

# MELBOURNE WATER - QUIET LAKES BORE FLUSHING TARIFF PROPOSAL

Draft Decision

10 March 2017

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# SUMMARY

On 28 November 2016, Melbourne Water submitted a proposal to the Commission to introduce a new bore flushing tariff from 1 July 2017 to 30 June 2021. The proposed tariff of \$156 (nominal) per property per annum, levied on 251 properties that border Lake Legana and Lake Illawong – within the Quiet Lakes area in Patterson Lakes, includes the following services:

- an additional 253 mega litres of bore water pumped into the lakes for six months each year (1 October – 31 March), and
- weekly blue-green algae monitoring during October and November each year.

Melbourne Water consulted with affected residents in developing the proposed tariff. Ballot results indicated 75 per cent support for the bore flushing tariff and services.

After a review of the efficient costs we reduced the tariff to \$135 (nominal) per affected property per annum.

## **BACKGROUND**

Melbourne Water initially proposed a new water quality tariff on the residents of Quiet Lakes in March 2016, after the release of the Commission’s draft decision on Melbourne Water’s 2016 price submission.

The Commission did not approve Melbourne Water’s proposed water quality tariff in its final decision as there was insufficient time to consider stakeholder submissions and analyse the proposal. Melbourne Water was invited to resubmit its proposal by 1 December 2016. Melbourne Water’s revised proposal was received in November 2016 and published on the Commission’s website. Stakeholders were invited to provide comments on the proposal by 10 February 2017.

## KEY ISSUES

The Commission received nine submissions on the proposed tariff from seven stakeholders (two stakeholders submitted two submissions each). The majority of submissions were made by individual residents affected by the proposed tariff.

Seven submissions generally opposed the proposed tariff but all nine submissions strongly supported the continuation of bore flushing. Two submissions, by the same stakeholder, supported the tariff.

The Commission considered Melbourne Water's proposal, stakeholder submissions, the Patterson Lakes Independent Review final report, Melbourne Water's consultation with affected customers and independent technical and legal advice. The key issues considered by the Commission in making this draft decision include:

- Melbourne Water's obligations on water quality in the Quiet Lakes area
- the beneficiaries of the proposed services and the nature of the Quiet Lakes
- Melbourne Water's consultation with affected customers in relation to willingness to pay
- the capacity of affected residents to pay the proposed tariff, and
- the efficiency of the costs to be recovered via the proposed tariff.

We found the annual bore pumping electricity costs to be higher than necessary and reduced the cost estimate. Overall, the proposed tariff was reduced to \$135 (nominal) per property, per annum from 2017-18 to 2020-21.

The Commission's draft decision is to approve Melbourne Water's bore flushing tariff of \$135 (nominal) per annum per property from 2017-18 to 2020-21 for the following reasons:

- 75 per cent of affected residents supported Melbourne Water's proposed bore flushing tariff and services
- Melbourne Water's proposed services are over and above its obligations to maintain water quality at secondary contact standard, and
- the primary beneficiaries of the bore flushing service are those properties adjacent to lakes Legana and Illawong.

Stakeholders are invited to provide feedback on the Commission's draft decision, with written comments due by 13 April 2017. A final decision will be made in May 2017.

# 1 MELBOURNE WATER'S PROPOSAL

## 1.1 BACKGROUND

Located 32 km south-east of Melbourne's CBD, the Quiet Lakes area in Patterson Lakes is a series of three interconnected, storm water fed lakes – Lake Legana, Lake Illawong and Lake Carramar.<sup>1</sup> The Quiet Lakes are connected to the Patterson River and Kananook Creek via pumps and drains. Melbourne Water has managed the lakes, and the contained water, since 1991 when it took over the responsibilities of the Dandenong Valley Authority.

The combination of organic and nutrient loads entering the Quiet Lakes from surrounding catchments (via stormwater flow), average water residence times and the maturity of the lakes has resulted in intermittent blue-green algal blooms. The blooms impact the aesthetic and water quality of the lakes.

Several water quality studies of the Quiet Lakes have been undertaken since the lakes were established in 1973. Melbourne Water has investigated blue-green algae events since 2001.

## 1.2 PATTERSON LAKES INDEPENDENT REVIEW

In 2012, the Victorian Minister for Water requested the establishment of the Patterson Lakes Independent Review (Independent Review). The aim of the Independent Review was to assess existing management arrangements for the Patterson Lakes waterways, and provide future management strategies based on a fair and equitable funding model

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<sup>1</sup> See Appendix A for a map of the three lakes.

that addressed the interests of beneficiaries of the Quiet Lakes. Melbourne Water and the Patterson Lakes Residents Association selected the panel of reviewers from Planning Panels Victoria's group of independent panel members.

## BOX 1.2 RECOMMENDATIONS OF THE INDEPENDENT REVIEW

The Independent Review Final Report was published on 8 March 2013, and made the following recommendations in relation to management of the Quiet Lakes:

- the existing Precept Rate<sup>2</sup> to cease from 1 July 2013 and be replaced by a funding framework that augments the Melbourne Metropolitan Waterways and Drainage Charge
- that minimum water quality standards in the Quiet Lakes and Tidal Waterways are maintained to comply with secondary contact criteria as defined under the Australian and New Zealand Guidelines for Fresh and Marine Water Quality<sup>3</sup> (ANZECC Guidelines) and State Environmental Protection Policy – Waters of Victoria (SEPP) as amended from time to time
- that the recommendations of the DesignFlow 'Quiet Lakes Water Quality Management Plan'<sup>4</sup> be implemented, following the completion and assessment of a bore water trial
- that Melbourne Water review the then current bore water trial, and by the end of 2013 ascertain the long term quantity and quality of groundwater required. Melbourne Water should then consult with Southern Rural Water and Kingston Council regarding the on-going sustainability of groundwater extraction for the Quiet Lakes

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<sup>2</sup> The Precept Rate was a tariff charged to the Quiet Lakes residents from 1973 to 2013 by the managing authorities, to recover the costs of managing the Quiet Lakes. The precept rate paid by residents was calculated with reference to 1990 property values.

<sup>3</sup> Australian and New Zealand Guidelines for Fresh and Marine Water Quality, October 2000.

<sup>4</sup> DesignFlow, Quiet Lakes Water Quality Management Plan – Report Prepared for Melbourne Water, 2011. Note that this report was subsequently updated in July 2013 and April 2015. The Commission has generally relied on the 2015 updated report in assessing the proposed tariff.

- that the system of the interconnecting water flows between the three Quiet Lakes be managed, funded, and operated by Melbourne Water to deliver the outcomes recommended in the review. These are to be funded from the Melbourne Metropolitan Waterways and Drainage Charge
- that the Quiet Lakes property owners consider what, if any, additional capital projects they may jointly require to achieve water quality levels over and above secondary contact standard
- that any additional services sought and agreed between authorities and the property owners are to be delivered on a user pays cost recovery basis.

Source: Patterson Lakes Independent Review 2013, Management of Patterson Lakes Tidal Waterways and Quiet Lakes - Report to Patterson Lakes Tidal Waterways and Quiet Lakes Stakeholders, March, page ix-xi.

### 1.3 BORE FLUSHING TRIALS AND OUTCOMES

During the period 2000 to 2010, regular bore water flushing of Lake Legana and Lake Illawong was conducted in order to dilute blue-green algae (*Cyanobacteria*) by reducing lake water residence times. The impact of this process on the frequency of algal-blooms over that period is unclear.

In response to requests from Quiet Lakes residents, in June 2012 Melbourne Water sought and was granted a licence to increase annual extraction from the bore to 400 mega litres per year (at a maximum flow rate of 2 mega litres per day). A bore water flushing trial commenced from October 2012 to March 2013. After some experimentation on flow rates and quantities, the trial settled on a flushing volume 1.5 mega litres per day. The trial was extended for two years during the summers of 2013-14 and 2014-15 (where the quantity was increased to 2 mega litres per day after a request from the Patterson Lakes Quiet Lakes Owners and Residents Association).



The implementation and results of the trials are presented in the DesignFlow Quiet Lakes Water Quality Management Plan (2015 Update), as outlined in Box 1.3, and presented in Appendix C.

### BOX 1.3 BORE FLUSHING TRIAL

DesignFlow concluded that bore flushing ‘appears to have had a positive impact on *Cyanobacterial* bio volumes.’<sup>5</sup> However, its report notes that *Cyanobacterial* bio volumes in Lake Legana and Lake Illawong were low at the commencement of the flushing period, and therefore it is uncertain what impact the bore flushing would have had if elevated *Cyanobacterial* bio volumes were present at the commencement of each flushing period. It also noted that *Cyanobacteria* levels in Lake Carramar (which is not affected by the bore flushing) were also generally low during the trials (although blooms were observed in Lake Carramar during the end of the flushing period in each year).<sup>6</sup>

While the impact of the bore flushing trial on the frequency of algal-blooms is unclear, the results recorded for the periods are as follows:

- Year 1 (2012-13) – both Lake Legana & Lake Illawong presented decreased levels of *Cyanobacteria* bio volumes
- Year 2 (2013-14) – both Lake Legana & Lake Illawong presented notably low *Cyanobacteria* bio volumes during the trial
- Year 3 (2014-15) – both Lake Legana & Lake Illawong presented notably low *Cyanobacteria* bio volumes during the trial period, with levels remaining low during non-flush period.

Source: DesignFlow 2015, Quiet Lakes Water Quality Management Plan, updated April 2015, pp. 58.

<sup>5</sup> DesignFlow (2015), Quiet Lakes Water Quality Management Plan, updated April 2015, p. 58.

<sup>6</sup> Ibid.

## 1.4 MELBOURNE WATER'S APRIL 2016 PROPOSAL

After the Commission released its draft decision in March 2016 on Melbourne Water's 2016-17 to 2020-21 price submission, we received Melbourne Water's proposal for a new water quality tariff for the Quiet Lakes – specifically Lake Legana and Lake Illawong. We invited submissions on the proposed new tariff from interested stakeholders, and received three submissions which opposed the proposed tariff.

The Commission considered that as the proposed Water Quality Tariff had not been included in Melbourne Water's 2016-17 to 2020-21 price submission, there was insufficient time for the Commission to appropriately analyse key issues raised by stakeholders before the final decision, and therefore did not approve the proposed tariff. Melbourne Water was invited to resubmit its proposal on the Quiet Lakes by 1 December 2016.<sup>7</sup>

## 1.5 MELBOURNE WATER'S NOVEMBER 2016 PROPOSAL

In November 2016, Melbourne Water resubmitted the Quiet Lakes bore flushing tariff proposal. Consistent with its April 2016 proposal, the submission proposed a new tariff of \$156 (nominal) per property per annum for 251 properties that border Lake Legana and Lake Illawong for the period 2017-18 to 2020-21.

The tariff, proposed to commence on 1 July 2017, seeks to recover annual costs associated with summer groundwater flushing of Lake Legana and Lake Illawong. Melbourne Water's proposal states that the bore flushing proposal reflects residents' requests for a higher level of water quality than it is required to deliver as part of its responsibility for managing the recreational waterways.

The bore flushing service consists of 253 mega litres of bore water pumped into Lake Legana and Lake Illawong for six months each year (1 October to 31 March), and weekly blue-green algae monitoring during October and November. In total, the proposed tariff would recover \$39,156 per annum.

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<sup>7</sup> Essential Services Commission 2016, Melbourne Water Price Review 2016, Final Decision, June.

## 1.6 MELBOURNE WATER'S CONSULTATION WITH RESIDENTS

In late 2015, Melbourne Water engaged Evaluation Solutions to carry out an independent ballot of the residents and property owners on Lake Legana and Lake Illawong. The ballot polled whether property owners were in favour of, or against the bore flushing service and tariff. The ballot outlined both the cost (\$156 per property per year [nominal]) and the service proposal.

**TABLE 1.1 RESULTS OF THE DECEMBER 2015 BALLOT**

Voting Preference	Number	Percentage (rounded)
Yes (in favour)	188	75%
No (against)	24	10%
Opt-out (no preference indicated)	4	2%
Did not vote	35	14%
Total Property Owners	251	100%

Source: Evaluation Solutions, Results of Quiet Lakes Ballot on Bore Flushing, 21 December 2015.

The ballot result suggests strong support for the bore flushing tariff.

Following the ballot, Melbourne Water conducted a letter box drop to the residents of Lake Legana and Lake Illawong outlining its intention to submit a water quality tariff proposal to the Commission.

Subsequent engagement activities included a letter box drop in August 2016 – updating residents on the status of Melbourne Water's initial water quality tariff proposal, and in September 2016 bulletins were placed on the Quiet Lakes notice board and the Lake Illawong retirement village notice board, updating residents of the 2016-17 bore flushing trial, and Melbourne Water's intention to resubmit a bore flushing tariff proposal in late 2016.

## 2 COMMISSION'S ASSESSMENT

### 2.1 ASSESSMENT FRAMEWORK

Melbourne Water's proposed tariff relates to its metropolitan waterways and drainage services. The Commission's 2016 price review determined prices for Melbourne Water's waterways and drainage services for 2016-17 to 2020-21. By proposing to introduce a new tariff, Melbourne Water is proposing a variation to its current determination (2016-17 to 2020-21), made under the *Water Industry Regulatory Order 2014* (WIRO).

The WIRO requires that when making a price determination, the Commission must have regard to, among other things:

- the promotion of efficient use of prescribed services by customers, and efficiency within the water business and the broader industry, including incentives to pursue efficiency improvements<sup>8</sup>
- the extent to which tariffs are able to be understood by customers
- the need to provide signals about the efficient costs of providing services to customers (either collectively or to an individual customer or class of customers) while avoiding price shocks where possible
- the interests of affected customers, including low income and vulnerable customers.<sup>9</sup>

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<sup>8</sup> WIRO, cl. 8.

<sup>9</sup> WIRO cl. 11.

The Commission's Guidance Paper for the Melbourne Water 2016 price review also noted that proposed tariffs must provide signals to customers about the efficient costs of providing services.

The Commission's assessment of the proposed tariff included determining whether:

- the tariff promotes efficient use of services by customers, through providing appropriate price signals
- Melbourne Water's proposed service outcomes reflect customer preferences and their willingness to pay
- the costs of providing Melbourne Water's proposed services are efficient.

In its assessment, the Commission considered Melbourne Water's proposal, stakeholder submissions, the Independent Review final report, and Melbourne Water's consultation with affected customers. We carefully considered each issue raised in submissions, except for any issues that falls outside those that we can consider under the WIRO (see section 2.3).

The Commission does not have the power to compel Melbourne Water to undertake particular operating or capital activities.

## 2.2 SUBMISSIONS

The Commission received nine submissions on Melbourne Water's proposal, from seven stakeholders (two submissions each were received from Graham Tonta and James Middleton).

The majority of submissions were made by individual residents that are affected by the proposed tariff. One submission was made on behalf of the Patterson Lakes Quiet Lakes Owners and Residents Association Inc. Two submissions from James Middleton were on behalf of the Illawong retirement village.

Submissions generally opposed the proposed tariff, but strongly supported the continuation of bore flushing. One stakeholder supported the proposed tariff.

Some submissions raised concerns with Melbourne Water's proposal to review the operation of the bore in the event of prolonged *Cyanobacteria* breakouts, requesting instead that operation of the bore continue indefinitely. Submissions also raised concerns with the extent and frequency of Melbourne Water's water quality testing in the area, which it also proposed as part of the bore flushing service.

Some submissions raised concerns with Melbourne Water's approach to community consultation and the ballot it carried out in 2015.

Issues raised in submissions are discussed in the evaluation section below.

Several submissions raised multiple issues that are unrelated to the Commission's assessment of Melbourne Water's proposed tariff, such as responsibilities for weed removal and sand raking at the Quiet Lakes. Unrelated issues have not been considered in the Commission's evaluation of the proposed tariff.

## 2.3 EVALUATION

### 2.3.1 KEY ISSUES

#### LEGAL POWERS

As the Authority with responsibility for the waterway management district covering Patterson Lakes, the *Water Act 1989* provides that Melbourne Water may develop and implement schemes for the use, protection and enhancement of land and waterways.<sup>10</sup> It may also develop and implement plans and programs, and carry out works and activities to improve the environmental values and health of water ecosystems, including their biodiversity, ecological functions, quality of water and other uses that depend on environmental condition.<sup>11</sup>

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<sup>10</sup> Water Act 1989, s 122(h) and 189 (1)(b).

<sup>11</sup> Water Act 1989, s 189 (1)(bb).

Melbourne Water also has the power to levy a charge or tariff on the owner of any property within its waterway management district, to contribute to the cost of carrying out works or activities.<sup>12</sup>

The WIRO provides that tariffs for declared services (which include metropolitan waterways and drainage services) may be regulated by the Commission, and that nothing precludes certain services from being regulated, whether as to price or standards and conditions of service and supply, in a different manner from any other service.<sup>13</sup> This allows the Commission to approve a separate tariff for particular customers for an additional service, provided it is consistent with the requirements of the WIRO outlined in section 2.1.

## **MELBOURNE WATER'S RESPONSIBILITIES**

Several submissions stated that Melbourne Water has not maintained the water quality in the Quiet Lakes according to a secondary contact standard, and have suggested that bore flushing is required to ensure the secondary contact standard is met in the Quiet Lakes.<sup>14</sup> It was also stated in several submissions that in order to meet a secondary contact standard, the recommendations of the DesignFlow report must be followed by Melbourne Water.<sup>15</sup>

The management of water quality in recreational urban waterways such as the Quiet Lakes is guided by specific limits set by the National Health and Medical Research Council (NHMRC), currently contained in the 2008 Guidelines for Managing Risks in Recreational Water (NHMRC Guidelines).<sup>16</sup> The same limits are also contained in the State Environment Protection Policy (Waters of Victoria) (SEPP), which provides the legal framework for Victorian government agencies, businesses and the community to work together, to protect and rehabilitate Victoria's surface water environment.<sup>17</sup>

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<sup>12</sup> Water Act 1989, s 196.

<sup>13</sup> WIRO, cl 7(c).

<sup>14</sup> Andrew Meehan, p 2, Nancy Grant, p. 5; Alison Yates p.1, 4); Anthony Moffatt, p. 10; Cr Tamsin Bearsley, p.1, 2.

<sup>15</sup> Ibid.

<sup>16</sup> NHMRC, Guidelines for Managing Risks in Recreational Water, 2008.

<sup>17</sup> State Environment Protection Policy (Waters of Victoria).

Melbourne Water is required to comply with the SEPP and NHMRC Guidelines in managing water quality within its waterways management district.

Water quality standards for waterways are defined in the NHMRC Guidelines according to the degree of contact with water during recreational activities, consistent with guidelines set by the World Health Organisation.<sup>18</sup> The NHMRC Guidelines classify recreational water contact according to the following categories:

- Whole-body contact (**primary contact**) — activity in which the whole body or the face and trunk are frequently immersed or the face is frequently wet by spray, and where it is likely that some water will be swallowed or inhaled, or come into contact with ears, nasal passages, mucous membranes or cuts in the skin (e.g. swimming, diving, surfing or white water canoeing).
- Incidental contact (**secondary contact**) — activity in which only the limbs are regularly wet and in which greater contact (including swallowing water) is unusual (e.g. boating, fishing, wading), and including occasional and inadvertent immersion through slipping or being swept into the water by a wave.
- No contact (aesthetic uses) — activity in which there is normally no contact with water (e.g. angling from shore), or where water is incidental to the activity (such as sunbathing on a beach).<sup>19</sup>

It is noted that the Independent Review recommended that minimum water quality standards in the Quiet Lakes be maintained to comply with the secondary contact criteria as defined in the Australian and New Zealand Environment Conservation Council Guidelines (ANZECC Guidelines) and the SEPP.<sup>20</sup> The ANZECC Guidelines for recreational water quality in Australia rely on the NHMRC Guideline values.<sup>21</sup>

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<sup>18</sup> NHMRC, Guidelines for Managing Risks in Recreational Water, 2008, p. 16.

<sup>19</sup> Ibid

<sup>20</sup> Patterson Lakes Independent Review 2013, Management of Patterson Lakes Tidal Waterways & Quiet Lakes, March 2013, p. ix.

<sup>21</sup> Australian and New Zealand Guidelines for Fresh and Marine Water Quality, October 2000, p. 5-2. Note that the NHMRC Guidelines were updated in 2008, since the ANZECC Guideline was published in 2000. The current NHMRC Guidelines set a higher standard of water quality than the current ANZECC Guideline and are therefore the most relevant standard.



For levels of *Cyanobacteria* the NHMRC Guidelines outline a primary contact standard limit of 10mm<sup>3</sup> bio volume of *Cyanobacteria* per litre of water. There are currently no secondary contact limits for levels *Cyanobacteria* within the NHMRC Guidelines (or the ANZECC Guidelines, or the SEPP), as it is considered that the impact of secondary contact with *Cyanobacteria* is so low as not to warrant a limit.<sup>22</sup>

The NHMRC Guidelines outline activities for the management of *Cyanobacteria* at the primary contact standard level, which include regular visual inspections, sampling where known species of *Cyanobacteria* are present, monitoring blooms and notification of health authorities and warning the public of the potential health risks.<sup>23</sup>

Information reviewed by the Commission, including copies of public warning notices, has confirmed that Melbourne Water generally follows the practices outlined in the NHMRC Guidelines for *Cyanobacteria* at a primary contact standard level.

While there have been instances of *Cyanobacteria* in the Quiet Lakes exceeding the 10mm<sup>3</sup> per litre primary contact standard since 2010, including during the bore flushing trial periods, Melbourne Water has followed the NHMRC Guidelines during these periods, consistent with a primary contact standard management approach. In this regard, Melbourne Water is working above its secondary standard obligations without the bore flushing.

While *Cyanobacteria* outbreaks do pose health and environmental risks, the Independent Review noted that due to the constructed shallow nature of the Quiet Lakes, such outbreaks are not unusual.<sup>24</sup> The Independent Review Final Report noted that in 2011, DesignFlow found Quiet Lakes' water quality is 'reasonably good in comparison to other urban lakes'.<sup>25</sup> The Independent Review concluded that

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<sup>22</sup> NHMRC, Guidelines for Managing Risks in Recreational Water, 2008, p 103.

<sup>23</sup> NHMRC, Guidelines for Managing Risks in Recreational Water, 2008, p. 112-114.

<sup>24</sup> Patterson Lakes Independent Review 2013, Management of Patterson Lakes Tidal Waterways & Quiet Lakes, March 2013, p. 70.

<sup>25</sup> Patterson Lakes Independent Review 2013, Management of Patterson Lakes Tidal Waterways & Quiet Lakes, March 2013, p. 67.

‘Permanently achieving a primary contact standard in the Quiet Lakes is not a viable scenario, with or without any additional special tariff.’<sup>26</sup>

The 2011, 2013 and 2015 DesignFlow recommendations are associated with strategies for the management of *Cyanobacteria* in the Quiet Lakes.

## EFFECTIVENESS OF THE BORE FLUSHING

The 2015 DesignFlow report presented data on *Cyanobacteria* bio volume within the Quiet Lakes over 2010 to 2015, which included three years of bore flushing trials (trials ran from October to March over 2012 to 2015).<sup>27</sup> The data presented in Appendix C (Quiet Lakes BGA monitoring results 2010 – 2015 [including bore flushing trial results]) shows that prior to the bore flushing trials, *Cyanobacteria* bio volume more frequently exceeded the 10 mm<sup>3</sup> per litre primary contact standard than during the bore flushing trial years.

The Commission engaged a technical engineering consultant to assist it in reviewing the trial outcomes and Melbourne Water’s water quality requirements.

As noted in section 1.3, the results of the bore flushing trials are unclear. In relation to the effectiveness of bore flushing in managing *Cyanobacteria* in the Quiet Lakes, the Commission makes the following observations:

1. The 2015 DesignFlow report suggested that bore water flushing ‘appears to have had a positive impact’ on *Cyanobacteria* levels. However, there are other factors that may have influenced *Cyanobacteria* levels during the trial period. Climatic conditions (rainfall, temperature, wind) and nitrogen levels in the lakes at the commencement of the trial each year could also have resulted in reduced *Cyanobacteria* levels during the bore flushing periods. DesignFlow’s report shows that during the period January 2011 to March 2015, *Cyanobacteria*

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<sup>26</sup> Patterson Lakes Independent Review 2013, Management of Patterson Lakes Tidal Waterways & Quiet Lakes, March 2013, p. 74.

<sup>27</sup> DesignFlow, Quiet Lakes Water Quality Management Plan – Report Prepared for Melbourne Water – Updated April 2015, p. 85 and p. 59.

levels were trending downward, even during periods where no bore water flushing took place.

2. DesignFlow's reports outlined the accepted theoretical requirements for flushing, and results of hydrodynamic modelling. The theory indicates that a residence time of 15 days is required to adequately manage *Cyanobacteria*, which would require a bore flushing flow rate of at least 8-10 mega litres per day, around five times the rate carried out in trials.<sup>28</sup> Therefore, the outcomes of the trials appear to be at odds with accepted theory on flushing requirements to manage *Cyanobacteria*. DesignFlow noted that the flushing rates required to manage algal biomass within shallow lakes is poorly understood.<sup>29</sup>
3. The 2011 DesignFlow report noted some unique characteristics of the Quiet Lakes system which were expected to contribute to higher *Cyanobacteria* bio volumes and reduce the effectiveness of bore flushing.<sup>30</sup> Following the bore flushing trials, the 2015 DesignFlow report noted that in fact some unique characteristics of the Quiet Lakes system had reduced the theoretical required flow rate to manage *Cyanobacteria*, making bore flushing more effective.<sup>31</sup> These unexpected outcomes add to uncertainty around interpreting the trial results and the effectiveness of bore flushing in the Quiet Lakes.

While the evidence indicates that overall the *Cyanobacterial* levels were generally low during the flushing trials (despite at least one *Cyanobacterial* bloom during each of the summer trial periods), the Commission considers that the trial results are inconclusive.

However, the Commission notes that Melbourne Water has provided the trial results and DesignFlow reports discussed above to the residents affected by the tariff. In addition, Melbourne Water noted in its proposal for the bore flushing tariff that

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<sup>28</sup> DesignFlow, Quiet Lakes Water Quality Management Plan – Report Prepared for Melbourne Water – Updated April 2015, p. 42.

<sup>29</sup> DesignFlow, Quiet Lakes Water Quality Management Plan – Report Prepared for Melbourne Water – Updated April 2015, p. 61.

<sup>30</sup> DesignFlow, Quiet Lakes Water Quality Management Plan – Report Prepared for Melbourne Water – Updated April 2015, pp. 42-45.

<sup>31</sup> DesignFlow, Quiet Lakes Water Quality Management Plan – Report Prepared for Melbourne Water – Updated April 2015, p. 61.

*“Melbourne Water has always been clear to residents that the bore flushing does not guarantee increased water quality or the absence of blue-green algae”.*<sup>32</sup>

Despite this, there remains strong support for the bore flushing to continue.

## **USER PAYS ARRANGEMENT**

Several submissions objected to the proposed user pays arrangement for bore flushing stating:

- There are additional beneficiaries of bore flushing outside of the Quiet Lakes residents, including those who use the lakes for recreation but do not live beside the lakes, and those using downstream waterways, flora and fauna.<sup>33</sup>
- The Quiet Lakes are a reserve for drainage and recreational purposes,<sup>34</sup> and therefore the proposed tariff would result in Quiet Lakes residents paying twice for waterways and drainage services.<sup>35</sup>
- The bore is part of the original infrastructure of the Quiet Lakes, owned by Melbourne Water, and therefore its operational costs should not be separately charged to residents.<sup>36</sup>

Some submissions suggested that as Melbourne Water pumps water to maintain other parts of its waterway management district using funding from the general waterways and drainage tariff, the bore flushing for Quiet Lakes should be similarly funded.<sup>37</sup>

The Independent Review made the following observations regarding the purpose and beneficiaries of the Quiet Lakes:

- ‘The Quiet Lakes are an integral part of the local drainage system...they fulfil a role as a drainage retardation and flood mitigation basin...(and) may also assist in minimising local inundation in future intense storm events.’<sup>38</sup>

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<sup>32</sup> Melbourne Water, Quiet Lakes Bore flushing Tariff Proposal, 28 November 2016.p. 9

<sup>33</sup> Alison Yates, p. 2; Anthony Moffatt, p. 6; Cr Tamsin Bearsley, p. 2

<sup>34</sup> Nancy Grant, p 3; Alison Yates, p. 3, 9.

<sup>35</sup> Anthony Moffatt p. 3, 17.

<sup>36</sup> Andrew Meehan p.3; Alison Yates, p. 6; Anthony Moffatt, p. 8-9.

<sup>37</sup> Nancy Grant, p. 5; Alison Yates, p. 10; Anthony Moffatt, p. 7; Cr Tamsin Bearsley, p. 3.

- 'The Review acknowledges that the Quiet Lakes have a recreational function and amenity value. However the Review considers that the recreational and amenity features of the Quiet Lakes are a private benefit that is exclusive to the dwellings that adjoin those lakes. This is largely because of their lack of accessibility – no provision has been made for the general public to enter from surrounding streets.'<sup>39</sup>

The Independent Review noted that school groups and other non-residents may be granted access to Lake Illawong, however also concluded:

*'It is clear to the Review that the residents of the Quiet Lakes enjoy special and private recreational benefits that are not available to the general public.'*<sup>40</sup>

Our review of the history of the flushing trials, including the Independent Review and correspondence between residents of the Quiet Lakes, Melbourne Water and other authorities, clearly identifies bore flushing as being undertaken at the request of residents of the Quiet Lakes.

The risk of negative downstream impacts of *Cyanobacteria* in the Quiet Lakes were identified as 'acceptably low' in a 2012 study conducted by SKM<sup>41</sup>, and DesignFlow identified that bore flushing itself poses some risks of downstream algae growth.<sup>42</sup> This also supports a position that achieving a higher standard of water quality in the Quiet Lakes through bore flushing primarily benefits those living adjacent to the lakes and rather than downstream residents, flora or fauna.

The Quiet Lakes bore pump has operated for over 40 years since the Quiet Lakes were constructed. With the exception of the flushing trial period since 2011 (funded by Melbourne Water), the operating costs of the bore have been recovered from Quiet

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<sup>38</sup> Patterson Lakes Independent Review 2013, Management of Patterson Lakes Tidal Waterways & Quiet Lakes, March 2013, p. 51.

<sup>39</sup> Patterson Lakes Independent Review 2013, Management of Patterson Lakes Tidal Waterways & Quiet Lakes, March 2013, p. 53.

<sup>40</sup> Patterson Lakes Independent Review 2013, Management of Patterson Lakes Tidal Waterways & Quiet Lakes, March 2013, p. 55.

<sup>41</sup> SKM, Quiet Lakes Trial Risk Assessment Report 2012, quoted in: Patterson Lakes Independent Review 2013, Management of Patterson Lakes Tidal Waterways & Quiet Lakes, March 2013, p. 68.

<sup>42</sup> DesignFlow, Quiet Lakes Water Quality Management Plan – Report Prepared for Melbourne Water – Updated April 2015, p. 56.

Lakes residents through Council and precept rates. The precept rates were ceased in 2013 at the conclusion of the Independent Review. Melbourne Water's proposed bore flushing tariff reflects the costs of operating the bore to provide an additional 253 mega litres of bore water each year, to improve water quality over and above its required secondary contact water quality standards. In the final year of the precept rate in 2012-13, the average charge paid by Quiet Lakes residents for Melbourne Water's management of the Quiet Lakes was \$430 (\$2012-13).<sup>43</sup>

While Melbourne Water carries out pumping in various areas of its waterway management district to maintain environmental standards, the Commission understands that this is for public recreational usage or to provide environmental benefits, rather than private recreational usage, and is therefore appropriately recovered by the general waterways and drainage tariff.

While acknowledging that the Quiet Lakes also perform a drainage function, consistent with the findings of the Independent Review, the Commission considers that a user-pays approach to funding potentially higher water quality in the Quiet Lakes is appropriate due to the 'special and private recreational benefits' of the lakes. Accordingly we consider the costs of additional bore flushing for the Quiet lakes are appropriately recovered separately from the general Waterways and Drainage Tariff through a user-pays approach. This is consistent with the WIRO principles relating to reflective pricing, and the Independent Review recommendation that any additional services sought and agreed between the Authorities and the property owners should be delivered on a user pays cost recovery basis.<sup>44</sup>

## **MELBOURNE WATER'S CONSULTATION WITH RESIDENTS AND WILLINGNESS TO PAY**

Information on its website confirms that Melbourne Water consulted regularly with Quiet Lakes residents in relation to water quality in the period prior to, during and after

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<sup>43</sup> Melbourne Water, Response to ESC request for information, 17 February 2017. Note that some customers paid less than the average charge, which was based on their property value.

<sup>44</sup> Patterson Lakes Independent Review 2013, Management of Patterson Lakes Tidal Waterways & Quiet Lakes, March 2013, p. 102.

the Independent Review.<sup>45</sup> Melbourne Water consulted with residents prior to submitting its April 2016 proposal for the bore flushing tariff, including through the November 2015 ballot.

The Commission has reviewed documentation surrounding the November 2015 ballot, including the Evaluation Solutions report and material circulated to residents prior to the ballot. Some submissions raised concerns about the conduct of the ballot, suggesting that residents were 'forced into a compromising position to agree to pay,' as the ballot voting options and associated correspondence from Melbourne Water ignored the downstream benefits of bore flushing.<sup>46</sup>

The Commission considers that the ballot questions and material circulated by Melbourne Water were appropriate, and reflect the user pays principle for bore flushing discussed above.

The strong support (75 per cent of residents voted in favour of the tariff) confirms the majority of affected customers are willing to pay for the services proposed by Melbourne Water.

One submission noted a petition conducted by the Patterson Lakes Quiet Lakes Owners and Residents Association, in which 581 signatures were gathered to request the Minister for Water to compel Melbourne Water to honour the recommendations of the Independent Review Panel. The Commission considers that this petition – which specifically references the recommendations of Independent Review (not the bore flushing tariff) – does not indicate a lack of support for the proposed bore flushing tariff.

## **MELBOURNE WATER'S REVIEW OF THE TARIFF DURING 2017-18 TO 2020-21**

In the event of prolonged outbreaks of *Cyanobacteria* during any summer period, Melbourne Water has proposed to fund an independent review on the benefit of bore flushing in controlling *Cyanobacteria* in the Quiet Lakes. Some submissions raised

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<sup>45</sup> <https://www.melbournewater.com.au/aboutus/customersandprices/PattersonLakes/Pages/Community-bulletins-and-information.aspx>

<sup>46</sup> Nancy Grant, p. 5; Cr Tamsin Bearsley, p. 4; Anthony Moffatt, p. 1.

concerns that the bore flushing may be stopped during or after such a review takes place.<sup>47</sup>

The Commission requested further information from Melbourne Water on the conditions for reviewing the effectiveness of bore flushing. Melbourne Water indicated that:

- A review would commence in the event that two BGA bloom events occur in the same lake (Lake Legana or Lake Illawong) with levels of *Cyanobacteria* above 10 mm<sup>3</sup> per litre for 5 weeks or longer, during the summer bore flushing period
- While the review is being undertaken, Melbourne Water would cease the bore flushing and also cease charging the proposed tariff
- The review would be conducted by an independent reputable party at Melbourne Water's expense.<sup>48</sup>

Noting our concerns regarding evidence for the effectiveness of the bore flushing in controlling *Cyanobacteria* (discussed above), the Commission considers that Melbourne Water's proposed approach to reviewing the bore flushing in the event of sustained bloom events is prudent.

However, given strong community support for the bore flushing, the Commission considers that in the event a review is undertaken, Melbourne Water should inform Quiet Lakes residents regarding the approach to the review, and clearly explain the process and steps to be followed after the review is concluded.

The Commission will consider the continuation of the bore flushing tariff as part of the next Melbourne Water price review in 2021.

## **COST RECOVERY**

The services proposed to be carried out by Melbourne Water and recovered via the bore flushing tariff include:

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<sup>47</sup> Graham Tonta (both subs); Nancy Grant, p. 5; Anthony Moffatt, p. 18.

<sup>48</sup> Melbourne Water, Quiet Lakes Bore flushing Tariff Proposal, ESC Queries, 6 December 2016.



- 253 mega litres of bore water pumped into Lake Legana and Lake Illawong for six months of each year (October to March) at a rate of 1.5 mega litres per day, extending the 20 mega litres of bore water to be pumped each year and funded under the general waterways and drainage tariff
- Weekly blue-green algae monitoring (visual inspections) during October and November each year, extending the existing monitoring regime funded by the general waterways and drainage tariff by two months (to allow it to cover the bore flushing period each year).

The Commission requested and reviewed information from Melbourne Water on the underlying costs of the activities, including water, labour, energy, administration and capital depreciation input costs.<sup>49</sup>

We reviewed information on the time and duration of the bore pumping, and noting the availability of lower cost off-peak electricity rates, questioned the efficiency of operating the pump during peak times (7am to 11pm). Melbourne Water explained that the approximately 11 hours of pumping per day over summer is staged in blocks in order to avoid overflow and degradation of the Quiet Lakes beaches which occurred during the initial trials of continuous pumping.<sup>50</sup> The Commission considers that this approach to operating the bore, which avoids localised damage to the beaches at a materially higher electricity cost, further demonstrates the specialised nature of the proposed bore flushing service, designed for the unique circumstances and residents of the Quiet Lakes. This further supports our conclusion that the service is suited to a user pays charging arrangement.

In response to our questions regarding the estimated annual electricity costs for running the bore, Melbourne Water amended its assumptions, resulting in a reduction in the annual bore costs underpinning the tariff. The revised assumptions incorporate:

- An average proportion of off-peak pumping (approximately one third of the pumping occurred at off-peak times during the most recent summer energy billing period for the bore pump).

<sup>49</sup> Melbourne Water, Quiet Lakes Bore flushing Tariff Proposal, ESC Queries, 6 December 2016.

<sup>50</sup> Melbourne Water, Response to ESC request for information, 17 February 2017.

- An overall discount on energy costs applied in Melbourne Water’s energy contract.

By incorporating off-peak pumping at a lower energy price and a discount on the total electricity charges, the bore flushing costs were reduced by \$5,408 per annum and the proposed annual charge per customer from \$156 (nominal) to \$135 (nominal).<sup>51</sup>

Subsequent to submitting its proposal, Melbourne Water also sought to amend its capital depreciation assumptions.<sup>52</sup> We sought further information on the impact of amending the bore pump depreciation assumptions on Melbourne Water’s waterways and drainage regulatory asset base. Melbourne Water noted that the waterways and drainage depreciation would decrease.<sup>53</sup> The Commission proposes not to accept Melbourne Water’s proposed amendment to capital depreciation assumptions as it requires a reopening of the Melbourne Water 2016 final decision on waterways and drainage tariffs. We believe the depreciation assumption should remain the same as the 2016 final decision.

Melbourne Water noted that it has not proposed to recover depreciation costs for the McLeod Road pump, which is also used in providing the bore flushing service.<sup>54</sup>

The Commission’s draft decision is to accept the proposed changes to electricity costs, resulting in a reduction in the proposed tariff to \$135 (nominal) per property per annum.

One submission requested that Melbourne Water provide information on the efficiency of the pump used in bore flushing.<sup>55</sup> Melbourne Water provided additional information to the Commission regarding the pump:

- The Quiet Lakes bore pump is a multi-stage submersible pump, which is located 40 metres below ground. It was updated 8 years ago.

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<sup>51</sup> Melbourne Water, Response to ESC request for information, 17 February 2017.

<sup>52</sup> Melbourne Water, Response to ESC request for information, 17 February 2017.

<sup>53</sup> Melbourne Water, Response to ESC request for information, 7 March 2017.

<sup>54</sup> Melbourne Water, Response to ESC request for information, 17 February 2017.

<sup>55</sup> James Middleton, p. 3.

- The operational cost for running the pump is calculated based on the 'duty point' of the pump, which is based on the head allowed for (40m) and the flow rate required (up to 2 mega litres per day).
- Melbourne Water monitors the mega litre output of the pump, and will adjust the operational costs recovered by the tariff based on observed pump efficiency at the end of each regulatory period.
- Over time as the pump wears down, Melbourne Water would consider replacing it if the costs of the efficiency losses are greater than the pump replacement cost. This is consistent with Melbourne Water's approach to maintaining other capital equipment in its network.

The Commission considers that the revised costs proposed to be recovered via the bore flushing tariff reflect the efficient costs of providing the proposed services.

## **CAPACITY TO PAY**

Two submissions raised concerns about the residents' capacity to pay the proposed bore flushing tariff, noting that a retirement village adjoining Lake Illawong consists of residents on restricted incomes and the age pension.<sup>56</sup>

In our consideration of capacity to pay, we reviewed the appropriateness of a user-pays approach. The Commission considers that a user-pays approach is appropriate for the tariff, as it reflects costs to provide a level of service above Melbourne Water's obligations. The majority support indicated in Melbourne Water's ballot suggests there is a strong willingness to pay for the bore flushing service.

The revised proposed tariff of \$135 (nominal) per property per annum (\$34 per quarter), while significant, is less than the average precept rate which was charged by Melbourne Water between 1991 and 2013. In the final year of the precept rate in 2012-13, the average charge paid by Quiet Lakes residents was \$430 (\$2012-13).<sup>57</sup> Together, Melbourne Water's current annual charge for Waterways and

<sup>56</sup> James Middleton p. 2-3. Note that James Middleton's submissions stated that they represented the views of the 74 residents of the Illawong Retirement Village, however the Commission has been unable to verify this representation.

<sup>57</sup> Melbourne Water, Response to ESC request for information, 17 February 2017. Note that some customers paid less than the average charge, which was based on their property value.

Drainage for residential customers (\$97 – charged to Quiet Lakes residents since the precept was removed) and the proposed bore flushing tariff sum to significantly less than that paid by the average customer in 2012-13 for management of the Quiet Lakes system.

The Commission acknowledges that residents in financial hardship may experience difficulties paying the proposed tariff. South East Water, which is responsible for passing on Melbourne Water charges to retail water bills in the Quiet Lakes area, offers a range of payment options and assistance for its customers experiencing difficulties paying bills. Information on payment options and assistance is available on South East Water's website.<sup>58</sup>

### 2.3.2 OTHER ISSUES

#### OPERATION OF THE BORE

Some submissions highlighted that the daily summer bore flushing rate of 1.5 mega litres per day (273 mega litres per annum) is below the original groundwater licence for the Quiet Lakes, suggesting Melbourne Water should increase the rate to 2 mega litres per day year-round.<sup>59</sup>

The 2015 DesignFlow report stated that during the 2012-13 bore flushing trial, Melbourne Water pumped water at a rate of 2 mega litres per day for 10 days, which resulted in a rapid increase in Lake Legana and significant loss of the surrounding beach area. It also led to water overflowing onto a nearby road bridge. As a result of the overflow, the effectiveness of the flushing in treating *Cyanobacteria* was reduced as water was bypassing the lake system.<sup>60</sup>

During the 2012-13, 2013-14 and 2014-15 bore flushing trials, Melbourne Water trialled different flow rates and hours of flushing, as well as strategies to address the overflow caused by higher flushing volumes (sandbagging etc.) to identify the most appropriate

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<sup>58</sup> <http://southeastwater.com.au/Residential/Pages/Support.aspx>

<sup>59</sup> Alison Yates, p. 7-8; Anthony Moffatt, p. 8-9.

<sup>60</sup> DesignFlow, Quiet Lakes Water Quality Management Plan – Report Prepared for Melbourne Water – Updated April 2015, p. 57.

approach. DesignFlow noted that no discernible difference in *Cyanobacteria* bio volume levels were evident between the 1.5 mega litres and 2 mega litres per day trials.<sup>61</sup>

Data presented in the DesignFlow reports show that over the 2013-15 trial periods, *Cyanobacteria* volumes in the Quiet Lakes peaked during the summer months, and winter levels were substantially lower.<sup>62</sup> Based on the results of the trials, DesignFlow recommended bore flushing during the summer months at a rate of 1.5 mega litres per day.<sup>63</sup> This recommendation has been followed by Melbourne Water.

The Commission considers that bore flushing only during the warmer months of the year when *Cyanobacteria* risk is highest is prudent. The results of the bore flushing trials reported in the 2015 DesignFlow report confirmed that 1.5 mega litres per day is an appropriate flow rate for bore flushing in the Quiet Lakes.

## **WATER TESTING**

Several submissions called for Melbourne Water to reinstate a program of year-round weekly sampling to test for *Cyanobacteria*.<sup>64</sup>

Prior to the removal of the precept rate in July 2013, and in response to requests from residents, Melbourne Water carried out year-round weekly water sampling at the Quiet Lakes, which reflected a higher level of service than it provided in other areas of its waterways management district. During the bore flushing trial period over 2013-15, Melbourne Water also continued a higher level of water testing in the Quiet Lakes, particularly to inform the assessment of the effectiveness of bore flushing. At the conclusion of the 2014-15 bore flushing trial, Melbourne Water reduced its water sampling to the following program:

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<sup>61</sup> DesignFlow, Quiet Lakes Water Quality Management Plan – Report Prepared for Melbourne Water – Updated April 2015, p. 58.

<sup>62</sup> DesignFlow, Quiet Lakes Water Quality Management Plan – Report Prepared for Melbourne Water – Updated April 2015, p. 59.

<sup>63</sup> DesignFlow, Quiet Lakes Water Quality Management Plan – Report Prepared for Melbourne Water – Updated April 2015, p. 4.

<sup>64</sup> James Middleton p. 2; Andrew Meehan p. 3; Alison Yates p. 3; Anthony Moffatt, p. 15; Cr Tamsin Bearsley, p. 5; Nancy Grant, p. 5.

- Weekly visual inspections during the 16 week period over December to March (targeting the high-recreation summer period).
- Where visual inspections reveal risks of *Cyanobacteria*, water sampling is carried out, and if appropriate, public warnings are issued, consistent with the NHMRC Guidelines for management of *Cyanobacteria* blooms.

This Quiet Lakes *Cyanobacteria* monitoring program exceeds the fortnightly monitoring program Melbourne Water carries out in similar waterways over the rest of its network.<sup>65</sup> The NHMRC Guidelines and the Victorian State Government Blue Green Algae Circular (2016-17) do not stipulate specific ongoing monitoring or testing frequencies in the absence of a *Cyanobacteria* bloom, instead the monitoring regime is to be determined and implemented by the local water manager (Melbourne Water), taking into consideration the risk of blooms, which is affected by temperature and other factors.<sup>66</sup>

As discussed in section 2.3.1, Melbourne Water implements the response required for primary contact standards in the event of a *Cyanobacteria* bloom, including weekly testing following a bloom event.

As part of the bore flushing service, Melbourne Water has proposed to carry out additional water monitoring and testing, extending its standard testing program by eight weeks to cover the bore flushing period, commencing in October each year.

The Commission notes that the Quiet Lakes water quality testing proposed by Melbourne Water in its 2014 submission to ESC's Melbourne Water Patterson Lakes Special Drainage Area Price Review 2014-15 to 2015-16 referred to applying a level of inspections and sampling consistent with the rest of Melbourne Water's waterway management district, funded by the general waterways and drainage tariff.<sup>67</sup>

The Commission is satisfied that Melbourne Water's current approach to water inspection and sampling in the Quiet Lakes is consistent with its obligations to manage

<sup>65</sup> Melbourne Water, Response to ESC request for information, 17 February 2017.

<sup>66</sup> NHMRC, Guidelines for Managing Risks in Recreational Water, 2008, p. 34.

<sup>67</sup> Melbourne Water, Pricing Proposal for Patterson Lakes Special Drainage Area, p. 4; ESC, Melbourne Water Patterson Lakes Special Drainage Area Price Review 2014-15 to 2015-16, May 2014, p. 1.

water quality in recreational waterways and with the primary contact standard for management of *Cyanobacteria*, which is above the standard recommended in the Independent Review Final Report. The additional weekly inspections proposed as part of the bore flushing service reflect a higher level of service for which the majority of residents have indicated a willingness to pay.

## OTHER ISSUES RAISED IN SUBMISSIONS

Other issues raised in submissions include:

- Melbourne Water's obligations in relation to Lake Carramar (the third Quiet Lake which is not included in the bore flushing tariff)<sup>68</sup>: Following the Independent Review Final Report, Melbourne Water conducted a review of the Quiet Lakes headworks infrastructure which confirmed that nothing had been altered from the original engineering design.<sup>69</sup> A further investigation determined that water flow through to Lake Carramar is not feasible.<sup>70</sup> Accordingly, Lake Carramar residents are excluded from the proposed bore flushing tariff.
- Melbourne Water's obligations in relation to sand retrieval and weed control in the Quiet Lakes<sup>71</sup>, and organising Patterson Lakes Steering Committee meetings. These issues are unrelated to the proposed bore flushing tariff and have therefore not been considered by the Commission as part of this decision.

## 2.4 DRAFT DECISION

The Commission proposes to accept Melbourne Water's proposed bore flushing tariff for the following reasons:

- 75 per cent of affected residents supported Melbourne Water's proposed bore flushing tariff and services

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<sup>68</sup> Nancy Grant p. 4-5; Alison Yates, p. 4; Anthony Moffatt, p. 14; Cr Tamsin Bearsley, p. 2.

<sup>69</sup> Water Technology, Quiet Lakes Headworks Review, August 2013.

<sup>70</sup> Melbourne Water, Memo: Patterson Lakes Management Plan Steering Committee - Lake Carramar southern pipe outlet & through flows, 15 January 2014.

<sup>71</sup> Anthony Moffatt, p. 15, 18; James Middleton p. 2; Andrew Meehan p. 3; Alison Yates p. 3; Cr Tamsin Bearsley, p. 5.

- Melbourne Water's proposed services are over and above its obligations, and
- the primary beneficiaries of the bore flushing service are those properties adjacent to Lakes Legana and Illawong

As discussed in section 2.3.1, during our review, Melbourne Water revised its annual pumping electricity cost estimate, which results in a reduction in costs to be recovered via the tariff, and a revised tariff of \$135 (nominal) per annum. The Commission is satisfied that the revised expenditure to deliver the bore flushing service reflects efficient costs.

### **BOX 2.1 THE COMMISSION'S DRAFT DECISION**

That the "Metropolitan Melbourne Water Price Review 2016 - Melbourne Water Determination 1 July 2016 - 30 June 2021" made on 15 June 2016 be amended to approve Melbourne Water's proposed bore flushing tariff at a rate of \$135 (nominal) per annum in the Quiet Lakes area for the period 2017-18 to 2020-21.

## **2.5 NEXT STEPS AND RESPONDING TO THIS DRAFT DECISION**

The Commission is interested in the thoughts and comments of the public on this draft decision. The responses will assist the Commission to make its final decision in May 2017. If approved in the final decision, the bore flushing tariff would apply from 1 July 2017, for the remainder of Melbourne Water's current regulatory period, which ends on 1 July 2021.

Interested parties can provide feedback on the draft decision in one of two ways:

1. You can send a written submission or comments in response to the draft decision. Written comments are due by 13 April 2017.

The Commission would prefer to receive them by email at [water@esc.vic.gov.au](mailto:water@esc.vic.gov.au).

2. You can also send comments by mail to:

Essential Services Commission  
Level 37, 2 Lonsdale Street  
Melbourne VIC 3000





# APPENDIX A: SUBMISSIONS

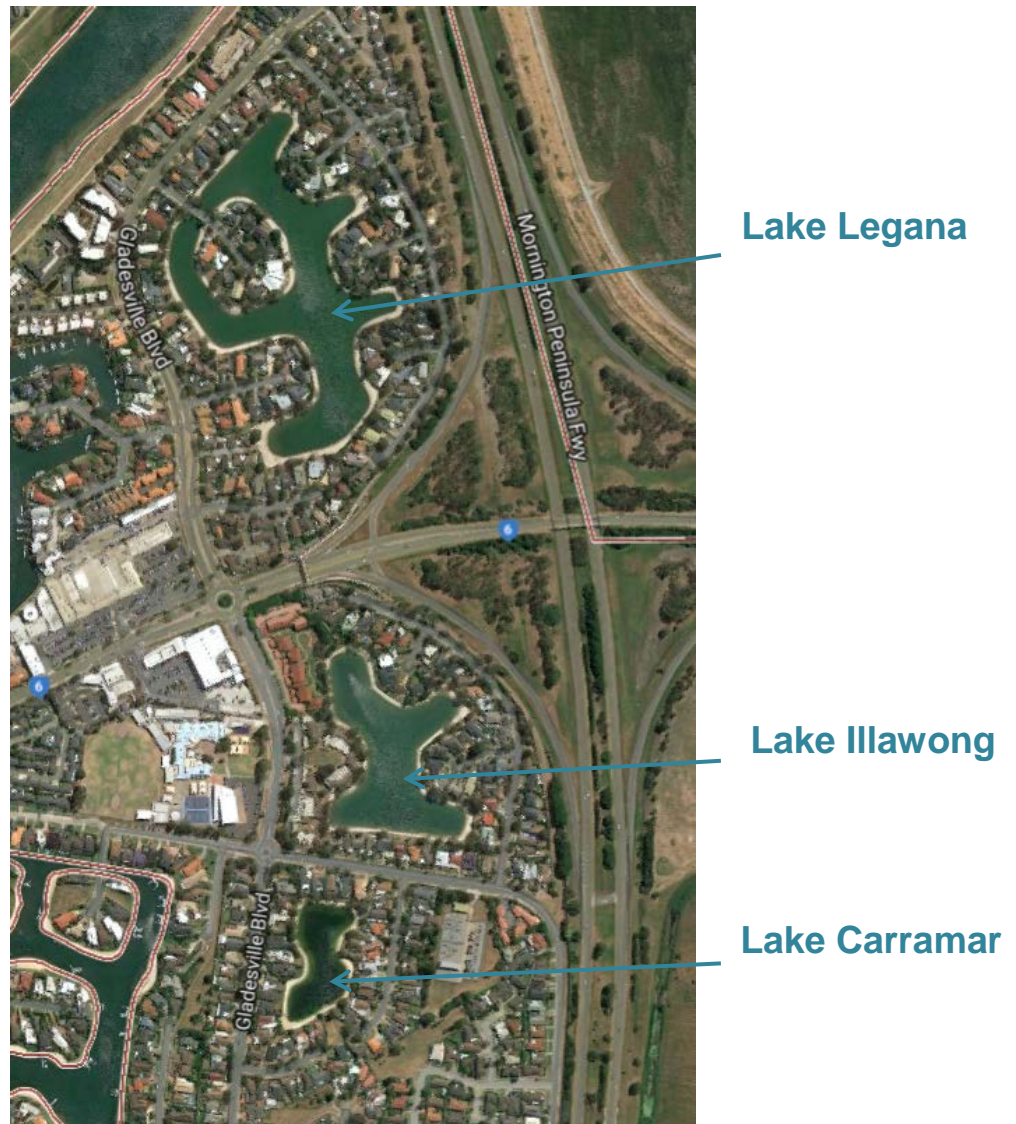
Table A1 lists the written submissions on our Melbourne Water's bore flushing tariff proposal. The submissions are available on our website:

<http://www.esc.vic.gov.au/document/water/36626-quiet-lakes-bore-flushing-tariff-proposal/>

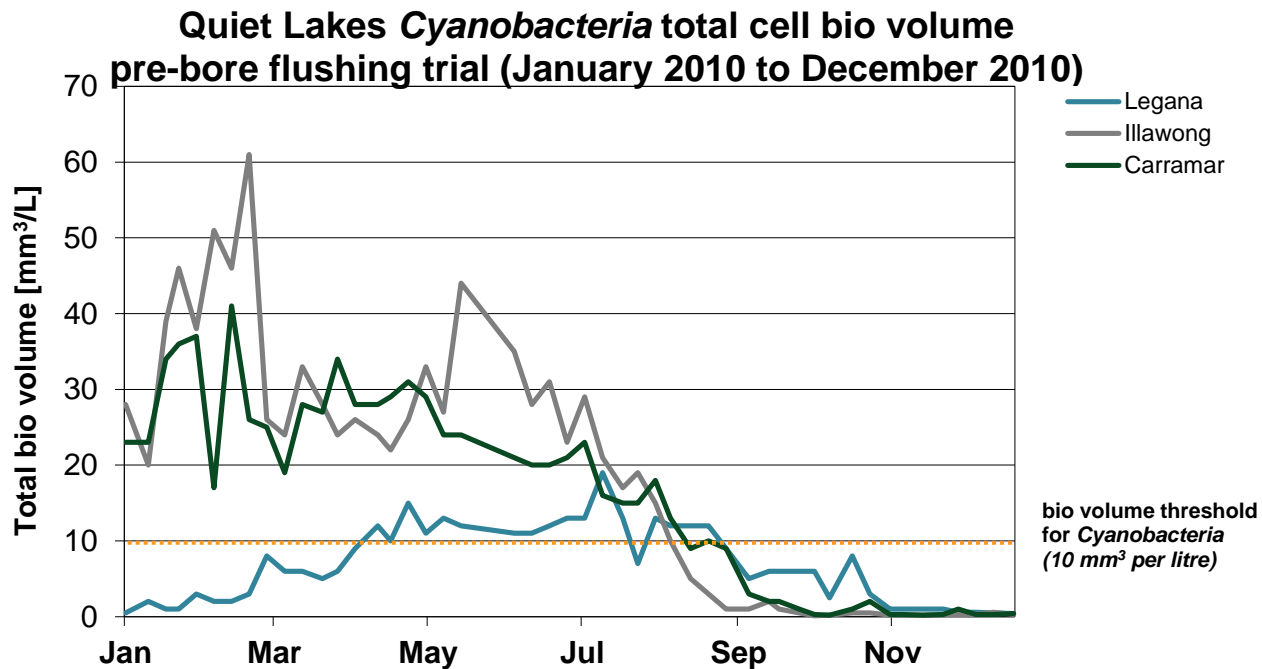
**TABLE A1**

<b>Name</b>	<b>Date received</b>
Graham Tonta (two submissions)	2 December 2016, 6 February 2017
James Middleton (two submissions)	2 February 2017, 17 February 2017
Andrew Meehan	8 February 2017
Alison Yates	10 February 2017
Nancy Grant	10 February 2017
Anthony Moffatt	13 February 2017
Tamsin Bearsley	13 February 2017

# APPENDIX B: MAP OF THE QUIET LAKES

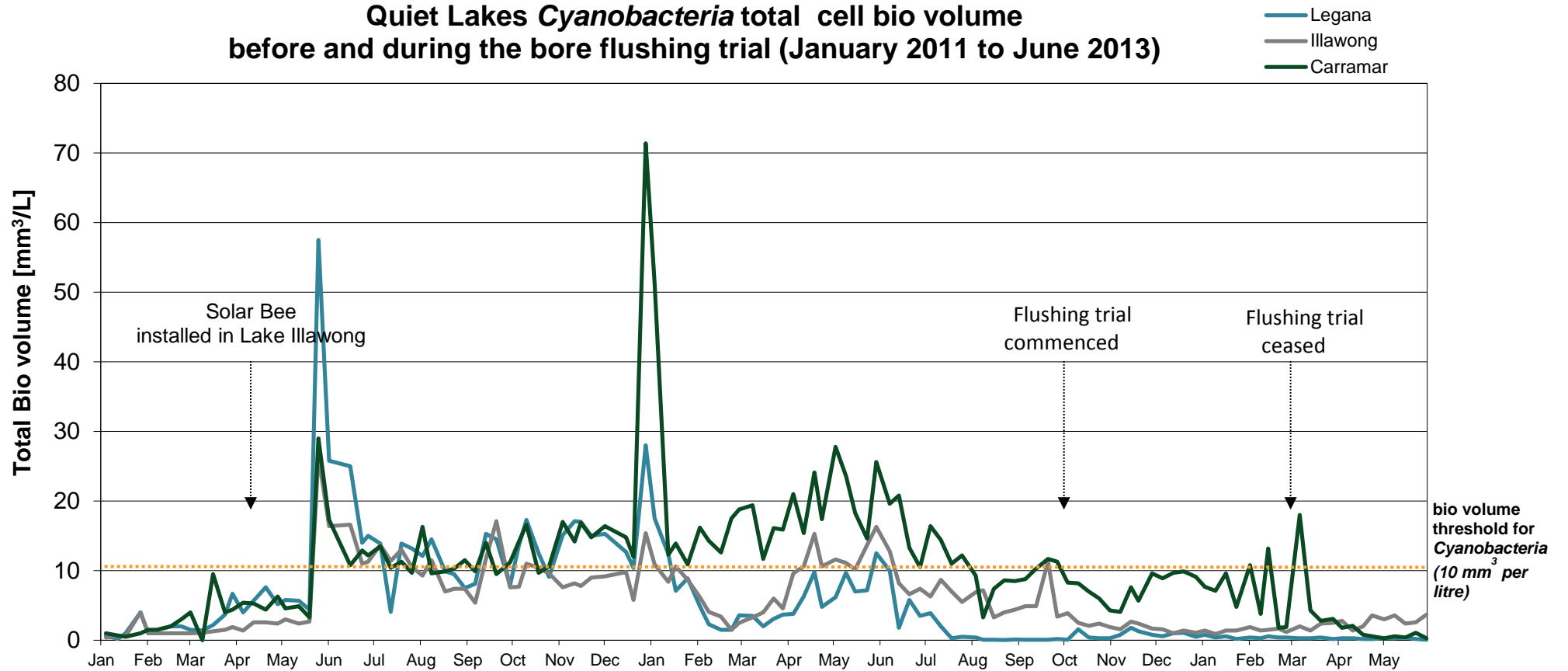


# APPENDIX C: QUIET LAKES BGA MONITORING RESULTS 2010 – 2015 (INCLUDING BORE FLUSHING TRIAL RESULTS)



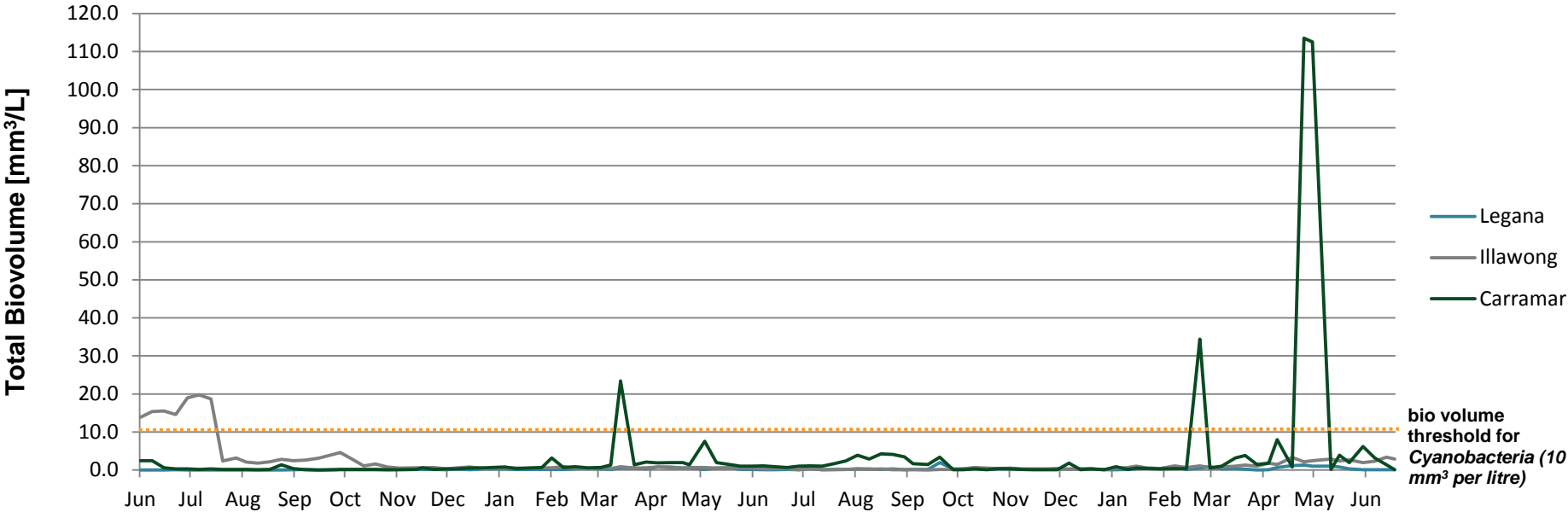
Source: Melbourne Water - BGA results data, received 27 February 2017

### Quiet Lakes *Cyanobacteria* total cell bio volume before and during the bore flushing trial (January 2011 to June 2013)



Source: Melbourne Water - BGA results data, received 27 February 2017

## Quiet Lakes *Cyanobacteria* total cell bio volume during the bore flushing trial (June 2013 to June 2015)



Source: Melbourne Water - BGA results data, received 27 February 2017