



Nathan Heath
Planning Officer
Planning and Assessment Group
Department of Planning, Industry and Environment
4 Parramatta Square, 12 Darcy Street
Parramatta NSW 2150

Dear Mr Heath

Subject: Exhibition - Upper South Creek Advanced Water Recycling Centre (SSI-8609189) – NPWS and EPBC Act World Heritage Properties (s12 and 15A) and National Heritage Places (s15B and 15C)

Thank you for your email received 15 October 2021 requesting comments from Environment, Energy and Science Group (EES) on the Upper South Creek Advanced Water Recycling Centre (SSI-8609189) during the exhibition stage of the project.

As you are aware, on 1 December 2021, EES provided detailed comments in relation to biodiversity, floodplain risk management and waterway health matters and advised that comments in regard to National Parks and Wildlife Service (NPWS) reserves would be provided separately.

EES also noted that the proposal is an *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act) controlled action and that comments in regard to World Heritage Properties (s12 and 15A) and National Heritage Places (s15B and 15C) would also be provided separately.

EES has now reviewed the relevant documents and provides detailed comments in regard to NPWS reserves and EPBC Act World Heritage Properties and National Heritage Places in Attachment 1. Appendix J (Section 14.4, p. 408) recommends that the proposed activity is undertaken in consultation with the NPWS. This approach is supported and NPWS would welcome the opportunity to provide further comment as the proposal progresses.

If you have any queries please contact Marnie Stewart via marnie.stewart@environment.nsw.gov.au or 02 9995 6868.

Yours sincerely

A handwritten signature in black ink that reads 'S. Harrison'.

08/12/21

Susan Harrison

**Senior Team Leader Planning
Greater Sydney Branch
Biodiversity and Conservation**

Attachment 1 – EES comments on the Upper South Creek Advanced Water Recycling Centre (SSI-8609189) EIS and technical reports – NPWS reserves and World Heritage properties

EPBC Act – Matters of National Environmental Significance

EPBC Act - World Heritage Properties (s12 and 15A) and National Heritage Places (s15B and 15C)

NPWS has an interest in the proposal given changes to water levels, flows and water quality along the Nepean River as a result of the proposal have the potential to impact sections of Blue Mountains National Park that are included in the Greater Blue Mountains Heritage Area.

Identification of the Outstanding Universal Values of the property

The World Heritage Assessment (Appendix Q, Executive Summary, p. 2) states that “The Outstanding Universal Values (OUV) identified in the World Heritage List relate to the natural heritage values.” However the Statement of Outstanding Universal Values (OUV) for the Greater Blue Mountains Area (GBMA) (available [online](#)) also includes Indigenous relationships, water systems and natural beauty. An expanded analysis considering these matters alongside the natural heritage values would contribute to a more robust assessment of potential impacts to the OUV of the GBMA. Adding reference to this Statement of Outstanding Universal Value (2013) to the Documentation and reference list of the World Heritage Assessment (p. 11) could also ensure this is a more complete set of references.

The assessment undertaken in Table 4.1 World Heritage Values (World Heritage Assessment, p. 30) appears appropriate but could be strengthened by also considering the other values that support the Integrity of the property that are described in the Statement of OUV. These other values include Indigenous associations, water systems, geodiversity, wilderness and adjacent lands and natural beauty. Similarly, the assessments in Table 5.1 Potential interactions between the World Heritage Values and the project (p. 36) and in Table 5.4 Heritage values within the study area (p. 55) could also be strengthened by considering the other values identified in the Statement of OUV given the 13 kilometre stretch (plus unmapped areas of tributaries) contain outstanding natural values that would be impacted.

Threats to the Outstanding Universal Values of the property generally

Treated water releases to South Creek, Nepean and Warragamba rivers have potential to impact riparian vegetation and aquatic ecology along the length of the Nepean River as it flows through the Greater Blue Mountains Area (GBMA). These are attributes of the Outstanding Universal Value (OUV) of the property. [The Greater Blue Mountains World Heritage Area \(GBMWhA\) Strategic Plan](#) requires that where developments might have an unknown but potentially significant impact on the World Heritage and other values of the GBMWhA they should be modified to minimise the risk of impact on those values or they are not to proceed. The Strategic Plan also states that terrestrial and aquatic ecosystems and their associated ecological processes, species, populations and genetic diversity should all be protected and conserved in-situ. Specifically, the Australian and New South Wales governments have a commitment to [identify, protect, conserve, present and transmit to future generations](#) the Outstanding Universal Value of the GBMA.

The World Heritage Assessment (Appendix Q, Executive Summary, p. 4) states that the project would only have indirect impacts on the GBMWhA, resulting from proposed water releases through a small portion of the Blue Mountains National Park. While the project might only relate to a “small portion” of the national park, the integrity of the World Heritage property refers to wholeness and intactness and the proposal will contribute to cumulative impacts on the OUV, both

within and adjacent to the GBMA. The Warragamba and Nepean rivers make a contribution to the integrity of the World Heritage property and so an assessment of the impacts (if any) of the proposal on the integrity of the World Heritage property with regard to “wholeness and intactness” would serve to strengthen the EIS and the conclusions it reaches.

Use of modelling in determining flow and nutrient load impacts

The Ecohydrology and geomorphology impact assessment (Volume 3 Impact Assessment, p. 294) identifies potential anomalies in the model outputs at several locations, including upstream of Norton’s Basin and at the Glenbrook Creek Nepean River confluence. The impact assessment (Volume 3 Impact Assessment, p. 295) also acknowledges the coarseness of data available and acknowledges that data anomalies may be inherent in complex terrain, over large spatial scales and across multiple flow scenarios. If the EIS is relying on modelling for flows and nutrient load levels, an increased effort to determine potential flows and nutrient loads (across spatial, temporal and climate scenarios) entering the GBMA would be recommended to ensure the proposal aligns with Management Response 2.4 (p. 28) of the GBMWA Strategic Plan which requires the precautionary principle to be applied where there is doubt about any potential impacts of an action on World Heritage values.

The impact assessment (Table 8-46, Volume 3 Impact Assessment, p. 419) identifies that in some locations increases in wetted perimeter would be up to 11 metres. It appears inaccurate for the EIS to focus on a “positive impact” based on benefits to aquatic fauna (see Table 8-46 Summary of potential impacts from AWRC releases to aquatic ecology in Nepean and Warragamba rivers, p. 419). Given the “coarseness” of the data and the anomalies referenced, potential increases to water levels could also be higher in areas where the river narrows.

It is also noted an increase in wetted area of 11 metres has potential to cause additional shading of the bed of the river, that if flowing quickly the river would scour the benthic habitat, if slow moving would result in deposition of silt and sediment in the GBMA and that Erskine and Euroka Creeks would also hold water for longer periods during high rainfall. These are likely impacts on aquatic ecology and riparian vegetation (part of the property’s OUV) that would occur in a number of waterways in the GBMA as a result of the proposal.

The Executive Summary of the World Heritage Assessment (p. 2) finds that the project would result in improved water quality and beneficial outcomes for aquatic ecology. This conclusion might need revisiting given the project would increase nutrient loads, particularly nitrogen, and given such changes have potential to cause increased turbidity, algal growth and possibly low dissolved oxygen levels associated with eutrophication. In turn these impacts have potential to affect aquatic and terrestrial species along the riverbank traversing GBMA and in upstream creeks in the event of high rainfall.

The assessment of water quality (Appendix Q World Heritage Assessment, p. 58) identifies that higher concentrations of nutrients would be introduced in releases during more severe wet weather, due to higher content of tertiary treated water and that these “spikes” present localised downstream effects. The higher concentration of nutrients will impact aquatic and riparian species, part of the OUV of the World Heritage property. There are predicted to be more severe wet weather events resulting from climate change, however assessment of climate change’s interactions with the proposal’s impacts appears to have been limited to the section on climate change in Chapter 12 of the EIS. Given the size and complexity of the EIS a section on how climate change would exacerbate risks to each consideration might also be appropriate in the assessment of each factor (e.g. World Heritage) to make it easier to understand how these processes would interact.

Impacts to biodiversity

The summary of predicted impacts to aquatic ecology in the Nepean and Warragamba rivers (Volume 3 Impact Assessment, p. 423) identifies potential changes to the vegetated bar at the mouth of the Glenbrook Creek, including die back due to an increase in wetted perimeter. The EIS should specify the species and vegetation communities that will be affected for ease of assessment. The potential for increased weeds resulting from higher nutrient loads is also a potential impact on the OUV of the GBMA that it is recommended to be considered in the EIS.

Section 6.4.2 (p. 61) of the World Heritage Assessment identifies that increased inundation frequency is predicted to result in impacts to an additional 0.12 to 0.19 ha of native vegetation. The EIS finds that these impacts are considered unlikely to result in a significant impact to these species and communities. However, it is difficult to adequately assess the level of impact without the EIS explicitly identifying the species and communities that would be affected. The EIS should make this clear.

Table 8.2 Blue Mountains National Park Plan of Management policies and their application to the Heritage Impact Assessment (HIA) (Appendix A of the World Heritage Assessment, p. 85) identifies that the project would result in more frequent inundation to 0.84 hectares of five Plant Community Types (PCT) including PCT 835 Forest Red Gum. This has been assessed as a slight impact based on the limited area impacted. However Section 5.5.1 Study Area Interaction (World Heritage Assessment, p. 44) notes that PCT 835 Forest Red Gum meets the key diagnostic criteria for the listing of River-flat Eucalypt Forest on Coastal Floodplains of the New South Wales North Coast, Sydney Basin and South East Corner Bioregions which is critically endangered under the Environment Protection and Biodiversity Conservation Act 1999 and endangered under the Biodiversity Conservation Act 2016. A “slight impact” to a critically endangered community appears to be an inaccurate assessment.

Figures 2.12 and 2.13 of Appendix J Biodiversity Assessment (pp. 22-23) show that the areas downstream of the release points and subject to impact from inundation were not included in the “impact assessment area” and not considered to be part of the “impact area”. As identified in the EIS raised water levels have the potential to impact biodiversity adjacent the rivers, however this potential impact does not appear to have been captured in the Biodiversity Assessment.

The EIS assesses the impacts on platypus and echidna to be negligible (Section 7.11 of the Executive Summary, p. 44). However, platypus are wholly dependent on high quality aquatic habitat with good water quality and aquatic flora and fauna including intact riparian areas. If any platypus are present (or likely to be present) in the affected area it is considered that the impact would instead be significant given platypus are part of the OUV for the area.

It should also be noted in the EIS, to ensure all impacts are captured, that all fauna (i.e. not just platypus and echidna) are considered attributes of OUV.

Impacts to natural beauty

Aesthetics (visual) is assessed as having a “high” integrity and authenticity however as having a “low” value (Table 5.4 of the World Heritage Assessment, p. 55). This assessment is based on the area not being identified as one of the key lookouts in the Blue Mountains. Regardless of Table Rock being a “key lookout”, the natural beauty of the GBMA contributes to the integrity of the property and so the “low” value assessment needs revisiting.

Recreational opportunities in GBMWA

The EIS (Table 8-24 Recreation areas along Nepean River, Volume 3 Impact Assessment, p. 351) identifies Norton's Basin as a recreational destination along the Nepean River. The impacts of water quality changes on the recreational value of this swimming area do not appear to be assessed in the EIS though.

Indigenous sites and connections contribute to the Integrity of the GBMA in the Statement of OUV

Comments on Indigenous sites and connections are made in the Aboriginal Cultural Heritage section below, however, also have relevance to GBMWA, particularly as they contribute to the integrity of the GBMA as identified in the Statement of OUV.

Access to the GBMWA

Comments on visitor access to and recreation opportunities in Blue Mountains National Park are made in the National Parks and Wildlife Service reserves section below, however, also have relevance to the GBMWA.

Consideration of the State of Conservation report 2004 Greater Blue Mountains Area (Australia)

The Documentation and reference list of the World Heritage Assessment (p. 11) and EIS overall could be strengthened by referencing the State of Conservation report 2004 Greater Blue Mountains Area (Australia). The document is [available online](#) and in it (28 COM 15B.15, p. 81) the World Heritage Committee encourages the prevention of any developments that could have adverse effects on the World Heritage property. The Conservation issues presented to the World Heritage Committee in 2004, [available online](#), also identify that, under the *Environment Protection and Biodiversity Conservation Act 1999*, undesirable actions are to be discouraged not only within a World Heritage area but also outside the area. This is consistent with the assessment undertaken in informing the above comments, whereby World Heritage values (and impacts to these values) do not simply stop at World Heritage Area boundaries.

Aboriginal cultural heritage – World Heritage and NPWS estate

The Aboriginal Heritage Information Management System (AHIMS) sites which are in the study area referenced in the World Heritage Assessment (Appendix Q) are not mentioned in the Aboriginal Cultural Heritage Assessment Report (ACHAR) (Appendix O) for the project. It is noted that the two assessments are by different consultants, the World Heritage assessment is undertaken by EMM and the ACHAR was undertaken by Keller Knightingale Consulting.

The AHIMS sites noted to have been erroneously mapped in Section 6.7.1 (p. 62) of the World Heritage Assessment should be corrected and updated on AHIMS and as such a new map provided showing these updates, rather than just leaving the data as incorrect. Section 5.8.2 of the World Heritage Assessment (p. 48) states that over 1,000 AHIMS sites are located in the GBMWA, however this figure is now over 1,500 sites.

It is unclear whether all the registered Aboriginal parties (RAPs) in the ACHAR were involved in the world heritage assessment – or whether the comments from the ACHAR were just used. The process followed should be clarified. It is also unclear from the ACHAR whether the two sites above the raised water level were even checked or inspected.

The impact assessment states that the sites would not be impacted but the HIA states that field inspections were not undertaken as previous sites were adequately assessed to allow for the determination of impacts. This is of concern as it implies the Aboriginal community were not

involved in determining the impacts to those sites that are stated to be above the increased water level. If the ACHAR did not inspect the two sites above the raised water level this would mean there was no confirmation of their location or if the Aboriginal community had any concerns on the impacts to these two shelters with Art. It is recommended this is undertaken.

The assessment of “unknown” integrity and authenticity and attribution of a “low” value to Indigenous sites (Table 5.4 of the World Heritage Assessment, p. 55) is a misleading statement and potentially offensive to Aboriginal people and should be rated high and high, noting that the EIS states “the study area does not contain art or open sites of research.” It is clear that the EIS relies on AHIMS reports and no additional Aboriginal cultural heritage assessment was carried out for the area that will be inundated along the Nepean River.

National Heritage is a ‘matter of national environmental significance’ and controlling provision for this proposal. Therefore, EPBC Schedule 5B - (National Heritage management principles) applies and include:

6 Indigenous people are the primary source of information on the value of their heritage and the active participation of indigenous people in identification, assessment and management is integral to the effective protection of indigenous heritage values.

Whether this assessment is adequate is a matter for the Aboriginal groups involved.

In the publicly exhibited version Figure 5.1 “Gundungurra Indigenous Land Use Agreement Area and Aboriginal Heritage Information Management System search results” (World Heritage Assessment, p. 50) was redacted. While the redaction of the AHIMS details is supported it is noted that the Gundungurra Indigenous Land Use Agreement (ILUA) area map is publicly [available online](#). The inclusion of coordinates of Aboriginal cultural heritage sites (see Section 5.8.2 Registered Aboriginal sites in the AHIMS database, p. 53) is not appropriate.

National Parks and Wildlife Service reserves

NPWS has a strong interest in the proposal given the pipeline alignment traverses south of Western Sydney Regional Park, north of Kemps Creek Nature Reserve and north of lands acquired under the NPW Act for future reservation. The environmental flows pipeline and water release area into the Warragamba River is proximate Blue Mountains National Park and is to the north of Burratorang State Conservation Area. Changes to water levels, flows and water quality along the Nepean River as a result of the proposal have the potential to impact Blue Mountains National Park.

Adjacent development guidelines – Developments adjacent to National Parks and Wildlife Service lands

Appendix J (Section 14.4, p. 408) refers to an outdated 2013 version of NPWS Adjacent development guidelines. The [Developments adjacent to National Parks and Wildlife Service lands](#) (NPWS 2020) resource has recently been updated, and provides general guidance on the priority environmental considerations for impact assessments adjacent or adjoining park. It is recommended the EIS is updated to refer to these current guidelines.

Adequacy of assessment of likely impacts to NPWS estate

The EIS fails to identify whether the impacts of raised water levels of 5-10 centimetres would impact NPWS lands, or whether they would occur adjacent NPWS estate, on other tenures. This is an essential question to answer before undertaking an assessment of impacts to NPWS lands. It is also noted that the Biodiversity Assessment contained in Appendix J (Section 14.4, p. 408) contains only a very limited discussion of potential impacts to NPWS lands.

Mapping of lands acquired under the National Parks and Wildlife Act

An area north of the land reserved as Kemps Creek Nature Reserve has been acquired under the NPW Act for future reservation. This land is not shown on the maps in the EIS, including those showing other open spaces and conservation lands.

It is recommended that the EIS mapping is updated to also show lands acquired but not yet reserved under the NPW Act, as the alignment runs proximate to this NPWS managed land, however this is not currently identified in the EIS. NPWS is able to provide Sydney Water with updated details and mapping of NPWS estate if required.

Impacts to wildlife corridors

As identified in the BDAR, the pipeline construction and recovery of the areas where the pipeline has been constructed will result in impacts to wildlife movement corridors (such as the South Creek Corridor and Kemps Creek corridor). The potential impacts of this loss of connectivity has the potential to impact fauna that also use habitats on park, particularly corridors north and east of Kemps Creek Nature Reserve and north and east of lands acquired under the NPW Act (see comment above). Pipeline siting, design and construction methods that minimise the extent of this loss of connectivity are required, such as limiting the pipeline corridor and construction footprint to already disturbed areas in this locality.

Access to Blue Mountains National Park and impacts to visitation

Increased water levels in the Nepean River would in turn increase water levels at Glenbrook Creek, causing high water levels for longer periods over the causeway crossing to Euroka. Inundation of this causeway impacts visitation levels and so higher water levels are anticipated to impact NPWS visitors' ability (bushwalking and vehicle access) to access certain sections of Blue Mountains National Park.

Other impacts to NPWS estate

It is noted that those matters raised above regarding GBMWA would also have relevance to Blue Mountains National Park given the reservation area of the national park and the GBMA World Heritage Boundary largely overlap, including the Aboriginal cultural heritage issues raised.

Assessment of cumulative impacts

Table 7-5 (Flood Impact Assessment, p. 161) provides that the Warragamba Dam Raising EIS is still under development and impacts have not been published, however the Warragamba Dam Raising EIS is currently on public exhibition. The [IUCN has noted alarm](#) at the proposed raising of the Warragamba Dam would inundate over 1,000 hectares of the GBMWA and 3,700 hectares of the surrounding national park.

The EIS should be updated to also consider the cumulative impacts of the subject proposal alongside the dam raising proposal.