



ADVISORY COMMITTEE

PO Box 552, Katoomba NSW 2780

Phone: 0419 307 099

gbm.worldheritage@environment.nsw.gov.au

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Our contact Jacqueline Reid ph: 0419 307 099

Mr Carl Dumbleton
Mining and Industry Projects
NSW Department of Planning & Environment
GPO Box 39
Sydney NSW 2001

Dear Mr Dumbleton,

Re: Tinda Creek Sand Quarry Expansion Application Number SSD 4978

The Greater Blue Mountains World Heritage Area (GBMWA) Advisory Committee was jointly appointed by the Commonwealth and State Environment Ministers to advise on matters relating to the protection, conservation, presentation and management of the GBMWA, which was inscribed on the World Heritage List in 2000 for its outstanding natural values.

The Advisory Committee thanks the NSW Department of Planning & Environment for the opportunity to make comment on the proposed Tinda Creek Sand Quarry Expansion - Application Number SSD 4978. The Advisory Committee has always taken a strong position that it is essential to consider any adverse impacts; both direct and indirect; on World Heritage and other heritage values which may arise from developments that occur adjacent to the GBMWA. On this basis, and in light of the impacts of the proposal, the Advisory Committee objects to the proposed Tinda Creek Sand Quarry Expansion.

The GBMWA was inscribed on the World Heritage List in 2000 because it satisfied two of the criteria for natural values of Outstanding Universal Value (OUV), namely that World Heritage places should:

- *be outstanding examples representing significant on-going ecological and biological processes in the evolution and development of terrestrial, fresh-water, coastal and marine ecosystems and communities of plants and animals; and*
- *contain the most important and significant natural habitats for in-situ conservation of biological diversity, including those containing threatened species of outstanding universal value from the point of view of science or conservation.*

Examples of the GBMWA's World Heritage values include outstanding diversity of habitats and plant and animal taxa, including a large number of plant and animal taxa of high conservation significance. The Australian Government has an international obligation, under the World Heritage Convention, to ensure the identification, protection, conservation, rehabilitation and presentation of the GBMWA and its transmission to future generations.

The GBMWA faces a range of threats to its immediate and long-term integrity. The GBMWA does not exist in isolation and adjacent land uses have the potential to impact significantly on the values of the GBMWA. Complementary management of adjoining land is therefore critical to the long term maintenance of the Area's integrity.

The Advisory Committee is therefore concerned that developments on lands surrounding the GBMWhA do not impact detrimentally on the World Heritage values. The proposed development is adjacent to, and largely surrounded by, the GBMWhA (Wollemi and Yengo National Parks).

Proposed development in relation to the GBMWhA

The proposed Tinda Creek Sand Quarry Expansion seeks to expand an existing quarry operation. An Environmental Impact Statement (the EIS) for the proposed development (Umwelt [Australia] Pty Ltd 2014), to be located in Lots 1, 2 and 3 in DP 628806 (the study area), indicates that the proposed development includes:

- expanding the existing extraction area to increase production levels from Tinda Creek Quarry to enable extraction of approximately 7Mt of sand product over 30 years;
- an additional proposed extraction area of approximately 50 ha with extraction to a depth of 15 m;
- transporting sand from the quarry via road;
- backfilling with clean fill brought opportunistically to the site as backloads (amount of backfilling not certain and source of fill material unspecified); and
- site rehabilitation and monitoring.

The proposed expansion has been deemed a 'controlled action' by the Commonwealth Department of the Environment.

The study area is within the upper reaches of Tinda Creek catchment. Surface drainage from the study area flows westwards into the Wollemi National Park and the GBMWhA, including into Gibba Swamp on the western side of Putty Road, and thence into Wollemi Creek and the Colo River. An existing quarry located in Lot 2 has been operating for about 30 years. The existing quarry is approximately 500 m from the eastern, northern and southern boundaries of the study area and over 1 km from the downstream western boundary. At present, the buffer between the GBMWhA/ national parks and the existing quarry includes areas of native and disturbed vegetation.

The EIS sets out two alternatives for the proposed mining expansion but does not stipulate a preferred option. It appears that quarrying is planned to occur in either of the areas identified in the EIS as Domain 3 or Domain 7, but not both. Both Domain 3 and Domain 7 contain areas of significant vegetation in apparently good condition, however the alternative of not quarrying in both Domain 3 and Domain 7 is not appraised in the EIS. It is uncertain whether the area to be retained (Domain 3 or Domain 7) will be conserved in perpetuity.

Ecological significance of study area

The EIS has found that the biodiversity values of the study area are exceptionally high. The high biodiversity values of the study area complement and help maintain the listed values of the adjacent national parks and GBMWhA. Given the proximity of the area to the GBMWhA, the existing exchange of genetic material (plant and animal) and fauna (including threatened species) between the study area and the WHA enhances the listed values of the GBMWhA.

The high biodiversity values of the study area include:

- **Threatened Ecological Communities**

The EIS states that no threatened ecological communities occur in the study area. However, the EIS notes that while Office of Environment and Heritage (OEH) vegetation mapping (DECC 2008) of the study area describes the sedgelands in the study area as 'Hunter Range Flats Freshwater Wetland', they found that these sedgelands do not fit the description of 'Hunter Range Flats Freshwater Wetland'. The EIS describes the sedgelands in the study area as Mellong Sandmass Sedgeland and states that this vegetation community "conforms to the description of Sydney Hinterland Sandstone Upland Swamp". The EIS does not recognise that Sydney Hinterland

Sandstone Upland Swamp (DECC 2008) is included in the endangered ecological community 'Coastal Upland Swamp in the Sydney Basin Bioregion', which is listed under the NSW TSC Act (NSW Scientific Committee 2012) and Commonwealth EPBC Act (Department of the Environment 2014a).

The Native Vegetation of Yengo and Parr Reserves and Surrounds (DECC 2008) indicates the presence of an endangered ecological community 'Hunter Range Flats Paperbark Thicket' (a component of 'River-flat Eucalypt Forest on Coastal Floodplains', an endangered ecological community listed under the NSW TSC Act), at the western end of the site spanning Lots 1 and 2 and immediately upstream of Gibba Swamp. This endangered ecological community is not discussed in the EIS.

- **Regionally significant vegetation communities**

Three vegetation communities identified in the study area have high conservation significance at regional level: Mellong Sandmass Dry Woodland, Mellong Sandmass Swamp Woodland and Mellong Sandmass Sedgeland. These communities are confined to the perched alluvium and silty loams on the Mellong Plateau (Bell *et al.* 1993) where they overlie particularly sandy soils (Keith 2004). The Mellong sandmass woodland/forest vegetation is naturally isolated and rare (Ryan *et al.* 1996, DECC 2008) and hence distinct from other forms of the vegetation class Sydney Sand Flats Dry Sclerophyll Forest to which the Mellong Sandmass vegetation belongs (Keith 2004). On private lands, these communities have been largely cleared for sand mining and grazing. While, as stated in the EIS, a large proportion of the remaining regionally significant vegetation is now situated within Yengo and Wollemi National Parks, occurrences of these communities in conservation reserves (Yengo and Wollemi National Parks) are restricted and this vegetation type is considered to be poorly conserved (Ryan *et al.* 1996).

- **Groundwater dependent ecosystems**

Two groundwater dependent ecosystems were recorded in the study area: Mellong Sandmass Swamp Woodland and Mellong Sandmass Sedgeland. These groundwater dependent ecosystems extend into the adjacent Yengo and Wollemi National parks and the GBMWA. Of particular note, is the occurrence of Gibba Swamp, a ground water dependent ecosystem which lies downstream of the study area along Tinda Creek, immediately to the west of Putty Road. Gibba Swamp is an area of some 200 ha of the regionally significant Mellong Sandmass Woodland (Smith and Smith 1992).

- **Threatened flora and known threatened flora habitat**

Grevillea parviflora ssp. *Parviflora* is listed as Vulnerable under both the NSW TSC Act and Commonwealth EPBC Act. A large population (849 plants) occurs in the study area. The Commonwealth species profile for *Grevillea parviflora* ssp. *parviflora* (Department of the Environment 2014b) indicates only two known populations (one at Bargo, approximately 2000 plants; one at Cooranbong, 2952 plants) of greater size than the one recorded in the study area. A number of populations of this species are known to have become extinct following disturbance.

- **Threatened fauna and known threatened fauna habitat**

Fifteen threatened fauna species, and habitat for these species, were recorded in the study area including:

- 2 species (New Holland Mouse and Koala) listed under the Commonwealth EPBC Act; and
- 14 species (Rosenberg's Goanna, Powerful Owl, Masked Owl, Scarlet Robin, Varied Sittella, Koala, Eastern Pygmy Possum, Squirrel Glider, Eastern Bent-wing Bat, Eastern Cave Bat, Large-eared Pied Bat, Eastern False Pipistrelle, East Coast Freetail-bat and Greater Broad-nosed Bat) listed under the NSW TSC Act.

Estimates of the abundance of threatened fauna species in the study area are not provided in the EIS.

Likely impacts of proposed mine expansion

Likely impacts of the proposed mine extension include:

- loss of native vegetation communities including threatened and regionally significant communities;
- loss of habitat and individuals of one threatened plant species;
- loss of habitat and individuals of 15 threatened fauna species;
- loss of potential core habitat for the Koala;
- loss or degradation of ground water dependent ecosystems both on site and in adjacent national parks and the GBMWA, Gibba Swamp being a particular concern;
- potential long term groundwater management issues, both on and off site, resulting from quarrying expanded areas of the site to a depth of 15 m and subsequent reshaping of the land surface;
- potential impacts of pollution, both on and off site, for example on Gibba Swamp, due to modified surface water and groundwater flows;
- greatly increased edge effects impacting on identified population of *Grevillea parviflora* ssp. *parviflora* owing to lengthy unbuffered interface between mining expansion and plant population;
- greatly increased edge effects extending into the GBMWA and national parks arising from very substantial reduction in widths of buffers and increase in the length of interface between disturbed and natural areas. In parts, a buffer between proposed mining and the GBMWA as low as 14 m is proposed. The likely effectiveness of such a buffer is not demonstrated in the EIS; and
- reduced exchange of genetic material (plant and animal) and fauna (including threatened species) between the study area and the GBMWA.

Adequacy of offsetting of impacts

The EIS is required (Amended Director General's Environmental Assessment Requirements, dated 12 December 2012) to provide details of:

- a comprehensive offset strategy to ensure the development **maintains or improves** the terrestrial and aquatic biodiversity values of the region in the medium to long term.

As noted above, adjacent land uses have the potential to impact significantly on the listed values of the GBMWA and complementary management of adjoining land is critical to the long term maintenance of the GBMWA's integrity. The Preliminary Environmental Assessment for the proposed Tinda Creek sand quarry expansion (Umwelt November 2012) stated that "it is proposed that a biodiversity offset strategy will be developed in order to maintain or improve current biodiversity values of the area". The Advisory Committee strongly supports the requirements of the Director General and the intention of the Preliminary Environmental Assessment, namely that the proposed development should maintain or improve the terrestrial and aquatic biodiversity values of the region in the medium to long term.

The NSW OEH's Interim Policy on Assessing and Offsetting Biodiversity Impacts of Part 3A, State Significant Development (SSD) and State Significant Infrastructure (SSI) sets out three alternative standards to be applied, which, in decreasing order of preference, are termed Tier 1 (improve or maintain), Tier 2 (no net loss) and Tier 3 (mitigated net loss):

- The Tier 1 'improve or maintain' standard is the normal standard applied under the BioBanking Assessment Methodology (BBAM), where 'red flag' assets (endangered ecological communities) are protected and clearing only occurs within the variation rules set out in the BBAM, and the offsetting requirements determined by the BBAM credit calculator are fully met.
- The Tier 2 'no net loss' standard is applied to State Significant developments when red flag assets are not protected, or only partially protected, and clearing is allowed that is inconsistent with the BBAM, but all impacts are fully offset in accordance with the offsetting requirements determined by the BBAM credit calculator.

- The Tier 3 'mitigated net loss' standard is applied to State Significant developments where the amount and type of offsetting proposed is inconsistent with the BBAM requirements. Offsetting is allowed under a series of variation criteria that are set out in the policy.

The Director General's requirement, that offsets must maintain or improve biodiversity, dictates that the 'improve or maintain' standard of the BBAM – the Tier 1 standard – must be adopted. However, the EIS has elected (EIS 7.1.2.1) to adopt the least preferred Tier 3 'mitigated net loss', the weakest offsetting option available, but provides no justification as to why this least preferred option is considered appropriate. According to the OEH Interim Policy, Tier 3 cannot be applied to flora or fauna species, such as *Grevillea parviflora* ssp. *parviflora*, Koala, New Holland Mouse (all recorded in study area), listed under EPBC Act when the proposed development is a controlled action nor can it be used to compensate clearing of endangered ecological communities. The Advisory Committee submits that in light of the additional potential impact on the GBMWA, deviation from the normal Tier 1 standard cannot be justified.

The Advisory Committee does not understand why the BioBanking Assessment Methodology, including using the BBAM credit calculator to determine the number of ecosystem and species credits required to be offset, has not been applied in the EIS. This is now the standard approach in NSW for objectively assessing biodiversity impacts and offsetting requirements. The EIS is required to prepare a comprehensive offsetting strategy which demonstrates that biodiversity values will be improved or maintained, yet the EIS provides no indication as to how many ecosystem and species credits are required to be offset.

The EIS states that offsets must be achieved on site, but provides no justification as to why this is so. The EIS makes some attempt to provide offsets for loss of vegetation communities but does not show how loss of threatened fauna habitat will be offset. The Advisory Committee does not consider it acceptable that offsets are not provided to compensate for loss of fauna, particularly threatened fauna habitat.

The EIS indicates that some of the impacts of the development will be offset through rehabilitation of the site following mining. Examination of the aerial photograph in the EIS, indicates that little, if any, rehabilitation has occurred in the existing extraction area over the last 30 years. Little vegetation is evident in this area. Figure 4.3, Appendix 7 of the EIS indicates, in contrast to the undeveloped parts of the study area, a dearth of threatened fauna species in the existing extraction area. Apart from 4 threatened microbat species (which presumably are flying over), only one threatened species, the Squirrel Glider, was recorded on the southern boundary of the existing extraction area. The lack of threatened fauna, apart from microbats flying overhead, accords with the findings of a 1992 survey (Smith and Smith 1992) of the extraction area. The 1992 survey, which did not include microbats, found no threatened fauna species in the disturbed extraction area.

The EIS does not make it clear how the site will be revegetated following mining. Replacement of the original high conservation value vegetation is desirable, but is in no way guaranteed. The original vegetation grows on deposits of sand above a lower clayey layer. When the underlying sand has been removed by mining to a depth of 15m and the surface contours, drainage and ground water have been altered, it is highly unlikely that the original vegetation can be restored, even in the long term.

The EIS claims that there are currently no offsite impacts from the existing mining operation owing to surface run-off from the site or alterations to ground water. The evidence for such claims is lacking in the EIS. It is also questionable whether an apparent lack of impacts from the existing mining operation can be extrapolated to conclude that no impacts will result from a much expanded operation.

Two areas (dependent on whether Domain 3 or 7 were quarried) are proposed as possible offsets in the EIS, together with the suggestion of their possible subsequent inclusion in Yengo National Park. The value of each of these offsets, as offered post mining, will be much diminished by their

lengthy and irregular perimeters and the lack of buffers between them and the highly disturbed area of mining.

Conclusion

The Advisory Committee objects to the proposed expansion of the Tinda Creek sand quarry. The Advisory Committee believes that the proposed expansion would be an overdevelopment of the site, particularly given its proximity to the GBMWHa and its outstanding natural values which complement the listed values of the GBMWHa. The Advisory Committee does not believe that the offset strategy provided in the EIS demonstrates that biodiversity values in the area adjacent to the GBMWHa will be 'maintained or improved'.

The Advisory Committee believes that the risks associated with the much expanded development, including through direct loss of high conservation value vegetation, loss of threatened fauna and their habitats, exacerbation of edge effects resulting from clearance and disturbance of vegetation, as well as changes to surface water flows and ground water, at the boundary of national parks and the GBMWHa, are likely to cause adverse impacts to the Outstanding Universal Value of the GBMWHa and are therefore unacceptable. Further, the EIS has not demonstrated with certainty that the site could be adequately rehabilitated to restore its existing high conservation values after mining.

If you would like more information about the GBMWHa Advisory Committee, please contact the Executive Officer, Jacqueline Reid by telephone to 0419 307 099 or via email to jacqueline.reid@environment.nsw.gov.au

Yours sincerely,



Prof Richard Mackay, AM

Chair

Greater Blue Mountains World Heritage Area Advisory Committee

18/08/2014

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