

Sydney Dive Wreck

BUSINESS CASE

Gordons Bay Scuba Diving Club Inc. (GBSDC)

Version 9 1st February 2019

Key Proposal Details

Proposal name	A Dive Wreck for Sydney
Lead proponent (e.g. Council)	Gordons Bay Scuba Diving Club (GBSDC Inc.)
Lead proponent ABN	Y210124
Proposal partners	<i>Australian Government, NSW Government</i>
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Proposal Scope

This is a proposal to give Sydney a dive wreck by sinking an ex-navy ship in recreational dive depths off the Sydney coast funded by the NSW Government. This proposal forecasts revenue over five years of \$12.4M (low) and \$48.6M (high) at a one off cost of \$6M-\$10M- a cost benefit ratio of between 2.1 and 4.8 (Appendix 1). This supports the strategic imperatives of the NSW Government and the Department of Industry (2.3). The dive wreck has the potential for over 100 years (Gabriel et al. 2000) of useful life with very low post sinking costs and apart from the economic benefit the dive wreck will provide recreational, research and environmental benefits for generations to come. The GBSDC Inc. has consulted widely with the community (2.5) and a petition may be tabled in the Legislative Assembly with over 10,500 signatures asking the Government to make the necessary funds available for a Sydney Dive Wreck.

Proposal Location

Proposal address	<i>4 kilometres S.S.E from Coogee Beach NSW</i>
Local government area	<i>Randwick City Council</i>
NSW electorate	<i>Coogee NSW</i>
Federal electorate	<i>Kingsford Smith NSW</i>

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Acknowledgements

Member for Coogee: Bruce Notley-Smith, *Coogee MP’s officers,* Will Peters. *Dive Industry Representatives:* PADI – Danny Dwyer, Dive Industry Association of Australia, Richard Nicholls, Dive Centre Bondi, Duncan Paterson, Pro Dive Australia, Russell de Groot, and Rod de Groot. *Community Representatives* Lynda Newman Randwick Tourism, Bernadette Summers Coogee Chamber of Commerce, *Environmental Engineering:* Ed Rowe, Maritime & Coastal. Arup, *Independent Environmental and Marine Science advisors:* Professor Iain Suthers, UNSW Professor William Gladstone UTS. *Sydney Marine Park:* Sharnie Connell *GBSDC Representatives* President Sam Baxter, Founder- John Rowe, Marine Scientist

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1. Executive Summary

1.1 This is a proposal to give Sydney a dive wreck from a decommissioned navy ship off the Sydney coast as an artificial reef wreck. There are 22 Royal Australian Navy Ship scheduled for decommissioning in the coming years.

1.2 For the purposes of this proposal, the literature defines an artificial reef as a vessel that is sunk intentionally as a recreational resource including for diving, fishing, surfing, marine engineering, environmental restoration, or disposal. A shipwreck is a vessel that sunk as the result of an accident or misadventure (Edney & Spennemann 2014). However, as this proposal is mainly for diving we will use the term dive wreck.

1.3 Worldwide, since 1984 over 130 ships and planes (Appendix 8) have been sunk as dive wrecks. In Australia 7 ex-navy, ships have been sunk as dive wrecks with an estimated economic impact of \$30M per annum (MauraBedlocCommunications 2016). Dive wrecks bring in millions of dollars to the economy and greatly assist biodiversity by acting as artificial reefs for fish and marine life. This proposal forecasts a low economic impact over five years of \$12.4M and a high of \$48.6M at a one off cost of between \$6M-\$10M-a cost benefit ratio of between 2.1 and 4.8 (Appendix 1).

1.4 The proposed dive wreck site at Coogee is 4km off the coastline, and there will be no visibility of the wreck from the beach, preserving the natural beauty and amenity of the area.

A properly managed dive wreck has the potential for over 100 years of useful life (Gabriel et al. 2000), and will provide recreational activity and economic benefits for generations to come (Appendix 1a).

1.5 A Sydney dive wreck will be a great asset to Sydney's eastern beaches and to the one million Australians who take part in diving and snorkeling every year (Appendix 6). Not only will it appeal to the Australian market (Appendix 1a), its' potential as an international diving attraction, for diving on ex-Navy ships is significant. We see a significant difference between attracting interstate and international divers to a location such as Avoca Beach for the ex-HMAS Adelaide, and a Sydney Dive Wreck. The Sydney tourist market is 24 times as large as the Central Coast market. Sydney is a major tourist hub, with a wide range of existing attractions (LGA Randwick) and over 31.5M overnight visitors in 2015 (Appendix 2a). Of these 2.9M were international. This compares to only 1.3M overnights to the Central Coast for the same period with just 41000 of those being international. Growth figures from Destination NSW (DNSW) confirm the difference where Sydney is recording over 9% annual growth in visitor expenditure. DNSW has also identified a significant China market where one in ten went scuba diving during their trip to Australia. 536,000 visited NSW in 2015 (UTS: ACIR).

1.6 The community overwhelmingly supports the proposal (See 2.1 & 2.5 Appendix 11). The Hon Bruce Notley-Smith MP for Coogee has a petition of over 10,500 signatures for the NSW Parliament. The dive wreck enjoys bipartisan support from both the leader of the opposition, Michael Daley and Marjorie O’Neill the ALP candidate for Coogee. The project aligns with the NSW Government’s strategy in, sports and recreation, business activity, tourism, and the goals of sustaining conditions for economic development, increase jobs and investment in NSW and an active recreation sector (Government 2018a).

2. Case for Change

2.1 Background

The [creation](#) of a dive wreck by scuttling an ex-[Navy](#) ship provides four key benefits to NSW:

- a) [Economic](#) – Provides a strong return on the investment with a payback period within 1-3 years.
- b) [Recreational](#) – Provides additional recreational opportunities for NSW residents and visitors by creating a new SCUBA diving site.
- c) [Research](#) – Provides a new site at which marine research [site](#) can be conducted
- d) [Environmental](#) – [Increases](#) the overall biomass of marine life in the area where the [dive](#) wreck is located, and in surrounding areas.

Additional details on these benefits are provided throughout this document.

The Gordons Bay Scuba Diving Club Inc. (GBSDC) is an incorporated not for profit association founded in 1993 which maintains the underwater nature trail (public reserve #1986/75) in Gordons Bay between Clovelly and Coogee beaches NSW. Maintenance of the trail, which is ongoing, has involved over 5000 community service hours-1200 scuba divers, and 602 dives. The club is a community service award winner (PADI & Sydney Morning Herald) and supports marine science research projects. The club since 2005 has been advocating for a dive wreck for Sydney.

To further explore community response and service delivery the Sydney Dive Wreck Organizing Committee (SDWOC) was set up by the MP for Coogee the Hon Mr. Bruce Notley-Smith in mid-2015.

SDWOC Members

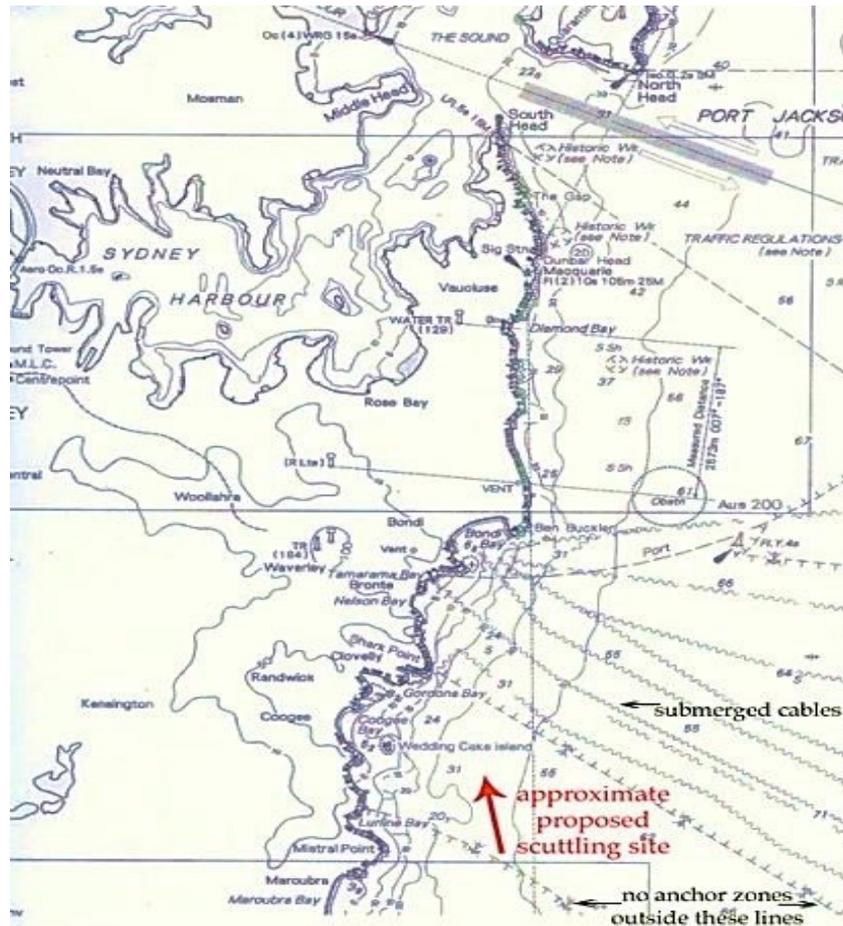
- Chair – Bruce Notley-Smith , Member for Coogee
- Will Peters, Coogee MP’s officers.
- Dive Industry Representatives
 - PADI – Danny Dwyer
 - Dive Industry Association of Australia – Richard Nicholls
 - Dive Centre Bondi – Duncan Paterson
 - Pro Dive Australia – Russell de Groot
- Community Representatives
 - Lynda Newman - Randwick Tourism
 - Bernadette Summers Coogee Chamber of Commerce

- BJ Hatton Randwick Chamber of Commerce
 - Sharnie Connell Sydney Marine Park
- Environmental Engineering
 - Ed Rowe Arup, Maritime & Coastal.
- Independent Environmental and Marine Science advisors
 - Professor Iain Suthers, UNSW
 - Professor William Gladstone UTS
- GBSDC Representatives
 - President – Sam Baxter, Founder- John Rowe, Marine Scientist

2.1.1 The proposal is based on the Federal Government gifting an ex-Navy Ship and the NSW government fully funding the sinking and ongoing maintenance and management of the dive wreck in a manner similar to the ex-HMAS Adelaide. The Federal Government has already made two ships available in the past eighteen months, the ex HMAS Sydney, which was scrapped in Fremantle at a cost of \$2.75M and the ex HMAS Tobruk was sunk in 2018 as a dive wreck off Bundaberg QLD by the QLD State government at a cost of \$10M (www.abc.net.au/news/2018-10-13).

2.1.2 The dive wreck is predicated on a complete ban of recreational and commercial fishing in the immediate area of 350m x 250m similar to the ex HMAS Adelaide (DPI 2010).

Figure 2.1 Proposed location of dive wreck (Australian 2001)



2.1.2 Current Use

Very little scuba diving activity occurs at the proposed location because of the sandy bottom (Appendix 5). However, a sandy bottom is perfect site to sink a dive wreck. Additionally, the site is adjacent to excellent diving at Wedding Cake Island, the Magic Point Grey Nurse Sanctuary, and Shark Point Clovelly NSW. A dive wreck would only enhance the diving in the immediate vicinity. Currently the Sydney coastline does not have a dive wreck and this proposal is seen as a companion to the dive wreck, the ex HMAS Adelaide (1V) sunk off Avoca Beach NSW in 2011.

2.2 Rationale for Investment

2.2.1 Environmental Rationale

In summary:

- Functions as a new habitat for a multitude of fish and invertebrate species.
- Creates effective marine habitats on what is otherwise a soft-bottomed featureless environment (Appendix 5).
- Alters the connectivity patterns between natural reefs in a positive way.
- Provide corridors so smaller fish can safely move from one reef to another.
- Conserves pre-existing habitats as well as form new habitats of complex ecological systems.

In detail:

Many studies have demonstrated higher fish densities, biomass, and diversity on artificial reefs than natural habitats (Diamant et al. 1986, Bohnsack 1991, Bohnsack et al. 1994, Wilhelmsson et al. 1998, Clark & Edwards 1999, Rilov & Benayahu 2000, Arena et al. 2007, Burt et al. 2009). In contrast to Rilov and Benayahu (2000) and Arena et al. (2007) observed greater species richness on concrete pillars and shipwrecks, respectively. Fishing on dive reefs can rapidly reduce target fish populations and drastically decrease the value of a dive for tourism (Brock 1994). Artificial reefs are good for fishing and divers but bad for fish (Arena 2013). In line with this, Arena *et al.* (2007) suggested that the high vertical relief of four vessel reefs studied might have accounted for increased settlement of juvenile fishes leading to greater fish abundance and species richness recorded. Of interest, Granneman and Steele (2014) found total fish tissue production tended to be greater on artificial reefs than natural reefs, with a positive correlation occurring between tissue production and the abundance of large boulders that were more numerous on artificial reefs. Some authors note however, that given sufficient time and similar structural features, differences in benthic community structure can become almost indistinguishable. Three authors and colleagues studied seven shipwrecks of differing ages (20 to 100 years old) and observed increasing age of the artificial reef influenced its degree of similarity to its adjacent natural reef (Aseltine-Neilson *et al.* 1999, Perkol-Finkel *et al.* 2006, Thanner *et al.* 2006). This was most evident with stony coral cover. Moreover, Perkol-Finkel *et al.* (2006) noted a similar benthic community structure on a 119-year old shipwreck to that of a neighboring natural reef. In contrast, only a handful of studies report less fish biomass and abundance on artificial reefs (Lindenberg 1973, Carr & Hixon 1997, Thanner et al. 2006, Simon *et al.* 2013). Although this has frequently been treated as a dichotomic problem, attraction and production (Pickering & Whitmarsh 1997). These two hypothesis are only the extremes of a gradient that can change within and among species depending on the availability of natural reefs, mechanisms of natural population limitation, fishery exploitation pressure, and life history dependence on reefs and species specific and age-specific behavioral characteristics (Simon *et al.* 2013).

2.2.2 Economic rationale

Ocean-going ships have an average life cycle of approximately 28-35 years. At the end of their lifespan, they are scrapped mainly for their recyclable steel (Glisson & Sink 2006). However, it is this proposals recommendation that a dive wreck is much more sensible, sustainable and economically viable option for the state of NSW than any other option.

Consider the following:

The ex HMAS Sydney (IV) in 2017 cost the Australian federal government over \$2.75M to tow and scrap in Fremantle WA after the NSW Government rejected the offer to create her as a dive wreck (Anon). A dive wreck has a useful life of up to 100 years or more (Gabriel 2004). The economic and community benefits of a dive wreck for the NSW Community far outweigh the scrapping option. Our proposal estimates a revenue over a 5-year period from \$12.5M - \$48M (Appendix 1). However, there is no reason to conclude that this dive wreck proposal will not continue to earn income for the NSW Community for the next 100 years or more which is a far more sustainable option for a decommissioned ship than scrapping. Marine tourism and recreation activity is a rapidly increasing phenomenon (Orams 2002). Large and charismatic animals and dive wrecks sustain nature based tourism markets (Gallagher & Hammerschlag 2011) . For example, the SS *Yongala* a ship wrecked off Townsville QLD in 1911 and in 2017, SS *Yongala* is today one of the greatest attractions for dive tourists from all over the world (Cafiero 1992). Wood, (Wood 2012) rates the *Yongala* in the top ten best dive shipwrecks in the world. More than 10,000 divers visit the wreck every year. At 110 meters long, she is one of the largest, most intact historic shipwrecks and has survived for 110 years (Wikipedia 2016).

- The ex HMAS Tobruk was sunk as a dive wreck off the waters of the Bundaberg and Fraser Coasts on 28 June 2018 (ABC 2018). The HMAS Darwin was decommissioned in December 2017. The Break O 'Day Council Skeleton Bay TAS has submitted a proposal for the Darwin (MauraBedlocCommunications 2016) which the Tasmanian government has declined to support (Mercury 2018).

The ex- HMAS Adelaide has set the gold standard of how to prepare and sink a dive wreck in an environmentally sustainable way.

- The proposed site is offshore from Coogee and is some 4 kilometers from Coogee beach.
 - The site satisfies all of the criteria for a dive wreck site (Appendix 5).

- A dive wreck would provide a significant boost to tourism in eastern Sydney and NSW. The project will generate from \$1.9M to \$3.9M per annum in diving revenue. Tourism spend is estimated to be an additional \$1.5-\$6.9M for a total per annum revenue estimate of between \$3.4-\$10.8M (Appendix 1) at an estimated one off cost of some \$6.5M (Appendix 7 McMahon Services 2011). Other estimates put the cost as high as \$10M (Johnston 2013). The sale of scrap of some 5200 tonnes from the ex HMAS Adelaide of aluminum brass, copper, lead and steel was estimated to be \$1.4M at current prices (Parker 2016). A dive wreck will provide substantial more revenue than the sale of an ex-Navy ship for scrap plus there are no scrapping costs with a dive wreck which were \$2.1M on the ex HMAS Sydney (1V) and the scrappers received the full value of the scrap sale not the tax paying public.

In NSW the scuba dive market is valued at \$300M (Nicholls 2014). Nationally it is valued at \$1B from international visitors and \$547M from Australian divers (Worley Parsons 2009). Beaver and Kelly (2015) value the market at \$2.2B made up of club divers \$125M, domestic tourists, \$406M, international tourists at \$1.7B. In NSW they value the dive related spend at \$513M in 2015. Nationally nearly 1M Australians participate in diving and snorkeling each year (Appendix 6). Therefore, a strong case can be made for the money resource to fund the project (Appendix 7).

This proposal forecasts revenue over five years of \$12.4M (low) and \$48.6M (high) at a one off cost of \$6M-\$10M-a cost benefit ratio of between 2.1 and 4.8 (Appendix 1).

A dive wreck site in Sydney would diversify dive offerings and create a more attractive destination for this market. Other studies have shown that specialist dive offerings do not flow solely to the industry but are also spread across the region where it is hosted: Shark divers in Australia from March 2013-June 2014 in Australia contributed \$25.5M (Huveneers 2017). Dicken *et al.* (2014) calculated that from July 2011- July 2012 in Sodwana Bay, South Africa, divers spent \$7.2M. Du Preez *et al.* (2012) in the Aliwal Shoal, South Africa, calculated that the per capita spend on tiger shark diving was \$198. In Fiji, shark diving contributed \$55.5M to the Fijian economy (Vianna *et al.* 2011). Catlin *et al.* (2009) demonstrated that whale shark divers in 2006 spent \$894 per trip.

2.2.3 Research rationale

- The Sydney Institute of Marine Science (SIMS) may undertake research projects on a dive wreck.
- Acoustic receivers can be placed on the dive wreck to monitor for any tagged fish and sharks.
- The dive wreck may attract large crustaceans (Howard 1980) and is a potential research project (Spanier *et al.* 2011) on the Sydney Rock Lobster (*Sagmariasus verreauxi*). The installation of passive collectors and concrete housings (Jensen *et al.* 2012) for spiny lobster, post larval puerulus in the dive wreck prior to sinking may supplement natural habitats to increase survival rates of post larvae by increasing the availability of settlement sites (Spanier *et al.* 2011).

2.2.4 Community rationale

- Great dive site for Scuba Divers. (Kirkbride-Smith 2014) summarizes the research on diving on both dive wrecks (DR) and Natural Reefs (NR) which reinforces our view that scuba divers needs and expectations are been met by our proposed dive wreck i.e. large naval vessel in a preferred depth range (Milon 1989, Ditton *et al.* 2002, Stolk *et al.* 2005, Shani *et al.* 2012). Dive wrecks are viewed as effective conservation tools, (Stolk *et al.* 2005). Dive wrecks further provide for divers an historical significance, marine life photographic opportunities and support for management controls over dive wrecks (Edney 2012). Dive wrecks reduce the impacts on historic shipwrecks (Edney & Spennemann 2015). Divers were asked to state their most favored type of artificial reefs to dive on and 76.5% selected large ex-navy ships (Kirkbride-Smith *et al.* 2013).). A petition of over 10,500 signatures is to be tabled in the NSW Legislative Assembly, reinforces the contention.
- Potential for underwater 24-hour camera surveillance for non-divers on shore.
- There is strong support in the community for this proposal with over 14000+supporters:
 - 3000 plus signatures on a petition on Change.org (www.change.org Sydney Dive Wreck).
 - 1500 plus likes on Sydney Dive Wreck Facebook page'
 - 10716 plus signatures on paper petition to be tabled in the NSW Parliament
 - Positive response to an article in The Beast Eastern Suburbs Community Magazine and Dive Log National Scuba Trade Magazine (Rowe 2013, Rowe & Log 2015). See section 2.5 for additional media.
 - Numerous letters of support from marine scientists, members of the dive community, government, and political representatives (See section 2.5).
 - A land based memorial to the men and women who served in all RAN ships

would fit well into the Coogee coastline (John Byrne pers. com. 2017).

2.3 Strategic Alignment with the NSW Governments Objectives

The proposal to acquire, and then scuttle, an ex-Navy ship as a dive wreck in recreational diving depths off Sydney's coastline aligns with the strategic imperatives of the NSW Government and the Department of Industry.

The suggested dive wreck site at Coogee borders the NSW Government's Marine Estate Management Strategy 2018 ([Appendix 9](#)); which proposes 25 distinct sanctuary /conservation zones (Government 2018b). Further, it meets the objectives set by MEMS as follows:

The primary objectives in the MEMS for proposed Bronte-Coogee site are fully met by the dive wreck proposal:

(https://www.marine.nsw.gov.au/__data/assets/pdf_file/0019/821323/Hawkesbury-site-Bronte-Coogee.pdf)

- enhance the conservation of marine biodiversity
- promote marine ecotourism in the bioregion
- continue to provide for marine economic opportunities that are consistent with ecologically sustainable development, for example, low-risk commercial fishing activities
- establish and maintain public infrastructure to support access and use of the bioregion, for example moorings, boat ramps
- enhance the intrinsic benefits derived by the community from the marine estate
- enhance bequest values for current and future generations
- reduce conflicts between users of the marine estate
- provide enhanced recreational experiences for particular user groups
- provide baseline monitoring areas (scientific reference sites)
- ensure appropriate mechanisms exist for community involvement in the management of the marine estate
- promote stewardship of the marine estate.

Unfortunately, MEMA did not examine the Sydney Dive Wreck Proposal, listing it only in the appendix as a submission received, in spite of the request by Minister Niall Blair in a meeting on 16th November 2016 at the NSW Parliament for MEMA to consider the proposal.

1. Such a proposal supports the NSW Government’s focus on sports and recreational facilities as well as directly supporting broader economic growth and an increased focus on driving growth in tourist numbers and spend.

<https://www.budget.nsw.gov.au/sites/default/files/budget-2018-06/NSW%20Budget%202018-19%20-%20Budget%20Overview-1.pdf>

2. The 2018-2019 State Budget made it clear that these three areas remain a focus.

3. **Sports and Recreation**

3.1. One of the key areas of the 2018-2019 State Budget is a focus on “Sports, arts and culture for all.” The investment of \$937.7M in sporting facilities in Sydney and the \$25M Regional Sports Infrastructure Fund demonstrate that the NSW Government is building facilities that will be used by the broad community for many years to come.

3.2. A dive wreck will have a useful life of at least 100 years, Unlike the major investment the Government is choosing to make in establishing world class sporting facilities in NSW, this facility would require minimal investment after the initial purchase, preparation, EIS and sinking of a ship.

4. **Business Activity**

4.1. The 2018-2019 State Budget the Treasurer noted, “The Government is investing in initiatives that will attract, support and encourage business activity across New South Wales.”

4.2. Most of the positive impact in scuttling an ex-Navy ship in Sydney waters will be for a wide range of small businesses. This is a section of the business community that the NSW Government continues to support through the NSW Small Business Strategy. The Government budget in 2017-2018 continues to support with increased thresholds for small business.

http://www.industry.nsw.gov.au/data/assets/pdf_file/0003/107643/nsw-small-business-strategy.pdf

4.3. An ex-Navy dive wreck in Sydney waters will increase revenues for dive shops, through increased boat traffic, dive courses, notably wreck and deep courses and SCUBA associated equipment. In addition, several businesses in the locale of the wreck such as cafes, restaurants, service stations, car hire, hotels and ships chandleries will benefit.

5. **Tourism**

5.1. In addition to the significant investment that the NSW Government made in sporting facilities in the 2018-2019 Budget, the Government also took the opportunity to invest \$173M for Destination NSW to support the delivery of the Visitor Economy Industry Action Plan. <https://www.industry.nsw.gov.au/invest-in-nsw/industry-opportunities/tourism/industry-action-plan-tourism>

5.2. As the Minister for Tourism, Major Events, Hospitality and Racing noted in his 2012 foreword in the NSW Government’s response to the final report of the Visitor Economy Taskforce, “...the NSW visitor economy is worth more than

agriculture, forestry and fishing and just below mining.”

https://www.industry.nsw.gov.au/_data/assets/pdf_file/0007/53683/121218_VE-IAP-Full-version_FINALv2.pdf

5.3. The sinking of an ex-Navy ship in Sydney Waters will attract both interstate and international tourists and the ability to dive two ex-Navy Ships, the other being ex-HMAS Adelaide off Avoca Beach NSW, will be more attractive than just diving the ex-HMAS-Adelaide which is considerably less accessible.

Alignment with the NSW Department of Industry’s Goals

6. The sinking of an ex-Navy ship supports the following Department Goals:

6.1. Sustaining the conditions for economic development

6.2. Support to increase jobs and investment in NSW

6.3. Foster a vibrant and valued sport and active recreation sector

<https://www.industry.nsw.gov.au/about/our-business/our-priorities>

7. In turn this directly aligns to the “What we do” components of the 2015-2019 Corporate Plan in the following areas:

7.1. Promoting a vibrant and valued sport and active recreation sector that enhances the lives of the people of NSW

7.2. Growing the visitor economy of NSW by promoting our attractiveness as a major tourism centre and destination for events

7.3. Supporting small businesses in NSW to start and grow.

8. We would offer that apart from the economic, recreational and environmental benefits that this project has it also provides the opportunity to meet one of the department’s key attributes, namely an opportunity to “Think and act creatively to lead the way”.

https://www.industry.nsw.gov.au/_data/assets/pdf_file/0011/108884/NSW-

[Department-of-Industry-Cluster-Corporate-Plan-2015-2019.pdf](#)

2.4 Expected Outcomes

There are several discrete groups of beneficiaries from the outcomes of sinking of an ex-Navy ship as a dive wreck in recreational diving depths in Sydney.

The key beneficiaries are -

- The NSW State Government

- The Department of Industry

- Destination NSW and Sydney.com

- The local councils of Bayside, Randwick, Woollahra and Waverley

- The Professional Dive Associations

- Small Businesses in Bayside, Randwick Woollahra and Waverley
- Sydney based Scuba Diving Operators
- The Community of Recreational Scuba Divers
- Dive Tourists: Local Interstate and International.

In what way will these stakeholders benefit from sinking an ex-Navy ship in Sydney Waters?

2.4.1 The NSW Government

The NSW Government has summarised its approach as ‘Building for tomorrow and delivering today’. The sinking of an ex-Navy ship in Sydney waters for the purposes of recreational diving does just that. It delivers a facility in the short term that the active diving community of NSW, that current estimates put at an estimate of between 8000-16,000 divers, will continue to benefit from for the next 100 years (Appendix 1).

Summary of Tangible benefits

Increased Revenues of from \$2.5M-\$9.7M over 5 years.

Support of the Government’s stated policies regarding:

Keeping our Environment Clean

(Divers are extremely environmentally aware and advocates for the marine environment)

Tourism (Attracting interstate and international visitors to Sydney)

The provision of Recreational Facilities

(In alignment with current NSW Government commitments however with a much longer period of positive return for minimal ongoing operational costs)

The promotion of a Healthy Lifestyle,

(Scuba Diving requires good levels of health and fitness to participate)

Support for Small Business.

(The dive operators of Sydney and the local businesses in the proximity of the wreck are the main financial beneficiaries)

2.4.2 The Department of Industry

Sinking an ex-Navy ship in Sydney waters directly meets components of the Department’s goals namely:

Sustaining the conditions for economic development

Support to increase jobs and investment in NSW

Foster a vibrant and valued sport and active recreation sector

2.4.3 Destination NSW

Destination NSW's role is to market Sydney and NSW as one of the world's premier tourism-"destinations; to develop and deliver initiatives that will drive visitor growth throughout the State; and to achieve the NSW Government's goal of doubling expenditure within the State's visitor economy by 2020".

The sinking of an ex-Navy ship provides a destination experience that would be a feature on Sydney.com (under the auspices of Destination NSW) and directly supports all of the projected outcomes.

2.4.4 The local councils of Bayside, Randwick Woollahra and Waverley

These four councils are likely to receive the largest financial benefit given their proximity to the proposed dive site. Studies have shown (Appendix 1) that in addition to the actual revenues directly associated with the act of diving on such a wreck that there is an additional spend of between \$5.4M-\$31.3M over 5 years.

2.4.5 The Professional Dive Associations

There are several Professional Dive Associations however, those who will benefit most, based on their presence in NSW, are:

- PADI (Professional Association of Dive Instructors),
- SSI (Scuba Schools International),
- RAID (Rebreather Association of International *Divers*)
- TDI (Technical Diving International) and
- SDI (Scuba Diving International).

PADI trains approximately 75% of all Open Water Scuba certifications in NSW and will be the main beneficiary.

It is possible that the sinking of an ex-Navy ship in close proximity to Sydney will, of itself, create interest in diving such that the number of Open Water certifications increase. However what is more certain is that the specialities for both PADI Deep Diver or equivalent (certification to a depth of 40 metres) and Wreck Diver will increase markedly.

2.4.6 Small Businesses in Bayside, Randwick Waverley and Woollahra

Studies have shown that direct dive spend is from 13- 26% and, perhaps more importantly, the non-dive spend is from 74-87% of a divers total expenditure (Pendleton 2004, Escobedo 2007). The local businesses will benefit directly from this, especially as other studies have shown that visitors always bring more to the economy than locals (Bell et al. 1998, Johns *et al.* 2001, County 2004, Adams *et al.* 2006, Oh *et al.* 2008, Tapsuwan & Asafu-Adjaye 2008, Wheaton *et al.* 2008, Leeworthy 2011a, Huth *et al.* 2015). Marsden Jacobs Associates reports that in nature based travels day-trip expenditures largely comprise shopping (28%), petrol (25%), food and beverages (12%) and takeaway or restaurant meals (20%). For overnight visits, the major expenditure items are accommodation (25%), domestic airfares (15%),

takeaway/restaurant meals (15%), petrol (10%), food and beverages (12%) and shopping (8%) (Jacob 2017).

2.4.7 Sydney Based Scuba Dive Operators

The 21 Dive Operators (Appendix 3) within easy access of the proposed location certify in the region of 4,000-5,000 new divers per year. This means that in the last five years between 20,000 and 25,000 new divers have been certified. The business case embedded in this document only use a number of divers from 8000-16000 active scuba divers (Appendix 1).

In addition to the original certification between 20% and 30% of those divers progress to a higher level of certification or speciality, that provides them the education to dive deeper safely. There is a measurable drop off in diving activity post initial certification and this is reflected in the business plan.

By sinking an ex-Navy ship in Sydney, we estimate, based on activity associated with the sinking of other dive wrecks that dive certifications will increase by 10-15%. The increased additional certification levels that provide divers the education to dive safely at increasing depths of 30-35% and through the attraction of 'lapsed divers' to restart diving an increase in active divers of 5%.

2.4.8 The Community of Recreational Scuba Divers

Providing world-class facilities for recreational divers provides a compelling proposition to remain in the sport, increase fitness, health and wellbeing and creates a powerful group of environmental advocates. The sinking of an ex-Navy ship in Sydney waters will put Sydney on the diving map in a new and compelling way.

2.4.9 Dive Tourists (Interstate and International)

Scuba Diving was 'one of the world's fastest growing recreational sports (Musa & Dimmock 2013). PADI, one of the world's leading certification agencies, certifies more than 1 million divers per year and has certified in excess of 25 million divers during its lifetime. Both of those numbers continue to grow and an attraction, such as an easily accessible ex-Navy dive wreck in Sydney creates the opportunity to attract some of that growing pool of scuba divers

Diving by its very nature is an equipment intensive sport that benefits from a continuing investment in ongoing education, equipment and the servicing of that equipment. Divers are willing to save and spend significant sums on their diving experience (Binney 2009).

Summary

The sinking of an ex-Navy ship in Sydney waters has a wide range of beneficiaries, not just the scuba divers that will dive the wreck.

We believe that by the NSW Government taking a leading role in the project to sink an ex-Navy vessel in Sydney Waters will create a lasting legacy. This role will contribute to the State's bottom line, fulfil a number of the Governments policy positions and, just as importantly, not cede ground to the Queensland Dive Industry, which, with the support of the Queensland Government, has recently sunk its second ex-Navy ship the ex-HMAS Tobruk.

2.5 Stakeholder and Community Support

The Sydney Dive Wreck team has consulted widely with stakeholders and with the broader Sydney community regarding this proposal over the last 7 years. Over 40 letters are on file and are available by requesting a copy from John Rowe at jcprowe@bigpond.net.au.

A summary is listed at appendix 3 with letter reference.

Table 2.5.1 outlines the key stakeholder groups, the engagements with the Sydney Dive Wreck team, any issues, and concerns raised by these groups and how this proposal has addressed these concerns.

Table 2.5.1

Stakeholder Group	SDW Engagement	Concerns raised	How addressed
Commonwealth Government (Defence)	Meetings with Defence Minister (2013/2017)	None – very supportive	
NSW Government - Primary Industry	Meeting with Niall Blair and department. November 2016	4 areas of concern raised: Financial Environmental Health & Safety Community Engagement	All concerns addressed in response to department on December 2016. Submission made to MEMA .Excluded from the strategy
NSW Government - Tourism	Meeting requested 2017.		Previous ministers supportive
NSW Government - Environment	Meeting with Minister scheduled August 2018		Minister supportive
Randwick Council	Various meetings with Individual Councilors	No concerns raised	
Randwick Tourism	Continuous Involvement	Very supportive – Member of Sydney Dive Wreck Committee	
Local Precinct Committees	Presentations or invitations to Coogee Malabar, Maroubra Clovelly and Bronte Beach	No concerns raised	No response from Malabar, Clovelly and Maroubra
Sydney Coastal Councils	Various meetings through 2016 & 2017	No concerns raised	
NPA Marine	Various meetings through 2016 &	No concerns raised	

	2017		
Recreational Fishers Alliance	Various meetings through 2016 & 2017	No concerns raised	Check shipping channels
Professional Fisherman's Associations	Various meetings through 2016 & 2017	No concerns raised	
Coogee Chamber of Commerce	Various meetings through 2016 & 2017	No concerns raised –	very supportive member of Sydney Dive Wreck organizing Committee
Marine Research Organizations	Various meetings through 2016 & 2017	No concerns raised. Scientific advisors appointed to review plans. Numerous letters of support from Marine Scientists.	
Nature Conservation Council	Correspondence and discussions 2016	No concerns raised	
Surf Live Saving	Presentations to South Maroubra, No response from Clovelly and Coogee clubs	No concerns raised	
Dive Industry of Australia	Continuous Involvement	Very supportive – Member of Sydney Dive Wreck Committee	
Royal Australian Navy	Informal engagement with numerous ex-Navy staff	Very supportive – letters of support provided	
Sydney local community	Significant Engagement (see details below)	Overall very supportive	

2.5.2 The Sydney Dive Wreck team has been very actively engaged in making the local community in Sydney's East, and in particular within Coogee, aware of the plans outlined in this proposal. The support has been very overwhelmingly positive. The following is evidence for this:

- Over 10,700 signatures on a paper petition to the NSW Legislative Assembly
- Over 3,500 signatures on an online petition to the NSW Government
- Over 1,500 'likes' on Sydney Dive Wreck Facebook page

2.5.3 The Sydney Dive Wreck team has informed the community about Sydney Dive Wreck plans at a wide range of community events and activities over the last 3 years as follows:

Stalls at major local community fairs and festivals:

- Randwick Eco Fair (2016, 2017)
- Randwick Spot Festival (2016, 2017)
- Coogee Family Fun Day (2016, 2017)
- Bondi Winter Magic Festival (2017, 2018)

Stands at popular local community areas

- Bondi Junction Station (2017)
- Bondi to Coogee Walk (10 events through 2016, 2017, 2018)

Media Activities. (Audience figures in brackets see www.gordonsbayscubadivingclub.com for full video)

- Channel 9 Sydney News Saturday (260,000)
- Channel 9 Sydney News Sunday (400,000)
- 2 x Daily Telegraph articles (1,998,000)
- 2 x Radio 2UW interviews Greater Sydney (300,000)
- 3 x ABC Radio 2BL interview (audience tbc)
- 2 x Weekly Southern Courier (130,000)
- 2 x Wentworth Courier (audience tbc)
- 2 x The Beast Magazine (122,000)
- 1 x Bruce Notley-Smith's Community Newsletter (40,000)

Numerous letters of support from marine scientists, members of the dive community, government, and political representatives (Appendix 8).

One member of the Darwin ships company has offered to take our petition to the ship's decommissioning ceremony.

Further, a land based memorial to the men and women who served in all RAN ships would fit well into the Coogee coastline (John Byrne pers. com. 2017).

Analysis of the Proposal

3.1 Objectives & Indicators

Please outline what the proposal is seeking to achieve and how each desired outcome will be measured

Table 3.1.1: Proposal objectives

Key problem/opportunity	Key proposal objective	Key success indicator
No dive wreck for Sydney	Get a decommissioned Navy ship	NSW Government agrees to fund
No wreck site approved	Gazette a site under Crown Lands Act 1989 Complete an EIS	Site gazetted EIS completed
Prepare the ship	Preparation in accordance with the London Protocol	Ship ready for sinking
Sink the ship	At site in accordance with sec 4.2	Ship successfully sunk

3.2 The Base Case

3.2 Please summarise what is the ‘base case’ to be used to assess the merits of the preferred solution? The base case is the ‘state of the world’ without the proposal, the case with no change and business as usual.

- No Sydney Dive wreck that is world class challenging exciting and sustainable dive experience for divers with varying interests and levels of experience.
- A safe dive wreck for Sydney
- Access for non-divers and divers to the Sydney dive wreck for commercial operators, non-commercial interests, educational establishments, researchers, public both on and off site.
- To create an artificial reef that is linked to a natural reef that provides habitat and protection for a range of species naturally occurring within the dive site.
- To respect the history and heritage of the Royal Australian navy ships and all who sail in them and by erecting a land based monument to all who served.
- To enhance tourism and increase the revenue and employment opportunities for the citizens of NSW
- To be nationally and internationally recognised as a demonstration and education site for the productive and sustainable use of an ex-Navy ship as a

dive site and artificial reef with a fishing closure which will contribute to marine environmental awareness

- There would be no dive wreck without the proposal hence there is no case for “no change “ or “business as usual”

3.3 The Preferred Solution

3.3.1 Please summarise how the preferred solution was selected.

- See section 2.2 rationale for investment

3.3.2 What alternative options were considered that would also solve the abovementioned problems?

- Allocation an ex-Navy ship to another state meaning a complete loss of the amenity

3.3.3 Alternative options that proponents may need to consider include:

A do-nothing option

- With considerable public support (10,700+ signatures on a formal NSW Parliamentary Petition), “do nothing” remains an option however is less attractive due to the level of public support for the dive wreck

A do-minimum option

- Allocate funds for an EIS

A do-later option

- This is a possible scenario given the status of ex HMAS Darwin.

3.4 Information about the proposal

The NSW government has previously delivered a project very similar to this project, that being the preparation, scuttling and ongoing management of the ex-HMAS Adelaide near Avoca Beach on the Central Coast NSW.

We would recommend that the scope of works that was used on the management of that project during delivery and operations be replicated on the Sydney Dive Wreck project, with the following ~~three~~ modifications:

- Adjustments to the works model that may have been recommended from any project reviews conducted on the ex-HMAS Adelaide project.
- Adjustments to the scope of works model to include an interface to the Sydney Dive Wreck Organizing Committee who will be available to act as advisors/consultants to specifics relating to the Sydney region.
- Inclusion of the NSW MP for Coogee on the Steering Committee
- Consideration given to the installation of web cameras on the Sydney Dive Wreck, and the creation of a marine display in the Coogee locality.
- Consideration given to the creation of a land based memorial in Coogee for those who have served on RAN ships.

(Refer to Appendix 6 – which outlines some of the scope of works detailed for the ex-HMAS Adelaide)

Proposal Exclusions

There are no specific exclusions in this proposal.

Related Projects

As outlined above, the project to scuttle the ex HMAS Adelaide ~~sunk~~ as a dive wreck by the NSW Government off Avoca Beach in 2011 is a very similar project.

3.5 Projected Costs

~~PROJECTED CAPITAL COSTS~~

~~Please outline the projected capital cost of the proposal.~~

The NSW government has previously delivered a project very similar to this project, that being the preparation, scuttling and ongoing management of the ex-HMAS Adelaide off Avoca Beach NSW.

We would recommend that the capital costs incurred on the management of that project during delivery and operations be replicated on the Sydney Dive Wreck project, with the following ~~three~~ modifications:

- Adjustments to the capital costs that may have been recommended from any project reviews conducted on the ex-HMAS Adelaide project.
- Adjustments to the capital costs to include an interface to the Sydney Dive Wreck Organizing Committee who will be available to act as advisors/consultants to specifics relating to the Sydney region.
- Inclusion of the NSW MP for Coogee on the Steering Committee
- Quotations have been requested from potential firms.

The NSW government has previously delivered a project very similar to this project, that being the preparation, scuttling and ongoing management of the ex-HMAS Adelaide off Avoca Beach NSW.

We would recommend that the ongoing costs incurred on the management of that project post sinking be replicated on the Sydney Dive Wreck project, with the following ~~three~~ modifications:

- Adjustments to the ongoing costs that may have been recommended from any project reviews conducted on the ex-HMAS Adelaide project.
- Adjustments to the ongoing costs to include an interface to the Sydney Dive Wreck Organizing Committee who will be available to act as advisors/consultants to specifics relating to the Sydney region.
- Annual maintenance costs for buoys and signage at the dive site are not expected to be significant perhaps in the vicinity of \$1500.00 per annum (MauraBedlocCommunications 2016).
- It is expected that revenue collected from dive permits will easily cover on going maintenance costs.

3.6 Cost Benefit Analysis

This proposal forecasts revenue over five years of \$12.4M (low) and \$48.6M (high) at a one off cost of \$6M-\$10M-a cost benefit ratio of between 2.1 and 4.8 (Appendix 1).

3.7 Financial Appraisal

The NSW government has previously delivered a project very similar to this project, that being the preparation, scuttling and ongoing management of the ex-HMAS Adelaide off Avoca Beach NSW.

We would recommend that the financial appraisal, which is used on that project during delivery and operations, be replicated on the Sydney Dive Wreck project, with the following three modifications:

- Adjustments to the financial appraisal that may have been recommended from any project reviews conducted on the ex-HMAS Adelaide project.
- Adjustments to the financial appraisal to include an interface to the Sydney Dive Wreck Organizing Committee who will be available to act as advisors/consultants to specifics relating to the Sydney region.

Funding sources							
NSW Government (subject of this request)	\$10M						
Council contributions	\$0						
Industry contributions	\$0						
Community contributions	1000 hours						
Other government contributions	\$0						
Other funding sources (please detail)	\$0						
Sub-total	\$10M						

3.9 Financial Health & Support

There is no financial support from non-government parties. The project is based entirely on funding from the NSW Government.

4. IMPLEMENTATION CASE

4.1 Program & Milestones

The NSW government has previously delivered a project very similar to this project, that being the preparation, scuttling and ongoing management of the ex-HMAS Adelaide at Avoca Brach NSW.

We would recommend that the program & milestones that were used on the management of that project during delivery and operations be replicated on the Sydney Dive Wreck project, with the following three modifications:

- Adjustments to the program & milestones that may have been recommended from any project reviews conducted on the ex-HMAS Adelaide project.
- ~~Adjustments to the governance model to include an interface to the Sydney Dive Wreck Organizing Committee who will be available to act as advisors/consultants to specifics relating to the Sydney region.~~
- ~~Inclusion of the NSW MP for Coogee on the Steering Committee~~

4.2 Governance

The NSW government has previously delivered a project very similar to this project, that being the preparation, scuttling and ongoing management of the ex-HMAS Adelaide off Avoca Beach NSW.

We would recommend that the governance plan incurred on the management of that project during delivery and operations be replicated on the Sydney Dive Wreck project, with the following three modifications:

- Adjustments to the governance that may have been recommended from any project reviews conducted on the ex-HMAS Adelaide project.
- Adjustments to the governance to include an interface to the Sydney Dive Wreck Organizing Committee who will be available to act as

advisors/consultants to specifics relating to the Sydney region. Inclusion of the NSW MP for Coogee on the Steering Committee.

Some specific points relating to the key personnel and organizational responsibilities, which we expect would be included in the governance model, would be:

Key sponsor decision maker: Minister for Crown Lands

Steering Committee Chair: Minister for Crown Lands

Steering Committee Members:

Departmental Head of NSW Crown Lands

Representative from the NSW Department of the Environment

Representative from the NSW Department of Tourism

Project Manager (appointed by Department of Crown Lands)

Project Management Office representative

MP for Coogee

Representative(s) from Sydney Dive Wreck Organizing Committee

Representative from National Parks NSW

Representative from key subcontractor responsible for scuttling preparation (by invitation)

We would be happy to provide additional details on any of these areas if required, however as has been previously stated the NSW government has already delivered a very similar project so we would expect the governance model to be well established and understood.

4.3 Key risks

The NSW government has previously delivered a project very similar to this proposal, that being the preparation, scuttling and ongoing management of the ex-HMAS Adelaide off Avoca Beach NSW.

We would recommend that any key risks that were identified on the management of that project during delivery and operations be replicated on the Sydney Dive Wreck project, with the following three modifications:

- Adjustments to any key risks that may have been recommended from any project reviews conducted on the ex-HMAS Adelaide project.

- Adjustments to any key risks to include an interface to the Sydney Dive Wreck Organizing Committee who will be available to act as advisors/consultants to specifics relating to the Sydney region.
- Inclusion of the NSW MP for Coogee on the Steering Committee
- Further the NSW Government commissioned Nation Partners (Wedgwood & Speechley 2016) to carry out a risk assessment of the ex HMAS Sydney and Tobruk as dive wrecks. It is not clear if this document can be made public but it has been provided to the GBSDC by Crown Lands with the legal risks blacked out. The key risks were responded to in a meeting at Parliament House on 16th November 2016 with the Minister for Primary Industry Niall Blair arranged by the Member for Coogee Mr Bruce Notley-Smith. Those issues raised, by the DPI (italics) and the GBSDC answers provided follow:

RISKS

4.3.1: *Service delivery – no detailed planning has been undertaken and significant uncertainty exists across the project lifecycle. Based on the experience with the Ex-HMAS Adelaide and other dive wrecks, the market for this technically demanding sport is small and largely confined to Sydney.*

The minimum qualification for diving on the Adelaide is Advanced Open Water. In PADI diver education terms for technical diving to occur one of the following must occur.

Diving beyond 40 meters deep.

Required stage decompression.

Diving in an overhead environment beyond 40 linear meters

Accelerated decompression and or the use of variable gas mixtures during the dive.

None of the above conditions applies to our proposal and accordingly it is not correct to say that diving the Sydney as proposed is “technically demanding”. In fact the dive wreck is targeted at the recreational dive and snorkel market of which there were over 982000 participants in 2015 (Appendix 6)

International and interstate dive tourism has been negligible on the Central Coast.

The market for diving on ex-Navy ships is significant. Worldwide there have been 130 ships sunk as dive wrecks. We see a significant difference between attracting interstate and international divers to a location such as Avoca Beach for the ex-HMAS Adelaide, and a Sydney Dive Wreck. The Sydney tourist market is 24 times as large as the Central Coast market. Sydney is a major tourist hub, with a wide range of existing attractions (p7) and over 31.5m overnight visitors in 2015 (p15) . Of these 2.9m were international. This compares to only 1.3 m overnights to the Central Coast for the same period with just 41000 of those being international. Growth figures from Destination NSW (DNSW) confirm the difference where Sydney is recording over 9% annual growth in visitor expenditure. DNSW has also identified a

significant China market where one in ten went scuba diving during their trip to Australia. 536,000 visited NSW in 2015 (UTS: ACIR).

4.3.2: *Health and safety – the depth of the water at Coogee may pose increased risk to the safety of divers at the proposed wreck site.*

The site selection and business case prepared by the proponent of the Coogee proposal is not adequate to substantiate the proposal for a project with an order of cost of some \$10M to Treasury.

Please advise what other information is required to meet the requirements of the business case, and where there are any inadequacies. We have prepared this business case based on a range of information - both from a top down level from data extrapolating from data from research studies based on typical revenue generated from creating dive wrecks worldwide, and from a bottom up basis from local Sydney dive industry statistics.

If you have a preferred business case format please supply this so we can prepare the business case as required.

We would also appreciate detailed information on how you arrived at the estimate of \$10M. In our proposal, we quote a cost range of \$6M to \$10M, the latter figure being provided by the Minister for Defence in 2013. In our research for the former figure, we have been quoted \$4.5M for ship preparation, \$1M for reef connectivity for fish using smaller reefs and underwater sculpture with Wedding Cake Island and an estimate of \$0.5M to meet the legal and regulatory requirements.

The approximate cost of converting the ship to scrap is around \$2M (Trent Raines Birdon) with no possibility of earning any revenue. For an additional expenditure of \$4M, the state has a dive wreck that well may last over 100 years. The question ignores the environmental, research and recreational values outlined in our proposal (p5) and ignores our suggestion that on site cameras relay images of the wreck to non-diving community members, schools and educational institutes. The proposed development (p10) of an artificial reef between Wedding Cake and the dive wreck will further enhance the diving opportunities. More importantly, as it will be outside the fishing closure of the dive wreck, it will provide recreational fishing opportunities similar to the artificial reef proposed for Port Hacking. <http://www.dpi.nsw.gov.au/fishing/recreational/resources/artificial-reef/port-botany> Research could also be done on the potential of the dive wreck to reinvigorate the Sydney Rock Lobster fishery.

4.3.3: *The location for the site is ill defined but appears to be deeper than the Ex-HMAS Adelaide site, which has recorded one fatality.*

The site nominated is only suggested for the Sydney Dive Wreck because it is outside anchoring and telecommunication restrictions and has the perfect sandy bottom for a dive wreck (p8). It meets the criteria required for scuttling an ex-Navy ship but is subject to an EIS prior to final site selection. We are interested in any other factors in relation to the nominated site that we should address prior to the EIS. We would be prepared to support other nearby sites off the Sydney coast should our nominated site not be satisfactory.

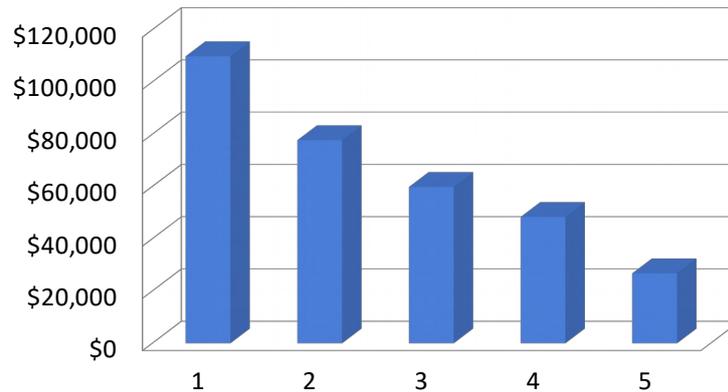
The depth at the proposed site is 35 m, marginally deeper than the Adelaide at 33m. As stated previously, the final site location is to be set by an EIS. We would accommodate a shallower depth for the dive wreck as laid out in the EIS. We are unable to comment on the fatality on the dive site other than press reports that the diver suffered a cardiac arrest, which may or may not have been related to the dive.

4.3.4: Legal and regulatory – onerous project regulation and no guarantee of approvals being granted. The Deed burdens the NSW Government with all the contractual risk. There are a number of regulatory requirements that need to be met. Including: obtaining a Commonwealth Sea Dumping permit, Preparation of an Environmental Assessment Development Approvals under NSW Planning legislation. Experience, and the advice given at the compulsory briefing when the offer to treat was made for ships suggests that the assessment instrument would need to be through and Environmental Impact Statement (EIS).

We fully expect that all the processes would be adequately addressed by the relevant areas. We do not see why this is a reason not to proceed to DoD EOI process.

4.3.5 Financial – significant financial risk due to lack of formal business case. The project may not be financially viable. Given the decline in numbers at the Ex-HMAS Adelaide dive wreck over time, development of a second dive wreck attraction is likely to fragment the limited market and impacting on the viability of the existing Adelaide reserve. (Please find table below of declining Ex-HMAS Adelaide income over time).

Total Revenue



This would increase the cost burden on the NSW Government and impact on the businesses that depend upon the Adelaide reserve.

There are a numbers of reasons why there has been a decline in revenue from the ex-HMAS Adelaide. The lack of promotion of the ex-HMAS Adelaide may be a factor. DNSW does not mention scuba diving on the ex HMAS Adelaide and only lists beaches, markets, surfing and fishing at Avoca Beach as things to do. The Sydney Market is 24 times as large as the Central Coast market. The decline is related to the ocean conditions for dive boats exiting the sand bar at Tuggerah Lakes and Brisbane Waters resulting in only a 50% chance of diving. The deeper entrances to Sydney Harbor and Botany Bay provide an 80% chance of diving. There are shallower diving options in the immediate vicinity: Grey Nurse Sharks at Magic Point, Wedding Cake Island, and Shark Point at Clovelly. Access to the Sydney Dive Wreck would be a short trip from many Sydney hotel / accommodation bases. The 2 hour + drive from Sydney to Terrigal and the limitation of other attractions in that area will have been a detractor from interstate and international visitors to the ex-HMAS Adelaide. Sydney would not suffer from the same difficulty.

Adam Crouch the MP for Terrigal fully supports the Coogee proposal. Les Graham from the former Terrigal Dive Centre does not see Coogee affecting his business. In fact, an additional dive wreck in Sydney would assist the flagging revenue on the Adelaide with dive stores now able to promote two dive wreck destinations. The SDWOC includes a member from Randwick City Tourism who have already provided promotional support for our campaign and would continue to provide promotional support. The GBSDC secretary is a member of the Tourism Committee.

4.3.6: *The Commonwealth's experience with the preparation of the Ex-HMAS Adelaide and the additional preparation cost because of the AAT decision has made them highly risk averse. It is expected that any exposure to litigation would be borne completely by the state.*

The AAT process for the ex-HMAS Adelaide may have led to some risk aversion in areas of the government, but it has positive consequence for a Sydney Dive Wreck and future dive wreck proposals. The No Ship Action Group (NSAG) in the Administrative Appeals Tribunal (AAT) before the hearing withdrew eleven environmental objections. The NSAG legal action led to the additional preparation costs estimated at \$2.6M. The AAT hearing was granted on the basis that the Minister had approved a sinking date before the sea-dumping permit was approved, not on environmental problems. This additional level of preparation for a dive wreck is now well understood, and has been included in indicative costing from organizations that may be engaged to perform the preparation for a Sydney Dive Wreck. It unlikely that any AAT challenge would be made for the Sydney Dive Wreck, given that all concerns raised relating to the ex-HMAS Adelaide would be factored into the proposal for the Sydney Dive Wreck. If an AAT challenge is raised, then it would be unlikely to be upheld given the ‘precedent’ of the ex-HMAS Adelaide decision. Such a legal challenge subsequent to the AAT decision on the Adelaide may well be considered vexatious.

4.3.7: Stakeholders – insufficient community engagement has been undertaken. The potential for the presence of a range of hazardous substances and experience with the Ex-HMAS Adelaide project means that significant local and more widespread opposition to the project would be likely.

Whilst there is a range of potential hazardous substances on all ex-navy ships, prior to disposal, all such hazards are removed prior to sinking. It is disingenuous to say that there are hazardous substances and therefore they will remain on the ship. The ex HMAS Adelaide set the benchmark for how to prepare a ship as a dive wreck (Appendix 7 p). In addition, the quarterly Cardno Ecology Lab reports on the Adelaide prove that there are no adverse reactions to the environment from the Adelaide (p)

Also see 2.5 Community Engagement

Other key risks follow

4.3.8: Dive wreck move to shore

Concerns have also been expressed about the potential of the wreck to be moved on to the shore at Coogee (Notley-Smith 2013). Waves off Tonga for instance 120,000 years ago estimated to be 19-44m in height deposited seven boulders on shore, weighing from 70-1600 tonnes (Frohlich et al. 2009). This is an unlikely scenario given the expected wave climate off Coogee and the fact that the dive wreck is 3 times the weight of the Tongan boulders. Additionally initial research and informal consultation with environmental engineers makes this concern a most unlikely scenario. Calculations (Worley Parsons 2009) have been done for the *ex HMAS Adelaide* a ship of some 3800

tonnes off Avoca Beach. Worley Parsons estimate a slip of 2m for the Adelaide given a maximum wave height of 15.6m in 100 years. Prevailing wave conditions off Coogee are similar to Avoca (Short & Woodroffe 2009) and generally are in the 2-3 m wave height. Waves much higher than that are a rarity (Scheffers & Kelletat 2003).

So the hypothesis at this stage is that the prospect of the dive wreck ending up on the Coogee shore is most unlikely. If we should have oceanic conditions prevailing that can move a 4000 tonne dive wreck sunk to 35m in the ocean emplaced in 7 meters of sand over 4 kilometers to shore then ship movement would be the least of any problems on shore. There would need to be consideration and close attention to the assumptions made here with respect to the interaction of the wave climate with the ex HMAS Adelaide and these would need to be re-evaluated with respect to the proposed site at Coogee. As well as this, any changes to the wave climate at this proposed location from the site at Avoca and changes to the orientation, and the depth of the scuttled ship at this location would also need to be considered. It is likely that calculations would show similar results to those for the ex HMAS Adelaide and that the hypothesis would be correct. However, for a project that would be under such public scrutiny these calculations and a comprehensive analysis of our site the proposal, similar to that produced by Worley Parsons for the ex HMAS Adelaide would be required (Rowe 2015).

4.3.9: *Potential harmful effects on the dive wreck in lead-based paint and the copper-based anti-fouling system.*

The ex HMAS Adelaide as a condition of scuttling has a heavy metals monitoring requirement. A site comparison has been made pre and post scuttling of metal contamination. The survey was completed by Worley Parsons pre and post scuttling (Worley & Parsons 2011). This survey showed sediment values are all below ANZECC/ ARMCANZ national guidelines (ANZECC 2000) so there is a very low risk of any adverse environmental effects. CardnoEcology Lab did a study 21 months later and concluded that the impact to the marine environment and associated benthic biota as a result of metal corrosion and or degradation of paint layers from the ex HMAS Adelaide is considered unlikely (Lab 2013). Funds should be allocated for ongoing monitoring of the proposed wreck (Suthers 2015). However, not at the frequency and cost of the AAT order for the ex HMAS Adelaide. The fact was that the Adelaide was ready to be sunk in an environmentally sensitive way (Worley & Parsons 2009). The NSAG obtained a hearing before the Administrative Appeals Tribunal based on the fact that the Minister Peter Garrett had signed off on a sinking date before he had signed off on the Sea Dumping Permit of the dive wreck not on the basis of the NSAG arguments that the process was environmentally unsustainable (AAT 2010).

4.3.10: *Junk dumping exercise*

Table 1 summarizes other impacts of the dive wreck. Community concerns such as the proposal being a junk dumping exercise as suggested by The Beast (Rowe 2013) article arose from a lack of accurate information on the proposal.

No negative comments were received following the publication of this article. Five responses were received from readers all positive.

The perception is that a grubby metal navy ship should not taint the sea. This perception was evident in the No Ships Action Group (NSAG) opposition to the sinking of the *Ex HMAS Adelaide* off Avoca Beach. However their appeal before the Administrative Appeals Tribunal (AAT) has been best summarized by (Cole & and Abbs 2011).

“NSAG originally had a long list of concerns, principally claiming that the marine environment would be polluted by the scuttling of *Ex-HMAS Adelaide* due to leaching into the marine environment of polychlorinated biphenyls (PCBs) and heavy metals. Their Amended Statement of Issues in April 2010 raised ten issues for the Tribunal to review, but on the second day of the hearings in July, NSAG abandoned all but four items, dropping their claims regarding PCBs and most of the heavy metals. The case proceeded principally upon their concerns relating to potential harmful effects from lead-based paint and the copper-based anti-fouling system. NSAG also argued that the proposal was contrary to the international convention known as the London Protocol, arguing that the ship should be recycled for scrap metal.

The Tribunal heard evidence from a number of experts on these issues, Australian and American specialists in vessel preparation, environmental monitoring, and risk assessment. Evidence was also presented on environmental monitoring from other vessels placed as artificial reefs in Australian and American waters.

The NSW Government presented expert evidence that the risks of harm to the environment from PCBs, copper and lead were low or negligible. The type of lead present – lead tetroxide – is particularly inert and insoluble. The State contended that the proposed scuttling was consistent with the London Protocol as it entailed the deliberate placement of the ship for creating an artificial reef that will attract marine life, and hence was a form of reuse.

The Administrative Appeals Tribunal handed down its decision on 15 September 2010, allowing the scuttling of *Ex-HMAS Adelaide* to proceed with some extra conditions relating to the preparation of the ship and environmental monitoring. By this time, the project was delayed 6 months at a cost of \$1M. The Tribunal concluded that: ‘...all the information available to us points to a conclusion that there is no risk of harm to human health or the environment’ and “the level of pollutants now aboard the ship is low, and those that remain are either in very low quantities of inert and unlikely to cause any environmental problem”. The Tribunal also concluded that the purpose of the scuttling – to create an artificial reef – is recognized by the *Environment Protection (Sea Dumping) Act* as a proper purpose and that ‘there are benefits to the environment from the resulting marine habitats generated, as well as more general benefits to the community’. The parties had 28 days to appeal the Tribunal’s decision in the Federal Court, but neither party appealed.”

4.4 Legislative Regulatory Issues & Approvals

The NSW government has previously delivered a project very similar to this project, that being the preparation, scuttling and ongoing management of the ex-HMAS Adelaide off Avoca Beach NSW.

We would recommend that the legislative regulatory issues and approvals incurred on the management of that project during delivery and operations be replicated on the Sydney Dive Wreck project, with the following three modifications:

- Adjustments to the governance that may have been recommended from any project reviews conducted on the ex-HMAS Adelaide project.
- Adjustments to the governance to include an interface to the Sydney Dive Wreck Organizing Committee who will be available to act as advisors/consultants to specifics relating to the Sydney region. Inclusion of the NSW MP for Coogee on the Steering Committee.
- Legislative regulatory issues & approvals are summarised in table 4.4.1.

Table 4.4.1 Legislative Regulatory Issues & Approvals

Impact	Impact Rating	Governance & Comment
Ship	High	Departments of Planning, Primary Industries, Environment Climate Change Workcover, Destination NSW, Randwick City Council. Other bidders for the ship
Site Selection Aesthetics & Approval	High	Junk your old boats at our beach? Artificial Reef Permit from DEHWA ¹ under the E P (Sea Dumping) Act 1981 ² . 30 m - 35 m depth. EP&A Act Part 5 ³ , NSW C P A 1979 ⁴ , SEPP No71 ⁵ Coastal Protection
Commercial Fishing	High	Fishing Closure: potential contested resource. NSW Fisheries Management Act 1994
Recreational Fishing	High	Fishing closure: potential contested resource NSW Fisheries Management Act 1994

Diving, Snorkeling Spearfishing	Low	Complements existing dive sites, spear fishing closure contested resource NSW Fisheries Management Act 1994
Sailing & Boating	Medium	Contested resource ocean racing and wreck mooring.
Marine Protected Areas	Low	The site borders the existing Bronte to Coogee Marine Protected Area. NSW Environment Protection and Biodiversity Conservation Act (EPBC) 1999, NSW Threatened Species (TSC) Conservation Act NSW Fisheries
Historical Ship Wrecks	Low	No historical wrecks. Commonwealth Historic Ship Wrecks Act (1976) NSW Heritage Act (1997)
Mineral & Petroleum	Moderate	Previous proposals to sand mine offshore have been rejected
Telecommunication Cables	High	The site is outside the one nautical mile exclusion zone restriction. Approval has been given from REACH Submarine cable protection
Anchoring Restrictions	High	The site is outside anchoring restrictions NSW Maritime and Sydney Ports Corporation
Native Title	Low	Commonwealth Native Title Act 1993

- (1) Commonwealth Department of the Environment,
- (2) Water, Heritage, and the Arts
- (3) Commonwealth Environment Protection (Sea Dumping) Act 1981
- (4) NSW Environmental Planning and Protection Act (1979) Part 5.
- (5) NSW Coastal Protection Act 1979.(5) 5. State Environmental Planning Policy No71 Coastal Protection

4.5 Proposed management activities

RISK MANAGEMENT & OPERATIONS

The NSW government has previously delivered a project very similar to this project, that being the preparation, scuttling and ongoing management of the ex-HMAS Adelaide off Avoca Beach NSW.

We would recommend that the risk management plan incurred on the management of that project during delivery and operations be replicated on the Sydney Dive Wreck project, with the following three modifications:

- Adjustments to the risk management plan that may have been recommended from any project reviews conducted on the ex-HMAS Adelaide project.
- Adjustments to the risk management to include an interface to the Sydney Dive Wreck Organizing Committee who will be available to act as advisors/consultants to specifics relating to the Sydney region.
- Inclusion of the NSW MP for Coogee on the Steering Committee.

ASSET MANAGEMENT & OPERATIONS

The NSW government has previously delivered a project very similar to this project, that being the preparation, scuttling and ongoing management of the ex-HMAS Adelaide off Avoca Beach NSW.

We would recommend that the asset management & operations plan incurred on the management of that project during delivery and operations be replicated on the Sydney Dive Wreck project, with the following three modifications:

- Adjustments to the asset management and that may have been recommended from any project reviews conducted on the ex-HMAS Adelaide project.
- Adjustments to the governance to include an interface to the Sydney Dive Wreck Organizing Committee who will be available to act as advisors/consultants to specifics relating to the Sydney region. Inclusion of the NSW MP for Coogee on the Steering Committee.

6. Conclusion

The member for Coogee, Bruce Notley-Smith arranged a meeting at Parliament House on 16 November 2016 with the Minister for Primary Industry Niall Blair. This followed a risk assessment (4.3) by the Department of Industry Lands on the dive wreck proposal. The consultants in their risk assessment did not consider our proposal. Questions raised by the DPI as to why the department was not going to submit an expression of interest for the ex HMAS Sydney (IV) was tabled and answered by the proposers (4.3). The Minister requested that the dive wreck proposal be considered in the context of a Sydney Marine Park and the Marine Estate. Consequently, an earlier proposal was tabled with the Marine Estate Management Authority (MEMA) on 31 March 2017 (Community-and-Stakeholder Engagement-Report 2017).

The GBSDC asserts that the November proposal is fully aligned (Appendix 10) with the objectives of the Marine Estate Management Act 2014 No 72. The November proposal has been submitted to MEMA on 8 December 2017. On the 17th September 2018, officers from the Department of Environment and Heritage responded that the dive wreck proposal was not considered in the MEMA assessment in spite of the request by Minister Blair that the dive wreck proposal be considered in the context of the Sydney Marine Park proposal.

Coogee is a perfect site for a dive wreck for scuba divers. However, for a project that would be under such public scrutiny this proposal will need to be subject to a full and comprehensive analysis, similar to that produced by Worley Parsons (2009) for the ex HMAS Adelaide.

Appendix 1

5 YEAR REVENUE

REVENUE HIGH EST.	Year1	Year2	Year3	Year4	Year5	Total
No of Divers	0	16,000	15,200	14,400	13,600	59,200
Dive Revenue (\$K)	0	\$3,840	\$3,648	\$3,456	\$3,264	\$14,208
Tourism Revenue* (\$K)	0	\$6,962	\$6,614	\$6,266	\$5,918	\$25,762
Total Revenue (K)	0	\$10,802	\$10,262	\$9,722	\$9,182	\$39,970
REVENUE LOW EST.	Year1	Year2	Year3	Year4	Year5	Total
No of Divers	0	8,000	6,800	5,600	5,200	25,600
Dive Revenue (\$K)	0	\$1,920	\$1,632	\$1,344	\$1,248	\$6,144
Tourism Revenue* (\$K)	0	\$1,526	\$1,297	\$1,068	\$992	\$4,885
Total Revenue (\$K)	0	\$3,446	\$2,929	\$2,412	\$2,240	\$11,029

includes meals, accommodation, transport, car hire, fuel, incidentals*.

5 YEAR COSTS

COST HIGH EST.	Year1	Year2	Year3	Year4	Year5	Total
Scuttling Costs (\$K)	\$10,000					\$10,000
Maintenance Costs (\$K)		\$15	\$15	\$15	\$15	\$60
Total Cost (\$K)	\$10,000	\$15	\$15	\$15	\$15	\$10,060
COST LOW EST.	Year1	Year2	Year3	Year4	Year5	Total
Scuttling Costs (\$K)	\$6,000					\$6,000

Maintenance Costs (\$K)		\$15	\$15	\$15	\$15	\$60
Total Cost (\$K)	\$6,000	\$15	\$15	\$15	\$15	\$6,060

5 YEAR SURPLUS

MOST FAVOURABLE SURPLUS (HIGH REVENUE, LOW COST)	Year1	Year2	Year3	Year4	Year5	Total
Surplus (\$K)	-\$6,000	\$10,787	\$10,247	\$9,707	\$9,167	\$33,910
LEAST FAVOURABLE SURPLUS (LOW REVENUE, HIGH COST)	Year1	Year2	Year3	Year4	Year5	Total
Surplus (\$K)	-\$10,000	\$3,431	\$2,914	\$2,397	\$2,225	\$969

Rather than providing a single specific revenue and cost figure, a range has been provided for each of these cost and revenue elements.

The following factors and planning assumptions have been used to prepare the revenue, cost and surplus tables above.

Revenue:

The main factors influencing the revenue to the NSW government from Sydney Dive Wreck will be the following:

1. Number of divers attending the wreck
2. The geographic base from where the divers are located (i.e. Sydney, Interstate, Overseas) . Interstate and overseas divers bring tourism revenue.
3. The spending per diver , both on diving specific items , and general tourism spending (included meals , accommodation, transport , car hire , fuel , incidentals)
4. The fee charged by the NSW government for use of the National Park
5. The time taken to prepare the ship for diving - which determines when revenue commences.

The following assumptions were used in preparation of these estimates

1. Number of divers from Dive Industry estimates (refer to the number in the table above)
2. Geographic base (ranging from 44% Sydney divers to 75% Sydney divers)
3. Dive Industry spend (ranging from \$152 - \$222 per diver per day)
4. Tourism spend (ranging from \$450-\$660 per diver per day)
5. National Park Fee (\$20 per diver per day)
6. A 'decline rate' has been factored into the diver numbers (ranging from 5% to 15% per year).
7. .It is assumed that the activities required to complete the preparation of the dive wreck from the ship being gifted to NSW government, to the ship being scuttled and diving commencing will be completed in 12 months. Revenue will commence in year 2

Cost

As stated in other sections of the document, the best way to calculate the cost of this project will be to use relevant aspects of the costs incurred for preparing the ex-HMAS Adelaide. We do not have access to this cost information.

As a result the range of cost estimate provided are based on a 'low' figure of \$6M as indicated in an informal quote from a contracting organisation that has provided similar services , to a high figure of \$10M as advised by a senior Naval official.

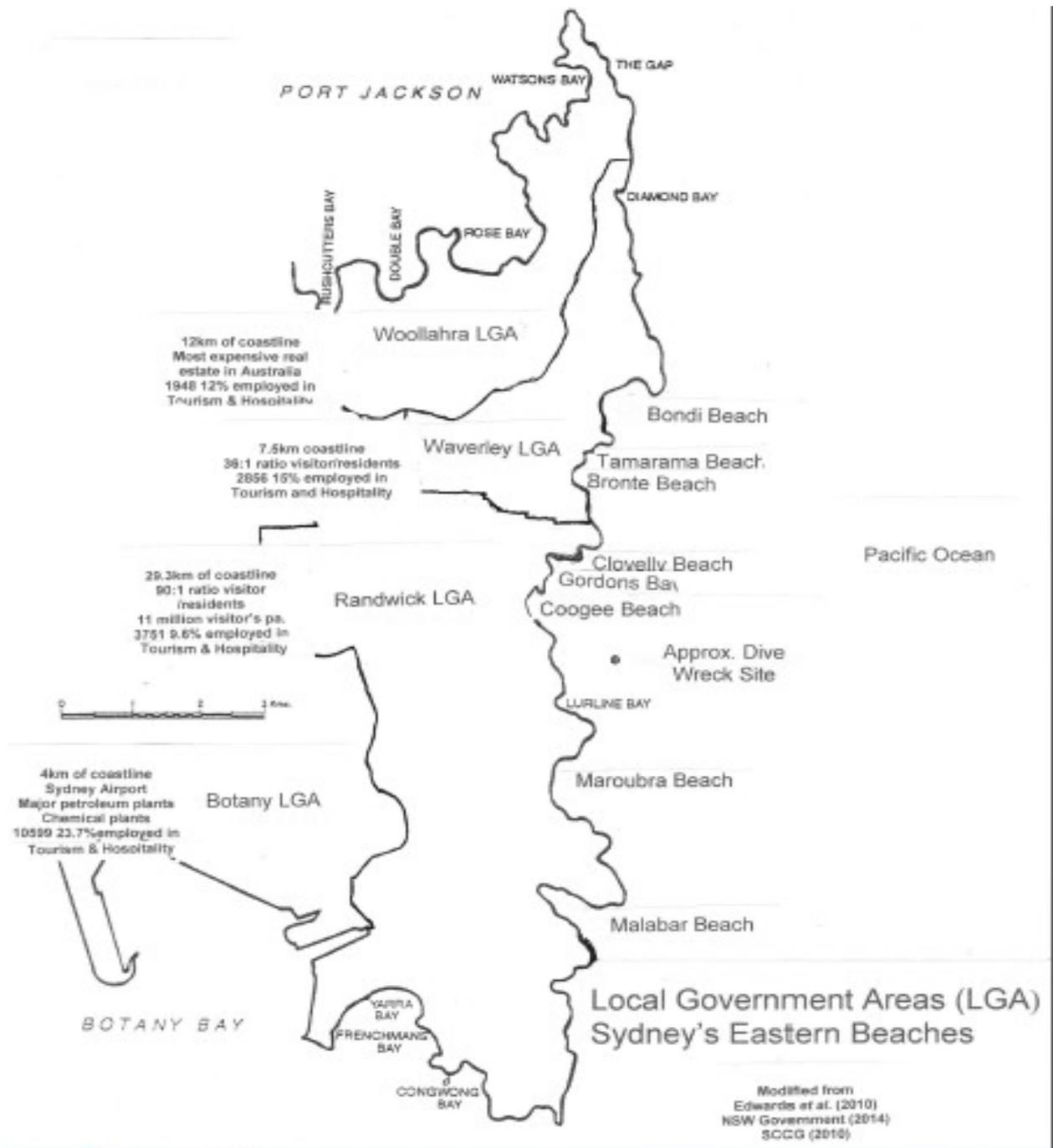
Surplus

Two calculations have been performed to calculate a range for the surplus. These are the 'most favourable' (highest revenue – lowest cost) and 'least favourable (lowest revenue – highest cost).

The following references have been

used to provide the data for the estimate of revenue calculated from the best available information from the Australian Dive Industry and Australian and International studies. (Tabata 1992, Rhodes et al. 1994, Bell et al. 1998, Dowling & Nichol 2001, Johns et al. 2001, Ditton et al. 2002, County 2004, Pendleton 2004, Adams et al. 2006, Escobedo 2007, Oh et al. 2008, Schaffer et al. 2008, Tapsuwan & Asafu-Adjaye 2008, Wheaton et al. 2008, Morgan et al. 2009, Schaffer & Lawley 2010, Anning 2011, Leeworthy 2011b, Schaffer 2011, Shani et al. 2012, Clark 2014, Beaver 2015, Huth et al. 2015, Choi et al. 2016, Paterson 2016, Wikipedia 2016)

Appendix 2 (a) Local Government Areas



Appendix 2 (b)

Total visitors by LGA for year ending September 2015

	thousands							
LGA	Intl	%	Domestic overnight	%	Daytri p	%	total	%
Botany Bay	106	10.5	178	24. 7	433	28. 2	717.0	39. 4
Randwick	812	80.6	226	31. 4	520	33. 8	827	45. 5
Waverley	67	6.6	199	27. 6	355	23. 1	622	34. 2
Woollahra	23	2.3	117	16. 3	230	15. 0	370	20. 3
Total LGA	100 8	100. 0	720	10 0	1538	100	1819	10 0
Total Sydney	290 0	34.8	9222	7.8	19341	8.0	31514	5.8
Total Australia	670 0	15.0	85320	0.8 4	17487 5	0.8 8	26691 2	0.6 8

<http://www.tra.gov.au/research/latest-nvs-report.html>

Appendix 3 Letters of Support Summary

Letters of Support for a Dive Wreck for Sydney

Support letter no	From
1/41	Australian National Maritime Museum
2/41	Shire of Busselton WA
3/41	Michael Daley MP Maroubra
4/41	Michael Daley MP Maroubra
5/41	Sen Hon Robert Hill Minister for Defence
6-7/41	Sen Hon Robert Hill Minister for Defence
8/41	Peter Garrett MP Kingsford Smith
9/41	Pru Goward MP for Goulburn
10/41	Heritage Office David Nutley NSW
11-12/41	Sen Hon David Johnston Minister for Defence
13-14/41	Stephen Jones MP for Throsby
15/41	Mike Kinley AMSA
16/41	Bruce Notley-Smith MP for Coogee
17/41	National Parks Association Dinner with Premier Iemma
18-20/41	NSW Department of Primary Industry
21/41	NSW Premiers Department
22/41	Mayor City of Randwick
23/41	Sen Hon Maryse Payne Minister for Defence
24-27/41	REACH Submarine Cable Protection
28/41	SIMS Chair Peter Steinberg
29/41	South Pacific Divers Club Geoff Cook
30/41	The Lord Mayor of Sydney Clover Moore
31/41	The Hon George Souris NSW Minister for Tourism
32/41	The Hon Andrew Stoner Minister for Trade & Investment
33/41	The Hon Sandra Nori Minister for Tourism
34-35/41	Tim Fischer Australian Tourism Commissioner
36-37/41	Malcolm Turnbull MP for Wentworth
38/41	Gabrielle Upton Member for Vaucluse
39/41	Stuart Ayres Minister for Trade Tourism and Major Events
40/41	Peter Debnam Member for Vaucluse
41/41	Marjorie O'Neil Labor candidate for Coogee

Appendix 4

Recreational dive centres within 75 minutes of potential Coogee site

1. Dive, Spear, Sport, 1729 Pittwater Rd, Mona Vale NSW 2103
2. Pro Dive Manly, 9 Sydenham Rd, Brookvale NSW 2100
3. Dive Centre Manly, 10 Belgrave St, Manly NSW 2095
4. Southern Cross Divers, 235 Spit Rd, Mosman NSW 2088
5. Dive 2000, 2 Military Rd, Neutral Bay NSW 2089
6. Frog Dive Willoughby, 539 Willoughby Rd, Willoughby NSW 2068
7. Adreno Scuba Diving, 2/678-682 Botany Rd, Alexandria NSW 2015
8. Pro Dive Coogee, 27 Alfreda St, Coogee NSW 2034
9. Sydney Dive Safari, 1371-1373 Botany Rd, Botany NSW 2019
10. Scubathlon Scuba Diving Centre, 670 Princes Hwy, Kogarah NSW 2217
11. Abyss Scuba Diving, 278 Rocky Point Rd, Ramsgate NSW 2217
12. Obsession Dive 5/155 Taren Point Rd, Taren Point NSW 2229
13. GEO Divers, 3 Horwood Pl, Parramatta NSW 2150
14. Pro Dive 40 Kingsway, Cronulla NSW 2210
15. Dive Smart, 1/10 Victoria Ave, Castle Hill NSW 2154
16. Sub Aquatics, 9 Newill St, Condell Park, 2200
17. Wilderness Sea and **Ski**, 137 George St, Liverpool NSW 2170
18. United Divers, 22 Princes Hwy, Fairy Meadow NSW 2519
19. Windang Dive and Spearfishing, 324/328 Windang Rd, Windang NSW 2528
20. Shellharbour Scuba Centre, 41 Addison St, Shellharbour NSW 2529

Recreational dive centres within 120 minutes of potential Coogee site

1. Leisure Coast Dive, 2/17 Addison St, Shellharbour NSW 2529
2. Dive Jervis Bay 64 Owen St, Huskisson NSW 2540
3. Dive Imports Australia 5/188 The Entrance Rd, Erina NSW 2250
4. Pro Dive Central Coast 163 Wyong Rd, Killarney Vale NSW 2261

Recreational dive centres within 180 minutes of potential Coogee site

1. Charlestown Diving Academy 53a Ridley St, Charlestown NSW 2290
2. Feet First Dive 17/34 Stockton St, Nelson Bay NSW 2315
3. Let's Go Adventures - Dive Nelson Bay 8 Teramby Rd, Nelson Bay NSW 2315

Other recreational dive centres in NSW

1. Dive Adventures Uladulla Kings Point Industrial Estate, 6 Aroo Rd, Uladulla NSW 2539
2. South Coast Underwater Diving Academy 150 Princes Hwy, Ulladulla NSW 2539

3. Batemans Bay Dive Adventures 6 Sharon Rd, Batemans Bay NSW 2536
4. Narooma Fishing and Dive Centre 66 Princes Hwy, Narooma NSW 2546
5. Underwater Safaris Centenary Dr, Narooma NSW 2546
6. Merimbula Divers Lodge 1/15 Park St, Merimbula NSW 2548
7. Forster Dive Centre 11-13 Little St, Forster NSW 2428
8. Dive Forster at Fisherman's Wharf Cnr Memorial Drive & Little St, Forster 2428
9. Ricks Dive School 19 Granite St, Port Macquarie NSW 2444
10. SCUBA Haven 20 Merrigal Rd, Port Macquarie NSW 2444
11. Fish Rock Dive Centre 134 Gregory St, South West Rocks NSW 2431
12. South West Rocks Dive Centre 5/98 Gregory St, South West Rocks NSW 2431
13. Jetty Dive Centre 398 Harbour Dr, Coffs Harbour NSW 2450
14. Riffe Oceania Woolgoolga NSW 2456
15. Dive Quest 30 Mullaway Dr, Mullaway NSW 2456
16. Byron Bay Dive Centre 9 Marvell St, Byron Bay NSW 2481
17. Sundive Byron Bay 11/8 Middleton St, Byron Bay NSW 2481
18. Blue Bay Divers Brunswick Heads Boat Harbour, Old Pacific Highway,
Brunswick Heads NSW 2483
19. Tweed Sea Sports 33 Machinery Dr, Tweed Heads South NSW 2486
20. Kirra Dive on the Tweed 1/133 Wharf St, Tweed Heads NSW 2485

Total recreational dive centres in NSW 47

Appendix 5 Coogee wreck dive site characteristics



(Diver Peter Howard photographer George Evatt April 2006)

- a bare sandy bottom without extreme conditions such as strong rips or currents.
- the ability to attract marine life to colonise the artificial reef.
- appropriate depth to the seabed and underlying rock to ensure a scuttled vessel could penetrate into the sand and remain stable and upright.
- meeting navigational safety requirements.
- minimal impact on commercial fisheries.
- within reasonable proximity to on-shore infrastructure for dive operators.
- Water depths in this area are between 30 and 34m.
- Be devoid of sensitive marine habitats and have minimal impact on the local coastline.
- Have the ability to attract fish and increase local biodiversity.
- Have geological characteristics suitable for the ship to settle with no impact on local reefs and other geological features.
- Be at an appropriate depth of water.
- Not impact on shipping lanes or navigational areas.
- Not be dangerous for scuba diving and have good visibility.
- Not impact on other legitimate uses that may operate in the area.
- Have no natural reef or seagrass beds.

Appendix 6 Sport Participation Table Australia (Source Roy Morgan Research)

Activity	Total players 000	%women	% men
Swimming	6853	56	44
Hiking Bushwalking	5041	52	48
Jogging	4576	49	51
Gym Weight training	4223	49	51
Cycling	3656	43	57
Ten pin bowling	2007	50	50
Yoga	2002	78	22
Golf	1891	19	81
Tennis	1682	41	59
Soccer	1400	27	73
Aerobics	1208	80	20
Cricket	1205	11	89
Basketball	1055	24	76
Diving Snorkeling	982	47	53
Marathon running	719	51	49
Netball	678	85	15
Australian Rules	583	19	81
Shooting	518	17	83
Horse riding	514	66	34
Boxing	513	54	46
Volleyball	461	44	56
Rock climbing	400	47	53
Rowing	342	46	54
Rugby League	320	22	78

Appendix 7

Ex HMAS Adelaide Scuttling

Locations	Glebe Island Wharf No. 2, Sydney Harbour, New South Wales
Client	NSW Land & Property Management Authority
Contract	Scuttling of Ex HMAS Adelaide Vessel for use as an Artificial Reef
Cost	\$6.5 Million
Duration	18 months, 2011

Stripping and preparation of former war ship to a virtual skeleton and scuttling off the NSW mid coast.

- This ship participated in the 1990/91 Gulf War, peacekeeping operations in East Timor in 1999 and deployed to the Arabian Gulf as part of the International Coalition against Terrorism in 2001 and 2004. She was Australia's first guided-missile frigate and was home-ported in Western Australia.
- McMahon Services were contracted by NSW Land & Property Management Authority to prepare the vessel for scuttling off the NSW mid coast. This was an enormous task - stripping a fully operational war ship to make it a virtual skeleton. All environmental hazards required total removal.
- We had to develop methods to make the vessel do what it was never design to do...sink. The vessel was littered with specially cut holes to let water in and air out when it was scuttled. The main task was to penetrate bulkheads and clearing pathways through the vessel so that divers had enough room to manoeuvre through safe thoroughfares.

- **Key Milestones**

- Milestone 1: Establishment and Vessel Delivery
- Milestone 2: Initial Preparation and Towage Milestone
- Milestone 3: Design and Ship Preparation Milestone 4: Scuttling
- Milestone 5: Post Scuttling Activities
- Milestone 6: Handover - including ballasting details and Dangerous Goods & Materials Register

● Unique Processes

- Removal of zinc chromate and lead based paint prior to hot work or friction cutting
- Removal of 80 tonnes of lead ballast “pigs” sealed inside the ballast tanks and in the Auxiliary Motor Room bilges attached to the keel between the ribs and stringers
- The client and end user groups, including the dive community and environmental groups, were very pleased with the dive design and the considerable items of interest that were retained in the vessel from the Bridge to the Engine Rooms.
- Environmental groups were impressed with the standard of clean lines particularly the removal of the hydrocarbons, insulation and dangerous materials.
- The project took approximately 18 months to complete, with man-hours in excess of 30,000 hours with a steady crew of 20 personnel.
- Statistics on materials removed: 80 tonnes of lead ballast
- Hydrocarbons - 145,000 Litres of Hydraulic oil lube oil JP5 Aviation Fuel Diesel/Oily Bilge water Mercury switches in fire system – 143 in total and sent to licenced Recycler
- Capacitors from over 1,000 fluorescent lights that potentially contain PCB's (2000)
- 2,000 Fluorescent tubes that contain Mercury Gases removed and sent to licenced Recycler 50 Transformers that contain potential PCB's
- 4,800 globes from lights on instrument panels and battle lamps, landing lights, etc. 5,100 fuses from electrical boards, communication boards, radars, instrument panels 450 various capacitors in electrical boxes and communication appliances Approximately 600 9 Volt Batteries in battle lamps
- Asbestos from various areas including ducting, pipe flanges, and switchboards by cutting each side so as not to disturb asbestos and disposed of to a licenced Contractor
- Links to video of ex HMAS Adelaide
- <http://www.mcmservices.com.au/media/videos/the-force-hmas-adelaide/the-force-hmas-adelaide>
- <http://www.mcmservices.com.au/media/videos/hmas-adelaide-decommissioning-and-scuttling/hmas-adelaide-decommissioning-and-scuttling>
- <http://www.mcmservices.com.au/news/the-final-journey-of-the-ex-hmas-adelaide>
- <http://www.mcmservices.com.au/news/ex-hmas-adelaide-sent-to-a-watery-grave>
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Appendix 8 dive wrecks worldwide

https://en.wikipedia.org/wiki/Sinking_ships_for_wreck_diving_sites

[#List of ships sunk for wreck diving](#)

Year	Vessel Name	Location	Country/territory
2018	HMAS Tobruk	Bundaberg QLD	Australia
2017	Fishing Trawler, <i>Gal 'Oz</i>	<u>Hertzliya, Israel</u>	Israel
2017	<u>USCGC <i>Tamaroa</i> (WMEC-166)</u>	<u>Cape May, New Jersey</u>	United States
2016 ¹	<i>Vis</i>	<u>Kamenjak, Istra</u>	Croatia
2016 ¹	Airbus	Kusdaci	Turkey
2016 ¹	Ship	Karaburun	Turkey
2016 ¹	Ship	Dikili	Turkey
2016 ¹	Ship	Karaburum	Turkey
2015 ¹	Ship	Merselin Silifske	Turkey
2015	ARM <i>Uribe</i> (P121)	<u>Rosarito Beach,</u>	Mexico
2015	<u>USS <i>Comstock</i></u> ^[citation needed]	<u>Checheng Township,</u> Pingtung	Taiwan
2015	<u>HMCS <i>Annapolis</i></u> ^[1]	British Columbia	Canada
2014 ¹	Ship	Erdine Sarus Bay	Turkey
(GENÇ et al. 2017)			
2014	<u>MV <i>Ærø Sund</i></u> ^[citation needed]	South Fionan Sea	Denmark
2014	<u>HTMS <i>Kledkaeo</i> (AKS-861)</u> ^[citation needed]	<u>Phi Phi Islands</u>	Thailand
2013	<u>Tug No. 2</u>	<u>Sliema</u>	Malta
2013 ¹	Airplane C47	Kemer Ucadalar	Turkey
2013	T11 Coastal Patrol Ship	<u>Ko Chang</u>	Thailand
2013	NRP <i>Almeida Carvalho</i> (A527)	<u>Algarve</u>	Portugal
2013	NRP <i>Hermenegildo Capelo</i> (F481)	<u>Algarve</u>	Portugal
2012 ¹	Ship	Samsun Kurupelit	Turkey
2012	<u>USS <i>Lincoln County</i></u>	<u>Ko Chang</u>	Thailand
2012	NRP <i>Zambeze</i> (P1147)	<u>Algarve</u>	Portugal
2012	NRP <i>Oliveira e Carmo</i> (F489)	<u>Algarve</u>	Portugal
2012	HTMS <i>Phetra</i> (LCT-764)	Ko Man Nok	Thailand
2012	HTMS <i>Mataphon</i> (LCT-761)	<u>Ko Larn</u>	Thailand
2012	<u>USCGC <i>Mohawk</i></u>	<u>Lee County, Florida</u>	United States
2011	<u>USS <i>Arthur W. Radford</i></u>	<u>Cape May, New Jersey</u>	United States
2011	HTMS <i>Sattakut</i> (LCI-742)	<u>Koh Tao</u>	Thailand

Year	Vessel Name	Location	Country/territory
2011	HTMS <i>Prab</i> (LCI-741)	<u>Chumphon</u>	Thailand
2011	<u>HMAS Adelaide</u>	<u>Avoca Beach</u> , NSW	Australia
2011	<u>USS Kittiwake (ASR-13)</u>	Grand Cayman	Cayman Islands
2011 ¹	Ship	Didim	Turkey
2011 ¹	Ship	Kas, Cukurbag Peninsula	Turkey
2011 ¹	Ship	Airplane	Turkey
2010 ¹	Ship	Seferihisar Sigacik	Turkey
2009	<u>P31</u>	<u>Comino</u>	Malta
2009 ¹	Airplane	Kaz Incebogaz	Turkey
2009 ¹	Ship	Duzce	Turkey
2009	HMAS Canberra	Barwon Heads VIC	Australia
2009	<u>USNS Vandenberg</u> ^[2]	Key West, Florida	United States
2008 ¹	Airplane C47	Bodrum, Pacoz Bright	Turkey
2007	<u>USS Cruise</u>	<u>Delaware Bay</u>	United States
2007 ¹	Ship	Kemer Ucadalar	Turkey
2007 ¹	Ship	Bodrum Karaada	Turkey
2007	<u>HMNZS Canterbury</u>	<u>Bay of Islands</u>	New Zealand
2007	<u>USTS Texas Clipper</u>	South Padre Island, Texas	United States
2007	<u>P29</u> ^[3]	Çirkewwa	Malta
2006 ¹	Ship	Alanya Damlatas Beach	Turkey
2006	<u>MV Cominoland</u> ^[3]	Gozo	Malta
2006	<u>MV Karwela</u> ^[3]	Gozo	Malta
2006	HTMS <i>Kut</i> (L-731)	Pattaya	Thailand
2006	<u>USS Oriskany (CV-34)</u>	Florida	United States
2006	Xihwu Boeing 737 ^[4]	British Columbia	Canada
2005	<u>HMNZS Wellington</u>	Wellington	New Zealand
2005	<u>HMAS Brisbane</u>	<u>Mooloolaba</u> , QLD	Australia
2004	Hebat Allah ^[5]	<u>Hurghada</u> , Red Sea	Egypt
2004	<u>USCGC Spar</u>	<u>Morehead City</u> , NC	United States
2004	<u>HMS Scylla</u>	<u>Whitsand Bay</u> , Cornwall	United Kingdom
2003	MV <i>Camia 2</i>	<u>Boracay island</u>	<u>Aklan</u>
2003	CS <i>Charles L Brown</i> ^[6]	Sint Eustatius	Leeward Islands
2003	<u>HMCS Nipigon</u>	Quebec	Canada
2003	<u>USS Leonard F. Mason</u>	Chaikou, <u>Green Island</u>	Taiwan
2003	HTMS <i>Khram</i> (L-732)	<u>Ko Phai</u>	Thailand

Year	Vessel Name	Location	Country/territory
2002	<i>MV Dania</i> ^[7]	Mombasa	Kenya
2002	<i>USS Spiegel Grove</i> ^[8]	Florida	United States
2002	<i>HMAS Hobart</i>	<u>Yankalilla Bay</u> , South Australia	Australia
2001	<i>HMAS Perth</i> ^[9]	<u>Albany, Western Australia</u>	Australia
2001	<i>HMCS Cape Breton</i> ^[4]	British Columbia	Canada
2001	<i>USS Jubilent</i>	<u>Veracruz</u>	Mexico
2000	<i>HMNZS Waikato</i>	Tutukaka	New Zealand
2000	<i>USS Knave</i>	<u>Puerto Morales</u>	Mexico
2000	<i>USS Fort Marion</i>	HaiTzuKuo, <u>Xiaoliuqiu</u>	Taiwan
2000	<i>HMCS Yukon</i> ^[4]	San Diego, California	United States
2000	<i>Stanegarth</i>	<u>Stoney Cove</u>	United Kingdom
1999	<i>MV Imperial Eagle</i> ^[10]	Qawra	Malta
1999	<i>USS Scuffle</i>	Cozumel	Mexico
1999	<i>HMNZS Tui</i>	Tutukaka Heads	New Zealand
1999	<i>MV Xlendi</i> ^[11]	Gozo	Malta
1998	<i>MV Adolphus Busch</i>	<u>Looe Key</u> , Florida	United States
1998	<i>Um El Faroud</i> ^[3]	Qrendi	Malta
1998	<i>St. Michael</i>	Marsaskala	Malta
1998	<i>Tug No. 10</i>	Marsaskala	Malta
1997	<i>HMCS Saskatchewan</i> ^[4]	British Columbia	Canada
1997	<i>HMAS Swan</i> ^[12]	<u>Dunsborough, Western Australia</u>	Australia
1996	<i>HMCS Columbia</i> ^[4]	British Columbia	Canada
1996	<i>MV Captain Keith Tibbetts</i> (formerly Russian-built frigate 356)	Cayman Brac	Cayman Islands
1996	<i>Inganess Bay</i> ^[13]		British Virgin Islands
1995	<i>HMCS Mackenzie</i> ^[4]	British Columbia	Canada
1995	<i>MV Jean Escutia</i>	<u>Puerto Morelos</u>	Mexico
1994	<i>INS Sufa</i>	<u>Eilat, Israel</u>	Israel
1994	<i>HMAS Derwent</i>	<u>Rottnest Island</u>	Australia
1994	<i>HMS Pelorus</i>	<u>Miller's Point</u> ,	South Africa
1994	<i>HMCS Saguenay</i>	<u>Nova Scotia</u>	Canada
1992	<i>HMCS Chaudière</i> ^[4]	British Columbia	Canada

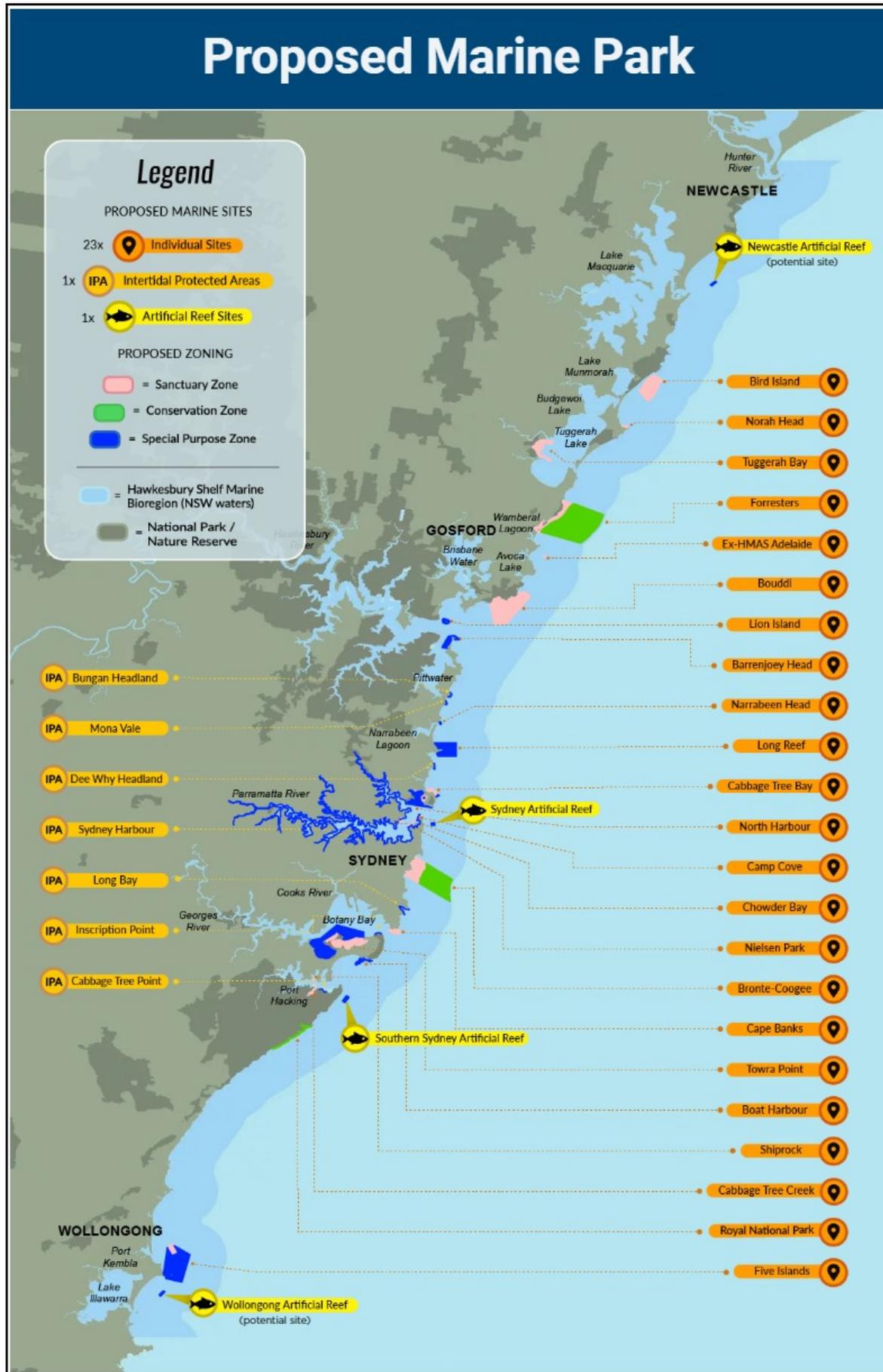
Year	Vessel Name	Location	Country/territory
1992	<u>USS Indra</u>	North Carolina	United States
1992	<u>MV Rozi</u> ^[3]	Ċirkewwa	Malta
1991	<u>USS Algol</u>	New Jersey	United States
1991–2001	"Wreck Alley" – <i>Marie L, Pat and Beata</i> ^[14]		BVI
1991	<i>MV G.B. Church</i> ^[4]	British Columbia	Canada
1990	<i>Fontao</i>	Durban	South Africa
1990	<i>USCG Hollyhock</i>	Florida	United States
1990	<i>T-Barge</i>	Durban	South Africa
1990	<u>USS Chippewa</u>	<u>Destin, Florida</u>	United States
1990	<u>USS Yancey</u>	<u>Morehead City, North Carolina</u>	United States
1989 ¹	Trolley Bus	Izmir inner Bay	Turkey ¹
1989	<u>YO-257</u>	<u>Oahu, Hawaii</u>	United States
1989	<u>USS Blenny</u>	<u>Ocean City, Maryland</u>	United States
1989	<u>USS Muliphen</u>	<u>Port St. Lucie, Florida</u>	United States
1988	<u>USS Aeolus</u>	North Carolina	United States
1988	<u>USS Rankin</u>	<u>Stuart, Florida</u>	United States
1988	<u>USCGC Unimak</u>	Virginia	United States
1988	<u>USS Vermilion</u>	<u>Myrtle Beach, South Carolina</u>	United States
1987–2000	<u>Wreck Alley</u>	<u>San Diego, California</u>	United States
1987	<u>USCGC Bibb</u> ^[15]	Florida	United States
1987	<u>USCGC Duane</u> ^[15]	Florida	United States
1987	<u>Rainbow Warrior</u> ^[16]	<u>Matauri Bay</u>	New Zealand
1987	<u>USS Strength</u>	<u>Panama City, Florida</u>	United States
1987	<u>USS Accokeek</u>	Gulf of Mexico	United States
1985	<u>Eagle</u>	Florida	United States
1983	<u>USS Curb</u>	<u>Key West, Florida</u>	United States
1982	<u>MS Logna</u>	<u>Grand Bahama Island</u>	Bahamas
1982	<u>USS Scrimmage</u>	<u>Waianae, Hawaii</u>	United States
1980	<u>USS Mindanao</u>	<u>Daytona Beach, Florida</u>	United States
1980	<u>USS Harlequin</u>	Isla Mujeres	Mexico
1980	<i>Oro Verde</i> ^[17]		Cayman Islands
1978	<u>USS Dionysus</u>	North Carolina	United States

Year	Vessel Name	Location	Country/territory
1975	<u>USS Mona Island</u>	<u>Wachapreague, Virginia</u>	United States
1974	<i>SS Theodore Parker</i>	North Carolina	United States
1972	<u>USS Fred T. Berry</u>	<u>Key West, Florida</u>	United States
1970	<u>Mohawk</u>	<u>Wrightsville Beach, North Carolina</u>	United States
1970	<u>Glen Strathallen</u>	<u>Plymouth Sound</u>	United Kingdom
1968	<u>USS Mizpah</u>	<u>Palm Beach, Florida</u>	United States
1942/1984	<u>ITS Scirè</u>	<u>Haifa, Israel</u>	Israel

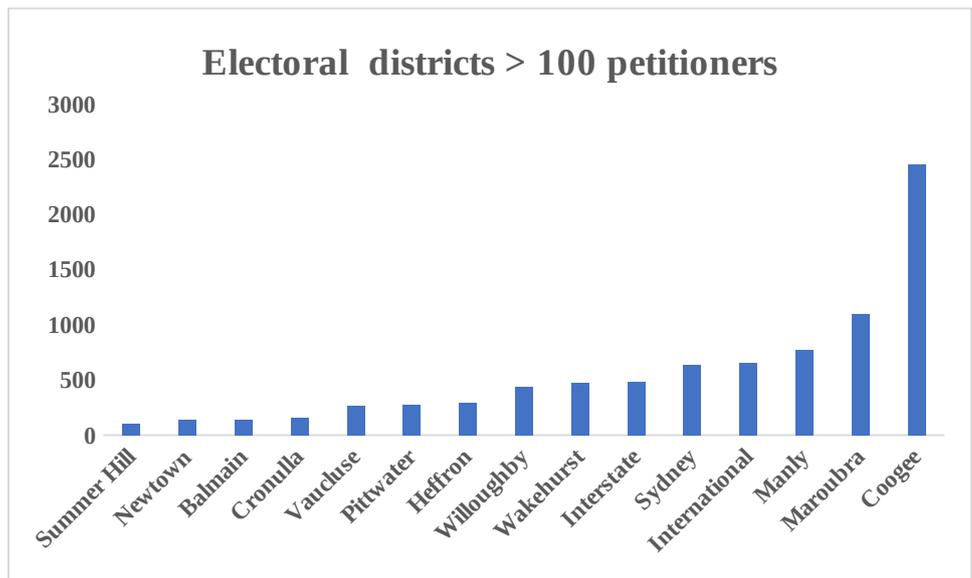
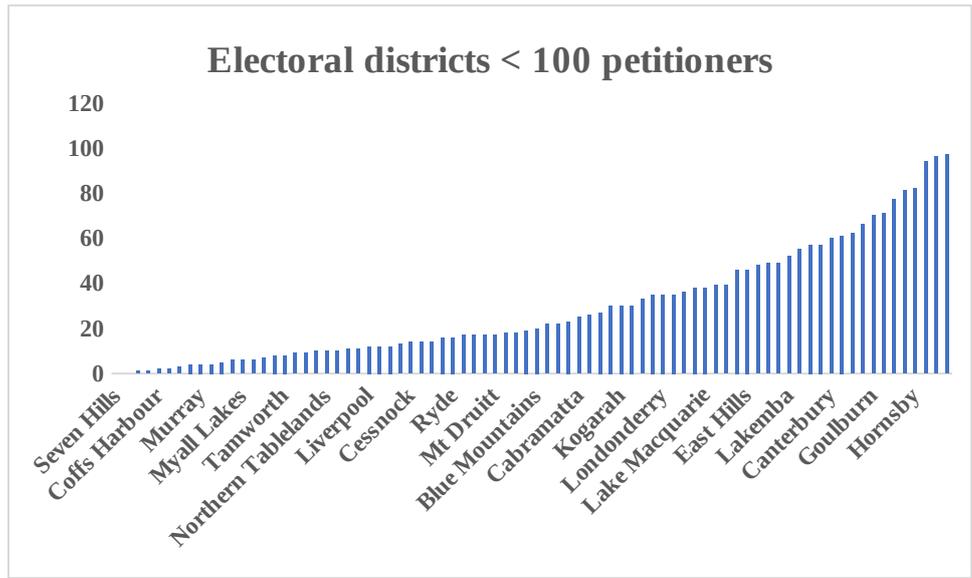
Appendix 9 Sydney Dive Wreck alignment with the Marine Estate Management Act No72, 2014

Sydney Dive Wreck Proposal alignment to Marine Estate Management Act		
MEMA Objectives	SDW Reference	Met?
(a) to provide for the management of the marine estate of New South Wales consistent with the principles of ecologically sustainable development in a manner that:	Overall	Yes✓
(i) promotes a biologically diverse, healthy and productive marine estate ,	Section 2.2.1 Environmental Rationale	Yes✓
facilitates: • economic opportunities for the people of New South Wales, including opportunities for regional communities,	Section 2.2.2 Economic Rationale	Yes✓
facilitates: the cultural, social and recreational use of the marine estate	Section 2.2.4 Community Rationale	Yes✓
facilitates: the maintenance of ecosystem integrity	Section 2.2.1 Environmental Values	Yes✓
facilitates: the use of the marine estate for scientific research and education	Section 2.2.3 Research Values	Yes✓
(b) to promote the co-ordination of the exercise , by public authorities, of functions in relation to the marine estate ,	Section 4.2. Governance	Yes✓
(c) to provide for the declaration and management of a comprehensive system of marine parks and aquatic reserves .	Executive Summary	Yes✓

Appendix 10



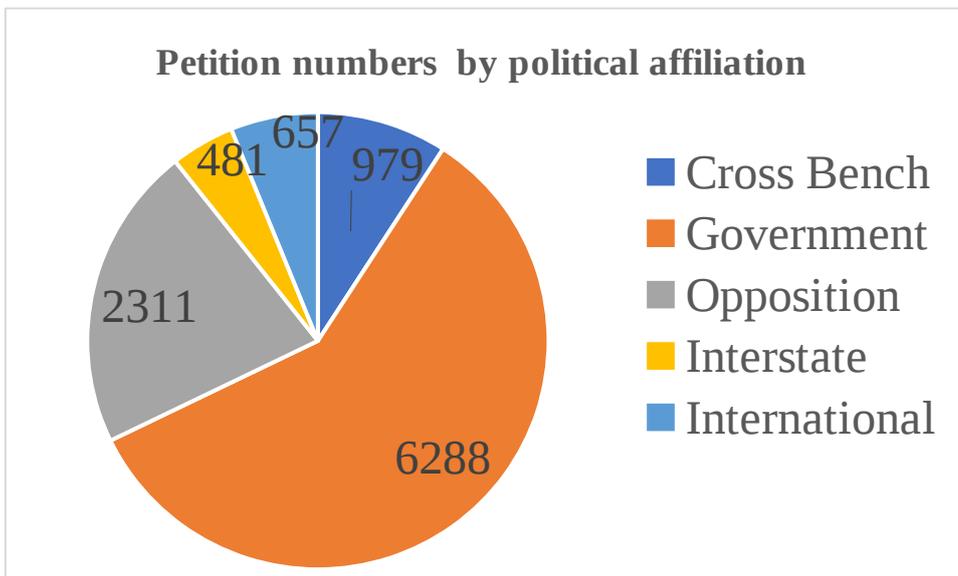
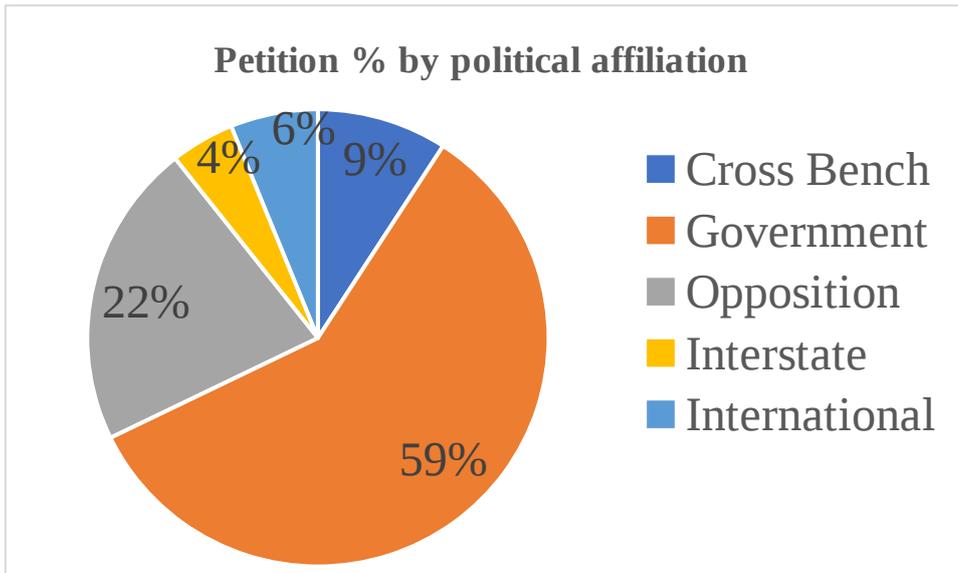
Appendix 11 NSW Electoral divisions petition analysis



Wagga Wagga and Seven Hills were the only electorates to record Zero signatures.

**The above charts show those electorates with less than 100 signatures
And more than 100 signatures in support of a Sydney Dive Wreck**

Appendix 11



The above charts show the support for a Sydney Dive Wreck by Petition signatures by % and numbers.

Of note is that 10% or over 1100 signatures are from interstate and overseas

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