9 May 2018

NSW Independent Planning Commission Determination Report
Cabbage Tree Road Sand Quarry (SSD 6125)

1. INTRODUCTION

On 7 February 2018, the Independent Planning Commission (the Commission) received from the Department of Planning and Environment (the Department) a State significant development application from the Williamtown Sand Syndicate Pty Ltd (the applicant) to develop the Cabbage Tree Road Sand Quarry.

The Commission is the consent authority for the development application under clause 8A of *State Environmental Planning Policy (State and Regional Development) 2011* because the Department received more than 25 submissions from the public in the nature of objections and a reportable political donations disclosure.

On 15 February 2018, the Minister for Planning directed Ms Abigail Goldberg determine the members of the panel to consider this project. This is because the Chair of the Commission, Professor Mary O'Kane AC, identified a potential perceived conflict of interest and stepped aside from the project.

Ms Abigail Goldberg nominated Ms Dianne Leeson (chair), Mr Peter Cochrane, and Mr Peter Duncan AM to constitute the Commission to determine the development application.

1.1 Summary of Development Application

The development application proposes the construction and operation of a fine and medium grade sand quarry on 4 lots of land on Cabbage Tree Road, near Williamtown, NSW. The project would extract a maximum 530,000 tonnes per annum of sand products over an 8-15 year period. The construction and operation of the quarry would include:

- vegetation clearing, sand extraction and mobile screening utilising a dry processing plant;
- associated infrastructure including site access, office, amenity buildings, weighbridge, staff and visitor parking, and a maintenance shed;
- a road intersection with Cabbage Tree Road, including deceleration and acceleration lanes;
- transporting processed materials off-site via public roads; and
- progressive rehabilitation of the site.

Through its response to submissions the applicant identified several significant amendments to the project. Principally the project footprint was reduced from 53.9 hectares to 42.25 hectares. This reduced the total available sand from 3.32 million tonnes to 3.25 million tonnes and the maximum annual sand production from 600,000 tonnes to 530,000 tonnes. The weekday working day was also amended to cease at 5 pm, though product loading would continue until 6 pm.

1.2 Need for the proposal

The Department's assessment report identifies the Port Stephens area is a key source of industrial and construction sand for the Hunter and Sydney regions. Several existing sand quarries have been established near the site servicing the local and regional markets. The applicant estimates that the

quarry could produce up to 3.25 million tonnes of fine, medium and medium-grained sand products to Hunter and Sydney construction and industrial markets.

The applicant identified that the project would provide key economic benefits, as outlined in the EIS. These benefits would include:

- providing construction and industrial grade sand to the Sydney and Hunter region markets;
- employment of six quarry personnel, with flow-on effects to the local and regional communities; and
- an estimated $16.25 million in royalties to Port Stephens Council in addition to site rental payments.

Both the Department and the applicant are of the view that the site is strategically located to supply these markets due to its proximity to the Pacific Highway and other major road networks.

1.3 Site description

The project site is in the Coastal Zone sub-region of the Hunter Valley, within the wider Hunter River catchment. The site is located north of Fullerton Cove and consists of undulating land, with elevations between 3 to 24 metres above Australian Height Datum. Two sand ridgelines extend east-west within the southern and central parts of the site. Outside of the ridgelines much of the land is low-lying and swampy. There are no defined watercourses.

The project site was formerly mined for heavy mineral sands. Impacted areas were revegetated as part of post mining activities in the 1970s – 1990s.

The project site is in the Tomago Sandbeds Catchment Area, designated as a 'Special Area' under the *Hunter Water Regulation 2015*. A person must not engage in any extractive industry in the Tomago Sandbeds Catchment Area otherwise than in accordance with an approval granted under *Hunter Water Act 1991*. This approval is in addition to development consent required under the *Environmental Planning and Assessment Act 1979* (EP&A Act).

The project site is located south west of the Williamtown RAAF base. Before December 2017, the entire project site was within the Williamtown per- and poly-fluoroalkyl substances (PFAS) investigation area, jointly established in October 2015, by the NSW Environment Protection Authority (the EPA), Williamtown Contamination Expert Panel, Hunter Water and the Department of Primary Industries. This investigation area was based on the surface water drainage patterns and groundwater flow directions in the area known at the time, and preliminary investigations of the potential extent of PFAS contamination.

The investigation area has been amended since its establishment as the understanding of ground and surface water behaviour, including the extent of the known contamination, has been refined. These changes have followed advice from the Williamtown Contamination Expert Panel and the completion of the Commonwealth Department of Defence's *Off-site Human Health Risk Assessment – RAAF Base Williamtown Stage 2B Environmental Investigation* (AECOM December 2017) (the HHRA).

Consequently, a portion of Lot 1 DP 224587 on the western part of the site is within the current "Broader Management Zone", established by the Williamtown Management Area Map published by the EPA in December 2017, reflecting the topography and hydrology of the area and the potential for PFAS detections to occur in the future. The remaining areas of the identified lot have been included as part of the broader management zone as a result of defined project boundaries. The remaining two land lots included in the project site have not been included in the identified management zones. This area correlates to Risk Zone C, as mapped in the HHRA, which identifies a low and acceptable risk of exposure if groundwater is avoided.

2. DEPARTMENT'S ASSESSMENT REPORT

The Department's assessment report identified public health and safety, air quality, noise, traffic and road safety, biodiversity, social impacts and economics, as the key potential impacts associated with this proposal. The Department's assessment report concluded that the project would result in positive socio-economic benefits to the local and regional communities. The Department concluded that the project would not interfere with groundwater or any potential contamination that might occur in it, and otherwise result in low-level impacts, if operated in accordance with the recommended conditions of consent.

3. COMMISSION'S MEETINGS AND SITE VISIT

As part of its assessment of the proposal, the Commission met with the Department, the applicant, the NSW Office of the Chief Scientist and Engineer, the NSW Environment Protection Authority, the Port Stephens Council, the NSW Department of Health and visited the site. Notes from these meetings and the site inspection are provided in **Appendix 1**. The Commission also conducted a public meeting. The speakers at the public meeting are provided in **Appendix 2.** A transcript of the meeting is available on the Commission's website.

3.1 Briefing from the Department

On 9 March 2018, the Department briefed the Commission on the context and importance of sand mining in the region, the extent and impact of PFAS contamination, community consultation processes, and other potential impacts associated with the project including biodiversity, noise, dust and historic mineral sand mining.

3.2 Briefings from Other Agencies

On 9 March 2018, the Commission met with the Office of the NSW Chief Scientist and Engineer. The topics discussed were the impact of PFAS and exposure pathways for PFAS compounds, the studies to date which have been conducted to examine the extent of PFAS contamination in the region and community, the studies to date on the contamination extent and risk to public health, and how the understanding of the extent and risk of contamination has changed.

On 12 March 2018, the Commission met with the EPA. The topics discussed included the evolution of the EPA's understanding of the extent and risk of PFAS contamination, the reliability of the groundwater modelling, historic mineral sands mining, and the potential impacts from dust and noise exposure.

On 5 April 2018 the Commission met with the NSW Department of Health, Hunter New England Local Health District. The topics discussed included the development of the Williamtown PFAS investigation area, the nature and evolution of the Department of Health's submissions on the project and the potential risk to human health from the proposed quarry.

3.3 Briefing from the Applicant and Site Visit

On 12 March 2018, the Commission met with the applicant and visited the site. The main topics discussed included the project design and layout, including proposed infrastructure and retained features, risk of PFAS exposure and intercepting groundwater, and impacts and management strategies associated with clearing native vegetation, dust generation, traffic volumes and noise.

3.4 Meeting with Port Stephens Council

On 12 March 2018, the Commission met with Port Stephens Council. The main topic discussed was the applicant's response to Council's submission on the project's environmental impact statement.

3.5 Public Meeting

The Commission held a public meeting at the Mercure Newcastle Airport, 2 Williamtown Drive Williamtown NSW on 12 March 2018 to hear the public's views on the proposal. A list of the 10

speakers that presented to the Commission is provided in **Appendix 2**. In summary, the main issues of concern were the presence of PFAS in the locality and poor government engagement, physical and mental health impacts to residents, dust, noise and traffic impacts, road safety, ecological impacts, including impacts to local koala populations, and the lack of transparency and due process in the site tendering process.

4. ADDITIONAL INFORMATION

On 19 March 2018 the Commission requested additional information from the Department regarding concerns raised as part of the public meeting and written comments. The additional information sought clarification on:

- the nature and frequency of groundwater monitoring and model verification processes; and
- the Department's considerations and concessions in reaching a negotiated outcome in relation to establishing a biodiversity offset liability.

On 23 March 2018, the Department provided clarification in response to the Commission's request. This information is available on the Commission's website.

5. COMMISSION'S CONSIDERATION

In this determination, the Commission has considered carefully:

- all information provided by the applicant including additional information;
- the Department's assessment report;
- advice from government agencies;
- relevant matters for consideration specified in section 4.15 of the EP&A Act, including:
    - relevant environmental planning instruments;
    - the *Environmental Planning and Assessment Regulation 2000*;
    - the likely impacts of the development on both the natural and built environments;
    - social and economic impacts in the locality;
    - the suitability of the site for the development;
    - written and verbal submissions from the public; and
    - the public interest, including the objects of the EP&A Act.

The key matters considered by the Commission include potential for public health impacts from PFAS, water management, ecology and biodiversity, traffic, noise and dust.

Separate to the Commission's consideration of matters relating to the proposal, the Commission would also like to respond to concerns raised in the verbal and written submissions to the public meeting in relation to tendering process. This matter is discussed in Section 6 of this report.

5.1 Public Health and PFAS

Oral and written comments to the Commission expressed a high level of concern about the potential for the project to result in human health impacts in relation to the ongoing PFAS contamination of the Williamtown area. The speakers identified the strain that the PFAS contamination was having on the community and their concern the quarry would increase their exposure to PFAS. The speakers felt that they were being subjected to different standards and expectations than the quarry operators, that the Department's assessment diminished the impact that PFAS compounds are having on the community and the assessment was a continuation of government agencies not engaging in genuine consultation with the community.

The ongoing changes to the management zones and safety precautions were difficult to trust they said. One speaker suggested that:

"*Several properties adjoining the proposed mine site now have high levels of PFAS in the bore water. This was after a nil detect only 12 months prior. We were told the plume would reduce in size back in 2015. Since then, the zone has been expanded by 50%.*"

Residents are angry and upset at the ongoing uncertainty surrounding the PFAS contamination. They told the Commission they feel "stuck" – unable to sell up and "escape" because their properties have been rendered worthless. The proposed quarry, the Commission heard, would be an additional and overwhelming burden, and should be "knocked back" or at the very least "put on hold" until there is a greater understanding of the fallout of the contamination.

The Commission recognises communication and responsibility between State and Federal agencies has been a long process and frequently unclear as acknowledged in the *Review of the New South Wales Environment Protection Authority's Management of Contaminated Sites Final Report,* (December 2016) prepared by Macquarie University. As detailed in the review, this process produced a large volume of information which has changed, and continues to change, which can adversely affect public awareness of the contamination zone.

The current evidence available to the Commission about contamination and groundwater movement in relation to the proposed quarry includes not only the applicant's EIS, but more recent surveys and studies. These surveys and studies include:

- *Exposure to PFAS and potential for health impacts* (Pacific Environment February 2017);
- *Per- and poly-fluorinated alkyl substances assessment* (Kleinfelder February 2017);
- *Water sampling for Per- and poly-fluorinated alkyl substances* (Kleinfelder June 2017);
- *PFAS Human Health response paper* (Kleinfelder December 2017); and
- *Groundwater model and peer review* (Hydro Simulations January 2017).

These studies investigated the likelihood of PFAS occurring on site and the potential risk to human health of the project.

These studies report that despite being near the Williamtown RAAF base and areas of identified PFAS contamination, PFAS compounds are not present in either the soil or groundwater in the project site. These studies also suggest that should PFAS be detected in groundwater in the future through ongoing monitoring, that the risk to human health would be minimal as the project will remain above the maximum predicted groundwater level and not interact with or use groundwater on the site.

The most recent modelling outcomes have been provided through the HHRA, and demonstrate that groundwater flows are to the south and south-east direction from the Williamtown RAAF Base, towards Tilligerry Creek and Fourteen Foot Drain. The surface drains were identified as a method to transport PFAS contaminated groundwater beyond the known extent of the PFAS contamination plume, resulting in isolated detection of PFAS, including those identified south of the project site.

Ground and surface water samples were collected from the four groundwater bores and an area of standing water located on site. The samples were assessed against both the *Food and Safety Standards Australia New Zealand* and the *Cooperative Research Centre for Contamination Assessment and Remediation of the Environment's* ecological screening levels. None of the samples collected returned a positive result for PFAS compounds. The water sampling report stated that PFAS compounds were not present in the ground or surface water at the project site.

Soil analysis was undertaken from 22 locations across the project site, including historically disturbed areas above the maximum ground water level, which were representative of the sand resource

targeted for extraction. None of the range of 28 PFAS compounds, were present in the soil at the project site.

The extraction area is above the maximum predicted groundwater level and groundwater modelling correlated well with observed ground water levels, with good level of confidence about maximum predicted groundwater level.

The HHRA found that, even if PFAS was present in the material to be extracted, and in the most severe weather conditions, the predicted level of PFAS exposure would account for approximately 0.3% of the identified total safe daily intake level for PFAS.

The applicant also stated that the proposed assessment for the presence of PFAS materials, as well as the development of precautionary managements actions, was in accordance with advice received from relevant regulatory agencies. The small risk would be further reduced by ensuring sand excavation remained above the maximum predicted groundwater level, as normally required of extractive industry in the Hunter Water management area.

The applicant noted that readily available technology, such as GPS equipped excavators, would ensure that the extraction depth would remain above the maximum predicted groundwater level. The depth of extraction would also be periodically validated by survey. The applicant also identified that ongoing groundwater monitoring data would be collected to inform and refine their modelling and understanding of groundwater behaviour on site.

The Department's assessment also identified that the likelihood for PFAS to occur on the project was low. Without the presence of PFAS on the site, the risk of the project resulting in an adverse human health impact from PFAS was minimal. The Department identified that this small risk would be further reduced by the applicant avoiding interaction with groundwater on the site, as defined by the maximum groundwater level.

The Department's assessment report concluded that suitable management of construction activities, including the use of suitable technology and monitoring, would avoid encountering groundwater. The relevant regulatory and investigative agencies involved with the Williamtown PFAS investigation, including the EPA, the Office of the Chief Scientist and Engineer, and the Williamtown Contamination Expert Panel, including the Water Working Group, agreed through their submissions that the proposed management measures were suitable.

The Department also acknowledged that the understanding of PFAS in the Williamtown area was evolving and included ongoing PFAS monitoring as part of the proposed conditions of consent. This monitoring would inform the required groundwater management plan, which includes provisions to assess and appropriately manage any future detection of PFAS on site. PFAS detection, though unlikely, would lead to risk evaluation and amelioration measures, if they are found to be necessary.

Commission's Considerations

The Commission acknowledges that there have been significant developments in the analysis of the extent and nature of PFAS compounds in the Williamtown area, including the identification of potential exposure pathways and health impacts of these compounds into the local community, and that this will continue to be an evolving process. The impact that these changes have had on the local community is apparent through the comments which have been made regarding this project, as expressed during the public meeting.

With reference to the evidence before the Commission, PFAS is not present in the extractive material on the site, or the groundwater beneath it. Although PFAS has been detected in a surface

drain south of the project site it is unlikely to migrate to or beneath the site. Importantly, the project is not seeking to disturb or alter these drains.

The Commission considers that an exposure pathway for PFAS as a result of the project is unlikely to exist. These findings have been supported by each of the agencies that the Commission directly consulted with, including the EPA, the NSW Department of Health and the NSW Office of Chief Scientist and Engineer.

Additionally, the Commission considers that the proposed conditions provide a precautionary approach. The conditions set strict requirements for the applicant to remain above the maximum groundwater level. The Commission is satisfied that appropriate quarrying equipment and methodologies are available to allow the applicant to achieve this. Additionally, the conditions will establish ongoing monitoring for PFAS compounds in the site and requirements to establish appropriate responses if they are detected.

In making this finding the Commission recognises that the local community has undergone, and continues to experience, a significant amount of uncertainty and stress. But, as acknowledged by speakers at the public meeting, the Commission's role in considering the project must be focussed on the detailed evidence about the particular site and proposed development.

Based on the assessment provided and the conditions imposed by the Commission, the Commission finds that PFAS related impacts to human health from the project are unlikely to occur. The Commission concludes that the project will not result in establishing a new or intensification of existing PFAS exposure pathways and that the human health risks from the project in relation to PFAS are unlikely to occur. NSW Health advised that, in regard to the development, without this exposure pathway there is no risk to human health.

5.2 Ecology and Biodiversity

Oral and written comments to the Commission expressed concern about the potential for the project to result in impacts to biodiversity and ecological values, including the Port Stephens koala populations. The speakers felt that the Department's assessment understated the risk to threatened species and depended heavily on offsets which did not adequately compensate for the impacts. Other submissions highlighted the importance of the Port Stephens koala population and the continuing, cumulative, pressure this population was under from development.

The applicant's ecological assessment identified that the project site contained habitat for twelve threatened flora and fauna species, including the koala and Mahoney's toadlet, described as a new species in 2016, and one endangered ecological community, *Swamp Sclerophyll Forest on Coastal Floodplains of the NSW North Coast, Sydney Basin and South-East Corner Bioregions*, as present on site, with 0.13 hectares likely to be disturbed.

The ecological assessment identified that the project would clear 19.19 hectares of preferred habitat and 22.02 hectares of supplementary koala habitat. This equates to approximately 1.01% of the preferred koala habitat and 0.78% of supplementary koala habitat in the Tomago Sandbeds Koala Management Unit. The ecological assessment concluded that with koala habitat adjacent to the project site and a reduced project footprint, the project was unlikely to result in a significant impact to koala populations.

The ecological assessment identified the presence of 227 individuals of Camfield's stringybark in the disturbance footprint, approximately 10% of the total population in the site. The assessment identified that a large portion of the described vegetation was the result of prior revegetation practices. This has resulted in a higher abundance of this species than would be encountered in a natural system. The ecological assessment concluded that due to impacted individuals being part of

rehabilitation plantings and the species being included in post extraction revegetation, the project was unlikely to result in a significant impact to Camfield's stringybark.

The ecological assessment identified that the project site was likely to provide habitat for 15 additional threatened species, including swift parrot, regent honeyeater and spotted-tailed quolls, though these species were not recorded on site. The *Ecological Constraints and Opportunities Report (2011)* assessed that while these species were likely to be impacted by the project, these impacts were not significant. These species were included in the proposed biodiversity offset strategy.

The Department identified that the applicant had addressed the inconsistencies, associated with the survey methods and assessment of impacts to koala, with the *Port Stephens Comprehensive Koala Plan of Management* (PSCKPM). The Department noted that the requirements of *SEPP No. 44 – Koala Habitat Protection* have been incorporated into the PSCKPM and have been satisfied. In making this finding the Department stated that the project site does not currently support a resident population, that habitat availability is not considered to be a limiting factor on the local Koala population and that connectivity between local koala populations would be strengthened through the site rehabilitation process and biodiversity offsets.

The Department has set out that by securing the remaining onsite vegetation and securing a supplementary offsite offset the project would achieve a "mitigated loss outcome", as set out in the *NSW OEH interim policy on assessing and offsetting biodiversity impacts of Part 3a, State significant development (SSD) and State significant infrastructure (SSI) project (2011).*

The Department identified that, based upon the date the applicant requested environmental assessment requirements, the applicant was not required to undertake an assessment using the BioBanking Assessment Methodology (BBAM). However, the Department identified that the BBAM would provide a practical method for assessing the impacts to biodiversity and calculating the offsets required to inform the environmental assessment of the project. The Department and the Office of Environment and Heritage (OEH) also established through the conditions of consent that the mechanisms created under *the Biodiversity Conservation Act 2016,* while not required to be satisfied, would provide the most effective method for securing the proposed offsets.

The Department identified that meeting 78% of the offset requirement for Camfield's stringybark, the complete offset liability for koala, Earp's gum, eastern osprey and the wallum froglet and 85% of the assessed ecosystem credits required was suitable to compensate for impacts from the project. As part of the mitigated loss outcome, the Department stated that the reduction in the assessed offset requirement for the project is appropriate, as the project site contains areas composed of rehabilitating vegetation from prior mineral sand mining.

The OEH was consulted by the Department in relation to the assessment of the impacts and identifying appropriate biodiversity offsets for the project. The OEH have advised that the proposed offset strategy would provide a suitable conservation outcome, pending the inclusion of provisions set out by OEH for identifying the proposed second offset site.

Commission's conclusions

The Commission notes the significant community concern regarding the impacts of the project on local ecological and biodiversity values. The Commission recognises that community concern focussed on the impact to local koala populations and the ability of the proposed offset strategy to compensate for the assessed impacts.

The Commission recognises that due to the timing of when the *Director General's Environmental Assessment Requirements* for the project were issued, the application of the BBAM was not required. However, the Commission acknowledges that the BBAM provides a contemporary method

for assessing the level of impact and biodiversity offsets associated with the development. The Commission notes that while the proposed biodiversity offsets have not been calculated in strict accordance with the BBAM, they provide a comprehensive offset strategy which maintains or improves the terrestrial biodiversity values of the region in the medium to long term, as required by the *Director General's Environmental Assessment Requirements* for the project.

The Commission accepts the view that the reduced offset liability, as set out by the OEH, will provide an appropriate conservation outcome. Importantly, the Commission recognises the importance of all identified components of the offset strategy as contributing to the described conservation benefits.

The Commission acknowledges the scope of the proposed rehabilitation and revegetation strategy provided by the applicant, and its focus on progressively re-establishing vegetation representative of natural systems. While the Commission recognises the inherent uncertainty associated with rehabilitation, it considers implementing this strategy will ensure that the impacts to biodiversity are relatively short in duration and mitigated in the medium to long term.

The Commission considers it important that the identified requirements set out by the OEH are incorporated into the final biodiversity offset strategy.

In reviewing the documentation on the offset strategy, the Commission considered that the proposed conditions of consent did not provide sufficient certainty regarding the applicant's requirement to acquire and conserve the residual ecosystem credits to address the shortfall in ecosystem credits in the proposed offset strategy. The Commission considered the requirement to retire any credits concurrent with establishing a koala offset, could be avoided by acquiring koala credits on the market. The Commission has revised the proposed conditions of consent to include a defined minimum ecosystem credit offset requirement for the offsite offset site, consistent with the applicant's commitments. The Commission has also amended the conditions to require that the applicant's proposed offset sites are identified prior to commencement.

The Commission has considered the project in relation to the objectives of the PSCKPM and *SEPP No. 44 – Koala Habitat Protection.* The Commission recognises that the project will disturb the rehabilitation undertaken on the site by RZM Pty Ltd, as identified in the PSCKPM, but that this area will be rehabilitated in a manner which is likely to provide koala habitat. The Commission finds that the project is consistent with these documents in that the project provided a detailed assessment of the impacts to koala and set out measures to conserve and improve koala habitat.

Based on the assessment provided and the conditions imposed by the Commission, the Commission considers that impacts to biodiversity are appropriately managed and compensated. The Commission acknowledges that the project will impact on threatened species, however an appropriate conservation gain will be delivered through the proposed offset strategy in the short term, with the applicant's proposed revegetation commitments providing medium to long term benefits to locally and nationally important threatened species. The Commission concludes that the project will not result in unacceptable impacts to biodiversity.

5.3 Traffic and road safety

Haulage trucks access the site off Cabbage Tree Road via proposed acceleration and deceleration lanes that provide for left-in/left-out driveway access only. Cabbage Tree Road connects to Nelson Bay Road to the east and to the Pacific Highway to the west via Tomago Road.

Oral and written comments to the Commission expressed concern about the potential for the project to result in road noise and traffic impacts, particularly on Cabbage Tree Road. Speakers felt the current road conditions were unsafe. Speakers explained that school children wait for the school bus on the road side, while others noted the many private driveways can be difficult to turn into, if

trucks follow too closely behind. Another speaker mentioned that the residents of a retirement village on Nelson Bay Road find it difficult to cross the road to a bus stop located adjacent the village, because of the number of heavy vehicles that already use that road.
The applicant's traffic assessment included a revised intersection design, traffic analysis and micro-simulation in the response to submissions. The assessment predicted that the operation of the quarry would result in annual average daily traffic of 126 one-way heavy vehicle movements, while during construction there would be up to 10 one-way vehicle trips per hour and up to 40 one-way vehicle trips per day (including all light and heavy vehicles).

The traffic assessments identified that this was an increase for Cabbage Tree Road of approximately 29% in overall heavy vehicle movements and 2% increase on overall movements from a base condition of 425 heavy vehicle movements per day and 8,900 total vehicle movements per day on Cabbage Tree Road. Other road and approach options were considered, including access via Masonite Road, but the traffic assessment identified that using these routes would either have a larger impact or require illegal turn movements.

The traffic assessment's predicted road function and safety analysis concluded that despite the predicted increases in traffic, road function on Cabbage Tree and Nelson Bay Road roundabout are expected to be maintained at Level of Service A. Queuing delays are expected to be 1 – 2 seconds per vehicle, with traffic speeds decreasing by 2%. The applicant's assessment concluded that the project was unlikely to significantly increase traffic volumes on Cabbage Tree Road or impact on road function. The road safety audit identified the need for minor road upgrades (left in left out intersections and acceleration and deceleration lanes) to maintain road function and the current Level of Service A.

The Department also set out that by utilising a defined arrival and departure schedule, traffic impacts and road function could further be reduced including the use of a booking system for loading slots to manage the proposed arrival and dispatch of trucks from the quarry. The arrival and departure of vehicles would also be managed using a monitored gate system to restrict the frequency (on an hourly basis) and total daily trucks which are able to access and leave the site. The Department considered that the proposed intersection of the quarry entry and Cabbage Tree Road has been well-designed and should operate safely for other road users and nearby residents.

Commission's conclusion
The Commission considers that the proposed road intersection design is appropriate for managing the predicted volume and composition of traffic on Cabbage Tree Road generated by the project. The proposed intersection has undergone refinement to its design to incorporate the requirements of NSW RMS and Council.

The Commission recognises that the project will result in an increase in traffic, predominantly an increase in heavy vehicle movements on Cabbage Tree Road. Importantly, the Commission recognises that with these increases the current level of service of Cabbage Tree Road is expected to remain the same.

The Commission acknowledges the significant community concern regarding the current traffic and road safety conditions and the potential for the project to intensify these issues. The Commission recognises that community concern focussed on driver behaviour, and the relative level, and safety of heavy vehicle movements (trucks). The Commission accepts the Department's assessment that the development and operation of the project would only marginally increase overall traffic levels and would not significantly decrease public safety.

Importantly, the Commission notes that through the road safety audit the applicant has identified and taken actions to remediate aspects of their project which would have impacted road safety.

Additional aspects to improve road function and safety were identified in the audit, including lowering speed limits, clearly identifying bus stops, installing street lighting and relocating house numbers. However, implementing these actions remains the responsibility of other organisations, including NSW Roads and Maritime Services and Port Stephens Council. The Commission will write separately to those organisations alerting them to the recommendations in the audit report.

The Commission considers that the methods proposed by the Department to manage truck movements, in conjunction with appropriate compliance monitoring, are likely to ensure the number of vehicle movements undertaken by the quarry do not exceed the traffic volumes in the proposed conditions. These methods include the establishment and enforcement of a driver's code of conduct and the management of arrival and departure traffic volumes through a combination of a haul truck booking system and monitored weigh bridge and entry and departure gate. We note the booking system will also help to manage hourly movements and provide a more orderly pattern of arrivals and dispatches.

While not directly related, the Commission notes recent and ongoing compliance action undertaken by the Department in the region as a demonstration of the effectiveness of the conditions being utilised to manage traffic volumes from quarrying operations.

Based on the assessment provided, the Commission finds that impacts to traffic and road safety are likely to be relatively small and are appropriately monitored and managed. The Commission acknowledges that the project will increase traffic volume on Cabbage Tree Road, but that this increase is unlikely to significantly impact on road safety and function. The Commission concludes that the project will not result in unacceptable traffic and road safety impacts.

5.4 Noise and Vibration

The existing sound environment near the project is rural in nature with a reasonably busy road, Cabbage Tree Road. The residential areas near the site fit the acoustic definition of suburban as set out in the EPA's *Industrial Noise Policy*, but are not subjected to existing industrial noise. The project site is subject to noise impacts from the nearby runway at Newcastle Airport, which carries both commercial and Air Force aircraft.

Oral and written comments to the Commission expressed concern about the potential for the project to result in unacceptable noise related impacts to local residents. The speakers felt that the project would also unreasonably increase noise at residences through the operation of onsite machinery, and also through increased heavy vehicle traffic, in particular air braking. The speakers also raised concern that by removing sand dunes and associated vegetation, increased noise levels may be experienced from the nearby Newcastle Airport. The community highlighted concern that these noise impacts would be cumulative.

The applicant provided, through their assessment, an examination of the likely changes and impacts to noise and local amenity. Following the exhibition of the environmental impact statement for the project, the applicant prepared a revised noise impact assessment (NIA), to address community and government agency concerns regarding the methodology and results of the prior assessment.

The revised NIA considered impacts to local amenity from noise against seven construction scenarios, twelve operational scenarios and traffic impacts. The revised NIA also updated the background noise levels used to predict the level of impact.
For construction scenarios, noise criterion for "highly noise affected" areas were considered for the construction of the project intersection, including the acceleration and deceleration lanes. On site construction scenarios were assessed against "noise affected" noise criterion. Compliance was predicted against all scenarios. The revised NIA also stated that compliance with noise criteria was predicted during construction activities.

Operational impacts, including vegetation clearing, were assessed by the revised NIA to generally be below noise criterion for "noise affected" areas. The revised NIA predicted that short term noise criterion exceedances up to 5 dB may occur during vegetation clearing, especially if a bulldozer is used. The assessment proposed the predicted noise levels determined by the revised NIA be adopted as the noise criteria for short-term activities, such as vegetation clearing. In making this proposal the applicant highlighted the small number of affected receivers, the very short duration of vegetation clearing and the unfeasibility of alternate noise control options.

The revised NIA predicted that the project was unlikely to exceed noise guidelines during sand extraction. The revised assessment found that maximum predicted noise levels, including sub-optimal weather conditions and close proximity to the nearest receivers were likely to result in noise levels below the established daytime background noise level.

The applicant's assessment predicted that traffic noise was expected to increase by a marginal amount, approximately 0.9 dB, on existing levels. This level of increase was considered not to be perceptible to human hearing. The revised NIA also concluded that cumulative noise impacts, including predicted operational noise from the nearby airport, were unlikely to significantly increase as a result of the construction and operation of the sand quarry.

The Department assessed that the predicted noise impacts from the proposed quarry could largely be managed to meet all relevant noise and vibration criteria. The Department identified that some exceedances were expected during short campaign periods of vegetation clearing activities. During these periods the Department found that while exceedances were likely, the short duration of these activities moderated the overall impact.

The Department proposed conditions of consent to establish the noise criteria that apply to the project and require a noise management plan be prepared and implemented.

In addition, and with respect to potential vibration impact on nearby residences and structures, the applicant must provide building condition inspections, if requested by the landowner, for all residences within 300 metres of either quarrying operations or road construction activities.

The Department concluded that subject to the proposed conditions of consent the project's noise and vibration impacts are acceptable.

Commission's considerations

The Commission notes, as predicted by the revised NIA, the low level of amenity impacts from noise over the life of the quarry, including construction and operational phases as well as associated traffic. The Commission also notes the predicted noise exceedances are expected to occur in the absence of mitigation and management strategies. However, the Commission recognises that the identified exceedances can be managed through the applicant's commitments and measures included in the proposed conditions of consent.

The Commission recognises that some exceedances of noise criteria have been predicted in the applicant's revised NIAs, associated with sequential periods of vegetation clearing. However, the Commission finds that these activities will be short in duration and occur periodically over the life of the project rather than as a continuous or frequently occurring activity. The Commission accepts that the impacts of higher noise levels during vegetation clearing have been mitigated as far as practical. Additionally, the Commission notes these activities are subject to the same timing limitations as other quarrying operations, as set out in the proposed conditions.

The Commission recognises the community's concern regarding the impact of removing the sand dunes and native vegetation present in the project site, potentially reducing noise buffering from the Newcastle Airport. The Commission notes that the project will retain a portion of the dune system, including vegetation, nearest to the residences on Cabbage Tree Road. The retained landform is likely to buffer the predicted aircraft noise in a manner consistent with the current dune system. Importantly, the predicted noise impacts from take-offs, landing and aircraft circling the area are unlikely to be increased by the removal of sand dunes and associated vegetation.

The Commission considers that the project is unlikely to intensify the predicted level of aircraft noise at nearby residences as the removal of sand and vegetation would not significantly change aircraft noise patterns.

The Commission notes that the EPA has reviewed both the original noise impact assessment and the revised assessment. They also reviewed the proposed conditions of consent and concluded that in conjunction with the mitigation measures proposed by the applicant, noise impacts were unlikely to significantly impact on nearby residences.

Based on the assessment provided, the Commission finds that impacts to local amenity through increases in noise are likely to be small and appropriately monitored and managed. The Commission acknowledges that the project will result in changes to the local amenity, but that this change is unlikely to be significant. The Commission concludes that the project will not result in unacceptable noise impacts on local amenity.

5.5 Air Quality

The public comments expressed concern about the potential for the project to have unacceptable impacts to the air quality of nearby receivers. The community raised concerns that the project would result in an unacceptable, cumulative, impact to air quality as well as increasing their risk of developing silicosis.

The applicant's assessment included an Air Quality Impact Assessment (AQIA) as part of the environmental impact assessment and a revised AQIA prepared as part of their response to submissions. The applicant's assessment examined four operational scenarios, including all sources contributing to the overall quarry particulate emission with and without operational controls in effect.

The air quality modelling, without the proposed additional operational controls, predicted potential exceedances of NSW Air Quality Impact Assessment criteria for 24-hour average PM_{10}. However, with the proposed operational controls in place, modelling indicates that the project is unlikely to exceed criteria for 24-hour average PM_{10} in most circumstances.

The modelled exceedances of the 50.0 g/m^3 24-hour average PM_{10} criteria were predicted to occur on two consecutive days of the modelled meteorological data set where the background PM_{10} concentration was elevated to 43.3 g/m^3 and 47.2 g/m^3 respectively. The modelling predicted that for exceedances of air quality to occur at nearby residences, substantial non-project related particulate matter would need to present in the locality.

The applicant provided a *Silicosis Risk Review* as part of their response to submissions. The review identified that while the long-term inhalation of silica dust may lead to the formation of scar tissue in the lungs, which can result in silicosis, this is regarded exclusively as a work place exposure issue that is associated with long-term exposure to high levels (generally around 200 $\mu g/m_3$) of respirable crystalline silica. The review identified that while airborne exposure to silica increased the risk of developing silicosis, the identified total annual average PM_{10} concentration at the most affected residence is predicted to be 1.8 $\mu g/m^3$. The Commission considers that even if all predicted

contributions to PM_{10} were composed of fine silica dust, which is unlikely, the concentration is significantly below the concentration associated with increased risk of developing silicosis.

The Department has assessed the likely air quality impacts associated with the development and operation of the project. The Department also concluded that the risk to local community of developing silicosis was unlikely at the modelled PM_{10} concentrations. The Department found that, subject to the proposed conditions, the project's air quality impacts are acceptable.

The Department has proposed conditions of consent to manage and monitor changes in air quality, including a condition requiring at least two real-time air monitors to be located at the site. The monitors would ensure that the applicant is aware of real-time trends in the site's air quality. In the event of high background PM_{10} concentrations and adverse meteorological conditions, operational controls will be implemented to limit particulate emissions. The operational controls will include a staged shutdown of dust generating activities including the dry screening plant, extraction activities and product loading in a worst-case situation. Increased watering of exposed areas and stockpiles will also be implemented when required.

Commission's considerations
The Commission acknowledges that the modelled impacts to air quality predict that exceedances may occur in the absence of operational controls. However, the Commission recognises that the applicant has identified practical control measures to monitor and manage impacts to air quality.

The application of these control measures is accompanied by the implementation of an air quality management plan, inclusive of tailored trigger action response plans. The development and application of these measures will be supported with real time air quality monitoring, as set out in the proposed conditions of consent.

The Commission notes that these management and monitoring measures are accompanied by the retention of sections of the natural landform and vegetation areas close to residential receptors, such as the southern extraction area, near Cabbage Tree Road. The Commission agrees with the project assessment that this, in conjunction with the sequential revegetation of the site, will assist in controlling the offsite movement of dust.

The Commission acknowledges the community concern regarding the impact of silicosis. However, the Commission notes that occurrences of silicosis are associated with industrial levels of exposure to fine silica particles, such as cutting and grinding. These actions are not consistent with the described project activities and exposure to fine silica particles is would not occur at a high enough concentration for the extended timeframe required to develop silicosis. The Commission notes that during interview NSW Health concurred that silicosis is associated with industrial levels of exposure.

The Commission notes that the EPA has reviewed the air quality assessment and the proposed conditions of consent. Following this review and refinement of the conditions of consent, the EPA concluded that with the mitigation measures proposed by the applicant, significant changes to current air quality levels were unlikely to occur as a result of the project.

Based on the assessment provided, the Commission finds that impacts to air quality are likely to be relatively small and appropriately monitored and managed. The Commission concludes that in the amended form the project will not result in unacceptable air quality impacts to nearby receptors.

5.6 Other Relevant Issues

The Commission recognises the importance of post quarrying rehabilitation of the project site in considering the medium to long term impacts to ecological function in the region. The applicant states that their rehabilitation strategy is likely to be successful, noting the current success of onsite

rehabilitation of historic sand mining. The Department has agreed with the applicant's rehabilitation strategy. The Commission concludes that based upon the previous success in the site and the approach proposed by the applicant, the rehabilitation strategy is likely to be successful.

The Department concluded that residual site contamination problems are not expected, though it noted the possible presence of improperly disposed waste within former disturbance areas. The Commission notes the findings of the Phase 1 Environmental Assessment and radiation survey provided by the applicant. These surveys, cumulatively, conclude that the proposed quarry activities are unlikely to interact with any historical mineral sands tailings, including the identified monazite trenches. This builds upon the applicant's radiation survey which found that surface levels of radiation were within normal limits of background / naturally occurring radiation levels in the region.

The Commission acknowledges the limitations of the applicant's radiation survey, but considers these limitations are adequately addressed through the Department's proposed conditions which require additional radiation surveying. The Commission acknowledges commitments by the applicant to establish operational procedures which will trigger an immediate stop work in the area if any foreign materials are encountered during quarrying. The Commission concludes that based upon the low likelihood of contaminated material historically present in the extraction area, that adverse impacts are unlikely.

The Commission has considered the applicant's and the Department's assessment of impacts to the local economy, visual amenity, greenhouse gas emissions, European and Indigenous Heritage and social impacts, outside of the impacts associated with PFAS contamination. While the Commission recognises that some impacts to these matters may occur as a result of the project, these impacts are small and suitably managed through the proposed conditions of consent.

6. COMMISSION'S RESPONSE TO OTHER COMMUNITY ISSUES

The public comments raised concerns about the transparency of the tendering process undertaken for the development and operation of the Cabbage Tree Road Sand Quarry.

Notwithstanding those expressions of concern, the Commission did not receive any evidence of impropriety in the tendering process. The Commission acknowledges the concerns expressed, but it is beyond the remit of the Commission in making its determination for this development to consider or provide comment on the tendering process undertaken by the Port Stephens Council.

7. COMMISSION'S FINDINGS AND DETERMINATION

The Commission has considered carefully the applicant's proposal, the Department's assessment report, the concerns of the local community, and the relevant matters for consideration under section 4.15 of the EP&A Act. The Commission has noted the advice from Port Stephens Council, and government agencies including the NSW EPA, the NSW Office of the Chief Scientist and Engineer and the NSW Department of Health. Finally, the Commission has heard from members of the community about their concerns regarding the project during the public meeting in Williamtown.

In making this determination the Commission is aware of and has considered the almost complete community opposition to this development. From the written and verbal comments provided during both the Commission's consideration as well as the Department's assessment, no one spoke in favour of the project. While the Commission has decided to approve the project, it acknowledges that a significant difference of opinion exists between the community, the Council and the applicant. This difference is something the applicant and the Port Stephens Council will likely need to resolve as the project progresses.

The Commission has responded to concerns expressed by speakers at the public meeting regarding the ongoing impact of PFAS contamination. The Commission notes that a number of these issues do

not practically relate to aspects or impacts of the project, but are linked to the impact of PFAS contamination in the area more generally.

The Commission recognises that despite extensive soil and groundwater sampling, PFAS has not been detected in the project site. In the absence of PFAS on the site, the Commission does not consider that the project will result in human health impacts from PFAS.

The Commission recognises that the proposed project would contribute to increased heavy vehicle traffic on Cabbage Tree Road. While the project would contribute an average daily increase of 146 vehicle movements a day, this level of increase is not expected to result in a significant adverse impact or a substantial change in the current level of service or road safety of Cabbage Tree Road.

The Commission recognises that the project will result in an impact to biodiversity, including local koala populations and other protected flora and fauna. The Commission acknowledges the proposed offset strategy will provide a mitigated loss outcome. It was considered that in conjunction with the proposed site revegetation, the impacts would be adequately managed in the medium to long term.

The Commission considers that the potential impacts to local amenity from increases in noise and changes in air quality are likely to be small and are proposed to be adequately mitigated and managed by the applicant. The potential impacts to local amenity have also been adequately incorporated into the conditions of consent for the project.

The Commission recognises that the project will provide benefits in the form of access to a sand resource, employment, royalties and site lease fees to the local region as well as to New South Wales. Additionally, through the establishment of the offset site, funding for the management and improvement of the adjacent, undisturbed areas, will be provided.

The Commission considers that while the project will result in environmental and social impacts, the applicant has developed adequate measures to manage these impacts. The Commission finds that, relative to the project benefits, the impacts to the local environment are acceptable and adequately compensated for through the establishment of biodiversity offsets. The implementation of the rehabilitation strategy will likely reduce the environmental impacts further.

The Commission concludes that the project, as described, is in the public interest and in accordance with the principles of ecologically sustainable development. For the reasons set out above, the Commission has determined to grant consent to the development application subject to the conditions set out in the instrument of approval.

Dianne Leeson (Chair)
Member of the Commission

Peter Cochrane
Member of the Commission

Peter Duncan AM
Member of the Commission

APPENDIX 1
RECORDS OF COMMISSION MEETINGS

Notes of Briefing from the Department of Planning and the Environment

This meeting is part of the Determination process.		
Meeting note taken by David Way	**Date:** 9 March 2018	**Time:** 10:00 am
Project: Cabbage Tree Road Sand Quarry (SSD 6125)		
Meeting place: Independent Planning Commission Offices		
Attendees: Commission Members: Ms Dianne Leeson (Chair), Mr Peter Cochrane and Mr Peter Duncan AM Commission Secretariat: Mr David Mooney (Team Leader) and Mr David Way (Senior Planner) Department of Planning and the Environment (the Department): Mr Howard Reed (Director) and Mr Colin Philips (Team Leader)		
The purpose of the meeting: For the Department to brief the Commission on their assessment of the Cabbage Tree Road Sand Quarry project (project).		
Matters discussed: • Introductions and project description: - Nature of the sand resource (estimated at approximately 3.35 tonnes total). - Life of the project, with approval sought for 15 years, but possible for the extraction to finish sooner. - Change in project boundary and extracted sand resources to increase the vegetation buffers between the project and neighbouring properties. - Local context of sand mining, including the industry presence in the region and the importance of the industry to local and regional construction projects. • Presence of perfluoroalkyl and polyfluoroalkyl substances (PFAS): - A summary of the Department's consultation and engagement with the local community. - The study area has been refined, corresponding with increased understanding of groundwater movements in the regions. Area of elevated PFAS recorded away from the contaminated groundwater "plume" are linked to the movement of contaminated groundwater through surface drains. - Current advice from agencies is that there is no PFAS on the project site, but that the risk can be further reduced by preventing contact / interception of groundwater. - The determination of the maximum predicted groundwater level, supported by large data sets from Hunter Water, will create a conservative buffer between the maximum extraction depth and the likely groundwater level on the site. - Commonwealth is currently undertaking an epidemiological study of the impacts of PFAS. • Ecological impacts, including to koala populations: - Updates to aspects of the environmental impact statement were provided as part of the applicant's response to submissions, including an offset strategy and refinements to the ecological assessment. - Connectivity between the key koala populations is maintained over the short term and likely improved over the medium to long term. • Traffic: - The project would result in a 2% increase in the current traffic levels. Cabbage Tree Road is currently a busy road with a mixture of industrial and residential traffic. - The timing of vehicle movements would be managed through a proposed "booking system".		

- Entrance to the project site designed as a left in, left out intersection, with the turnaround area set at the roundabout at the intersection of Cabbage Tree Road and Nelson Bay Road. The use of acceleration and deceleration lanes will reduce traffic disruption.

- Air Quality and Noise:
  - The nature of the sand resource prevents airborne / dust based exposure pathway for PFAS materials.
  - Real time monitoring would be implemented, with trigger action response plans to be developed and implemented by the applicant.
  - Equipment optimisation will lower noise and dust impacts, though impacts may increase during periods of vegetation clearance.
  - The established buffers will mitigate noise and dust impacts.
- Other Considerations:
  - Generally, Council is supportive of the action, with the project likely to generate $17 million in royalties for the Port Stephens Council.
  - The project would provide an important source of construction and industrial sand for local and regional markets.

Documents [tabled at meeting/to be provided]: NA

Outcomes/Agreed Actions: NA

Meeting closed at *11:30 am*

Notes of Briefing from the NSW Office of the Chief Scientist and Engineer

This meeting is part of the determination process.		
Meeting note taken by David Way	**Date:** 9 March 2018	**Time:** *2:00 pm*
Project: Cabbage Tree Road Sand Quarry (SSD 6125)		
Meeting place: Independent Planning Commission Offices		
Attendees: Commission Members: Ms Dianne Leeson (Chair), Mr Peter Cochrane and Mr Peter Duncan AM Commission Secretariat: Mr David Mooney (Team Leader) and Mr David Way (Senior Planner) The Office of the Chief Scientist & Engineer (OCSE): Dr Chris Armstrong (Director) and Mr Edward Jansson (Senior Manager Reviews and Committees). The Department of Planning and Environment (as observers): Mr Colin Philips (Team Leader)		
The purpose of the meeting: For the Commission to discuss the evolution of the perfluoroalkyl and polyfluoroalkyl substances (PFAS) contamination in the locality and the OCSE's advice on the project.		
Matters Discussed: • Historical context of the PFAS investigation area: - Function and chemical properties of PFAS, being that PFAS has notably high solubility in water and "bonding" capabilities with soils. - Initial investigation area and guidelines were conservatively established and were subsequently refined as information on the extent and concentration of the contamination became clearer. - Groundwater and drainage systems provide the principle manner of PFAS dispersal, with surface drain areas being responsible for the detection of patches of PFAS "isolated" from the groundwater "plume". - The refinements to the mapped management areas have been informed by ongoing investigation into the extent and impact of the PFAS contamination. • The OCSE confirmed that the draft guidelines and exposure levels have been refined since the PFAS investigation area was established. • The changes in the extent and level of PFAS management zones, as presented in the State and Commonwealth maps, represent an evolution in the understanding of the extent and pathways for PFAS contamination. This included recent maps, which were designed to assist with land management decisions resulting in management areas extended to property boundaries.		
Documents [tabled at meeting/to be provided]: NA		
Outcomes/Agreed Actions: OCSE to review proposed conditions with regard to the suggested frequency of water monitoring.		
Meeting closed at 3:00 pm		

Notes of Briefing from the Port Stephens Council

This meeting is part of the Determination process.		
Meeting note taken by David Way	**Date:** 12 March 2018	**Time:** 11:00 am
Project: Cabbage Tree Road Sand Quarry (SSD 6125)		
Meeting place: Mercure, Newcastle Airport		
Attendees: Commission Members: Ms Dianne Leeson (Chair), Mr Peter Cochrane and Mr Peter Duncan AM Commission Secretariat: Mr David Mooney (Team Leader) and Mr David Way (Senior Planner) Port Stephens Council (Council): Ms Kate Drinan (Manager Development Assessment and Compliance) and Mr Brett Gardiner (Senior Executive Planner)		
The purpose of the meeting: For the Port Stephens Council to discuss the Cabbage Tree Road Sand Quarry project (project) with the Commission.		
Matters Discussed: • Council's submissions: - The initial submission raised concerns regarding impacts to threatened species, heavy vehicle movements, storm water management and duration of quarry operations. - Council satisfied that their comments have been addressed through the applicant's response to submissions and the Department of Planning and Environment's assessment report. • Council has no residual concerns, but suggested the Commission take care in addressing community concerns and submissions regarding the project. • Council confirmed that, in partnership with the Environmental Protection Authority, they have developed conditions to manage development applications in the perfluoroalkyl and polyfluoroalkyl substances (PFAS) "red zone" to ensure groundwater is not impacted.		
Documents [tabled at meeting/to be provided]: NA		
Outcomes/Agreed Actions: NA		
Meeting closed at *11:30 am*		

Notes of Meeting and Site Visit with the Williamtown Sand Syndicate

This meeting is part of the Determination process.		
Meeting note taken by David Way	**Date:** 12 March 2018	**Time:** *8:00 am and 10:15 am*
Project: Cabbage Tree Road Sand Quarry (SSD 6125)		
Meeting place: Mercure, Newcastle Airport		

Attendees:
Commission Members:
Ms Dianne Leeson (Chair), Mr Peter Cochrane and Mr Peter Duncan AM

Commission Secretariat:
Mr David Mooney (Team Leader) and Mr David Way (Senior Planner)

The applicant - Williamstown Sand Syndicate:
The site visit: Mr Jonathon Berry (Lead consultant, Kleinfelder), Mr Darren Williams (Project Manager) and Mr Murray Towndrow (Director).
The project discussion: as above, plus: Mr Chris Sneddon (Director) and Mr Peter Dodds (Shareholder).

The purpose of the meeting: For the Commission to familiarise themselves with the Cabbage Tree Road Sand Quarry project (project) site and discuss the project with the applicant.

Site Visit – Matters Discussed

- The applicant discussed a number of the proposed mitigation measures and project features, including:
  - Modification to the intersection design, with additional "curving" of the entrance to the quarry, to reduce visual impacts.
  - Traffic and flooding considerations on Cabbage Tree Road, with the applicant noting low frequency of flooding on Cabbage Tree Road.
  - The vegetation and dune buffer adjoining Cabbage Tree Road, with the likelihood that this would further reduce the noise, air quality and amenity impacts from the project to nearby residents.
  - The status and extent of rehabilitating vegetation from historic mineral sand mines.
  - Location of hard stand areas, and general orientation and function of the portable conveyors.

Project Meeting – Matters Discussed

- Operational considerations for the quarry:
  - Extraction depth will be monitored to maintain a 70cm separation between maximum extraction and predicted groundwater level.
  - The predicted groundwater level provides a conservative estimate, with the likely observed groundwater level to be much lower than the maximum predicted level.
  - Groundwater will not be used or extracted for any processes. On site water will be sourced from town water supplies.
  - Use of monitored boom gates and weigh stations will maintain approved extraction rates and truck movements. Based upon the approved extraction rate full time excavation is not required, allowing the extraction schedule to be modified to reflect conditions.
  - The project uses exclusion fencing near the roads and the intersection with Cabbage Tree Road to minimize impacts to koalas as well as driver safety.

- Rehabilitation of extracted areas:
  - The final landform will be at least 1 metre above maximum predicted groundwater level.
  - The reinstated landform will involve re-application of retained topsoil from cleared area. This will include

placing natural features recovered from clearing prepped sites to rehabilitation sites.
  - The rehabilitation will seek to re-establishing vegetation representative the current vegetation communities.
- Public health and site context:
  - On-site testing had not detected perfluoroalkyl and polyfluoroalkyl substances (PFAS).
  - Historic mineral sands mining had occurred, but radiation surveys had not detected any surface radiation above natural background levels.
  - Historic workings had been identified outside of the extraction area.

Documents [tabled at meeting/to be provided]: NA

Outcomes/Agreed Actions: NA

Meeting closed at 8:45 am (site visit) and 11:00 am (meeting)

Notes of Briefing from the NSW Environment Protection Agency

This meeting is part of the Determination process.		
Meeting note taken by David Way	**Date:** 12 March 2018	**Time:** *9:00 am*
Project: Cabbage Tree Road Sand Quarry (SSD 6125)		
Meeting place: Mercure, Newcastle Airport		
Attendees: Commission Members: Ms Dianne Leeson (Chair), Mr Peter Cochrane and Mr Peter Duncan AM Commission Secretariat: Mr David Mooney (Team Leader) and Mr David Way (Senior Planner) NSW Environment Protection Authority (EPA): Ms Karen Marler (Director), Mr Peter Jamieson (Head Regional Operations Unit) and Mr Steve Clair (EPA Regional Operations Officer) Department of Planning and Environment (as an observer): Mr Colin Philips (Team Leader)		
The purpose of the meeting: For the EPA to discuss the Cabbage Tree Sand Quarry project (project) with the Commission		
Matters Discussed: • Perfluoroalkyl and polyfluoroalkyl substances (PFAS): - The primary exposure pathway is through ingestion (bio-accumulates). First detected in rabbits, but since identified in fish (particularity in drains) and livestock. Higher risks of PFAS exposure are associated with high levels of continuous consumption. - Limited ability to bond with sand particles, though there limited capability for testing for air dispersed PFAS. The prior human health risk assessments identified that airborne pathways were not likely to be a significant exposure pathway. - The guidance on exposure pathways has been refined since the detection of environmental PFAS. - The EPA noted that PFAS has not been detected in the project extraction area and the risk encountering PFAS or intensifying the contamination from the project was low, especially if the applicant avoided interactions with groundwater. • The EPA noted onsite noise would likely not be a significant issue. • Air quality impacts to receivers/residences were expected to be low and below established limits for PM_{10}. • Historic presence of mineral sands (monazite), with potential areas of monazite trenches have been detected on site through on ground radiation levels, but have been avoided in the proposed quarry activities .		
Documents [tabled at meeting/to be provided]: NA		
Outcomes/Agreed Actions: NA		
Meeting closed at *10:00 am*		

Notes of Briefing from the NSW Department of Health

This meeting is part of the Determination process.		
Meeting note taken by David Way	**Date:** 5 April 2018	**Time:** *12:00 pm*
Project: Cabbage Tree Road Sand Quarry (SSD 6125)		
Meeting place: Independent Planning Commission Offices, 201 Elizabeth Street.		
Attendees: Commission Members: Ms Dianne Leeson (Chair), Mr Peter Cochrane, Mr Peter Duncan AM and Ms Abigail Goldberg Commission Secretariat: Mr David Mooney (Team Leader) and Mr David Way (Senior Planner) NSW Department of Health: Professor David Durrheim, Dr Ben Scalley (Director, Environmental Health Branch) and Dr Anthea Katelaris (Applied Epidemiology)		
The purpose of the meeting: For the Department of Health to discuss the Cabbage Tree Sand Quarry project (the project) with the Commission		
Matters Discussed: • Introductions • The Department of Health provided their views on human health risks associated with Perfluoroalkyl and polyfluoroalkyl substances (PFAS) broadly and in relation to the project, including: - As a principal consideration the Department of Health was guided by the principle that for PFAS to have a human health impact an exposure pathway and a significantly high concentration of PFAS are both required. The lack of an exposure pathway of and elevated concentrations of PFAS reduced or eliminated risks to human health. - There are two potential pathways in the region, ingestion (including through water) and inhalation from contamination dust. - Advice provided by the Department of Health was targeted to consider human health impacts from developing the project. This advice builds upon studies provided by other state and Commonwealth agencies which looked to define the extent and the behaviour of the PFAS in the region. • Ongoing water monitoring can be informative, but any positive sample should be considered with regard to the concentration measured, noting low levels of PFAS are common in the environment, as well as the existence of an exposure pathway. • Silicosis has been raised as a concern by the community, but is associated with prolonged exposure to very high concentrations of fine silica dust found in industrial settings. The assessed changes in air quality from the project make this very unlikely.		
Documents [tabled at meeting/to be provided]: NA		
Outcomes/Agreed Actions: NA		
Meeting closed at *12:45 pm*		

APPENDIX 2
LIST OF SPEAKERS

Independent Planning Commission
Cabbage Tree Road Sand Quarry- D500-18

Date and Time: Monday 12 March 2018, 12:30 pm

Place: Mercure Newcastle Airport, 2 Williamtown Drive Williamtown NSW

List of Speakers

1. Kate Washington MP, Member for Port Stephens
2. Des Maslen
3. Brian Curry
4. Cain Gorfine (Williamtown & Surrounds Residents Action Group)
5. Dorothy Harland
6. Rhianna Gorfine
7. Geoffrey Dingle
8. Nigel Water (Port Stephens greens, Tomaree Rate Payers & Residents Association and Eco-Network Port Stephens)
9. Wayne Sampson
10. Rob Scaife