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REVIEW OF THE STATUTORY ASSET VALUES OF VICTORIAN WATER BUSINESSES

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Executive Summary

This report documents the results of an analysis of the statutory reporting practices of the 19 state owned water businesses operating in Victoria. These financial statements, prepared in accordance with international standards (i.e. IFRS) and Financial Reporting Directives (i.e. FRDs), are a key information source for the Commission and other stakeholders looking to assess the financial position and performance of water businesses and the extent to which businesses are meeting their objectives.

Given their significance, the focus of the report is on the extent to which the statutory infrastructure asset measures of water businesses provide relevant, reliable and comparable information. These statutory infrastructure measures are now based on a revaluation model. As part of this model, metropolitan water businesses utilise the income approach, whilst regional urban and rural water businesses utilise the depreciated replacement cost approach.

The critique of the statutory infrastructure values documented in this report was based on a review of the:

- applicable accounting standards and principles;
- published statutory reports of Victorian water businesses;
- differences between statutory and regulatory values;
- accounting practices of public sector entities operating in other Australian states and the practices of Australian private sector entities; and
- accounting practices of privatised water businesses operating in the UK and US.

Conclusions were further supported by reference to the research literature concerning infrastructure measurement and disclosure by public sector entities and existing VAGO reports.

Whilst the use of the revaluation model for infrastructure by Victorian water business is consistent with the practices of other Australian public sector entities, the move has created a number of potential comparability issues. Most obviously, the financial impacts of the move to fair value measurement, has impacted the comparability of results between periods. Moreover, different water businesses use different revaluation techniques, few private Australian businesses elect to revalue equivalent assets, the approach is not applied by a number of large privatised water businesses in the UK for statutory purposes, and US GAAP does not permit firms to revalue such assets. The use of different maximum infrastructure useful lives for depreciation purposes may also hamper the comparability of results within the Victorian water sector.

The information revealed about water infrastructure by the application of the income and depreciated replacement cost approaches is likely to be relevant in a number of contexts. Whilst relevant, a number of questions remain in regards to the reliability of these measures given the:

- performance of the VGV and inconsistent asset valuation policies between businesses as identified by the VAGO, and
- inconsistent disclosure of infrastructure measurement assumptions.

Collectively, the conclusions reached in this report support suggest the following are long overdue:

- Improved revaluation guidance to enhance consistency of practice and improve the disclosure of revaluation assumptions;
- Improved guidance in relation to the determination of useful lives for infrastructure;
- Further work to explore the choice of financial performance indicators water businesses report on, with a consideration of alternatives which are not impacted by the choice of infrastructure measurement model; and
- Further work to evaluate how existing financial information on the valuation of infrastructure, together with information on the performance of

infrastructure, can be augmented with other financial and non-financial information to better reveal the underlying condition and maintenance of infrastructure and promote accountability.

List of Acronyms

AASB	Australian Accounting Standards Board
CWPM	Centre for Water Policy and Management
DEPI	Department of Environment and Primary Industries
DLG	Division of Local Government
DTF	Department of Treasury and Finance
FPI	Financial Performance Indicator
FRD	Financial Reporting Direction
IAS	International Accounting Standard
IASB	International Accounting Standards Board
IFRS	International Financial Reporting Standards
MRD	Ministerial Reporting Direction
OFWAT	Office of Water Services
RAV	Regulatory Asset Value
SAC	Statement of Accounting Concept
SAV	Statutory Asset Value
VAGO	Victorian Auditor-General's Office
VGV	Valuer-General Victoria

1.0 Introduction

The Victorian water industry consists of 19 state owned water businesses providing water, sewerage, and/or irrigation services within metropolitan, regional urban and rural settings (Department of Environment and Primary Industries, DEPI 2014). Since January 2004, the Essential Services Commission has regulated the prices and services standards of these water businesses.

A key component of the Regulatory Principles embodied within the Victorian Water Industry Regulatory Order (2012) is that approved prices should ensure a sustainable revenue stream for businesses. In this regard, the statutory financial statements of Victorian water businesses are a key information source for the Commission and other parties needing to assess the financial performance of water businesses.

Many billions of dollars of water infrastructure assets are managed by Victorian water businesses. These assets encompass the dams, weirs, channels, pumping stations, treatment plants, desalination plants, pipelines, drains and other assets that facilitate the harvesting, storage, treatment and transfer of water and that underlie sewage and drainage systems (FRD 121, *Infrastructure Assets (Water/Rail)*).

Given their significance, the measurement of infrastructure assets and resulting depreciation charges have a material impact on the reported financial position and performance of water businesses. The question remains, however, as to whether the statutory infrastructure asset measures of water businesses, given their measurement at fair value and the assumptions made in estimating their useful lives, provide relevant, reliable and comparable information. These matters will be specifically addressed in this report.

This report provides a summary of the purpose of statutory reporting, the composition of major asset values, and reviews the estimation of these values for reporting purposes by Victorian water businesses. The report also offers a critique of valuation approaches and presents an informed opinion on whether the approach taken provides

a 'fit for purpose' estimate of asset values. Specific questions considered in the report include:

- To what extent do the businesses have a choice in the approach they take to asset valuations?
- How does the approach of the water businesses compare with public sector practices internationally and with private sector businesses?
- How do the statutory asset values (SAVs) compare with regulatory asset values (RAVs)?
- To what extent should regulatory asset values be considered in deriving statutory values?
- Do the valuations sufficiently take into account non-measurement related issues, such as the physical condition of assets, likelihood of full asset replacement?
- The appropriateness of assumptions about asset lives?

The report is divided into three additional parts. Section 2.0 outlines the applicable statutory accounting principles and discusses the aims of statutory reporting. Section 3.0 reviews the relevance, comparability and reliability of statutory accounting values. Finally, Section 4.0 provides a summary of the key findings of the report.

2.0 Statutory Accounting: Guidelines and Purposes

As with other public sector entities, Victorian water businesses are required to prepare and publish annual statutory reports. These statutory reports are prepared in accordance with Australian Accounting Standards Board (AASB) accounting standards (now Australian equivalents of International Financial Reporting Standards or A-IFRS) together with Department of Treasury and Finance (DTF) Financial Reporting Directions (FRDs) and Ministerial Reporting Directions (MRDs).

In complying with IFRS, Victorian water businesses now utilise the same accounting standards as Australian private sector entities. This is a direct outcome of efforts to ensure a sector neutral approach to accounting standards in Australia (see, for example, Ryan et al. 2007). As discussed by Pawsey and Crase (2013), the use of the

same accounting standards by both public and private sector entities followed a greater emphasis on the published financial results of public sector entities and was premised on the assumption that it would enable more meaningful comparisons of public and private sector entities (Clarke 1998, Walker et al. 2000b, Lee & Fisher 2004).

The use of IFRSs within Australia is a relatively recent phenomenon. As a result of ongoing international accounting convergence, the AASB implemented these standards for use from 2005. The International Accounting Standards Board (IASB) is ultimately responsible for the development of IFRS. Australia's use of IFRS follows a long list of more than 100 countries, having been drawn by the prospect of improved international comparability of financial statements, to have at least permitted IFRS as an option for domestic listed companies (IFRS Foundation 2012).

The need for a relatively complex statutory accounting framework for Victorian water businesses, involving IFRS, FRDs and MRDs, relates to two key factors.

Firstly, international standards are said to be of a principles-based nature requiring a high degree of professional judgment in the selection of appropriate accounting policies (Barth 2008). The benefit of such an approach is that it provides the flexibility needed to ensure IFRS are applicable to a wide variety of firms. This flexibility can, however, be at the expense of comparability with different firms potentially making different accounting policy judgments. In this context, FRDs in circumstances deemed appropriate, overrule IFRS and mandate particular accounting policy choices to ensure a consistent approach across water businesses.

Secondly, notwithstanding the sector-neutral approach to standard setting in Australia, given the domination of the IASB by private sector interests, IFRS are sometimes viewed as being focused on the measurement of short-term profitability for the purposes of the decisions of investors in private companies (Brown, 2004, 2006; Ryan et al. 2007). The additional disclosure requirements embodied within FRDs and MRDs helps to ensure that information not required by IFRS, but relevant in relation to the performance and position of public sector water businesses, is provided to stakeholders.

Whilst potentially costly and complex to prepare, the statutory reports of water businesses serve a number of vital roles in supporting the effective management and oversight of the Victorian water sector. As considered by Statement of Accounting Concept (SAC) 2 *Objective of General Purpose Financial Reporting*, key potential users of these reports include the management of water businesses, the Commission and other parties involved in the oversight of water businesses, together with the customers of water businesses and other resource providers. Fundamentally, SAC 2 holds that these user groups should be able to utilise the information embodied within statutory reports as part of their assessment of various important concerns including the:

- extent to which water businesses are meeting their objectives and operating economically and efficiently and using resources in the public interest; and
- financial capacity of water businesses to continue to meet their service obligations into the future and the likely cost of doing so.

Financial metrics reported in statutory reports can further provide incentives for water businesses to improve efficiency given their use for benchmarking purposes. As De Witte and Marques (2009, p. 192) commented, in discussing the role of yardstick comparisons or competition by comparison, “the public display of efficiency levels provides transparency in the sector and generates a competitive pressure”.

The preparation of statutory accounts contrasts with the preparation of regulatory accounts. Regulatory accounts are prepared in accordance with the Commission’s (2009) *Water Industry Regulatory Accounting Code* and support the price determination process, ensuring businesses have sufficient revenue to recover capital expenditures. As further elaborated in later sections, given their different goals, statutory and regulatory infrastructure accounting principles differ in a number of respects including the recognition criteria and measurement approach adopted. Underlying statutory asset values further depart from regulatory asset values given the outcomes of the initial establishment of regulatory values in 2004 under the direction of the Minister for Water.

3.0 Review of Statutory Asset Values

3.1 Introduction

As reported by VAGO (2012) and further illustrated in Table 1, as of 30 June 2012, the combined statutory assets reported by Victorian water businesses was \$36.3 Billion. Of the total assets controlled, infrastructure – now measured at fair value – typically represented more than 80% of the total assets controlled by individual water businesses. Relatedly, depreciation represents one of the major expenses of water businesses. On average, for the year ended 30 June 2012, depreciation represented 27% of the total expenses (excluding taxation) reported by individual water businesses.

As a result of the significance of infrastructure values and depreciation charges, the measurement of infrastructure and the selection of the useful life of assets has a significant impact on the reliability and comparability of reported statutory profits. The measures also impact other financial performance indicators (FPIs) used to assess the financial position and performance of water businesses. These FPIs include, for example, the gearing, interest cover, return on asset, and return on equity ratios required by MRD 01: *Financial Performance Indicators*. Furthermore, considering that water infrastructure represents a material component of the \$170 Billion of non-current assets managed by the Victorian public sector, the measurement of this infrastructure may impact the reliability of the assessment of the state's financial position and future plans for public services (VAGO 2013a).

Table 1. Significance of statutory asset values and depreciation charges (2011-12)

Business	Infrastructure Depreciation (\$000)	Total Expenses (ex Tax) (\$000)		Total Infrastructure (\$000)	Total Assets (\$000)	
Barwon	47,691	170,522	27.97%	1,632,766	2,114,938	77.20%
Central Highlands	18,511	83,945	22.05%	788,110	943,853	83.50%
City West	32,137	417,658	7.69%	1,587,480	2,016,012	78.74%
Coliban	34,061	113,624	29.98%	1,026,138	1,318,904	77.80%
East Gippsland	8,904	28,550	31.19%	309,632	344,904	89.77%
Gippsland	28,544	123,905	23.04%	893,761	1,031,802	86.62%
Goulburn Valley	22,495	71,621	31.41%	688,884	824,984	83.50%
Goulburn-Murray	67,442	212,441	31.75%	3,996,806	4,170,502	95.84%
GWMWater	31,992	65,497	48.84%	1,828,567	1,933,823	94.56%
Lower Murray	22,858	70,474	32.43%	726,211	829,096	87.59%
Melbourne	233,246	867,457	26.89%	7,466,224	10,034,129	74.41%
North East	18,552	54,072	34.31%	639,695	731,695	87.43%
South East	61,101	613,700	9.96%	2,724,045	3,232,724	84.26%
South Gippsland	8,395	28,363	29.60%	278,398	302,494	92.03%
Southern Rural	12,619	37,812	33.37%	1,194,526	1,241,381	96.23%
Wannon	24,974	75,117	33.25%	476,502	592,431	80.43%
Western	14,351	72,041	19.92%	577,656	674,391	85.66%
Westernport	4,929	19,085	25.83%	145,605	170,170	85.56%
Yarra Valley	63,986	688,130	9.30%	2,974,903	3,747,075	79.39%
Total				29,955,909	36,255,308	
Average			26.78%			85.29%

(Amounts expressed in nominal dollars)

The following sections are used to review the usefulness of statutory infrastructure measures in the assessment of the financial position and performance of water businesses. However, an important condition for the infrastructure measures to be useful is that the metrics should be relevant, reliable and comparable. For the purposes of this analysis, the AASB (2009) *Framework for the Preparation and Presentation of Financial Statements* definitions of these concepts are employed and repeated below for convenience:

Relevance “To be useful, information must be relevant to the decision-making needs of users. Information has the quality of relevance when it influences the economic decisions of users by helping them evaluate past, present or future events or confirming, or correcting, their past evaluations” (par. 26).

Comparability “Users must be able to compare the financial statements of an entity through time in order to identify trends in its financial position and performance. Users must also be able to compare the financial statements of different entities in order to evaluate their relative financial position, financial performance and cash flows. Hence, the measurement and display of the financial effect of like transactions and other events must be carried out in a consistent way throughout an entity and over time for that entity and in a consistent way for different entities” (par. 39).

Reliability “To be useful, information must also be reliable. Information has the quality of reliability when it is free from material error and bias and can be depended upon by users to represent faithfully that which it either purports to represent or could reasonably be expected to represent” (par. 31).

3.2 Infrastructure measurement guidelines

AASB 116 *Property, Plant and Equipment* provides guidance on the measurement of infrastructure. This standard is the Australian equivalent of International Accounting Standard (IAS) 16 *Property, Plant and Equipment*. After recognition, AASB 116 permits firms to adopt either the cost model or revaluation model for the measurement of infrastructure.

Under the cost model, infrastructure is reported at cost less accumulated depreciation and impairment (AASB 116, par. 30). In contrast, the revaluation model requires that firms measure their infrastructure at fair value less any subsequent accumulated depreciation and impairment (AASB 116, par. 31). Fair value is defined by AASB

116 (par. 6) as “the amount for which an asset could be exchanged between knowledgeable, willing parties in an arm’s length transaction”.

As part of the revaluation model, firms are required to conduct revaluations with sufficient regularity so as to ensure that the carrying amount of infrastructure is not materially different to fair value (AASB 116, par. 31). In discussing the regularity of revaluations, AASB 116 (par. 34) identifies that the fair value of some non-current assets are likely to be volatile, necessitating annual revaluations. For other items of property, plant and equipment, however, revaluations may only be necessary every three to five years.

Paragraphs 32 and 33 of AASB 116 provide guidance on the determination of the fair value of property, plant and equipment. Whilst for some items such as land and buildings it is possible to utilise market-based evidence, this may not always be feasible. In the case of the specialised infrastructure assets controlled by water utilities, other valuation techniques are needed. In these cases, firms may utilise either an income or depreciated replacement cost approach to determine fair value. Such techniques are sometimes labelled ‘mark to model’ as opposed to ‘mark to market’ approaches (Ball 2006).

The income approach to measure the fair value of infrastructure involves forecasting the future net cash flows to be derived from holding the asset and discounting these using an appropriate rate to calculate the present value. The depreciated replacement cost approach, by comparison, estimates fair value as the cost to hypothetically replace an asset with depreciation adjustments made to reflect the age and condition of the asset.

Any accumulated depreciation at the time of the revaluation of infrastructure is treated in one of two ways:

- (a) restated proportionately with the change in the gross carrying amount of the asset so that the carrying amount of the asset after revaluation equals its revalued amount. This method is often used when an asset is revalued by means of applying an index to determine its replacement cost; or

- (b) eliminated against the gross carrying amount of the asset and the net amount restated to the revalued amount of the asset. This method is often used for buildings (AASB 116, par. 35).

Whilst AASB 116 provides firms with the option to choose either the cost or revaluation model for infrastructure and Victorian water businesses had previously applied the cost model, FRD 121 *Infrastructure Assets (Water/Rail)* now mandates the use of the revaluation model. The revaluation model was applied for the first time by metropolitan water businesses using the income approach in the preparation of 2009-10 statutory reports. Regional urban and rural water business first applied the revaluation model using the depreciated replacement cost approach in the preparation of 2010-11 statutory reports.

3.3 The significance of statutory infrastructure revaluations

As reviewed by Pawsey and Crase (2013) and further summarised in Table 2, the first time application of the revaluation model to the infrastructure controlled by Victorian resulted in an increase in infrastructure values of more than \$10 Billion across the sector.

Table 2. Impact of first time application of revaluation model

<i>Metropolitan Water Business Transition Year (2009-10) Revaluations</i>		
	<i>Revaluation (\$000)</i>	<i>Revaluation (% of book value of infrastructure, property, plant & equipment)</i>
City West Water	355,793	24%
Melbourne Water	2,724,895	31%
South East Water	997,185	37%
Yarra Valley Water	815,182	27%
<i>Regional Urban Water Business Transition Year (2010-11) Revaluations</i>		
Barwon Water	32,559	29%
Central Highlands Water	42,687	5%
Coliban Water	258,585	21%
East Gippsland Water	119,380	37%
Gippsland Water	212,587	22%
Goulburn Valley Water	162,743	22%
GWMWater	746,755	39%
Lower Murray Water	215,350	28%
North East Water	237,545	35%
South Gippsland Water	120,736	41%
Wannon Water	2,458	0%
Western Water	79,047	13%
Westernport Water	44,222	27%
<i>Rural Water Business Transition Year (2010-11) Revaluations</i>		
Goulburn-Murray Water	1,699,550	42%
Southern Rural Water	785,516	64%

(Amounts expressed in nominal dollars)
(Pawsey & Crase 2013, p. 334)

In contrast to statutory accounting principles that require infrastructure to be measured at fair value, regulatory accounting principles do not generally allow firms to revalue their regulatory values. The benefit of this ‘set and forget’ approach to regulatory values is that it increases the stability of prices and returns over time and improves certainty for water businesses and their customers. The approach taken also avoided circularity between initial asset values and future prices.

Other key differences between statutory and regulatory accounting values relate to the treatment of gifted assets and assets held in relation to unregulated activities. Table 3 provides a summary of the difference between statutory and regulatory accounting principles in relation to the treatment of infrastructure.

Table 3. Difference between statutory and regulatory accounting principles

Issue	Statutory Accounting	Regulatory Accounting
Assets relating to unregulated activities	Recognised.	Excluded.
Gifted assets	Recognised at fair value.	Do not impact regulatory asset values and entities do not generate a return on gifted assets.
Asset revaluations	Required by FRD 121.	Not permitted “unless they are specifically agreed to or required by the Commission” (ESC 2009, p. 16).

As a result of the ongoing application of different accounting principles for statutory and regulatory accounting purposes, together with the outcomes of the determination of the initial regulatory asset values, statutory values now significantly differ from the regulatory values used for price setting purposes. The initial regulatory values were established in 2004 by the Minister for Water, John Thwaites. As identified by VAGO (2013b):

- the RAVs of metropolitan water businesses were initially set above statutory values;
- the RAVs of regional urban water businesses were initially set below statutory values; whilst
- the RAVs of rural water businesses were initially set at zero.

In advising on appropriate regulatory values for different water businesses, the Minister would have been required to weigh competing demands for low RAVs that ensure reasonable prices from the perspectives customers, and for higher RAVs that promote the profitability of water businesses.

Table 4 illustrates the magnitude of the gap between the infrastructure SAVs (measured as total statutory infrastructure) and updated RAVs of individual water businesses over the financial periods 2008-09 through 2011-12.

Prior to the revaluation of the statutory infrastructure of metropolitan water businesses, at 30 June 2009, the updated RAVs of these businesses were well above corresponding statutory values. On average, updated RAVs were 162% of the corresponding SAVs. Since the significant upward revaluations of statutory values, however, the SAVs of metropolitan businesses have become more closely aligned with regulatory values. At 30 June 2012, on average, updated regulatory values of these businesses were 101% of the statutory values.

Consistent with the designation of regional urban and rural water businesses as not-for-profit entities, the RAVs of these businesses are generally much lower than the statutory values. Ensuring that the RAVs of regional urban and rural water businesses are below corresponding statutory figures helps to minimise prices in regional and rural settings. This practice has, however, inhibited the ability of such entities to generate strong statutory profits and return dividends to the government. In the case of these entities, whilst depreciation charges are based on the higher statutory values, their benchmark revenue requirement is based on the lower regulatory values. The significant upward revaluations made to statutory infrastructure values in 2010-11 has further exaggerated gap between the statutory and regulatory values of regional urban and rural water businesses.

At 30 June 2012, the updated RAVs of regional urban businesses represented, on average, only 40% of the statutory values. This compares with pre-revaluation values for 2008-09 and 2009-10 in which average RAVs represented 50% and 54% of statutory values, respectively.

At 30 June 2012, the updated RAVs of rural businesses represented, on average, only 4% of the statutory values. This compares with pre-revaluation values for 2008-09 and 2009-10 in which average RAVs represented 6% and 7% of statutory values, respectively.

As identified by VAGO (2012b), the difference between the statutory values and regulatory values goes some way to explain the varying financial performance across the metropolitan ('relatively stable'), regional urban ('relatively well placed') and rural sectors ('unsustainable'). This discussion is supplemented by the results reported

in Figure 1. This figure reports the results of a comparison of the alignment of statutory and regulatory values between firms rated by VAGO (2013b) as having either: low, medium or high financial risk during the 2012-13 period. On average, entities rated with high financial risk had significantly lower updated RAV percentages for 2011-12 than those with low financial risk.

Table 4. Actual Infrastructure SAVs¹ versus Updated RAVs

Entity	2008-09 (\$000)			2009-10 (\$000)			2010-11 (\$000)			2011-12 (\$000)		
	SAV	RAV	RAV %									
<i>Metros</i>												
City West	889,333	1,124,964	126%	1,325,000	1,240,357	94%	1,511,660	1,316,065	87%	1,587,480	1,413,889	89%
Melbourne	3,064,833	6,995,316	228%	6,466,163	7,872,164	122%	6,740,147	8,444,336	125%	7,466,224	8,783,883	118%
South East	1,440,353	2,165,420	150%	2,497,882	2,298,861	92%	2,629,839	2,425,162	92%	2,724,045	2,526,699	93%
Yarra Valley	1,796,344	2,555,000	142%	1,910,000	2,778,904	145%	2,838,941	2,933,875	103%	2,974,903	3,090,316	104%
Average			162%			113%			102%			101%
<i>Regional Urban</i>												
Barwon	936,870	643,578	69%	1,021,008	704,565	69%	1,527,422	802,004	53%	1,632,766	977,798	60%
Central Highlands	646,699	206,224	32%	675,421	249,373	37%	779,864	275,492	35%	788,110	288,568	37%
Coliban	776,690	221,193	28%	775,248	241,916	31%	1,023,095	270,348	26%	1,026,138	297,463	29%
East Gippsland	162,453	97,011	60%	181,444	120,908	67%	308,251	124,135	40%	309,632	123,497	40%
Gippsland	454,657	412,325	91%	452,709	433,898	96%	885,327	469,019	53%	893,761	452,552	51%
Goulburn Valley	420,537	198,714	47%	423,476	222,427	53%	673,210	231,373	34%	688,884	245,181	36%
GWMWater	863,674	213,374	25%	854,168	273,171	32%	1,852,822	287,279	16%	1,828,567	288,923	16%
Lower Murray ²	593,005	112,795	19%	600,718	173,414	29%	731,333	183,371	25%	726,211	194,899	27%
North East	419,637	150,115	36%	416,333	158,788	38%	641,606	167,373	26%	639,695	171,798	27%
South Gippsland	140,041	80,646	58%	147,248	86,147	59%	268,232	94,569	35%	278,398	101,435	36%
Wannon	437,542	204,073	47%	444,543	232,973	52%	478,318	256,360	54%	476,502	270,941	57%
Western	310,939	173,695	56%	411,027	211,691	52%	548,914	224,474	41%	577,656	238,970	41%
Westernport	96,447	76,114	79%	95,466	80,717	85%	143,651	83,829	58%	145,605	89,171	61%
Average			50%			54%			38%			40%
<i>Rural</i>												
Goulburn-Murray	2,038,409	138,800	7%	2,178,751	155,358	7%	3,943,119	177,319	4%	3,996,806	189,993	5%
Southern Rural	419,768	24,769	6%	422,509	29,632	7%	1,204,292	32,787	3%	1,194,526	35,831	3%
Average			6%			7%			4%			4%

(Amounts expressed in nominal dollars)

¹ Measured as total statutory infrastructure.² Combined urban and rural RAV.

Figure 1. RAV Percentages and Financial Risk

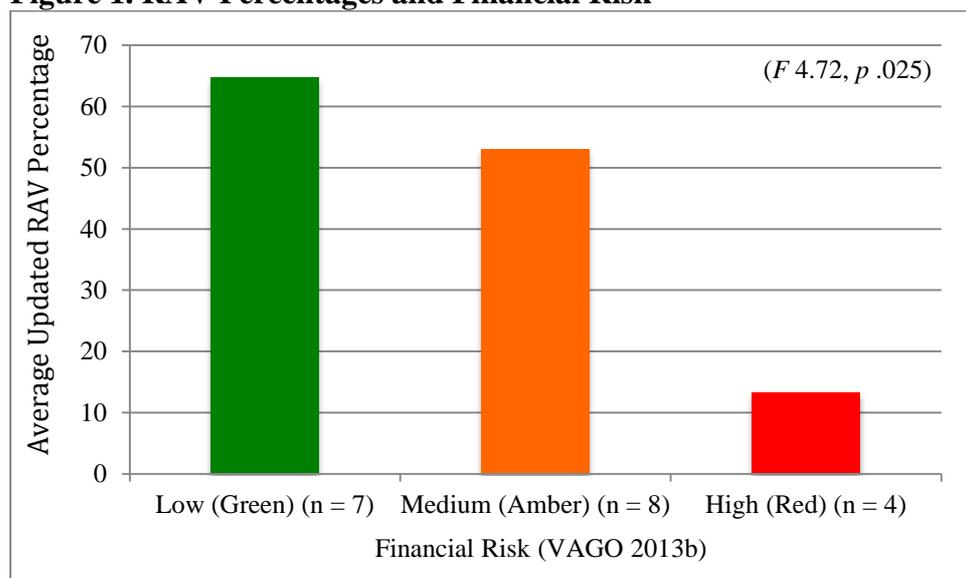


Table 5 presents the results of an analysis that explores the alignment between statutory infrastructure values and regulatory values, had water businesses continued to apply the historic cost model. For metropolitan water businesses this is a relatively simple task. In accordance with the requirements of AASB 116 (par. 77e), these businesses are required to disclose in their statutory reports the carrying value of infrastructure had these assets been valued under the cost model.

Despite the relevance of the disclosures, regional urban and rural water businesses are exempt from providing the carrying amounts of infrastructure had the cost model persisted. This exemption arises from the designation of these entities as not-for-profit (see AASB 116, par AUS77.1).

The historic cost statutory infrastructure values for regional and rural entities reported in Table 5 were estimated using figures disclosed in statutory accounts. Adjustments to these figures were made in accordance with the procedures employed by Carlin (2000) who undertook a similar analysis in relation to various government financial statements. The adjustments involved backing out the effects of the revaluations and

subsequently estimating what the carrying values would have been had depreciation been based on historic cost figures.

Table 6 reports estimates of the depreciation expenses that would have been recognised for 2011-12 by regional urban and rural water businesses, had historic cost measurement persisted³. On average, estimated depreciation charges under the historic cost model were 31% below the amounts recognised under the newly adopted revaluation model. The reductions to depreciation under the historic cost model would have resulted in a corresponding increase in the statutory operating results reported by regional urban and water businesses. In some circumstances halving losses, doubling profits or turning losses into profits.

Collectively, the results reported in Table 5 generally confirm that the gap between regulatory and statutory values would have been maintained at pre-revaluation levels had the historic cost method continued to be applied. That is, on average:

- the regulatory values of metropolitan water businesses would have continued to be approximately 1.5 times more than statutory values;
- the regulatory values of regional urban water businesses would have continued to be approximately 50% of statutory values; and
- the regulatory values of rural water businesses would have continued to be approximately 10% of statutory values.

These results are further illustrated in Figures 2, 3 and 4. These figures graph the total: (1) updated regulatory asset values, (2) statutory values under the revaluation model, and (3) estimated statutory values under the historic cost model, for the respective water sectors over recent financial periods.

³ In accordance with Carlin (2000, p. 70), adjusted depreciation figures were determined by examining the proportion of the value of total infrastructure recognised as an expense each year and then applying that proportion to total infrastructure less the balance in the asset revaluation reserve.

Table 5. HC SAV⁴ v Updated RAV

Entity	2009-10 (\$000)			2010-11 (\$000)			2011-12 (\$000)		
	SAV (HC)	RAV	RAV %	SAV (HC)	RAV	RAV %	SAV (HC)	RAV	RAV %
City West	996,700	1,240,357	124%	1,055,000	1,316,065	125%	1,151,000	1,413,889	123%
Melbourne	3,782,800	7,872,164	208%	4,082,198	8,444,336	207%	4,892,688	8,783,883	180%
South East	1,520,400	2,298,861	151%	1,645,700	2,425,162	147%	1,760,500	2,526,699	144%
Yarra Valley	2,716,200	2,778,904	102%	1,970,000	2,933,875	149%	2,280,000	3,090,316	136%
Average			147%			157%			145%
<i>Regional Urban</i>									
Barwon				1,048,697	802,004	76%	1,167,423	977,798	84%
Central Highlands				731,329	275,492	38%	740,661	288,568	39%
Coliban				787,868	270,348	34%	797,415	297,463	37%
East Gippsland				184,209	124,135	67%	188,894	123,497	65%
Gippsland				674,001	469,019	70%	690,111	452,552	66%
Goulburn Valley				432,164	231,373	54%	455,709	245,181	54%
GWMWater				1,122,267	287,279	26%	1,110,028	288,923	26%
Lower Murray ⁵				525,239	183,371	35%	526,008	194,899	37%
North East				417,012	167,373	40%	421,614	171,798	41%
South Gippsland				149,563	94,569	63%	162,939	101,435	62%
Wannon				461,380	256,360	56%	460,352	270,941	59%
Western				448,030	224,474	50%	467,133	238,970	51%
Westernport				97,402	83,829	86%	106,357	89,171	84%
						53%			54%
<i>Rural</i>									
Goulburn-Murray				2,249,370	177,319	8%	2,332,958	189,993	8%
Southern Rural				424,186	32,787	8%	421,874	35,831	8%
						8%			8%

(Amounts expressed in nominal dollars)

⁴ Measured as total statutory infrastructure.

⁵ Combined urban and rural RAV.

Figure 2. Metropolitan Water Businesses: Total SAV and RAV Trend

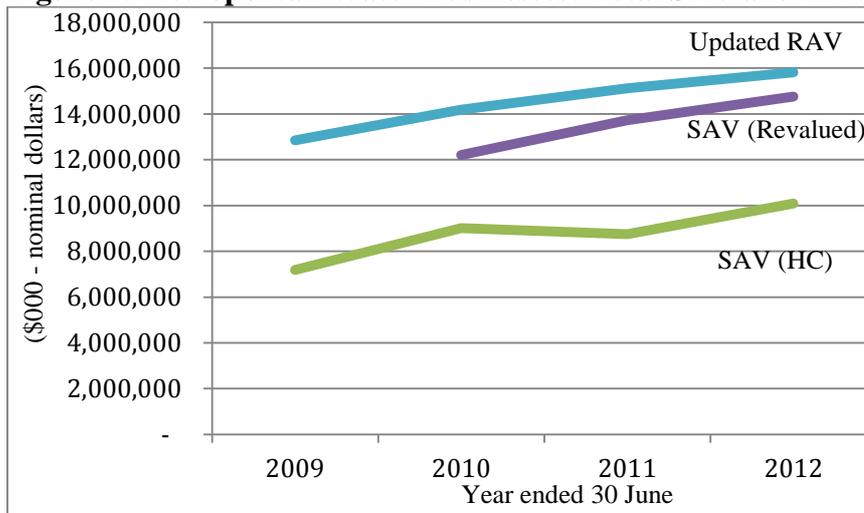


Figure 3. Regional Urban Water Businesses: Total SAV and RAV Trend

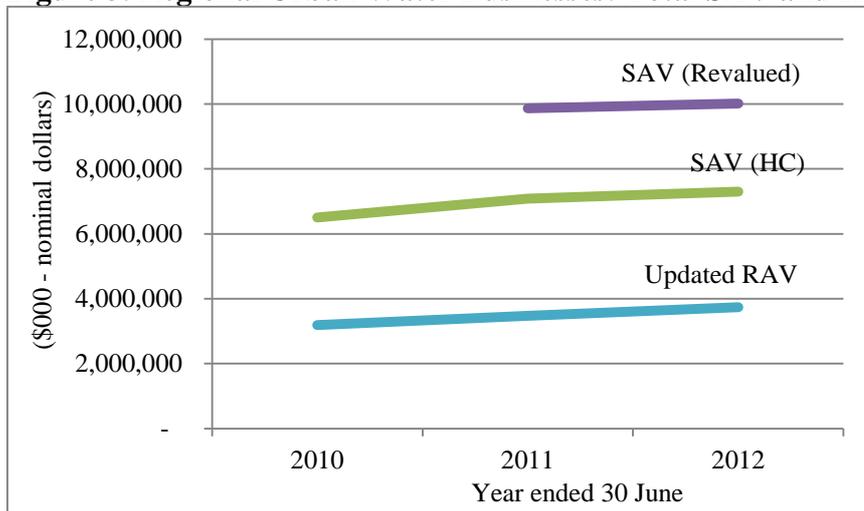


Figure 4. Rural Water Businesses: Total SAV and RAV Trend

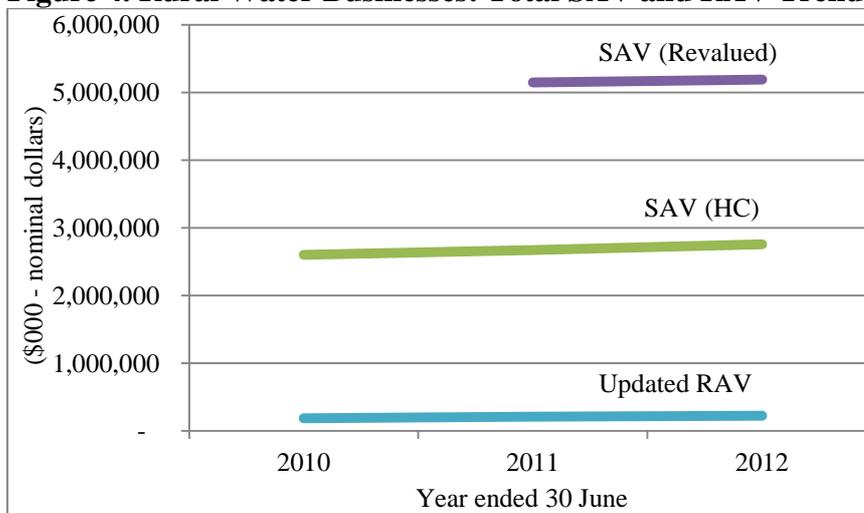


Table 6. Estimated impact of revaluations on depreciation and operating result (2011-12)

<i>Regional Urban</i>	<i>Reported inf. Depreciation (FV) (\$000)</i>	<i>Recast inf. Depreciation (HC) (\$000)</i>	<i>Movement (\$000)</i>	<i>Reported Operating Result (b/t) (\$000)</i>	<i>Recast Operating Result (b/t) (\$000)</i>
Barwon	44,082	31,161	-12,921 (29%)	50,589	63,510
Central Highlands	17,637	16,551	-1,086 (6%)	-6,067	-4,981
Coliban	28,371	21,867	-6,504 (23%)	-20,251	-13,747
East Gippsland	8,228	4,932	-3,296 (40%)	3,696	6,992
Gippsland	25,755	19,659	-6,096 (24%)	-4,171	1,925
Goulburn Valley	22,495	14,624	-7,871 (35%)	-6,817	1,054
GWMWater	30,207	18,141	-12,066 (40%)	-8,267	3,799
Lower Murray	21,136	15,138	-5,998 (28%)	-12,701	-6,703
North East	17,213	11,170	-6,043 (35%)	-2,386	3,657
South Gippsland	7,530	4,320	-3,210 (43%)	-1,120	2,090
Wannon	22,164	21,376	-788 (4%)	4,911	5,699
Western	12,571	10,112	-2,459 (20%)	5,185	7,644
Westernport	3,784	2,582	-1,202 (32%)	3,028	4,230
<i>Rural</i>					
Goulburn-Murray	65,086	36,809	-28,277 (43%)	-52,184	-23,907
Southern Rural	11,414	3,960	-7,454 (65%)	-8,990	-1,536
Average			-7,018 (31%)		

(Amounts expressed in nominal dollars)

3.4 The relevance of statutory infrastructure values

It is better to be roughly right than precisely wrong... Current values are less precise than historic ones, but they are far more useful (Edwards et al. 1987, p. 42).

The principal benefit of fair value measures compared to historic cost values is their relevance for decision-making purposes. Fair values are consistent with the actual options available to entities in relation to their assets; after all, you cannot repurchase an asset you already hold (Bell 1972, cited by Walker & Jones 2003). Fair values and changes thereof, are also consistent with the demands of financial statement user groups for up-to-date asset values when assessing the performance, solvency and liquidity of different entities (Walker & Jones 2003; Bolivar & Galera 2007). Unlike historic costs that, by definition, do not change overtime, fair values provide the possibility of feedback on past expectations for user groups (Herrmann et al. 2006). Fair values are arguably a better basis upon which to measure rates of return (Walker & Jones 2003) and using fair values as the basis for depreciation can better reflect the

actual consumption of economic benefits in the delivery of services (Bolivar & Galera 2007).

Given these broad potential benefits of fair value accounting, it is useful to reflect on whether the income approach or the depreciated replacement is of most relevance to financial statement users. This is a difficult question to reach a consensus on given that both measurement techniques reveal valuable information about a water infrastructure. Accordingly, those involved in the management and oversight of water businesses will likely require both measures in different contexts. To illustrate, the information the income approach reveals about the expected cash flows to be generated from holding infrastructure can help managers to evaluate the opportunity cost of selling versus holding infrastructure (Walker & Jones 2003; Bolivar & Galera 2007). By comparison, having access to up-to-date depreciated replacement cost measures can facilitate the timely development of asset management programs.

In the private sector setting, Herrmann et al. (2006) summarised the results of empirical evidence regarding the relevance of property, plant and equipment revaluations (Easton et al. 1993; Barth & Clinch 1998; Aboody et al. 1999). These studies have generally found revaluations to be value relevant and they can improve the reliability of earnings forecasts.

In the case of public sector entities, evidence regarding the relevance of infrastructure revaluations is generally limited to survey data. Walker and Jones (2012) reported the results of a recent example of this kind of research. As part of their study, Walker and Jones (2012) surveyed 52 senior personnel from General Government Agencies and 42 senior personnel from Public Trading Enterprises in Australian states. Survey respondents were asked to indicate their level of support for five infrastructure reporting options. The overwhelmingly preferred option was for information about the physical condition of assets, together with estimates of the current cost to bring infrastructure to a satisfactory condition (which depreciated replacement cost could represent). In contrast, the unaccompanied presentation of either current replacement cost or historic cost valuations received little support by survey respondents.

The finding of Walker and Jones (2012) that, whilst relevant, information on the replacement cost of infrastructure is insufficient for financial statement users, is well established in the literature. To be truly useful, infrastructure measures are generally held to be in need of supplementation by other financial and non-financial disclosures concerning the physical condition of the infrastructure and maintenance issues (Mayston, 1992; Walker et al., 2000a; Walker & Jones 2012). Despite this, as Lee and Fisher (2004, p. 350) argued:

... current reporting guidance mainly focuses on asset valuation. Such focus is a result of the adoption of the accrual basis of accounting and the money measurement convention as part of the public sector reform process.

This focus on measurement is reflected by the quantum of infrastructure information provided within statutory reports by Victorian water businesses. Consistent with an earlier study of 73 Australian Public Sector entities conducted by Lee and Fisher (2004), other than the disclosure of maintenance policies and programs, routine maintenance expenditure, reconciliations of the opening and closing carrying amounts of infrastructure, and descriptions of revaluations, the statutory reports of Victorian water businesses generally reveal little about the condition of infrastructure or maintenance. Furthermore, little information in regards to any potential deferred maintenance is forthcoming.

Whilst statutory reports generally reveal relatively little about the condition and maintenance of infrastructure, the Commission's *Water Performance Report* guidelines and Ministerial Reporting Directions (i.e. MRDs), require businesses to report on a wide variety of indicators which give insights on the underlying performance of infrastructure. These include, for example, indicators in relation to spillages, bursts and leaks, blockages, supply interruptions, and the number of customer complaints regarding service reliability and quality.

Some jurisdictions are more advanced in the disclosure of comprehensive infrastructure information. Walker et al. (1999) and Walker et al. (2000a), for

example, outlined NSW Local Government reporting guidelines which require entities to report on the condition of public works (using a five point scale), and provide estimates of the cost to bring works to a 'satisfactory condition', estimates of the cost to maintain works at a 'satisfactory condition', and the current budgeted maintenance expenditure. As the guidelines prepared by the NSW Division of Local Government (DLG 2013a) identify, reports on the condition of public works are referred to as Special Schedule 7 disclosures. It should be noted, however, that Special Schedule 7 disclosures are not audited and councils are not required to disclose exactly how they intend to address assets that are not considered satisfactory (DLG 2013b).

Further exploring these issues, Walker et al. (2000a) developed a normative framework proposing the disclosure of key engineering information concerning the state of sewage systems and water supply infrastructure. This information would augment existing financial statement disclosures and the proposals followed consultations with engineers. The details of the disclosures themselves would be dependent on local geographic and demographic variables. Example disclosures suggested by Walker et al. (2000a) included:

- descriptions of infrastructure;
- condition assessments;
- details of components which may require replacement to ensure continuity of supply;
- details of assumptions made about the continued use of infrastructure;
- projected future capital investment requirements; and
- details regarding risk safeguards.

3.5 The comparability of statutory infrastructure values

3.5.1 Introduction

The ability to make meaningful comparisons of statutory reports over time, and between different entities, is an important element of the assessment of the financial sustainability of water businesses. The following section is used to consider how the movement to the revaluation model for infrastructure has impact the comparability of statutory reports.

3.5.2 Comparability within Australia

The move to the revaluation model by Victorian water businesses has improved the comparability of statutory reports in two key ways.

Firstly, the move has generally brought Victorian water businesses into line with the measurement practices of Australian public sector entities operating in other industries and from other states (see, for example, Walker et al. 2000b; Less and Fisher 2004). The move also brought Victorian water entity policies into line with the requirements of AASB 1049 *Whole of Government and General Government Sector Financial Reporting*.

Table 7 provides a summary of the statutory measurement approaches adopted for infrastructure by a sample of large Australian water utilities operating outside of Victoria⁶. Consistent with the comments of Deloitte (2010), the data highlights that almost all utilities now adopt the revaluation model for infrastructure. However, there is some variation in the use of either the income or depreciated replacement cost methodologies.

⁶ This included major utilities with more than 100,000 customers as reported in National Performance Report (2011-12).

Table 7. Statutory Measurement Approach for Infrastructure: Large water businesses from other states

Utility	Statutory Measurement Approach for Infrastructure (2012-13)
ACTEW Corporation	Revaluation model: Income approach
Hunter Water Corporation	Revaluation model: Depreciated replacement cost
Sydney Water Corporation	Revaluation model: Depreciated replacement cost
Queensland Urban Utilities	Revaluation model: Income approach
Unity Water	Revaluation model: Income approach
SA Water	Revaluation model: Depreciated replacement cost
Water Corporation Perth	Cost Model

Secondly, to the extent that firms within the water industry apply fair value infrastructure measurement and adopt similar methodologies, the move to the revaluation model has improved the comparability of asset values, given that assets of a similar nature and condition will be valued consistently irrespective of age and the different economic conditions existing at the time of construction, acquisition or gifting (Herrmann et al. 2006; Bolivar and Galera 2007).

Notwithstanding these potential improvements in the comparability of statutory infrastructure, a number of comparability challenges remain.

Firstly, the significant financial impacts (discussed above) from the initial application of the revaluation model reduce the comparability of water entity results overtime.

Secondly, the application of different revaluation methodologies by different Australian water businesses reduces the potential reliability of comparisons between entities. Such issues may be addressed in future years with further guidance on the selection of revaluation methodologies becoming available in AASB 13 *Fair Value Measurement*. AASB 13 compels entities to select the methodology which “maximizes the use of relevant *observable inputs* and minimizes the use of *unobservable inputs*” (par. 3). Observable inputs and unobservable inputs are defined by AASB 13 (Appendix A) as:

Observable inputs: Inputs that are developed using market data, such as publicly available information about actual events or transactions, and that reflect the assumptions that market participants would use when pricing the asset or liability.

Unobservable inputs: Inputs for which market data are not available and that are developed using the best information available about the assumptions that market participants would use when pricing the asset or liability.

It remains an open question whether water utilities will unilaterally reach a coherent view on AASB 13.

Thirdly, the variation in the useful lives assumed by different entities for depreciation purposes has made comparability more problematic. As illustrated in Figure 5, in 2008-09, there was a high degree of variation in the maximum useful lives assumed for infrastructure across the sector. Whilst most entities (11) used a maximum useful life of less than 150 years, some (8) utilised a maximum useful life of 150 years or more (e.g. up to 400 years).

A limitation of this analysis relates to the inconsistency in the ways in which individual businesses disclosed the useful lives assumed for different classes of infrastructure. At one extreme, entities provided no further detail other than to state the minimum and maximum useful life assumed for all infrastructure. Others, however, were more specific in disclosing the maximum and minimum useful life for specific sub-classes of water and wastewater assets.

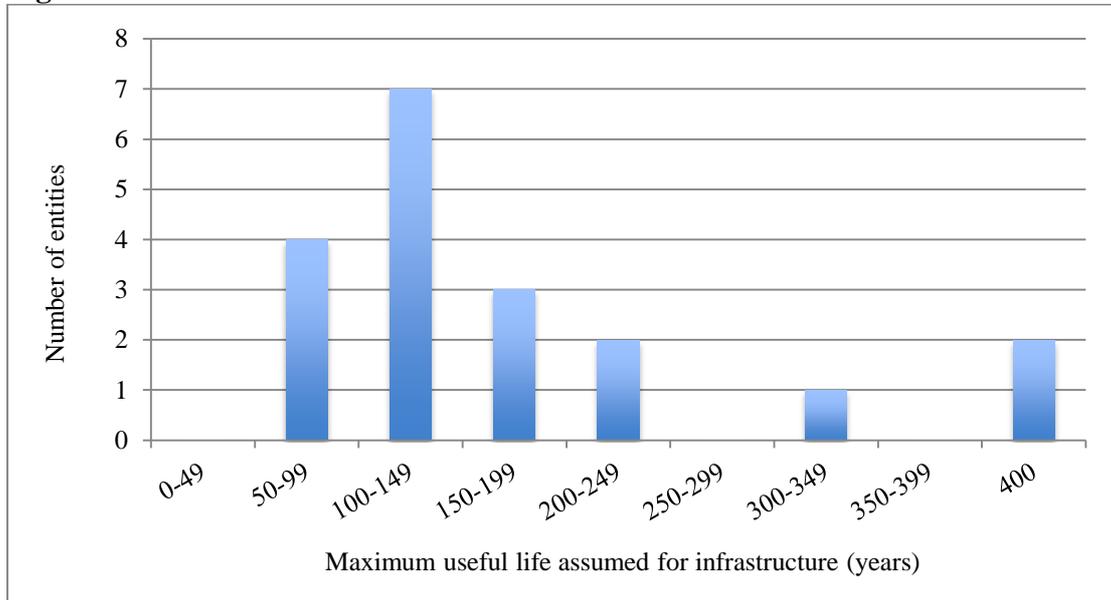
Fundamentally, the depreciation method adopted for an item of infrastructure should “reflect the pattern in which the asset’s future economic benefits are expected to be consumed by the entity” (AASB 116, par. 60). As identified by AASB 116, the economic benefits embodied in infrastructure are generally consumed through use, although other factors including wear and tear, obsolescence, and legal limits (particularly relevant in the case of leased items) may be relevant:

... all the following factors are considered in determining the useful life of an asset:

- (a) expected usage of the asset. Usage is assessed by reference to the asset’s expected capacity or physical output.
- (b) expected physical wear and tear, which depends on operational factors such as the number of shifts for which the asset is to be used and the repair and maintenance programme, and the care and maintenance of the asset while idle.
- (c) technical or commercial obsolescence arising from changes or

improvements in production, or from a change in the market demand for the product or service output of the asset.
 (d) legal or similar limits on the use of the asset, such as the expiry dates of related leases (AASB 116, par. 56).

Figure 5. Maximum useful life assumed for infrastructure in 2008-09



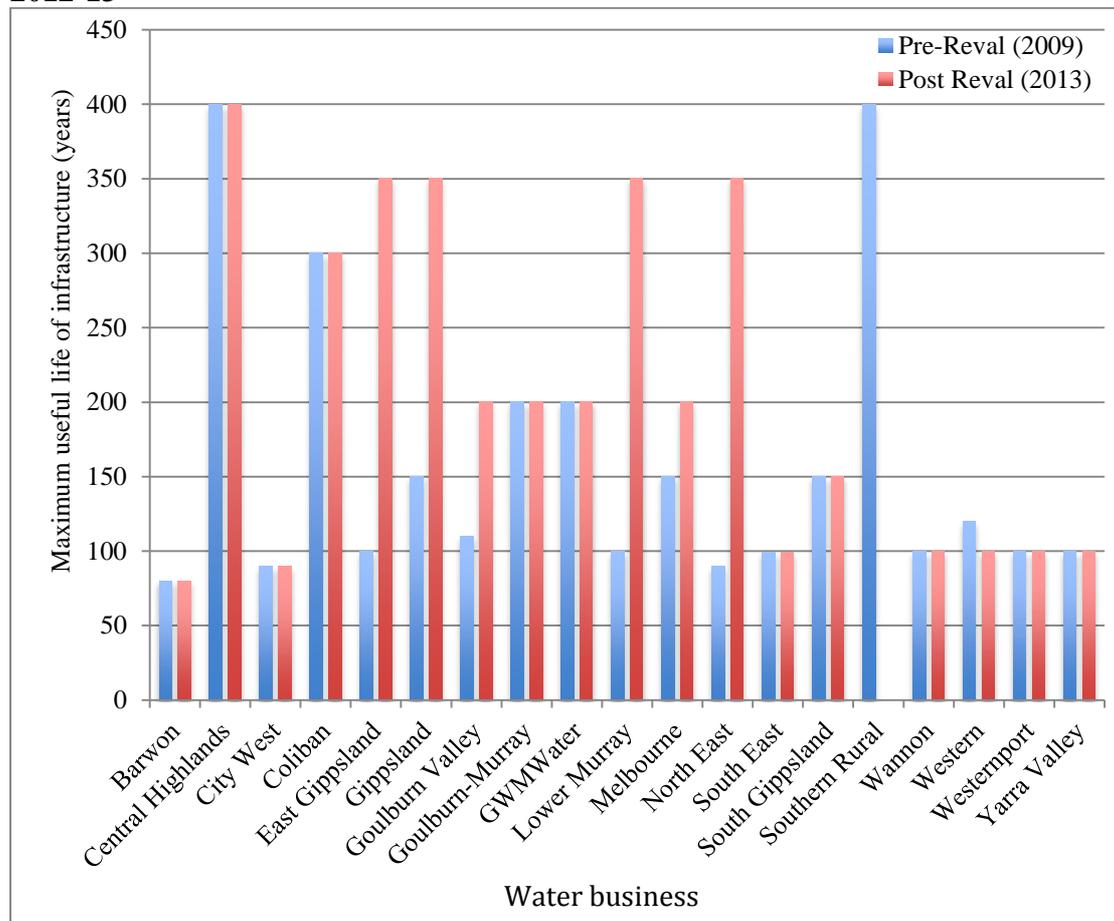
The inconsistency of useful lives assumed for statutory infrastructure have been further compounded by adjustments between periods. For example, between 2008-09 and 2012-13, seven water businesses took steps to increase the maximum useful lives assumed for infrastructure. The minimum and the median increases in the maximum useful lives were 50 and 250 years, respectively. Figure 6, which compares the maximum useful lives assumed by individual water businesses in 2008-09 and 2012-13, illustrates these results.

There was some disparity in the justifications provided to support the increase in the maximum useful lives of infrastructure. To illustrate, one business simply stated that the increase in the maximum useful life occurred as part of the first-time revaluation and it had the impact of minimising the depreciation impacts of the revaluation. A second entity justified the increase on the basis of the condition and performance of infrastructure and estimated that the change would reduce depreciation by \$1.63m in each of the next four years. Only one other entity provided an estimate of the financial impact of the change. This entity disclosed that the change would reduce current and

future depreciation charges by \$2.5m per annum. In contrast with these entities, others that increased the maximum useful life of infrastructure provided less detail.

Given these observations, the establishment of a Victorian water industry working group to determine the best method for estimating the useful lives of long-lived assets appears warranted (see VAGO 2012).

Figure 6. Maximum useful lives assumed for infrastructure: 2008-09 versus 2012-13



Finally, whilst the move by Victorian water businesses to the revaluation model has generally brought them into line with the practices of other Australian public sector entities, the approach conflicts with the method adopted by many private sector Australian businesses.

Based on a sample of 114 Australian listed companies, for which the class of asset was applicable, Cairns et al. (2011) found that only 12(11%) measured property at fair

value and none measured plant and equipment at fair value for the financial period preceding the Australian adoption of IFRS. Even fewer measured property at fair value in the first IFRS reporting period.

Much has been written in the context of the private sector about the initial enthusiasm for current cost accounting alternatives during the high inflation periods experienced by many developed economies throughout the 1970s and 1980s. This has been followed by periods of fierce debate about the usefulness of this approach, and by what has ultimately been described by some as the failure or rejection of fair value accounting (see, for example, Clarke 1998; Ng & Shead 1999; Walker et al. 2000b; Johnstone 2003; Walker & Jones 2003; Whittington 2008).

Problems associated with the questionable reliability of fair value measures, coupled with: (1) the complexity and cost of actually undertaking and auditing revaluations (Ng & Shead 1999; Bolivar & Galera 2007); (2) improved government control of inflation (Tweedie & Whittington 1997); and (3) self-interest, with firms failing to realise any tax benefits from fair value valuation (Tweedie & Whittington 1997), have all been used to explain the lack of success of fair value measurement within the private sector.

This disconnection between private and public sector infrastructure measurement practices has drawn the attention of a number of commentators. As discussed by Pawsey and Crase (2013), some have characterised the situation as being the result of a failure of public sector regulators to learn from their private sector counterparts (Johnstone 2003), by dusting off (Walker and Jones 2003) and recycling (Walker et al. 2000b) previously rejected measurement ideas.

3.5.3 Comparability with UK and US statutory reporting practices

Coinciding with Australia's move and as part of a wider EU decision, IFRS have been utilised within the UK since 2005. However, whilst IFRS are applied widely throughout Australia by both private and public entities, the use of IFRS within the UK is more confined. As identified by the EC (2012), whilst listed UK companies

must use IFRS for the preparation of their consolidated accounts, IFRS are permitted for use by but are not mandatory for other companies. This status of IFRS within the UK is reflected in the varying accounting standards used by large, privatised water businesses in the preparation of statutory accounts.

Table 8 provides a summary of the accounting standards used by the 10 largest UK water businesses by turnover as reported by OFWAT (2011). Whilst some adopt IFRS, others continue to report under UK accounting standards. Importantly, both set of standards permit the use of either the cost or revaluation model for infrastructure. Most of the entities sampled in Table 8, however, measure infrastructure at cost for statutory purposes. Ernst and Young (2011) provided a summary of key differences between UK accounting standards and IFRS.

Whilst few of the large sampled UK water businesses adopted the revaluation model as part of the preparation of statutory accounts, as reviewed by Pardina et al. (2008), current cost information is provided as part of the preparation of regulatory accounts.

Table 8. Statutory Accounts of Large UK Water Businesses: Basis of preparation and measurement model

Company	Basis of preparation	Infrastructure Measurement Model	Year Ended
Thames	UK accounting standards.	Cost	31-Mar-13
United Utilities	IFRS	Cost - Revalued to fair value on the adoption of IFRS	31-Mar-13
Severn Trent	IFRS	Cost - Revalued to fair value on the adoption of IFRS	31-Mar-13
Anglian	UK accounting standards.	Cost	31-Mar-13
Yorkshire	UK accounting standards.	Revaluation ⁷	31-Mar-13
Dŵr Cymru	IFRS	Cost	31-Mar-13
Northumbrian	UK accounting standards.	Cost	31-Dec-12
Southern	UK accounting standards.	Cost	31-Mar-13
South West	IFRS	Cost - Revalued to fair value on the adoption of IFRS	31-Mar-13
Wessex	UK accounting standards.	Cost	31-Mar-13

Whilst the US is actively pursuing convergence with the IASB and foreign listed firms within the US are permitted to use IFRS, US GAAP is still applicable for US firms. Numerous key differences exist between US GAAP and IFRS (see, for example, Deloitte 2008; Ernst & Young 2009; KPMG 2010; PwC 2010). Infrastructure measurement represents a key area of conflict. Unlike their Australian and UK counterparts, privatised US water businesses do not have the option to adopt the revaluation model for infrastructure in the preparation of statutory accounts⁸.

⁷ Commentary provided within Yorkshire Water 2013 statutory report identifies that, following the advice from the firm's auditors, the following two step approach was used to determine the fair value of infrastructure:

1. Estimating the business VIU [Value in Use], using a discounted cash flow ("DCF") model excluding outperformance against Ofwat's targets to determine the business enterprise value. Excluding forecast outperformance against the regulatory allowance is a proxy for excluding any goodwill that a purchaser would pay for the business. The enterprise value was then cross-checked against the Regulatory Capital Value ("RCV"). This step was followed by:
2. Allocating the VIU of the business (less relevant working capital balances and other adjustments) to individual classes of tangible fixed assets (Yorkshire Water 2013, p. 63).

⁸ Refer to Herrmann et al. (2006) for further discussion of the historic versus revaluation model for property, plant and equipment debate within the US.

3.5.4 Summary

In sum, Table 9 categorises infrastructure comparability problems arising from:

- the recent move to the revaluation model by Victorian water businesses;
- differences in the infrastructure measurement models adopted locally and internationally; and
- differences in the assumptions made about the useful lives of infrastructure for depreciation purposes.

Table 9. Infrastructure Comparability Issues

Type of comparison	Issues
Between period	<ul style="list-style-type: none"> • The financial significance of the revaluations impacts the ability to make reliable comparisons of pre and post-revaluation results. • A number of entities have changed the maximum useful life assumed for infrastructure.
Between water businesses	<ul style="list-style-type: none"> • Different entities apply different measurement models and may make different assumptions in the application of these models. • Different entities assume different useful lives for infrastructure. • Internationally, not all entities apply the same accounting standards and there is variation in the uptake of the revaluation model.
Against private sector benchmarks	<ul style="list-style-type: none"> • Few private sector entities adopt the revaluation model for infrastructure.

3.6 The reliability of statutory infrastructure values

The reliability of fair value measures is a highly contested issue. Questions remain about the usefulness of the revaluation model for infrastructure despite many years of debate.

In some regards, fair values can be viewed as being more reliable than historic costs as the latter can result in overly conservative earnings (Herrmann et al. 2006). Another potential source of historic cost bias relates to the timing of asset sales. Clearly, as long-lived assets are held over time and as market conditions change

unrealised gains or losses accumulate. Management can subsequently use their discretion in regards to the timing of asset in order to realise gains or losses and thus potentially biasing earnings (Walker & Jones 2003; Herrmann et al. 2006). In contrast, fair values give credence to current market conditions or the ‘market voice’ with gains and losses being recognised as market conditions change (Barlev & Haddad 2003).

In terms of the reliability of the income approach, different valuers are likely to reach more or less optimistic cash flow forecasts and determine that different discount rates are appropriate (Walker et al. 2000b; Ball 2006). Attempts to measure the present value of cash flow to be derived from an asset are further clouded by uncertainty about what management actually intend to do with assets (Hampton 1999). Such issues may be minimised, however, given that the income approach must reference future prices generated on regulatory asset values.

Lee and Fisher (2004) highlighted that the use of the depreciated replacement cost methodology is inherently logical in that it reflects the reality of the situation in that, if disposed, assets would need to be replaced by similar assets. Furthermore, it can be applied by government and other not-for-profit entities which won’t necessarily generate positive cash flows from the delivery of services (Lee & Fisher 2004).

As with the income approach, however, the depreciated replacement cost methodology relies on a multitude of assumptions regarding the grouping and aggregation of assets to be replaced; sample selection; method of replacement given technology advancements; allowances for wear and tear; and allowances for the enhanced capacity and functionality of newer technology (Walker & Walker 2000; Johnstone 2003). Such problems have led to assertions that managers can “virtually pick a number – any number” (Walker & Walker 2000, p. 100). Furthermore, unlike the income approach, the depreciated replacement cost method does not utilise forecast prices generated from regulatory asset values.

VAGO (2011) noted that metropolitan water businesses engaged their own valuers to revalue infrastructure. In contrast, the revaluations of the infrastructure controlled by regional urban and rural water business were organised by the VGV. As summarised

below, existing commentary provided by the VAGO raises a number of concerns in relation to the potential reliability revaluations.

In relation to the revaluation of the infrastructure of regional urban and rural water businesses, VAGO (2011, p. 65) identified that:

... eleven had reservations with the methodology with six indicating they would reject the initial valuation. Five indicated that they would accept the fair value if audit was satisfied with the valuation methodology.

As part of their review, VAGO (2011) also evaluated the asset valuation frameworks of all 19 water businesses. At the time, only nine (47%) businesses were identified as having an asset valuation policy. Furthermore, there were some discrepancies between firms in terms of their assessments of the reasonableness of fair value measures given that as part of the assessments:

- 84 per cent considered sample selection, sample size and mix of physical and desktop assessments
- 89 per cent considered the appropriateness of the unit costs
- 89 per cent considered asset condition when assigning useful lives
- 89 per cent considered the reasonableness of the movement in asset values given their understanding of the assets revalued (VAGO 2011, p. 65).

Additional concerns regarding the reliability of the revaluations to the infrastructure of regional urban and rural water businesses were identified in VAGO's (2013a) evaluation of the performance of the Valuer-General Victoria (VGV). This report concluded that the "VGV's processes for assuring the validity of its valuations are not rigorous" (p. viii). This conclusion was based on a consideration of a number of shortcomings. These included that the VGV quality assurance procedures tend to be focused "on compliance checking rather than in-depth scrutiny of valuation decisions" (p. 11). In this regard, VAGO (2013a) recommended that the VGV could improve assurance by increasing the number of field audits conducted and the number of second valuer reviews. These issues were further confounded by what the VAGO

(2013a) considered to be a lack of guidance provided by the DTF in relation to the valuation of infrastructure.

VAGO (2013a) further considered that the VGV had poorly engaged with clients given the lack of transparency in regards to valuation assumptions. The ability of the VGV to effectively engage clients was also not helped by the unsatisfactory timeliness of some valuations. Of 11 water entities surveyed in relation to the VGV organised revaluations in 2010-11, 10 were dissatisfied with timeliness.

In terms of the value for money for the VGVs services, VAGO (2013a, p. 10) commented that it was difficult to judge the extent to which the services constitute value for money because the VGV “does not have any documented benchmarks or targets around the typical cost (or fees), size, and scope of valuations for particular sectors”. VAGO (2013a) further criticized the VGV for failing to document the basis upon which it calculates its administrative fee for valuation services.

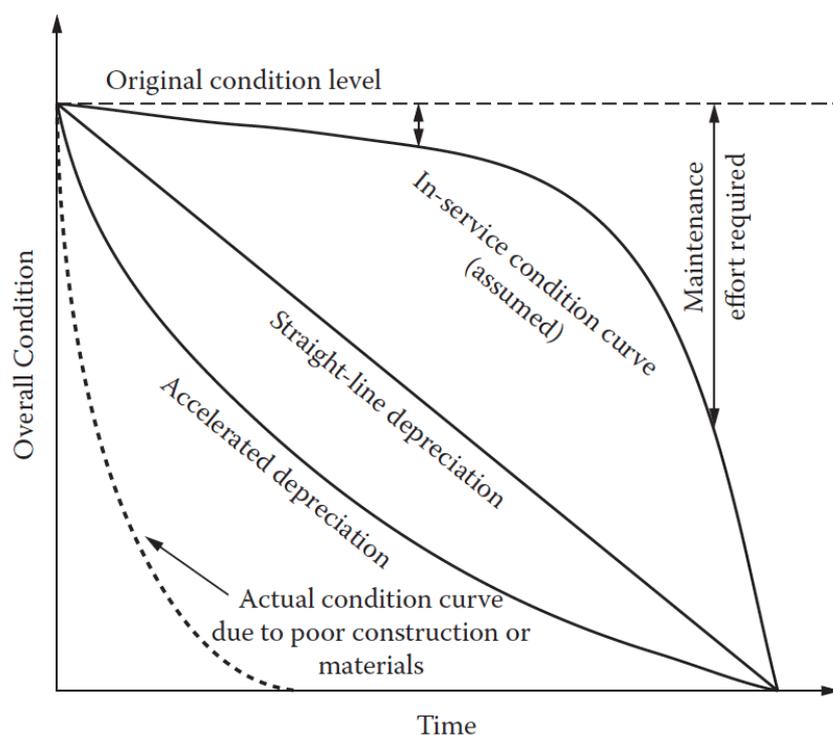
As identified in Section 3.3, the statutory infrastructure values of a number of water businesses far exceed the regulatory values upon which returns are generated. This situation is most prominent in relation to regional urban and rural water businesses and raises questions about the reliability to which statutory infrastructure values reflect the future economic benefits to be derived from holding infrastructure. Whittington (1998) identified an equivalent situation as having occurred in relation to privatised gas and water in the UK. In the case of one of the firms, the firm’s auditors stated that the current cost accounting values should be written down to reflect lower regulatory values given that the current values were much lower than deprival values.

In addition to the measurement model employed, a further concern in relation to the reliability of statutory infrastructure values is the method of depreciation. As discussed in Section 3.5.2, Victorian water businesses use straight-line depreciation for infrastructure and there is some discrepancy in the useful lives assumed in the application of this technique. As presented in Figure 7, past commentaries have questioned the reliability of straight-line depreciation given that straight-line depreciation may not reflect the actual condition of infrastructure and that some infrastructure assets will be maintained in perpetuity. Alternatives to straight-line

depreciation including renewals accounting may be more appropriate (see, for example, Carey et al. 1994).

Walker et al. (2004) explored issues regarding the appropriateness of straight-line depreciation for public sector infrastructure. Based on a survey of 204 councillors and staff from local Australian councils, Walker et al. (2004) reported that a number of respondents were highly critical of reported depreciation charges. Some lamented depreciation as a “nonsense figure” or “ridiculous”, and challenged the appropriateness of straight-line depreciation for assets which don’t depreciate in a straight-line or which are actually improving. As one respondent commented, “sewers don’t depreciate in a straight line” (Walker et al. 2004, p. 371).

Figure 7. Straight-line depreciation and asset condition



(Figure reproduced from Grigg 2012, p. 243)

Financial statement note disclosures can play an important role in helping to ensure that financial statement users can assess the assumptions made by firms in the application of either the income or depreciated replacement cost approach.

Accordingly, as summarised by Table 10, AASB 116 requires firms to disclose a range of key issues in relation to infrastructure revaluations.

Table 10. AASB 116 Revaluation Disclosure Requirements

Paragraph	Disclosure Requirement
73(a)	Measurement basis for each class of PPE
73(c)(iv)	Amount of increase or decrease arising from revaluation for each class of PPE
77(a)	Effective date of revaluation
77(b)	Whether an independent valuer was involved
77(c)/(d)	Method of revaluation and whether method was based on current market prices, a recent market transaction or other estimation techniques.
77(d)	Significant assumptions made in estimating fair value
77(e)	Carrying amount of revalued assets had the cost model been applied – not applicable to not-for-profit entities (AUS77.1)
77(f)	Revaluation surplus and change for the period
77(f)	Restrictions on the distribution of revaluation surpluses to shareholders

A review of note disclosures provided in 2011-12 statutory reports of Victorian water businesses was conducted to explore compliance with AASB 116 revaluation disclosure requirements. Entities were generally explicit in identifying that fair value was used to measure infrastructure. Entities also provided details of the effective date of revaluations, the details of valuer, and identified whether the income or depreciated methodology was used. There was, however, some variation in the depth of disclosure:

- Most metropolitan water businesses explicitly identified the discount rates used in the application of the income approach. A number of these entities also identified that the revaluation was based on the current regulated price path as well as projected revenues using the Commission’s building block approach. Not all, however, explicitly identified the discount rate used.
- A number of regional urban and rural water businesses identified that the application of the depreciated replacement cost approach was dependent on assumptions regarding the condition, age, and performance history of a portfolio of assets; or provided details regarding the application of the Greenfields or Optimum Modern Equivalent approach. Some commentaries, however, could have been more detailed.

4.0 Conclusions and Recommendations

4.1 Approach Taken in Report

In accordance with FRD 121, and as part of the preparation of statutory reports, Victorian water businesses are now required to use the revaluation model for infrastructure. This report has detailed the results of a review of the relevance, reliability and comparability of these statutory asset values. The measurement of asset values plays an important role in helping to ensure the usefulness of statutory accounts in the assessment of the financial performance and position of water businesses. The conclusions reached in this report were formed based on a review of the:

- applicable accounting standards and principles;
- published statutory reports of Victorian water businesses;
- differences between statutory and regulatory values;
- accounting practices of public sector entities operating in other Australian states and the practices of Australian private sector entities; and
- accounting practices of privatised water businesses operating in the UK and US.

In addition, a search of the published literature on infrastructure measurement and disclosure by public sector entities was undertaken. Finally, existing VAGO reviews of the statutory accounts of Victorian water businesses and the performance of the VGV were also employed.

As a result of the: (1) outcomes of the Minister's decision on initial regulatory asset values in 2004, and (2) ongoing application of different accounting principles for statutory and regulatory purposes, statutory infrastructure values are significantly different from regulatory asset values. The difference between these values is most prominent in relation to regional urban and rural water businesses.

At 30 June 2012, on average, the updated RAVs of regional urban water businesses represented only 40% of statutory infrastructure values. On the same date, the RAVs of the two rural water businesses represented only 5% or less of reported statutory infrastructure values. As such, many regional urban and rural water businesses are only permitted to generate a return on a relatively small percentage of the total infrastructure reported on statutory balance sheets. This has a negative impact on the profitability of these businesses but is consistent with their designation as not-for-profit and a desire to keep rural prices low. By comparison, the relatively larger regulatory asset values of for-profit metropolitan water businesses has allowed for a stream of profits and dividend payments.

4.2 The Relevance of Statutory Asset Values

The principal benefit from the use of the revaluation model by Victorian water businesses to measure infrastructure, is relevance of the disclosures to financial statement users requiring up-to-date valuations. Information on the present value of cash flows to be generated from infrastructure, as reported using the income approach, and information regarding the cost to replace infrastructure, as reported using the depreciated replacement cost technique, is likely to be relevant in a number of contexts. It is, however, important to note that the mere disclosure of these financial measures is not enough to fully inform financial statement users on the status of infrastructure.

It is recommended that future work is required to evaluate how existing financial information on the valuation of infrastructure, together with information on the performance of infrastructure provided in accordance with the Commission's reporting requirements and MRDs, can be augmented with further financial and non-financial information to better reveal the underlying condition and maintenance of infrastructure and promote accountability. This work will need to draw from the experiences in other jurisdictions and the perspectives of engineers, report preparers, water businesses management, and financial statement users including customers and those involved in the oversight of the industry.

4.3 The Comparability of Statutory Asset Values

The move to the infrastructure revaluation model has brought Victorian water businesses into line with the practices of water utilities operating in other states and other Australian public sector entities. The use of the revaluation model can further promote the comparability of water businesses statutory reports given that it can help to ensure that like assets are valued consistently, irrespective of economic conditions at the time of acquisition. Given the significant financial impacts of the accounting policy change to measure infrastructure at fair value, any potential improvements in the comparability of statutory reports between entities, can be at the expense of the comparability of results over time.

The ability compare the statutory reports of Victorian water businesses with private sector businesses and international water entities is restricted given that the revaluation model for property, plant and equipment is not widely applied by private Australian businesses or by large privatised UK water businesses for statutory reporting purposes. The revaluation model for infrastructure is also not permitted by US GAAP.

Also potentially having a negative impact on the comparability of the financial statements of water businesses is the variation in the use of either the income or depreciated replacement cost methods, and the apparent inconsistency in useful lives assumed for infrastructure between different water businesses. Significant revisions to the useful lives of infrastructure may further impact the comparability of results across periods.

Given the inconsistency in the maximum useful lives assumed by business for infrastructure depreciation, the establishment of a Victorian water industry working group to determine the best method of estimating the useful lives of long-lived assets is timely. The provision of further guidance should help to ensure that any inconsistency reflects differences in the nature and condition of infrastructure and not other factors.

Also timely is the release of AASB 13. The additional guidance provided by this standard may result in improved consistency in the revaluation models used by different water businesses to estimate the fair value of infrastructure. The use of one revaluation model across all water businesses would have obvious benefits. The difficulty, however, is that not all water businesses are alike given, most notably, differences between for-profit and not-for-profit businesses.

Given the difficulty of applying the income approach to not-for-profit entities, probably the most feasible approach would be for the depreciated replacement cost to be adopted across all Victorian water businesses. As Byron (2011) observed, in situations of very low prices, the net present value of holding infrastructure may be zero, implying that infrastructure would be worthless. The move to apply the depreciated replacement cost by for-profit metropolitan water businesses could, however, be at the expense of reliability given that the use of the income approach could better reflect the value of future economic benefits to be derived from holding assets. As discussed in the report, whilst the income approach utilises the revenues to be generated from regulatory values, the depreciated replacement cost approach does not.

It terms of promoting the international comparability of water business financial results, it will be important to continue to monitor the up-take of the revaluation model by UK water businesses and the move to IFRS in the US.

In relation to the comparability of financial results over time, water businesses subject to FRD 27B *Presentation and Reporting of Performance Information*⁹ are required to prepare a performance report which discloses the following in relation to the financial indicators specified by MRDs:

- Prior year result;

⁹ As identified by VAGO (2013b), FRD 27B is applicable to all Victorian water businesses other than the three metropolitan retailers. The three metropolitan retailers are still, however, encouraged to comply with the direction.

- Current year result;
- Any applicable target as reported in entity's corporate plan;
- Any variance of actual result versus the target; and
- The reasons for any significant variances.

Significant variances are defined as those in which the actual result varies from the target by more than 10%. A pro-forma table provided with FRD27B further encourages entities to provide a summary of performance indicators over a five-year period.

To the extent that pre and post-revaluation results are compared in performance reports, it will be important that water businesses disclose sufficient information to enable financial statement users to comprehend the impact of the move to the new valuation model and the impact of any revisions made to the useful lives of infrastructure. Financial statement users should be able to separate those variances caused by changes to accounting policies and estimates, from those relating to a business's underlying operations. Finally, in light of the selection of financial performance indicators that are impacted by the choice of infrastructure measurement model, it may be appropriate to re-consider the financial performance indicators reported on. Other ratios, particularly those based on cash flow data, may be more appropriate.

4.4 The Reliability of Statutory Asset Values

Past commentaries concerning the application of both the income and depreciated replacement approaches reveal a degree of scepticism in regards to the reliability of these measures given the numerous assumptions firms must make. In relation to the revaluation of the infrastructure controlled by Victorian water businesses, such scepticism has probably not been helped by the:

- performance of the VGV and inconsistent asset valuation policies between businesses as identified by the VAGO, and
- inconsistent disclosure of infrastructure measurement assumptions.

In this regard, the release of AASB 13 is a positive move. This standard provides further guidance on the determination of fair values and the necessary disclosures firms must provide in relation to revaluations. The standard takes effect for financial years beginning on or after 1 January 2013 and we encourage wide and systematic adoption to avoid the current anomalies. Those involved in the oversight of the financial reporting practices of Victorian water businesses should monitor the application of this new standard and evaluate the need for further guidance.

List of References

- Aboody, D., Barth, M.E., & Kasznik, R. (1999). Revaluations of fixed assets and future firm performance: Evidence from the UK. *Journal of Accounting and Economics*, 26, 149-178.
- Ball, R. (2006). Internatioanl Financial Reporting Standards (IFRS): pros and cons for investors. *Accounting and Business Research*, 36, 5-27.
- Barlev, B., & Haddad, J.R. (2003). Fair value accounting and the management of the firm. *Critical Perspectives on Accounting*, 14(4), 383-415.
- Barth, M.E. (2008). Global Financial Reporting: Implications for U.S. Academics. *Accounting Review*, 83(5), 1159-1179.
- Barth, M.E., & Clinch, G. (1998). Revalued Financial, Tangible, and Intangible Assets: Associations with Share Prices and Non-Market-Based Value Estimates. *Journal of Accounting Research*, 36, 199-233.
- Bolívar, M.P.R., & Galera, A.N. (2007). Could fair value accounting be useful, under NPM models, for users of financial information? *International Review of Administrative Sciences*, 73(3), 473-502.
- Brown, A.M. (2004). The Milieu of the IASB. *Journal of American Academy of Business*, 5(1/2), 385-390.
- Brown, A.M. (2006). The Financial Milieu of the IASB and AASB. *Australian Accounting Review*, 16(38), 85-95.
- Byron, N. (2011). *The politics of water*, in J. Langford & J. Briscoe *The Australian Water Project Volume 1, Crises and opportunity: Lessons of Australian water reform*, Committee for Economic Development of Australia, 70-76.
- Cairns, D., Massoudi, D., Taplin, R., & Tarca, A. (2011). IFRS fair value measurement and accounting policy choice in the United Kingdom and Australia. *The British Accounting Review*, 43(1), 1-21.
- Carey, A., Cave, M., Duncan, R., Houston, G., & Langford, K. (1994). *Accounting for Regulation in UK Utilities*. London: ICAEW.
- Carlin, T.M. (2000). Measurement Challenges and Consequences in the Australian Public Sector. *Australian Accounting Review*, 10(21), 63-72.
- Clarke, F.L. (1998). Deprival Value and Optimized Deprival Value in Australasian Public Sector Accounting: Unwarranted Drift and Contestable Serviceability. *ABACUS*, 34(1), 8-17.
- De Witte, K., & Marques, R.C. (2010). Designing performance incentives, an international benchmark study in the water sector. *Central European Journal of Operations Research*, 18(2), 189-220.
- Deloitte. (2008). IFRSs and US GAAP: A Pocket Comparison. Available at: <http://iasplus.com/dttdpubs/0809ifrsusgaap.pdf>
- Deloitte (2010). *Determining the fair value of Australia's water infrastructure assets*. Available at: https://www.deloitte.com/view/en_AU/au/insights/browse-by-job-title/coos/6cd8522e82119210VgnVCM200000bb42f00aRCRD.htm

- DEPI (2014). *Water Corporations*. Available at:
<http://www.depi.vic.gov.au/water/governing-water-resources/water-corporations>
- DLG (2013a). *Integrated Planning and Reporting Manual for Local Government in NSW*. Available at:
http://www.dlg.nsw.gov.au/dlg/dlghome/dlg_IntegratedPlanningIndex.asp?sectionid=1&mi=20&ml=9&AreaIndex=IntPlanRept&index=1201
- DLG (2013b). *Local Government Infrastructure Audit*. Available at:
www.dlg.nsw.gov.au/dlg/dlghome/documents/Information/Local%20Government%20Infrastructure%20Audit%20Report%20-%20June%202013.pdf
- Easton, P.D., Edey, P.H., & Harris, T.S. (1993). An Investigation of Revaluations of Tangible Long-Lived Assets. *Journal of Accounting Research*, 31, 1-38.
- EC (2012). *Implementation of the IAS Regulation (1606/2002) in the EU and EEA*. Available at: http://ec.europa.eu/internal_market/accounting/docs/ias/ias-use-of-options_en.pdf
- Edwards, J., Kay, J., & Mayer, C. (1987). *The Economic Analysis of Accounting Profitability*. Oxford University Press, Oxford.
- Ernst & Young (2009). *US GAAP vs. IFRS: The basics*. Available at:
[http://www.ey.com/Publication/vwLUAssets/IFRS_v_GAAP_basics_Jan09/\\$file/IFRS_v_GAAP_basics_Jan09.pdf](http://www.ey.com/Publication/vwLUAssets/IFRS_v_GAAP_basics_Jan09/$file/IFRS_v_GAAP_basics_Jan09.pdf)
- Ernst & Young (2011). *UK GAAP vs. IFRS: The basics*. Available at:
[http://www.ey.com/Publication/vwLUAssets/UK_GAAP_v_IFRS_-_The_basics_-_Spring_2011/\\$FILE/EY_UK_GAAP_vs_IFRS_-_The%20basics_-_Spring_2011%20.pdf](http://www.ey.com/Publication/vwLUAssets/UK_GAAP_v_IFRS_-_The_basics_-_Spring_2011/$FILE/EY_UK_GAAP_vs_IFRS_-_The%20basics_-_Spring_2011%20.pdf)
- ESC (2009). *Water industry Regulatory Accounting Code*. Available at:
<http://www.esc.vic.gov.au/getattachment/bc209b0a-80ee-468a-b20e-1ed5c21e9a11/Code-Regulatory-Accounting-Code-for-Victorian-wate.pdf>
- Grigg, N.S. (2012). *Water, Wastewater, and Stormwater Infrastructure Management*. 2nd Edn, Taylor & Francis, Hoboken.
- Hampton, G. (1999). The Role of Present Value-based Measurement in General Purpose Financial Reporting. *Australian Accounting Review*, 9(17), 22-32.
- Herrmann, D., Saudagaran, S.M., & Thomas, W.B. (2006). The quality of fair value measures for property, plant, and equipment. *Accounting Forum*, 30(1), 43-59.
- IFRS Foundation. (2012). *The move towards global standards*. Available at:
<http://www.ifrs.org/Use+around+the+world/Use+around+the+world.htm>
- Johnstone, D. J. (2003). Replacement Cost Asset Valuation and Regulation of Energy Infrastructure Tariffs. *ABACUS*, 39(1), 1-41.
- KPMG (2010). *IFRS compared to US GAAP: An overview*. Available at:
<http://www.kpmg.com/Global/en/IssuesAndInsights/ArticlesPublications/IFRS-S-GAAP-comparisons/Documents/IFRS-US-GAAP-2010-Overview.pdf>
- Lee, J., & Fisher, G. (2004). Infrastructure assets disclosure in Australian public sector annual reports. *Accounting Forum*, 28(4), 349-368.

- Mayston, D. (1992). Capital accounting, user needs and the foundations of a conceptual framework for public sector financial reporting. *Financial Accountability & Management*, 8(4), 227-248.
- Ng, C., & Shead, B. (1999). Major Issues Associated With the Reporting of Government Net Worth. *Australian Accounting Review*, 9(19), 61-68.
- OFWAT (2011). *Water companies in England and Wales: Financial summary 2010-11*. Available at: http://www.ofwat.gov.uk/regulating/reporting/rpt_fsum2010-11
- Pardina, M.R., Rapti, R.S. & Groom, R. (2008). *Accounting for Infrastructure Regulation: An Introduction*. The World Bank, Washington, DC.
- Pawsey, N. & Crase, L. (2013). The Mystique of Water Pricing and Accounting. *Economic Papers*, 32(3), pp. 328-339.
- PwC (2010). *IFRS and US GAAP: similarities and differences*. Available at: http://www.pwc.com/us/en/issues/ifrs-reporting/assets/ifrs-simdif_book-final-2010.pdf
- Ryan, C., Guthrie, J. & Day, R. (2007). Politics of Financial Reporting and the Consequences for the Public Sector. *ABACUS*, 43(4), 474-487.
- Tweedie, D, & Whittington, G. (1997). The End of the Current Cost Revolution. In T. Cooke & C. Nobes (Eds.), *The Development of Accounting in an International Context*. London: Routledge.
- VAGO (2011). *Water Entities: Results of the 2010-11 Audits*. Available at: http://www.audit.vic.gov.au/reports_and_publications/latest_reports/2011-12/20111109-water-entities.aspx
- VAGO (2012). *Water Entities: Results of the 2011-12 Audits*. Available at: http://www.audit.vic.gov.au/reports_and_publications/latest_reports/2012-13/20121114-water-entities.aspx
- VAGO (2013a). *Public Asset Valuation*. Available at: <http://www.audit.vic.gov.au/publications/20130417-Public-Asset-Valuation/20130417-Public-Asset-Valuation.html>
- VAGO (2013b). *Water Entities: Results of the 2012-13 Audits*. Available at: http://www.audit.vic.gov.au/reports_and_publications/latest_reports/2013-14/20131212-water-entities.aspx
- Walker, B., & Walker, B.C. (2000). *Privatisation sell off or sell out? The Australian experience*. Sydney: ABC Books.
- Walker, R.G., Clarke, F.L., & Dean, G.W. (2000a). Options for Infrastructure Reporting. *ABACUS*, 36(2), 123-159.
- Walker, R.G., Clarke, F.L., & Dean, G.W. (2000b). Use of CCA in the Public Sector: Lessons From Australia's Experience With Public Utilities. *Financial Accountability & Management*, 16(1), 1-32.
- Walker, R.G., Dean, G.W., & Edwards, P.J. (2004). Infrastructure Reporting: Attitudes of Preparers and Potential Users. *Financial Accountability & Management*, 20(4), 351-375.
- Walker, R. G., & Jones, S. (2003). Measurement: A Way Forward. *ABACUS*, 39(3), 356-374.

- Walker, R.G., & Jones, S. (2012). Reporting on Infrastructure in Australia: Practices and Management Preferences. *ABACUS*, 48(3), 387-413.
- Whittington, G. (1998). Deprival Value and Price Change Accounting in the U.K. *ABACUS*, 34(1), 28-30.
- Whittington, G. (2008). Fair Value and the IASB/FASB Conceptual Framework Project: An Alternative View. *ABACUS*, 44(2), 139-168.

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