



Report and recommendations of the Environmental Protection Authority



Point Grey Marina Proposal - Inquiry under section 46 of the *Environmental Protection Act 1986* to amend Ministerial Statement 906

Point Grey Development Company Pty Ltd

Report 1621

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ENVIRONMENTAL PROTECTION AUTHORITY
REPORT AND RECOMMENDATIONS TO THE MINISTER FOR
ENVIRONMENT

**POINT GREY MARINA PROPOSAL - INQUIRY UNDER SECTION
46 OF THE *ENVIRONMENTAL PROTECTION ACT 1986* TO
AMEND MINISTERIAL STATEMENT 906 (Assessment No. 2130)**

The Minister for Environment has requested that the Environmental Protection Authority (EPA) inquire into and report on the matter of changing the implementation conditions relating to the Point Grey Marina proposal, in order to extend the 'Time Limit of Authorisation' for substantial commencement (condition 3).

The following is the EPA's Report and Recommendations (No. 1621) to the Minister pursuant to section 46(6) of the *Environmental Protection Act 1986* (EP Act).

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Background

The Point Grey Marina proposal is for the construction and operation of an onshore marina and associated boating infrastructure (e.g. boat pens, jetties, navigational aids, entrance channel, protective groynes, public boat ramps and car parks) on the western side of the Point Grey peninsula. The proposal also includes the construction of a 2.5 kilometre navigation channel across the Harvey Estuary from the Point Grey Marina to the Dawesville Channel.

The Point Grey Marina is a component of the Point Grey Outline Development Plan which is a requirement of Town Planning Scheme (TPS) No.4, Amendment No. 104 (Ministerial Statement 860). TPS No 4 provides for the rezoning of a number of Lots from 'Rural' to 'Special Development' to allow a variety of land uses in the area.

State assessment

The EPA assessed the Point Grey Marina proposal at the level of Public Environmental Review and released its assessment report (EPA Report 1420) in December 2011. The EPA identified the following key environmental factors relevant to the proposal:

- Terrestrial flora and vegetation
- Terrestrial fauna and waterbirds
- Estuarine environmental quality
- Estuarine fauna.

In applying the EPA *Statement of Environmental Principles, Factors and Objectives* (2016a) these factors are now represented by:

- Flora and Vegetation
- Terrestrial Fauna
- Marine Environmental Quality
- Marine Fauna.

The EPA concluded in EPA Report 1420 that 'it is likely that the EPA's objectives would be achieved, provided there is satisfactory implementation by the proponent of the recommended conditions'.

The then Minister for Environment approved the proposal for implementation on 1 August 2012 subject to the implementation conditions of Ministerial Statement 906. The proposal has not substantially commenced.

Commonwealth assessment

In June 2010, the then Commonwealth Department of the Environment, Water, Heritage and the Arts – now the Commonwealth Department of Environment

and Energy (DoEE) – determined that the proposal is a controlled action under the *Environment Protection Biodiversity Act 1999* (EPBC Act). The specific Matters of National Environmental Significance identified as potentially being affected by the proposal included:

- Impacts on Wetlands of International Importance: the Peel Inlet Harvey Estuary System (Ramsar)
- Listed Migratory Species: Japan-Australia Migratory Birds Agreement/ China-Australia Migratory Birds Agreement / Republic of Korea-Australia Migratory Birds Agreement Migratory Birds
- Listed Threatened Species and Communities.

Following the State approval for the Point Grey Marina, the Commonwealth Minister for the Environment requested additional information be provided relating to direct, consequential and cumulative impacts of the Point Grey Marina Proposal. An additional technical report was provided to the Commonwealth in 2014 and the proposal was approved under the EPBC Act on 28 June 2014.

Requested changes to conditions

Condition 3-1 of Ministerial Statement 906 requires the proponent to substantially commence the proposal within five years of the date of issue of the Statement (that is, before 1 August 2017).

The proponent, Point Grey Development Company Pty Ltd, has not substantially commenced the proposal to date and in July 2016 requested an extension of the Time Limit of Authorisation (now referred to as Time Limit for Substantial Commencement) for substantial commencement to be extended to align with the Commonwealth approval timeline of 28 June 2019.

The EPA released its report and recommendations (Report 1595) in April 2017, concluding that the existing implementation conditions would continue to address the relevant environmental factors for the proposal and recommended that condition 3 be amended to extend the time within which the proposal can be substantially commenced until 28 June 2019. In making this recommendation, the EPA considered that there is no new or additional information that justifies the reassessment of issues raised by the proposal.

Since the publication of the EPA's report in April 2017, the Minister for Environment was made aware of new information relating to heavy metals exposure in Caspian Terns *Hydroprogne Caspia* breeding on Penguin Island. On 31 July 2017, pursuant to section 46(1) of the EP Act, the Minister for Environment requested that the EPA inquire into and report on the matter of changing the implementation conditions relating to the Point Grey Marina proposal, in order to extend the time limit of authorisation for substantial commencement, taking into consideration any new information.

On 7 February 2018, the Minister for Environment advised the EPA that the proponent had requested the Time Limit for Substantial Commencement be extended until 1 August 2022 to allow sufficient time following completion of a new section 46 inquiry. The Minister for Environment requested the EPA's advice on an appropriate timeframe for the time limit to be extended to, should the EPA recommend an extension.

Application of relevant EPA policies and guidelines

While inquiring into the change to conditions, the EPA has considered and given due regard, where relevant, to its current and any applicable former environmental impact assessment policy and guidance documents, noting that a number of published policies and guidelines pertaining to this proposal were considered but not determined to be relevant.

Inquiry into the requested change to conditions

The EPA typically recommends the Minister sets conditions on significant proposals that require them to be substantially commenced within a specified timeframe. Extending this timeframe requires the Minister to change the relevant conditions under section 46 of the EP Act, and provides for the EPA to review and consider the appropriateness of the implementation conditions relating to the proposal, ensuring that:

- consideration is given to changes in the environment, scientific or technology knowledge arising since the initial assessment
- proposals are being implemented using best practice and contemporary methods so that the EPA objectives for the relevant key environmental factors are met.

The EPA has discretion as to how it conducts this inquiry. The inquiry has considered the currency of its

- original assessment (EPA Report 1420)
- section 46 inquiry (EPA Report 1595)
- Ministerial Statement 906.

These documents are instructive in determining the extent and nature of the inquiry under section 46 of the EP Act.

The EPA has also considered the additional technical information provided to the DoEE for its assessment in 2014.

In conducting the inquiry the EPA sought comment from relevant stakeholders and decision-making authorities on whether there was evidence of any significant environment decline in the Peel–Harvey Estuary area since the original State assessment in 2012, in particular in the Point Grey area. The EPA

provided the key comments received to the proponent in October 2017. The proponent responded to the comments in a response to submissions document received by the EPA in February 2018.

Inquiry findings

During the EPA's inquiry it was identified that an administrative non-compliance with Ministerial Statement 906 was outstanding, in that the Point Grey Development Company Pty Ltd had not submitted a Compliance Assessment Plan and associated Compliance Assessment Report as required by Condition 4. This non-compliance has now been resolved to the satisfaction of the Department of Water and Environmental Regulation.

In considering whether it should recommend an extension of the authorised time limit for substantial commencement, or any other changes to conditions, the EPA also considered whether there is any new relevant information in relation to the assessment of the proposal under each of the key environmental factors.

Flora and Vegetation

The EPA's objective for this factor is 'to protect flora and vegetation so that biological diversity and ecological integrity are maintained'.

The construction of the onshore marina, car park and boat ramp area involves the removal of remnant native vegetation. The remaining portion of the marina and car-park footprint is comprised of agricultural land which is already cleared.

To minimise impacts to flora and vegetation, the proponent reduced the proposed marina footprint from 13 to 9.8 hectares (ha), and committed to monitoring vegetation health during and after construction. EPA Report 1420 identified that up to 7.06 ha of native vegetation will be cleared for activities associated with the proposal.

The proponent proposed an environmental offsets strategy to mitigate the residual environmental impacts to flora and vegetation. The offset package was considered to be consistent with the Government of Western Australia's *Environmental Offsets Policy* (September 2011) and met the principle that offsets should be 'like for like or better'.

EPA Report 1420 stated that, having particular regard to the:

- unavoidable and relatively small permanent loss of foreshore vegetation (7.06 ha)
- revised construction methodology designed to reduce indirect impacts
- proponent's environmental offset strategy,

it is the EPA's opinion that it is likely that its environmental objective for this factor can be achieved provided conditions 6 (Protection of Vegetation) and 7

(Environmental Offsets) (Ministerial Statement 906) are imposed to ensure that direct and indirect losses of native vegetation do not exceed 7.1 ha and an appropriate environmental offset strategy is implemented.

Relevant policy and guidance

The EPA considers that the following current environmental policy and guidance is relevant to its assessment of the proposed changes to conditions:

- *Environmental Factor Guideline – Flora and Vegetation* (EPA, 2016b).
- *WA Environmental Offsets Policy* (Government of Western Australia 2011)
- *WA Environmental Offsets Guidelines* (Government of Western Australia 2014).

The Environmental Factor Guideline – Flora and Vegetation was applied with regard to:

- application of the mitigation hierarchy to avoid or minimise impacts on flora and vegetation, where possible
- any potential impacts as a result of the proposed change
- the significance of the flora and vegetation, and the risk to the flora and vegetation
- whether proposed management and mitigation approaches are technically and practically feasible
- whether the Point Grey Marina proposal area will be revegetated in a manner that promotes biological diversity and ecological integrity.

The proponent has not proposed any additional disturbance to flora and vegetation for the proposal.

Submissions on section 46 inquiry

Stakeholder submissions relevant to the proposal raised the following issues:

- Potential impacts to the Subtropical and Temperate Coastal Salt Marsh Ecological Community, which was listed as a Threatened Ecological Community (TEC) under the EPBC Act in 2013.
- The Tuart (*Eucalyptus gomphocephala*) woodlands and forests of the Swan Coastal Plain Ecological Community is currently being considered for listing under the EPBC Act as a TEC. With the loss of Tuart's due to the Waroona/Yarloop bushfire in 2016, it is likely that the importance of the Tuart trees at Point Grey for black cockatoo foraging and nesting has increased significantly since the initial EPA assessment.

Subtropical and Temperate Coastal Salt Marsh Ecological Community

The submission noted that mapping of this community indicates it occurs on the eastern side of the Point Grey peninsula (the opposite side of the peninsula from the marina). The submission raised concerns that dispersal of sulfidic materials (Monosulfidic Black Ooze and pyrite) disturbed during construction, operation and maintenance pose a threat to the Subtropical and Temperate Coastal Salt Marsh Ecological Community. The EPA notes that this community is listed as a Priority Ecological Community (Priority 3) in Western Australia.

The proponent undertook flora and vegetation surveys as part of the original assessment and no salt marsh communities were recorded within the development envelope of the proposed Point Grey Marina. Some individual non-dominant saltmarsh species were recorded outside the development envelope on the eastern edge of the Point Grey peninsula. However, as per Condition 7-2 of Ministerial Statement 906, this area is committed to be transferred to the Crown for the purposes of conservation. This was also required in Condition 5 of the Commonwealth Government's approval.

The potential for accumulation and dispersal of sulfidic materials was addressed during the original assessment through investigations, proposed methodologies and management measures. To ensure adequate management measures are in place, the EPA recommended condition 8 which requires the proponent to develop a Channel and Marina Management Monitoring Plan, prior to construction, to the satisfaction of the CEO of the Department of Water and Environmental Regulation (DWER). The Plan will have agreed management and contingency trigger levels based on water quality and nutrient loading to the estuary. Indirect impacts on vegetation from dispersal of sulfidic materials are not expected.

*Tuart (*Eucalyptus gomphocephala*) woodlands and forests of the Swan Coastal Plain Ecological Community*

The EPA notes that the DoEE have stated that the Federal Minister for Environment's decision regarding the status of the Tuart (*Eucalyptus gomphocephala*) woodlands and forests of the Swan Coastal Plain Ecological Community is due in the second half of 2018. The EPA notes that the ecological community is recognised by the Western Australian Government as Tuart (*Eucalyptus gomphocephala*) woodlands of the Swan Coastal Plain and listed as a Priority 3 (iii) ecological community (Department of Biodiversity Conservation and Attractions, 2017).

In EPA Report 1420 the EPA recognised that to minimise the impacts to mature Tuart trees, as well as other vegetation, the proponent, in finalising the marina design, had reduced the marina footprint from 13 to 9.8 ha. The proponent also committed to monitoring vegetation health during and after construction including in isolated areas where Tuarts are to be retained. The reduction in marina footprint resulted in five Tuart trees remaining located within the marina onshore footprint. The EPA notes that condition 7 of Ministerial Statement 906

requires the proponent to rehabilitate and revegetate, within three years of completion of construction, one hectare of Floristic Community Type 25, which includes *Eucalyptus gomphocephala* woodlands.

The EPA has considered information provided by the proponent, relevant agencies and stakeholders, and relevant EPA policies and guidelines, and concludes that:

- there is no significant new or additional information that justifies the reassessment of the issues raised by the proposal
- there have been no new significant changes in the flora and vegetation factor for this proposal since it was assessed by the EPA in Report 1420 (December 2011).

The EPA is therefore satisfied that the existing implementation conditions 6 (Protection of Vegetation), 7 (Environmental Offsets) and 8 (Estuarine Water and Sediment Quality) of Ministerial Statement 906 will continue to address the flora and vegetation, and manage and mitigate impacts of the proposal.

Terrestrial Fauna

The EPA's objective for this factor is 'to protect terrestrial fauna so that biological diversity and ecological integrity is maintained'.

Numerous species of waterbirds use the surrounding Peel Inlet-Harvey Estuary System which is recognised under the Ramsar Convention as a wetland system internationally important for migratory birds.

The onshore habitat in most of the proposed marina site is either degraded or completely degraded with stands of mature trees, predominantly Tuarts, which have been historically cleared for agricultural purposes e.g. grazing by cattle.

EPA Report 1420 identifies that the majority of conservation species recorded at Point Grey were migratory bird species, with twenty Conservation Significance Level 1 species recorded. The majority of birds utilise the eastern side of the Point Grey area, on the opposite side of the peninsula to the marina. EPA Report 1420 identified that the observed conservation significant migratory bird population within the proposed marina area totalled two per cent of the entire observed migratory bird population at Point Grey.

EPA report 1420 also recognised that the proposal would impact on the local availability of mainly foraging habitat for the conservation significant black cockatoos but will have an overall net gain as a consequence of rehabilitation of degraded foreshore areas and long-term conservation offsets required by Condition 7.

EPA Report 1420 concluded that:

- key migratory habitats are on the eastern side of Point Grey

- there are small direct impacts (7.06 ha) on foreshore habitats
- there is an expected conservation benefit to fauna and fauna habitat through environmental offsets
- significant issues, such as protection of high value foreshore vegetation and waterbird habitat, have been previously addressed through the EPA assessment of TPS Amendment No. 104.

The EPA considered that terrestrial fauna has been adequately addressed and the EPA's objective for this factor can be achieved. Condition 7 (Environmental Offsets) requires the proponent to implement its environmental offset package and condition 9 (Dredge Timing) was recommended to limit dredging activities, with no dredging to occur between 1 November and 30 April which is when the majority of migratory birds are present.

Relevant policy and guidance

The EPA considers that the following current environmental policy and guidance is relevant to its assessment of the proposed changes to conditions:

- Environmental Factor Guideline – *Terrestrial Fauna* (EPA, 2016c).
- *WA Environmental Offsets Policy* (Government of Western Australia 2011).
- *WA Environmental Offsets Guidelines* (Government of Western Australia 2014).

These policies and guidelines were applied with regards to:

- application of the mitigation hierarchy to avoid or minimise impacts to terrestrial fauna, where possible
- terrestrial fauna affected by the proposal
- any potential impacts and the activities that will cause them
- the scale at which impacts to terrestrial fauna are considered
- the significance of the terrestrial fauna and the risk to those fauna
- the current state of knowledge of the affected species/assemblages and the level of confidence underpinning the predicted residual impacts
- whether proposed management approaches are technically and practically feasible
- the need to offset significant residual impacts to conservation significant fauna.

The proponent is not proposing any additional disturbance to fauna or fauna habitat for the proposal.

Submissions on section 46 inquiry

Stakeholder submissions relevant to the proposal raised the following issues:

- Potential impacts to Tuart woodlands (*Eucalyptus gomphocephala*) and the risk to the endangered Carnaby's Cockatoos that utilise these trees.
- Further species of migratory shorebirds that utilise the Peel Inlet – Harvey Estuary have been listed under the EPBC Act as nationally threatened.
- Implementation of the marina will be an additional disturbance to the bird habitat, foraging behaviour and reproductive behaviour.

The EPA notes that during the original assessment the total number of Tuart trees within the marina footprint to be removed was reduced to five trees. This was considered an unavoidable impact during the assessment.

The potential impacts of the proposal to the habitats for three species of black cockatoo (the endangered Carnaby's Cockatoo (*Calyptorhynchus latirostris*); Baudin's Cockatoo (*Calyptorhynchus baundinii*); and the vulnerable forest red-tailed Black Cockatoo (*Calyptorhynchus banksianus*)) was considered in the original assessment. The vegetation to be impacted by the proposal includes potential foraging (6.67 ha) and potential nesting (0.67 ha) habitat.

It is noted that since the original assessment, the threatened status of the three species of the black cockatoos has not changed.

In terms of mitigating the potential impacts, implementation condition 7 requires the proponent to implement a long-term offset strategy to mitigate the residual impacts to priority ecological communities, foreshore areas of a Ramsar listed site and specially protected fauna species.

Condition 7-2 (1) requires the proponent to transfer 10.6 ha of rural zoned remnant foreshore vegetation (in private ownership) to the Crown for the purposes of conservation and recreation.

Condition 7-2 (2) requires the proponent to rehabilitate and revegetate at least 4.7 ha of Point Grey foreshore areas across three sites and maintain those sites in accordance with a plan.

Condition 7-2 (3) requires the development and submission of a land purchase offset strategy (for not less than 22 hectares) for approval of the CEO of DWER prior to the commencement of ground disturbing activities.

The proponent has advised the EPA that it is currently implementing certain elements of its offsets strategy.

The EPA considers that the three components of the proponent's offsets strategy is broadly consistent with the principles in the WA Environmental Offsets Policy and the WA Environmental Offsets Guidelines.

In summary, the EPA is satisfied that existing implementation condition 6 (Protection of Vegetation) is adequate to protect vegetation outside of the disturbance area and existing implementation condition 7 (Environmental Offsets) counterbalances potential foraging habitat for black cockatoos.

Of the twenty conservation significant bird species recorded at Point Grey during the original assessment, the conservation status has changed for one species, the curlew sandpiper (*Calidris ferruginea*). This species is now listed as Critically Endangered under the EPBC Act and Vulnerable under the *Wildlife Conservation Act 1950*. Impacts to the twenty bird species recorded were considered during the original assessment.

The EPA notes that the majority of migratory birds found in the Point Grey area utilise the mudflats of the eastern side of the Point Grey area, the opposite side of the peninsula to the proposal. As identified in the original assessment, the observed migratory bird population within the marina area totalled 2% of the entire migratory bird population at Point Grey. The curlew sandpiper was not recorded in the proposed marina area, rather on the eastern side of Point Grey.

The impacts of the overall Point Grey development on waterbirds was largely addressed in the previous EPA assessment of TPS Amendment No. 104 and the environmental conditions in Ministerial Statement 519. Ministerial Statement 860 supercedes Statement 519 and the conditions have been incorporated into the Shire of Murray Local Planning Scheme No. 4 (Schedule 7). The EPA was satisfied that the foreshore conservation area identified in the Point Grey Outline Development Plan is adequate to protect the vegetation and habitat values of the foreshore. The proponent is required to prepare a Waterbird Management Plan and a Foreshore Management Plan prior to subdivision approval under Schedule 7 of the Shire of Murray Local Planning Scheme No. 4. These plans include the requirement for fauna and waterbird monitoring, including identifying waterbird usage and potential impacts from people, animals, vehicles and watercraft and management of potential impacts and are to the satisfaction of the Shire of Murray and the Department of Biodiversity, Conservation and Attractions.

The EPA notes that in response to concerns raised in the TPS Amendment No. 104 assessment around the potential impacts to waterbirds from human disturbance, the foreshore buffer on the eastern foreshore of Point Grey was widened by 5.5 ha with a minimum distance of approximately 190 m and 220 m respectively at the key waterbird roosting headlands. The foreshore buffer will also be fenced. The closest roosting site is approximately 500 m north from the proposal.

As mentioned above condition 9 (Dredge Timing) was recommended to ensure that no dredging would occur between 1 November and 30 April to avoid potential disturbance to the migratory birds.

The EPA considers that the issues raised above with respect to impacts on terrestrial fauna have been addressed in the original assessment. The EPA

expects the impacts to terrestrial fauna from construction and operation of the marina and navigation channel to be minimal.

Heavy metals exposure in Caspian Terns breeding on Penguin Island.

The paper *Local movements, foraging patterns, and heavy metals exposure in Caspian Terns *Hydroprogne caspia* breeding on Penguin Island, Western Australia* (Dunlop and McNeill, 2017) presented results of banding and recapture studies undertaken on Caspian Terns from a breeding colony on Penguin Island. Fifty-six individuals were banded between August and October in the years 2012, 2013 and 2016. From 2013 members from Birdlife WA were invited to report and, if possible photograph the banded Caspian Terns. No coordinated searches were conducted.

The fifth tail feather of 24 (in 2012) and 15 (in 2016) adult Caspian Terns were extracted during the banding operations and tested. Cadmium and lead levels were below detection or low. The mean mercury concentration across the Terns was 2.27 mg/kg, with two individuals having mercury reported above 5 mg/kg. These results were compared to a study on Bridled Terns foraging off Perth (unpublished data, 10 birds) where an average concentration of 0.71 mg/kg was reported.

Dietary analysis was also used to investigate the prey taken by Caspian Terns on Penguin Island. Thirteen fish species were identified in the diet which were benthic species associated with nearshore seagrass meadows, seagrass wrack and sandy patches, and banks in the Shoalwater Bay area.

Between August 2012 and October 2016 there were 74 sightings/photos of 16 of the banded adults (28.5 per cent of the 56 banded). Seventy-three sightings/photos were from the deltaic fluvial shelf (Coodanup) where the Serpentine and Murray rivers meet in the Peel–Harvey Estuary.

The paper suggests that Caspian Terns foraging in southern Perth metropolitan coastal waters may be subject to elevated mercury exposure and implies that a principle source for exposure is the Peel-Harvey Estuary as high carbon, anoxic conditions frequently develop in the upper reaches of the Estuary.

The proponent provided the following relevant comments on the Dunlop and McNeill paper:

- The banding-recapture studies suggest that more than 70 per cent of banded adults were not using the Peel-Harvey Estuary.
- The 28.5 per cent of the banded birds sighted in the Peel-Harvey Estuary were sighted near the Serpentine and Murray River delta (Coodanup) which is unrelated to the Point Grey site and its more marine setting.
- The sample size is very small and only two birds tested have shown mercury levels more than 5 mg/kg.

- The birds tested for mercury were all adults. This introduces significant limitations in being able to integrate contaminant information over space and time, given the wide-ranging foraging habitats of shorebirds.
- The R5 feathers are replaced in adults during the December to February moult, and hence endogenous accumulation of mercury in feathers reflects the physiological condition during the period of feathering. The adult feathers were collected between August and October, with Dunlop and McNeil stating that mercury levels were reflective of contamination during foraging.
- The available sediment data does not support the assertions by Dunlop and McNeil of significant mercury contamination of the Peel–Harvey Estuary, or it being a likely source for contamination of Caspian Terns.
- Several of the methods used in the paper and subsequent inferences and interpretation based on the outcomes are not considered to be sufficient to support the conclusions.

The EPA notes that in the study undertaken by Dunlop and McNeill there were 74 sight/photographic records of 16 of the banded birds out of the 56 (28.5 per cent). All but one of the 74 records were sighted in the Peel-Harvey Estuary near the Serpentine and Murray River delta (Coodanup) not in the Point Grey area. The 74th record was from the Upper-Canning estuary.

The EPA notes that the sediment sampling undertaken for the assessment of the Point Grey Marina proposal met ANZECC/AMRCANZ (2000) requirements for the highest habitat protection level i.e. 99 per cent species protection level. A technical report titled *Sediment quality in three south-western Australian estuaries* (DWER, 2010) provided results on testing for metals in the Peel-Harvey Estuary. No metal concentrations were found to be above the sediment quality guidelines, in particular, mercury was below detection in all sediment samples.

The EPA sought advice from the DWER regarding water quality concerns raised for the Peel-Harvey Estuary. The DWER advised that there have been no significant changes in water quality within the vicinity of the Point Grey area since 2012. Significant changes are not expected in sediment quality since 2012 as it should be in general equilibrium with the surrounding environment. The EPA is of the view that exposure to metals through dredging is not likely to be a significant issue in the Point Grey area.

In consideration of the information provided by the proponent, relevant agencies and stakeholders and of the relevant EPA policies and guidelines, the EPA considers that:

- there is no significant new or additional information that justifies the reassessment of the issues raised by the proposal

- there have been no new significant changes in the terrestrial fauna factor for this proposal since it was assessed by the EPA in Report 1420 (December 2011).

The EPA is therefore satisfied that the existing implementation conditions 6 (Protection of Vegetation), 7 (Environmental Offsets) and 9 (Dredge Timing) of Ministerial Statement 906 will continue to address terrestrial fauna, and manage and mitigate impacts of the proposal.

In addition, the EPA notes that the Commonwealth Government approval for the proposal in 2014 included conditions for the development and submission of a Construction Environment Management Plan and a Foreshore Management Plan to the Federal Minister for Environment for approval to mitigate the potential impacts during construction and to protect the Peel–Yalgorup Wetlands and habitat for listed migratory species and listed threatened species.

Marine Environmental Quality

The EPA's objective for this factor is to 'maintain the quality of water, sediment and biota so that environmental values are protected'.

The key environmental receptor of the marina proposal is the Peel–Harvey Estuary. The EPA recognised in EPA Report 1420 that the key cause of poor estuary environmental quality is the level of nutrient input. Nutrients can be derived from urban, rural and industrial land use.

EPA Report 1420 considered both construction and operational potential impacts from the proposal including:

- increased turbidity and bottom deposition
- dewater effluent
- oxidation of potential acid sulphate soils
- sedimentation potential and Monosulfidic Black Ooze accumulation and subsequent deterioration of water quality through stratification and release of nutrients and metals
- maintenance dredging and onshore spoil disposal treatment.

Construction impacts

EPA Report 1420 noted that turbidity plumes will not be significant due to:

- pumping of dredge material directly onshore
- measures to increase settlement time of the material
- timing of dredging during winter months
- modelling indicating minimal turbidity plumes.

The EPA recognised that impacts to water quality from the release of sediments are not expected based on the sediment analysis.

EPA Report 1420 noted that the then Department of Water (now DWER) is the lead agency in relation to the water quality management of the Peel–Harvey Estuary and that a dredging licence from the department was required under the *Waterways Conservation Act 1976* (WC Act) prior to the proposal proceeding. In view of this, and that the proponent had already prepared a Dredge Spoil Disposal Management and Monitoring Plan (DSDMMP) in consultation with the department during the assessment, the EPA did not recommend a condition for the management of construction activities.

The EPA also noted that an Acid Sulfate Soil Dewatering Management Strategy (ASSDMS) was developed to the satisfaction of the department, to monitor and manage the dredged material, the onshore marina excavated material and dewatering effluent.

Operational impacts

In its original assessment, the EPA recognised that the Peel–Harvey Estuary is highly dynamic and its health has the potential to deteriorate should the environmental impacts be greater than the proponent’s predictions. The EPA recognised community and Government initiatives to improve water quality in the Peel–Harvey Estuarine System.

EPA Report 1420 recognised that the current groundwater nutrient levels with the existing land use (pasture for cattle rearing) are at low levels. The proponent anticipates that groundwater nutrient loadings will decrease with the change of land use to residential development and incorporation of nutrient best management practices. To ensure adequate management measures are in place, and to hold the proponent to its modelling predictions, the EPA recommended condition 8 (Estuarine Water and Sediment Quality) requiring the proponent to prepare a Channel and Marina Management Monitoring Plan for estuary water and sediment quality.

Having particular regard to the:

- dredge timing and methodology to reduce turbidity related impacts
- marina construction methodology to reduce dewatering impacts
- low risk of ASS impacts
- licensing role of the former Department of Water,

it was the EPA’s opinion that the environmental objective for this factor can be achieved.

Relevant policy and guidance

The EPA considers that the following current environmental policy and guidance is relevant to its assessment of the proposed changes to conditions:

- Environmental Factor Guideline – *Marine Environmental Quality* (EPA, 2016d).

The purpose of this guideline is to communicate how the factor Marine Environmental Quality is considered by the EPA in the environmental impact assessment process, with the intent to prevent or minimise pollution and protect the environmental values associated with the marine environment.

This guideline applies to the State's coastal waters and estuaries, including boat harbours and canals that are contiguous with the marine environment.

This guideline was applied when defining and identifying the environmental values for the factor Marine Environmental Quality.

- Environmental Protection (Peel Inlet-Harvey Estuary) Policy 1992.

The purpose of this policy is to set out environmental quality objectives for the Estuary which if achieved will rehabilitate the Estuary and protect it from further degradation. The policy also outlines the means by which the objectives are to be achieved.

The environmental quality objectives to be achieved and maintained are a median load (mass) of total phosphorous flowing into the Estuary of less than 75 tonnes per year with:

- (a) The median load of phosphorous flowing into the Estuary from the Serpentine River being less than 21 tonnes
- (b) The median load of total phosphorous flowing in the estuary from the Murray River being less than 16 tonnes
- (c) The median load of total phosphorous flowing into the Estuary from the Harvey River being less than 38 tonnes.

In its assessment of the proposal the EPA considered the potential for phosphorous to be released from sediments during and after dredging of the channel. Condition 8-1 of Ministerial Statement 906 requires that the proponent shall ensure that the operation of the proposal does not cause an unacceptable decline in estuary water and sediment quality. To verify the requirements of condition 8-1, condition 8-2 requires that the proponent prepare a Channel and Marina Management Monitoring Plan for estuary water and sediment quality. This plan is to include monitoring the rate of accumulation of sulfidic silty sediments within the access channel.

- Water Quality Improvement Plan for the Rivers and Estuary of the Peel-Harvey System – Phosphorous Management, 2008.

This plan recommends a combination of management measures, including land use planning, to reduce phosphorous discharges to estuarine waters.

In considering the above policies and guidance the EPA took into account that the proponent has advised that there is no change to the existing authorised extent of the proposal and no additional disturbance to marine environmental quality is proposed.

Submissions on section 46 inquiry

Stakeholder submissions relevant to the proposal raised the following issues:

- Assessments against the Limits of Acceptable Change as described by Hale and Butcher (2007) have highlighted that Limits of Acceptable Change for some components and processes are not being met in the Peel–Yalgorup System. These include: Nutrients (Total-Phosphorous, Total-Nitrogen, Nitrogen Oxides, Phytoplankton) and Dissolved Oxygen (DO), in particular for the Serpentine and Murray Rivers.
- Research publications completed in 2012 have indicated that sediments in the Peel–Harvey Estuary contain high concentrations of acid volatile sulphides which are indicative of Monosulfidic Black Ooze. Monosulfidic Black Ooze releases nutrients into, and lead to localised deoxygenation of the water column, especially upon disturbance. The mobilisation of fine sediments as a result of dredging will cause Monosulfidic Black Ooze to release contaminants. Disturbance of such sulfidic materials during construction and operation of the marina development presents a threat to the environment.

As part of the original assessment a series of marine technical studies were prepared by the proponent. The key technical studies included the following:

- Flushing and Water Quality Modelling
- Sediment Dispersion Modelling
- Coastal Morphology Assessment
- Channel Stability Assessment.

The hydrodynamic modelling undertaken during the original assessment showed that the marina site is located in a relatively dynamic area of the Peel–Harvey Estuarine System due to the influence of tidal flow through the Dawesville Channel/Indian Ocean connection. The mixing and exchange, including seasonal DO levels, in this general area is likely to be much higher relative to other upstream locations within the Estuary.

With regards to Monosulfidic Black Ooze, the proponent’s modelling indicated that sedimentation of the channel will not result in significant Monosulfidic Black Ooze accumulation. The EPA recognised that that there is some uncertainty about wind generated sediment re-suspending and settling in the dredged depression at a faster rate than predicted and therefore recommended condition

8 (Estuarine Water and Sediment Quality) to ensure adequate monitoring and management, including contingency measures are in place should this scenario eventuate.

The proponent has noted in response to the concerns raised in the submissions that the Point Grey marina site is not part of, or in proximity of, the Murray and Serpentine Rivers. The proponent has reiterated that the marina proposal will not add significant nutrients or contaminants to the Estuary.

The EPA sought advice from the DWER regarding water quality concerns raised for the Peel-Harvey Estuary. The DWER advised that there have been no significant changes in water quality within the vicinity of the Point Grey area since 2012.

The EPA notes that the location of the Point Grey navigation channel and onshore marina, being immediately opposite the Dawesville Channel and having prevailing oceanic conditions and good flushing, works against the accumulation of Monosulfidic Black Ooze sediments that can be found in other areas of the Estuary (e.g. Murray River). Further, the design of the channel, being shallow relative to its width, enhances water movement and flushing. This reduces the likelihood of accelerated Monosulfidic Black Ooze formation.

It is noted that the WC Act and the *Rights in Water Irrigation Act 1914* include legislative mechanisms to manage dredging and dewatering respectively, associated with the proposal. The DWER has responsibility for administering these Acts. The proponent will be required to finalise the DSDMMP to the satisfaction of DWER when the application is made for a dredging licence. Dredge disposal licences will be required at the appropriate time from DWER and require implementation of an ASSDMS.

The EPA is of the view that significant impacts to water quality from the release of sediments are not expected based on the original sediment analysis. As advised by DWER, there have been no significant environmental changes in the proximity of Point Grey and therefore no significant changes are expected in sediment quality as it should be in general equilibrium with the surrounding environment. However, given that commencement of the proposal will occur sometime after the initial sediment analysis was undertaken, the EPA considers that it may be prudent to re-sample sediments at the original sample sites.

The EPA suggests a risk based staged approach where, in the first instance, the surface profiles (to the same depth as the original sampling) are re-sampled and analysed, prior to any dredging operations commencing, to confirm no significant changes in surface sediment quality have occurred. If significant changes are detected in the surface sediment re-sampling then the EPA recommends that all sampling sites should be re-sampled prior to any dredging operations commencing. The EPA recommends that this is addressed in the DSDMMP to the satisfaction of the DWER.

The EPA notes that the Commonwealth Government approval for the proposal in 2014 included a condition that at least three months prior to commencement

of the proposal, the proponent must prepare and submit a Capital Dredging and Spoil Disposal Management Plan (CDSDMP) for the Federal Minister for the Environment's approval to mitigate the potential impacts from the capital dredging activities for the protection of the Peel–Yalgorup Wetlands and habitat for listed migratory species and listed threatened species. The CDSDMP is required to include a number of activities such as: baseline mapping of seagrass; baseline monitoring of water quality; spoil disposal sediment monitoring and post construction sediment and water quality monitoring.

In consideration of the information provided by the proponent, relevant agencies and stakeholders and of the relevant EPA policies and guidelines, the EPA considers that:

- there is no significant new or additional information that justifies the reassessment of the issues raised by the proposal
- there have been no new significant changes in the Marine Environmental Quality factor for this proposal since it was assessed by the EPA in Report 1420 (December 2011),

the EPA is therefore satisfied that the existing implementation conditions 8 (Estuarine Water and Sediment Quality) and 9 (Dredge Timing) of Ministerial Statement 906 will continue to address marine environmental quality, and manage and mitigate impacts of the proposal.

Marine Fauna

The EPA's objective for this factor is to 'protect marine fauna so that biological diversity and ecological integrity are maintained'.

The Peel–Harvey Estuary has abundant and diverse marine fauna and is an important recreational and commercial fishery for marine species.

In the original assessment, the EPA considered that proposal would result in the temporary loss of a small proportion of habitat for key species such as blue swimmer crab, cobbler, mullet, herring and whiting. The impacts were considered by the EPA to be temporary, localised and manageable.

The EPA acknowledged in EPA Report 1420 the proponent's commitment to develop a Fisheries Management Plan in consultation with the then Department of Fisheries (now the Department of Primary Industries and Regional Development) and to undertake a scientifically robust monitoring program of key fish and crustacean species.

The EPA recommended implementation of condition 9 (Dredge Timing), to limit dredging activities to the winter/spring period to avoid breeding times of the key marine species.

Relevant policy and guidance

The EPA considers that the following current environmental policy and guidance is relevant to its assessment of the proposed changes to conditions:

- Environmental Factor Guideline – *Marine Fauna* (EPA, 2016e).

The purpose of this guideline is to communicate how the factor Marine Fauna is considered by the EPA in the EIA process.

Marine fauna are also animals that either leave or enter the ocean for breeding or resting purposes, such as turtles, seals and sea lions, penguins, and crabs. Other animals such as seabirds can also be considered as marine fauna as they rely on fish and other marine life for food.

This guideline was applied when defining and identifying the environmental values for the factor Marine Fauna.

The proponent has advised there is no change to the existing authorised extent of the proposal and is not proposing any additional disturbance to marine fauna.

Submissions on section 46 inquiry

Stakeholder submissions relevant to the proposal raised the following issues:

- Inter-annual variation in abundance of crab, particularly blue swimmer crab, and finfish, as well as the number of fish kills due to heavy rainfall events and subsequent input of organic matter has become more pronounced in the Peel–Harvey Estuary. Should the implementation of the Point Grey Marina proposal lead to a further decline in environmental quality, the pressure on aquatic resources will increase.
- In 2016, the Peel-Harvey Estuarine Fishery was certified as sustainable by the Marine Stewardship Council (MSC). This certification involved development and adoption of harvest strategies for the target species of blue swimmer crabs and sea mullet, based on catch data from the period 2000/01 to 2011/12 inclusive. Implementation of the proposal has the potential to cause the closure of the recreational and/or commercial fisheries due to factors other than fishing pressure (such as habitat and breeding ground degradation and change in the benthic environment from dredging and accumulation of Monosulfidic Black Ooze), or alternatively places the MSC certification of the fishery at risk.
- Dredging from the proposal will significantly impact the stocks, flow and recruitment of crabs and fish through the Dawesville Cut, with crab recruitment very variable and unpredictable since 2012.

As outlined in EPA Report 1420 impacts to marine fauna as a result of changes to water quality from toxicants are not expected based on the sediment analysis. Modelling undertaken by the proponent also predicts that the extent

and duration of the plume will be minimal, and as such any impacts to the feeding, spawning or migration of key indicator fish and blue swimmer crabs is expected to be small, temporary and unlikely to displace marine fauna permanently. To put into context, the proposed channel constitutes approximately 0.28 per cent of the area of the Peel–Harvey Estuary.

The proponent noted that a Department of Primary Industries and Regional Development (DPIRD) assessment of blue swimmer crab recruitment and breeding stock levels in the Peel–Harvey Estuary (Johnston *et al*, 2014) concluded that changes to blue swimmer crab stock structure in the 10 years since the Dawesville Channel opening does not appear to be significant and current levels of fishing in the Peel–Harvey Estuary are sustainable.

The EPA notes the proponent's response to issues raised that the boating navigation channel and groyne are not located in any known critical fish nursery or adult habitats. The EPA notes that the timing of the channel dredging is planned to occur between May and October to avoid the potential to coincide with breeding times of key species.

The proponent has committed to the development of a Fisheries Management Plan, in consultation with the DPIRD and will undertake an appropriate monitoring program of key species. The EPA recommends that any issues identified by stakeholders continue to be discussed with the DPIRD and included in the agreed Fisheries Management Plan to be developed prior to construction.

The EPA notes that the Commonwealth Government approval for the proposal in 2014 included a condition that no capital dredged or maintenance dredged material or excavated material from the marina, entrance channel or navigational channel is to be disposed of in the Peel–Harvey Estuary thus reducing any potential dredge spoil impacts. A Maintenance Dredging and Spoil Disposal Management Plan is also required.

The EPA has considered information provided by the proponent, relevant agencies and stakeholders, and relevant EPA policies and guidelines, and concludes that:

- there is no significant new or additional information that justifies the reassessment of the issues raised by the proposal
- there have been no new significant changes in the marine fauna factor for this proposal since it was assessed by the EPA in Report 1420 (December 2011).

The EPA is therefore satisfied that the existing implementation conditions 8 (Estuarine Water and Sediment Quality) and 9 (Dredge Timing) of Ministerial Statement 906 will continue to address marine fauna, and manage and mitigate impacts of the proposal.

EPA conclusions and recommendations

Change to condition 3 (Time Limit for Substantial Commencement)

The proponent has requested an extension to the timeframe for substantial commencement until 1 August 2022. The EPA considers it appropriate to extend the authorised timeframe for substantial commencement until this date.

Conclusions

In relation to the environmental factors, and considering the information provided by the proponent and relevant EPA policies and guidelines, the EPA concludes that:

- there are no changes to the proposal
- there is no significant new or additional information that justifies the reassessment of the issues raised by the proposal
- there has been no new significant change in the relevant environmental factors since the proposal was assessed by the EPA in Report 1420 (December 2011)
- no new significant environmental factors have arisen since its assessment of the proposal
- the impacts to the key environmental factors are considered manageable, based on the requirements of existing conditions, and the imposition of the attached recommended conditions.

Recommendations

Having inquired into this matter, the EPA submits the following recommendations to the Minister for Environment under section 46 of the *Environmental Protection Act 1986*:

1. While retaining the environmental requirements of the original conditions of Ministerial Statement 906, it is appropriate to change implementation condition 3, and replace it with a new implementation condition.
2. After complying with section 46(8) of the *Environmental Protection Act 1986*, the Minister may issue a statement of decision to change condition 3 of Statement 906 in the manner provided for in the attached recommended Statement (Appendix 1).

Appendix 1

Identified decision-making authorities and recommended environmental conditions

Identified decision-making authorities

Section 44(2) of the EP Act specifies that the EPA's report must set out (if it recommends that implementation be allowed) the conditions and procedures, if any, to which implementation should be subject. This Appendix contains the EPA's recommended conditions and procedures.

Section 45(1) requires the Minister for Environment to consult with decision-making authorities, and if possible, agree on whether or not the proposal may be implemented, and if so, to what conditions and procedures, if any, that implementation should be subject.

The following decision-making authorities have been identified for this consultation:

Decision-making authority	Approval
1. Minister for Water	<i>Rights in Water and Irrigation Act 1914</i> <i>Waterways Conservation Act 1976</i>
2. Minister for Lands	<i>Land Administration Act 1997</i>
3. Western Australian Planning Commission	<i>Planning and Development Act 2005</i>
4. Chief Executive Officer Shire of Murray	Local Planning Scheme
5. Chief Executive Officer Department of Transport	<i>Jetties Act 1926</i>

Note: In this instance, agreement is only required with DMA no. 1 and 2 since these DMAs are Ministers.

Statement No. XXXX

RECOMMENDED ENVIRONMENTAL CONDITIONS

**STATEMENT TO CHANGE THE IMPLEMENTATION CONDITIONS
APPLYING TO A PROPOSAL
(Section 46 of the *Environmental Protection Act 1986*)**

POINT GREY MARINA

Proposal: The proposal is for the construction of an onshore marina (and associated boating infrastructure e.g. boat pens, jetties, navigational aids, entrance channel, protective groynes, public boat ramps and car parks) on the western side of the Point Grey peninsula. The proposal also includes the construction of a 2.5 kilometre navigation channel across the Harvey Estuary from the marina to the Dawesville Channel.

Proponent: Point Grey Development Company Pty Ltd
Australian Company Number 122 607 845

Proponent Address: Level 5, 99 Macquarie Street
SYDNEY NSW 2000

Report of the Environmental Protection Authority: 1621

Previous Assessment Numbers: 1751, 2106

Previous Report Numbers: 1420, 1595

Preceding Statement/s Relating to this Proposal: 906

Pursuant to section 45 of the *Environmental Protection Act 1986*, as applied by section 46(8), it has been agreed that the implementation conditions set out in Ministerial Statement No. 906, be changed as specified in this Statement.

Condition 3 of Ministerial Statement 906 is deleted and replaced with:

3 Time Limit for Substantial Commencement

3-1 The proposal shall not commence implementation of the proposal after 1 August 2022, and any commencement, prior to this date, must be substantial.

3-2 The proponent must provide to the CEO* documentary evidence demonstrating that they have complied with condition 3-1 no later than 30 days after the 1 August 2022.

* “CEO” is the Chief Executive Officer of the Department of the Public Service of the State responsible for the administration of section 48 of the *Environmental Protection Act 1986*, or his delegate

References

Australian and New Zealand Environment and Conservation Council, *Agriculture and Resource Management Council of Australia and New Zealand 2000*, Australian and New Zealand Guidelines for Fresh and Marine Water Quality.

Department of Biodiversity Conservation and Attractions 2017, *Priority Ecological Communities for Western Australia Version 27*.

Department of Water 2010, *Sediment quality in three south-western Australian estuaries. A technical report for the project Tackling acid sulfate soils on the WA coast*.

Dunlop, JN and McNeill, S 2017, 'Local movements, foraging patterns, and heavy metals exposure in Caspian Terns *Hydroprogne caspia* breeding on Penguin Island, Western Australia' *Journal of Seabird Science Marine ornithology* (45): pp. 115-120.

Environmental Protection Authority 1992, *Environmental Protection (Peel Inlet-Harvey Estuary) Policy 1992*. Environmental Protection Authority, Perth, WA.

Environmental Protection Authority 2011, *Point Grey Marina, Report 1420*, Environmental Protection Authority, Perth, WA.

Environmental Protection Authority 2017, *Point Grey Marina proposal – inquiry under section 46 of the Environmental Protection Act 1986 to amend Ministerial Statement 906*, Report 1595, Environmental Protection Authority, Perth, WA.

Environmental Protection Authority 2016a, *Statement of Environmental Principles, Factors and Objectives*, Perth, WA.

Environmental Protection Authority 2016b, *Environmental Factor Guideline – Flora and Vegetation*, Environmental Protection Authority, Perth, WA.

Environmental Protection Authority 2016c, *Environmental Factor Guideline – Terrestrial Fauna*, Environmental Protection Authority, Perth, WA.

Environmental Protection Authority 2016d, *Environmental Factor Guideline – Marine Environmental Quality*, Environmental Protection Authority, Perth, WA.

Environmental Protection Authority 2016e, *Environmental Factor Guideline – Marine Fauna*, Environmental Protection Authority, Perth, WA.

Government of Western Australia 2011, *WA Environmental Offsets Policy*, Government of Western Australia, Perth, WA.

Government of Western Australia 2014, *WA Environmental Offsets Guidelines*, Government of Western Australia, Perth, WA.

Hale, J and Butcher, R 2007, *Ecological Charter Description of the Peel-Yalgorup Ramsar Site, Report to the Department of Environment and Conservation and the Peel-Harvey Catchment Council*, Perth, Western Australia.

Johnston, D, Chandrapavan, A, Wise, B and Caputi, N 2014. *Assessment of blue swimmer crab recruitment and breeding stock levels in Peel-Harvey Estuary and status of the Mandurah to Bunbury Developing Crab Fishery*, Department of Fisheries