

Attachment 8 52



David Campbell
Minister for Water Utilities
Minister for Small Business
Minister for Regional Development
Minister for the Illawarra

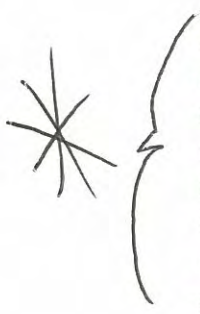
MO Ref: SD0600867
DEUS Ref: 06/109

Mr Ray Carter
Carter Bros Engineering Pty Ltd
3 Toronto Street
BATHURST NSW 2795

- 9 MAY 2006

Dear Mr Carter

I refer to your letter of 7 November 2005 to the Hon Frank Sartor MP, Minister for Planning, regarding the implementation of best-practice sewerage pricing by Bathurst Regional Council, and your fax of 30 January 2006 to Mr David Nemtsov, Director-General of the Department of Energy, Utilities and Sustainability (DEUS). These matters fall within my portfolio as Minister for Water Utilities.



As noted in former Minister Sartor's letter to you on 5 July 2005 (copy attached), Bathurst Regional Council had given an undertaking to review sewer access charges for customers with connections sized for fire flow requirements. Such reductions would be based on an independent hydraulic assessment and would be conditional upon use of the fire hose reels only for fire fighting purposes. I further draw your attention to the second paragraph of Mr Sartor's letter and reiterate that fire hose reels should not be used for washing down of hard surfaces and that any such hosedown water discharged to the stormwater system may pollute the environment.

Your concern at the introduction and implementation of best-practice sewerage pricing is noted, however, such tariffs are designed to ensure all customers, whether business or residential, pay a fair share of the costs of delivering sewerage services. High usage and large connections impose higher operating and capital costs on the sewerage system and a fair tariff must reflect this.

I am advised in 2005, Bathurst Regional Council commissioned a hydraulic assessment at each of your properties. As a result of this study, I understand that Council's letter of 5 April 2005 to you has proposed a meter downsizing program on 8 of your connections; and significant reductions in the sewer discharge factor at 10 of your 13 connections. All costs for meter downsizing would be met by Council and the resulting rebate backdated to July 2004.

.../2

The proposed reductions would result in sewer access charges being reduced by over \$11,000, or around 45% based on the 2005/06 sewerage tariff. Usage charges would also be significantly lower as a result of these reduced discharge factors. Accordingly, I would encourage you to accept Council's offer.

Whilst the Department of Energy, Utilities and Sustainability will continue to closely monitor tariff reforms, I believe Bathurst Regional Council has taken appropriate steps to ensure businesses such as yours are treated fairly.

If you require any further information on this matter, please contact Mr Scott Chapman, Manager, Best-Practice at the Department of Energy, Utilities and Sustainability on (02) 8281 7335 or 0417 236 373.

Yours sincerely



David Campbell
Minister for Water Utilities
Minister for Small Business
Minister for Regional Development
Minister for the Illawarra

Encl.



New South Wales

Minister Phillip Costa MP

Attachment 9
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Minister for Water
Minister for Regional Development

MSO 09/2199, MSO 09/2037, MSO09/2454
W09/2001, 09/1928, W09/2121

Mr Ray Carter
233 College Road
BATHURST NSW 2795

Dear Mr Carter

I refer to your letters of 23 July 2009, 6 August 2009 and 28 August 2009 regarding the sewerage access charge for your non-residential property at 16 Vale Road, South Bathurst.

I am advised that Bathurst Regional Council has had two-part tariffs involving access charges and usage charges in place for water supply and non-residential sewerage services since July 2004. Such tariffs substantially comply with the *Best-Practice Management of Water Supply and Sewerage Guidelines*.

As indicated in my letter of 14 July 2009, Council significantly increased its water supply usage charges in the 2009/10 financial year. The new usage charges reflect the long-run marginal cost of the water supply. Similarly, Council is proposing to move to appropriate sewer usage charges for the 2010/11 financial year in order to provide a better pricing signal for non-residential customers.

I understand that the water service connection size of your Vale Road property is 40mm and your consultant's report has calculated the average sewerage load from this property as equivalent to a 20mm connection. However, the relevant consideration in determining the sewerage access charge is the peak load which may be placed on the sewerage system through the water service connection. I am advised that in response to your request, Bathurst Council has indicated it will be reducing the connection size to 32mm, which will reduce the sewerage access charge by 36%.



Accordingly, Bathurst Council's calculation of the sewerage access charge on the basis of the water service connection size is appropriate.

I have sent a copy of this response to Mr Gerard Martin MP, Member for Bathurst, who has made representations on your behalf.

Yours sincerely

The Hon. Phillip Costa MP
Minister for Water
Minister for Regional Development

23 SEP 2009


MSO09/2941
W09/2341

Mr Gerard Martin MP
Member for Bathurst
PO Box 712
BATHURST NSW 2795

23/12/09


Dear Mr Martin

Thank you for your letter of 13 October 2009 (your reference: CB:09) on behalf of Mr Ray Carter regarding the sewerage access charge for his non-residential property at 16 Vale Road, South Bathurst.

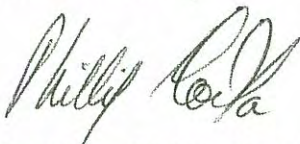
 Best practice pricing involves access charges and usage charges for non-residential sewerage bills. The *Best-Practice Management of Water Supply and Sewerage Guidelines, 2007* (page 9 - copy attached) indicate that the access charge is to be based on the capacity requirements that the customer's loads place on the sewerage system. Such capacity requirements are based on the peak load that the discharger can place on the sewerage system.

Use of a report from a hydraulic consultant that establishes the peak load in terms of equivalent tenements is considered satisfactory, providing the report determines the peak load that the discharger can place on the sewerage system.

However, I understand that the report prepared by Mr Carter's consultant calculates the average load (not the peak load) from this property as equivalent to a 20mm connection, and recommends downsizing the connection from 40mm to 25mm, which would be required in the future when the building is extended.

As the report prepared by Mr Carter's consultant has not addressed the issue appropriately, Bathurst Council has assessed the connection and has proposed downsizing of the connection to 32mm, which will reduce the sewerage access charge by 36%. I accept Council's action as satisfactory and I consider that no further action is warranted on this matter.

Yours sincerely



The Hon. Phillip Costa MP
Minister for Water
Minister for Regional Development

17 DEC 2009

Encl.



HENGCON PTY LTD
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Our Ref: L01_08_064.doc

2 December 2008

Cambrune Pty Ltd
233 College Road
BATHURST NSW 2795

Attention: Mr Ray Carter

Dear Sir

**RE. ASSESSMENT OF WATER & SEWER FOR 16 VALE ROAD, LOT 2 DP815734,
SOUTH BATHURST**

1.0 INTRODUCTION

As requested Heath Consulting Engineers has carried out an assessment of the above property with regard to the water supply requirements and required water meter size to determine the appropriate water access charge. An assessment has also been made of the sewer disposal for the site in relation sewer access charges.

The existing site is serviced by a DN40 water meter (Meter No. MK71028) located near the north west corner of the site.

This water meter is supplied from Council's water main in Vale Road.

Examination of the 2008/2009 Rates & Charges Notice for the property shows that the property was charged \$943.00 for the Water Availability Charge and \$1338.00 for the Sewer Access Charge which was then reduced by 5%. It is assumed that the 5% reduction is due to the property having a Sewer Discharge Factor (SDF) of 95%. These charges are both based on the water meter size for the property in accordance with Council's Revenue Policy.

2.0 METHODOLOGY

The water supply requirements for the site were determined based on the methodology outlined in *AS 3500.1 – 2003 Water Supply*. Table 3.1 of *AS 3500.1* indicates flow rate requirements.

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TABLE 2 - WATER DEMAND ASSESSMENT

Fixture/Appliance	Number	Flow Rate L/s		Loading Units	
		Each	Total	Each	Total
Sinks (Standard Tap)	1	0.12	0.12	3	3
Basins	2	0.10	0.20	1	2
Water closet cisterns	1	0.10	0.10	2	2
Urinals	1	0.10	0.10	2	2
Shower	1	0.10	0.10	2	2
Hose Taps (20mm)	2	0.30	0.60	8	16
Hot Water System	1	0.20	0.20	8	8
Fire Hose Reels	1 proposed for future expansion	0.33	0.33		
Totals			1.75		35

The total number of loading units for the building and the respective Probable Simultaneous Flow Rate (PSFR) from Table 3.3 is shown below:

Existing Building	<u>Loading Units</u> 35	<u>PSFR</u> 0.51 L/s
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3.2 Fire Fighting Supply

The site will contain one fire hose reel. AS2441 requires the PSFR for the building to be included with the two most hydraulically disadvantaged fire hose reels (flowrate of 0.33L/s/hose reel) unless only one fire hose reel is installed. Therefore, the design flowrate for the building is $0.51\text{L/s} + 0.33\text{L/s} = 0.84\text{L/s}$. AS2441 also requires the fire hose reel to have a minimum residual water pressure of 220kPa.

3.3 Assessment of Water Meter Size

Design information for typical water meters are shown in Table 3.

TABLE 3 - WATER METER DESIGN INFORMATION

Nominal Diameter	Maximum Continuous Flow Rate L/s	Maximum Flow Rate L/s
DN20	0.69	1.40
DN25	0.97	1.94
DN32	1.39	2.78
DN40	3.0	5.6
DN50	6.1	12.6

From Table 3, the PSFR for the property of 0.51L/s for the site would suggest the need of a DN20 water meter. Once the building is expanded and a fire hose reel is required the design flowrate would increase to 0.84L/s, thereby necessitating the need for a DN25 water meter.

At a Council meeting on the 21 July 2004 Council resolved that a number of items with regard to the user pays best practice sewer charges. Of particular interest is Item (d) of that resolution which is shown below:

(d) That the cost of downsizing or removing meters be met by Council.

It is recommended that Council be asked to change the water meter size to 25mm diameter in order to reduce the water availability charge for the property.

3.4 Water usage

The actual water usage for the property over the last three financial years is shown in Table 4.

TABLE 4 - ACTUAL WATER USAGE

Financial Year	Water Usage (kL)
2005/2006	0 (property vacant)
2006/2007	313
2007/2008	11

4.0 SEWER CHARGES

Council's management plan allows for non-residential properties to be levied sewer charges. These charges consist of two parts: an access charge (based on the size of the water meter connected to the property) and a usage charge (based on the amount of water used by the property). Each of these charges is then multiplied by the SDF determined by Council for the property.

In February 2004 the Department of Energy, Utilities and Sustainability (DUES) now known as the Department of Water & Energy (DWE) provided strategies as to how Council deal with the implementation of best practice pricing for water and sewer. It appears from minutes of Council meetings that not all of these strategies were adopted by Council, namely only charging for the actual water meter size required rather than charging for the actual meter size where the larger size is required for fire fighting purposes.

However, it appears that the Council have allowed for an expert report to be provided to establish the peak load (in equivalent tenements (ETs)) that is actually placed on the sewerage system. In the absence of such a report, the Council can determine the access charge on the basis of the square of the service connection size times the discharge factor.

4.1 Assessment of Peak Load

An assessment of the peak load in ETs was carried out. This assessment is outlined below.

The Department of Water & Energy's *Best-Practice Management of Water Supply & Sewerage Guidelines* August 2007 defines an ET as:

A measure of the demand a development will place on the infrastructure in terms of the water consumption or sewage discharge for an average residential dwelling.

These same guidelines also suggest that to encourage water conservation, high water consuming residential customers should be subjected to a step price increase of at least 50% for incremental usage above a specified threshold with the threshold not to exceed 450kL/annum for Tablelands areas. Bathurst Regional Council have adopted 250kL as their threshold limit.

Bathurst Regional Council staff advised they generally use a figure of 220 to 240L/person/day for their sewage load with an average of 2.3persons/ET. This equates to an annual sewage load of 185kL to 202kL.

The Australian Standard for On-Site Domestic Wastewater Management, AS1547, sets out wastewater demands for residential houses. These demands are used when designing effluent disposal systems where no reticulated sewer is available. The standard suggests values of 1080 L/day for older houses and 880L/d for new houses built in accordance with Basix requirements. The annual peak load per house is therefore 394.2kL and 321.2kL respectively, with an average of 357.7kL.

For the purposes of this report a figure of 200kL/annum was adopted as the peak load that an ET would place on a sewage system.

The water usage for the property shown in Table 4 is very irregular. Using the highest value of 313kL and the SDF of 95% a total of 297.4kL would be the peak load placed on the sewage system by this property. When expressed in terms of ETs it equates to 1.49 ETs.

If we average the water usage over two years (excluding the year the property was vacant) the peak load (expressed in ETs) would be 0.77 ETs.

If we use the lesser water usage over two years the peak load (expressed in ETs) would be 0.05 ETs.

With such a range of water usage it would be fair to adopt the average value as the the peak sewage load.

Council's revenue policy sets out that there is a minimum sewer access charge for any non-residential property, which is equivalent to the charge for a 20mm diameter water service.

This minimum access charge correlates with the actual water meter size that would be required for the property as outlined in Section 3.3.

The user pays best practice sewer charges allow for a second set of charges to be applied which is based on the actual amount of water used. Non-residential properties are levied for all water used which is multiplied by the SDF. Bathurst Regional Council have set their charge at \$0.85/kL. This is the truest form of user pays.

5.0 CONCLUSION

The water meter size and the peak sewage load of the property was assessed to determine the appropriateness of the current water and sewer access charges currently being levied for the property. Based on our assessment we conclude that the existing property only requires a DN20 water meter. When the existing building is extended and requires a fire hose reel the water meter would need to be DN25.

As a comparison, the current annual water availability charge for a DN40 water meter is \$943.00, a DN25 water meter is \$367.00 and a DN20 water meter is \$235.00.

It is recommended that Council be asked to change the water meter size to 25mm diameter in order to reduce the water availability charge for the property. This change in meter size would be at Council's cost in accordance with the Council resolution.

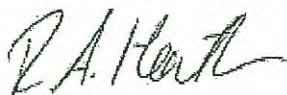
The peak sewage load placed on the existing sewage system, based on actual water usage, was assessed to be range between 0.05 ETs and 1.49 ETs.

Council's revenue policy allows for a minimum sewer access charge equivalent to a DN20 water meter size (this is the normal size meter provided for a single residential property).

Based on the peak sewage load determined we conclude that this property should only be charged the minimum sewer access charge. As a comparison, the current annual sewer access charge for the property is 95% of \$1339.00, whilst the minimum charge would be \$334.00.

We trust that this information satisfies your requirements, however, if you require further information do not hesitate to contact the undersigned.

Yours faithfully
Heath Consulting Engineers



Per:
ROGER HEATH



HEATH CONSULTING ENGINEERS

Attachment 11

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HENGCON PTY LTD
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Our Ref: L02_08_064.doc

13 May 2009

Cambrune Pty Ltd
233 College Road
BATHURST NSW 2795

Attention: Mr Ray Carter

Dear Sir

RE. SEWER ACCESS CHARGES, BATHURST REGIONAL COUNCIL

Reference is made to the letter from the Mayor of Bathurst Regional Council, Mr Paul Toole, dated 19 February 2009 to the Bathurst Business Chamber, regarding sewer access charges.

We wish to draw your attention to Item 2 of this letter (copy attached) which the Mayor explains that Council has adopted part (b). Careful reading of part (b) shows that it is actually dependant on Part (a). Part (a) allows for an expert report to be presented to Council for Council's consideration establishing the peak load in equivalent tenements their operations place on the sewerage system. Part (b) then goes on to say that "In the absence of such a report the Council can determine the access charge based on the.....". Therefore, if Council have been presented with an expert report then they are obliged to consider it. Once a report is submitted then Part (a) comes into affect.

Council's Management Plan outlines the pricing policy principles adopted by the plan. For sewerage servicing pricing there are five (5) principles adopted which are listed below:

- (i.) *Follows the Ministry of Energy & Utilities Draft Based Best Practice Pricing Guideline and is a combination of uniform annual charges, access and usage charges;*
- (ii.) *Collects revenue to fund the sewerage system from ratepayers who actually benefit from availability or use of Council's sewerage system;*
- (iii.) *Ensures Council derives sufficient income to operate the sewerage system and provide for future capital expenditure and debt servicing;*
- (iv.) *Sends appropriate pricing signals, can be administered relatively simply and inexpensively and can be understood by the public;*
- (v.) *No subsidisation between residential and non-residential categories.*

We offer comment on items (i) and (iv).

The Department of Water & Energy's (DWE) "Best Practice Management of Water Supply and Sewerage Guidelines" states that:

Best-practice sewerage pricing involves a uniform annual sewerage bill for residential customers. For non-residential customers an appropriate sewer usage charge is required for the estimated volume discharged to

the sewerage system, together with an access charge based on the capacity requirements that their loads place on the system relative to residential customers."

The pricing checklist contained within the guidelines suggests that the sewer usage charge per kilolitre reflects the long-run marginal cost of sewerage business whilst the sewerage access charge for non-residential customers is reflective of the customers peak load on the system.

Typically Councils base the access charge on the size of the water meter connected to the property. For non-residential properties the water meter is more often sized to accommodate fire hose reels or fire hydrants installed on the property. The majority of Council's require fire hose reels to be connected to the metered supply. This was typically done as in the past fire hose reels were used to wash down hardstand areas or used to wash vehicles and as such Councils wanted to ensure that customers paid for the water that was used. This water typically does not and would have great difficulty entering the sewerage system.

In the spirit of true user pays principles many Council's have adopted a policy of either reducing the sewer discharge factor (SDF) or allowing the "nominal" size water meter to be adopted when levying the sewerage pricing for non-residential properties. This is to account for the properties where larger water meters are installed for fire services. This enables the principles of best practice sewerage pricing to be adhered to by ensuring that the access charge applied to the property reflects the true capacity requirements that the property places on the Council's sewerage system. It also ensures that sewerage charges are applied in an equitable manner and are not penalized by having to comply with building code requirements.

To ensure that there are no cross subsidies the sewer usage charge would therefore be higher. This is much more consistent with the true principles of pay for use, ie. the more water that is used by the property the more that is paid. Bathurst Regional Council appear to have adopted a much higher access charge with a low water usage charge. We have noted that many other Councils have similar pricing structures to that of Bathurst Regional Council but the majority either offer a reduction in the SDF or levy the sewer access charge based on the "nominal" water meter size that is required by the property assuming no fire services are installed.

In the case of the recent analysis carried out by us on 16 Vale Road, Bathurst (copy of report attached) the property had a peak annual water usage over the last three years of 313kL which equates to a sewer usage charge of approximately $313 \times 0.95 \text{ (SDF)} \times 0.78 = \231.93 . In addition a sewer access charge of approximately \$1229.00 (based on 2006/2007 fees and charges) was levied against the property. This difference is further compounded when lesser quantities of water are used, which was the case for this property.

The above example shows that the sewerage charges paid by this property were in no way a reflection of the sewerage loads placed on the Council's sewerage system by the property. In actual fact they are at odds with DWE's best practice guidelines and also the true principles of pay for use, ie. The property is paying substantial access charges, between 5 ½ and 150 times the sewer usage charge and not actually placing much of a load on the sewerage system.

To better reflect DWE's best practice guidelines and the true principles of pay for use a better approach would be to adopt a lesser sewer access charge or base the access charge for a property on the nominal water meter size required but increase the sewer usage charge. This means that the more water that is used the more that is paid in sewer usage charges. With the correct pricing structure Council would still ensure that there is no cross subsidy between residential and non-residential customers.

It is worth noting that the Department of Land & Water Conservation's *Water Supply, Sewerage and Trade Waste Pricing Guidelines (2002)* suggests that the sewerage long-run marginal cost can be reasonably estimated as 100% to 150% of the Local Water Utilities operating cost/kL. In 2002 the State-wide median operating cost was 82c/kL, which indicated that a typical sewer usage charge would be between 82c/kL and 123c/kL. This figure is now almost seven years old. With ever increasing costs it is fair to expect that this figure would be higher today. Bathurst Regional Council's Draft Management plan for 2009/2010 has proposed a figure of 89c/kL, which is at the lower end of the 2002 State-wide median figure.

This leads to item (iv). The higher the usage charge means that customers would be much more conscious of the amount of water being used and ultimately discharged to sewer. This sends the appropriate pricing signals to the customers and should ultimately lead to a conservation of water and long term sustainability. After all that is part of what the Best-Practice Management Guidelines are trying to achieve. Under the present pricing structure, customers which have a large water meter solely for compliance with the building code fire fighting requirements are being penalised and treated as if they were placing excessive demands on Council's sewerage system. This is not a fair and equitable arrangement and does nothing to encourage water conservation and sustainability. The excessive sewer access charge may mean that this property is actually subsidising residential or other high water use non-residential businesses.

We have noted in Council's Draft Management Plan the Water Availability charge proposed for the upcoming financial year is approximately half that of the current year. This is coupled with an approximate increase in the water usage charge of 50%. It is also noted that there are slight increases in the sewer access charges and sewer usage charges.

It appears that Bathurst Regional Council are moving towards true pay for use principles for their water supply but have not followed this through with their sewerage pricing.

We trust that this information satisfies your requirements at this stage and it may be able to form part of a submission to Bathurst Regional Council to point out that their sewerage pricing policy principles are at odds with their adopted sewer charges.

We trust that this information satisfies your requirements, however, if you require further information do not hesitate to contact the undersigned.

Yours faithfully
Heath Consulting Engineers



Per:
ROGER HEATH
Enc

65

BATHURST REGIONAL COUNCIL



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19 February 2009

Mr Peter Sargent
Bathurst Business Chamber
PO Box 293
BATHURST NSW 2795

Dear Peter

Sewerage Access Charges

I refer to your letter of 20 January 2009, regarding sewerage access charges.

In order to understand Council's position on the matter of sewerage access charges the following information is supplied.

- 1) In May 2004, Council received advice from the NSW Government of Guidelines to be used in determining a method to charge customers for the use of Council's sewerage assets.
- 2) From 2003 onwards, Councillors have been presented with various reports and options for the charging of sewer charges.

Council, at its meeting held in July 2004, chose the option that is currently being charged to each customer. The options available to Council were to charge either of the following:

- (a) Base sewerage access charges on the peak load the discharger places on the sewerage system. Such discharges should therefore have the option of providing for Council's consideration, an expert report to establish the peak load in equivalent tenements (ET's) their operations place on the sewerage system.
- (b) In the absence of such a report the Council can determine the access charge on the basis of the square of the service connection size times the discharge factor.

Part (b) is the method that has been adopted by this Council.

- 3) As part of establishing a method of charging Council's engineering staff were requested to categorise each business to determine their sewerage discharge factor (SDF).
- 4) Council on 8 June 2004, wrote to all businesses affected by the introduction of this new system requesting them to advise Council if they required a review of

Reference: RR:AL:26.00010-03/026
Enquiries: Mr Bob Rosch (02) 6333 6267
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BATHURST REGION... FULL OF LIFE

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Bathurst Business Chamber
19 February 2009

their business SDF. Council received replies to this request and proceeded to review each property's SDF and where appropriate make the required change.

Council wrote to over 300 landowners who were affected by these proposed changes. Council received replies from 19 landowners and then proceeded to review each of these requests and make any necessary adjustments that were required.

- 5) Council has since 2004 used this method to charge customers for the use of the sewerage assets.
- 6) Each year Council invites submissions from its ratepayers and customers on any aspect of items contained within the Management Plan including the method of charging for sewer as well as the SDF charge contained in the Revenue Policy section of the Management Plan.
- 7) This issue has been raised many times by a member of the Bathurst Business Chamber, and again I would like to reiterate that it was Council's decision to adopt the method they did. That is, the Council determined the access charge on the basis of the square of sewer connection size times the discharge factor.
- 8) As Council has adopted its method of charging then the option you refer to regarding the peak load in equivalent tenements (ET) is not available to Council's customers at the present time. However, as pointed out in item (6) each and every ratepayer has the right to make a submission on the Management Plan including the method of charging for sewer charges.
- 9) Council will invite and consider all submissions made in determining its Management Plan and Revenue Policy for the 2009/10 period.

I trust this explains Council's position in relation to sewer access charges.

Yours faithfully

Paul Toole
MAYOR OF BATHURST

Reference: RR:AL:20.00010-03/026
Enquiries: Mr Bob Rosch (02) 6333 6257
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HEATH CONSULTING ENGINEERS

67

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2 December 2008

Cambrune Pty Ltd
233 College Road
BATHURST NSW 2795

Attention: Mr Ray Carter

Dear Sir

**RE. ASSESSMENT OF WATER & SEWER FOR 16 VALE ROAD, LOT 2 DP815734,
SOUTH BATHURST**

1.0 INTRODUCTION

As requested Heath Consulting Engineers has carried out an assessment of the above property with regard to the water supply requirements and required water meter size to determine the appropriate water access charge. An assessment has also been made of the sewer disposal for the site in relation sewer access charges.

The existing site is serviced by a DN40 water meter (Meter No. MK71028) located near the north west corner of the site.

This water meter is supplied from Council's water main in Vale Road.

Examination of the 2008/2009 Rates & Charges Notice for the property shows that the property was charged \$943.00 for the Water Availability Charge and \$1338.00 for the Sewer Access Charge which was then reduced by 5%. It is assumed that the 5% reduction is due to the property having a Sewer Discharge Factor (SDF) of 95%. These charges are both based on the water meter size for the property in accordance with Council's Revenue Policy.

2.0 METHODOLOGY

The water supply requirements for the site were determined based on the methodology outlined in *AS 3500.1 – 2003 Water Supply*. Table 3.1 of *AS 3500.1* indicates flow rate requirements.

TABLE 1 - FLOW RATES & LOADING UNITS

Fixture/Appliance	Flow Rate L/s	Loading Units
Water closet cistern	0.10	2
Bath	0.30	8
Shower	0.10	2
Basin	0.10	1
Sink (Standard Tap)	0.12	3
Laundry tub	0.12	3
Dishwasher	0.20	3
Hose tap (20 nom. size)	0.30	8
Hose tap (15 nom. size)	0.20	4

The loading units indicated in **Table 1** allow an assessment to be made of the probable simultaneous flow that may occur to a group of fixtures/appliances. Due to the diversity of use within a building or development, it is a rare occurrence that all fixtures in a development are in use at the one time. For economic reasons it is usual practice to size water pipes to allow flow that is less than the flow that would be required if all fixtures were in use at the same time.

A loading unit is a factor that takes into account the expected flow and probability of usage of a plumbing fixture. By adding up the total number of loading units and referencing an appropriate table, an estimate of the probable simultaneous flow to a group of fixtures can be made.

An assessment must also be made of fixtures that require full flow to be actually available. Full flow requirements must be satisfied for groups of showers, wash fountains, commercial laundry equipment, dishwashing equipment and air conditioning units. Cleaners sinks inside buildings are not counted in the design flow as the fixtures are usually only in use by cleaning staff when all other occupants of the buildings have gone.

For this assessment it has been assumed that there are no full flow requirements for the building.

3.0 WATER SUPPLY REQUIREMENTS

3.1 Potable Water Supply

The number of water supply fixtures was determined from an inspection of the site and building and also discussions with yourself. The assessment of the water requirements for the site is presented in **Table 2**.

TABLE 2 - WATER DEMAND ASSESSMENT

Fixture/Appliance	Number	Flow Rate L/s		Loading Units	
		Each	Total	Each	Total
Sinks (Standard Tap)	1	0.12	0.12	3	3
Basins	2	0.10	0.20	1	2
Water closet cisterns	1	0.10	0.10	2	2
Urinals	1	0.10	0.10	2	2
Shower	1	0.10	0.10	2	2
Hose Taps (20mm)	2	0.30	0.60	8	16
Hot Water System	1	0.20	0.20	8	8
Fire Hose Reels	1 proposed for future expansion	0.33	0.33		
Totals			1.75		35

The total number of loading units for the building and the respective Probable Simultaneous Flow Rate (PSFR) from Table 3.3 is shown below:

Existing Building	<u>Loading Units</u> 35	<u>PSFR</u> 0.51 L/s
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3.2 Fire Fighting Supply

The site will contain one fire hose reel. AS2441 requires the PSFR for the building to be included with the two most hydraulically disadvantaged fire hose reels (flowrate of 0.33L/s/hose reel) unless only one fire hose reel is installed. Therefore, the design flowrate for the building is 0.51L/s + 0.33L/s = 0.84L/s. AS2441 also requires the fire hose reel to have a minimum residual water pressure of 220kPa.

3.3 Assessment of Water Meter Size

Design information for typical water meters are shown in **Table 3**.

TABLE 3 - WATER METER DESIGN INFORMATION

Nominal Diameter	Maximum Continuous Flow Rate L/s	Maximum Flow Rate L/s
DN20	0.69	1.40
DN25	0.97	1.94
DN32	1.39	2.78
DN40	3.0	5.6
DN50	6.1	12.6

From Table 3, the PSFR for the property of 0.51L/s for the site would suggest the need of a DN20 water meter. Once the building is expanded and a fire hose reel is required the design flowrate would increase to 0.84L/s, thereby necessitating the need for a DN25 water meter.

At a Council meeting on the 21 July 2004 Council resolved that a number of items with regard to the user pays best practice sewer charges. Of particular interest is Item (d) of that resolution which is shown below:

(d) That the cost of downsizing or removing meters be met by Council.

It is recommended that Council be asked to change the water meter size to 25mm diameter in order to reduce the water availability charge for the property.

3.4 Water usage

The actual water usage for the property over the last three financial years is shown in Table 4.

TABLE 4 - ACTUAL WATER USAGE

Financial Year	Water Usage (kL)
2005/2006	0 (property vacant)
2006/2007	313
2007/2008	11

4.0 SEWER CHARGES

Council's management plan allows for non-residential properties to be levied sewer charges. These charges consist of two parts: an access charge (based on the size of the water meter connected to the property) and a usage charge (based on the amount of water used by the property). Each of these charges is then multiplied by the SDF determined by Council for the property.

In February 2004 the Department of Energy, Utilities and Sustainability (DUES) now known as the Department of Water & Energy (DWE) provided strategies as to how Council deal with the implementation of best practice pricing for water and sewer. It appears from minutes of Council meetings that not all of these strategies were adopted by Council, namely only charging for the actual water meter size required rather than charging for the actual meter size where the larger size is required for fire fighting purposes.

However, it appears that the Council have allowed for an expert report to be provided to establish the peak load (in equivalent tenements (ETs)) that is actually placed on the sewerage system. In the absence of such a report, the Council can determine the access charge on the basis of the square of the service connection size times the discharge factor.

4.1 Assessment of Peak Load

An assessment of the peak load in ETs was carried out. This assessment is outlined below.

The Department of Water & Energy's *Best-Practice Management of Water Supply & Sewerage Guidelines* August 2007 defines an ET as:

A measure of the demand a development will place on the infrastructure in terms of the water consumption or sewage discharge for an average residential dwelling.

These same guidelines also suggest that to encourage water conservation, high water consuming residential customers should be subjected to a step price increase of at least 50% for incremental usage above a specified threshold with the threshold not to exceed 450kL/annum for Tablelands areas. Bathurst Regional Council have adopted 250kL as their threshold limit.

Bathurst Regional Council staff advised they generally use a figure of 220 to 240L/person/day for their sewage load with an average of 2.3persons/ET. This equates to an annual sewage load of 185kL to 202kL.

The Australian Standard for On-Site Domestic Wastewater Management, AS1547, sets out wastewater demands for residential houses. These demands are used when designing effluent disposal systems where no reticulated sewer is available. The standard suggests values of 1080 L/day for older houses and 880L/d for new houses built in accordance with Basix requirements. The annual peak load per house is therefore 394.2kL and 321.2kL respectively, with an average of 357.7kL.

For the purposes of this report a figure of 200kL/annum was adopted as the peak load that an ET would place on a sewage system.

The water usage for the property shown in Table 4 is very irregular. Using the highest value of 313kL and the SDF of 95% a total of 297.4kL would be the peak load placed on the sewage system by this property. When expressed in terms of ETs it equates to 1.49 ETs.

If we average the water usage over two years (excluding the year the property was vacant) the peak load (expressed in ETs) would be 0.77 ETs.

If we use the lesser water usage over two years the peak load (expressed in ETs) would be 0.05 ETs.

With such a range of water usage it would be fair to adopt the average value as the the peak sewage load.

Council's revenue policy sets out that there is a minimum sewer access charge for any non-residential property, which is equivalent to the charge for a 20mm diameter water service.

This minimum access charge correlates with the actual water meter size that would be required for the property as outlined in Section 3.3.

The user pays best practice sewer charges allow for a second set of charges to be applied which is based on the actual amount of water used. Non-residential properties are levied for all water used which is multiplied by the SDF. Bathurst Regional Council have set their charge at \$0.85/kL. This is the truest form of user pays.

5.0 CONCLUSION

The water meter size and the peak sewage load of the property was assessed to determine the appropriateness of the current water and sewer access charges currently being levied for the property. Based on our assessment we conclude that the existing property only requires a DN20 water meter. When the existing building is extended and requires a fire hose reel the water meter would need to be DN25.

As a comparison, the current annual water availability charge for a DN40 water meter is \$943.00, a DN25 water meter is \$367.00 and a DN20 water meter is \$235.00.

It is recommended that Council be asked to change the water meter size to 25mm diameter in order to reduce the water availability charge for the property. This change in meter size would be at Council's cost in accordance with the Council resolution.

The peak sewage load placed on the existing sewage system, based on actual water usage, was assessed to be range between 0.05 ETs and 1.49 ETs.

Council's revenue policy allows for a minimum sewer access charge equivalent to a DN20 water meter size (this is the normal size meter provided for a single residential property).

Based on the peak sewage load determined we conclude that this property should only be charged the minimum sewer access charge. As a comparison, the current annual sewer access charge for the property is 95% of \$1339.00, whilst the minimum charge would be \$334.00.

We trust that this information satisfies your requirements, however, if you require further information do not hesitate to contact the undersigned.

Yours faithfully
Heath Consulting Engineers



Per:
ROGER HEATH



HEATH CONSULTING ENGINEERS

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Attachment 11a
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Our Ref: L05_08_064.doc

8 June 2010

The Hon. Phillip Costa MP
Minister for Water
Level 34
Governor Macquarie Tower
1 Farrer Place
SYDNEY NSW 2000

Attention: Mr Phillip Costa

Dear Sir,

RE. BATHURST REGIONAL COUNCIL – SEWER ACCESS CHARGES 16 VALE ROAD, BATHURST

I refer to your letter dated 23 September 2009 to Mr Ray Carter regarding the above matter. We act as Mr Carter's hydraulic consultants and were responsible for the preparation of the hydraulic report for this property.

We note in your letter that Bathurst Regional Council have opted to disregard the recommendations in our report where we advised that a 25mm diameter water meter should be installed for the above property. Our calculations showed that the site only required a 20mm diameter water meter but as a fire hose reel may be required for future shed extensions a 25mm diameter water meter was recommended.

The increase in the water meter size is to ensure compliance with the relevant Australian Standards and Building Code of Australia which sets out the minimum size of water meters for fire hose reels. The increase in water meter size to comply with these requirements does not in any way reflect the peak load which can be placed on the sewerage system.

It is understood that Council resolved to accept reports from experts which determined the peak load (in equivalent tenements (ETs)) that is actually placed on the sewerage system. Our report identified that based on actual water usage the peak load was significantly less than 1 ET. Notwithstanding this the Probable Peak Instantaneous Flow Rate (PSFR – the method recommended by AS3500.1 for the sizing of water services) for the site only required a 20mm diameter water meter. One (1) ET is generally accepted to be the same as one residential household which nearly always have a 20mm diameter water meter installed.

We are very frustrated that it appears Council have completely disregarded our report and taken it upon themselves to change the water meter to 32mm. We have not received any feedback or been provided with any information as to what sections of our report they did

not agree with, nor has the owner been provided with any justification as to how Council arrived upon the 32mm size. It would have been expected that Council would have consulted with the owner or us as the hydraulic consultant prior to changing the water meter. Council have basically dictated what service is required, which we believe is not their role or responsibility.

We have previously carried out a report of a similar nature on behalf of Bathurst Council to down size an existing water meter. This report was accepted by Council and not questioned.

The Department of Water & Energy's (DWE) "Best Practice Management of Water Supply and Sewerage Guidelines" states that:

Best-practice sewerage pricing involves a uniform annual sewerage bill for residential customers. For non-residential customers an appropriate sewer usage charge is required for the estimated volume discharged to the sewerage system, together with an access charge based on the capacity requirements that their loads place on the system relative to residential customers."

The pricing checklist contained within the guidelines suggests that the sewer usage charge per kilolitre reflects the long-run marginal cost of sewerage business whilst the sewerage access charge for non-residential customers is reflective of the customers peak load on the system.

Typically Councils base the access charge on the size of the water meter connected to the property. For non-residential properties the water meter is more often sized to accommodate fire hose reels or fire hydrants installed on the property. The majority of Council's require fire hose reels to be connected to the metered supply. This is typically done, as fire hose reels are often used to wash down hardstand areas and as such Councils wanted to ensure that customers paid for the water that was used. This water typically does not and would have great difficulty entering the sewerage system and can not place any load on the sewerage system.

In the spirit of true user pays principles some Council's have adopted a policy of either reducing the sewer discharge factor (SDF) or allowing the "nominal" size water meter to be adopted when levying the sewerage pricing for non-residential properties. This is to account for the properties where larger water meters are installed for fire services. This enables the principles of best practice sewerage pricing to be adhered to by ensuring that the access charge applied to the property reflects the true capacity requirements that the property places on the Council's sewerage system. It also ensures that sewerage charges are applied in an equitable manner and are not penalized by having to comply with building code requirements.

We note from your letter that Bathurst Council are moving to "*appropriate sewer usage charges for the 2010/11 financial year...*" and that their "*tariffs substantially comply with the Best-Practice management of Water Supply and Sewerage Guidelines*". These statements indicate to us that perhaps the charges levied against non-residential properties since the implementation of the sewer access charges in July 2004 may not have been completely in accordance with the best practice guidelines nor entirely appropriate.

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We would appreciate some clarification as to what has happened in this case and request that a review of how Bathurst Council and other Councils across New South Wales impose sewer access charges on properties with a view to standardising the method across New South Wales.

Yours faithfully
Heath Consulting Engineers



Per:
ROGER HEATH

CC Mr Ray Carter
Mr Gerard Martin MP