

Submission on the Draft North Shore City Council Annual Plan 2008-2009

Submission from the Onepoto Lagoon Co-ordination Committee

Summary

The Onepoto Lagoon Co-ordination Committee (the Committee) is drawn from members of the boating clubs that use the lakes at the Onepoto Domain for boating purposes. The Committee is seeking confirmation that sufficient funding is available in the Annual Plan budget for 2008-2009 for the dredging of sediment from, and restoration of, the Onepoto Lagoon in the Onepoto Domain.

Background

Onepoto Domain Reserve Management Plan

The Onepoto Domain Reserve Management Plan 1997 (the Plan) describes the Onepoto Lagoon as two freshwater lakes designed to function as a settling ponds for stormwater which is collected through the three main drainage channels in the Domain. The lakes were designed to be 450mm deep. As drainage lakes they naturally accumulate sediment from stormwater (1.4.2).

Future use and environmental improvements for the Domain include ongoing regular management practices for the lakes which will include (2.1.1):

- Dredging out of the lakes
- Aeration of the lake water by operating the fountain on a regular basis
- Clearing of rubbish and lake weed

In terms of existing casual use, the Plan (2.1.2) provides for the continued use of the lakes by remote control boating hobbyists, namely the Whitbread 60 Remote Yacht Club (now renamed NZ Radio Yacht Squadron) and the Onepoto Electron Fleet. The Plan states the lakes will be maintained in a condition suitable for their pursuit, while the effects of the activity, especially noise will be carefully monitored.

Amongst the Management Objectives and Policies for the Domain are:

- 5.4.7 That dredging of the lakes be provided for and that disposal of dredgings on site be an option.
- 5.4.8 That the lakes be regularly cleared of weed and rubbish
- 5.4.10 That the lakes be de-silted regularly to maintain a minimum depth when full of 350mm approximately.
- 5.4.11 That the streams and cesspits within the basin be regularly cleared of weed and rubbish.

The Issues

The boating clubs that use the lakes on a regular basis include:

The NZ Radio Yacht Squadron
The Onepoto Electron Fleet
The Ancient Mariners Radio Control Group

The issues are as follows:

1. Sediment deposition

The lakes have accumulated considerable silt and decayed vegetation resulting in a 1-2 metre margin around the whole of the eastern side of the main sailing lake having a depth of 100-300mm only. Approximately 25% of the sailing lake has a depth less than 400mm and this means the yachts cannot approach the shallow area or will ground. The deepest part of the lake appears to be no more than 1.2 metres. This is shown in the attached map.

2. Weed Growth

All clubs have experienced difficulties over the past 2 years with excessive weed growth fouling the keels and rudders of their boats. This has made racing and organised events difficult. The club members themselves have undertaken flushing of the lakes with estuarine water which kills the weed. However, floating dead weed has proven another problem.

The pond is going through a cycle of intense weed and algal growth during warmer weather accelerated by the high sediment deposits. The pond is then flushed with estuarine water by opening the flood gates to kill the weed growth and maintain the pond suitable for sailing. This is followed by rapid decomposition of the dead weed resulting in low oxygen levels with hydrogen sulphide being emitted.

3. Aeration of the lakes

In an attempt to further understand the dynamics of the lakes, club members have also undertaken water quality monitoring of the lakes and one of the feeder streams for the past year under the Wai Care umbrella. The results can be viewed using the links below:

<http://www.waicare.org.nz/site/locations/onepoto-pond.aspx>

<http://www.waicare.org.nz/site/locations/eastern-stormwater-channel.aspx>

Investigations over the past year conclude that:

The lake bottom and entire margin has very fine black mud which is anoxic – producing hydrogen sulphide which bubbles up the fine mud on warm, still days. Frequent flushing of the lakes with salt water to kill the algal weed growth has been necessary to maintain the lakes for sailing. However, this contributes to the mud build up and anoxic conditions that produce a bad smell.

Water quality monitoring has shown that available oxygen levels fluctuate 40% to more than 100% saturation with an alarming low of only 20% recorded in February 2008. A level of 60% saturation is necessary to sustain fish life and most aquatic invertebrates requiring a level higher than 40%. The low oxygen levels indicate decomposition of organic matter is occurring, higher levels indicate active weed and algal growth.

It is understood that a new fountain has been commissioned and is soon to be installed, resolving this issue.

Decisions Sought

1. That funding be made available in the 2008-2009 Annual Plan budget for dredging of the bottom sediments, and restoration of the lakes at Onepoto Domain preferably before September when weed growth accelerates.

2. That funding be made available in the 2008-2009 Annual Plan budget for maintaining the lakes at Onepoto Domain with a minimum depth of 350mm with the water column clear of excessive weed growth.
3. That the lakes be properly aerated to maintain a minimum dissolved oxygen level of 60% oxygen saturation to ensure a healthy functioning system.

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