

Essential Services Commission  
Level 37/2 Lonsdale Street  
Melbourne Victoria 3000

**20 January 2017.**

I am making this submission to the Essential Services Commission (ESC) in response to the submission by Melbourne Water of the Quiet Lakes Bore Flushing Tariff Proposal (MWQLBFTP) dated November 2016.

The following quotes indicate Melbourne Water is peddling misinformation of what the residents are seeking.

Melbourne Water state the residents want a higher standard of water *in order to undertake swimming i.e. Primary Contact* (MWQLBFTP p1)

This statement is incorrect. First and foremost the residents by virtue of the Independent Review expect Melbourne Water to maintain the water quality in Lake Legana, Lake Illawong and Lake Carramar to a secondary contact standard as the minimum benchmark for residents, flora and fauna to be safe from exposure to unsafe levels of hazardous blue green algae.

IR Conclusions and Recommendations 5.5 (p74) states:

*The Review concludes that secondary contact is reasonable and a practical standard at this advanced stage of the Patterson Lakes evolution. Permanently achieving primary contact standard in the Quiet Lakes is not a viable scenario, with or without an additional special charge or tariff.*

*Achieving secondary contact standard in all Patterson Lakes Waterways is reasonable and practical aspiration, and the residents and the general public should rely upon a 'duty of care' being exercised by all the relevant authorities.*

Please note that a 'duty of care' by all relevant authorities to protect residents and the general public from a known health hazard includes not only MW, DELWP, The EPA and KCC but also the ESC.

In my reading of the NHMRC Guidelines and the Blue Green Algae Circular the Authorities are directed to erect warning signs to advise when unsafe levels of Blue Green Algae are present.

Therefore, the erection of Blue Green Algae warning signs advising against any human or pet contact with the water, which include images of secondary contact activities of fishing, boating and a dog, is clear confirmation that the secondary contact standard as a minimum benchmark is no longer being achieved whilst the sign being displayed.

By inference of the IR stating that secondary contact is a reasonable and practical standard tells us that the presence of blue-green algae should be a rare event with appropriate managed tools are adopted. Unfortunately, this outcome was certainly not the case in Lakes Legana and Illawong prior to commencement of the annual operation of the bore from Oct 12 and has never been the case in Lake Carramar due to its disconnection from the flow through provided by the bore.

BACKGROUND

The suburb of Patterson Lakes was formed around a series of Quiet Lakes and Tidal Waterways and the Quiet Lakes comprise of 300 residential properties abutting the lakes.

*The Patterson Lakes Waterways were based on two designs. The design for the lakes consisted of a system of lakes which would be landlocked with the exception of water being allowed to move between them and the Patterson River, The Tidal Waterways and Kananook Creek via various pumps and drains, and surrounded by residential developments.*

*Stormwater would primarily fill each lake, and that a system of interconnecting pipes and outflows would balance the water levels in each lake. This would ensure that the inter-flows of water were sufficient to maintain appropriate retention times in each water body. Retention periods (or hydraulic residence times) relate to the primary anaerobic treatment function of the water body. ie: Too short a period does not allow natural treatment processes to occur, and too long a period can create stagnancy and algal blooms. (PLIR p62)*

*Water Management from the Quiet Lakes and Tidal Waterways via pumps and drains contribute towards environmental flows for Kananook Creek and thereby assist in maintaining the waterway in a reasonably healthy condition.*

*The creation of the Patterson Lakes Waterways was based on two functions, which are clearly evident on the titles for both the Quiet Lakes and Tidal Waterways as shown by the expression "Reserves for Drainage and Recreational Purposes".*

The Quiet Lakes and Tidal Waterways provide benefit to the wider community rather than just to the residents abutting the lakes.

- *Both the Quiet Lakes and Tidal Waterways contain flood storage capacity during times of high rainfall or floods.....The Quiet Lakes linked via pumps and drains.*

*.....the Quiet Lakes recreational benefits are limited to surrounding AND SOME NEARBY RESIDENTS. (PLIR page 20).*

- *N.B Lake Illawong is used by the Patterson Lakes Primary School and a Club interested in model boats.*
- *A further 3700 properties in the surrounding area drain in to the Patterson Lakes Waterways via the local drainage network (PLIR p 29)*

**I believe that it is unreasonable to expect the residents immediately adjacent to the Quiet Lakes to be held financially responsible for making the water safe as a result of a drainage service in to the lakes from another 3,700 residents.**

*Progress with urban development surrounding the Quiet Lakes and the on-going inputs of stormwater runoff and sediment from the catchment into the Quiet Lakes would be expected to receive organic material from gardens and street plantings that include mature trees that continue to shed leaves, twigs and bark that end up in the waterways as detritus material.(PLIR p69).*

*The eutrophication process contributes to the poor quality of the water and the increased nutrients in the sediment "often leads to the excessive growth of algal bloom" (PLIR p70).*

In the Pricing Submission Summary and Recommendation in 2014 Melbourne Water proposed a management strategy for delivery of services in Patterson Lakes consisting of:

- *"Waterway health and regional drainage services funded from the waterways and drainage base rate"*

**Why is Melbourne Water renegeing on this undertaking by now proposing that waterway health in the Quiet Lakes is to be funded from a special tariff on the Quiet Lakes residents?**

The PLIR discussion on page 71 goes on to state:

*"the goal should be to maintain water quality to secondary contact standard as a minimum benchmark, and warnings posted when the quality falls below this. (PLIR p71).*

In meeting its goal Melbourne Water is required to **strive to achieve** secondary contact water quality as the minimum standard. i.e. water quality suitable for boating, fishing, wading as secondary contact activities as defined in the NHMRC Guidelines (p16) and considered a reasonable and practical aspiration by the IR (IR p74)

In 2014 Melbourne Water made a submission to the Essential Services Commission stating:

*Melbourne Water proposed that until the Commission rules on the price submission the existing precept rate would cease and services would continue to be provided as normal. Customers would also still pay the general waterways and drainage charge. The Commission accepted this proposal.*

*Melbourne Water accepts the findings of the Independent Review Recommendations. Adoption of the key recommendations has lead Melbourne Water to develop the Patterson Lakes management strategy, consisting of:*

*For all other services considered to have a regional and community benefit, these will continue to be funded through the Waterways & Drainage Charge.*

*In the Quiet Lakes, these include:*

- *carp removal*
- *water quality testing*
- *general civil assets monitoring & works*
- *community communications/consultations*

Weekly Blue Green Algae water quality testing, as previously under the precept, was submitted by Melbourne Water and approved by the ESC in the 2014 submission yet weekly water quality testing for Blue Green Algae has ceased since the 1<sup>st</sup> July 2015-

Since the 1<sup>st</sup> July 2015 warning signs for unsafe levels of toxic blue green algae have been erected on Lake Carramar as an outcome of water quality testing conducted by the EPA following telephone calls from concerned residents whose homes are adjacent to Lake Carramar. This unacceptable

situation of Melbourne Water neglectfully jeopardising human health is just further evidence that Melbourne Water's visual inspection program is not an appropriate or adequate regime for a series of lakes that are highly susceptible to unsafe levels of blue green algae.

In the 2016 ESC submission Melbourne Water referred to a service of increased water monitoring over summer from fortnightly to weekly. Since the 1<sup>st</sup> July 2015 Melbourne Water has unilaterally decided that monitoring no longer means testing but simply means a visual inspection. Melbourne Water's unilateral decision to downgrade monitoring from weekly testing to weekly inspection is inconsistent with:

1. Its 2014 ESC submission for weekly testing '*considered to have a regional and community benefit*'
2. Its 2014 ESC submission that '*services would continue to be provided as normal*' as defined in the IR p68
  - Melbourne Water commissions weekly water quality testing, to ascertain the conditions for recreational use, and any warnings that need to be disseminated regarding algal blooms.
3. The NHMRC Guidelines Table 6.6 pg 112
  - Surveillance mode (green level, i.e. safe level <0.4mm<sup>3</sup>/L) requires*
    - *regular monitoring.*
    - *Weekly sampling and cell counts at represented locations in water body where known toxigenic species are present*
    - *Fortnightly for other types.*
  - Alert Mode (amber level. i.e. safe level <4mm<sup>3</sup>/L) requires*
    - *Increase sampling frequency to twice weekly*
    - *Monitor weekly or fortnightly where other types are dominant*
    - *Make regular visual inspections*
  - Action Mode (red level i.e. unsafe level >4mm<sup>3</sup>/L Toxic and >10mm<sup>3</sup> Non Toxic) requires*
    - *Monitor as for Alert mode*

Since the 1<sup>st</sup> July 2015 the water quality testing service submitted by Melbourne Water and Approved by the ESC in 2014 has not been performed as stated.

Historic weekly water quality test result charts available on the Melbourne Water website show us that without the running of the bore the three Quiet Lakes are persistently subjected to unsafe levels of blue green algae with Lake Carramar being regularly subjected to TOXIC blue-green algae. Historic weekly testing charts show us that without the running off the bore Melbourne Water fails to meet the IR Recommendation 2 to "maintain water quality to secondary contact standard as a minimum benchmark."

For Melbourne Water to submit that it is operating consistent with the IR recommendations (MWQLBFTP p4) is to distort the facts. The fact of the matter is that Melbourne Water is only ever operating consistent with the recommendations of the IR for Lakes Legana and Illawong when it operates the bore. For Melbourne Water to also be operating consistent with the recommendations of the IR for Lake Carramar will be the day that adequate through flows in Lake Carramar are guaranteed as per IR Recommendation 6.

The Quiet Lakes are covered by the Design and Development Overlay2 – Patterson Lakes Residential Waterways Area (DDO2) and the Land Subject to Inundation Overlay (LSIO).

Beneficial uses to be protected as applied to slightly or moderately modified ecosystems.

One of the conditions of the LSIO is:

- *To protect water quality in accordance with provisions of relevant State Environment Protection Policies, particularly in accordance with Clauses 33 and 35 of State Environment Protection Policies (Waters of Victoria), and*
- *To ensure that development maintains or improves river and wetland health, waterway protection and flood plain health.*

**Melbourne Water fail to meet the above mentioned criteria by not ensuring sufficient water is pumped through to avoid stagnation and to reduce the long hydraulic residency. The presence of blue green algae is not consistent with the conditions of the LSIO. It is Melbourne Water's responsibility to ensure the water in the Quiet Lakes comply with the SEPP (Waters of Victoria)**

Melbourne Water has stated "a user-pays" principle for higher levels of water quality within the Quiet Lakes in order to undertake other activities such as swimming, and to reduce the occurrence of blue-green algae." (Quiet Lakes Bore Flushing Tariff Proposal Melbourne Water p1)

The proposition that the user-pays principle applies to reduce the occurrence of blue-green algae is incorrect. **Managing safe levels of Blue Green Algae is a health issue for recreation water of all levels including Non Contact, Secondary Contact and Primary Contact classifications.**

The NHMRC Guidelines state: (p7 & p91)

*Fresh recreational water bodies should not contain:*

- *>4mm<sup>3</sup>/L for the combined total of all cyanobacteria where a known toxin producer is dominant in the total biovolumes*
- *>10mm<sup>3</sup>/L for total biovolume of all cyanobacterial material where the know toxins are not present*
- *cyanobacterial scums consistently present*

*The goal is to maintain water quality to secondary contact standard as a minimum benchmark, and warnings posted when the quality falls below this. (PLIR p71)*

**Water containing Blue-Green Algae does not meet the secondary contact standard as a minimum benchmark and the residents should not be made to bear the costs of Melbourne Water meeting their responsibilities and obligations as an Authority, with a public Duty of Care.**

This position is further reinforced in PLIR p38:

*"For Quiet Lakes, the history of their construction and the extent of urban development in their catchments place the emphasis for water quality on modified ecosystems and surface waters. Hence, water quality protection is based on avoidance of harm to human health with a lower percentile for protection of water quality than would apply to a less modified waterway system.*

*For the Quiet Lakes, the combination of age/maturity of the lakes, the water inputs including organic and nutrient loads from the surrounding catchments, and the length of time the water resides in each lake, all contribute towards episodic blooms of algae. The blooms can impact on lake aesthetics and include that of blue-green algae, which can be harmful to human health. All these types of effects can impact on the amenity of the surrounding lakeside residential communities" .(PLIR p65)*

The Chief Engineer-Manager of the Dandenong Valley Authority in 1974, when in correspondence to the Australian Conservation Foundation, stated that:

*A second advantage of the design system .....and it has always been our view that a complete change-over in the vicinity of every two months would, in light of the other conditions, ensure satisfactory water quality. (PLIR p63).*

Melbourne Water stated in their submission *that whilst the bore flushing appeared 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. (MWQLBFTP p6)*

For Melbourne Water to state that the lakes are primarily urban stormwater-fed but ignore the fact that PLIR had assessed storm water as providing insufficient flow goes to the very heart of the purpose of why the developer installed the bore to assist in maintaining safe water quality.

*“stormwater inputs appeared insufficient in volume to support the required flushing effect of reducing water residency times (PLIR p71)*

*A groundwater bore was used initially to help fill the Quiet Lakes and later for topping up water levels when required. (PLIR p63).*

*The Bore provided the crucial **back-up inflows** to Lake Legana (the highest level of the three lakes) and ensured water would overflow to Lake Illawong and then in to Lake Carramar. The 1976 ground water license was for 730ML per annum. . (PLIR p63).*

The Independent Review recommended:

4. *That a review of the Quiet Lakes Headworks infrastructure be undertaken by Melbourne Water, to determine what has been altered from the original engineering design. Adequate through flows in Lake Carramar are to be guaranteed by Melbourne Water (PLIR P75)*

To date, Melbourne Water has made no attempt to address Recommendation 4 by implementation of an engineering solution to ensure *‘adequate through flows in Lake Carramar are to be guaranteed’*. Meanwhile, the residents of Lake Carramar continue to be persistently affected by TOXIC Blue Green Algae, whilst Lake Legana and Illawong avoid such a plight by virtue of the proven benefits of receiving *‘adequate through flows’ from the running of the bore.*

Melbourne Water refer to the distribution of benefits associated with bore flushing.(MWQLBFTP p7)

And state:

*“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.”*

Melbourne Water’s statement ignores Recommendation 4 *“Adequate through flows in Lake Carramar are to be guaranteed” and contradicts their statement on (MWQLBFTP p4) that Melbourne Water is operating consistently with the recommendations of the Independent Review in this matter.*

*Maintaining water quality to secondary contact standard as the minimum benchmark. (PLIR p71)*

*“This will require the implementation and maintenance of the recommendations contained in the Design Flow Water Quality Management Plan” (PLIR 71) i.e. continue to run the bore!*

*“This is fundamentally dependent upon the system operating as it was originally engineered. It appears from site inspections undertaken by the Review, and several of the submissions,*



*that the system physicality has been altered over time. The recommended through-flow of water needs to reach all three lakes, not just Lake Legana.(PLIR p 71)*

*Flows are being diverted from Lake Illawong to the Wadsley Drain, not allowing adequate flushing flows to enter Lake Carramar.”(PLIR p 71)*

*In the interest of improving waterway health and protecting human health from the negative effects of hazardous blue green algae Melbourne Water should rectify this issue, immediately.”*

**From conception and design of Patterson Lakes in the 1970’s and throughout the Independent Review, Lake Carramar was part of the entire operating system which means they too are entitled to have “water of a secondary contact water quality as a minimum benchmark”.**

*Recommendation 5 stated Melbourne Water review the current bore trial, and by the end of 2013 ascertain the long term quantity and quality of ground water required..... (PLIR p75).*

The operational system has deviated considerably from the original engineering design. The amount of water going through the system has been reduced by 65%.

Instead of 2 ML being pumped everyday 365 days per year utilising the original extraction licence of 730ML/year, we are receiving 1.5ML per day for the six months over the summer period. For the remaining six months over winter the water stagnates receiving only stormwater from severe storm events as input from the local catchment area. This means the water residency is too long making the lakes susceptible to algal blooms through that winter period.

*The water residency for the Quiet Lakes was estimated to be 800 days.( Design Flow QUIET LAKES Water Quality Management Plan Updated July 2013.) Design Flow was commissioned by Melbourne Water in response to a recommendation from the PLIR.*

As detailed by Design Flow’s estimated 800 days residence time by storm water inputs only, without the crucial back-up inflows from the bore equates to a residence time of more than 5 years.

As Melbourne Water’s historic water quality test result charts show us - without Melbourne Water fulfilling its role to run the bore to ‘manage waterway health funded from the waterways and drainage base rate’ to deliver the recommended residence time of every two months, the three Quiet Lakes will be persistently subjected to unsafe levels of hazardous blue green algae.

Evidence from Melbourne Water’s own Guidelines for Developers of Shallow lake systems highlight caution to the negative impact of long water residency times. Melbourne Water should apply the same standard to the Quiet Lakes in accordance with their own Design Guidelines for Developers.

The Constructed Shallow Lake Systems Design Guidelines for Developers (Melbourne Water, 2005), suggest that there is a “low” (i.e. acceptable) risk of an algal bloom where: - **Lake residence time is less than 30 days more than 80% of the time.** - Lake inflows are treated to reduce nutrients and sediment loads. - More than 50% of the lakes are covered in macrophytes.

Melbourne Water commented that some residents were of the view that the existing level poses a risk of blue green algae affecting residents and wildlife. (MW QLBT proposal. P2)

This position by the residents is based on solid evidence. More recently, two potential toxin-producing cyanobacteria species, *Anabaena bergii* and *Microcystis aeruginosa* have been recorded in the lake system, albeit at very low concentrations.

In June 2015, less than three months after MW turned the bore off, Lake Illawong witnessed several dead fish, a dead parrot and a dead duck. Parts of the lake were a seething mass of green algae. This was reported to DELWP and Melbourne Water. Lake Carramar was in worse condition and also reported dead fish. (Pictures are attached)

Melbourne Water’s submission refers to the pumping of 273 million litres of bore water into lakes Legana and Illawong which is equivalent to a residence time of 80 days during the period when the bore is operating. Currently the remaining 6 months over winter rely on above average rainfall to achieve similar residence time.

Melbourne Water made an application to Southern Rural Water in early 2012 increasing the ground water license from 20 ML up to 400 ML. **There is access to a further 127 million litres.**

In that application to Southern Rural Water it was stated that, if approved, ***the water would be used for renewal and water quality issues.*** The application was approved and is consistent with the Independent Reviews recommendation 6 – *That the system of interconnecting water flows between the three Quiet Lakes be managed, funded and operated by Melbourne Water to deliver the outcomes recommended in this review. These are to be funded from the MMWDC*

- **Outcome 1:** maintain minimum secondary contact water quality standard
- **Outcome 2:** Implement the Design Flow Water Quality Management Plan to manage BGA
  - carp minimisation
  - continue to run the bore
  - aquatic planting
  - eventual removal of nutrient rich sediments
- **Outcome 3:** Ensure through flows in Lake Carramar are guaranteed
- **Outcome 4:** Review bore trial to ascertain the long term quantity and quality of groundwater

Melbourne Water has made no reference to Lake Carramar, which is an integral component of the three lake system. The lakes were designed to operate in concert with a *complete changeover of water* envisaged every two months. (PLIR p63)

As Melbourne Water has put no effort toward guaranteeing flow through Lake Carramar, this lake remains disconnected from the positive affects created by the bore causing Lake Carramar to be persistently affected by TOXIX Blue Green Algae.

Melbourne Water consistently fails to address water quality for Lake Carramar though it was addressed by the Independent Review.

Recommendation 4. *Adequate through flows in Lake Carramar are to be guaranteed by Melbourne Water (PLIR P75).*

Recommendation 5. *That Melbourne Water review the current bore trial and by the end of 2013 ascertain the long term quantity and quality of groundwater required.....for the Quiet Lakes.*



Recommendation 6. *“That the system of interconnecting water flows between the **THREE** Quiet Lakes be managed, funded and operated by Melbourne Water to deliver the outcomes recommended in this review. “ (PLIR p76)*

It is not sufficient that Lake Legana has secondary contact water and therefore Melbourne Water have satisfied the criteria. The criteria must be applied to the three lakes and sufficient water pumped through to ensure Lake Illawong and Lake Carramar also has secondary contact water as the minimum benchmark.

Nor is it satisfactory for Melbourne Water to state the infrastructure has not been altered and therefore no works should be undertaken to rectify the problems experienced by Lake Carramar.

(See attached Melbourne Water Data Quiet Lakes water quality 2015)

Melbourne Water has **NEVER** even come close to meeting the outcomes anticipated by the Independent Review. To assert they have ‘exceeded the anticipated outcomes’ (MW QLBF Proposal. p2) is not supported by any activities regarding water quality outcomes that are proposed by Melbourne Water to be funded ongoing from the Melbourne Water Metropolitan Waterways and Drainage Charge.

Melbourne Water has a responsibility under SEPP –F6 Waters of Port Phillip Bay which are relevant to the quality of water leaving the Patterson Lakes Waterways into Port Phillip Bay via either Patterson River or Kananook Creek.

Regular or constant outbreaks of blue-green algae in any of the three lakes is not consistent with maintaining water quality to secondary contact as a minimum standard.

I dispute Melbourne Water’s Distribution of Benefits associated with bore flushing. (MW QLBF proposal. P7) where it states:

- *The Quiet Lakes are private assets accessible only to the residents whose properties adjoin the individual lakes.*

This argument was rejected by the Independent Review and clarified when it examined the Exemption from paying rates and taxes.(PLIR P59)

The Independent Review stated:

*“it was not aware of any statutory basis for creating a “private reserve” through the subdivision process.....If the intention was not to reserve the lakes and waterways for a public purpose, then the land should have been privately owned and not set aside in the subdivision as a “Reserve for Drainage and Recreational Purposes”(PLIR p50)*

*The Review acknowledged the Quiet Lakes have a recreational function and amenity value. The Review considered this to be of a private benefit .....largely because of their lack of accessibility. (PLIR 53)*

**Exemption from paying rates and taxes.(PLIR P59)**

Both the Local Government Act 1989 and the Land Tax Act 2005 provide exemptions to public statutory authorities from the liability to pay municipal rates or land tax in relation to land that is used exclusively for public purposes.

Section 154 of the Local Government Act 1989, under the heading “What land is rateable states:

- 2) (a) land which is unoccupied and is the property of the.....public statutory authority.....
- (b) any part of land , if that part-
  - (i) is vested in or owned.....a public statutory authority
  - (ii) is used exclusively for public or municipal purposes.

*Melbourne Water informed the Review that is it indeed exempt from paying rates and taxes with respect to the Patterson Lakes Waterways..... However it is sufficient to say that the current exemption certainly reinforces the Review’s conclusions with respect to the use of the Quiet Lakes for public drainage purposes.(PLIR P59)*

Lake Illawong is used by the Patterson Lakes Primary School for fishing as part of the sports curriculum and there is a model boat club that accesses Lake Illawong. There is also key access for residents from surrounding houses that are not adjoining the lakes.

It is interesting to note that Melbourne Water would not allow a contractor to cross Melbourne Water’s reserve to access the beach to enable easy access for construction works on the rear of Number 13 Illawong Court unless the Contractor paid a fee of \$144.00 for Melbourne Water to get a permit to open the access gate to allow a bobcat to pass through.

I again dispute the second and third points of Melbourne Water’s Distribution of Benefits:

- *Bore flushing is a higher level of service than is provided to Waterways and Drainage ratepayers around Melbourne*

*The Independent Review states:*

*The Tidal Waterways are subject to tidal movement and hence water levels regularly fluctuate. They are less contained than the Quiet Lakes.....Several of the far-reaching parts of the Tidal Waterways are also topped up with inflows being pumped from Patterson River to provide flushing and to achieve appropriate water retention periods.( PLIR p63)*

**Why is it acceptable that Melbourne Water recognise the need to top up with inflows to provide flushing and to achieve appropriate retention periods for the Tidal Waterways that are less contained but want to charge the residents of Lake Legana and Lake Illawong for the same service, and totally ignore Lake Carramar?**

In addition, the Kananook Creek pump station, which is located at the Southern End of the Tidal Waterways pumps between 100ML and 164ML/day into Kananook Creek for the exact same purpose required to manage water quality within the Quiet Lakes.

The Kananook Creek Corridor Management Plan states: (p18)

*As development occurred in the late 1940's through to the 1970's, the area was progressively sewerred and the sewage treatment plant discharged treated effluent into the creek providing increased flows. However the water quality was poor due to high nutrient levels and high algal content. In response to the need for reliable flushing flows, the Dandenong Valley Authority commissioned the Kananook Creek Pump Station in 1982 and the Station commenced pumping in February 1984 which supplemented the Boggy Creek catchment flows and the treatment effluent from the Frankston Sewage Treatment Plant. The recent upgrade to the Kananook Creek Pump Station by Melbourne Water has slightly increased the pumping capacity and it now delivers a normal pumping flow of 100ML/day and a peak flow of approximately 164ML/day.*

**Concerning is Melbourne Water's blatant attempt to deceive the ESC into believing that Melbourne Water does not pump water to manage water quality, in particular algal content and that this is somehow 'a higher level of service than is provided to Waterways and Drainage ratepayers around Melbourne'. Two comparable examples exist within the Patterson Lakes Waterways system that are funded from the MMWDC. How many more example exist further afield? Melbourne Water can't even be trusted to answer that question truthfully.**

Page 2 'Background' of Melbourne Water's Submission to the Essential Services Commission in 2014 acknowledged that Patterson Lakes was a unique waterfront residential development in the City of Kingston.

**The reason it was the "Patterson Lakes Independent Review" and not the "Waterways and Water Bodies In Our Area of Responsibility Review" was because of the uniqueness of the development compared with other waterways. It has a drainage function and a recreational function. The proximity of the residences to the water and the harmful effects of blue-green algae should be of high consideration.**

Melbourne Water's Distribution of Benefits fourth point is erroneous.

- Downstream waterways do not receive a benefit.

*"Both the **Quiet Lakes** and the **Tidal Waterways** also outflow into the neighbouring drains leading to the Kananook Creek, which flows into Port Phillip Bay at Frankston. This demonstrates the Patterson Lakes Waterways were **designed, situated, and created to perform a floodplain management and drainage retention function**. The Review also acknowledges that the inter-connectedness of the Patterson Lakes Waterways reflects the **high reliance upon the broader catchment as a source of water**. They also play an **important role in the primary treatment of stormwater before it is discharged in to Port Phillip Bay**.(PLIR p64)*

*"The water quality of the Patterson Lakes Waterways affects those who live there, use them, and those downstream abutting drainage and watercourse areas (via the outflows). This includes not only human activity but also flora and fauna species and broader ecosystems, (PLIR p64)*

Not only do downstream waterways benefit as stated in the Independent Review but the Seaford Wetlands adjacent to the Kananook Creek are an internationally recognised **Ramsar** site and must be protected by healthy water leaving the lakes.

Melbourne Water has made reference to the management of waterways by water authorities, in particular referring to their governance by Part 10 of the Water Act 1989.

Melbourne Water identified S189 (1) (a) and S189 (1) (b)

(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.

**I believe S189 (ba) and S189 (bb) should also be cited.**

To—

(i) develop and implement plans and programs; and

(ii) Carry out works and activities—

**to maintain the environmental water reserve in accordance with the environmental water reserve objective;**

S. 189

(bb) to—

(i) develop and implement plans and programs; and

(ii) 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;**

(c) to investigate, promote and research any matter related to its functions, powers and duties in relation to waterway management;

(d) to educate the public about any aspect of waterway management.

**Melbourne Water needs to abide by not only S190(4) of the Act ((MWQLBFTP p5) but have regard to S190(2) and S190(3)**

(2) A regional waterway strategy must include the following information in respect of the waterway management district to which the strategy relates—

- (a) plans and priorities for performing the Authority's functions;
  - (b) a program of actions for implementing those plans and priorities;
  - (c) .....
- (3) In preparing a regional waterway strategy, an Authority must—
- (a) take into account any relevant strategy for river health or sustainable water strategy prepared under Part 3; and
  - (b) take into account any relevant strategy or statement of policy or plan prepared under this Act, the Catchment and Land Protection Act 1994 , the Flora and Fauna Guarantee Act 1988 , the Heritage Rivers Act 1992 , the Planning and Environment Act 1987 and the Environment Protection Act 1970 ; and

The Independent Review Recommendation 9 states:

*That the Quiet Lakes property owners consider what, if any , additional capital projects they may jointly require to achieve water quality over an above secondary contact e.g. Class A recycled water, and solar bees for each lake.*

Running the bore requires no capital project of capital expenditure.

The Independent Review Recommendation 15 states:

*That any additional services sought and agreed between the Authorities and the property owners are to be delivered on a user pays cost recovery basis*

The Independent Review concluded that running the bore to manage safe levels of Blue Green Algae affects those that live at the Quiet Lakes, use them and those downstream abutting drainage and watercourse areas (via outflows). This includes not only human activity but also flora and fauna species and the broader ecosystem

## **CONCLUSION**

Consistent with the recommendations of the Independent Review and associated documents:

1. Determining who is financially responsible for the cost of running the bore is not about who is willing to pay. It's all about who is responsible to pay.
2. The NHMRC Guidelines for managing Blue Green Algae in recreational water including Non Contact, Secondary Contact and Primary Contact classifications
3. The NHMRC Guidelines advise us that Blue Green Algae should not exist in any recreational water body above the specified level of 10mm<sup>3</sup>/L
4. Melbourne Water is required to maintain secondary contact water quality as the minimum standard

5. Melbourne Water is required to implement the recommendations of the Design Flow Water Quality Management Plan, which includes continuing to run the bore to manage safe levels of Blue Green Algae
6. Melbourne Water is responsible for guaranteeing through flows in Lake Carramar
7. Melbourne Water does pump water as a service provided at other waterways for the purpose of managing water quality, including managing algal blooms, that are funded by the MMWDC.
8. The Residents of the Quiet Lakes are not the sole beneficiaries of safe water quality stored in and subsequently discharged from the Quiet Lakes.
9. Running the existing bore pump, transporting water within the existing pipes and extraction of water licence are original infrastructure installed by the original developer and exhibit no quality of being an 'additional capital project'
10. The images displayed on the blue green algae warning signs depicted secondary contact activities
11. The Blue Green Algae warning message conveyed to residents in community bulletins distributed by Melbourne Water includes severe warnings against participating in secondary contact activities.

Melbourne Water's proposal to apply a special tariff on Quiet Lakes residents to pay to run the bore to manage safe levels of Blue Green Algae to achieve secondary contact water quality is inconsistent with the recommendations of the Independent Review in every regard.

The Water Industry Act 1994 sets out processes for regulation via a Statement of Obligations. The SoO includes provisions relating to governance, quality and performance of standards, community service obligations, customer and community consultation and matters relating to failure to comply with the SoO.

In accordance with the provisions of the Water Industry Act 1994 I believe the ESC should consult with the Minister for Water and the Treasurer to insist Melbourne Water meet their obligations and provide the residents of the Quiet Lakes with safe healthy water. It is now four years since the Independent Review was released and there is still no satisfactory management strategy in place.

Yours sincerely,  
Alison Yates



Alison Yates - Quiet Lakes Bore Flushing Tariff (supporting documents)























8/04/2015	0.13	1.8	1.8
13/04/2015	0.7	1.5	8
22/04/2015	1.2	3.3	0.8
29/04/2015	1.3	2.2	113.5
4/05/2015	1	2.5	112.5
15/05/2015	1	2.9	0.2
20/05/2015	0.8	2.4	3.9
26/05/2015	0.3	2.7	2
3/06/2015	0.1	2	6.2
10/06/2015	0.1	2.3	3.2
17/06/2015	0.1	3.4	1.4
22/06/2015	0.1	2.9	0.1
1/07/2015			
7/07/2015		4.2	0.3
16/07/2015	0.01	0.5	0.1
22/07/2015	0.01	3.4	0.2
29/07/2015			
5/08/2015			
12/08/2015			
19/08/2015			
26/08/2015			
2/09/2015			
9/09/2015			
16/09/2015			
23/09/2015			
30/09/2015			
7/10/2015			
14/10/2015			
21/10/2015			
28/10/2015			
4/11/2015			
11/11/2015			
18/11/2015	0.5	0.3	0.8
25/11/2015			
2/12/2015			
9/12/2015			
14/12/2015	0.3		
23/12/2015			
30/12/2015			
6/01/2016			
14/01/2016			0.5
20/01/2016			
27/01/2016			
3/02/2016			
10/02/2016			
17/02/2016			
24/02/2016			
2/03/2016			
9/03/2016			
16/03/2016			
21/03/2016	0.2	1	0.7
30/03/2016			

8 Microcystis

113.5 Microcystis  
112.5 Microcystis

18/06/2014	0.1	0.4	0.9
25/06/2014	0.2	0.4	0.7
2/07/2014	0.1	0.1	1
9/07/2014	0.4	0.4	1.1
16/07/2014	0.1	0.1	1
23/07/2014	0.2	0.1	1.7
30/07/2014	0.2	0.2	2.4
6/08/2014	0.3	0.3	3.9
13/08/2014	0.3	0.2	2.9
20/08/2014	0.2	0.3	
27/08/2014	0.3	0.1	
3/09/2014	0.1	0.07	3.5
8/09/2014	0.2	0.1	1.7
17/09/2014	0.2	0.06	1.5
24/09/2014	2	0.2	3.4
2/10/2014	0.3	0.2	0.1
8/10/2014	0.3	0.3	0.1
15/10/2014	0.6	0.7	0.3
22/10/2014	0.2	0.5	0.1
29/10/2014	0.3	0.4	0.4
5/11/2014	0.4	0.5	0.3
12/11/2014	0.2	0.3	0.2
19/11/2014	0.2	0.3	0.1
26/11/2014	0.2	0.3	0.1
3/12/2014	0.3	0.4	0.1
10/12/2014	0.3	0.2	1.8
17/12/2014	0.3	0.3	0.1
23/12/2014	0.3	0.3	0.3
31/12/2014	0.1	0.2	0.1

Date	Legana	Illawong	Carramar
7/01/2015	0.1	0.4	0.9
14/01/2015	0.2	0.7	0.2
19/01/2015	0.3	1	0.5
28/01/2015	0.5	0.4	0.4
2/02/2015	0.4	0.4	0.3
11/02/2015	0.9	1.1	0.4
18/02/2015	0.2	0.7	0.4
26/02/2015	0.5	1.1	34.4
4/03/2015	0.9	0.7	0.5
11/03/2015	0.3	0.8	1
19/03/2015	0.4	1	3.2
25/03/2015	0.24	1.3	3.8
1/04/2015	0.03	1	1.5

Microcystis

16/11/2013	0.2	0.6	0.2
20/11/2013	0.2	0.6	0.6
27/11/2013	0.2	0.7	0.2
4/12/2013	0.1	0.3	0.3
11/12/2013	0.3	0.6	0.3
18/12/2013	0.1	0.8	0.5
27/12/2013	0.3	0.4	0.6

- Legana
- Illawong
- Carramar

Date	Legana	Illawong	Carramar
8/01/2014	0.3	0.6	0.8
15/01/2014	0.2	0.5	0.4
22/01/2014	0.2	0.5	0.5
30/01/2014	0.2	0.6	0.7
5/02/2014	0.15	0.6	3.2
12/02/2014	0.2	0.9	0.7
19/02/2014	0.3	0.5	0.9
26/02/2014	0.4	0.3	0.6
6/03/2014	0.3	0.6	0.7
12/03/2014	0.2	0.4	1.3
18/03/2014	0.6	0.9	23.4
26/03/2014	0.5	0.5	1.4
2/04/2014	0.3	0.6	2.1
9/04/2014	0.8	0.8	1.9
16/04/2014	0.8	0.6	2
24/04/2014	0.5	0.5	2
28/04/2014	0.6	0.7	1.4
7/05/2014	0.2	0.7	7.6
14/05/2014	0.5	0.5	2
23/05/2014	0.6	0.7	1.4
28/05/2014	0.2	0.5	1
4/06/2014	0.2	0.6	1
11/06/2014	0.1	0.3	1.1

Microcystis

Microcystis

12/12/2012	1.0	1.0	9.7
19/12/2012	1.1	1.4	9.9
27/12/2012	0.5	1.1	9.1

Date	Legana	Illawong	Carramar
2/01/2013	0.8	1.4	3.7
9/01/2013	0.4	0.9	7.0
16/01/2013	0.6	1.4	9.6
23/01/2013	0.2	1.4	4.8
30/01/2013	0.4	1.9	10.8
6/02/2013	0.3	1.4	3.8
13/02/2013	0.6	1.5	13.2
20/02/2013	0.4	1.7	1.8
25/02/2013	0.4	1.2	1.9
6/03/2013	0.3	2.0	18.0
13/03/2013	0.3	1.4	4.3
20/03/2013	0.4	2.4	2.8
28/03/2013	0.2	2.5	3.1
3/04/2013	0.3	2.8	1.8
10/04/2013	0.3	1.4	2.1
17/04/2013	0.2	2.0	0.8
23/04/2013	0.2	3.6	0.6
1/05/2013	0.3	3.0	0.3
8/05/2013	0.3	3.6	0.6
15/05/2013	0.4	2.4	0.4
22/05/2013	0.2	2.6	1.1
29/05/2013	0.1	3.7	0.3
5/06/2013	0.0	13.9	2.5
12/06/2013	0.0	15.4	2.5
19/06/2013	0.0	15.5	0.6
26/06/2013	0.1	14.6	0.3
3/07/2013	0.0	19.0	0.3
10/07/2013	0.0	19.8	0.2
17/07/2013	0.0	18.7	0.3
24/07/2013	0.0	2.4	0.2
1/08/2013	0.0	3.2	0.2
7/08/2013	0.0	2.1	0.2
14/08/2013	0.0	1.8	0.1
21/08/2013	0.0	2.2	0.1
28/08/2013	0.0	2.8	1.4
4/09/2013	0.1	2.5	0.4
11/09/2013	0.2	2.6	0.1
19/09/2013	0.0	3.1	0.0
29/09/2013	0.1	4.3	0.1
2/10/2013	0.1	4.6	0.2
9/10/2013	0.1	2.9	0.2
16/10/2013	0.1	1.1	0.2
23/10/2013	0.1	1.6	0.2
30/10/2013	0.1	0.8	0.1
6/11/2013	0.2	0.5	0.1

— Legana  
 — Illawong  
 — Carramar

Planktolyngbya

10.8 Planktolyngbya

13.2 Microcystis

18.0 Microcystis + Aphanizomenon ovalisporum



Date	Legana	Illawong	Carramar
3/01/2012	17.5	10.9	51.2
12/01/2012	12.4	8.4	12.3
17/01/2012	7.1	10.6	13.9
25/01/2012	8.9	8.7	10.9
2/02/2012	4.9	6.2	16.2
8/02/2012	2.3	4.1	14.3
16/02/2012	1.5	3.4	12.6
23/02/2012	1.5	1.5	17.5
28/02/2012	3.6	2.5	18.8
8/03/2012	3.5	3.3	19.4
15/03/2012	2.0	4.0	11.7
22/03/2012	3.1	6.0	16.1
28/03/2012	3.7	4.6	15.9
4/04/2012	3.8	9.6	21.0
11/04/2012	6.3	10.6	15.4
18/04/2012	9.8	15.3	24.1
23/04/2012	4.8	10.6	17.4
2/05/2012	6.2	11.6	27.8
9/05/2012	9.7	11.1	23.6
15/05/2012	7.0	10.2	18.3
23/05/2012	7.2	13.7	14.6
29/05/2012	12.5	16.3	25.6
7/06/2012	10.0	12.8	19.6
13/06/2012	1.8	8.2	20.8
20/06/2012	5.8	6.6	13.3
27/06/2012	3.5	7.4	10.5
4/07/2012	3.9	6.3	16.4
11/07/2012	2.0	8.7	14.4
18/07/2012	0.3	7.0	11.0
25/07/2012	0.5	5.5	12.2
3/08/2012	0.4	6.9	9.3
8/08/2012	0.1	7.2	3.3
15/08/2012	0.1	3.3	7.4
22/08/2012	0.0	4.0	8.6
29/08/2012	0.1	4.4	8.5
5/09/2012	0.1	4.9	8.8
12/09/2012	0.1	4.9	10.3
20/09/2012	0.1	11.3	11.7
26/09/2012	0.2	3.4	11.3
3/10/2012	0.1	3.9	8.3
10/10/2012	1.6	2.5	8.2
17/10/2012	0.4	2.1	7.0
24/10/2012	0.3	2.4	6.0
31/10/2012	0.3	1.9	4.3
7/11/2012	0.8	1.6	4.1
14/11/2012	1.8	2.7	7.6
19/11/2012	1.3	2.4	5.7
28/11/2012	0.8	1.7	9.6
5/12/2012	0.6	1.6	8.9



Date	Legana	Illawong	Carramar
4/01/2011	0.7	0.4	1
12/01/2011	0.2	0.6	0.7
17/01/2011	1	0.6	0.5
27/01/2011	4	4	1
1/02/2011	1	1	1.5
7/02/2011	1.5	1	1.5
16/02/2011	2	1	2
23/02/2011	2	1	3
1/03/2011	1.5	1	4
9/03/2011	1.4	1.1	0.1
16/03/2011	2.2	1.3	9.5
24/03/2011	3.7	1.5	4
29/03/2011	6.7	1.9	4.4
5/04/2011	4	1.4	5.4
12/04/2011	5.7	2.6	5.3
20/04/2011	7.6	2.6	4.4
28/04/2011	5.2	2.4	6.3
3/05/2011	5.8	3	4.6
12/05/2011	5.7	2.4	4.9
19/05/2011	4.4	2.7	3.3
25/05/2011	57.5	26.5	29
1/06/2011	25.8	16.4	17.3
15/06/2011	25.0	16.6	10.8
23/06/2011	14.0	11.0	12.9
27/06/2011	15.0	11.3	12.2
5/07/2011	13.9	13.7	13.5
12/07/2011	4.1	11.4	10.4
19/07/2011	13.9	13.0	11.3
26/07/2011	13.2	10.5	9.7
2/08/2011	12.1	9.3	16.3
8/08/2011	14.5	11.5	9.6
17/08/2011	9.9	7	9.9
23/08/2011	9.5	7.4	10.3
30/08/2011	7.5	7.4	11.5
6/09/2011	8.1	5.4	9.9
13/09/2011	15.3	11.7	14
20/09/2011	14.5	17.1	9.5
29/09/2011	7.9	7.6	11.2
5/10/2011	13.7	7.7	14.2
10/10/2011	17.3	11	16.6
18/10/2011	12.5	10.4	9.7
25/10/2011	9.1	9.6	10.6
3/11/2011	15.1	7.6	17
11/11/2011	17.1	8.2	14.2
15/11/2011	17.0	7.8	16.9
22/11/2011	15.0	9.0	14.8
1/12/2011	15.3	9.2	16.4
15/12/2011	12.7	9.8	14.8
20/12/2011	10.4	5.8	12.0
28/12/2011	28.0	15.4	71.4

— Legana  
 — Illawong  
 — Carramar

**New  
Assessment**

Date	Legana	Illawong	Carramar
5/01/2010	0.5	28	23
12/01/2010	2	20	23
21/01/2010	1	39	34
28/01/2010	1	46	36
2/02/2010	3	38	37
9/02/2010	2	51	17
16/02/2010	2	46	41
23/02/2010	3	61	26
2/03/2010	8	26	25
9/03/2010	6	24	19
16/03/2010	6	33	28
23/03/2010	5	28	27
31/03/2010	6	24	34
6/04/2010	9	26	28
13/04/2010	12	24	28
22/04/2010	10	22	29
27/04/2010	15	26	31
4/05/2010	11	33	29
11/05/2010	13	27	24
18/05/2010	12	44	24
25/05/2010	11	35	21
15/06/2010	11	28	20
22/06/2010	12	31	20
29/06/2010	13	23	21
6/07/2010	13	29	23
13/07/2010	19	21	16
20/07/2010	13	17	15
28/07/2010	7	19	15
3/08/2010	13	15	18
10/08/2010	12	10	13
16/08/2010	12	5	9
24/08/2010	12	3	10
31/08/2010	9	1	9
7/09/2010	5	1	3
16/09/2010	6	2	2
24/09/2010	6	1	2
28/09/2010	6	0.5	1
6/10/2010	6	0.1	0.3
12/10/2010	2.5	0.2	0.2
18/10/2010	8	0.5	1
27/10/2010	3	0.5	2
3/11/2010	1	0.2	0.3
11/11/2010	1	0.2	0.3
16/11/2010	1	0.2	0.2
24/11/2010	1	0.3	0.3
2/12/2010	0.6	0.3	1
8/12/2010	0.6	0.3	0.3
15/12/2010	0.5	0.6	0.3
22/12/2010	0.4	0.3	0.4
30/12/2010	0.5	0.5	0.6