



Flinders Ports Outer Harbor dredging proposal

Community submissions report

14 December 2018

Flinders Ports Outer Harbor dredging proposal – community submissions report, December 2018

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Executive summary

In May 2018, the Minister for Planning approved a development application by Flinders Ports Pty Ltd (Flinders Ports) to widen the Outer Harbor shipping channel to accommodate larger vessels. This approval was subject to eight conditions, many of which were recommended by the Environment Protection Authority (EPA). Following approval of its development application, Flinders Ports is required to apply for a licence under the *Environment Protection Act 1993* before it can commence dredging. On 3 August 2018 Flinders Ports submitted an application to the EPA and the EPA subsequently undertook consultation on the application.

From 5 November 2018 to 30 November 2018, the EPA had **99** interactions with regard to the licence application. This included **85 submissions** about the application and **15 interactions** relating to obtaining further information. **13%** of the people who made submissions expressed the view that there should be no dredging under any circumstances, and **65%** submitted the same or very similar responses that requested that *“no dredging licence be granted until:*

- *A comprehensive independent environmental evaluation has been undertaken;*
- *All stakeholders have been properly consulted (including the fishing industry and conservation groups);*
- *Comprehensive real-time monitoring and reporting arrangements are in place with all work to stop if conditions deteriorate; and*
- *An adequate security bond of at least \$100 million is in place to cover the cost of environmental damage and to compensate the fishing industry and others when things go wrong.”*

24% of the people who made submissions were concerned about the dredging that occurred in 2005-06, which generated widespread and extensive turbidity that spread throughout the nearshore environment and impacted seagrass meadows.



The conclusion from the submission process is that many of the issues that are of concern to the community are also shared by the EPA. The EPA considered the majority of these concerns in its advice to the State Commission Assessment Panel in November 2017, and in the current assessment of the licence application in 2018.

The original proposal in Flinders Ports' July 2017 development application was to use the same dredging methods as the 2005-06 dredging works. The EPA informed Flinders Ports that the predicted loss of seagrass from this method was unacceptable and a range of alternative dredging methods needed to be considered to reduce the predicted impact on the marine environment.

Following advice from the EPA on the likely significant impacts on seagrass from its original methodology, Flinders Ports determined to alter its development application to include dredging methodology that is predicted to greatly reduce the area of total seagrass loss (by up to 82%). A range of other measures to minimise the impact on the environment to the greatest extent possible has also been proposed and further details of many of these measures are outlined in this report.



The EPA is currently still considering whether it will grant Flinders Ports an environmental authorisation in the form of a licence.

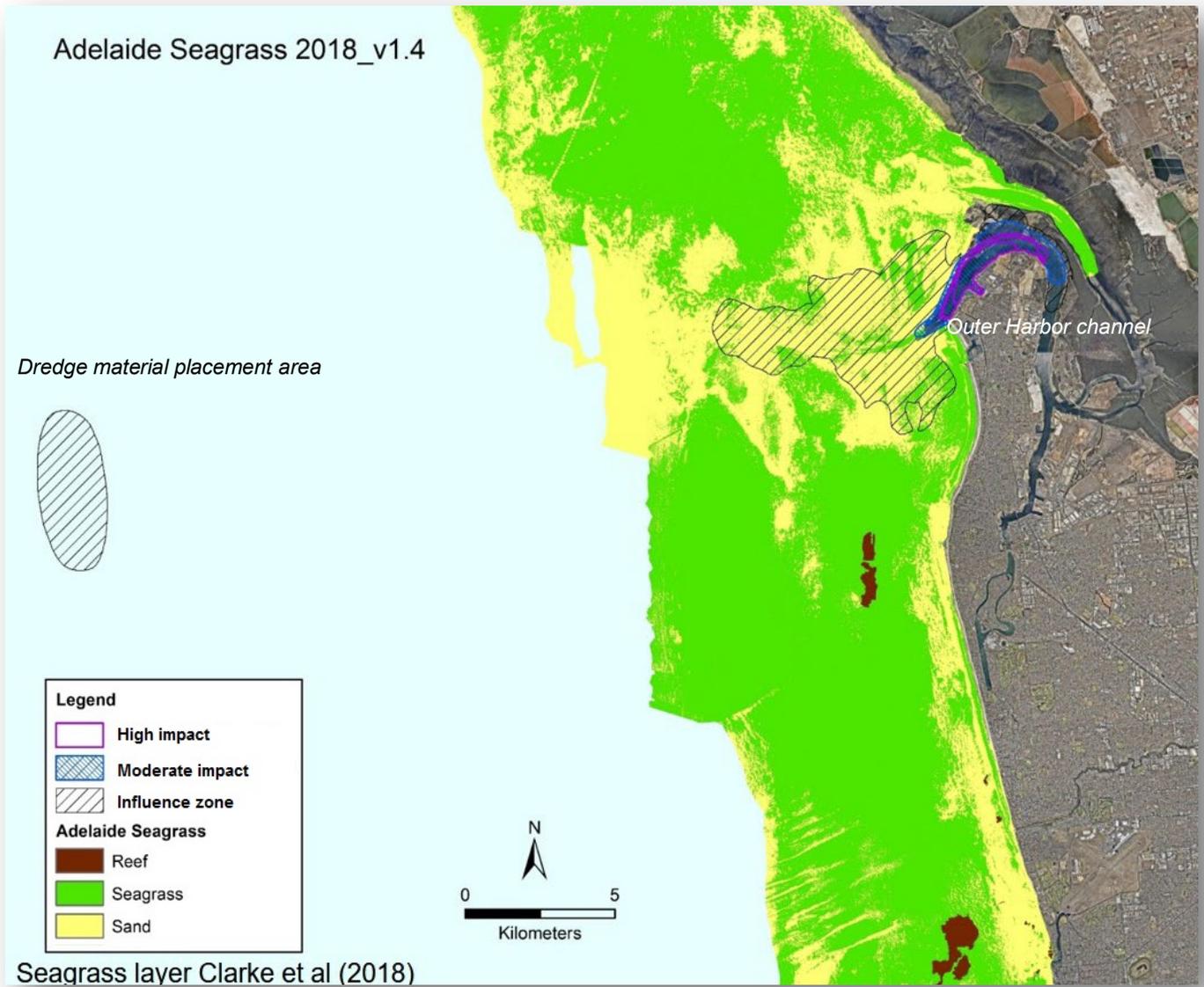


Image courtesy of Adelaide University Hyperspectral Report, Clarke et. al. (2018)

1 Purpose and objectives

The purpose of the engagement process was to identify stakeholder and community views so these could be considered during the EPA's assessment of Flinders Ports' licence application to widen the existing shipping channel and swing basin at Outer Harbor in the Port of Adelaide.

The engagement process fulfilled the statutory public notice and submissions process set out in the *Environment Protection Act 1993* and was extended by directly inviting submissions from stakeholders who had previously expressed an interest in the Port environment.

The EPA commenced earlier engagement with key stakeholders on the proposal during the process of providing advice to the State Commission Assessment Panel (SCAP) in 2017 on Flinders Ports' development application and is committed to engaging with the community for the entirety of the project.

The EPA developed a fact sheet about the proposal and published the licence application, advice to the SCAP, and links to further information and relevant documents on an updated webpage dedicated to this proposal. The EPA's engagement objectives were to provide information, clarify queries or concerns, listen to and gather feedback from the public, and record the nature, topic and results of these interactions.

The EPA also strongly encouraged Flinders Ports to undertake its own community engagement.

This report outlines the EPA's approach and findings of the community submissions and engagement on the licence application.

2 Background

Flinders Ports has applied for an EPA licence for the activity of dredging to widen the Outer Harbor Channel of Port Adelaide. The proposed development involves the following two sites:

- Dredging works within the Outer Harbor Channel and swing basin; and
- The dredge material placement area located 30 km southwest of Outer Harbor in Gulf St Vincent.

In its application, Flinders Ports stated that widening is considered necessary to allow larger vessels (known as Post-Panamax vessels) to utilise Port Adelaide and provide the best opportunities for South Australian exporters to reach their markets.

The project involves widening the Outer Harbor Channel by approximately 40 metres.

The EPA expects minimisation of turbidity to protect the surrounding marine environment during any dredging process, anywhere in South Australia.

Flinders Ports' application outlined that materials removed from the channel are proposed to be moved by multiple barge vessels approximately 30 km out to sea, to the same area as materials from the channel deepening project in 2005-06. The volume of material proposed to be disposed is approximately half the volume of material that was disposed during the previous channel deepening project. The current project is expected to take three to six months to complete.

3 Community engagement approach to submissions

Community engagement by the EPA on the dredging proposal began in 2017 as part of the State Commission Assessment Panel (SCAP) process. The EPA undertook community engagement at this time with key stakeholders including representatives of the following groups:

- Friends of Gulf St Vincent
- Western Adelaide Coastal Residents' Association
- Port Adelaide Residents' Environment Protection Group
- Conservation Council of SA
- RecFish SA
- RecfishCENTRAL
- Commercial fisheries

The EPA placed public notifications of the licence application in *The Advertiser* and the *Portside Weekly Messenger* on 7 November 2018 (noting that it was with an incorrect reference to the *Environment Protection Act 1993*) and again on 14 November 2018 (being the correction). The notice contained the address of the EPA's dedicated webpage.

Because of the significance of the project, on 5 November 2018 the EPA broadened the distribution for the invitation to make a submission on the Flinders Ports' licence application. The EPA sent information to key stakeholders that had previously identified with the EPA's community engagement team as having an interest in the Port environment – this included a project fact sheet, links to website information, and an invitation to make a submission.

A summary of key themes and issues raised by members of the community is outlined in this report, along with the EPA's response to concerns raised.

For each submission received, the EPA:

- Read the submission;
- Collated it into a summary provided to key EPA staff, Flinders Ports and its consultants;
- Coded the key themes so that they could be compiled into an easy overview graph;
- Provided a personalised acknowledgement email that provided links to the fact sheet and website;
- Where it was clear that the person making a submission had read previous material but was interested in a particular element of the project, directed the person to the relevant information; and
- Summarised the main topics and compiled this information into responses in this report.

Table 1 Community engagement timeline for submissions

| | Activity |
|-----------------------------------|---|
| <p>November 2017</p> | <ul style="list-style-type: none"> • Key stakeholder engagement with conservation groups and recreational fishing groups (see list above). • Thorough environmental assessment of the proposal by marine scientists, planning experts, and other key EPA staff. |
| <p>3 August 2018</p> | <ul style="list-style-type: none"> • Flinders Ports' licence application submitted. Preliminary meetings and discussions held with Flinders Ports about the aims of the EPA in ensuring that if a licence is to be granted there will be a strong focus on minimising and mitigating environmental harm. • EPA encourages Flinders Ports to commence its own community engagement process and develop a community engagement plan. • Flinders Ports submits its community engagement plan to the EPA and the EPA indicates the support of its content and plan for implementation. |
| <p>5 November 2018</p> | <ul style="list-style-type: none"> • EPA sends information to key stakeholders advising of the application, attaching a fact sheet about the proposal and inviting submissions. Stakeholders were identified through previous contact and engagement with the EPA, as well as targeted local community groups and community members. • The designated web page of the EPA website is updated with information regarding the application and the fact sheet. The web page will continue to be updated throughout the life of the project. • The EPA provided a designated phone number and email address for the community engagement and this was publicised in all information materials produced: engage.epa@sa.gov.au. • On 7 November the first notification in <i>The Advertiser</i> and <i>Portside Weekly Messenger</i> (inadvertently erroneously quoting Section 39 of the <i>Environment Protection Act 1993</i>) announced a public submission period. |
| <p>14 November 2018</p> | <ul style="list-style-type: none"> • On 14 November a second notification in <i>The Advertiser</i> and <i>Portside Weekly Messenger</i> (correcting the first notification made on 7 November 2018) announced a public submission period. |
| <p>30 November 2018</p> | <ul style="list-style-type: none"> • Public submission period closes. The EPA forwards all submissions (with personal details removed) to Flinders Ports for the opportunity to respond. |
| <p>7– 14 December 2018</p> | <ul style="list-style-type: none"> • EPA publishes community submissions report. The EPA is still considering this licence application. |

4 Evaluation

4.1 Key themes and areas of interest

A summary of the top key themes raised with staff through submissions and personal interactions is shown in Figure 1 below.

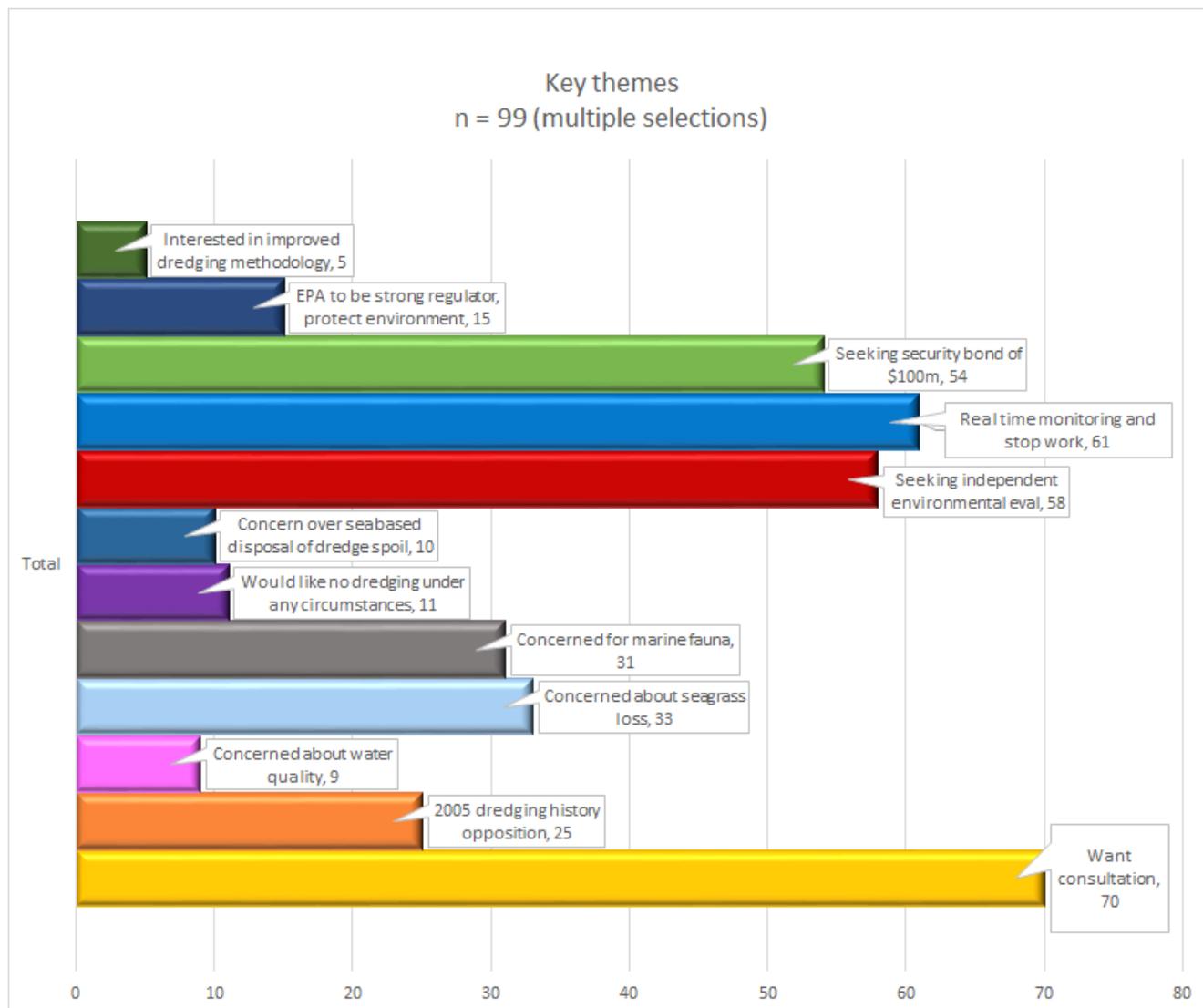


Figure 1 Key themes raised in submissions and during personal interactions

There were four main key themes that were the same or very similar. In full, the request is “that no dredging licence be granted until:

- A comprehensive independent environmental evaluation has been undertaken;
- All stakeholders have been properly consulted (including the fishing industry and conservation groups);
- Comprehensive real-time monitoring and reporting arrangements are in place with all work to stop if conditions deteriorate; and

- *An adequate security bond of at least \$100 million is in place to cover the cost of environmental damage and to compensate the fishing industry and others when things go wrong.”*

Other key themes were concern for seagrass loss, marine fauna, and the previous dredge operation in 2005-06.

4.2 EPA decision on licence application

The EPA has considered the objects of the Environment Protection Act 1993 (the Act), and relevant points outlined in Section 47 of the Act (below) in determining whether to grant or refuse an environmental authorisation and what the term or conditions should be, including:

- (a) have regard to, and seek to further, the objects of this Act; and*
- (b) have regard to the general environmental duty; and*
- (c) have regard to any relevant environment protection policy, and, in relation to an application for exemption from mandatory provisions of an environment protection policy, give effect to any provisions of the policy governing the granting of such exemptions; and*
- (d) have regard to any relevant reports, assessments, environmental impact statement, public environmental report, development report, Assessment Report, development authorisation or other document or requirement under the Development Act 1993; and*
- (e) have regard to any written submissions (and any responses to such submissions) made to the Authority under this Part that are relevant to the matters to be determined.*

The EPA has also had regard to aspects set out in Section 21 of the *Environment Protection Regulations 2009* in assessing the application for a licence involving an activity of environmental significance.

The EPA has looked at every aspect of the proposal in the 2017 development application and again in the 2018 licence application to ensure that the impact on the environment is minimised to the maximum extent possible. With the exception of the four hectares of permanent seagrass loss directly in the section of channel being widened, the majority of the environmental impact is expected to be relatively short-term.

The EPA has had regard to the application and supporting documentation, all written submissions received and the applicant's response to those submissions. The EPA is still considering this licence application.

4.3 Key themes raised and further information in response

Table 2 Key themes raised and EPA further information in response

| Key themes and number of times raised | EPA consideration |
|--|---|
| <p>Want adequate consultation (n=58)</p> | <p>In July 2017 Flinders Ports lodged a development application with the State Commission Assessment Panel (SCAP). SCAP referred the application to the EPA shortly after receiving it to seek advice on aspects relating to the environment. Following a number of further information requests and meetings with the applicant and its consultants, the EPA commenced engagement with key stakeholders on the proposal as part of its assessment process.</p> <p>As well as liaising with other government departments, community engagement was undertaken at this time with key stakeholders including representatives of the following groups:</p> <ul style="list-style-type: none"> • Friends of Gulf St Vincent • Western Adelaide Coastal Residents' Association • Port Adelaide Residents' Environment Protection Group • Conservation Council of SA • RecFish SA • RecfishCENTRAL • Commercial fisheries <p>This engagement informed the EPA in its analysis of the proposal, and was incorporated in its advice to the SCAP. In May 2018, the Minister for Planning approved the application subject to eight conditions, many of which were recommended by the EPA. Flinders Ports was then required to apply to the EPA for an environmental authorisation to undertake the dredging.</p> <p>Because of the significance of the project, the EPA broadened the distribution for the invitation to make a submission on the Flinders Ports licence application. As part of the early engagement on the licence application, on 5 November 2018 the EPA invited the above key stakeholders and others that had previously identified with the EPA to make a submission on the licence application.</p> <p>The EPA also placed statutory public notifications in <i>The Advertiser</i> and the <i>Portside Weekly Messenger</i> on 7 November 2018 (noting that it was with an incorrect reference to the <i>Environment Protection Act 1993</i>) and 14 November 2018 (correction).</p> <p>The EPA is committed to engaging with the community for the duration of the project and on all aspects of the dredging.</p> <p>In addition, the EPA has strongly encouraged Flinders Ports to undertake its own community engagement.</p> <p>The EPA is still considering this licence application.</p> |

Requesting real-time stop work (n=56)

In order to adaptively manage the dredging works, the EPA would require an extensive monitoring program so that water quality and stress on seagrass can be monitored. The EPA would require Flinders Ports to monitor seagrass conditions using a 'before and after control impact' (BACI) design, which looks at the background condition before dredging as the control driver to determine the impact.

The monitoring program would include turbidity and light logging capabilities to ensure turbidity is maintained at a level that is unlikely to differ from the zones of impact described in the development approval.

The Minister for Planning's development approval requires an environmental monitoring program be developed and implemented by Flinders Ports following approval by the EPA. In addition, the EPA would require Flinders Ports to prepare a Dredge Management Plan (DMP), approved by the EPA, prior to commencement of the dredging works.

The DMP would provide real-time 'alarm' and 'halt work' turbidity triggers and management actions if these triggers are exceeded. The EPA also expects that this would include real-time access to water quality data at monitoring sites and appropriate management of biosecurity risks, as endorsed by Primary Industries and Regions SA.

The EPA would require that management actions include the condition that work ceases in certain conditions and does not recommence until conditions improve. The criteria that would trigger this would form part of the licence and is currently being considered by the EPA, based on baseline data and scientific modelling.

There would be a range of different monitoring tools used from live turbidity monitoring moorings at multiple locations, through to satellite monitoring of plumes and seagrass monitoring.

In addition to the work undertaken by Flinders Ports (or its consultants) the EPA would take an auditing role, with deployment of our own light and turbidity sensors and seagrass condition monitoring using SCUBA divers.

The EPA would require that a BACI study be undertaken prior to dredging occurring in order to understand the condition of seagrass at that time. This ensures that any changes in seagrass cover can be considered within the context of seasonal changes.

Seeking independent environmental evaluation (n=54)

The EPA is South Australia's independent environment protection regulator. We protect, restore and enhance the environment through the risk-based regulation of pollution, waste, noise and radiation. The EPA administers the *Environment Protection Act 1993* (the Act) and is governed by a Board with members comprising persons who have qualifications and relevant experience in natural resources management and the environment, as well as persons with business, community and local government experience.

In May 2018, the Minister for Planning approved the development application after extensive consideration, including requesting a thorough environmental evaluation from the EPA to ensure that the impact on the environment would be minimised as much as possible. When the Minister approved the application, it was subject to eight conditions, many of which were recommended by the EPA as a result of its assessment.

In assessing the proposal during the development application process, the EPA had regard to and sought to further the objects of the Act and also had regard to:

- The General Environmental Duty, as defined in Part 4, Section 25 (1) of the Act; and
- Relevant Environment Protection Policies made under Part 5 of the Act.

To minimise environmental impacts to an acceptable level, having regard to the General Environmental Duty, the EPA recommended that the proposed dredging should only be allowed to proceed subject to conditions relating to:

- Timing of the dredging works;
- The proposed alternative dredging methodology being implemented;
- An environmental monitoring program be prepared and implemented;
- The preparation of a dredge management plan; and
- Restrictions on the timing and methods employed for pile driving.

A summary of the EPA's environmental evaluation can be referenced in the advice to the [State Commission Assessment Panel](#) and the recommendations adopted by the Minister for Planning in his [Development Approval](#). Extensive background information and Frequently Asked Questions (FAQs) are available on the EPA website (go to www.epa.sa.gov.au then follow the links to 'Business & Industry' then 'Industry updates').

Seeking security bond to cover cost of environmental damage and to compensate the fishing industry (n=54)

The EPA is not requiring Flinders Ports to provide a security bond to cover the cost of environmental damage and to compensate the fishing industry. Section 104 of the *Environment Protection Act 1993* provides that individuals may make applications for compensation to the Environment, Resources and Development Court to impose a civil penalty should anyone believe they require compensation.

Seagrass is protected by the *Native Vegetation Act 1991* and Flinders Ports must obtain approval from the Native Vegetation Council to clear it. Flinders Ports will be required to demonstrate that clearance has been minimised as much as practically possible. Flinders Ports is also required to provide a Significant Environmental Benefit Offset via a payment into the Native Vegetation Fund. If the maximum possible clearance is undertaken, this would amount to \$944,304.74. Reducing the amount of native vegetation to be cleared is a financial incentive and benefit to Flinders Ports in reducing the overall cost of the project.

Environmental legislation provides the EPA with a variety of regulatory tools and the ability to exercise discretion to determine which tool is appropriate for particular circumstances.

The suite of enforcement tools includes criminal prosecution, and administrative and civil proceedings. The purpose of the EPA's thorough environmental evaluation is to ensure that all measures are imposed to prevent and minimise the damage to the environment by:

- Requiring Flinders Ports to use the best available modern dredging methods to reduce the impact on the environment and loss of seagrass. As a result, the proposed methodology is predicted to greatly reduce the area of total seagrass loss (by up to 82%) compared to the original proposal submitted through the development application process, with seagrass loss being limited to the channel area being dredged and an area adjacent to the channel.
- Placing detailed conditions on the licence, should one be granted, including implementation of a Dredge Management Plan, water quality monitoring, and requiring that data is made available to the public.
- Requiring Flinders Ports to prepare an Environmental Monitoring Program, which would measure and validate the zones of seagrass impact predicted in the hydrodynamic modelling.
- Incorporating, as a minimum, the monitoring of seagrass conditions using a 'before and after control impact' design – measuring seagrass health metrics at an appropriate spatial and temporal frequency. In addition to monitoring probes placed by Flinders Ports, the EPA would also undertake its own monitoring program.
- Ensuring that Flinders Ports' Dredge Management Plan provides real-time 'alarm' and 'halt work' triggers and management actions if triggers for turbidity levels are exceeded. This also needs to include real-time access to water quality data at monitoring sites and appropriate management of biosecurity risks, as endorsed by Primary Industries and Regions SA.
- Should a licence be granted, preparing licence conditions that require Flinders Ports to undertake mitigation throughout the dredging operation to ensure the seagrass loss is minimised.
- Supporting the choice of spoil disposal at sea in the same area that was used in the previous dredge operation, preventing the need for land-based disposal, which would likely cause significant impact on sensitive habitats such as mangroves and samphire.

**Concerned about
seagrass loss
(n=29)**

The dredging method approved in the development assessment is predicted to greatly reduce the area of total seagrass loss (by up to 82%) compared to the original proposal.

Seagrass cover in Gulf St Vincent is improving after historic losses. Total prevention of seagrass loss is not achievable in a proposal of this nature. The EPA has, therefore, focused on requiring Flinders Ports to undertake all reasonable and practicable measures to ensure the predicted loss is minimised to the furthest extent possible.

Flinders Ports has submitted modelling that indicates seagrass loss is expected to be limited to the channel area being dredged and an area adjacent to the channel.

All modelling and risk to seagrass undertaken by Flinders Ports is assessed by EPA marine scientists and is considered to be of high quality and appropriate for the dredging scenario. The model is conservative and did not include management actions such as using live turbidity monitoring triggers or other mitigation methods implemented by the dredgers to actively manage turbidity generation. This will substantially reduce the risk to seagrass within the zones indicated in the modelling.

Aside from the immediate dredge zone, seagrass in the area potentially affected by the dredging is dominated by the *Heterozostera* species, which is expected to recover from disturbance substantially quicker than other types of seagrass.

The EPA would require Flinders Ports to monitor seagrass conditions using a 'before and after control impact' design, which looks at the background condition before dredging as the control driver to determine the impact.

Real-time 'alarm' and 'halt work' triggers and management actions would be put in place if triggers for turbidity levels are exceeded that may impact on the light available to seagrass. These triggers will be based on the most up-to-date scientific information on seagrass light and turbidity thresholds, with the aim of minimising any potential seagrass loss.

Licence conditions would require Flinders Ports to undertake mitigation throughout the dredging operation to ensure the seagrass loss is significantly less than it otherwise could be.

The timing of the works is a critical factor affecting the degree of marine impact associated with the dredging. This is because the turbidity generated can have a different impact on seagrass depending on the season. Studies have shown that seagrass builds up energy stores during summer when natural light conditions are high, and dredging during summer reduces the seagrasses ability to store energy during this crucial period. Dredging during winter may be less detrimental than during summer, as seagrass goes through a natural shedding process – reducing its energy demands while the natural light levels are lower.

The EPA would require that dredging work is not undertaken during December to February, when light availability is most critical to seagrass survival. It is also liaising with Primary Industry and Regions SA to ensure biosecurity risks would be taken into consideration in determining the best dredging schedule.

Seagrass is protected by the *Native Vegetation Act 1991* and for Flinders Ports to obtain approval from the Native Vegetation Council to clear it, it must demonstrate that clearance has been minimised as much as practically possible and that there will be a Significant Environmental Benefit Offset paid. This includes both direct clearance, such as the removal of vegetated sand through dredging and indirect impacts such as shading of seagrasses through the turbidity from the dredging. Flinders Ports is also required to provide a Significant Environmental Benefit Offset via a payment into the Native Vegetation Fund. If the maximum possible clearance is undertaken, this would amount to \$944,304.74.

Concern for marine fauna (n=25)

The EPA would instruct Flinders Ports to engage a marine mammal observer who is appropriately qualified in the identification and behaviour of marine mammals, to be positioned at a location to observe marine mammals within the one kilometre zone of the works. This is to ensure all activities associated with the dredging are done in a way that reduces the risk of potential physical harm, especially to dolphins (Adelaide Dolphin Sanctuary Objective 1). All dredging works would be under the new 7-knot speed limit that has been set for the protection of dolphins.

Tanner (2004)^[1] undertook an assessment of the potential impact of the dredging on the environment and other uses (e.g. fishing) prior to the 2005-06 dredging.

Prawns

The work by Tanner (2004) found that two fishing blocks in the Gulf St Vincent Prawn Fishery overlap the disposal site (14 and 19). These blocks represented an average of 7.6% of the total Gulf St Vincent prawn catch 1993-94 to 2002-03; however, the disposal site accounted for an area from which approximately 1.5% of the catch was taken.

The EPA has assessed the annual prawn catch and the number of trawl hours for blocks 14 and 19 between 2000 and 2016. This showed that the largest prawn harvest from these blocks was produced in 2008 (shortly after the previous dredge campaign), indicating little long-term impact to these blocks.

Garfish and other fish

The EPA is aware that a decline in Southern Garfish catches throughout marine fishing area 36 was observed in the years before and after the dredging. Garfish are largely an inshore fish species that inhabit subtidal and intertidal seagrass meadows. Catches were quite variable and a significant reduction in catches prior to dredging in 2005-06, in 2000-01 to 2002-03 was also noted. The Southern Garfish stock in northern Gulf St Vincent has been heavily exploited and is currently classified as overfished (Steer et al 2016)^[2]; Primary Industries and Regions SA has implemented a range of management changes to promote recovery of the fishery. The inshore seagrass loss as a result of the 2005-06 dredging may have contributed to the pressure on the fishery.

The Flinders Ports alternative dredging method will substantially reduce inshore turbidity and the risk to the seagrass meadows compared to the 2005-06 dredge project and methodology used. This is expected to result in minimal seagrass loss. Offshore disposal is not expected to significantly impact on commercial or recreational fisheries.

Cockles

The Section Bank is a part of the northern aspect of the shipping channel between the breakwater rock and the mangroves near Pelican Point. This sand bank is covered in *Heterozostera* sp. seagrass and has extensive cockle populations (*Kateleysia* spp). This area historically supported a commercial Vongole (mud cockle) fishery.

There have been concerns raised about the impact of the 2005-06 dredging on the fishery as the lowest harvest in the Port River occurred in 2006-07; this could be related to access restrictions while the dredging was occurring. Subsequently, the highest-recorded harvest occurred in the Port River in 2007-08 after the dredging occurred.

Potential sediment mounding at the spoil disposal site

Immediately after the major works of the previous dredge campaign, Flinders Ports undertook high-resolution mapping of the entire spoil disposal location, including the 1km buffer. This map showed no large mounds, with typical undulations less than 1m high, which is

| | |
|---|---|
| | <p>considered largely consistent with the terrain in this kind of environment and would be unlikely to preclude prawn trawling.</p> <p>The EPA, therefore, does not consider that mounding of sediment caused by spoil disposal from the 2005-06 dredge has precluded prawn trawlers from the area.</p> |
| <p>2005-06 dredging history opposition (n=23)</p> | <p>In 2005-06, large capital dredging occurred within the Outer Harbor channel, which removed approximately 3 million m³ of dredge spoil. This dredging campaign involved deepening the channel and disposal of dredge spoil in the same offshore area of Gulf St Vincent as the current proposal.</p> <p>The 2005-06 dredging caused widespread and extensive turbidity that spread throughout the nearshore environment and impacted seagrass meadows. The EPA used aerial photography to estimate a loss of approximately 1,600ha of seagrass near the shipping channel from the 2005-06 dredging campaign. Evidence suggests that this loss is likely to be due to the turbidity generated by the dredges at the dredging site, rather than offshore disposal.</p> <p>Investigations conducted as part of the 2005-06 campaign indicated that there were only minor short-term and localised impacts at the offshore dredge spoil disposal site (approximately 30km west of Outer Harbor in Gulf St Vincent) and the area quickly returned to pre-disposal conditions. The seafloor in this area is too deep for seagrass and has been affected by a long history of prawn trawling (Tanner 2005)^[3], so is primarily bare sand.</p> <p>The focus of the EPA's recommendations for the 2019 dredging project has been to require Flinders Ports to use the best available modern dredging methods to reduce the impact on the environment and loss of seagrass.</p> |
| <p>Would like no dredging under any circumstances (n=10)</p> | <p>The EPA recognises that if it were to reject the application to dredge, this may represent a loss of shipping trade and income to South Australia's import and export trade. The EPA must balance economic and environmental considerations when making a decision in order to promote the principles of ecologically sustainable development.</p> <p>The EPA has therefore, looked at every aspect of the proposal and licence application to ensure that the impact on the environment is minimised to the maximum extent possible. With the exception of the 4ha of permanent seagrass loss directly in the section of channel being widened, the majority of the environmental impact is expected to be relatively short-term.</p> <p>The EPA is still considering this licence application.</p> |

¹ Tanner JE 2004, Environmental assessment for proposed dredging of Outer Harbor approach channel, prepared for the KBR and Flinders Ports, Adelaide, SARDI Aquatic Sciences Publication No RD04/0090. SARDI Aquatic Sciences, 72 pp.

² Dent, J., Mayfield, S. and Carroll, J. (2016). Harvestable biomass of *Katelysia* spp. In the South Australian commercial Mud Cockle fishery. Report to PIRSA Fisheries and Aquaculture. South Australian Research and Development Institute (Aquatic Sciences), Adelaide. SARDI Publication Number F2014/000191-2. SARDI Research Report Series No 898. 29pp.

³ Tanner JE 2005, Three decades of habitat change in Gulf St Vincent, South Australia. Transactions of the Royal Society of South Australia 129(1): 65-73.

Want the EPA to be a strong regulator and protect the environment (n=13)

In May 2018, the Minister for Planning approved the development application after extensive consideration, including seeking input from the EPA to ensure that the impact on the environment was minimised as much as possible. The Minister approved the application subject to eight conditions, many of which were recommended by the EPA.

Dredging in 2005-06 led to seagrass loss due to turbidity (discolouration and cloudiness in the water) blocking light. The focus of the EPA's recommendations for the 2019 dredging project was to require Flinders Ports to use the best available modern dredging methods to reduce the impact on the environment and loss of seagrass. As a result, the proposed methodology is predicted to greatly reduce the area of total seagrass loss (by up to 82%) compared to the original proposal.

The EPA, as South Australia's independent environmental regulator, has a statutory role that includes ensuring that all reasonable and practicable measures are taken to protect, restore and improve the environment.

We ensure a modern approach to our regulatory role in policy making, development assessment, licensing and enforcement to safeguard the environment by applying risk-based and outcome-focused regulation to control environmental harm.

The EPA uses robust enforcement for operators demonstrating poor compliance behaviour, and ensures polluters are held accountable for managing the environmental impact of their activities.

For the Outer Harbor dredging proposal, the EPA has provided scientific and planning advice to encourage Flinders Ports to apply new technologies and better practices that will reduce environmental impacts and tackle environmental challenges.

In the environmental evaluation of this proposal the EPA has collaborated with research institutions to develop knowledge, and with local government, other government agencies and our peers in other jurisdictions. We continue to listen to communities and work with industry to identify and recognise opportunities for better environmental practices.

When assessing development applications, the EPA considers whether all reasonable and practicable measures have been taken by the proponent to prevent environmental harm for both the dredging activity and disposal of dredge spoil and have regard to any relevant environment protection policies.

The EPA must consider social and economic impacts in addition to short- and long-term environmental impacts when assessing development applications. The General Environmental Duty also requires the EPA to make a judgement about a number of considerations which are outlined in section 4.2 *EPA decision on licence application*.

Concern over sea based disposal of dredge spoil (n=8)

Global Positioning System (GPS) tracking of the dredge and barges, and monitoring of the opening and closing of the hoppers would be mandatory to ensure Flinders Ports only dredges or dumps in approved areas.

During spoil disposal it is expected that there will be a discolouration of the water due to turbidity. The hydrodynamic modelling undertaken for Flinders Ports and accepted by the EPA has predicted that this turbidity would not travel outside of the boundaries of the spoil ground nor would it affect the nearshore environment. This material is likely to settle within hours to days and have no long-term environmental impact.

The spoil has been tested and analysed as not contaminated (by chemicals) and as such is of appropriate quality for sea-based disposal. The dredged material is characteristically very similar to that in the disposal area and as such would be incorporated into the bed material very quickly.

In assessing whether land-based or sea-based disposal of spoil would have the least environmental impact, the EPA considered the following technical issues:

- The dredge spoil meets the *National Assessment Guidelines for Dredging* for disposal of dredge spoil to sea (including in regard to any contamination) and falls below the criteria in the *Australian and New Zealand Environmental Conservation Council (ANZECC) Guidelines*.
- The proposed offshore disposal site is unvegetated sand (minimal macro-algae is present and seagrass does not grow at this depth). The area is characterised by sparse marine invertebrates that are extensive throughout the gulf and is expected to recover relatively quickly from dredge spoil placement.
- The proposed sea-based receiving environment is an established spoil ground, used for spoil disposal previously and has been significantly impacted by trawling.
- The land-based disposal sites for the total amount of dredge spoil would require supportive infrastructure to be placed in sensitive coastal and estuarine environments that contain mangroves, samphire and seagrass.
- The risks of environmental harm to the sensitive estuarine environment containing seagrass and mangrove associated with potential clogging/unclogging of the pipe transporting spoil from the dredge sites to the dredge spoil disposal site.
- The land-based disposal sites would require water decanting from the settlement ponds to be directed back into coastal and estuarine environments that contain mangroves, samphire and seagrass.
- The dredge spoil is likely to take months to years to dry, which has implications for the use of land for an extended period of time.
- The limited quality of the dried dredge spoil for use (classified for non-engineered fill only) and is not suitable for beach replenishment.
- The imperative to not have extended dredging timeframes, resulting in longer periods where water is affected by turbidity.
- The cost of land based disposal which is significantly greater than the costs of sea-based disposal.

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| <p>Concerned about water quality (n=5)</p> | <p>Ambient background water quality monitoring data collection is already in place. Ongoing water quality monitoring would be required as part of any proposed licence conditions, as would real-time ‘alarm’ and ‘halt work’ triggers and management actions if triggers for turbidity levels are exceeded. The EPA would require real-time access to water quality data at monitoring sites and appropriate management of biosecurity risks, as endorsed by the Primary Industries and Regions SA.</p> |
| <p>Interested in improved dredging methodology (n=4)</p> | <p>The EPA recommended to the Minister for Planning, that the development approval be granted subject to the following condition:</p> <p><i>The dredging methodology to be used must implement the ‘no side-casting of the Cutter Suction Dredger (CSD)’ option presented in the Flinders Ports Pty Ltd Outer Harbor Channel Widening DA Report – Addendum #2 as prepared by ARUP Pty Ltd on 6 November 2017 or similar method that can achieve an equivalent (or better) environmental outcome.</i></p> <p>Alternative dredging methodology was proposed in one submission that suggested a continuous dredging operation which would take place over two to three years with land-based disposal. The EPA does not consider this to be an environmentally acceptable or economically feasible outcome.</p> |

4.4 Other issues raised⁴ and EPA response

4.4.1 Spread of marine pests such as *Caulerpa taxifolia* and Pacific Oyster Mortality Syndrome (POMS)

The EPA advises that marine pest control and all biosecurity measures fall under the jurisdiction of Primary Industries and Regions SA (PIRSA). Flinders Ports’ Development Approval conditions require that it produce a plan to the satisfaction of PIRSA that minimises the risk of the spread of POMS.

The POMS management plan would form part of a Dredge Management Plan. The EPA would only approve the Dredge Management Plan with a biosecurity management plan endorsed by PIRSA.

4.4.2 Impact on Bird Island and the Adelaide Bird Sanctuary

The EPA advises that Bird Island falls under the jurisdiction of the Coast Protection Board. The [Board submitted a response to the Development Application](#) during the State Commission Assessment Panel process in 2017. In its submission it advised:

1. *“The Coast Protection Board advises it has no objections to the proposed development, however it makes the following recommendations:*
 - *That dredging be undertaken in autumn to minimise impacts on the marine environment.*
 - *That the Department of Environment, Water and Natural Resources’ Coastal Management Branch be given the opportunity to provide input into the proposed environmental monitoring program.*
2. *Notwithstanding a detailed Dredge Management Plan, the Coast Protection Board advises there remains potential for widespread ecological impacts, both in the short and longer term, as a result of turbidity from the proposed dredging and disposal operations. Sensitive ecological systems in the wider region which*

⁴ Note that this is not an exhaustive list of every issue raised, however it covers other main areas of interest raised by the community.

may be impacted include the Section Bank, Barker Inlet – St Kilda Aquatic Reserve, St Kilda – Chapman Creek Aquatic Reserve and Torrens Island Conservation Park.”

There are no current restrictions for accessing Bird Island. The southern half of the island is owned by Flinders Ports through the Port Operating Agreement. The Department of Environment and Water (DEW) has, therefore, advised that access to this area of the island cannot be restricted however this concern has been forwarded to Flinders Ports.

The EPA understands that Natural Resources Adelaide and Mount Lofty Ranges staff implement an ongoing monthly monitoring program. These bird count surveys would be able to establish whether declines in bird abundance have been impacted by dredging. An additional project is focusing on the Fairy Tern (listed under the *Environment Protection and Biodiversity Conservation Act 1999*) through rat control. This species is monitored through this program by Birdlife Australia and volunteers.

From its consultation with DEW, the EPA understands that the key area for feeding on Bird Island is the Section Bank intertidal area. As part of the monthly bird count monitoring program conducted by DEW, observational data may be collected to determine whether this area has potentially changed over time following dredging. This area is also susceptible to storms, whereby in 2017 the area was damaged significantly and losses of nesting and feeding areas occurred.

4.4.3 Concern that damage to seagrass and environmental impact may exceed modelled area of impact

All modelling and risk to seagrass has been assessed by EPA marine scientists who consider that it is of a high quality and appropriate for the intended use. Further to this, the area of risk to seagrass was modelled ‘unmitigated’. This means it does not include using live turbidity monitoring triggers or other mitigation methods that will be implemented by the dredgers to actively manage turbidity generation. This further mitigation using real time triggers is expected to substantially reduce the risk to seagrass within the zones indicated in the modelling.

4.4.4 The draft Dredge Management Plan has only two monitoring sites

The modelling prepared for Flinders Ports and accepted by the EPA has demonstrated that there will be a plume moving back and forward within the channel and the modelling has demonstrated that there will be a level of impact within the channel. The EPA is of the opinion that the *Heterozostera* seagrass on the Section Bank will regrow or recolonise relatively quickly, with additional losses caused by widening the channel.

At the moment, monitoring undertaken by Flinders Ports using probes has been focused on understanding the background turbidity and light conditions at sensitive habitats, particularly the long lived *Posidonia* sp. seagrass. Flinders Ports would undertake additional monitoring from satellite imagery to understand the extent of the plumes in addition to the *in situ* probes.

There are two monitoring points covering expected areas of moderate impact predicted by the modelling and a background measurement point.

4.4.5 Will the EPA require Flinders Ports to establish more monitoring sites or will the EPA carry out its own monitoring?

The proposal includes a variety of different monitoring methods to be employed by Flinders Ports that will aim to assist in the operational control of turbidity from the dredges and disposal, potential spread of plumes in the nearshore and at the dredge material placement area and seagrass cover in the nearshore. This work could be undertaken by the dredge operators but could also be undertaken by appropriately qualified environmental consultants experienced in this kind of work.

The proposal includes a range of different monitoring tools to be used, ranging from live turbidity monitoring buoys at multiple locations, through to satellite monitoring of plumes, and seagrass monitoring. This monitoring will be undertaken using the best available scientific principles including before, during and after monitoring using both potentially impacted locations and 'control' site/s to enable comparison.

Light monitoring would also be required by the EPA, with the use of continuous (10-minute interval or similar) turbidity and light logging using calibrated remote and telemetered instruments with self-cleaning capability required as a specific condition of the development approval.

In addition to the work undertaken by Flinders Ports (or its consultants) the EPA would take a monitoring and auditing role, with deployment of our own light and turbidity sensors and seagrass condition monitoring using divers.

4.4.6 Concern that the distance that the turbid plume might spread further than modelled

Based on the modelling undertaken to support the application, the plume is expected to move in somewhat of a southerly direction during a strong north-westerly wind; however, the modelling included actual wind field data for each modelling scenario (summer and winter).

The model has used relevant ecological thresholds for sensitive seagrass species to determine the extent of risk (zones of influence, low to moderate and high risk), therefore, the scientific evidence does not support claims that any seagrass loss is likely to occur outside of the areas indicated by the maps (i.e.: contained almost wholly within the shipping channel). The EPA has accepted the modelling undertaken and presented by Flinders Ports.

Appendix 1 Expected permanent seagrass loss, and possible seagrass loss with the potential to regrow



Appendix 2 Submissions

| DETAIL | |
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| 1. | "To Whom It May Concern, The last time Flinders Ports dredged the channel for Outer Harbour, Adelaide in 2005 there was considerable damage caused to the environment because Flinders Ports failed to conduct the dredging in a way that limited collateral damage to the surrounding environment causing irreparable damage to this environment. I urge the EPA not to issue Flinders Ports a licence to dredge the Outer Harbour area due to a possible repeat of the same irresponsible work they carried out in 2005." |
| 2. | "Dredging mud to deepen the channel near Pt Adelaide should be brought ashore and not dumped at sea. Our fishery is in a bad enough state as it is!" |
| 3. | "Dear EPA Please do not issue any dredging or dumping licence until: <ul style="list-style-type: none"> • A comprehensive independent environmental evaluation has been undertaken; • All stakeholders have been properly consulted (including the fishing industry and conservation groups); • Comprehensive real-time monitoring and reporting arrangements are in place with all work to stop if conditions deteriorate; and • An adequate security bond of at least \$100 million is in place to cover the cost of environmental damage and to compensate the fishing industry and others when things go wrong." |
| 4. | "Dear sir/madam, Please don't dredge this place. Don't let our marine life be destroyed. Yours sincerely" |
| 5. | "As you would be aware. The last time the Outer Harbour shipping channel was dredged in 2005, fisheries were devastated and over 1,600 hectares of precious seagrass meadow was destroyed. As citizens we must rely on the EPA to make sure our environment is safeguarded, therefore, I ask that the EPA do not issue any dredging and dumping licence in relation to this matter until: <ul style="list-style-type: none"> • A comprehensive independent environmental evaluation has been undertaken; • All stakeholders have been properly consulted (including the fishing industry and conservation groups); • Comprehensive real-time monitoring and reporting arrangements are in place with all work to stop if conditions deteriorate; and • An adequate security bond of at least \$100 million is in place to cover the cost of environmental damage and to compensate the fishing industry and others when things go wrong. Thanking you in anticipation" |
| 6. | "Please, do not issue any dredging and dumping licence until: <ul style="list-style-type: none"> • A comprehensive independent environmental evaluation has been undertaken; • All stakeholders have been properly consulted (including the fishing industry and conservation groups); • Comprehensive real-time monitoring and reporting arrangements are in place with all work to stop if conditions deteriorate; and • An adequate security bond of at least \$100 million is in place to cover the cost of environmental damage and to compensate the fishing industry and others when things go wrong. Thank you. With best wishes and kind regards" |
| 7. | "When the Outer Harbour shipping channel was dredged in 2005, fisheries were devastated and over 1,600 hectares of precious seagrass meadow was destroyed. EPA...we are watching – we expect you to protect the environment from dredging and dumping !!!" |
| 8. | "When the Outer Harbour shipping channel was dredged in 2005, fisheries were devastated and over 1,600 hectares of precious seagrass meadow was destroyed. Now, Flinders Ports wants to widen the channel again with 1.55 million cubic metres of clay, limestone and sand to be dredged and dumped in the middle of Gulf St Vincent. This time they say they will only clear four hectares of |

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| | <p>native seagrass as part of the dredging, along with an additional 158-230 hectares of indirect clearance. Really? From previous operations, we know that most of the environmental damage is caused by turbidity and silt from the dredging which spreads for large distances where it destroys fish nurseries and smothers marine life. Although the Environment Protection Authority (EPA) seems to think that Flinders Ports can be trusted to a better job this time than in 2005, they nevertheless admit that there will still be "widespread turbidity and a high likelihood of extensive seagrass loss".</p> <p>Please do not issue any licence to dredge or dump until:</p> <ul style="list-style-type: none"> • A comprehensive independent environmental evaluation has been undertaken; • All stakeholders have been properly consulted (including the fishing industry and conservation groups); • Comprehensive real-time monitoring and reporting arrangements are in place with all work to stop if conditions deteriorate; and • An adequate security bond of at least \$100 million is in place to cover the cost of environmental damage and to compensate the fishing industry and others when things go wrong. <p>Our future and the future of our marine life is in your hands. Please think before you act and then act to save our waterways from destruction."</p> |
| <p>9.</p> | <p>"I am concerned that the widespread destruction of seagrass meadows that occurred the last time this channel was dredged in 2005 will occur again unless improved methods are to be used. To dredge and then dump in the middle of the Gulf will cause not only death to seagrasses directly dumped upon but also the turbid water and movement of silt will stop photosynthesis over a wide area and therefore many more seagrasses will be indirectly impacted and will die. Seagrasses are important habitat and should not be killed if possible.</p> <p>A full independent environmental evaluation must occur before dredging by Flinders Ports is allowed to occur. Fishing and conservation groups should be consulted along with all other stakeholders. Monitoring and reporting of severe impacts must allow work to be halted immediately until improvements can be made to the method of dredging. A sufficient security bond is needed to cover environmental damage and compensation for any affected stakeholders.</p> <p>Adaptive management strategies have been developed for dredging that specifically aim to address the problems of a static monitoring approach to environmental management. They consist of four elements:</p> <ol style="list-style-type: none"> 1. Implementation of the project and collection of baseline information 2. Monitoring including measurements and modelling works 3. Evaluation of data and results 4. Adaptation which includes not only the reassessment of the implemented dredging strategy but also the evaluation of the objective target values that are usually quite uncertain. In this way it is possible to adapt the works to the conditions at the site minimizing impacts on sensitive receptors while optimizing the dredging works <p>This proactive approach is usually defined in an environmental feedback monitoring and management plan. The implementation of an environmental feedback monitoring programme can be very beneficial during dredging operations as it provides a detailed assessment of the dredging works and the possible impact on sensitive receptors. This allows for optimization of the dredging works while minimizing impacts on the receptors and also ensures the authorities that the works are in compliance with what was proposed during the Environmental Impact Assessment. An example of this method was used in a 2012 project at Telek Rubiah, Lumut, Malaysia and three trigger levels were set to ensure the damage was restricted to that forecast with work interrupted if a trigger was reached.</p> <p>Perhaps this system should be used here to avoid causing damage above that forecast. I am sure if Malaysia can do this then South Australia can. Please do not issue a dredging and dumping licence until you are sure that best practice will be used and no preparation and expense spared to avoid a repeat of the disaster dredging caused in 2005, from which some parts of the Gulf have only just recovered."</p> |
| <p>10.</p> | <p>"I am writing to express my extreme concern about the issuing of a dumping and dredging licence to Finders Port so they can dredge the Outer Harbor shipping Channel. The destruction caused by the last dredging in this area in 2005 when fisheries and 1600 hectares of seagrass meadow were destroyed must not be allowed to be repeated. Thus I urge that a licence not be issued until the following conditions are met:</p> <ul style="list-style-type: none"> • A comprehensive independent environmental evaluation has been undertaken; • All stakeholders have been properly consulted (including the fishing industry and conservation groups); • Comprehensive real-time monitoring and reporting arrangements are in place with all work to stop if conditions |

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| | <p>deteriorate; and</p> <ul style="list-style-type: none"> • An adequate security bond of at least \$100 million is in place to cover the cost of environmental damage and to compensate the fishing industry and others when things go wrong. <p>It is the role of the EPA to protect the environment and as such the EPA must not issue this licence without the above restrictions in place. "</p> |
| 11. | <p>"I understand Flinders Ports proposes to widen the Outer Harbour shipping channel. When the Outer Harbour shipping channel was dredged in 2005, fisheries were devastated and over 1,600 hectares of precious seagrass meadow was destroyed. Now, Flinders Ports wants to widen the channel again with 1.55 million cubic metres of clay, limestone and sand to be dredged and dumped in the middle of Gulf St Vincent. This time they say they will only clear four hectares of native seagrass as part of the dredging, along with an additional 158-230 hectares of indirect clearance. However, from previous operations, it is clear that most of the environmental damage is caused by turbidity and silt from the dredging which spreads for large distances where it destroys fish nurseries and smothers marine life. Although the EPA seems to think that Flinders Ports can be trusted to a better job this time than in 2005, you nevertheless admit that there will still be "widespread turbidity and a high likelihood of extensive seagrass loss". I therefore request that no dredging and dumping licence be issued until:</p> <ul style="list-style-type: none"> • A comprehensive independent environmental evaluation has been undertaken; • All stakeholders have been properly consulted (including the fishing industry and conservation groups); • Comprehensive real-time monitoring and reporting arrangements are in place with all work to stop if conditions deteriorate; and • An adequate security bond of at least \$100 million is in place to cover the cost of environmental damage and to compensate the fishing industry and others when things go wrong." |
| 12. | <p>"To whom it may concern</p> <p>I respectfully request you do not issue any dredging and dumping licence until:</p> <ul style="list-style-type: none"> • A comprehensive independent environmental evaluation has been undertaken; • All stakeholders have been properly consulted (including the fishing industry and conservation groups); • Comprehensive real-time monitoring and reporting arrangements are in place with all work to stop if conditions deteriorate; and • An adequate security bond of at least \$100 million is in place to cover the cost of environmental damage and to compensate the fishing industry and others when things go wrong." |
| 13. | <p>"Dear EPA</p> <p>I am concerned that the planned dredging by Flinders Ports will have devastating effects on the marine environment. Please do not to issue any dredging and dumping licence until:</p> <ul style="list-style-type: none"> • A comprehensive independent environmental evaluation has been undertaken; • All stakeholders have been properly consulted (including the fishing industry and conservation groups); • Comprehensive real-time monitoring and reporting arrangements are in place with all work to stop if conditions deteriorate; and • An adequate security bond of at least \$100 million is in place to cover the cost of environmental damage and to compensate the fishing industry and others when things go wrong." |
| 14. | <p>"Dear Director of EPA,</p> <p>Our seagrass is home to a diversity of marine animals and plants. Dredging and dumping the spoil in our gulf would surely once again cause significant damage. An independent environmental impact study should be undertaken before this work is permitted."</p> |
| 15. | <p>"G'day at the EPA,</p> <p>I am writing this note to remind you of how lucky we South Australians are to live so far away from the degradation that global marine environment is suffering. The Great Australian Bight, including the SA coastline, fortunately, remains one of the most pristine marine environments on the planet.</p> <p>Please, let us work to keep it that way.</p> <p>Flinder's Ports should face the most strict regulations ever devised if they are to continue with their proposal to further dredge in Gulf St Vincent. Previous levels of degradation are no longer acceptable and while economic development is likely of benefit there will be no point to that development if we destroy our environment to achieve it.</p> <p>Turbidity and silt must be kept to an absolute minimum to protect vital fish nurseries and the wider marine ecology.</p> |

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| | <p>Thank you for the good work you mob do, please keep protecting us from the ravages of human greed and carelessness.</p> <p>with respect"</p> |
| 16. | <p>"To Whom it May Concern,</p> <p>I am writing to request that no Dredging and Dumping Licence be issued to Flinders Ports until the following criteria have been met:</p> <ul style="list-style-type: none"> - The undertaking of a comprehensive and independent environmental evaluation - All stakeholders have been properly consulted (including the fishing industry and conservation groups) - Comprehensive real-time monitoring and reporting arrangements are in place with all work to stop if conditions deteriorate - An adequate security bond of at least \$100 million is in place to cover the cost of environmental damage and to compensate the fishing industry and others when things go wrong <p>It is important to balance the protection of our marine environment with needs for development and that we thoroughly understand the impact of these actions."</p> |
| 17. | <p>"I wish to make a submission regarding the dredging application by Flinders Ports for the Outer Harbour channel.</p> <p>I acknowledge that there may be a need to conduct dredging to widen/deepen the existing channel, but, having read the "Flinders Ports Licence Fact Sheet" provided by the EPA, I have concerns that the fact sheet says that "around 4 hectares" of seagrass will be lost as a direct result of the dredging, and talks of a "worst case scenario" of up to 250 hectares extra loss. These figures seems very vague and don't appear to have been independently/scientifically verified.</p> <p>Speaking as someone who has worked as a Civil Engineer with involvement in major projects, I believe this is a dangerously vague, unsubstantiated, and unacceptable way to go about an operation that could well have major environmental impact.</p> <p>Therefore, before any dredging and dumping licence is issued to Flinders Ports, I would like to call for:</p> <ul style="list-style-type: none"> • A comprehensive independent environmental impact assessment and evaluation, and • Proper consultation with all stakeholders: including the fishing industry and conservation groups. <p>In the event of approval being given, and dredging commencing, there should also be:</p> <ul style="list-style-type: none"> • Comprehensive real-time monitoring and reporting arrangements in place with all work to stop if conditions deteriorate; and • An adequate security bond to cover the cost of environmental damage and to compensate the fishing industry and others if or when things go wrong <p>Thanks you for considering my submission."</p> |
| 18. | <p>"Do not issue any dredging and dumping licence until:</p> <ul style="list-style-type: none"> • A comprehensive independent environmental evaluation has been undertaken; • All stakeholders have been properly consulted (including the fishing industry and conservation groups); • Comprehensive real-time monitoring and reporting arrangements are in place with all work to stop if conditions deteriorate; and • An adequate security bond of at least \$100 million is in place to cover the cost of environmental damage and to compensate the fishing industry and others when things go wrong." |
| 19. | <p>"We wish to protest the proposed dredging of the outer harbour. The record of the company which dredged in 2005 is too bad to allow them loose again. The guaranteed loss of sea-grass is unacceptable. The dumping of soil in the gulf likewise is unacceptable. Please stop this process as soon as possible and as a Government which cares about the long-term."</p> |

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| 20. | <p>"I am concerned to hear of proposed dredging in the Outer Harbour shipping channel that may have adverse effects in Gulf St Vincent. I urge you not to issue any dredging and dumping licence until:</p> <ul style="list-style-type: none"> • A comprehensive independent environmental evaluation has been undertaken; • All stakeholders have been properly consulted (including the fishing industry and conservation groups); • Comprehensive real-time monitoring and reporting arrangements are in place with all work to stop if conditions deteriorate; and • An adequate security bond of at least \$100 million is in place to cover the cost of environmental damage and to compensate the fishing industry and others when things go wrong. <p>Thank you."</p> |
| 21. | <p>"It would be a failure of responsibility to issue any dredging and dumping licence for the Outer Harbour shipping channel until:</p> <ul style="list-style-type: none"> • A comprehensive independent environmental evaluation has been undertaken; • All stakeholders have been properly consulted (including the fishing industry and conservation groups); • Comprehensive real-time monitoring and reporting arrangements are in place with all work to stop if conditions deteriorate; and • An adequate security bond of at least \$100 million is in place to cover the cost of environmental damage and to compensate the fishing industry and others when things go wrong." |
| 22. | <p>"Hello, Think of our near empty fish stocks—no dredging or dumping please."</p> |
| 23. | <p>"To whom it may concern, After the disaster that was caused by the 2005 dredging of the Outer Harbour, I can not believe that the EPA are considering allowing Flinders Ports another massive expansion of the channel. The Gulf St Vincent is an important ecosystem for a healthy fishing and recreation industry. Before we allow this dredging and dumping of the waste we need comprehensive independent environmental evaluation to be undertaken. One in which all stakeholders have been properly consulted (including the fishing industry and conservation groups). These port expansions that include dredging and dumping of the material should only be allowed if the port companies can safely dispose of the dredging material onto dry land and not into the oceans surrounding the area. The science is very clear about the damage that can be done - hence dredging in places like the Great Barrier Reef are tightly controlled. So are our ocean environment here in South Australia not just as valuable? There also must be an independent comprehensive real-time monitoring and reporting arrangements in place with all work to stop if conditions deteriorate. As well as an adequate security bond of at least \$100 million is in place to cover the cost of environmental damage and to compensate the fishing industry and others when things go wrong. If the Port companies can not or will not commit to working with the other stake holders in the area then they don't deserve the right to operate at all. As the department that is in control of our environmental protection, it is up to you to ensure that any expansion or development in our port facilities does not impact our pristine coastal waters, which we depend on for so many other industries."</p> |
| 24. | <p>"Idiots!!-Don't drop dredge spoil in Gulf St Vincent. This has to be the most outrageous action by this government...this will be a one term government. The science is clear, the Gulf is already under stress!!"</p> |
| 25. | <p>"Dear EPA You are implored not to issue any dredging and dumping licence until:</p> <ul style="list-style-type: none"> • A comprehensive independent environmental evaluation has been undertaken; • All stakeholders have been properly consulted (including the fishing industry and conservation groups); • Comprehensive real-time monitoring and reporting arrangements are in place with all work to stop if conditions deteriorate; and • An adequate security bond of at least \$100 million is in place to cover the cost of environmental damage and to compensate the fishing industry and others when things go wrong." |
| 26. | <p>"Hello please do no issue a dredging and dumping licence for the the Outer Harbour shipping channel until:</p> <ul style="list-style-type: none"> • A comprehensive independent environmental evaluation has been undertaken; • All stakeholders have been properly consulted (including the fishing industry and conservation groups); • Comprehensive real-time monitoring and reporting arrangements are in place with all work to stop if conditions deteriorate; and |

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| | <ul style="list-style-type: none"> • An adequate security bond of at least \$100 million is in place to cover the cost of environmental damage and to compensate the fishing industry and others when things go wrong." |
| 27. | <p>"To whom it may concern,</p> <p>Given that Flinders Ports caused the destruction of 1,600 hectares of sea grass meadow whilst dredging in 2005, I would urge that you not permit or licence further dredging of the Outer Harbour fishing channel until:</p> <ul style="list-style-type: none"> • A comprehensive independent environmental evaluation has been undertaken; • All stakeholders have been properly consulted (including the fishing industry and conservation groups); • Comprehensive real-time monitoring and reporting arrangements are in place with all work to stop if conditions deteriorate; and • An adequate security bond of at least \$100 million is in place to cover the cost of environmental damage and to compensate the fishing industry and others when things go wrong. <p>Seagrass meadows are vital to our marine ecosystem and we need to ensure that adequate protection measures are enacted. The distribution of silt during dredging can negatively impact these ecosystems."</p> |
| 28. | <p>"NO DREDGING OR DUMPING LICENCE Until the following has been completed</p> <ul style="list-style-type: none"> • A comprehensive independent environmental evaluation has been undertaken; • All stakeholders have been properly consulted (including the fishing industry and conservation groups); • Comprehensive real-time monitoring and reporting arrangements are in place with all work to stop if conditions deteriorate; and • An adequate security bond of at least \$100 million is in place to cover the cost of environmental damage and to compensate the fishing industry and others when things go wrong." |
| 29. | <p>"Dear Sir/Madam, I raise my concerns regarding the proposed dredging of the Outer Harbour shipping channel proposed by Flinders Ports. This will involved 1.55 million cubic metres of dredge being dumped into Gulf St Vincent. It is clear this will lead to significant turbidity and silt impacting upon our precious fish nurseries and sea grass pastures in this region. In consideration of the devastation caused by the dredging conducted by Flinders Ports in 2005 this is not acceptable. I request that a dumping licence not be granted until:</p> <ul style="list-style-type: none"> • A \$100 million dollar security bond is in place to rectify any environmental damage and compensate the fishing industry if our fisheries are damaged. • Proper consultation involving all stakeholders has been conducted that includes both conservation groups and the fishing industry. • An independent and comprehensive environmental evaluation has been conducted; and • Real-time monitoring with reporting arrangements are organised and in place to stop the dredging if conditions deteriorate. <p>We are living in the greatest extinction even in earth's history, we cannot afford to continue treating our environment as if it were a cesspit."</p> |
| 30. | <p>"To whine it may concern:</p> <p>Please do not to issue any dredging and dumping licences until:</p> <ul style="list-style-type: none"> • A comprehensive independent environmental evaluation has been undertaken; • All stakeholders have been properly consulted (including the fishing industry and conservation groups); • Comprehensive real-time monitoring and reporting arrangements are in place with all work to stop if conditions deteriorate; and • An adequate security bond of at least \$100 million is in place to cover the cost of environmental damage and to compensate the fishing industry and others when things go wrong. <p>Thank you"</p> |
| 31. | <p>"I would like it known that I oppose approval for the above licenses in our beautiful marine environment. As do so many South Australians. It is time that the voice of the people should be listened to, especially when it comes to protecting our precious environment. We are not driven by greed, materialism or financial profit. We want to protect our planet and our climate. I would like to see -</p> <ul style="list-style-type: none"> • A comprehensive independent environmental evaluation has been undertaken; • All stakeholders have been properly consulted (including the fishing industry and conservation groups); • Comprehensive real-time monitoring and reporting arrangements are in place with all work to stop if conditions deteriorate; and • An adequate security bond of at least \$100 million is in place to cover the cost of environmental damage and to compensate the fishing industry and others when things go wrong. Because let us face it - we know something |

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| | always go wrong. And when it does and our environment is ruined, there are no second chances or going back. thank you" |
| 32. | "Please do not widen the harbour without thorough investigation and consultation. The damage to our fish and sea floor could be devastating." |
| 33. | "Please do not issue any dredging and dumping licence until: <ul style="list-style-type: none"> • A comprehensive independent environmental evaluation has been undertaken; • All stakeholders have been properly consulted (including the fishing industry and conservation groups); • Comprehensive real-time monitoring and reporting arrangements are in place with all work to stop if conditions deteriorate; and • An adequate security bond of at least \$100 million is in place to cover the cost of environmental damage and to compensate the fishing industry and others when things go wrong." |
| 34. | "Please make sure the appropriate studies have been made before issuing a licence to dredge to avoid destruction of our marine park ." |
| 35. | "Please don't do this at outer harbor the last time this was done the place was destroyed I drive there and want it left the way it is do not to issue any dredging and dumping license until: <ul style="list-style-type: none"> • A comprehensive independent environmental evaluation has been undertaken; • All stakeholders have been properly consulted (including the fishing industry and conservation groups); • Comprehensive real-time monitoring and reporting arrangements are in place with all work to stop if conditions deteriorate; and • An adequate security bond of at least \$100 million is in place to cover the cost of environmental damage and to compensate the fishing industry and others when things go wrong." |
| 36. | "Hi, I am a concerned citizen and am unhappy at the permission for dredging of the Port River to occur without a full comprehensive independent evaluation being made and any alternative recommendations explored. The gulf is too fragile to take chances with and is only now starting to recover from the years of putting our sewage into the waters. The following recommendations as suggested by Mark Parnell MRC seem appropriate to me <ul style="list-style-type: none"> • A comprehensive independent environmental evaluation has been undertaken; • All stakeholders have been properly consulted (including the fishing industry and conservation groups); • Comprehensive real-time monitoring and reporting arrangements are in place with all work to stop if conditions deteriorate; and • An adequate security bond of at least \$100 million is in place to cover the cost of environmental damage and to compensate the fishing industry and others when things go wrong. Please take this into consideration before proceeding. If there will be no problems with what the Flinders Ports is suggesting then they shouldnt be upset or worried about lodging a security bond of \$100 million." |
| 37. | "The decision to allow Flinders Ports dredging the Port river without critical Independent environmental impact studies is wholly unacceptable. Sucking the seabed & grasses is sucking the life out of the marine environment. Make environmentally responsible decisions & do not not purely in the financial interest of big business. Preserving the environment for nature & recreation has far greater reaching financial benefits in the long term & is the morally & ethically right thing to do." |
| 38. | "Dear EPA Licensing People, I entreat you not to issue any dredging and dumping licences to Flinders Ports or any other entities, for the current proposed dredging of the Outer Harbour Shipping Channel until the following occurs: <ul style="list-style-type: none"> • A comprehensive independent environmental evaluation has been undertaken; • All stakeholders have been properly consulted (including the fishing industry and conservation groups); • Comprehensive real-time monitoring and reporting arrangements are in place with all work to stop if conditions deteriorate; and • An adequate security bond of at least \$100 million is in place to cover the cost of environmental damage and to compensate the fishing industry and others if things go wrong. Until the above are instituted, there is no guarantee that the previous detrimental effects on fish nurseries, marine |

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| | <p>life and sea grasses, that occurred in 2005, will not happen again. Thank you in anticipation of the above measures being put in place"</p> |
| 39. | <p>"In my view, dredging of Outer Harbour will cause extensive environmental damage. Please don't issue any dredging and dumping licence until:</p> <ul style="list-style-type: none"> • A comprehensive independent environmental evaluation has been undertaken; • All stakeholders have been properly consulted (including the fishing industry and conservation groups); • Comprehensive real-time monitoring and reporting arrangements are in place with all work to stop if conditions deteriorate; and • An adequate security bond of at least \$100 million is in place to cover the cost of environmental damage and to compensate the fishing industry and others when things go wrong." |
| 40. | <p>"The environmental disaster in 2005 caused by dredging and clearing should have been an experience that taught us a lesson.</p> <p>The large-scale disturbance of water channels has been shown to cause long term destruction to the ecology of the water channels. South Australia has already lost thousands of hectares of sea grass through irresponsible dredging.</p> <p>What step have been taken to ensure that there is no environmental destruction if the project goes ahead? Is there compensation allocated for the fishing industry and environmental damage? Have oceanographers been consulted in regard to the unique tidal behaviour in our gulf? Have adequate safe-guards, in regard to monitoring the work, been instituted?</p> <p>Isn't it time we started taking responsibility for our actions of the past and learned by our mistakes?"</p> |
| 41. | <p>"Please see my public submission.</p> <p>Please do not issue any dredging and dumping licence until:</p> <ul style="list-style-type: none"> • A comprehensive independent environmental evaluation has been undertaken; • All stakeholders have been properly consulted (including the fishing industry and conservation groups); • Comprehensive real-time monitoring and reporting arrangements are in place with all work to stop if conditions deteriorate; and • An adequate security bond of at least \$100 million is in place to cover the cost of environmental damage and to compensate the fishing industry and others when things go wrong." |
| 42. | <p>"Good Morning, I want to express my concerns regarding further dredging of the Outer Harbour shipping Channel. This should not go ahead without a completely independent environmental study being done. I repeat, completely independent. A bond of \$100million should also be paid in full, by the dredging company, before any work is started. This will then guarantee that finance will be available to rectify any consequential damage."</p> |
| 43. | <p>"Stop the dredging. No one in South Australia wants our drag radars destroyed and it's about time you put the environment before profits!"</p> |
| 44. | <p>"I am concerned that the proposed additional dredging of 1.55 cubic meters of clay, limestone and sand from the Outer Harbour by Flinders Ports will have significant environmental impacts to the fishing industry and sea grasses in St Vincents Gulf. This dredging must not proceed unless the following measures can be obtained.</p> <ol style="list-style-type: none"> 1. A comprehensive independent environmental evaluation as to any impact dredging and depositing silt may have on fishing and sea grasses. 2. All stakeholders such as the fishing industry and conservation have been properly consulted. 3. Comprehensive real time monitoring and reporting arrangements are in place with all work to stop immediately if conditions deteriorate. |

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| | <p>4. An adequate security bond of \$100 million is in place to remedy any environmental damage and to compensate the fishing industry and others if things go wrong.</p> <p>The fishing industry both commercial and recreational depend heavily on clean water and adequate sea grasses and vegetation that we currently enjoy in St Vincents Gulf. If Flinders Ports cannot adhere to the above safeguards they should not be granted approval to proceed dredging."</p> |
| 45. | <p>"Please use your powers to prevent dredging of the outer harbour channel with resultant pollution of our pristine ocean with drastic long term repercussions for future generations which will be irreversible!"</p> |
| 46. | <p>"Please do not issue any dredging or dumping licences ever to Flinders Ports. They could not be trusted last time round and so how can you trust them this time round?"</p> |
| 47. | <p>"Prior to granting Outer Harbour Finders Port a dredging and dumping licence please ensure:</p> <ul style="list-style-type: none"> • A comprehensive independent environmental evaluation has been undertaken; • All stakeholders have been properly consulted (including the fishing industry and conservation groups); • Comprehensive real-time monitoring and reporting arrangements are in place with all work to stop if conditions deteriorate; and • An adequate security bond of at least \$100 million is in place to cover the cost of environmental damage and to compensate the fishing industry and others when things go wrong." |
| 48. | <p>"Dear EPA: please protect out local marine environment by preventing dredging at outer harbour. Could the process be conducted in a less damaging way?"</p> |
| 49. | <p>"PLEASE put the health, care and importance of marine conservation in SA as top priority and dont allow more dredging etc before agreement to Greens proposed considerations be guaranteed. Thankyou"</p> |
| 50. | <p>"To the EPA South Australia</p> <p>I am contacting you to ask that any dredging operations in and around Port of Adelaide is done in such a way as to not cause destructive damage caused by turbidity. Dumping the dredge waste in the middle of Spencer Gulf is not desirable. I believe this area is a 'dead zone' already from mining activity. Only the EPA can have an effective barrier in place to curtail such outcomes."</p> |
| 51. | <p>"To whom it may concern,</p> <p>I understand Flinders Ports wants to widen this previously dredged channel with the removal of a further 1.55 million cubic metres of silt, clay, limestone and shelly sand which is to be dumped in the middle (7kmx5km previous dump site) of Gulf St. Vincent. The clearing of native seagrass and "high likelihood of extensive seagrass loss" and "widespread turbidity" will surely have a detrimental effect upon fish nurseries. A thorough and independent Environmental Impact Assessment should be completed prior to the consideration of such major destructive works. What is the likelihood of further spread of Caulerpa taxifolia as a result of dredging operations? What effect will it have on the fish nurseries, wider marine ecology of Gulf St. Vincent subsequently, the fishing industry?</p> <p>I strongly oppose the EPA issuing a dredging and dumping licence to Flinders Ports for the proposed widening of the Outer Harbour shipping channel until:</p> <ul style="list-style-type: none"> • A comprehensive independent environmental evaluation has been undertaken; • All stakeholders have been properly consulted (including the fishing industry and conservation groups); • Comprehensive real-time monitoring and reporting arrangements are in place with all work to stop if conditions deteriorate; and • An adequate security bond of at least \$100 million is in place to cover the cost of environmental damage and to compensate the fishing industry and others when things go wrong. <p>It is incumbent upon a responsible State Government to protect our precious environment assets and local "green industries" to the benefit of sustainable natural resources and employment and not provide approval without full knowledge of possible adverse long term consequences."</p> |

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| 52. | <p>"No Dredging or Dumping Liscence until:</p> <ul style="list-style-type: none"> • comprehensive independent environmental evaluation has been undertaken; • All stakeholders have been properly consulted (including the fishing industry and conservation groups); • Comprehensive real-time monitoring and reporting arrangements are in place with all work to stop if conditions deteriorate; and • An adequate security bond of at least \$100 million is in place to cover the cost of environmental damage and to compensate the fishing industry and others when things" |
| 53. | <p>"Any approval for dredging the Outer Harbor channel and dumping the spoil in Gulf St. Vincent, should not be granted until a comprehensive and independent environmental impact study has been completed and the findings made public."</p> |
| 54. | <p>"Many Indigenous nations speak to leaving a model of our Mother Earth for the next 7 Generations. The earth is a living, breathing, vibrant whole Being, dependent on everything and everyone to CARE for Her. Let nature be. Let Her make choices. LET HER ALONE! In Love of our future. "</p> |
| 55. | <p>"To the EPA, If Flinders Ports is going to widen the Outer Harbour shipping channel at Port Adelaide, to accommodate larger ships in 2019 Then this apparently means dredging the sea floor for seven kilometres and then dumping over a million cubic metres of dredge "spoil" out into the middle of St Vincent Gulf. Which is totally unacceptable considering the previous history as the last big dredge in 2005 killed over 2,000 hectares of seagrass with smothering plumes of silt. Furthermore if you decide to do it in winter, then there is a strong possibility that the plume will be pushed south east due to the predominantly north westerly winds. Not only would this decimate the seagrass and fishing industry along the drift plume, but it could then end up in a reef system at Port Noarlunga which is now a sanctuary zone of a marine park! That would be extremely disappointing to many, as there was 15 million spent previously on stormwater harvesting and sediment reduction in the Christie creek catchment which is north of the reef system. These seagrasses provided habitat and nurseries for many marine reef species at Port Noarlunga, plus the associated tourism that goes with it. To make an analogy, its all about time and money and one must remember that Banks charged dead people fees for service, because they thought they could get away with it. Consequently I would like the government needs to enact real-time monitoring and reporting arrangements so that all work will stop if conditions deteriorate."</p> |
| 56. | <p>"As we learnt in the last time the Outer Harbour Chanel was dredged, there was extensive destruction of habitat and wide damage of fisheries. Therefore I woudl respectfully request that prior to renewing the liscence to dredge Outer Harbour :</p> <ul style="list-style-type: none"> • A comprehensive independent environmental evaluation has been undertaken; • All stakeholders have been properly consulted (including the fishing industry and conservation groups); • Comprehensive real-time monitoring and reporting arrangements are in place with all work to stop if conditions deteriorate; and • An adequate security bond of at least \$100 million is in place to cover the cost of environmental damage and to compensate the fishing industry and others when things go wrong." |
| 57. | <p>"Make sure you don't kill any plant and marine life in our gulf of St. Vincent when widening the harbour."</p> |
| 58. | <p>"Dear EPA, I am writing to you about the proposal to dredge yet again in Outer Harbour. I implore you not to issue any dredging and dumping liscence until:</p> <ul style="list-style-type: none"> • A comprehensive independent environmental evaluation has been undertaken; • All stakeholders have been properly consulted (including the fishing industry and conservation groups); • Comprehensive real-time monitoring and reporting arrangements are in place with all work to stop if conditions deteriorate; and |

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| | <ul style="list-style-type: none"> • An adequate security bond of at least \$100 million is in place to cover the cost of environmental damage and to compensate the fishing industry and others when things go wrong." |
| 59. | <p>"Let's make sure that the disaster of 2005 is not repeated again in 2019. Do not issue any dredging and dumping licence until:</p> <ul style="list-style-type: none"> • A comprehensive independent environmental evaluation has been undertaken; • All stakeholders have been properly consulted (including the fishing industry and conservation groups); • Comprehensive real-time monitoring and reporting arrangements are in place with all work to stop if conditions deteriorate; and • An adequate security bond of at least \$100 million is in place to cover the cost of environmental damage and to compensate the fishing industry and others when things go wrong." |
| 60. | <p>"Dear EPA</p> <p>Please don't issue any dredging and dumping licence until:</p> <ul style="list-style-type: none"> • A comprehensive independent environmental evaluation has been undertaken; • All stakeholders have been properly consulted (including the fishing industry and conservation groups); • Comprehensive real-time monitoring and reporting arrangements are in place with all work to stop if conditions deteriorate; and • An adequate security bond of at least \$100 million is in place to cover the cost of environmental damage and to compensate the fishing industry and others when things go wrong." |
| 61. | <p>"Dear EPA,</p> <p>I have learnt of the proposal by Flinders Ports to do extra dredging at Outer Harbour and it concerns me deeply. Please do not issue the authority for the dredging until:</p> <ul style="list-style-type: none"> • A comprehensive independent environmental evaluation has been undertaken; • All stakeholders have been properly consulted (including the fishing industry and conservation groups); • Comprehensive real-time monitoring and reporting arrangements are in place with all work to stop if conditions deteriorate; and • An adequate security bond of at least \$100 million is in place to cover the cost of environmental damage and to compensate the fishing industry and others when things go wrong." |
| 62. | <p>"I found out that Flinders Ports wants to widen the channel with 1.55 million cubic metres of clay, limestone and sand to be dredged and dumped in the middle of Gulf St Vincent.</p> <p>As effective protective agency I would like to ask you not to issue any dredging and dumping licence until:</p> <p>A comprehensive independent environmental evaluation has been undertaken; All stakeholders have been properly consulted (including the fishing industry and conservation groups); Comprehensive real-time monitoring and reporting arrangements are in place with all work to stop if conditions deteriorate; and An adequate security bond of at least \$100 million is in place to cover the cost of environmental damage and to compensate the fishing industry and others when things go wrong.</p> <p>Thank you for your good work."</p> |
| 63. | <p>"Please do not not to issue any dredging and dumping licences to Flinders Ports until</p> <ul style="list-style-type: none"> • A comprehensive independent environmental evaluation has been undertaken; • All stakeholders have been properly consulted (including the fishing industry and conservation groups); • Comprehensive real-time monitoring and reporting arrangements are in place with all work to stop if conditions deteriorate; and • An adequate security bond of at least \$100 million is in place to cover the cost of environmental damage and to compensate the fishing industry and others when things go wrong." |
| 64. | <p>"Dear Members of the EPA,</p> <p>Today I am writing to you about the proposed dredging and dumping in Flinders Port. Please do not issue a licence until:</p> <ul style="list-style-type: none"> • A comprehensive independent environmental evaluation has been undertaken; • All stakeholders have been properly consulted (including the fishing industry and conservation groups); |

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| | <ul style="list-style-type: none"> • Comprehensive real-time monitoring and reporting arrangements are in place with all work to stop if conditions deteriorate; and • An adequate security bond of at least \$100 million is in place to cover the cost of environmental damage and to compensate the fishing industry and others when things go wrong. <p>I look forward to your cooperation with this matter."</p> |
| 65. | <p>"Dear EPA,</p> <p>Please do not to issue any dredging and dumping licence for outer harbour until:</p> <ul style="list-style-type: none"> • A comprehensive independent environmental evaluation has been undertaken; • All stakeholders have been properly consulted (including the fishing industry and conservation groups); • Comprehensive real-time monitoring and reporting arrangements are in place with all work to stop if conditions deteriorate; and • An adequate security bond of at least \$100 million is in place to cover the cost of environmental damage and to compensate the fishing industry and others when things go wrong. " |
| 66. | <p>"To the EPA and the Environment Department.</p> <p>Please do not issue any dredging and dumping licence until:</p> <ul style="list-style-type: none"> • A comprehensive independent environmental evaluation has been undertaken; • All stakeholders have been properly consulted (including the fishing industry and conservation groups); • Comprehensive real-time monitoring and reporting arrangements are in place with all work to stop if conditions deteriorate; and • An adequate security bond of at least \$100 million is in place to cover the cost of environmental damage and to compensate the fishing industry and others when things go wrong. • And seeing as how this will be a Government run issue, things will probably go wrong. • When the Outer Harbour shipping channel was dredged in 2005, fisheries were devastated and over 1,600 hectares of precious seagrass meadow was destroyed. • Can Flinders Ports be trusted to do a better job this time than in 2005. • They nevertheless admit that there will still be "widespread turbidity and a high likelihood of extensive seagrass loss". • How much monitoring will be done [and by whom], when this will take effect?" |
| 67. | <p>"DO NOT issue any dredging and dumping license until:</p> <ul style="list-style-type: none"> • A comprehensive independent environmental evaluation has been undertaken; • All stakeholders have been properly consulted (including the fishing industry and conservation groups); • Comprehensive real-time monitoring and reporting arrangements are in place with all work to stop if conditions deteriorate; and • An adequate security bond of at least \$100 million is in place to cover the cost of environmental damage and to compensate the fishing industry and others when things go wrong. |
| 68. | <p>"Proposed widening of the Outer Harbour shipping channel</p> <p>I request that you do not to issue any dredging and dumping licence until:</p> <ul style="list-style-type: none"> • A comprehensive independent environmental evaluation has been undertaken; • All stakeholders have been properly consulted (including the fishing industry and conservation groups); • Comprehensive real-time monitoring and reporting arrangements are in place with all work to stop if conditions deteriorate; and • An adequate security bond of at least \$100 million is in place to cover the cost of environmental damage and to compensate the fishing industry and others when things go wrong. <p>yours concerned"</p> |
| 69. | <p>"Dear Sir/Madam/Ms,</p> <p>I understand from the EPA's website that Flinders Ports has applied for a license to undertake dredging in the Outer Harbor shipping channel. I have read the fact sheet provided by the EPA on this matter and would like to take the opportunity to make a comment on the application as invited on the fact sheet by the Agency, with a closing date of 30 November 2019.</p> <p>While I welcome the measures outlined by the Agency in the fact sheet in relation to the Environmental Monitoring Program and Dredge Management Plan, particularly the real-time 'alarm' and 'halt work' triggers and management actions if triggers for turbidity levels are exceeded, as prescribed in the DMP, I nevertheless have concerns that the collateral damage to native seagrass may significantly exceed the modelled area of impact assessed/assumed by</p> |

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| | <p>the Agency.</p> <p>Therefore, I would like to suggest that additional measures need to be taken before the license application is approved, such as:</p> <ul style="list-style-type: none"> • A comprehensive independent environmental evaluation has been undertaken; • All stakeholders have been properly and fully consulted (including the fishing industry and conservation groups) in addition to the interagency consultation that has already occurred; and • An adequate security bond is put in place to cover the cost of environmental damage and to compensate the fishing industry and others should things go wrong. (Suggest several tens of \$ millions.) <p>Needless-to-say, it is very important that the lessons learned from the previous dredging of the Outer Harbor shipping channel in 2005, where I understand that over 1,600 hectares of seagrass meadow were destroyed, are fully applied in this instance.</p> <p>Many thanks for considering my comments"</p> |
| 70. | <p>"NO DREDGING IN SA GULF Dear EPA, in regards to the application to dredging operations of the Outer Harbour shipping channel by Flinders Ports please be advised that I strongly oppose the granting of any such permission given this company's previous failings and current lack of assessment and protections; below are some of the issues: Do not issue any dredging and dumping licence until:</p> <ul style="list-style-type: none"> • A comprehensive independent environmental evaluation has been undertaken; • All stakeholders have been properly consulted (including the fishing industry and conservation groups); • Comprehensive real-time monitoring and reporting arrangements are in place with all work to stop if conditions deteriorate; and • An adequate security bond of at least \$100 million is in place to cover the cost of environmental damage and to compensate the fishing industry and others when things go wrong. <p>Please stop being pushed around by the government, your association is designed to protect the environment not act as advocates for pushing the cost based decisions that ignore the damaging outfalls. yours Sincerely, By the way the sand pumping between Glenelg and Seacliff is now commonly accepted as a total disaster by the general population using this area. Open your eyes."</p> |
| 71. | <p>"I am writing to express my concern with the dredging proposal by Flinders Port.</p> <p>This proposal should not be allowed until:</p> <ul style="list-style-type: none"> • A comprehensive independent environmental evaluation has been undertaken; • All stakeholders have been properly consulted (including the fishing industry and conservation groups); • Comprehensive real-time monitoring and reporting arrangements are in place with all work to stop if conditions deteriorate; and • An adequate security bond of at least \$100 million is in place to cover the cost of environmental damage and to compensate the fishing industry and others when things go wrong." |
| 72. | <p>"Dear people I am writing because I am disturbed to hear that Flinders Ports wants to widen the Outer Harbour shipping channel, an operation that will involve 1.55 million cubic metres of clay, limestone and sand to be dredged and dumped in the middle of Gulf St Vincent. We know that great environmental damage is caused by turbidity and silt from the dredging which spreads for large distances where it destroys fish nurseries and smothers marine life. I urge you not to issue any dredging and dumping licence until:</p> <ul style="list-style-type: none"> • A comprehensive independent environmental evaluation has been undertaken; • All stakeholders have been properly consulted (including the fishing industry and conservation groups); • Comprehensive real-time monitoring and reporting arrangements are in place with all work to stop if conditions deteriorate; and • An adequate security bond of at least \$100 million is in place to cover the cost of environmental damage and to compensate the fishing industry and others when things go wrong. |

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| | Please put our marine environment at the very centre of your considerations. It is irreplaceable and highly vulnerable." |
| 73. | <p>"I understand that in May 2018, the Minister for Planning approved an application by Flinders Ports to widen the Outer Harbor shipping channel in order to accommodate larger vessels. The Minister for Planning approved the development application subject to eight conditions, many of which were recommended by the EPA. Following approval of its development application, Flinders Ports is required to apply for a licence under the Environment Protection Act 1993 before it can commence dredging.</p> <p>This is a matter of Great Concern to me as a resident of Royal Park, a fisherman and an Environmentally aware citizen.</p> <p>I recall reading that when the Outer Harbour shipping channel was dredged in 2005, local fisheries were devastated with over 1,600 hectares of seagrass meadow destroyed, much of it forever. :-(</p> <p>I understand Flinders Ports plans to widen the channel again with 1.55 million cubic metres of clay, limestone and sand expected to be dredged and dumped in the middle of Gulf St Vincent. It seems only four hectares of native seagrass is expected to be directly cleared by the dredging, and an additional 158-230 hectares affected by "indirect clearance". From previous times it is clear that most of the environmental damage is caused by turbidity and silt from the dredging spreading around and carried by the currents for large distances, which destroys fish nurseries and smothers marine life where it eventually settles. I note that the EPA suggests that Flinders Ports will do a better job than in 2005, but expects "widespread turbidity and a high likelihood of extensive seagrass loss". We have already lost too much of our Fish Nursery areas and Seagrass! Local fish, crab etc stocks are way low as I see from the poor catches on Semaphore and Largs Jetty, etc. There has NOT been a thorough Environmental Impact Assessment of this work.</p> <p>I believe the EPA should NOT issue any dredging and dumping licence until:</p> <ul style="list-style-type: none"> • A comprehensive independent environmental evaluation has been undertaken. • A fully detailed study of the effects of the Native Vegetation clearance has been undertaken and serious minimisation plans and procedures are in place. • All stakeholders have been fully consulted e.g. include the fishing industry and conservation groups. • A serious security bond of at least \$100 million is set up to cover the cost of environmental damage and to compensate for losses when things go wrong. • Scientifically designed and effective real-time monitoring and reporting arrangements with public availability are in place. <p>All work should stop if conditions change and threaten the environment.</p> <p>Thanks for protecting our environment. It's so easy to damage and often we can never get the damage replaced at ANY cost!"</p> |
| 74. | <p>"Dear EPA</p> <p>It has been brought to my attention that the Outer Harbour shipping channel is under threat of widening, with dredging and dumping of clay, limestone and sand into the middle of Gulf St Vincent by a private company (Flinders Ports) with no scrutiny or environmental impact statements.</p> <p>This is wrong and I oppose this most strongly</p> <p>Our coastline is so amazing, unique, beautiful and essential for good health.</p> <p>Let's do nothing that would impact on it's natural state. Haven't we learned our lessons from the past – a past that has seen natural ecosystems eroded or destroyed in the long term for such short term gains (generally of the monetary kind).</p> <p>I have checked The Green's view on this and they say that licences should not be issued until the following: please don't issue the licence until:</p> <ul style="list-style-type: none"> • A comprehensive independent environmental evaluation has been undertaken; • All stakeholders have been properly consulted (including the fishing industry and conservation groups); • Comprehensive real-time monitoring and reporting arrangements are in place with all work to stop if conditions deteriorate; and • An adequate security bond of at least \$100 million is in place to cover the cost of environmental damage and to compensate the fishing industry and others when things go wrong. <p>(I am copying this as I'm too busy to write it all out...)</p> <p>Can there be another way found to get benefits for shipping at the Port another way?</p> <p>Also one thing that I just don't understand is why ANY native vegetation is allowed to be cleared AT ALL. We've lost so much – let's look after what's left. We just can't keep acting like business as usual.</p> |

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| | <p>We need good stewardship. I will be watching what happens on this issue as an engaged citizen (and a concerned one at that!)</p> |
| 75. | <p>I am an ordinary citizen who has significant concerns about the proposed dredging of the Outer Harbour Chanel. I have no confidence in the Flinders Ports to do the right thing and a better job this time despite all that you are proposing to put in place. I have no faith that the proposed dredging will not extensively destroy fisheries and extensive hectares of seagrass meadow despite what you as an authority are proposing. A 39% reduction in the amount of turbulence is not enough leaving still a 60% amount of turbulence to occur. This should be reduced further due to the known fact that the turbulence can spread for very large distances. Given the amount of damage that was done in 2005 I am unconfident the Port Authority even with monitoring will not destroy unacceptably significant amounts of seagrass meadow and components of the fisheries environment. I think the standards are too low. Our marine environment needs to be given a higher priority and protected at all cost. So often once it has been destroyed it can never recover.</p> <p><i>[excerpt cut and pasted]</i> <i>Caulerpa taxifolia</i> The Outer Harbor shipping channel is extensively infested with <i>Caulerpa taxifolia</i>, a listed invasive species. Dredging through this section is likely to spread fragments of <i>Caulerpa</i> throughout the nearshore environment, causing further dispersion of this invasive species. The EPA considers that spreading of this non-native species via discharge and/or deposition would cause environmental harm as per Part 1, clause 5(c) of the <i>Environment Protection (Water Quality) Policy 2015</i>.</p> <p>The environmental impacts of <i>Caulerpa taxifolia</i> invasion include altered sediment chemistry prevention of seagrass growth and rehabilitation, altered faunal communities and increased costs associated with clearing marine infrastructure such as intake pipes. <i>Caulerpa taxifolia</i> can grow from small fragments generated by the dredging process. As such, the active management of fragmentation and release of <i>Caulerpa taxifolia</i> fragments from dredging is required to decrease the risk of establishment outside the current containment area. The EPA has advised a condition to ensure that appropriate measures to manage <i>Caulerpa taxifolia</i> should be contained in a detailed Dredge Management Plan (DMP). <i>[end cut and paste]</i></p> <p>It is also very concerning that the dredging may very well spread this invasive species further in the channel.</p> <p><i>[excerpt cut and pasted]</i> As identified in the application, there are times when this overflow would occur adjacent to well established seagrass areas where, depending on the season that dredging would be undertaken, extensive seagrass loss is estimated to be between approximately 1000 hectares during winter or approximately 1500 hectares during a summer dredge campaign. The seagrass predicted to be lost is a mixture of <i>Posidonia</i> and <i>Amphibolis</i> spp. These are very long lived species which, once lost, have limited ability to recolonise. In many locations, seagrass removal or loss is still evident more than 100 years after the stress has been removed (e.g. Port Broughton seagrass mining in 1908-1914 - Irving, 2013). The EPA identified that such potential seagrass loss would equate to an economic loss to the State of between \$17-29 million a year (accounting for fisheries production, the cost of sand cartage on the beach, which is exacerbated by seagrass loss etc.). <i>[end cut and paste]</i></p> <p>Based on the above concerns it would seem that no dredging should occur until May at the very earliest as March and April are still very hot months. If the above is correct the dredging should occur in Winter (June -August) and into spring when it is often still quite cold (September-October). I think you are not following your own advice if you allow the dredging to commence before the winter months.</p> <p>Finally I ask that you not issue any dredging and dumping licence until</p> <ul style="list-style-type: none"> • A comprehensive independent environmental evaluation has been undertaken; • All stakeholders have been properly consulted (including the fishing industry and conservation groups); • Comprehensive real-time monitoring and reporting arrangements are in place with all work to stop if conditions deteriorate; and • An adequate security bond of at least \$100 million is in place to cover the cost of environmental damage and to compensate the fishing industry and others when things go wrong." |

76. "Please accept this letter as my submission to your consultation process for Flinders Ports' licence application regarding the proposed Outer Harbor Channel Widening Project.

I thank the EPA for publishing the corrected advertisement of the application on 14/11/18 which removed the erroneous statement in the original advertisement of 7/11/18 about the EPA not being able to refuse the grant of a licence.

For the reasons outlined below, I submit that the EPA should refuse to grant the licence sought by Flinders Ports to dredge the Outer Harbor channel.

As someone who takes an interest in environmental issues, particularly matters that affect the Adelaide Dolphin Sanctuary, I am very concerned about the application by Flinders Ports to carry out extensive dredging of the Outer Harbor channel to accommodate Post Panamax class vessels, and to dump the dredge spoil in Gulf St Vincent.

I am concerned that the potential environmental impacts of the project have been understated and that conclusions reached by Flinders Ports about the loss of seagrass meadows and rate of recovery are not supported by evidence.

Dredging of the Outer Harbor channel was undertaken in 2005 to accommodate Panamax class vessels.

I refer to the attached SARDI report, Re-assessment of sites potentially impacted by dredging in Outer Harbor, Port Adelaide: dredge spoil dump site and seagrass adjacent to dredged channel (Wiltshire and Tanner 2016).

That report refers to an earlier report by Tanner in 2004 (part of the environmental assessment for the 2005 dredging) in which it was noted that dense *Posidonia* seagrass occurred up to the channel edge prior to the dredging operation - see attached report, page 10 (pdf page 16 of 18). However, when seagrasses were surveyed in 2006 after the dredging, no seagrass was located closer than 1 km from the channel (Tanner and Rowling 2008) - see attached report, page 5 (pdf page 11 of 18) and page 10 (pdf page 16 of 18).

A study of seagrass structure (leaf density) occurred in 2007 but the scope of that study did not include seagrass distribution – see attached report, page 11 (pdf page 17 of 18) – leading the authors of the attached 2016 SARDI report to conclude, “thus whether seagrasses have recovered up to the channel edge, and the rate of any such recovery are unknown”.

By contrast, Flinders Ports claims that significant recovery of seagrass meadows was recorded 12 months after the dredging, (which may be true of the survey sites), but fails to add that the closest survey site was 1 km from the channel because all seagrass within 1 km of the channel had been destroyed. Additionally, only sites south of the channel were surveyed. No surveys were undertaken to the north of the channel – see Flinders Ports Outer Harbor Channel Widening Project Development Application Report, page 55:

https://www.dpti.sa.gov.au/__data/assets/pdf_file/0003/387021/010_V048_17_Consolidated_Document.pdf

I submit there is enough uncertainty arising from the discrepancy between the SARDI report and the Development Application Report to warrant further investigation.

The two seagrass mapping diagrams dated 2013 and 2017 in the Development Application Report (Figure 36 on page 100 and Figure 1-1 in Appendix C) are not useful for assessing the impact of the 2005 dredging in the absence of comparative mapping from before the dredging. At best they appear to show it took twelve years for some level of seagrass recovery near the dredging site.

With Flinders Ports' current proposal foreshadowing an “increased risk of future maintenance dredging” (Development Application Report, page iv), it is likely seagrass meadows destroyed by the proposed dredging would never have the opportunity to recover.

Seagrass meadows play a vital role in the ecology of Gulf St Vincent. The epic Adelaide Coastal Waters Study (CSIRO 2007) warned:

“ The loss of large tracts of (*Posidonia*) seagrass is one of the most visible and significant impacts on Adelaide's coastal environment. Seagrasses provide a natural habitat for many species of marine life and they stabilise the underlying sediments. Any loss will clearly negatively impact on these functions and may also increase the risk of colonisation by exotic marine pests.”

As acknowledged in the Development Application Report (page 34-35), this proposal invokes the provisions of the Adelaide Dolphin Sanctuary Act 2005.

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| | <p>Seagrasses support feeding by marine fauna including the dolphins of the Adelaide Dolphin Sanctuary. The dolphins will also be at risk from the following impacts listed in the Development Application Report:</p> <ul style="list-style-type: none"> • Dredging activity within the Outer Harbor, including direct disturbance of the seabed (causing the release of turbid plumes and the disturbance of contaminated material) • The release of contaminants from dredge vessel operations, including spills from refuelling, waste disposal etc. • Injury to fauna from vessel strike associated with the movement of the dredge vessel • Disturbance to marine fauna from underwater vessel noise generated by dredge vessel and piling activity • Spread of marine pests from dredging activity • Movement and berthing of larger vessels (up to 49m wide), including operation of tugboats to assist with vessel movement • An increased risk of future maintenance dredging • Altered channel morphology and changes to coastal processes. <p>Due to the seriousness and extent of the likely environmental consequences, I submit that the application should be refused."</p> |
| <p>77.</p> | <p>"Thank you for inviting the public to voice comments / concerns about plans to issue Flinders Ports with a dredging and dumping licence affecting the Outer Harbour channel and Gulf of st Vincent.</p> <p>Before such a licence can be issued, with the very possible risks of further environmental destruction as previously seen in the area, it is crucial that a transparent and fully independent environmental assessment is conducted.</p> <p>Consultation with conservation groups, fishing industry and all other stakeholders is necessary. What is the extent of marine life in jeopardy at this time?</p> <p>Any work to be undertaken would need to be monitored thoroughly and in real-time, documented, and discontinued if necessary.</p> <p>The potential cost of environmental damage e.g. widespread turbidity, loss of marine life, must be established, with a security bond put in place (\$100 million plus) to cover the negative impact of dredging and dumping on the environment and subsequently on the fishing industry.</p> <p>In the light of previously observed destruction of marine life as a result of dredging in the channel, it is more than ever essential for the Agency to demand responsible behaviour from Flinders Ports (or others) whose proposed activities jeopardise any environmental protection.</p> <p>I trust that this consultation process is not disingenuous and will lead to increased protection of the environment"</p> |
| <p>78.</p> | <p>"I am writing this submission as an individual out of concern for the potential impact of the Flinders Ports dredging of the Outer Harbor shipping channel on the bird populations on Bird Island, Outer Harbor.</p> <p>For the past 4 years I have been a volunteer for BirdLife Australia. Part of my role has included visiting Bird Island to count different bird species and monitor threats to the birds, such as foxes and human presence.</p> <p>The island is a sanctuary and feeding ground for many species of birds, including migratory shore birds that spend their summer months in South Australia. These species of migratory birds that 'overwinter' in South Australia include: sharp-tailed sandpiper, the endangered red knot and red-necked stints. The island is also home to many local shore birds. Pelicans, ibis, cormorants, oystercatchers and red-capped plovers all breed on the island, as does the fairy tern, which is currently listed as a vulnerable species.</p> <p>I am concerned about the impact of the dredging on Bird Island, which a highly significant bird feeding and breeding ground. The impact of the dredging on the bird populations needs to be assessed as part of the project. I call for the following measures to be considered as part of the project:</p> |

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| | <ul style="list-style-type: none"> • That the dredging take place during a time of year when breeding birds, particularly vulnerable birds such as fairy terns, are not present. It is currently scheduled to take place outside of fairy tern breeding season (October to March), but the schedule is tight and the project must hold to the proposed schedule. • That no members of the dredging team alight on island at any time during the project, particularly during the summer months when bird nesting is most likely to be taking place. • That bird populations are monitored by BirdLife or NRM staff and volunteers, or, a completely independent body, before, during and after the dredging to assess the impact of the process on the bird populations on the Bird Island. • That the impact of the dredging on the bird feeding grounds on Bird Island is monitored by a fully independent body and dredging ceased if any loss of feeding grounds occurs. • Please contact me if any clarification is needed." |
| 79. | <p>"I write to express my view that a comprehensive independent environmental evaluation has be undertaken with appropriate groups before any licence is granted. The fishing industry and conservation groups are key stakeholders.</p> <p>Even with safeguards the risk of environmental damage is still so great that compensation to the fishing industry needs to be assured by an adequate security bond.</p> <p>Comprehensive real-time monitoring and reporting arrangements are essential if it is to go ahead.</p> <p>Please give consideration to these my earnest pleas as a repeat of the 2005 disaster is unthinkable."</p> |
| 80. | <p>"Western Adelaide Coastal Residents Association's main interest is the health of seagrass beds and the recreational use of Adelaide's beaches by both local Western Adelaide Coastal Residents and visitors. However, from our research, it is clear that biosecurity measures and economic impacts on fisheries are also important reasons to consider.</p> <p>The EPA must not allow POMS to escape into the Gulf by dumping the dredged material into mid Gulf St Vincent. If this threat is considered remotely possible then an alternative methodology must be considered and the present application not be granted a licence. If dredging proceeds according to the current plan Flinders Ports should be required to indemnify oyster farming interests against the commercial consequences of any spread of POMS which can be attributed to the dredging.</p> <p>AN ALTERNATIVE TO THE PRESENT DREDGING MANAGEMENT PLAN</p> <p>Instead of the 4-6 month big dredging proposal currently being considered are there advantages in a smaller but continuous dredging operation which would take place over 2-3 years with land based disposal. Perhaps widen the turning area first and within the breakwaters then do the South side of the 7 km the channel. Retain the dredge to perform maintenance when necessary. Each increment would improve access and in a few years post-panamax vessels would have no problems. Eventually cruise ships may get so big that further works will be necessary.</p> <p>Some way to connect a barge by pump and pipe to a large storage area near the old salt pans could be devised if time is not a major consideration in the operation. The spoil will become a useful asset quickly if the area for storage is spread over 1 square kilometre.</p> <p>IF THE PRESENT DREDGING MANAGEMENT PLAN (DMP) REMAINS THE DREDGING PLAN THE FOLLOWING ARE WACRA'S CONSIDERED MINIMUM LICENCE CONDITIONS AND MONITORING REQUIREMENTS FOR DREDGING.</p> <p>Adequate turbidity and light monitoring sites; 2 SITES ONLY ARE NOT ADEQUATE.</p> <p>An additional monitoring site within the harbour breakwaters and near pelican point is also needed.</p> <p>Perhaps a second set of North and South monitoring sites is needed toward the western extent of seagrass adjacent to the channel that is being widened. All these need to be monitored in real time and able to trigger shutdown.</p> <p>The proposed parameters to be monitored as listed in the draft DMP are adequate.</p> |

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| | <p>When trigger levels are reached that notify that shutdown is required it is essential that the dredge operating motors are also monitored in real time to confirm they have shut down at the current site and only used after a change of operation by shifting to a distant area with less turbidity.</p> <p>GPS recording in real time of the position of the both dredge and all barges is essential.</p> <p>Monitoring of key indicators (turbidity, light, machinery operation, location etc) against trigger levels, should be live streamed and publicly accessible.</p> <p>BARGE HOPPERS MUST ALSO BE MONITORED IN REAL TIME TO ENSURE:-</p> <ol style="list-style-type: none"> 1. That they are properly closed while being filled and towed and are 2. Only opened within the correct dredged material placement area (DMPA). 3. That the dredged material is spread evenly over the DMPA <p>If the weather is too extreme for the barge to reach the DMPA then operations must cease when all barges are full.</p> <p>From Table 4 P17 of the Flinders Ports DMP:-It states "Background water quality monitoring will be performed prior to the commencement of works to set relevant performance triggers." The responsibility for this should be with the EPA, not Flinders Ports</p> <p>When dredging is in operation the EPA must monitor plumes using all information including live proofing from a vessel to see if the modelling that has been used to set impact areas and trigger levels were valid. In the event that they are not validated then changes must be made to the licence agreement to protect the sea grasses.</p> <p>An independent evaluation and review of the modelling assumptions and trigger levels should be conducted at Flinders Ports expense after 1 month of dredging and the report issued publicly within 2 weeks of that."</p> |
| 81. | <p>""Thank you for your advice on the public consultation process for the assessment of Flinders Ports application for an EPA licence to undertake dredging in Outer Harbor and to dispose of material in Gulf St Vincent.</p> <p>As discussed Council will formally consider its response at its meeting on 11 December 2018 and will provide its submission to the EPA on 12 December 2018, which is during the period when the EPA will receive additional comments before finalising any licence conditions (assuming the licence is approved).</p> <p>Please note that subject to Council's formal approval of the submission, the following matters will form the basis of Council's submission:</p> <p>Compliance</p> <p>The need for the operations to demonstrate/achieve compliance with relevant water quality and marine protection standards, including the EPA Water Quality Guideline for Dredging and Earthworks, noting the sensitivity of seagrasses to the impacts of increased turbidity that will result from the dredging.</p> <p>Management planning and monitoring regime</p> <p>The need for a comprehensive dredging management plan covering all aspects of the operation to demonstrate a proactive approach to minimising environment impact during the dredging, transportation and disposal stages (including water quality, wildlife protection, noise and air quality matters). The need for appropriate 'cease operations' criteria to be specified, when certain threshold conditions are observed or forecast. The need to mitigate the risk of further dispersion of invasive species i.e. <i>Caulerpa taxiflora</i>. These conditions should apply to all aspects of the operation with monitoring to occur throughout the impacted areas as part of an approved Environmental Monitoring Program. The need for this monitoring to be independently verified.</p> <p>Public reporting regime</p> <p>The need for public reporting (including real time access to water quality data at monitoring sites) to demonstrate compliance with any licence conditions and application of best practice technologies and management practice.</p> <p>Surveillance during operations</p> |

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| | <p>Consideration to be given to engaging Adelaide Dolphin Sanctuary management/volunteers as 'expert observers' during operations to ensure that 'stop work' procedures are activated when dolphins are in proximity to dredging and piling activities (latter causing under water noise impacts).</p> <p>Stakeholder engagement</p> <p>The need for ongoing engagement with impacted communities and interest groups . Noting that Flinders Port are presenting at an Elected Member workshop scheduled for 18 December. ""</p> |
| <p>82.</p> | <p>"The EPA have recognised that the Flinders Ports 2005 dredging campaign resulted in an ~ 1600 Ha of sea grass loss in the vicinity of the Outer Harbour shipping channel(1) The current application although predicted to be of smaller scale and better managed will nevertheless result in destruction of sea grass meadows, both adjacent to the shipping channel and in the Port Estuary.</p> <p>Water quality in the Port Estuary has improved in recent years, particularly since the closure of Penrice Soda operations which discharged large amounts of ammonia into the cestyuary effectively distorting marine growth. Water quality has improved to such an extent that the EPA now consider water fit for human immersion, which allows an annual swim through Port Adelaide. Our group would like to draw your attention to:</p> <ul style="list-style-type: none"> • Sea grass regeneration occurring within the estuary, down the western side of Torrens Island beyond the quarantine station wharf. • A large razor fish(Pinna bicolor) bed opposite the Royal Yacht Squadron at Outer Harbour • A breeding colony of Fairy Tern (Sternula nereis) resident on the western end of Bird Island. Fairy Terns are listed as vulnerable on the IUCN Red List of Threatened Species 2018 (2) Fairy Tern are dependent on small fish, crustaceans and small molluscs • Trials to regenerate cockle beds in the section banks(3) <p>Sea grass value</p> <p>A recent paper on valuation of ecosystem services in South Australia valued sea grass at \$39, 615 Ha/per year., ie the 2005 campaign resulted in a loss of more than \$63m per year (where values are denoted in international dollars(4)).</p> <p>While these valuations are global estimates and need to be refined for local circumstances they represent the best estimate we have. The majority of those services were "regulating services" eg nutrient removal and wave energy attenuation both of which are of critical importance for the metropolitan coast. These values exceed the current EPA seagrass valuation of \$20,000 per Ha.(5)</p> <p>Presumably removal of large sections of seagrass implies the additional nutrient removal must be taken on by existing beds, thus adding to their already overwhelming nutrient load</p> <p>Scale of the campaign</p> <p>The EPA estimates(1):</p> <ul style="list-style-type: none"> • the discharge of fine sediment using the proposed method to be 265,000 tonnes and • the cumulative storm water sediment discharge to the Adelaide metropolitan coast between 2005 and 2014 to be 31,500 tonnes (or an average of 3,150 tonnes per annum) <p>Using these values the sediment load represents 265,000/3,150 or 84 times the sediment discharge for the whole metropolitan coast is to be dumped on a relatively small area at Outer Harbour.</p> <p>The impact is particularly acute, when it is realised that (in spite of our lobbying) all coastal storm water outlets north of Point Malcolm (except North Haven Marina and Flinders Ports Outer Harbour facilities) discharge virtually untreated into the dunes, rather than into Gulf St Vincent.</p> <p>The EPA notes that "fine sediments generate the most turbidity and are re-suspended by wind and wave action in nearshore waters for extended periods of time, further impacting water quality"</p> |

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| | <p>Modelling is inconsistent with physical observations</p> <p>Modelling predictions are not consistent with physical observations reported in the Adelaide Coastal Waters study, which showed a plume consistently eddying to the south. (6) The relationship between turbidity and seagrass loss is not well defined Three zones are defined, apparently based on WA EPA guidelines.</p> <ul style="list-style-type: none"> • Zone of High Impact = water quality impacts resulting in predicted mortality of ecological receptors with recovery time greater than 24 months. • Zone of Low to Moderate Impact = water quality impacts resulting in predicted sub-lethal impacts to ecological receptors and/or mortality with recovery between 6 months (lower end of range) to 24 months (upper end of range). • Zone of Influence = extent of detectable plume but no predicted ecological impacts. If there is a link between these zones it extends over a number of documents and the relationship between, turbidity and seagrass loss is not apparent, and adaptation to local conditions is not clear <p>Ecological recovery</p> <p>Ecological systems are complex, and the possibility of relationships between seagrass, epiphytes ,molluscs, crustaceans being reestablished within 24 months is highly unlikely We have limited access to studies after the 2005 campaign, but note that investigations into recovery were done at 1, 2.5, 4 and 5.5km from the channel, but recovery within the 1 km zone was limited at best:</p> <p>Further evidence comes from the observation by Tanner (2004) that dense Posidonia seagrass occurred up to the channel edge ~2 years prior to the dredging operation, but that the closest seagrass found shortly after dredging was 1 km from the channel (Tanner and Rowling 2008).(7)</p> <p>We note that the Flinders Port’s application to the native vegetation assessment panel depicts seagrass associations growing up to the channel in places. Our conclusions are that heavily impacted Zostera recovery takes much longer than 24 months</p> <p>Monitoring regime</p> <p>Consequently we are surprised to see only two monitoring points proposed in the dredge management plan, and that those monitoring points are close to estuary mouth, and will remain static for the duration of the campaign</p> <p>While we understand the monitoring triggers are to be a combination of both slow and rapid turbidity time series, it’s in the public interest that it’s clear just what these triggers are designed to protect and the rationale to be used in setting their levels.</p> <p>Recommendations:</p> <ul style="list-style-type: none"> • The relationship between sediment load and ecological impact is very poorly defined. In our view the EPA should not grant a licence until that relationship has been fully investigated. • Given the conflict between the model presented and physical observations listed above, a more spatially diverse monitoring system, with a rationale for trigger points is required. • After the disastrous 2005 campaign, we believe it’s very much in the public interest to to have public access to the monitoring output in as real time as possible. • Granting of a licence will allow the holder to cause environmental harm within the licence parameters . The EPA has the power to implement Environment Improvement Programs under the licence. That power could be used to develop a better understanding of seagrass recovery mechanisms and progress , so that environmental harm can be truly minimised" |
| 83. | <p>"I wish to make a brief submission in relation to this application. I will firstly address some of the administrative and legal procedural issues around this application and then look at the merits of the application including appropriate conditions.</p> <p>Process</p> |

First, thank you for rectifying the incorrect advertisement. I am pleased that the EPA now recognises that regardless of whatever input the EPA had at the Development Application stage, you are legally able to consider additional information and are able to decline to issue any licence if the Authority is of the view that it is inconsistent with any of the considerations set out in section 47, including the General Environmental Duty. The EPA was fortunate in having this error brought to your attention early in the process which enabled re-notification whilst maintaining the original public submission date. I could have waited until near the close of submissions before pointing out the EPA's error, which would have caused much more grief and postponed the process by weeks or months. I chose not to do this because I wanted to make it easier for the EPA to consult further on this issue, rather than be pushed up against the proponent's timeliness for commencement. Which brings me to my second point.

Secondly, I would urge the EPA to undertake consultation on this licence application in two parts. The first is the current call for submissions and the second should be further consultation on a draft licence. In my submission, it makes sense to give stakeholders an actual proposed draft licence to comment on, as well as the more open-ended request for comment now underway. The public should be able to see the legal drafting so as to be able to assess whether it is adequate and whether there are unintended consequences or loopholes. I think a second round of public consultation is consistent with the Act and consistent with other public rights including rights of civil enforcement.

There are no problematic time constraints on doing this because no dredging is able to be conducted until March 2109 at the earliest under the Development Approval. The EPA has no doubt already drafted a licence in anticipation of this process, so you have 3 months in which to consult further on this most important matter.

Merits

In my submission, the EPA should defer the licence application pending a more thorough Environmental Impact Assessment. If unable to be deferred, the application should be refused.

The environmental harm that is known will be caused by this development is too serious to be approved without the most thorough and independent environmental assessment possible. I appreciate that the EPA has produced a 14 page assessment, however, with all respect, that is completely inadequate. I think the EPA should insist on (or commission itself), an independent assessment, including modelling, in order to improve the confidence in current predictions. Public confidence in the process has already been tainted by the fact that the last dredging in 2005/6 was an environmental disaster and the proponent initially proposed more of the same for 2019.

I understand that the EPA believes it has brought the proponent a long way from its original starting point, however the fact that the proponent was even contemplating repeating its earlier process does not inspire confidence that they are particularly interested in minimising their impact on the environment. In addition, anecdotal evidence from the earlier dredging campaign suggests that there were breaches of previous licence conditions including unauthorised dumping of dredge spoil outside the approved area. If the EPA has evidence that this did in fact occur, then the "fit and proper person" test would also come into play and give the EPA reason to delay or refuse a licence.

Nevertheless, given that the EPA already thought that its hands were tied and that it was legally obliged to issue a licence, I don't expect this submission to get very far, so I will deal with conditions.

Conditions

If the EPA determines to issue a licence, then it should attach rigorous conditions on all of the matters it has foreshadowed in its "Fact Sheet" issued on 5th November (and updated on 13th November 2018). These include issues already covered in the Development Approval such as the Environmental Monitoring Program.

The bottom line should be that the works are continually monitored so that any adverse impacts can be detected and results used to trigger real-time alarm and stop work triggers.

Other important conditions would be directed to compliance with dumping requirements. There is cheap technology available to ensure that dredge spoil is not dumped outside the approved area. To improve public confidence, barges could be tracked in real time in relation to both weight and location.

Finally, I look forward to seeing the draft licence and being offered the opportunity to comment on that in coming weeks. ""

84. I write in regard to the current consultation on the Flinders Ports application for a dredging licence for Outer Harbour of the Port River. Staff supporting the Adelaide and Mount Lofty Ranges (AMLR) Natural Resource Management (NRM) Board have reviewed the licence application and key information for the proposal.

In general, the supporting information provides a level of confidence that the environmental impacts and mitigation measures within the scope of the Environment Protection Act 1993 are being adequately considered at this stage.

Furthermore, there remains scope for my staff of technical specialists to assist the EPA with their assessment of the proponent's Environmental Management Plan and/or setting of licence conditions. Staff will be able to assist with historical information related to the flora and fauna of the site, and advice regarding monitoring and evaluation, among other matters. I welcome the opportunity to work together with the EPA in achieving the best possible environmental outcomes from this important development.