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Your ref: SSD-10435

Ellen Luu

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Dear Ellen

Central Waste Plant Resource Recovery Facility Kurri Kurri (SSD 10435) – Review of Environmental Impact Statement

I refer to your email dated 9 April 2021 in which Planning and Assessments Group (P&A) of the Department of Planning, Industry and Environment (the Department) invited Biodiversity and Conservation Division (BCD) of the Department for advice in relation to the Central Waste Plant Recover Facility, located at 1 and 8 Styles Street (Lot 1/DP1128108 and Lot 5/DP1251190) in Kurri Kurri.

BCD has reviewed the '*Kurri Kurri Resource Recovery Facility Expansion Environmental Impact Assessment*' (prepared by EMM Consulting Pty Limited and dated March 2021), including relevant appendices, annexures and attachments in relation to impacts on biodiversity and flooding.

A biodiversity development assessment report waiver was issued for the project on 21 April 2020 and no further biodiversity assessment is required. BCD's recommendations on flooding are provided in **Attachment A** and detailed comments are provided in **Attachment B**.

If you require any further information regarding this matter, please contact Steve Crick, Senior Team Leader Water, Floodplains and Coast, on 4927 3248 or via email at rog.hcc@environment.nsw.gov.au

Yours sincerely



10 May 2021

STEVEN COX
Senior Team Leader - Planning
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Biodiversity and Conservation Division

Enclosure: Attachments A and B

BCD's recommendations

Central Waste Plant Resource Recovery Facility Kurri Kurri

Flooding and flood risk

1. Primary water treatment facilities should not be located below flood planning levels. Alternatives for collecting and treating water should be considered. Storage of clean water for reuse on site could occur below flood planning levels.
2. Separation of treatment and storage of stormwater should be undertaken to reduce overflow of untreated water to the adjacent water course.
3. The proponent should develop a detailed evacuation plan for the site that includes how flood warning information will be obtained.
4. The proponent should provide more details about how it will identify flood producing rain and manage both on-site and transport operations to avoid flood risk, which is a key flood mitigation strategy outlined in the EIS.
5. More consideration should be given to the prevention of flood debris being generated from site. This should include consideration of the likely short warning times available to ensure that debris does not pollute waterway or cause blockage of hydraulic structures.
6. Water reuse values need to consider the volume of water that will return to the stormwater management system.
7. Greater detail on existing and proposed stormwater management is required to ensure that stormwater quality is adequately managed for the site.

BCD's detailed comments

Central Waste Plant Resource Recovery Facility Kurri Kurri

Flooding and flood risk

1. The water treatment basin is located below the 5% AEP flood level

The primary stormwater treatment for the recycling facility is a sediment basin. This basin is located in a section of the site which is subject to 1.2m of inundation in a 5% Annual Exceedance Probability (AEP) flood event. Sediment and pollutants stored in the basin are likely to be mobilised and transfer to Swamp Creek in the event of a flood.

Recommendation 1

Primary water treatment facilities should not be located below flood planning levels. Alternatives for collecting and treating water should be considered. Storage of clean water for reuse on site could occur below flood planning levels.

2. Stormwater management facilities do not separate clean and dirty water and have potential for contaminated overflow being transferred to Swamp Creek

The existing sediment basin is used as both the primary treatment system and storage facility for reuse of stormwater on site. This means that the basin is not managed as a sediment basin which would require treatment of water by flocculation if required followed by dewatering to an approved discharge point once acceptable water quality had been achieved. Use of the basin for water storage means that water is only drawn down at the reuse rate. In the case of extended or heavy rainfall reuse will not create sufficient capacity in the basin for capture of the event runoff for treatment. Modelling provided by EMM indicates that overflow will occur on average six times per year and this will not be a controlled discharge.

There are limited details provided for the on-site water treatment plant and treated water in excess of reuse requirements will be simply returned to the same sediment basin. This may result in a slight improvement in water quality within the basin, however it will result in treated water being mixed with untreated water and there does not appear to be a process for removal of sediment on an ongoing basis.

Recommendation 2

Separation of treatment and storage of stormwater should be undertaken to reduce overflow of untreated water to the adjacent water course.

3. Road access to the site is cut off in minor flood events

Access to 8 Styles Street, Kurri Kurri is inundated by floods of 1.0m depth in a 5% AEP event and the hazard rating of the roadway is H3 which is unsafe for vehicles, children and the elderly under the Australian Disaster Resilience Handbook 7 Managing the Floodplain: A Guide to Best Practice in Flood Risk Management in Australia (2017). The proponent has stated that an evacuation plan will be prepared and that the site will be evacuated when flood producing rainfall is predicted. This was also stated for the previous assessment for the site.

The site is not served by a flood warning system and there have been no details provided of how flood producing rainfall would be determined or monitored. Flooding in this locality is generally considered to be flash flooding with limited warning times. The development at 1

Styles Street for the café and parking area does have safer egress during a flood event if egress can be taken via Mitchell Street.

The probable maximum flood (PMF) event results in approximately 5 metres depth of water on site and therefore shelter in place is not an option. Significant damage to the facility is likely in a PMF event.

Recommendation 3

The proponent should develop a detailed evacuation plan for the site that includes how flood warning information will be obtained.

4. It is proposed to not operate the facility during predicted flood producing rain events.

The EIS indicates that the facility will close when flood producing rain is forecast. However, it is not clear how this could work in reality as the facility is proposed to receive waste 24 hours a day, 7 days a week and no flood forecasting is available for the locality.

If a flood forecasting service was available for the site it would be difficult to contact the various transport operators travelling to the site to cancel deliveries. The proponent should provide more details on how such a system would operate and where the information would be sourced to determine if this is a feasible risk mitigation strategy.

Recommendation 4

The proponent should provide more details about how it will identify flood producing rain and manage both on-site and transport operations to avoid flood risk, which is a key flood mitigation strategy outlined in the EIS.

5. Temporary flood barriers are proposed to prevent mobilisation of stored materials.

The EIS suggests that temporary flood barriers will be installed if safe to do so to prevent stored materials from becoming flood debris. It is considered likely in a flood event that insufficient time will be available to install barriers before the roadway becomes unsafe to travel. Barriers should either be automatically operated (triggered by rising water levels) or be a semi-permanent or permanent installation if possible.

Recommendation 5

More consideration should be given to the prevention of flood debris being generated from site. This should include consideration of the likely short warning times available to ensure that debris does not pollute waterway or cause blockage of hydraulic structures.

6. Water reuse may overestimate the removal of water from the system

The water reuse model examines water used for dust suppression and assumes this water will be removed from the system. Water used for dust suppression that does not infiltrate the dust/soil or evaporate will be collected and returned to the sediment basin. Water used for fog curtains is also likely to return to the stormwater system. If removal of water from the water management system through reuse has been overestimated, then the number of overflows from the site is likely to exceed the modelled frequency.

Recommendation 6

Water reuse values need to consider the volume of water that will return to the stormwater management system.

7. Pollutant modelling is not fit for purpose

The software program “Music” has been used for modelling of pollutant generation and treatment. The pollutant generation node used is for an industrial site and would not generate the sediment loads likely to be generated by the stockpiling of goods on site or sorting and crushing of goods on site. Music is best suited to residential or industrial use and does not have pollution generation nodes which reflect the use of the site as a waste processing facility. In addition, the main treatment method used is a sediment basin which is primarily managed as a water reuse facility. The treatment results are heavily dependent on removal of water by the reuse node. This does not reflect that reused water will report back to the sediment basin. Pollutant concentrations within the basin would therefore be expected to concentrate over time. The water treatment plant also returns the treated water to the same storage facility. Clean water for discharge purposes is therefore unlikely to be achieved by any of the existing or proposed treatment options.

The EIS indicates that covering of storage areas is proposed and that there is the potential to collect, treat and discharge water from roof areas. If acceptable water quality can be achieved this way, then this would reduce reliance on the sediment basin. In addition, the use of street sweeper as suggested in the EIS can also reduce the potential for sediment to report to the storage basin.

Greater throughput in the facility will increase the potential for generation of sediment due to increased material handling activities even though the proposal does not intend to increase storage on site.

Recommendation 7

Greater detail on existing and proposed stormwater management is required to ensure that stormwater quality is adequately managed for the site.