

3 November 2022

Our Ref: 101903

Jessie Evans
Director Resource Assessments
Department of Planning and Environment
4 Parramatta Square
12 Darcy Street
PARRAMATTA NSW 2124

Attention: Carl Dumpleton

Dear Jessie

Re: Howlong Sand and Gravel Quarry (SSD 8804) – Request for Additional Information

R.W. Corkery & Co Pty Ltd (RWC) has been commissioned by Fraser Earthmoving Construction Pty Ltd (FEC) to review and respond to a request for further information received from the Department of Planning and Environment (DPE) dated 13 September 2022. The request identified eight key matters that needed to be addressed prior to the assessment of the Project being finalised. The following presents the matters raised followed by a response. Where relevant, other Project documentation has been referenced in providing a response.

1. *Existing consent: to allow the department to determine the incremental increase in the proposed impacts more details are required on the existing consent, such as development consent number, plans, extraction areas, permitted operational activities, and approved final landform.*

As described in Section 1.1 of the Environmental Impact Statement (EIS), quarrying operations have been undertaken at the Project Site for at least 50 years or since at least 1970. It has been acknowledged informally by Federation Council (Council) that approval had been granted for the operation, noting that the approval was granted by the former Corowa Council. The landowner does not possess a copy of the existing consent and any copies held by Council are assumed to have been lost to fire in the offices of the then Corowa Shire Council

The current operations have been limited by the conditions of Environmental Protection Licence (EPL) 254¹ held by Table Top Holdings Pty Ltd (the landowner). EPL 254 specifies the premises as including Lot 174, Lot 231 and Lot 174A DP 753744. The activities are limited to extractive activities and crushing, grinding and separating of up to 30,000 tonnes per annum.

As such the approved development consent number, plans, extraction areas, permitted operational activities, and approved final landform are not available.

¹ See

<https://apps.epa.nsw.gov.au/prpoeoapp/Detail.aspx?instid=254&id=254&option=licence&searchrange=licence&range=POEO%20licence&prp=no&status=Issued>

2. *Confirmation the applicant seeks to voluntarily surrender the existing consent.*

It is confirmed that the landowner would surrender the existing approval rights upon commencement of an approval for the Expansion Project.

It is noted that Clause 68 of the *Environmental Planning and Assessment Regulation 2021* specifies the requirements for voluntary surrender of a development consent as permitted under Section 4.63 of the *Environmental Planning and Assessment Act 1979*. The following notice is to be given to the relevant consent authority.

(2) *The notice must contain the following information—*

- (a) *the name and address of the person giving the notice,*
- (b) *the address and folio identifier of the land to which the development consent relates,*
- (c) *a description of the development consent to be surrendered,*
- (d) *if the person giving the notice is not the owner of the land—a statement signed by the owner of the land that the owner consents to the surrender of the development consent,*
- (e) *whether any part of the development to which the development consent relates has commenced.*

Therefore Table Top Holdings Pty Ltd or the Applicant (with the written consent of Table Top Holdings Pty Ltd) may voluntarily surrender the existing consent without the approved development consent number, plans, extraction areas, permitted operational activities, and approved final landform.

3. *Timing of levee construction and completion around Stages 1 – 3 and Stage 4.*

It is confirmed that the levees would be constructed as follows.

- Stages 1 to 3 – The levees around Stages 1 to 3 (including the temporary levee) would be constructed prior to commencement of the operation.
- Reclamation of land adjacent to the Murray River – Once the portion of the Stage 1 extraction area that is to be reclaimed to re-instate a 100m buffer between the operation and the Murray River has been completed, the temporary levee would be removed and the levee replaced at the boundary of the Stage 1 extraction area. This would ensure that the levee is not within the 100m buffer area.
- Stage 4 – The levee surrounding the Stage 4 extraction area would be in place prior to operations commencing in Stage 4.

4. *Regarding the Water Technology 2022a report:*

- a) *Figure 1-1, move the legend to the right-hand side, to allow a clear view of the pits and river.*

An update to Figure 1-1 of the *Review of Flood Modelling Outcomes* prepared by Water Technology (2021) is presented as **Figure A**. This figure focuses on flood modelling upstream of the Quarry Site in response to the Council submission and the meeting held with Council on 9 June 2020. It is noted that the Council submission discussed upstream and downstream risks to infrastructure, particularly the Riverina Highway.

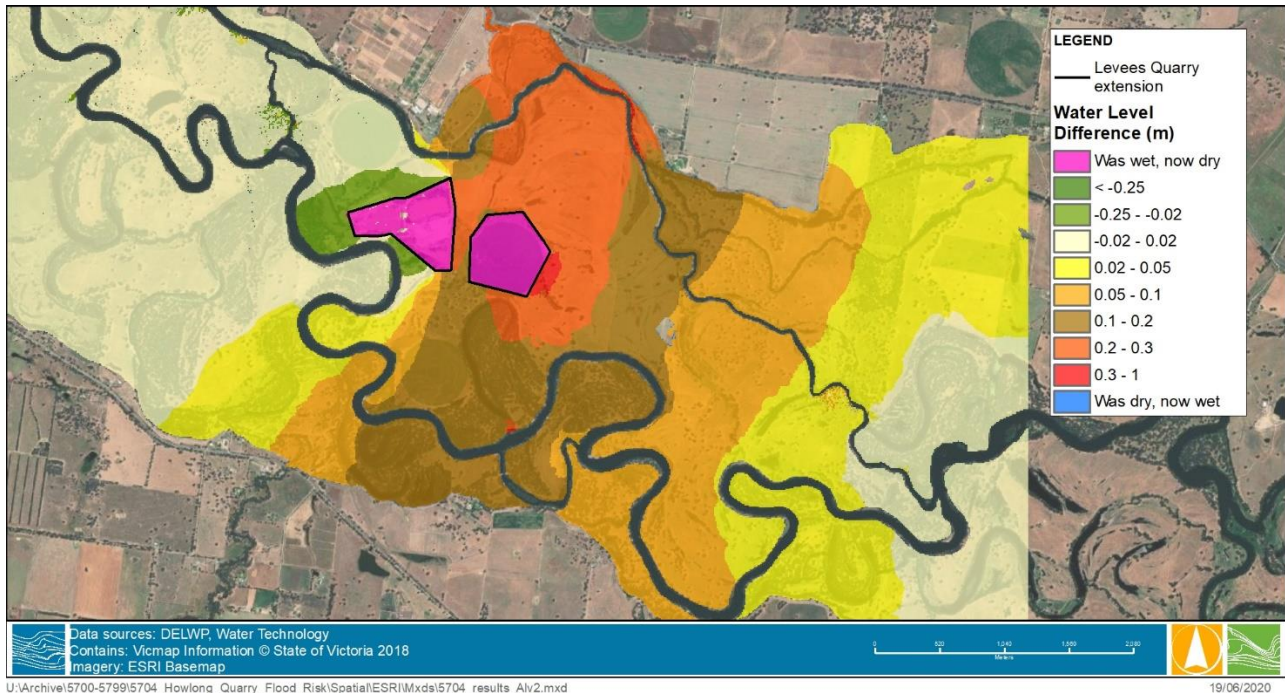


Figure A Updated Figure 1-1 of Water Technology (2021a) - 1% AEP flood difference map and upstream model boundary

- b) *Confirm what is preventing the flood extent from worsening in Figures 2-1 to 2-8, given the depths have increased.*

Figures 2-1 to 2-8 of Water Technology (2021a) present the outcomes of modelling predictions at private residences. Changes to water levels and flooding depths for various flooding events are presented in Appendix A and Appendix B of the Flood Risk Assessment for the Howlong Sand and Gravel Expansion Project (Water Technology, 2019). There is no change to the extent of flooding in these figures and therefore at the properties identified in Figures 2-1 to 2-8 of Water Technology (2021a) as the flooding is clearly contained within a well-defined floodplain. The Murray River floodplain is described in Section 1-1 and presented in Figure 1-2 of Water Technology (2019). It is noted that although the floodplain contains complex topographical features such as anabranching systems and billabongs, in most large floods the flooding extent is contained within the margins of the floodplain. The Riverina Highway is on the northern extent of this floodplain and is elevated above the surrounding landscape in most places. Therefore, flooding risks to the Riverina Highway are not changed by the presence of flood levees at the Quarry Site.

Plate 1 presents a recent snapshot of the Riverina Highway at the northern end of the property. This photo clearly depicts the separation of the Riverina Highway from the floodplain and shows the operation of a culvert directing water to the north of the highway, providing additional mitigation.



Plate 1 View of the Riverina Highway from Lot 1 DP 798291

- c) Given the levee has enlarged, is the perimeter larger or smaller than what was modelled?*

Compared to the flood modelling undertaken for Water Technology (2019), the levees have been extended to the north of the Stage 1 extraction area but reduced to the south of the Stage 1 extraction area. This results in a minor increase to the perimeter of the levees (2,566m versus 2,495m – or a 71m increase). However, given the minor changes to flooding risks predicted in the flood modelling, it is expected that modelling of the currently proposed levees would not result in additional impacts that have not previously been identified and therefore would not change the outcomes of assessment.

- d) What is the flooding area increase for Figures 2-2 to 2-8 – what do the blue squares represent in m²*

There is no change to the flooding area for the locations presented in Figures 2-1 to 2-8 of Water Technology (2021a) as these locations are outside the floodplain area. The blue squares in these figures represent cells in the hydraulic model that are 10m².

- e) Why was the 0.2% AEP event used to determine the worst case scenario for an increase in flooding extent and depth (Figures 2-1 to 2-8), given the afflux event is the 0.5% AEP? Further given the levees would be overtopped, how would this impact the modelling?*

The levees have been designed to withstand flooding up to the 1% AEP event (to 142.7m AHD). Beyond this flooding level, the levees would be over-topped and the Quarry Site would be inundated. In these events, the flood levees are not changing the outcomes of flooding extent and therefore assessing the flood levels is not relevant in considering the possible impact of the levees. The 0.2% AEP level was used to assess impacts at the residences as this is the worst case flood impact assessed (excluding the Probable Maximal Flood). The worst-case afflux event is at the 0.5% AEP event. However, the difference in flood level between the 0.2% AEP and the 0.5% AEP is 10cm at the Stage 4 flood levees and in the order of 1.5cm at the eastern extent of the modelling (as presented in Figure 1-2 of Water Technology, 2021). Given that the model cells cover an 10m² area, this difference would be negligible for potential flood hazards at private properties. The impact of the levees has been assessed across numerous flood events to broaden the understanding of potential impact and the most relevant outcomes presented in the report.

- f) *Confirmation no dwellings and farm buildings would experience increased flooding depths.*

The modelling predicts that no dwellings and farm buildings would experience increased flooding depths as a result of the construction of the flood levees.

5. *WaterTechnology 2022b report:*

- a) *Section 1.3 of report states levees would be removed from the site – while the EIS/RTS states they would remain. Would you please clarify and determine what impact each option would have on this reports conclusions?*
- b) *For the hazard flooding assessment, what is the justification for using the 1% and 5% AEP events to determine the change in flood hazard levels? Why isn't the 0.5 or 0.2% event used?*

Figure 5 of the Submissions Report presents the final landform proposed for the Project. *The Howlong Quarry Expansion Flood Risk Assessment - Pit and Floodplain Stability Assessment* (Water Technology 2021b) discusses the risks of retaining or removing the levees in the final landform. It is noted in the assessment that the permanent presence of levees in the landform may mean that the landform is affected by a Probable Maximal Flood (PMF), indicating that over-topping of the levees is likely at some time in the future. While this would most likely occur when the final pits are full of water and therefore would have minimal erosion and stability impacts, the removal of the levees or replacement of parts of the levee with engineered spillways to direct flood flow was discussed. While both options are feasible, the risk of impact associated with flood waters entering rehabilitated wetland areas is considered low. It is therefore preferred that the flood levees remain in the final landform and offer flood protection for the rehabilitated wetlands up to the 1% AEP flood event. As noted in the Submissions Report, a Closure Strategy for the Project would be prepared two years prior to closure to describe the approach for the post-quarrying management of wetlands.

The 1% and 5% AEP events are used to assess the change in flood hazard levels as these are more frequent events and more likely to be the cause of erosion or stability risks. During a 0.5% or 0.2% AEP event, the surrounding environment is flooding and over-topping of levees would occur. The flooding risks caused by the presence of the levees would be minimal compared to the volume of water in the flood plain.

6. *A chosen final landform is needed to allow determination by the Department, and then appropriate conditions and management requirements set to support the chosen approach, if approved. The current proposal of seeking two potential options lacks finality.*

The final landform presented as Figure 5 of the Submissions Report is proposed for the Project.

7. *Consider the need for consultation with Dam Safety Committee regarding the final landforms?*

While the excavated pits would hold water at times and when empty would be 19m below ground level, they are not considered dams for the purpose of regulation by Dams Safety NSW. The Dams Safety NSW website describes how dams are defined for the purpose of declaring them to be declared dams in accordance with Section 5 of the *Dams Safety Act 2015*². Specifically, the website includes the following description.

² See <https://www.damsafety.nsw.gov.au/publications/defining-dams-for-declaration>

For the purposes of the Act, a dam is a structure that is:

- 1. intended to obstruct a flow and/or impound its contents*
- 2. built across a stream (or source)*
- 3. able to pass or release at least some of the impounded contents.*

The extraction stages of the Howlong Quarry Project would not be constructed to obstruct a flow or impound its contents, are not built across a stream. Given that they are constructed into the ground, they would not be able to pass or release the contents. The final condition relates to dam failures that can potentially endanger life downstream, cause major damage or loss to infrastructure, the environment or have major health and social impacts. There is no risk of such a dam failure for the Project, given that the only risk of releasing contents would require over-topping of the pit and levees which have been designed to contain a 1% AEP flooding event.

The water body directly adjacent to Stage 1, is constantly turbid in aerial photos, who owns it? What management is needed to prevent sediment leaving the site.

The water body to the east of the Stage 1 extraction area is a natural wetland that is disconnected from the Quarry Site due to the presence of the levees. It is within the landholding of Table Top Holdings Pty Ltd but not connected to or associated with the Quarry operation. It appears turbid due to the presence of sediment in the waterbody. Water levels naturally rise and fall depending on groundwater contribution from the Murray River. Given the regulation of the river in the summer period, the water level can vary substantially over any year. No water is currently or would be discharged to this location.

I trust that the above provides a sufficient response to address the final comments on the Project. Feel free to contact myself or Greg Fraser with any further queries.

Yours sincerely



Nicholas Warren
Principal Environmental Consultant