

Quiet Lakes Bore Flushing Tariff Proposal

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Table of contents

Summary and Recommendation	1
Background	1
Melbourne Water's level of service in the Quiet Lakes	2
Consistency with the recommendations of the Independent Review	3
Consistency with the Water Industry Regulatory Order (WIRO)	4
Managing for secondary contact recreational activities	5
Distribution of benefits associated with bore flushing	7
Tariff Proposal	8
Customer Consultation	9
Proposed services	10
Cost of service and tariff	10

Quiet Lakes Bore Flushing Tariff Proposal

Summary and Recommendation

This submission details Melbourne Water's bore flushing tariff proposal for the Quiet Lakes special drainage area. Melbourne Water proposes a bore flushing tariff of \$156 per household per annum for 251 properties that border Lake Legana and Lake Illawong within the Quiet Lakes special drainage area in Patterson Lakes, to recover the annual costs of additional groundwater flushing of the lakes.

This tariff is proposed to commence 1 July 2017 and apply for the remainder of the 2016 regulatory period. It has been developed following a bore water flushing trial, pricing consultation with all residents, and is consistent with the recommendations from the Patterson Lakes Independent Review of the management of the Quiet Lakes.

Background

The Quiet Lakes are a series of three small man-made stormwater fed lakes, located within the suburb of Patterson Lakes that offer private access only to adjoining residents.

Whilst stormwater that enters the lakes from urban environments carries a range of pollutants, Melbourne Water works to achieve a secondary contact standard within the lakes which still allows activities such as boating to occur.

Quiet Lakes residents have long wanted a higher standard of water quality within the lakes in order to undertake other activities such as swimming, and to reduce the occurrence of blue green algae blooms. This standard is problematic and difficult to achieve in all urban waterbodies even with significant investment.

The more cost-effective option of bore flushing has been requested by the residents, and following a trial it appears to have a positive impact on controlling blue green algae.

A user-pays principle for higher levels of water quality was a key recommendation of an independent review (*Patterson Lakes Independent Review Management of Patterson Lakes Tidal Waterways & Quiet Lakes*) undertaken in 2013 at the request of the then Minister for Water.

To help residents make an informed decision about the costs under a user-pays model, Melbourne Water agreed to fund a trial to determine if flushing the lakes with bore water could be used to control blue green algae in the lakes.

Bore flushing involves pumping about 253 million litres of bore water into the lakes for 6 months of the year (from 1 October – 31 March). This amount of water is the equivalent of filling and emptying Lake Legana approximately 3 times and Illawong approximately 6 times, requiring pumping infrastructure and associated electricity and maintenance costs.

The bore flushing trial ran for three years, from 1 October 2012 until 31 March 2015 and was funded by Melbourne Water. The final review of the trial suggests that the bore flushing appears to have a positive impact on maintaining low blue-green algae levels.

Melbourne Water proposed the Bore Flushing Tariff in April 2016 to the Essential Services Commission (ESC). However, in the ESC's Final Decision (June 2016), resolution on the tariff was deferred to allow the Commission to give further consideration to questions raised during the consultation process. The ESC required Melbourne Water to resubmit its tariff proposal by 1 December 2016.

This submission details:

- Melbourne Water's level of service in the Quiet Lakes
- the tariff's consistency with the recommendation of the Independent Review
- the tariff's consistency with the Water Industry Regulatory Order (WIRO)
- management for secondary contact recreational activities
- the distribution of benefits associated with the bore flushing
- customer consultation undertaken around the introduction of the tariff
- the tariff proposal.

Melbourne Water's level of service in the Quiet Lakes

In the context of the Independent Review recommendation that "That minimum water quality standard in the Quiet Lakes and Tidal Waterways is maintained to comply with secondary contact criteria", it is important to note that the Quiet Lakes typically met secondary contact criteria based on over 10 years of summer monitoring data, without the need for bore flushing.

However, some residents were of the view that the existing service level (secondary contact standard) poses a risk of blue green algal blooms affecting residents and wildlife. In recognition of the unique circumstances of the lakes, Melbourne Water has agreed to fund additional services through the Waterways and Drainage Charge that exceed the outcomes anticipated in the Independent Review and levels of service provided across other Melbourne Water-managed water-bodies.

These services include:

- a 3 year bore flushing trial (concluded 31 March 2015)
- funding 20 million litres of bore water to “top up” the lakes in summer each year
- increased maintenance of the interconnecting pipe system between the lakes, and
- increased water quality monitoring over summer from fortnightly to weekly.

In addition Melbourne Water is also funding the bore flushing over the 2016/17 summer while the ESC considers the tariff submission.

Consistency with the recommendations of the Independent Review

The Patterson Lakes Independent Review was established in 2012 (findings released March 2013) to review the management of Patterson Lakes Tidal Canals and Quiet Lakes. Key aims of the Independent Review were to assess current management arrangements and provide recommendations on future actions to create a sustainable management framework based on a fair and equitable funding model that includes beneficiaries of both the Quiet Lakes and Tidal Waterways.

This included, but was not limited to, assets such as beaches, retaining walls, jetties and waterways.

The Independent Review determined that, in terms of funding sources, it is most appropriate for “the application of user pays funding alternatives for those services and assets that are linked to private recreational benefits.”

The Independent Review found that Melbourne Water should manage water quality in the Quiet Lakes with the aim of achieving secondary contact to support activities such as boating. This is broadly consistent with what Melbourne Water aims for in other waterways in urban areas. Based on over 10 years of summer monitoring data, the Quiet Lakes have typically met secondary contact criteria for *E. coli* based on Victorian State guidelines (SEPP Waters of Victoria, 2003¹).

No specific guideline exist for managing Blue Green Algae (BGA) for secondary contact recreational activities. Melbourne Water follows national guidelines for managing BGA

¹ Victorian Government, State Environment Protection Policy, (Waters of Victoria). Victorian Government Gazette 4 June 2003

in recreational waters (NHMRC, 2008²), which were developed based on primary contact recreation studies.

These guidelines outline responsibilities for waterway managers to manage risks to public health by monitoring BGA blooms and ensuring people are well informed when a bloom occurs. Melbourne Water has sought advice from the Department of Health and Human Services (DHHS) to ensure it is correctly interpreting guidelines, which was confirmed in September 2013.

As outlined above, the Independent Review found that Melbourne Water as waterway manager should aim to manage water quality to support secondary contact recreational activities. The Independent Review acknowledged that the Quiet Lakes, whilst having a public drainage function, were essentially private access with regard to recreation. Subsequently the application of a user-pays model for any water quality improvements aimed at higher recreation standards is appropriate.

Melbourne Water is operating consistently with the recommendations of the Independent Review in this matter.

Consistency with the Water Industry Regulatory Order (WIRO)

Under Section 3 of the Water Act the Quiet Lakes are defined as a waterway and form an integral part of the local drainage system. At times of heavy rainfall, they store local stormwater run-off until such time as it can be discharged into the regional drains via the McLeod Road pump station or to Patterson River via the Gladesville Boulevard pump station.

Pursuant to Section 7 of the WIRO 2014, metropolitan waterways and drainage services are both a declared service and a prescribed service for the purposes of "Coverage" under the WIRO.

Melbourne Water's Quiet Lakes Bore Flushing Tariff is proposed as a method of funding with the aim of increasing the quality of the water in the Quiet Lakes ('Service'). This forms part of Melbourne Water's waterways management obligations under the Act.

Melbourne Water notes the management of waterways by water authorities is governed by part 10 of the Act. Specifically, s189 (1)(a) and s189(1)(b) of the Act state the following:

² Australian Government, National Health and Medical Research Council. Guidelines for Managing Risk in Recreational Waters. Canberra, Australian Government (2008).

An Authority that has a waterway management district has the following functions in relation to designated waterways and designated land or works within that district:

- (a) to identify and plan for State and local community needs relating to the use and to the economic, social and environmental values of land and waterways;*
- (b) to develop and to implement effectively schemes for the use, protection and enhancement of land and waterways;*

Further, in order to carry out its functions under the act, s190 (1) of the Act requires Melbourne Water to develop a regional waterway strategy ('Strategy'). Under s190 (4), the strategy must have regard to the aesthetic, recreational and cultural values of waterways within its waterway management district.

Finally, s7(c) of the WIRO provides that nothing in the WIRO precludes the services that come within paragraphs (a) and (b) from being regulated in relation to "price, standards and conditions of service and supply" differently from any other service that comes within the same category. As a result the service is not a "precluded service" on the basis that it seeks to impose a different standard of service for the Quiet Lakes.

Given the above, both the drainage function of the Quiet Lakes and the service form part of a prescribed Service under the WIRO.

Managing for secondary contact recreational activities

According to the State and National guidelines, secondary contact recreation refers to activities that have some direct contact with the water, but where the chance of swallowing water is very low to unlikely, such as boating and fishing. *E.coli* is the microbial indicator used to monitor recreational health risk in freshwater and guideline values are set for the protection of primary contact and secondary contact activities. The guideline value outlined in SEPP (WoV)³ for secondary contact recreation is the median of five *E.coli* tests taken over 30 days should be equal to or less than 1000 organisms/100ml.

Historical *E.coli* data collected in the Quiet Lakes shows the Quiet Lakes are typically compliant with secondary contact criteria and therefore no further publicly funded water quality improvement services are required.

³ Victorian Government, State Environment Protection Policy, (Waters of Victoria). Victorian Government Gazette 4 June 2003

Melbourne Water proposes to continue monitoring throughout the high-recreation summer period in order to continue to track compliance against this criteria.

In relation to BGA, SEPP (WoV) does not establish guideline values. In relation to blue green algae management in recreational waters Melbourne Water and other waterway managers around Australia adhere to the NHMRC guidelines for BGA management and do so by monitoring and notifying stakeholders when a bloom is detected.

Guideline values in NHMRC that trigger notifications to the public are set to assess the risks for primary contact recreation activities such as swimming. The NHMRC guidelines consider that the risks posed by secondary contact recreation are so low as to not warrant the development of a specific guideline value for blue-green algae. This has been confirmed by the Department of Environment, Land, Water and Planning (DELWP) and the Department of Health and Human Services (DHHS).

In the context of the Independent Review recommendation, Melbourne Water is responsible for water quality in the Quiet Lakes with the aim of achieving secondary contact criteria which is aligned with the level of service we aim to achieve for all waterways and water bodies in our area of responsibility with the Melbourne Metropolitan Waterways and Drainage Charge.

Given that secondary contact activities are currently protected, the provision of the bore flushing service for the Quiet Lakes to achieve improved water quality outcomes is determined to be an increased level of service linked to private recreational benefits, which should be funded by a user-pays model.

From 2012 to 2015 Melbourne Water funded a bore flushing trial to help residents make an informed decision about funding an increased service through a user-pays model (see *Background* for details).

While the bore flushing trial review concluded that flushing appears to have a positive impact on controlling blue green algae, water quality in the Quiet Lakes cannot be guaranteed because the lakes are primarily urban stormwater-fed.

This is reinforced by the Independent Review which states in conclusion 8 “Maintaining water quality for primary contact purposes (including swimming) in waterways and lakes in urban areas cannot be guaranteed.”

Distribution of benefits associated with bore flushing

The beneficiaries of the bore flushing are residents of Lake Legana and Lake Illawong, because:

- The Quiet Lakes are private assets, accessible only to the residents whose properties adjoin the individual lakes
- Lake Carramar does not receive the flushing flow because the outlet to the 3 lakes is located at Lake Illawong and the flushing water leaves the lakes before entering Lake Carramar.
- Bore flushing is a higher level of service than is provided to Waterways and Drainage ratepayers around Melbourne
- Downstream waterways do not receive a benefit.

Quiet Lakes bore water flushing does not provide a benefit to the broader public outside the Quiet Lakes. The current service provided to the Quiet Lakes already meets and exceeds the required level of service provided to Melbourne Water's broader operating area.

Water leaving the Quiet Lakes is pumped to a local drainage pipeline which ultimately drains to Kananook Creek. The bore water flushing flow proposed would make up less than 1% of the flow of Kananook Creek when the bore is flushing, which would have no measurable beneficial impact on the waterway.

Access to the Quiet Lakes is private. This is made clear by the Patterson Lakes Independent Review⁴ (see extracts below). This, combined with the negligible volume of bore water that would enter Kananook Creek, means the primary beneficiaries of the flushing are the residents of the Quiet Lakes.

- *...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. (page 53)*
- *It is however 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. (page 55)*
- *The Quiet Lakes do not provide any recreational benefits to the public because they are not accessible. (page 61)*

⁴ Patterson Lakes Independent Review – Management of Patterson Lakes Tidal Waterways & Quiet Lakes (8 March 2013)

- *The recreational benefit provided by the Quiet Lakes remains implicitly private in nature. (page 92)*
- *The Quiet Lakes and all the Tidal Waterways being holistically and equally regarded as “waterways” under the Water Act...The Melbourne Metropolitan Waterways and Drainage Charge funds should then be applied to these assets in the same manner as for Melbourne Water’s entire broader catchment jurisdiction, and be treated as public assets.*

Any additional service provision required and agreed to by the stakeholders would be costed, and funded equitably by the respective beneficiaries, on a project basis. (page 93)

- *The application of user pays funding alternatives for those services and assets that are linked to private recreational benefit (page 92)*

Tariff Proposal

Based on the information provided in this submission, Melbourne Water proposes that the most fair and equitable way to fund the additional bore flushing is through the application of a tariff, paid by the residents of the Quiet Lakes (Lakes Legana and Illawong).

This approach is supported by the Patterson Lakes Independent Review and results of a survey to all households in Lakes Legana and Illawong, which showed the majority of residents were supportive of a user-pays charge to fund the bore flushing (see *Customer Consultation* section below).

This tariff is proposed to apply for the remainder of the 2016 regulatory period commencing 1 July 2017. Full details are provided below (see *Cost of service and tariff* section page 10).

If however during bore flushing multiple prolonged blue green algae blooms were to occur within a single summer in Lake Legana or Lake Illawong, Melbourne Water will conduct a review into the benefit bore flushing is providing on controlling blue green algae. This review would be funded by Melbourne Water.

Following the outcome of the review, a decision will be made to either continue running the bore if there appears to be a benefit, or to cease if there appears to be no benefit.

If the decision is made to cease bore flushing Melbourne Water will cease flushing and advise South East Water (who collect billing on our behalf) to stop billing residents of Quiet Lakes for the bore flushing tariff.

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.

Customer Consultation

Melbourne Water has consulted extensively with the residents of the Quiet Lakes on the outcomes of the Independent Review and the bore flushing trial through community drop in sessions, bulletins, surveys and community noticeboards.

In September 2015 the Minister for Water confirmed in writing to Kingston Council and a Quiet Lakes resident that a user-pays funding model needed to be considered for additional use of the bore pump and that this will need to be funded by the primary beneficiaries – in this case the residents of the Quiet Lakes (Legana and Illawong).

Melbourne Water subsequently arranged for an independent ballot of all Quiet Lakes residents which commenced in November 2015 and ran into December to determine their willingness to pay for the Bore Flushing Tariff. A majority of residents (75% - refer table below) voted in support of the proposal.

Table 1: Ballot of Quiet Lakes Property Owners – bore pump flushing charges

Response	Residents	Percentage
Yes	188	74.9%
No	24	9.6%
Opt-out	4	1.6%
Did not vote	35	13.9%
TOTAL	251	100.0%

Since the community ballot conducted in November/ December 2015, Melbourne Water has further engaged with the Quiet Lakes community around the bore flushing tariff, including:

- **December 2015** – A bulletin letter box drop to all Lake Legana and Lake Illawong residents with the results of the ballot and confirming Melbourne Water’s intention to submit the bore flushing tariff proposal to the ESC.
- **August 2016** - A bulletin letter box drop to all Lake Legana and Lake Illawong residents providing an update on the ESC’s interim decision, and outlining Melbourne Water’s intention to resubmit by 1 December 2016.
- **September 2016** – A bulletin placed on the Quiet Lakes notice board and provided to the Lake Illawong retirement village to place on their notice board,

updating residents of the 2016/17 bore flushing and Melbourne Water’s intent to resubmit to the ESC by the 1 Dec.

Considering the strong support for the tariff shown in the customer survey and our continued communication with the community with reference to our proposed new charge, Melbourne Water is satisfied the tariff proposal is supported by customer willingness to pay for the additional service of bore flushing.

Proposed services

Proposed higher levels of services consist of Melbourne Water running additional bore flushing over the summer months in Lake Legana and Lake Illawong.

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

Melbourne Water will also continue to contribute 20 million litres of bore water per year and additional water quality monitoring to assist in maintaining the lakes. This will be funded through the Waterways and Drainage Charge.

Cost of service and tariff

The total cost of providing bore water and algae monitoring services is estimated at around \$39k per annum (see table below)

Table 2: Servicing cost – Quiet Lakes (2015/16 Real Dollars)

\$	2016/17	2017/18	2018/19	2019/20	2020/21
Service costs	39,156	38,201	37,269	36,360	35,473

Melbourne Water’s cost would be recovered from residents through a **\$156 annual tariff** per household or \$39 per quarter. Effective 1 July 2017 the tariff is proposed to be set in nominal terms for the remainder of the 2016 regulatory period until 2020/21.