

10.4.2 PROPOSAL FOR A TRIAL SHARK BARRIER – COTTESLOE BEACH

File Ref: SUB/1770
Attachments: [Confidential Proposal Bionic Barrier](#)
[Confidential Proposal Eco Shark Barrier](#)
[The West Australian Article SLSWA 7 October 2014](#)
Responsible Officer: Carl Askew
Chief Executive Officer
Author: Carl Askew
Chief Executive Officer
Proposed Meeting Date: 21 October 2014
Author Disclosure of Interest: Nil

SUMMARY

This report responds to recent proposals received by the Town in relation to shark barriers on Cottesloe beach and recommends that Council consider the temporary installation of such a barrier, subject to a range of approvals and conditions as outlined in this report.

BACKGROUND

Following an increased incidence of fatal shark attacks along the West Australian coastline during 2013/14 the State Government committed funds to research and trial various shark hazard mitigation treatments. The State Government Department of Commerce (which houses the office of the Chief Scientist) sought Expressions of Interest (EOI) from Local Governments for grant funding of up to \$150,000 to trial a beach enclosure to protect swimmers from risk of shark encounters. The City of Cockburn submitted an EOI and was shortlisted, however was unsuccessful in securing the funds on account of the form of barrier the City proposed (the Eco Shark Barrier) not being consistent with the product that the State Government wanted to trial. The City of Busselton was subsequently successful in securing a grant to trial a net at Dunsborough.

As a means of testing their product, the proponents of the Eco Shark Barrier sought support from the City of Cockburn to trial their barrier at Coogee Beach over the 2013/14 summer at no cost to Council. After a rigorous consultation, application and approval process through a number of State Government agencies the barrier was finally installed in December 2013 and removed on 26 April 2014. Eco Shark Barrier Pty Ltd (ESB) subsequently offered Council an opportunity to purchase or lease the Barrier on an ongoing basis. Based upon the success of the trial Cockburn Council subsequently resolved to commence negotiations with ESB and the State Government to continue the trial for a three year period from September 2014 to September 2017.

According to the officer report to Cockburn Council “*by all measures contemplated, the barrier trial is considered to have been a success*” and a number of “success measures” were reported, including;

- No Personal Injuries
- No Marine Animal Entrapment or Other Marine Creature Harm

- Barrier Resilience to Sea Conditions
- Beach or Seabed Sand Accretion or Erosion
- Seaweed or Flotsam Build-up
- Boat or Other Watercraft Issues or Incidents
- Beachgoer Acceptance
- Ancillary Popularity Issues
- Council Costs
- Reduced Risk of Shark Encounters

STRATEGIC IMPLICATIONS

Nil

POLICY IMPLICATIONS

Beach Policy

STATUTORY ENVIRONMENT

Local Government Act 1995 - Section 3.18 (3)

FINANCIAL IMPLICATIONS

If the recommendation is successful a \$110,000 allocation will be required in the 2014/15 financial year budget. ESB have provided the Town with priced proposals for both the purchase and/or lease of the Eco Shark Barrier, with or without an ongoing maintenance component.

STAFFING IMPLICATIONS

There will be some staff time required to work with ESB to obtain the necessary approvals for the trial as well as reporting and monitoring on the installation and operation of the barrier.

SUSTAINABILITY IMPLICATIONS

The sustainability implications are unknown at this stage. The impact on sustainability will be monitored during the trial period and reported back to Council.

CONSULTATION

Presentations to Elected Members during September 2014.

STAFF COMMENT

The Eco Shark Barrier installed at Coogee Beach was comprised of "clip together" uPVC star segments hung between a continuous uPVC float line on the water surface and a continuous anchored line running along the sea bed. This was secured to anchor pylons and the barrier formed an enclosure approximately 300 metres long by 75 metres wide parallel to the beach.

In relation to Cottesloe attachment two shows the proposed location for the placement of the barrier at Cottesloe Beach, including the requirement for some securing at both the end of the groyne and beach. As a condition of any trial, ESB will be required to provide monthly reports on how the barrier performs.

Issues for Consideration

1. Approvals

For the barrier trial to take place ESB and/or the Town will be required to obtain approvals from:

- (i) The Department of Lands (in the form of a license to use Crown Land and meet the requirements of the Aboriginal Heritage Act);
- (ii) The Department of Planning; and
- (iii) The Department of Transport, in the form of a license for the structure in the marine environment.
- (iv) The Department of the Environment

Given the success of the trial at Coogee and recent decisions by the State Government in relation to “drum lines” it is hoped that the approvals should not be overly difficult to acquire.

2. Lease or Purchase, Maintenance & Inspection Costs

As noted from the presentations to Council there is some interest in this product and, based upon the State Government’s latest position, there may be some increased market demand for the Eco Shark Barrier or similar product, and it is reasonable to assume that other manufacturers will look at competing. This will likely impact on price.

For the purchase option, any necessary maintenance would be at the Town’s cost. Separate to maintenance is routine inspection of the barrier and most especially after storm events to ensure no marine animals or large quantities of seaweed or flotsam are caught in it. A maintenance and inspection schedule would need to be developed but it is felt such inspections would likely need to be an average of around once per week via boat or snorkeler. An initial budget allocation for maintenance and inspection associated with the purchase option would be recommended and/or negotiated with ESB as part of any lease arrangement. This cost would be reviewed once installation and specific inspection regimes and resource needs are established.

3. Future Replacement

The likely life of the various barrier elements is unknown at this time, it being a prototype design. The proponents have suggested between 5 and 10 years and it is probable that ESB will look to improve upon aspects of the product for new and existing installations, as is the case for the Town as the proposed barrier has been improved from the version trialled at Coogee. Any pylon and/or anchorage elements themselves can be expected to have a very long life before needing replacement.

4. Erosion or Sedimentation

The trial barrier at Coogee has not been in place for long enough to fully establish whether erosion or sedimentation of the beach or sea bed may become a problem and necessitate additional expenditure to address. This will be the case regardless of a purchase or lease option being taken up.

State Government's Shark Hazard Response Initiatives

Whilst the State Government via the Department of Commerce and Department of the Premier and Cabinet was not prepared to contribute funding toward the trial of the Eco Shark Barrier at Coogee Beach they are interested in the outcomes of the trial, including a comparison with the Uni Net Barrier trialled at Dunsborough. Clearly beach enclosures are one of the options to provide a protected swimming environment and it can be expected that there will be continued State Government interest in barrier installations at locations around the West Australian coast, especially given the latest determination in relation to drum lines. Whether this will translate into support funding is not known but should be explored.

Provided Amenity & Community Response

There is no doubt that the Eco Shark Barrier has been a popular inclusion to Coogee Beach. It has provided the opportunity for a safe secure swimming experience in the ocean for those persons that would be otherwise pensive or fearful of entering the water on account of concern about sharks. Comments provided by their community survey suggest that people have taken up swimming in the ocean again or are enjoying the experience of swimming in the ocean much more so since the barrier was established. Feedback via the survey and anecdotally also suggests that people are travelling considerable distances to Coogee, as compared to closer beaches, on account of the Eco Shark Barrier being installed there. Similarly swimming lessons and families with young children are seen to be taking advantage of the barrier whereas they would not have utilised this beach prior.

The presence of a beach enclosure does provide increased amenity for the users in much the same way as a jetty, groyne, beach pool or pontoon. Whether this should justify installing a barrier for future use is a matter for Council to consider. The Eco Shark Barrier trial at Coogee Beach was considered successful from the City of Cockburn's perspective and it appears to be widely accepted by beach users and anecdotally, it is giving everyone an opportunity to embrace the ocean environment without fear. Whilst its impact on shark behaviour is still relatively unknown, it does provide social advantage, at least in an environment such as Coogee Beach and potentially other metropolitan beaches.

The social advantage that the barrier offers should not be left to the Town to provide or fund on its own. The State Government has accepted its role in trying to address the social impacts of sharks by funding products to help mitigate shark attacks. It is not unreasonable to expect the Government to contribute to the purchase and/or installation of such a product. Officers have therefore recommended that Council seek matching financial support from the State Government. It is not yet known whether the State Government will agree to co-fund the proposed trial.

At this point in time the barrier is still relatively untested, having only been installed at one relatively calm beach area for one season. Whilst the social benefits have been highlighted, further work needs to be done to prove the product in different weather conditions. A three year trial period is recommended and officers are recommending to enter into negotiations with ESB and the State Government to support the trial of the eco shark barrier for a three year period.

To streamline the approval process, officers are recommending that the Town lease the area of coastline bounded by the trial and, with ESB, also seek the necessary approvals for installation of the barrier. The various State Government agencies may be somewhat reluctant to enter into long term agreements with a private entity and would be more willing to support the trial if the Town leases the area.

Options

The options available to the Town going forward in respect to the Eco Shark Barrier are as listed below:

1. Not install the barrier (i.e. no purchase or lease) and allow the State Government to determine its position or proposal for a similar style of net/barrier.
2. The Town purchases the barrier in its entirety and the barrier is installed as soon as all approvals are obtained as per the attached quotation noting that maintenance of the barrier (if required) would be at an extra cost to the Town. Removal of the barrier over subsequent winter periods would be at the cost of the Town.
3. The Town leases the barrier from ESB as per the quotation received for a period of three years, inclusive of installation, inspection and maintenance. An annual clean would incur an extra cost of \$20,000 and periodic inspections potentially another \$10,000 per annum. The barrier is not to be left in over the winter period and would be removed and stored by ESB at their cost.

VOTING

Absolute Majority

COMMITTEE DISCUSSION

Committee discussed the design and operational aspects of the trial shark barrier. The Manager Corporate and Community Services reminded Committee that the design has not been finalised and there are still is still much work to do before a shark barrier is trialled.

Committee debated the level financial support the State Government should contribute to the trial. Cr Pyvis was of the view that the State Government should cover the cost for the trial, however, Cr Jeanes expressed concern that the Town would then be unable to have a say in how the trial was run. Committee concluded to finalise the request to the State Government for a financial contribution at a later date.

OFFICER RECOMMENDATION

Moved Cr Burke, seconded Cr Jeanes

THAT Council, by absolute majority:

1. Note the officer report;
2. Seek financial support from the State Government on a dollar for dollar basis up to a maximum of \$50,000 per annum;

3. Seek approval from the Department of Lands to lease the area bounded by the Eco Shark Barrier for a three (3) year period during the trial;
4. Subject to points (2) and (3) above, approve a three (3) year trial of the Eco Shark Barrier at Cottesloe beach on the basis of the barrier being installed each summer season (1 November to 31 March) and removed each winter, and provided the following conditions are met:
 - a) Eco Shark Barrier Pty Ltd are to;
 - i) In partnership with the Town, consult with Surf Life Saving WA and Cottesloe Surf Life Saving Club in relation to the proposed location and operation of the barrier;
 - ii) Provide certification of the Eco Shark Barrier by an appropriately qualified engineer;
 - iii) Gain and comply with all required approvals from the necessary government agencies, including Department of Lands, Department of Planning and Department of Transport;
 - iv) Ensure that they have public liability insurance to the value of \$20,000,000 for the duration of the trial;
 - v) Retain responsibility for installation, management, insurance, cleaning and monitoring of the barrier for the entire period of the trial;
 - vi) Install, monitor, maintain and remove the structure at their own cost;
 - vii) Provide monthly reports to the Town in relation to the structure which is to include details on public issues including safety, maintenance issues, costs and marine wildlife captures;
 - viii) Monitor and report on erosion or sedimentation of the beach or sea bed;
 - ix) Give a commitment to remove the structure early should it not withstand ocean conditions or have any adverse impacts on beach users; and
 - x) At the end of the trial Eco Shark Barrier Pty Ltd will remove the Barrier and all associated elements including any pylons and/or anchor assemblies unless alternative arrangements have been made with the Town.
5. Amend the budget for the year ended 30 June 2015 to include an allocation of \$110,000 for the installation, removal and maintenance of a shark barrier at Cottesloe Beach.

AMENDMENT

Moved Cr Jeanes, seconded Cr Burke

That the words "*on a dollar for dollar basis up to a maximum of \$50,000 per annum*" be removed from point two.

Carried 5/0

COMMITTEE RECOMMENDATION

Moved Cr Rowell, seconded Cr Birnbrauer

THAT Council, by absolute majority:

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4. Subject to points (2) and (3) above, approve a three (3) year trial of the Eco Shark Barrier at Cottesloe beach on the basis of the barrier being installed each summer season (1 November to 31 March) and removed each winter, and provided the following conditions are met:

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- iii. Gain and comply with all required approvals from the necessary government agencies, including Department of Lands, Department of Planning and Department of Transport;
- iv. Ensure that they have public liability insurance to the value of \$20,000,000 for the duration of the trial;
- v. Retain responsibility for installation, management, insurance, cleaning and monitoring of the barrier for the entire period of the trial;
- vi. Install, monitor, maintain and remove the structure at their own cost;
- vii. Provide monthly reports to the Town in relation to the structure which is to include details on public issues including safety, maintenance issues, costs and marine wildlife captures;
- viii. Monitor and report on erosion or sedimentation of the beach or sea bed;

- ix. Give a commitment to remove the structure early should it not withstand ocean conditions or have any adverse impacts on beach users; and
 - x. At the end of the trial Eco Shark Barrier Pty Ltd will remove the Barrier and all associated elements including any pylons and/or anchor assemblies unless alternative arrangements have been made with the Town.
5. Amend the budget for the year ended 30 June 2015 to include an allocation of \$110,000 for the installation, removal and maintenance of a shark barrier at Cottesloe Beach.

AMENDMENT

Moved Mayor Dawkins, seconded Cr Burke

That in item 5 of the recommendation the amount “\$110,000” be increased to “\$130,000”.

Carried 8/1

AMENDMENT

Moved Cr Walsh, seconded Cr Pyvis

That in item 2 of the recommendation the words ”and obtain” be added after the word “seek”.

Carried 9/0

COUNCIL RESOLUTION

THAT Council, by absolute majority:

1. **Note the officer report;**
2. **Seek and obtain financial support from the State Government;**
3. **Seek approval from the Department of Lands to lease the area bounded by the Eco Shark Barrier for a three (3) year period during the trial;**
4. **Subject to points (2) and (3) above, approve a three (3) year trial of the Eco Shark Barrier at Cottesloe beach on the basis of the barrier being installed each summer season (1 November to 31 March) and removed each winter, and provided the following conditions are met:**

Eco Shark Barrier Pty Ltd are to;

- i. **In partnership with the Town, consult with Surf Life Saving WA and Cottesloe Surf Life Saving Club in relation to the proposed location and operation of the barrier;**
- ii. **Provide certification of the Eco Shark Barrier by an appropriately qualified engineer;**

- iii. Gain and comply with all required approvals from the necessary government agencies, including Department of Lands, Department of Planning and Department of Transport;
 - iv. Ensure that they have public liability insurance to the value of \$20,000,000 for the duration of the trial;
 - v. Retain responsibility for installation, management, insurance, cleaning and monitoring of the barrier for the entire period of the trial;
 - vi. Install, monitor, maintain and remove the structure at their own cost;
 - vii. Provide monthly reports to the Town in relation to the structure which is to include details on public issues including safety, maintenance issues, costs and marine wildlife captures;
 - viii. Monitor and report on erosion or sedimentation of the beach or sea bed;
 - ix. Give a commitment to remove the structure early should it not withstand ocean conditions or have any adverse impacts on beach users; and
 - x. At the end of the trial Eco Shark Barrier Pty Ltd will remove the Barrier and all associated elements including any pylons and/or anchor assemblies unless alternative arrangements have been made with the Town.
5. Amend the budget for the year ended 30 June 2015 to include an allocation of \$130,000 for the installation, removal and maintenance of a shark barrier at Cottesloe Beach.

THE AMENDED SUBSTANTIVE MOTION WAS PUT

Carried 9/0