9: Top 10 Capital Expenditure Projects / Programs**

Project	Total WP3 Expenditure
Maryborough Water Quality Improvement Project	\$10.2M
Ballarat West Urban Growth Zone Infrastructure	\$10.1M
Reservoir and Dam Upgrade Works	\$10.1M
Water and Sewer Main Renewals	\$10.0M
Ballarat South Wastewater Treatment Plant Augmentation Works	\$9.6M
Fleet Replacement - Operational	\$7.5M
ICT Infrastructure Replacements & Upgrades	\$5.0M
Raw Water Pipeline Replacement	\$3.1M
Ballarat Sewer Flow Containment Project – Ballarat South Outfall Sewer	\$3.0M
Lexton Water Supply Project	\$2.5M
TOTAL (Top 10 Projects / Programs)	\$71.1M

### 1. Maryborough Water Quality Improvement Project

The driver of this project is to ensure compliance with Water Quality targets (including TDS and hardness) and provide supply volume for future demand. The delivery date for this project will be dependent on a number of factors including water resource supply levels and quality. The preferred solution for this project is the provision of treatment of Moolort bore water in addition to the existing water treatment plant that treats the surface water supplies.

### 2. Ballarat West Urban Growth Zone Infrastructure

The Ballarat West Urban Growth Zone (BWUGZ) will cater for residential growth and provide services and infrastructure for new communities. The BWUGZ comprises 1,675 hectares of land located to the west of Alfredton, Delacombe and Sebastopol. The BWUGZ will provide approximately 18,000 new houses at full development to accommodate a population of over 40,000 people. The Precinct Structure Plan for Alfredton West precinct now known as Lucas, has been approved and the remaining three residential precincts (Bonshaw Creek, Greenhalghs Road and Carngham Road) which will comprise housing, town centres, community facilities, open space and transport networks are waiting approval.

This project will provide the trunk water and sewerage infrastructure to meet the needs of growth in the BWUGZ and consists of 11 distinct projects including the construction of water trunk mains, sewerage trunk mains, upgrades to pump stations and rising mains. The Ballarat South Wastewater Treatment Plant (BSWWTP) augmentation works also includes a component to cater for the increased flows from the BWUGZ. These works will be staged so as to facilitate the growth in Ballarat West.

### 3. Reservoir and Dam Upgrade Works

As part of the Department of Sustainability and Environment's (DSE) Statement of Obligations, CHW is required to develop and implement a program to maintain its dams and reservoirs. The program is targeted at minimising risk of dam failure to CHW, DSE and customers and is based on adherence to ANCOLD (Australian National Committee on Large Dams) guidelines on dam management processes. The program for WP3 includes a list of planned upgrades at a number of CHW's dams with works to occur across the five year period.

### 4. Water and Sewer Main Renewals

Detailed asset condition and performance assessments are used to target replacements and renewals of water mains to improve customer service outcomes and to reduce maintenance costs. This program of works will see the continuation of the replacement of water mains, on a priority basis, in a number of CHW's supply systems across the WP3 period.

The sewer main renewal program is required to maintain ESC customer service standards and meet EPA compliance requirements. Sewer main performance is assessed based on date constructed, material, life expectancy (dependant on material) and a risk rating. The risk rating is based on CHW's Risk management methodology and is determined by:

Consequence of Failure:

- Typical flow (guide to number of customers affected)
- Distance to repair
- Supply to Major customers
- Distance to waterway

Likelihood of Failure:

- Number of previous blockages

Sewer mains are inspected on a routine basis and the inspection reports provide a condition assessment of the main. Mains are then either selected for rehabilitation via the sewer main replacement works program, or given a date for another inspection.

### 5. Ballarat South Wastewater Treatment Plant Augmentation Works

The Ballarat South Wastewater Treatment Plant (BSWWTP) is the larger of the two wastewater treatment plants in Ballarat and treats approximately 70% of the wastewater generated in Ballarat and the surrounding areas. Since the BSWWTP was built in 1925, it has undergone a number of treatment upgrades to cater for increase flows and loads, as well as licence discharge requirements.

The BSWWTP is currently limited on hydraulic capacity and is also reaching its load capacity for biological nutrient removal. As a result CHW recently developed a strategy to augment the capacity of the BSWWTP to accommodate predicted 2035 flows and loads, and an increased level of service to match industry standards.

Some of the major projects outlined for the BSWWTP for the 2013 -2018 period include:

- New Clarifier and Sludge pumping station
- New aeration system
- New drum thickener and carbon dosing system
- Plant automation
- Decommissioning of old trickling filters
- New Archimedes screw conveyor

These upgrade works are to ensure ongoing compliance and to cater for growth and will be undertaken progressively across the five year period.

### 6. Fleet Replacement – Operational

CHW maintains a fleet of operational vehicles in order to undertake the full range of maintenance, customer service and emergency response functions across its supply systems. This ensures that:

- Staff have appropriate equipment (plant) to address system maintenance outcomes
- Staff are able to safely travel to and from required locations
- The vehicle fleet is compliant with relevant legislation

### 7. ICT Infrastructure Replacements and Upgrades

CHW maintains an extensive information and communication technology (ICT) network that enables effective and efficient delivery of safe drinking water, treatment of waste water and provision of high levels of customer service to all customers. To ensure that the network delivers the highest possible service, CHW will continue to upgrade relevant ICT equipment and systems.

WP3 initiatives will include: phone system upgrades for CHW's regional office, improved mobile computing technology for field staff and further reviews and streamlining of core customer service applications.

### 8. Raw Water Pipeline Replacement

CHW owns, operates and maintains a significant number of raw water supply mains which are critical assets to maintaining a reliable and high quality water supply. Some of the existing pipelines are near to the end of their useful lives and a program of systematic replacement has been developed. This program aligns with sound asset management principles and will enable CHW to continue to meet its service standards. Maintaining pipelines in sound condition also minimises water losses making systems more sustainable and efficient. The program for WP3 includes a list of planned replacements to occur across the five year period.

**9. Ballarat Sewer Flow Containment Project – Ballarat South Outfall Sewer**

CHW has been implementing a Sewer Flow Containment Strategy over the last 10 years in order to contain flows during 1 in 5 year rainfall events as per EPA guidelines.

The improvement works have targeted improving the capacity of Ballarat south outfall sewer. Several stages of this project have already been constructed with full depth sewer duplication the preferred methodology adopted.

Following additional flow monitoring in parts of the sewerage network catchment in 2010, the CHW sewerage model was recalibrated. This has provided a high level of confidence in model predictions as flow monitoring was undertaken during a high rainfall period with high soil saturation conditions. However, the recalibrated model predicted that the next stage of the proposed system improvement work would not be sufficient to overcome current system deficiencies.

Following this review of the system model, CHW is proceeding with an Inflow and Infiltration (I/I) reduction project in this catchment to include rehabilitation works and continued flow monitoring. This approach targets reducing the amount of water entering the sewerage system, primarily from rainfall events, with the benefits being less rain water being conveyed to and treated at the wastewater treatment plant. The overall strategy for the Ballarat South Sewer Flow Containment Project will be reviewed following the Inflow and Infiltration reduction project and a new Capital Program developed. The budget in WP3 reflects this plan.

**10. Lexton Water Supply Project**

The Lexton Water Supply Project involves sourcing an improved water supply for the Lexton township. The water quality in the existing supply, being Lexton Reservoir, is considered as inadequate from a long term security of supply and water quality perspective. This project involves establishing a groundwater bore at Gordon Hill, a raw water supply pipeline from the bore to the Lexton water treatment plant and associated modifications at the treatment plant for the new supply.

### P50 Analysis

P50 analysis is an analysis tool used to assess project costings and risk. It assesses the key project cost line items for the probability and risk that the line item will increase or decrease in cost. Each of these line items consists of two distributions, a quantity and a rate. Each line item of the cost estimates was analysed via a computer model with the overall P50 being the median when all these individual distributions are considered together. As part of the Water Plan process, CHW is required to provide P5, P50 and P95 capital cost estimates for the top 10 capital expenditure projects by value.

#### CHW prepared P50 and P95 cost estimates for the following selected projects:

1. Maryborough Water Quality Improvement Project
2. Ballarat West Urban Growth Zone Infrastructure
3. Reservoir and Dam Works
4. Ballarat South Treatment Plant (BSTP) Augmentation Works
5. Ballarat Sewer Flow Containment Project – Ballarat South Outfall Sewer

The P50 analysis was undertaken on the above projects as they are within the Top 10 by value and are distinct projects better suited to the P50 process, rather than a 'program' of works. The analysis produced project cost estimates which were marginally higher than original estimates. CHW has, in most cases, retained the original costings and will use the P50 analysis to assist in the identification and mitigation of project risks.

Figure 10: Capital Investment Program

Capital Expenditure	2013-14	2014-15	2015-16	2016-17	2017-18	TOTAL
Growth	860	1,850	4,680	830	2,930	11,150
Compliance	6,960	9,920	2,390	4,710	3,530	27,510
Renewals	9,010	8,400	6,960	7,710	7,530	39,610
Improved Services	6,040	1,170	1,970	7,600	5,040	21,820
<b>Total (\$'000s)</b>	<b>22,870</b>	<b>21,340</b>	<b>16,000</b>	<b>20,850</b>	<b>19,030</b>	<b>100,090</b>

CHW will continue to review and revise its capital investment program to prioritise the allocation of funds based on: risk analysis, servicing customer requirements and ensuring compliance with relevant obligations.

The ESC building block approach calculates a Maximum Allowable Revenue (MAR) for water corporations to efficiently operate their businesses, which in turn translates into tariffs based on forecast demand.

**The MAR consists of four components:**

- Operating Expenditure
- Return on Capital
- Return of Capital (regulatory depreciation)
- Adjustments for prior periods

Operating expenditure is explained further in Section 4. Return on/of Capital calculations are linked to the Regulatory Asset Base (RAB) which represents the value, as assessed by the ESC, of past capital investments. This is the value on which CHW can expect to earn a return (return on capital), and the value that is returned to the business over the economic life of the assets (as regulatory depreciation). CHW's projected RAB can be seen in Figure 11.

**Figure 11: Regulatory Asset Base Projections**

Regulatory Asset Base (RAB)	2012-13	2013-14	2014-15	2015-16	2016-17	2017-18
<b>Opening RAB</b>	<b>288,570</b>	<b>318,840</b>	<b>328,590</b>	<b>336,490</b>	<b>338,880</b>	<b>345,560</b>
Plus Gross Capital expenditure	20,263	22,870	21,340	16,000	20,850	19,030
Adjustments	22,000	-	-	-	-	-
Less Customer contributions	1,702	-	-	-	-	-
Less Proceeds from disposals	1,217	900	900	900	900	900
Less Regulatory depreciation	9,017	12,230	12,530	12,790	13,140	13,520
<b>Closing RAB (\$'000s)</b>	<b>318,840</b>	<b>328,590</b>	<b>336,490</b>	<b>338,880</b>	<b>345,560</b>	<b>350,220</b>
<b>Return on RAB (\$'000s)</b>	<b>N/A</b>	<b>15,390</b>	<b>15,840</b>	<b>16,100</b>	<b>16,330</b>	<b>16,620</b>

# 6.0

## REVENUE REQUIREMENT

Adjustments for prior periods include unforeseen costs incurred in meeting legislative obligations in WP2 such as the recent Superannuation obligations brought to account in 2011/12 driven by the shortfall in the Vision Super Defined Benefit Super Plan. Under legislation CHW is required to contribute \$5.2m to bring the fund back to surplus.

With each of the revenue requirement building blocks quantified the Maximum Allowable Revenue is shown in Figure 12.

**Figure 12: Maximum Allowable Revenue**

Revenue Requirement	2013-14	2014-15	2015-16	2016-17	2017-18
Operating expenditure	51.74	52.68	53.85	54.89	56.52
Return on assets to 30/6/13	14.82	14.18	13.56	12.97	12.40
Regulatory depreciation of assets to 30/6/13	11.80	11.36	10.94	10.54	10.15
Return on new assets	0.57	1.66	2.53	3.36	4.22
Regulatory depreciation of new assets	0.43	1.17	1.85	2.61	3.38
Adjustments from last period	5.38	-	-	-	-
<b>Total revenue Requirement</b>	<b>84.73</b>	<b>81.05</b>	<b>82.74</b>	<b>84.36</b>	<b>86.67</b>

CHW's proposed tariffs (see section 8.0) are based on a revenue requirement below the MAR. There were two key considerations in arriving at the proposed tariffs:

### 1. Cost of living pressures

CHW is aware of the pressures customers face in managing household expenditure. As a result the following steps have been taken to mitigate cost increases to customers:

- a. Limiting total price increase to 8.5%, plus CPI, across the WP3 period
- b. Increasing the size of the allowance on tier one pricing scale from 150kL (1kL = 1 kilolitre or 1,000litres) per annum to 175kL per annum. This equates to an increase of 68 litres per day (16%) before residential customers move into tier two, but still maintains a conservation focus via tier two.
- c. Removing the third tier from the inclining block tariff

### 2. Financial stability

CHW undertook a major Capital program during WP2 to address water security following a period of unprecedented drought. The WP2 tariffs were based upon the expectation of an increase in demand which has not eventuated. Customer behaviours and climatic conditions have changed such that demand remains at record low levels. The combined impact of the major capital program (including new treatment plants for smaller communities across the region) and structural change in demand resulted in a material increase in CHW's debt. CHW's debt level has grown from zero in 2005-06 to approx. \$140M in 2011-12. This in turn has contributed to an increase in costs to service this debt.

While CHW has implemented strategies to mitigate the financial impact by delivering capital and operational expenditure below WP2 allowances, there remains a cash shortfall of approximately \$22M. To ensure CHW's financial stability is maintained and to avoid a material impact on prices this shortfall has been capitalised in the Regulatory Asset Base to allow recovery over future Water Plans at modest rates.

On balance CHW believes a real tariff increase of a total of 8.5%, plus CPI, across the Water Plan best meets these competing demands of cost of living pressures and financial stability. CHW's projected revenue for the WP3 period (excluding CPI) can be seen in Figure 13.

Figure 13: Projected Revenue

Revenue (\$'000s)	WP2	Water Plan 3				
	2012-13	2013-14	2014-15	2015-16	2016-17	2017-18
Water and Sewerage Service Charges	52,310	57,630	58,618	59,649	60,748	61,869
Usage Charges	18,914	20,730	21,222	21,704	22,180	22,656
Other Revenue	2,077	2,084	2,090	2,096	2,102	2,108
<b>Total Prescribed Revenue (\$'000s)</b>	<b>73,301</b>	<b>80,444</b>	<b>81,930</b>	<b>83,449</b>	<b>85,030</b>	<b>86,633</b>



### 7.1 DEMAND

The level of demand for water across CHW's region is a key factor in the Water Plan process. Despite the easing of restrictions from 2009 there has been little increase in demand across CHW's fifteen water supply systems.

This change in water use is attributed to changes in customer water-use behaviours and the investment many customers have made in water efficient technologies. Figure 14 shows the magnitude of change in demand for water across all of CHW's systems over recent years. The chart also shows that the projected demand for the WP3 period is relatively flat, which reflects both the changes in customer behaviour and impact of increased adoption of water efficient technologies (water tanks, water efficient devices etc). As with all modelling there is a degree of uncertainty around projected demand, which can and will be impacted by a wide range of external factors such as climate, technology changes and customer behaviours. CHW's average residential demand in 2011/12 was 138kL/annum per connection, which is 20% below the regional state average of 172kL/annum and nearly 40% below average consumption in Ballarat in the 1990's.

In order to better understand the factors that will influence demand into the future, CHW has undertaken work to establish robust demand projections for the Water Plan period. CHW worked with Intelligent Software Development (ISD) in 2010 to develop a demand model that incorporated customer water-use decision-making. The effects of time spent on restrictions, climate variation and other influences were assessed and resulted in a highly validated representation of household water use behaviour, applicable to both of CHW's largest supply systems in Ballarat and Maryborough.

In 2012, CHW supplemented the ISD model by developing deeper knowledge of the individual components that make up overall demand. The modelling approach that was developed is known as an 'end-use' model. The features of this model are that it incorporates a 'bottom up' approach which gives an understanding of the separate responses for each type of water use.

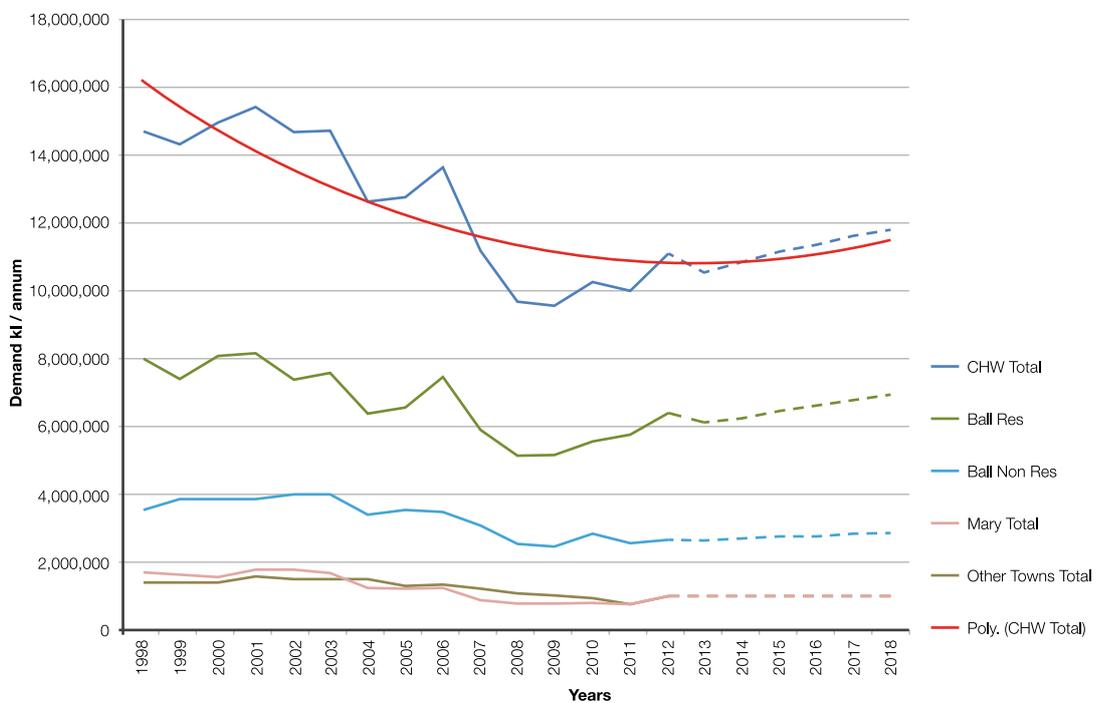
**For a residential situation this includes building water usage patterns based upon the following parameters:**

- Shower times and types of shower heads
- Toilet flush types
- Dishwasher type and usage
- Other modelled indoor usage
- Projected adoption and penetration rates over time of water efficient technologies including washing machines, dishwashers and shower heads
- Outdoor watering system type, including duration and frequency of use
- Outdoor and hose usage
- Rainwater tank installations and usage

Non-residential customers' water usage was also modelled. As a result, end-use models for the larger systems were developed which not only supported previous work undertaken by CHW (including the ISD model) but provided the basis for a greater understanding of the factors that influence future demand. By overlaying expected connection growth rates and climate modelling to the expected water-use behaviours, a range of future water demand scenarios can be accurately mapped. The end result is a highly validated range of retail demand for the forecast period which is shown in the projected demand levels in Figure 14.

**Figure 14: Historical and Projected Total Retail Water Demand**

**CHW Total & Component Demand**



This approach is also supported by findings from research conducted independently by the University of Ballarat in 2011<sup>1</sup>. One of the key findings concluded that:

**'...householders water conservation attitudes are strongly and confidently held, and that water conservation behaviours are quite durable, at least in the short to medium term...the findings suggest that water usage levels will remain relatively steady in the foreseeable future.**

It should also be noted that all of CHW's supply systems are projected to be on Permanent Water Savings Rules (PWSR) across the WP3 period, due to the current storage levels and the security of supply within these systems.

Total projected demand for all of CHW's supply systems can be seen in Figure 15 below (note figures are shown in millions of litres or ML).

**Figure 15: Projected CHW Retail Demand**

Demand	2013-14	2014-15	2015-16	2016-17	2017-18
Residential	7,763	7,949	8,130	8,307	8,483
Non-Residential	3,077	3,139	3,200	3,260	3,321
<b>Total Demand (ML)</b>	<b>10,840</b>	<b>11,088</b>	<b>11,330</b>	<b>11,567</b>	<b>11,804</b>

## 7.2 SUPPLY

**CHW has made significant investments during WP2 in order to secure water supplies for its customers, during a period of unprecedented drought.**

**This included projects such as:**

- Additional groundwater sources for Avoca, Landsborough, Maryborough, Daylesford, Ballarat and Beaufort
- Securing Ballarat's water supply with the Goldfields Superpipe
- Advanced water treatment plants for Landsborough and Avoca
- Water Treatment Plant upgrades in Maryborough and Daylesford

This investment has resulted in bringing water supply to the agreed level of service across most of CHW's supply systems. In addition to the works since 2010, the CHW region has been fortunate in receiving good rainfall and inflows to its water supply systems. Today CHW systems are holding high storage levels which provides for a good short term outlook and for aquifer recovery for many groundwater systems.

CHW has undertaken detailed modelling on its water supply systems to better understand supply system yields now and into the future. For Ballarat and Maryborough this has included the use of stochastic modelling techniques to better understand a full range of future scenarios and service levels.

1. Durability of Water Conservation Behaviours in the Home. University of Ballarat Centre for Regional Innovation & Competitiveness, July 2011

Stochastic modelling takes the likelihood of events occurring (as observed from historical records) and applies them to the generation of datasets over extended periods. This allows the probability of certain events occurring to be observed over a larger dataset (10,000 records) than that available through historic records (110 years of records). The modelling has also included allowance for a range of possible climate change scenarios.

This modelling has shown that the yield for Ballarat at the agreed level of service will meet expected demands, because it is now based on a diversified number of water resources including the Goldfields Superpipe. It has also shown that the next major augmentation of the Ballarat system is not required for at least twenty years, depending on growth and per capita demand changes. The modelling shows that to meet the agreed level of service, some supply will need to be pumped from the Goldfields Superpipe (GSP). This volume will vary from year to year depending on local rainfall and runoff. The modelling shows that overall there is a 1% annual exceedence probability that this volume will be greater than 2.6 GL (1GL = 1 gigalitre or 1 billion litres) per annum. However given the current good position of the Ballarat system reservoirs, CHW has determined that in the WP3 timeframe adopting the 1% value is unnecessarily conservative. The 10% exceedence value for supply from the GSP is 1.6 GL per annum and this has been adopted for the water plan. It should be noted that approximately 400ML/annum of this volume is required for routine operations. This is required for routine maintenance to ensure pumps remain in good working order and also to turn over the water in the pipeline to keep it of acceptable quality for direct usage in the White Swan Water Treatment Plant (WTP) if required.

For Maryborough the modelling highlights the need for additional supply to ensure forecast demand can be met. CHW has committed funds in the capital program for the upcoming regulatory period that will allow increased system yield at good quality through the treatment of additional groundwater supplies. This additional volume will provide Maryborough with the agreed level of service well into the future and will ensure less dependency on the extremely variable surface water resources in this system.

For CHW's thirteen other supply systems, the recently reviewed and updated WSDS's have shown that eleven of these systems are secure and have sufficient supply to meet demand, with only Redbank and Lexton requiring additional works to meet future demand requirements. Additional groundwater investigations at Redbank have commenced, with project works expected to be completed in the next twelve to eighteen months. Funds are committed in the Water Plan for these works. Similarly the augmentation required at Lexton will be completed early in the Water Plan period and will see a new groundwater supply commissioned to improve current water quality and security of supply issues, by the end of the 2013-14 year.

In relation to urban growth and employment zones, CHW will continue to collaborate with Local Councils, developers and key stakeholders to promote water sensitive urban design principles and targets and ensure that its servicing plans support the sequential development of designated areas. The ongoing promotion and support of rebates for water efficient appliances in the home and rebates for small businesses for a range of water saving products, will also be supported.

### 7.3 LIVING VICTORIA

CHW supports the Government's Living Melbourne, Living Victoria water reform vision which is designed to improve the integration between water and urban planning in order to provide enhanced social, economic and environmental outcomes for the community.

**In this regard, the key objectives of the Living Melbourne, Living Victoria policy are to:**

- Establish Victoria as a world leader in liveable cities and integrated water cycle management
- Drive generational change in how Victoria uses rainwater, stormwater and recycled water
- Drive integrated projects and developments in Melbourne and regional cities to use rainwater, stormwater and recycled water to provide Victoria's next major water augmentation

**CHW is currently supporting the implementation of these initiatives through the following means:**

### **1. Living Ballarat Feasibility Study**

The government has created the Office for Living Victoria and committed \$1 million to conduct a Living Ballarat feasibility study. The scope of this study is still to be finalised but may include work in the following residential and commercial settings:

- Managed Aquifer Recharge (MAR) trial to capture and store stormwater in order to develop alternative water sources
- Additional in-home water use research including point of use meters and intelligent water network systems
- Opening up opportunities for localised re-use and recycling of treated wastewater
- Alternative water supply atlas

### **2. Ballarat West Growth Zone – Lucas**

Urban water use in Ballarat's newest suburb, Lucas, is guided by an Integrated Water Management Strategy which was developed with support by CHW. Covenants on property titles require rainwater tanks of at least 2,000 litres capacity to capture at least 80% of the roof area. These will be internally connected to each property and supply water for cold laundry water, toilet flushing and outdoor use. Water efficient fittings and appliances (up to 6 stars rating) will also be promoted within the area. It has been calculated that these initiatives will help reduce potable water demand by each residence by approximately 25%. This work supports the achievement of demand targets (per property) as stated within the Precinct Structure Plan and the Integrated Water Management Strategy for the suburb.

### **3. Ballarat West Employment Zone**

The Ballarat West Employment Zone is a long term project to unlock land for industry and create significant employment opportunities for Ballarat's growing population. The Master Plan identifies opportunities for alternative energy, water re-use, environment enhancement, research and development, efficient freight network and clustering layouts to create a competitive business environment. CHW looks forward to working in partnership with local government and local agencies to further the development of integrated water supply strategies as plans for the Zone develop to ensure available water resources are used as efficiently as possible.

### **4. Reclaimed Water**

CHW already provides up to 600 ML of Class A reclaimed water from the Ballarat North Water Reclamation Plant to Ballarat's Lake Wendouree every year. CHW will continue to pursue other opportunities as they arise to further offset the use of potable water in identifying 'fit-for-purpose' uses of reclaimed water from the existing treatment infrastructure.

### **5. Partnerships**

CHW will also pursue partnerships that help provide technical and financial support to help bring the Living Ballarat vision closer. It is envisaged closer partnerships will be sought with the following organisations during the Water Plan 3 period in this regard:

- Office of Living Victoria
- The Co-Operative Research Centre (CRC) for Water Sensitive Cities
- Local Councils eg City of Ballarat
- Key business and stakeholder agencies
- University of Ballarat



### 8.1 TARIFF INCREASE

**CHW will increase tariffs by a total of 8.5%, in real terms, across the WP3 pricing period.**

This will see tariffs increase by 8.5% in the first year of the Water Plan (2013-14), plus CPI, with prices then increasing in subsequent years (2014-15 to 2017-18 inclusive) by CPI only. This equates to an average increase of 1.7% per annum (plus CPI) across the five year period.

CHW's financial modelling indicates that an 8.5% increase is required to ensure long term financial stability of the business while at the same maintaining service levels for customers and catering for forecast growth. The price increase reflects the costs required by CHW to continue to provide long term water supply security and quality water and wastewater services to all its supply systems.

The tariff increase and its impact on current pricing are shown in Figure 18 and Figure 19. The tables show the prices for the final year of the current regulatory period (2012-13) and the changes into WP3.

### 8.2 TARIFF STRUCTURE

**CHW will maintain the bulk of its current tariff structure for WP3 but will change the way in which the volumetric component of water usage is charged.**

This will see a change from the use of the three tiered inclining block tariffs (IBT's) in the pricing of the volumetric component of water usage, to a two tiered system.

In transitioning away from IBT's, CHW proposes to initially move to a two tiered system through WP3 and continue to monitor usage patterns and customer responses during this time. The new tariff structure for a typical residential bill will comprise fixed water and wastewater access fees, plus a two tiered tariff for water usage. The two tiered system would include the removal of the current top tier which is charged at the highest rate (charges for usage of >300kL / annum) and an increase to the thresholds of the remaining two.

These changes are designed to simplify the way in which water is billed, provide pricing options for all users including larger families and low income earners, but still provide a conservation mechanism in the tariff structure. CHW also believes such a structure will provide relief for those experiencing hardship and help address the marginal rise in bad debts observed in recent years. The current tiers in the IBT system are shown in Figure 16 along with the proposed changes in Figure 17.

Figure 16: Current IBT Structure

	Annual Block size	Daily Block size
Tier 1	0-150kL / annum	0-411L / day
Tier 2	151-300kL / annum	412-822L / day
Tier 3	>300kL / annum	>822L / day

Figure 17: Proposed Two Tier Structure

	Annual Block size	Daily Block size
Tier 1	0-175kL / annum	0-479L / day
Tier 2	>175kL / annum	>479L / day

Feedback from customers indicates that a change to the fixed versus variable charges on their water bills should have been given consideration as part of the WP3 process. CHW has investigated options in regards to fixed and variable charges, however with current, sustained low usage rates, any such change would see a dramatic increase in the volumetric price of water at this time. CHW has estimated that at current demand levels, changes to volumetric and fixed fees in conjunction with a simplified flat volumetric tariff, would result in a greater than 25% increase in the volumetric price of water. CHW believes a change of this magnitude would be unacceptable for customers and therefore proposes to monitor demand and consumption patterns across WP3, to inform any such changes in the transition to WP4.

The transition to a two tiered system is shown in Figure 18 and Figure 19, along with the other changes to fees and charges for WP3. The impact of this tariff structure on the average residential bill (residential consumer using 125kL/annum) is shown in Figure 20. This shows that with the 8.5% increase (plus CPI – set for indicative purposes at 2.5%) the average customer bill will increase by approximately \$10 per month, or \$2.40 per week, in 2013-14. Increases post 2013-14 will be by CPI only.

CHW will maintain its current tariff structure for non-residential customers which will include the tariffs outlined in Figure 18 and for those businesses that discharge trade waste, the standard fees as outlined in Figure 22 will also apply. As per the current pricing mechanism, non-residential customers will not be subject to the tiered pricing for their volumetric component of their usage, as discretionary usage in businesses is considered minimal.

Trade Waste, New Customer Contributions and Miscellaneous tariffs are shown in the Appendices.

**Please Note** – all prices are shown in 2012-13 dollars and WP3 figures exclude CPI. CPI will be applied each year, in addition to price increases indicated in Figure 19.

Figure 18: Proposed Tariff Structure

Tariff		WP2	Water Plan 3				
		2012-13	2013-14	2014-15	2015-16	2016-17	2017-18
		Including CPI	Excluding CPI				
<b>Residential Water</b>							
Access Fee (per annum)		236.13	256.20	256.20	256.20	256.20	256.20
Access Fee (vacant land)		118.05	128.08	128.08	128.08	128.08	128.08
Usage Charges (\$/kL)							
<b>Supply Systems:</b> Avoca, Ballarat, Beaufort, Blackwood, Clunes, Daylesford, Dean, Forest Hill, Landsborough, Learmonth, Lexton, Maryborough, Waubra	0-150kL	1.6633	-	-	-	-	-
	150-300kL	1.9960	-	-	-	-	-
	>300kL	2.4951	-	-	-	-	-
	0-175kL	-	1.8047	1.8047	1.8047	1.8047	1.8047
	>175kL	-	2.1657	2.1657	2.1657	2.1657	2.1657
<b>Supply Systems:</b> Amphitheatre, Raglan & Redbank	0-150kL	0.7639	-	-	-	-	-
	150-300kL	0.9751	-	-	-	-	-
	>300kL	1.2188	-	-	-	-	-
	0-175kL	-	0.8288	0.8288	0.8288	0.8288	0.8288
	>175kL	-	0.9945	0.9945	0.9945	0.9945	0.9945
<b>Non-Residential Water</b>							
Access Fee		236.13	256.20	256.20	256.20	256.20	256.20
Usage Charge (\$/kL)		1.6633	1.8047	1.8047	1.8047	1.8047	1.8047
<b>Residential Wastewater</b>							
Access Fee (per annum)		676.16	733.63	733.63	733.63	733.63	733.63
Access Fee (vacant land)		338.07	366.80	366.80	366.80	366.80	366.80
<b>Non-Residential Wastewater</b>							
Access Fee (per annum)		676.16	733.63	733.63	733.63	733.63	733.63
Access Fee (vacant land)		338.07	366.80	366.80	366.80	366.80	366.80
Sewer Disposal Charge		0.9732	1.0560	1.0560	1.0560	1.0560	1.0560

Figure 19: Proposed Tariff changes

Tariff	Water Plan 3				
	2013-14	2014-15	2015-16	2016-17	2017-18
<b>Residential Water</b>					
Access Fee (per annum)	8.5% + CPI%	+ CPI%	+ CPI%	+ CPI%	+ CPI%
Access Fee (vacant land)	8.5% + CPI%	+ CPI%	+ CPI%	+ CPI%	+ CPI%
Usage Charges (\$/kL)					
<b>Supply Systems:</b> Avoca, Ballarat, Beaufort, Blackwood, Clunes, Daylesford, Dean, Forest Hill, Landsborough, Learmonth, Lexton, Maryborough, Waubra	0-150kL	-	-	-	-
	150-300kL	-	-	-	-
	>300kL	-	-	-	-
	0-175kL	8.5% + CPI%	+ CPI%	+ CPI%	+ CPI%
	>175kL	8.5% + CPI%	+ CPI%	+ CPI%	+ CPI%
<b>Supply Systems:</b> Amphitheatre, Raglan & Redbank	0-150kL	-	-	-	-
	150-300kL	-	-	-	-
	>300kL	-	-	-	-
	0-175kL	8.5% + CPI%	+ CPI%	+ CPI%	+ CPI%
	>175kL	8.5% + CPI%	+ CPI%	+ CPI%	+ CPI%
<b>Non-Residential Water</b>					
Access Fee	8.5% + CPI%	+ CPI%	+ CPI%	+ CPI%	+ CPI%
Usage Charge (\$/kL)	8.5% + CPI%	+ CPI%	+ CPI%	+ CPI%	+ CPI%
<b>Residential Wastewater</b>					
Access Fee (per annum)	8.5% + CPI%	+ CPI%	+ CPI%	+ CPI%	+ CPI%
Access Fee (vacant land)	8.5% + CPI%	+ CPI%	+ CPI%	+ CPI%	+ CPI%
<b>Non-Residential Wastewater</b>					
Access Fee (per annum)	8.5% + CPI%	+ CPI%	+ CPI%	+ CPI%	+ CPI%
Access Fee (vacant land)	8.5% + CPI%	+ CPI%	+ CPI%	+ CPI%	+ CPI%
Sewer Disposal Charge	8.5% + CPI%	+ CPI%	+ CPI%	+ CPI%	+ CPI%

# 8.0

## TARIFFS

Figure 20: Change to Average Residential Bill (125kL/annum) for 2013-14

	2012-13 (including CPI)	2013-14 (including CPI of 2,5%)
Volumetric Tariff - Tier 1	\$1.6633	\$1.8498
Volumetric Tariff - Tier 2	\$1.9960	\$2.2198
Volumetric Tariff - Tier 3	\$2.4951	-
Water Volume Charge (per annum)	\$207.91	\$231.23
Water Service Charge (per annum)	\$236.13	\$262.61
Sewer Service Charge (per annum)	\$676.16	\$751.97
<b>Total</b>	<b>\$1,120.20</b>	<b>\$1,245.81</b>

# 9.0

## TARIFF CHOICE

In their guidance for the preparation of Water Plans, the ESC indicated they will consider proposals for alternative tariffs and tariff choices for customers for the upcoming regulatory period.

CHW believes that while there may be some advantages to customer tariff choices, more detailed consultation with customers is required prior to the implementation of such a process. As discussed earlier CHW therefore proposes to investigate a range of tariff options with its customers during the upcoming regulatory period (WP3) in order to inform the development of the next Water Plan (WP4).

**Issues to be investigated during the next regulatory period will include:**

- Customer preferences in regards to tariff choice
- Confirming a Standard / Default tariff
- Piloting tariff choice options with a range of customers
- Ensuring consumer protection in tariff choice
- Tariff choice options and risks



CHW has undertaken a wide range of customer consultation activities in the preparation of this Water Plan (See Figure 27 for a full listing of communications / engagement activities).

**This has included:**

- Conducting a detailed customer survey on Water Plan related issues
- Holding a number of specific workshops with customers and stakeholders, including:
  - Councils
  - Major customers
  - Key stakeholders
  - Agencies dealing with hardship and disadvantage
- One-on-one consultation with a range of customers and stakeholders
- Working with CHW's Customer Liaison Group (CLG) on Water Plan issues
- Public release of a Draft Water Plan for comment
- Focus Group work on specific Water Plan issues

CHW published the draft Water Plan on the CHW website in early June 2012 and accepted submissions from customers and stakeholders via mail or electronic means, until 14th of August 2012. CHW also mailed out a summary of the Water Plan and a feedback form to all its customers (some 62,850) in July 2012 to ensure that they were informed of the plan and the process. This resulted in 121 responses from customers as per the data found in Figure 21.

Figure 21: Summary of Feedback received on Draft Water Plan

Supply System	Responses Received	Response Issues	Responses Received
Ballarat	58	Tariffs	89
Details not supplied	44	Brochure / Form	9
Maryborough	10	Other	6
Beaufort	4	Billing	5
Daylesford	3	Water Quality	4
Learmonth	2	Resources	4
		Infrastructure	3
		Customer Service	1
<b>Total</b>	<b>121</b>	<b>Total</b>	<b>121</b>

The total number of responses received via the feedback form process represented a response rate of 0.19% (121 responses received from a total of 62,850 forms sent).

**Written submissions were also received from a number of customer and stakeholder groups, including:**

- Corangamite Catchment Management Authority (CCMA)
- Central Highlands Agribusiness Forum (CHAF)
- Committee for Ballarat
- State Member for Ballarat West - Sharon Knight MP
- Moorabool Shire Council
- Central Goldfields Shire Council
- Department of Health
- City of Ballarat

CHW responded to these submissions in writing and where appropriate has included additional information in the final Water Plan relating to these submissions.

Three fact sheets were also produced to provide additional information on the Draft Water Plan and made available on the website.

**These covered:**

- Volume and access charges
- Water and wastewater pricing
- Major projects



Management of the risks associated with the operations of the CHW business is an important factor in ensuring that quality water and wastewater services are delivered to customers.

CHW is strongly committed to risk management, with a focus on continuous improvement, as an integral component of effective business management. CHW maintains a Corporate Risk Register which is managed in line with Aus/NZ ISO 31000:2009 'Risk Management Principles and Guidelines'. The Corporate Risk Register plays a key role in the formulation of CHW's capital works and maintenance programs, which aims to ensure spending is targeted and addresses key risks.

The risks are periodically re-assessed to identify whether controls that mitigate the risk (impacting on either the frequency or the consequence of the risk event) continue to operate as designed, and whether any other events have occurred that may change the risk rating. It is important to recognise that some risks will always carry a 'High' rating, regardless of the type and number of controls in place.

One of the key planning risks facing water corporations is climate variability and its impacts on both water availability and water demand. During WP2 CHW invested heavily in water infrastructure that diversified supply sources, to mitigate the effects of climate variability and therefore provide greater resilience and security, to many of CHW's water supply systems. Other relevant planning risks, as identified in current and previous Water Plans and Corporate Plans include:

**1. Increased capital costs due to:**

- New or accelerated water resource projects required in response to climate variability
- Treatment costs due to changes in raw water quality such as blue-green algae outbreaks or changes between sources such as surface water and groundwater
- Impact of pass-through costs of carbon tax on capital projects

**2. Demand for water remaining lower than forecast** - despite both improved level of water resource security and easing of water restrictions.

**3. Climate Variability**, resulting in:

- A change in operating regimes for waterways, channels and reservoirs
- Increased capital or operating expenses in protecting assets
- Flood response and mitigation
- Lower inflows to surface reservoirs resulting in requirement for increased treatment and associated costs

**4. Additional Government directed initiatives to undertake new projects not currently within CHW's funding model**, which could include:

- Additional small town water quality and/or sewerage projects

**5. Significant changes to policy and/or regulatory obligations** (particularly those not finalised at the time of preparation of this Plan) including:

- State Environment Protection Policy (SEPP)
- Statement of Obligations (SoO)
- Water Industry Regulatory Order (WIRO)
- Living Melbourne Living Victoria - Implementation Plan roll out
- Water Act amendments
- Regulatory requirements

**6. Change in regional planning priorities** that may result in out-of-sequence or accelerated development. This has the potential to create additional costs not budgeted for and may result in stranded assets if planned growth does not ultimately eventuate. Current areas under active consideration at the moment include:

- Growth zones, such as:
- Ballarat West Urban Growth Zone
- Ballarat North
- Ballarat East
- Ballarat West Employment Zone
- Gordon
- Ballan
- Smythesdale

**7. Changes to the Cost of Capital** that could materially affect the cost of CHW's borrowings.

With interest rates being at historically low levels the organisation has been able to service its debt which has increased rapidly from a zero base in 2005-06 to approx. \$140M in 2011-12. However, a change in global economic conditions combined with the potential move to a market based rating for Water Corporations, could see a significant increase in the cost to service debt over the Water Plan period. This in turn could materially impact CHW's financial position.

**8. Additional defined benefits superannuation payments** - if current, poor superannuation fund performance continues, the fund manager may require additional top-up payments during WP3. Currently CHW has made no allowance for additional defined benefits payments for WP3.

## 12.0

### REGULATORY PERIOD

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For the upcoming regulatory period, the ESC had proposed a model which would allow water businesses to opt for a regulatory period longer than the minimum five years.

With consideration of a number of factors and the changes which can and will occur in the future, CHW will maintain the current five year time period for WP3. This ensures pricing stability for customers but also allows for adjustments after five years in the event of unforeseen outcomes or issues.

## 13.0

### INCENTIVE MECHANISMS

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The ESC indicated, via its guidance paper for the preparation of WP3, that it may impose additional efficiency measures, above and beyond the 1% efficiency hurdle.

These efficiency measures may include the application of a Risk / Performance (RP) factor that penalises water corporations that are not performing to standards and targets. These penalties would be in the form of a reduction in allowable revenue if the corporation is assessed to be performing poorly against a range of performance indicators. ESC has since advised CHW that the review and implementation of an RP factor will not occur until after 2013-14.



CHW intends to adopt the individual price caps form of price control for the WP3 period. The 'price caps' is a model whereby prices are set for individual services across the planning period, with annual increases to these prices by the price determination percentage, plus CPI.

This provides customers with a high degree of certainty over pricing, even though this form of price control gives CHW little flexibility to adjust pricing to match circumstances, should there be significant variation from the assumptions made. CHW believes that the certainty in pricing path for the customer outweighs the risks associated with the lack of flexibility in pricing. This view was supported by focus group work undertaken during consultation on CHW's draft Water Plan. This work, conducted by the University of Ballarat, showed customers favoured pricing models which delivered pricing certainty, particularly for customers who are on fixed incomes.

The ESC regulatory model does allow for a price adjustment, or 'price re-opening' during a regulatory period, to account for events that were significant or unforeseen at the time of the original pricing determinations. CHW would see the use of this mechanism as a position of last resort and would need to be based on "exceptional circumstances".



The New Customer Contributions (NCC) process was reviewed by the ESC in the lead up to WP3. The purpose of this review was to develop a principles based approach to NCC's that is easier to understand and administer.

The ESC issued its final guidance paper relating to NCC's in August 2012. The proposed process from ESC for the development of a new NCC framework is that water businesses will develop their own NCC charging framework in consultation with stakeholders, and then submit this framework to the ESC for approval. The new process is to take effect in the next regulatory period, starting on 1st July 2013.

The proposed change by ESC will see the removal of the current standardised NCC charges to be replaced with a calculated NCC based on the full costs to service lots, minus the incremental revenue received from the serviced lots. Costs are to include all costs incurred by the water business in servicing new lots such as: actual capital infrastructure costs and all future operational expenditure (maintenance, billing etc).

CHW will formulate a process, in consultation with key stakeholders and submit this to the ESC by 7th December 2012, as per the ESC guidance paper. The overall NCC process will include a negotiating framework and an NCC calculation template. The basis for CHW's negotiating framework will be the draft framework outlined in ESC's guidance paper, as seen in Figure 29. The proposed framework will include the responsibilities for developers and CHW, timeframes and a dispute resolution process. CHW will develop a number of calculation templates to determine actual charges for a number of geographical areas within the CHW service region.

# GLOSSARY OF TERMS

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**ANCOLD** – Australian National Committee on Large Dams – organisation that publishes the Dam Safety guidelines to which CHW must comply, in its management of dams and reservoirs, under the Statement of Obligations

**Biosolids** – the organic byproduct of the wastewater treatment process

**CHW** – Central Highlands Region Water Corporation

**CPI** – consumer price index - "...a measure of changes, over time, in retail prices of a constant basket of goods and services representative of consumption expenditure by resident households in Australian metropolitan areas." Indexes are compiled and published for each of the groups, subgroups and expenditure classes for each State capital city, Darwin and Canberra. National indexes are constructed as the weighted average of the indexes for each of the eight capital cities (Source: Australian Bureau of Statistics)

**DoH** – Department of Health – Victorian State Government department – responsible for the administration and enforcement of the Safe Drinking Water Act and Regulations

**DSE** – Department of Sustainability and Environment – Victorian State Government department. DSE Office of Water oversee and administer the Water Act and its application within the Victorian Water industry

**EPA** – Environment Protection Agency – Victoria's environmental regulator and department responsible for administering and enforcing the Environment Protection Act

**ESC** – Essential Services Commission – Victoria's economic regulator for water, electricity, gas, ports and rail freight

**GSL** – Guaranteed Service Level – agreed service level between CHW and its customers that results in payment or compensation to a customer(s) of a defined amount, if the service level is breached

**IBT** – Inclining Block Tariff – tariff mechanism that has distinct pricing blocks that increase as the volume used by a customer increases

**KPI** – Key Performance Indicators – list of key service standards as defined by the ESC. Targets for each KPI are established by each water business and approved by the ESC during the Water Plan process.

**MAC** – Ministerial Advisory Council – Victorian State Government appointed Council formed to provide independent advice for consideration by Government on the changes needed to achieve the Government's aims for urban water

**MAR** – (Regulatory setting) - Maximum Allowable Revenue – benchmark revenue set through the ESC regulatory pricing process

**MAR** – (Water resource) – Managed Aquifer Recharge – a process that involves adding a water source, such as recycled water or storm water, to underground aquifers under controlled conditions

**NCC** – New Customer Contributions – charges levied for connection to a water businesses water, sewerage or recycled water assets

**RAB** – Regulatory Asset Base – The value of a water business' assets from a regulatory perspective, taking into account the opening asset value, as assessed by the ESC, and the past and future capital investment and depreciation

**SoO** – Statement of Obligations – DSE produced regulatory document that imposes obligations on water corporations and licensees in relation to the performance of their functions and the exercise of their powers

**Trade Waste** - means any waterborne waste (other than sewage) which is suitable according to the criteria for discharge to the Corporation's sewerage systems; or, any other matter which is declared under a regulation created under the Water Act 1989 to be trade waste

**WIRO** – Water Industry Regulatory Order – The WIRO made under section 4D(1)(a) of the Water Industry Act 1994. The purpose of the Order is to provide a framework for economic regulation, by the ESC, for services provided by Water Corporations

**WP2** – Water Plan covering the period from financial year 2008-09 to financial year 2012-13

**WP3** – Water Plan covering the period from financial year 2013-14 to financial year 2017-18

**WSDS** – Water Supply Demand Strategy – Fifty year planning documents produced by water businesses to assess the long term supply and demand levels for a given water supply system

# APPENDICES

**Please Note** – all prices are shown in 2012-13 dollars and future prices shown are exclusive of CPI, which will be applied each year.

**Figure 22: Trade Waste Charges**

Tariff	WP2	Water Plan 3				
	2012-13	2013-14	2014-15	2015-16	2016-17	2017-18
Application Fee	109.21	109.21	109.21	109.21	109.21	109.21
Major Trade Waste - BOD (\$/kg)	1.2946	1.2946	1.2946	1.2946	1.2946	1.2946
Major Trade Waste – Suspended Solids (\$/kg)	1.2946	1.2946	1.2946	1.2946	1.2946	1.2946
Major Trade Waste – Heavy Metals (\$/kL)	0.2875	0.2875	0.2875	0.2875	0.2875	0.2875
Major Trade Waste – Heavy Metals surcharge (\$/kL)	0.1467	0.1467	0.1467	0.1467	0.1467	0.1467
Major Trade Waste – Volume (\$/kL)	0.3739	0.3739	0.3739	0.3739	0.3739	0.3739
Minor A standard charge – per annum	278.87	278.87	278.87	278.87	278.87	278.87
Minor B volume charge – per kL	1.1225	1.1225	1.1225	1.1225	1.1225	1.1225
Additional sampling, investigations and enforcements	Actual cost	Actual cost	Actual cost	Actual cost	Actual cost	Actual cost

**Figure 23: Miscellaneous Charges**

Tariff	WP2	Water Plan 3				
	2012-13	2013-14	2014-15	2015-16	2016-17	2017-18
Plumbing Consents	111.75	111.75	111.75	111.75	111.75	111.75
Special Meter Reads	24.88	24.88	24.88	24.88	24.88	24.88
Meter Cost – 20mm (per item)	99.30	99.30	99.30	99.30	99.30	99.30
Meter Installation	-	70.00	70.00	70.00	70.00	70.00
Water Tapping fee – std 20mm	211.08	211.08	211.08	211.08	211.08	211.08

# APPENDICES

Figure 24: New Customer Contributions

Tariff	WP2	Water Plan 3				
	2012-13	2013-14	2014-15	2015-16	2016-17	2017-18
<b>Water per lot</b>						
Category one charge – Lot size <450 sq m	608.64	TBC*	TBC	TBC	TBC	TBC
Category two charge – Lot size 450 – 1350 sq m	1,217.30	TBC	TBC	TBC	TBC	TBC
Category three charge – Lot size > 1350 sq m	2,434.63	TBC	TBC	TBC	TBC	TBC
<b>Sewer (per lot)</b>						
Category one charge – Lot size <450 sq m	608.64	TBC	TBC	TBC	TBC	TBC
Category two charge – Lot size 450 – 1350 sq m	1,217.30	TBC	TBC	TBC	TBC	TBC
Category three charge – Lot size > 1350 sq m	2,434.63	TBC	TBC	TBC	TBC	TBC
<b>Recycled Water (per lot) Dual Pipe developments or subdivisions</b>						
Category one charge – Lot size <450 sq m	608.64	TBC	TBC	TBC	TBC	TBC
Category two charge – Lot size 450 – 1350 sq m	1,217.30	TBC	TBC	TBC	TBC	TBC
Category three charge – Lot size > 1350 sq m	2,434.63	TBC	TBC	TBC	TBC	TBC

\*As per section 15.0, the new customer contribution process is currently under review. CHW will develop a new customer contribution pricing framework, in consultation with stakeholders, by 7th December 2012 in accordance with ESC guidelines.

# APPENDICES

Figure 25: Core Service Standard Targets and Performance for Water Plan 2

Service Standard	Target (WP2)	2008-09 (Actual)	2009-10 (Actual)	2010-11 (Actual)	2011-12 (Actual)
<b>Water</b>					
Unplanned water supply interruptions (per 100km)	37.1	14.04	12.60	12.04	11.31
Average time taken to attend bursts and leaks (priority 1) (minutes)	60	42.42	39.86	41.92	49.78
Average time taken to attend bursts and leaks (priority 2) (minutes)	120	96.77	41.31	62.83	53.18
Average time taken to attend bursts and leaks (priority 3) (minutes)	720	82.26	164.58	75.84	137.96
Unplanned water supply interruptions restored within 5 hours (per cent)	98.7%	97.22%	98.63%	92.86%	96.69%
Planned water supply interruptions restored within 5 hours (per cent)	87%	100%	89.90%	88.71%	95.00%
Average unplanned customer minutes off water supply (minutes)	18	9.77	11.25	22.19	10.86
Average planned customer minutes off water supply (minutes)	12	1.43	3.66	2.90	6.22
Average frequency of unplanned water supply interruptions (total number per total customers per year)	0.2	0.071	0.08	0.102	0.085
Average frequency of planned water supply interruptions (total number per total customers per year)	0.1	0.01	0.018	0.020	0.027
Average duration of unplanned water supply interruptions (minutes)	120	137.71	140.46	217.44	127.70
Average duration of planned water supply interruptions (minutes)	240	149.17	201.98	146.08	231.82
Number of customers experiencing 5 unplanned water supply interruptions in the year (number)	0	2	4	12	40
Unaccounted for water (per cent)	14 – 11%	18.6%	13.02%	13.7%	12.90%
<b>Sewer</b>					
Sewerage blockages (per 100km)	32	22.74	20.58	15.13	12.56
Average time to attend sewer spills and blockages (minutes)	60	41.77	44.91	47.75	49.10
Average time to rectify a sewer blockage (minutes)	150	98.46	127.63	95.44	118.62
Spills contained within 5 hours (per cent)	100%	100%	100%	97%	100%
Customers receiving more than 3 sewer blockages in the year (number)	0	0	0	0	0
<b>Customer Service</b>					
Complaints to EWOV (rate per 1000 customers)	0.6	0.79	0.79	0.93	0.85
Telephone calls answered within 30sec	86 - 90%	88.87%	91.47%	89.88%	90.58%

# APPENDICES

Figure 26: Additional Service Standard Performance - WP2

Additional Service Standard	Target	2008-09	2009-10	2010-11	2011-12
Total CO2 equivalent emissions (tonnes)	45,000	67,064	51,045	18,782	14,797
Recycled Water (%)	10.9 – 15.8%	13.3%	16.7%	12%	16.7%
Biosolids reuse	100%	104%	121%	115%	100%
Sewer backlog connections (no.)	0-200	-	-	-	-
Environmental discharge indicators	100%	97.6%	97.7%	96%	97.6%
<b>Drinking Water quality indicators</b>					
% receiving water to E. coli std	100%	99%	100%	98.1%	100%
% receiving water to turbidity std	100%	100%	100%	100%	100%
% receiving water to disinfection by-product std	100%	91%	99.8%	100%	99.2%

Figure 27: CHW WP3 Communications and Engagement Matrix

Date	Event	Location	Key target audience	Comms channels	Purpose
14th June 2011	Customer Participation Committee (CHW)	Ballarat	Board members on CPC	Meeting agenda	To update CPC members on Water Plan and process ahead
June 2011	Ballarat and District CHW newsletter	System wide	Residential and Non-residential customers	Direct mail to 50,000 customers	To provide residents with information on WP3
4th July 2011	Ballarat City Council	Ballarat	Ballarat City Council CEO and Senior Management	Telephone call followed by meeting	To provide Council with an overview of WP3
13th July 2011	Pyrenees Shire Council	Beaufort	Pyrenees Shire Council	Telephone call followed by meeting	To provide Council with an overview of WP3
28th July 2011	Community Workshop - Clunes	Clunes	Residential customers (no residents attended the session)	Newspaper advertisement, flyers in shop windows and website followed by session	To seek input from residential customers
3rd August 2011	Community Workshop - Beaufort	Beaufort	Residential customers (no residents attended the session)	Newspaper advertisement x2, website	To seek input from residential customers
4th August 2011	Maryborough Stakeholder Taskforce	Maryborough	Maryborough Stakeholder Taskforce (Central Goldfields Shire Council)	Meeting agenda	To provide taskforce reps with an overview of WP3
10th August 2011	Community Workshop - Dean	Dean	Residential customers (session was attended by two residents)	Direct mail and website followed by session	To seek input from residential customers

# APPENDICES

Figure 27 (cont): CHW WP3 Communications and Engagement Matrix

Date	Event	Location	Key target audience	Comms channels	Purpose
<b>17th August 2011</b>	Community Workshop - Daylesford	Daylesford	Residential customers (no residents attended the session)	Newspaper advertisement x2, website	To seek input from residential customers
<b>August 2011</b>	Maryborough and District CHW newsletter	System wide	Residential customers	Direct mail to 5,600 customers	To provide residents with information on WP3
<b>21st September 2011</b>	Leadership Ballarat Forum	Ballarat	Leadership Ballarat attendees (run by Committee for Ballarat)	Presentation / Workshop	To gain input into the WP3 process
<b>27th September 2011</b>	Customer Liaison Group Meeting	Ballarat	Residential Customers	Meeting agenda (email and mail)	To provide overview of WP3 to CLG and to seek input from members
<b>27th September 2011</b>	Customer Participation Committee (CHW)	Ballarat	Board	Meeting agenda	To update CPC members of WP3 progress
<b>27th October 2011</b>	Stakeholder workshop	Ballarat	Major customers and government stakeholders (15 stakeholders and customers attended this session)	Direct mail invites followed by meeting minutes	To seek input from major customers and stakeholders
<b>October, November, December 2011</b>	Telephone Survey conducted by University of Ballarat	All systems	Residential customers	Telephone survey of 420 customers	To seek input from residential customers
<b>2nd November 2011</b>	Ballarat City Council	Ballarat	Ballarat City Councillors	Telephone call followed by meeting	To provide Councillors with an overview and seek input into WP planning
<b>10th November 2011</b>	Ballarat and District Aboriginal Co-Op	Ballarat	Indigenous community	Telephone followed by meeting	To provide the indigenous community with an overview of the WP and seek their input
<b>22nd November 2011</b>	Customer Liaison Group Meeting	Ballarat	Residential customers	Meeting agenda (mail and email)	To provide update to CLG on process and survey results
<b>November 2011</b>	Ballarat and District CHW newsletter	System wide	Residential customers	Direct mail to 50,000 customers	To provide residents with information on WP3
<b>7th December 2011</b>	Customer Participation Committee	Ballarat	Board	Meeting agenda	To provide update to CPC on WP3 process and survey results
<b>January 2012</b>	Maryborough and District CHW newsletter	System wide	Residential customers	Direct mail to 5,600 customers	To provide residents with information on WP3

# APPENDICES

Figure 27 (cont): CHW WP3 Communications and Engagement Matrix

Date	Event	Location	Key target audience	Comms channels	Purpose
<b>28th February 2012</b>	Community Liaison Group Meeting	Ballarat	Residential customers	Meeting agenda (mail and email)	To provide update to CLG on process and survey results
<b>8th March 2012</b>	Welfare and hardship agencies workshop	Ballarat	Key welfare and hardship agencies	Direct mail to stakeholders	To provide an overview to agencies and gain feedback on Water Plan
<b>18th April 2012</b>	Leadership Ballarat Forum	Ballarat	Leadership Ballarat attendees (run by Committee for Ballarat)	Presentation / Workshop	To provide an overview of CHW and the WP3 process and seek input
<b>22nd May 2012</b>	Community Liaison Group	Ballarat	Residential customers	Meeting agenda (mail and email)	To provide update to CLG on WP3 process and Draft plan
<b>24th May 2012</b>	Ballarat Environment Network	Ballarat	Environment Group	Presentation / Workshop	To provide an overview of CHW and the WP3 process
<b>May 2012</b>	Media Release	System wide	All customers and stakeholders	Media release to media channels	To provide an overview of Draft Water Plan
<b>31st May 2012</b>	Draft Water Plan made available on website	System wide	All customers and stakeholders	CHW website	To provide an overview of Draft Water Plan
<b>June 2012</b>	Council Briefing - Ballarat	Ballarat	Ballarat City Council	Meeting	To provide an overview of Draft Water Plan
<b>June 2012</b>	Council Briefing - All others	System wide	All other Councils - Hepburn, Pyrenees, Central Goldfields, Moorabool, Golden Plains	Meeting	To provide an overview of Draft Water Plan
<b>June - July 2012</b>	Stakeholder engagement – Dept Health, EPA, ESC	System wide	Key stakeholders	Meetings	To provide an overview of Draft Water Plan
<b>June 2012</b>	All customers mail out	System wide	All customers	Brochure to all customers	To provide an overview of Draft Water Plan and an opportunity to provide feedback
<b>July 2012</b>	Fact sheets developed and made available on website	System wide	All customers and stakeholders	CHW website	To provide a more detailed overview of Draft Water Plan
<b>August 2012</b>	Focus Groups	Maryborough & Ballarat	Representative groups of CHW customers	Meeting	To provide additional information on WP3 issues

# APPENDICES

**Figure 28: Customer Survey Results – Service Standards**

Survey conducted on October 2011 by the University of Ballarat. 420 customers surveyed across all 15 supply systems were proportionally surveyed (as per table below) and asked a series of questions relating to service standards (as per below).

Regions / Areas Surveyed	Count	%
North West Cluster 1 (Redbank, Amphitheatre, Raglan)	30	7%
North West Cluster 2 (Landsborough, Avoca)	40	10%
Central Cluster 1 (Lexton, Waubra, Learmonth, Dean)	40	10%
Central Cluster 2 Forest Hill, Clunes)	50	12%
Northern (Maryborough)	60	14%
Western (Beaufort)	30	7%
South (Ballarat & District)	90	21%
Eastern Cluster 1 (Daylesford)	50	12%
Eastern Cluster 2 (Blackwood)	30	7%
<b>Total</b>	<b>420</b>	<b>100%</b>

## Importance of Service Standards by Region

	REGION									
	NWC1 (Mean)	NWC2 (Mean)	CC1 (Mean)	CC2 (Mean)	Northern (Mean)	Western (Mean)	South (Mean)	EC1 (Mean)	EC2 (Mean)	Total (Mean)
Prompt response to emergencies	9.4	9.3	9.6	9.3	9.4	8.8	9.4	9.2	9.1	<b>9.3</b>
High quality drinking water	7.0	8.6	8.7	9.3	9.0	8.5	9.4	9.3	9.8	<b>9.0</b>
Reliable water services	8.3	9.2	9.3	8.9	9.1	8.6	8.5	9.1	9.0	<b>8.9</b>
Prompt phone service	8.6	8.3	9.1	8.7	8.4	8.7	8.6	8.7	8.4	<b>8.6</b>
Reliable wastewater services	5.6	8.5	8.6	8.2	9.0	8.1	8.9	9.0	6.8	<b>8.4</b>
Advice on water related issues	7.6	7.7	8.5	7.6	7.9	8.4	7.7	7.3	7.9	<b>7.8</b>
Easy to access face-to-face contact	7.5	8.0	8.3	7.4	8.3	7.9	7.5	6.8	6.6	<b>7.6</b>
Customer assistance programs	7.7	8.2	7.8	7.6	7.5	7.5	7.1	7.6	7.4	<b>7.6</b>
Retrofit / exchange programs	6.3	7.2	7.8	6.5	7.0	7.4	7.3	7.1	6.1	<b>7.1</b>
Community sponsorship	6.5	7.5	7.5	7.1	7.3	7.0	6.8	6.6	6.5	<b>7.0</b>
Up-to-date, easy to use website	2.4	5.3	6.9	5.2	5.6	6.0	6.4	6.2	5.8	<b>5.8</b>

Scale: 1 = not at all important; 10 = extremely important

**Key:**

Higher than other regions      Lower than other regions

# APPENDICES

## CHW Performance against Service Standards by Region

	REGION									
	NWC1 (Mean)	NWC2 (Mean)	CC1 (Mean)	CC2 (Mean)	Northern (Mean)	Western (Mean)	South (Mean)	EC1 (Mean)	EC2 (Mean)	Total (Mean)
Reliable water services	3.7	4.4	3.8	4.1	4.2	3.9	4.2	4.4	4.0	4.1
Reliable wastewater services	1.6	4.4	3.8	4.1	4.2	3.9	4.1	4.5	2.8	4.1
Prompt response to emergencies	4.3	4.5	3.2	4.0	4.1	3.4	4.2	4.5	3.9	4.0
Prompt phone service	4.1	3.8	3.6	4.2	4.0	3.5	4.1	4.1	3.7	3.9
Easy to access face-to-face contact	4.1	4.1	3.7	4.1	4.2	3.6	3.8	3.6	3.5	3.9
Advice on water related issues	4.0	3.9	3.4	3.8	3.6	3.8	3.6	3.6	4.0	3.7
Customer assistance programs	3.5	3.7	3.3	3.8	3.5	3.3	3.5	3.4	3.1	3.5
Retrofit / exchange programs	3.4	3.9	3.5	3.6	3.8	3.6	3.5	3.4	2.8	3.5
Up-to-date, easy to use website	2.0	3.5	3.9	3.2	3.2	2.8	3.6	3.6	3.8	3.4
High quality drinking water	1.9	3.5	2.6	3.3	2.7	2.9	3.8	4.1	4.6	3.4
Community sponsorship	3.1	3.2	2.5	3.4	3.4	2.5	3.6	2.8	2.6	3.1

Scale: 1 = poor; 5 = excellent

Key:



Higher than other regions

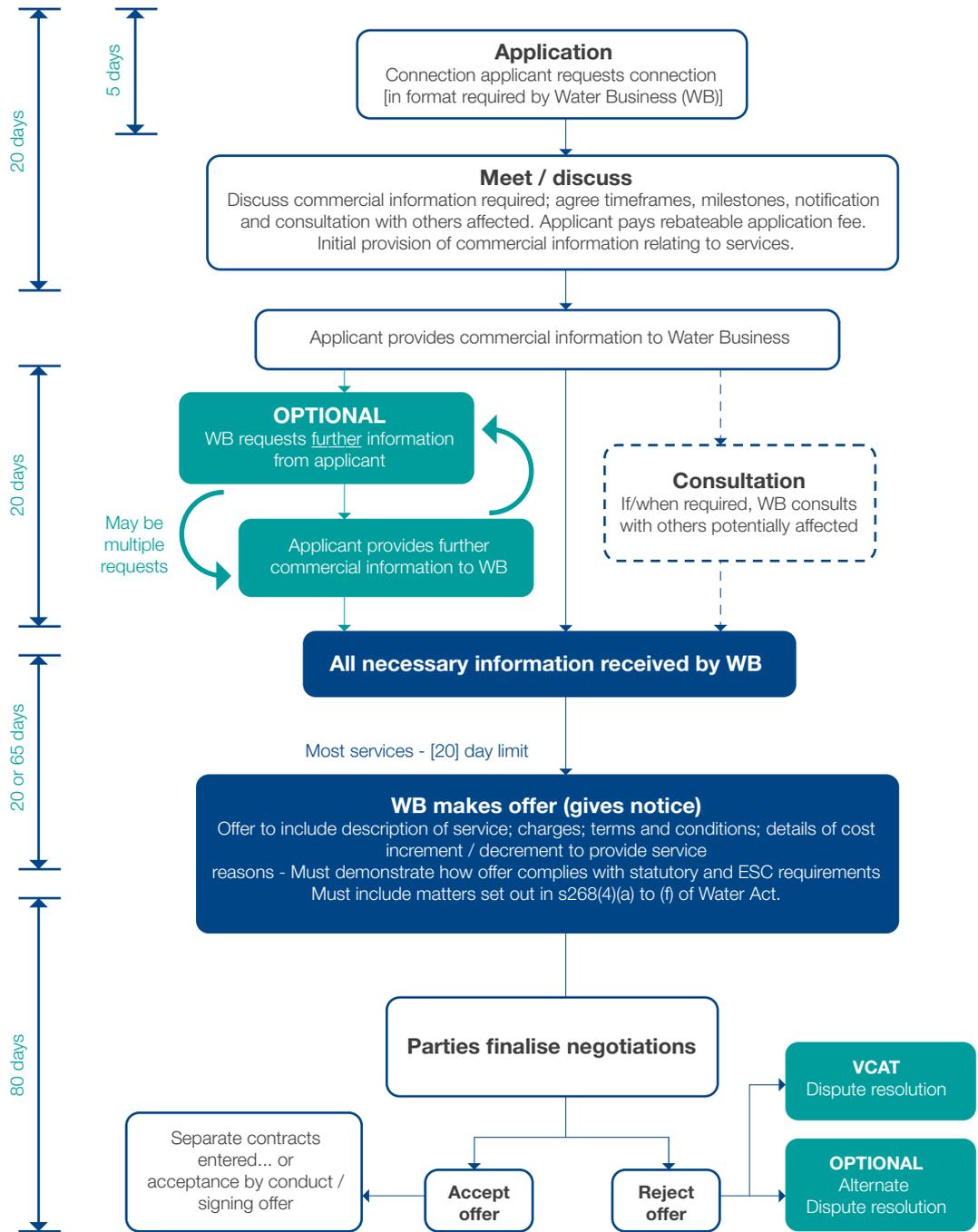


Lower than other regions

# APPENDICES

Figure 29: ESC's Proposed NCC Negotiating Frameworks

**NEGOTIATING FRAMEWORK FOR NEW CUSTOMER CONTRIBUTIONS**  
INDICATIVE TIMELINES FOR NEGOTIATING FRAMEWORK





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Designed in the Central Highlands region

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