12.5 Maylands Lakes Management Options

Officer: Director of Technical Services
Refer: Item 12.1.5: OCM 28.04.15

EXECUTIVE SUMMARY

Application:

For Council to receive the 'Lake Bungana, Lake Brearley and Brickworks Lake Management Options Report'.

Key Issues:

- Due to the observed decline in the water quality at the Maylands lakes over the last decade.
- A report which identifies the drivers of poor water quality and potential management options is now complete and for Council's consideration.
- Council consideration is requested in the most appropriate way to mitigate the water quality issues.

BACKGROUND

At the Ordinary Council Meeting of 28 April 2015, Council considered a report in relation to the decline in water quality and other issues at the Maylands Lakes (Brickworks, Lakes Bungana and Brearley).

The report was prompted by the poor water quality in the lakes and the associated community concern over the issue.

The major complaints received at the time were that the fountains had been turned off in response to the toxic algal bloom, algae scum and the jetty lights not working. At the meeting Council resolved as follows:

"That Council:

1. *Endorses Option 2 for the management of the Maylands lakes to undertake a 12 month water quality monitoring program.*
2. *Considers the allocation of $20,000 in the 2015/2016 budget to undertake a 12 month water quality monitoring program.*
3. *Notes that the City will advise residents who have previously written to the City of Council's resolution.*
4. *Considers the allocation of $37,500 on Council's 2015/16 budget for the Stage 1 installation of bollard lighting along the walkways at the Maylands Lakes."*

In accordance with the above resolution:

- Solar bollards have been installed at the lake;
- A 12 month water quality monitoring program has been completed; and
- A report in relation to proposed management options from consultant's Essential Environmental has been received.

April Community Meeting

In April 2016, Councillors held a community meeting at the Maylands Lakes in response to increased community concern regarding the poor water quality and other issues at the lakes. At the meeting, officers identified the need to complete the 12 month water quality monitoring program and management options report before they could provide recommendations on the best way forward for the lakes.

As a result of the community meeting an environmental community group was formed called the Friends of Maylands Lakes. City Officers have held approximately 5 further information meetings with their representatives to:

- Keep the group updated on the development of the report;
- Respond to recent animal deaths and algal blooms;
- Install 'socks' in the stormwater system to absorb oils; and
- Install additional infrastructure at the stormwater gullies to prevent turtles and ducklings getting trapped.

Council Workshop

Councillors were given a briefing to identify the key elements of the report and its management implications at the August Councillor Workshop. At the workshop councillor discussion supported holding a 'Community Information Session' to present the findings to the community.

City Webpage

Officers have posted on the City's webpage the following information:

- The April 2015 Council minutes;
- The consultant's report;
- The consultants PowerPoint presentation; and
- A questions & answers form.

Community Information Session

A community information session was held on Monday, 24 October 2016. The purpose of the session was not to consult on the options, but to inform the community of the findings of the management report. Approximately 50 people attended the session which included a presentation on the report by the consultant and a question and answer session.

As discussed at the community meeting and community workshop the existing design of the stormwater system does not meet contemporary water sensitive design management practices. The likely solutions will require retrofitting of the existing system which will require trade-offs to the existing lake 'look' and as such extensive community consultation will be required.

Without a thorough engagement process it is difficult to inform Council what level of support there is for implementing the various options in the report.

CONSULTATION

The consultation undertaken to date is detailed above.

ANALYSIS

On completion of the 12 month water quality monitoring program the report has indicated that:

- The Brickworks Lake nutrient concentrations were below water quality guidelines, and did not require any further actions to improve water quality.
- Nitrogen concentration was greater than water quality guidelines during most algal bloom events in Lake Bungana and Brearley.
- Phosphorous concentrations were lower than water quality guidelines during most algal bloom events in Lake Bungana and Brearley. The exception being that phosphorous levels were higher than water quality guidelines in the south western corner of Lake Brearley.

- Sources of nutrients causing the algal blooms include stormwater discharge and the lake sediment.
- Physical characteristics of Lake Bungana and Lake Brearley including hard-walls, lack of wetland vegetation, and unusual lake shape has led to lack of shade and poor mixing/circulation, which promotes conditions for algal blooms.

The report recommends that a coordinated approach using short term and long term solutions is required to address the poor water quality and algal blooms.

These include:

SHORT-TERM MANAGEMENT	LONG-TERM MANAGEMENT
• Revegetation program. • Physical removal of algae (if blooms still present at the end of 2016 winter period). • Installation of bat boxes. • Application of Phoslock (a clay that binds phosphorus). • Detailed design	• Dredging of Lake Bungana and Lake Brearley (including detailed bathymetric survey). • Installation of solar submersible pumps. • Modification of lake shape. • Community education. • Installation of floating wetlands.
Estimated Cost $300,000	**Estimated Cost $3M**

Further information has been asked by the community and Councillors on the certainty of the short term and long term recommendations and the following advice is provided:

1. *Risk* - It should be noted that unlike the construction of a road project where the majority of variables can be identified, there are a range of uncertainties with a living wetland system and as such, environmental projects carry a greater risk for final success. Additionally there is a competing balance between a community expectation to solve the problem now, and the ability to reduce risk through further extensive scientific investigation into the lake ecosystem. That being said, the report recommendations are consistent with contemporary practices in water sensitive urban design and the information that is available to date.

2. *Terminology* - The reference to 'short term' and 'long term' has been used to relate to essentially what can be implemented now (short term) and what requires further planning (long term). It is difficult to identify how long the short term actions may have an effect on the lakes. It is understood through discussion with the consultant that the short terms actions would reduce the overall algae count and the number of significant algal blooms over a year.

OPTIONS

Wetland management involves complex systems. The challenge of resolving the issues of the systems is compounded by the size and thus order of cost of any future potential works.

Key elements that will need to be considered in moving the project forward are:

- Community engagement - The more solutions that are implemented from the report, the better the water quality will be, equally some trade-offs that impact on residents amenity expectations may result and this process will need to be developed with the community.

- Further detailed design and costing - The report is at the concept stage and requires further information to be sought and detailed designs to be prepared.

- Funding options - The cost of these works is substantial. Identifying how the works would be paid for early in the development of the project is critical in developing a solutions pathway. Sources of funding could include municipal funds, grants, specified area rating and lobbying the State and Federal Government for a site specific allocation of funds. It should be noted that although not impossible, there is often limited opportunity to be successful for a grant to substantially fund these type and scale of works. It would however be proactive to have discussions with State and Federal Ministers and at this stage it would be normal practice to write to them requesting assistance in funding the major project.

- Considering opportunity cost - As identified in a number of Council items on emerging issues, there are a number of priority projects that have been identified by Council for consideration and implementation. By committing to undertake this project there will be an opportunity cost of reduced works in other environmental areas.

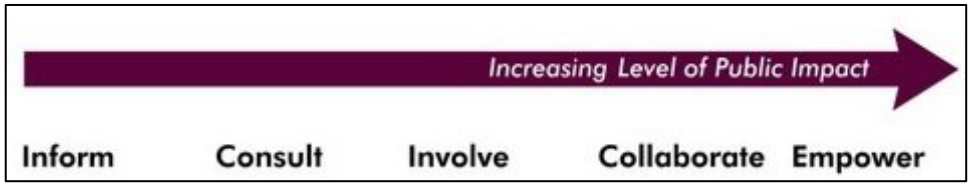
Four options have been identified by officers, to move the project forward including:

Option 1 - Detailed Design

Option 1 provides the most expeditious pathway to move forward from the report to a costed detailed design, and ultimately if funded rehabilitation works. The engagement process is proposed to be completed after the detailed design is developed and as such would be considered 'consult' as part of the IAP2 spectrum.

Figure 1.0 - Option 1 Process

Figure 2.0 - IAP2 Spectrum



Option 2 - Enquiry by Design

Option 2 would involve 'collaborate' with the community under the IAP2 spectrum, to move the project forward with a detailed design. A form of engagement similar to 'enquiry by design' could be used which would engage a consultant to develop a detailed design within existing funding, but additionally require Council to fund an additional facilitator.

Enquiry by design workshops are used to bring together stakeholders in one place to discuss, consider trade-offs and design for complex problems over multiple meetings. The basic process would include consultations tools to help the community identify the solutions which should be implemented based on what trade-offs they can and can't 'live with'. This would be considered best practice consultation, however would require additional funding and an additional 6 months to complete.

Figure 3.0 Option 2 Processes

Option 3 - Meet Formally with the Friends of Maylands Lakes

Hold a meeting with the Friends of Maylands Lakes and Council representatives to develop a way forward.

Option 4 - Wait to Complete the City's Integrated Planning Reviews (Strategic Community and Corporate Business Plans

Hold the project until its priority can be considered in the review of the Strategic Community Plan and Long Term Financial Plan.

The following options are available to Council:

OPTION		BENEFIT	RISK
1.	Detailed Design ***Estimated Cost:*** *$50,000*	• Most expeditious pathway to move the project forward.	• There is no clear direction on how the project will be resourced. • By not collaborating with the community there will likely be concerns with aspects of the solutions identified in the report.
2.	Enquiry by Design ***Estimated Cost:*** *$80,000*	• Best practice community consultation. • In the long term the solutions would have the greatest acceptance by the community.	• There is no clear direction on how the project will be resourced. • It is likely that further monies would be required to undertake the process. • Would take longer to complete.
3.	Meet with the Friends of Maylands Lakes (FOML) ***Estimated Cost:*** *Nil.*	• Collaborate with FOML on the best process forward to balance competing factors.	• There is no clear direction on how the project will be resourced. • May not meet the expectations of all community members.
4.	Wait to complete the City's Integrated Planning Review (Strategic Community and Corporate Business Plans) ***Estimated Cost:*** *Nil.*	• Would help to better understand the opportunity cost and funding implications to City priorities.	• Delay future on ground works. • Dissatisfaction from local community.

CONCLUSION

If the works in the report were progressed it would be the largest wetland project to be completed by the City and would require substantial officer time.

Limited informal feedback from the workshop has indicated a range of views in how the project should be progressed.

Option 2 would set a strong framework to achieve sustainable management options which are supported by the largest section of the community. This would require the allocation of additional resources and would delay implementation of the long term management options; however, it would demonstrate best practice community engagement as defined by the IAP2 spectrum. That being said, with so many competing issues for the lakes and a strongly grounded partnership with the local environmental community group, as a first stage officers recommend Option 3 to partner with FOML to develop a process to define the way forward.

FINANCIAL IMPLICATIONS

The following financial implications are applicable:

OPTION	2016/17 BUDGET ALLOCATION	2016/17 BUDGET RECONSIDER-ATION	PROPOSED 2017/18 BUDGET ALLOCATION	ONGOING COSTS (e.g. MAINTENANCE)	LIFE OF PROJECT'LIFE EXPECTANCY OF ASSET
1	$50,000	-	Short Term $300,000 Long Term $3M	These costs have not been defined, however, will be significant.	20 - 50 Years
2	$50,000	$30,000	Short Term $300,000 Long Term $3M	These costs have not been defined, however, will be significant.	20 - 50 Years
3	N/A	N/A	N/A	N/A	N/A
4	N/A	N/A	N/A	N/A	N/A

STRATEGIC LINK

In accordance with the City of Bayswater's Strategic Community Plan 2016-26, the following applies:

Theme: Our Natural Environment
Aspiration: We conserve and manage our natural environment, which makes the City of Bayswater a great place and we live in a sustainable way to protect our environment for future generations.
Outcome N1: Natural environment and biodiversity which is conserved and protected.

COUNCIL POLICY AND LEGISLATIVE IMPLICATIONS

Not applicable.

VOTING REQUIREMENTS

Simple Majority Required.

ATTACHMENTS

Not applicable.

COUNCIL RESOLUTION
(OFFICER'S RECOMMENDATION)

That Council:

1. **Receives the Lake Bungana, Lake Brearley and Brickworks Management Options Report.**
2. **Adopts Option 3 to meet with the Friends of Maylands Lakes to develop a way forward for the project.**
3. **Writes to the State and Federal Planning and Environment Ministers requesting financial support to implement the project.**

CR CATHERINE EHRHARDT MOVED, CR JOHN RIFICI SECONDED

CARRIED UNANIMOUSLY