Cradle Mountain Water

Headwork Charges

King Island, Currie System

January 2010

Contents

Table Index

1. Executive Summary

The Headworks report has adopted the Guidelines as prepared by the Department of Land and Water Conservation (DLWC) and is based on the Net Present Value (NPV) approach in the New South Wales Independent Pricing and Regulatory Tribunal (IPART) determination for the calculation of headworks charges. The methodology is detailed in the Guideline document released by the (DLWC) titled "*Developer Charges for Water Supply, Sewerage and Stormwater*".

Approximately 120 non-metropolitan water utilities and 170 general-purpose local government councils in NSW use the methodology in the application of developer charges. The Guidelines are appropriate to be used in the operating environment in which CMW finds itself in, that is, it has recently been formed through an amalgamation of Council owned water authorities.

Furthermore the guidelines and methodology detailed in the "*Developer Charges for Water Supply, Sewerage and Stormwater"* document complies with the Council of Australian Governments' (COAG) Strategic Framework for Water Reform and provides a proven methodology and procedures for the calculation of cost reflective developer charges for water supply, sewerage and stormwater infrastructure (stormwater is not relevant for this report).

In calculating the headwork charges for the King Island, Currie System, only those assets that specifically service development within the Currie area were considered in the calculation process.

The headwork's charge for development is $1,481 / ET for water and $1,907 / ET for sewerage.

2. Introduction into the King Island, Currie System

The *King Island* serves a population of approximately 745 residential customers and is located off the North West Tip of Tasmania.

CMW supplies approximately 89 ML / annum of high quality drinking water to the Currie system and collects and treats approximately 65 ML/ annum of wastewater from the Currie System.

The water and sewerage assets summarised in Table 1 and Table 2 below form part of the overall *Currie System.*

Table 1 Currie System - Water Assets – June 2009

Asset	Asset type	No. / or Km
Water	Dam	0 No.
	Reservoirs	4 No.
	Treatment Plant	2 No.
	Pump Stations	1 No.
	Pipelines	2.9 Km

Table 2 Currie System - Sewerage Assets – June 2009

Asset	Asset type	No. / or Km
Sewerage	Treatment Plant	1 No.
	Pump Stations	2 No.
	Rising Mains	0 Km
	Pipelines	4.3 Km

The assets listed in Tables 1 and 2 above form the basis behind the calculation of the headworks charges for the King Island, Currie System.

The water supply system includes the overall system supplied from the Wharf Rd and Currie water treatment plant for the Currie area.

The sewerage system includes the overall system discharging into the King Island, Currie wastewater treatment plant and includes Currie.

3. Calculation of Headworks Charges

Headworks charges are levied by water utilities up-front to recover the infrastructure costs for the servicing of new developments and emerging communities.

The authority for water utilities to levy headworks charges for water supply and wastewater collection in Tasmania derives from section 56Q(2) of the Water and Sewerage Industry Act 2008. Furthermore, Councils are obliged to include in any permits issued by it under the Land Use and Planning Approvals Act 1993 (LUPA) any conditions required by the water utility.

The following parameters where considered in preparing the water and sewerage headworks charges.

3.1 Year commissioned

This is the actual year that the asset was placed into service.

3.2 Effective year of commissioning

For the purpose of applying the methodology assets commissioned prior to 1996, this is 1996 and for assets commissioned after 1996, the actual date of commissioning is adopted.

3.3 Capital Cost (Replacement Cost)

The existing assets have been valued based on the replacement cost as provided by CMW which is based on the information provided to it by the NW Coast Councils and Cradle Coast Water prior to formation of the water corporations. Replacement cost of existing infrastructure for all of CMW's assets should be reviewed and validated (this is currently being undertaken as a separate exercise).

3.4 Capacity ET

This is a measure of the ultimate operating capacity of each asset expressed in terms of Equivalent Tenements. In general all assets have been assessed on the basis of the overall system capacity, rather than individual capacities for individual parts of the system.

Historical operating data (water and wastewater volumes and number of connections) has been used to determine the water and wastewater volumes per Equivalent Tenement (ET). These figures have been applied to the system design capacities (ML/d) to derive the equivalent design ET.

3.5 Capital Cost per ET

This is derived by dividing the Capital Cost by the Capacity ET.

3.6 Take up Period

This is an indication of the expected time in which the full design capacity of the assets forming the systems will be taken up.

Based on an average development of 5 ET / year (derived from historical planning applications for this area), the take-up periods applicable to the water and sewerage systems are approximately 15 and 49

years respectively. The take-up periods for the various assets adopted for the headworks calculation are 15 years for water and 30 years for sewerage.

It should be noted that the 30 year take up period for sewer is more conservative and favours the developer in the calculation of the headwork charge.

3.7 ROI Factor

This factor varies for different discount rates (3% for pre 1996 assets; 7% for post 1996 assets) and for different years to full take-up. Typically the ROI factor is 1.21 for water and varies between 1.49 to 2.26 for sewerage respectively according to the guidelines.

3.8 Capital Charge per ET

Multiplying the previously calculated Capital Cost per ET by the ROI Factor derives this charge.

3.9 Reduction Amount

The Guidelines published by DLWC proposes three methods for the purpose of calculating the reduction amount to be applied when calculating developer charges.

The three methods are NPV of Annual Charges, Direct NPV and Under 2000 Assessments method in the guidelines.

Since the information to use either the NPV of annual charges or Direct NPV method is not available at this time, our advisors has adopted the simpler and more conservative approach of the 50% reduction for the Under 2000 assessments method. This method is appropriate where a utility expects low to moderate annual growth.

This method is a practical and simple approach to calculating the reduction amount for developer charges until such time as the capital works and renewal programs can be completed, at which time the assessment for developer charges can be revisited.

It should be noted that the 50% reduction method is much more conservative and favours the developer in the reduction amount and hence the headworks charge.

3.10 Headworks Charge per ET

This Charge is derived by multiplication of the Capital Charge per ET and the Reduction Amount.

4. Summary of Headworks Charges

The water and sewerage headworks charges specifically for the King Island, Currie System are:

Table 3 Headworks Charges per ET

Asset	$ / ET
Water	$1,481
Sewerage	$1,907
Total	**$ 3,388**

The above charges are applicable to standard residential ETs.

For alternative type development such as (flats, units, commercial, industrial) it will be important to convert the development to an equivalent residential ET before application of headworks charges.

The Water Services Association of Australia Sewerage Code (WSA 02 – 2002 – 2.3) provides guidelines for determination of residential ET, as follows:

- Single occupancy lots – 3.5 EP/ Unit = 1 ET;
- Multiple occupancy lots
    - Medium density – 3.0 EP/Unit = 0.86 ET;
    - High density – 2.5 EP/unit = 0.71 ET;

Wher EP = Equivalent Persons.

The Sewerage Code also provides guidelines whereby commercial and industrial premises can be provided with ET ratings.

5. Conclusion

In conclusion the:

- Methodology adopted to calculate headworks charges is based on the NSW IPART approach as reflected in the document titled *"Developer Charges Guidelines for Water Supply, Sewerage and Stormwater* published by the DLWC;
- Headworks charge is based on the replacement cost as provided by CMW;
- Headworks charge is a conservative calculation based on a 50% reduction amount (in lieu of 30 year operating costs and 50 year renewals expenditure) programs being finalised;
- Headworks charge has been calculated specifically for the King Island, Currie system;
- Capital and operating forecasts for CMW should be reviewed and validated over the 30 year planning horizon;
- Replacement cost of existing infrastructure for all of CMWs assets should be reviewed and validated (this is currently being undertaken as a separate exercise);
- Headworks charge for water is $1,481 per ET
- Headworks charge for sewerage is $1,907 per ET

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