WALLARAH 2 COAL PROJECT – AMENDMENT TO SSD-4974

RESPONSE TO DP&E QUERIES OVER PAC2 REVIEW REPORT

for

Wyong Areas Coal Joint Venture

1 INTRODUCTION

This document responds to a letter from the Department of Planning & Environment (DP&E) dated 30 June 2017 in relation to the Wallarah 2 Coal Project, as Amended (the Project).

The DP&E letter requested a response to four items in relation to the Second Planning Assessment Commission Review Report dated 19 May 2017 (PAC2 Report) on:

- Compensatory water supply system;
- Noise impacts;
- Nikko Road; and
- Economic Data.

A response to each item is provided below. This response is further to the detailed response titled *'Planning Assessment Commission 2 Report Response'* dated 26 June 2017 (PAC2 Response).

Inputs to the responses have been provided by Wyong Areas Coal Joint Venture (WACJV) where required.

2 COMPENSATORY WATER SUPPLY SYSTEM – ISSUE 1

1a) Please provide a detailed description of the options being considered to satisfy the Commission's recommendation of "no net impact on potential catchment yield and the preferred compensation mechanism is by return of sufficient treated water to the catchment side of the water supply system", including:

- Water treatment options and plant locations;
- Water treatment pipeline(s) options (i.e. underground and/or over ground) and routes;
- Potential water transfer access points into the Central Coast Water Supply System;
- Timing for the construction and implementation of the water treatment and transfer system; and
- Costs of implementation of the system options, and implications to the overall project CIV.

A response to this issue requires an examination of the PAC1 report, records from meetings with Department of Primary Industries – Water (DPI – Water) and Planning Assessment Commission (PAC) 1 with WACJV and its specialists, and the PAC2 report in relation to the Project's potential impacts on Central Coast Water Supply (CCWS).

Following this detailed contextual discussion is a response to the five points above at **Section 2.7**.

2.1 PAC 1 REPORT

In relation to the requirement for a compensatory water supply system for the Project, relevant sections from the 'Wallarah 2 Coal Project Review Report' (PAC, 2014) (PAC1 Report) are presented below with a discussion to follow.

2.1.1 Executive Summary

"(ii) As presented, the project predicts risk of reduced availability of water for the Central Coast Water Supply (CCWS) in some years if the subsidence impacts on the catchment coincide with adverse climatic conditions. The maximum predicted impact on catchment yield is 300 ML/y.

The Commission has recommended that there be no net impact on potential catchment yield from the mining operation and that the maximum predicted impact should be offset by return of suitably treated water to the catchment side of the CCWS system for the period during which subsidence may impact on the Project Area catchments." (pii)

2.1.2 Potential Losses of Baseflow from Groundwater Impacts

"The EIS gives figures for the combined maximum impacts of subsidence on baseflow of 300 ML/y (i.e. 270 ML/y from the Jilliby Jilliby Creek system and 30 ML/y from the Wyong River system). The majority of this loss is attributed to storage increases associated with subsidence of sections of the alluvium causing temporary movement of water into the subsided area. The Commission agrees that the majority of this water will be returned to the system at a later date, but considers that in dry years the increased storage capacity in the alluvium could decrease baseflow and must therefore be treated as a potential impact on the Central Coast Water Supply (CCWS)." (p27)

"The maximum predicted impacts of 300 Ml/y should not be allowed to be exceeded unless the environmental impacts remain within existing predictions and any loss can be compensated (see 3.3.1.4 for additional detail on compensation requirements)." (p28).

"... • as recommended in 3.2.2.3 above, the Commission considers that the Proponent should be required to limit operations to ensure that the 300 ML/y is not exceeded unless the Proponent is in a position to provide a further additional compensatory supply acceptable to NOW and the Water Authority and there is no additional environmental impact; and …" (p32)

2.1.3 Is the Threat to the Central Coast Water Supply Significant?

Section 3.3.1.4 states *"The Commission's preliminary conclusion that the Proponent should be required to provide water to CCWS to offset the potential impact on catchment yield was discussed with the Proponent, NOW, Wyong Shire Council (representing the Water Authority), and the Department.*

The Commission's position is that sufficient water from the minewater make could be treated to the required standard to be returned to the raw water side of the CCWS system rather than being discharged to Wallarah Creek. There was agreement in-principle by all agencies that this would be an appropriate way to offset the losses potentially caused by the project, although there are many matters of detail to be negotiated between the parties. NOW has provided formal in-principle endorsement of the proposal (See Appendix 6, NOW Response to the Commission's Questions (undated), p.6) as has Wyong Shire Council on behalf of the Water Authority (see Appendix 6, Wyong Shire Council Response to the Commission's Questions dated 16 May 2014, p.6). The Commission also notes that diverting some of the excess water away from Wallarah Creek should be an environmental benefit.

The Commission notes that there are likely to be competing views on how and where the raw water compensation might be delivered to the CCWS system. The two broad options appear to be to return water to the catchment at or above the zone of subsidence impact or return it close to the area where raw water offtake for the CCWS system could occur. ***While returning water to the catchment appeared initially attractive to the Commission, there are a number of reasons why this may not be a sound proposition. They include:***

- *it would require an extremely complex system to enable supply of water at multiple sites to coincide with subsidence impacts;*
- *supply of fixed quantities of water on a regular basis is not likely to mimic natural flows and may not be environmentally sound; and*
- ***the intended purpose of compensatory supply is for the CCWS only**. There should be minimal opportunities for further loss of this compensatory supply.*

The likelihood is that there will still need to be some discharge to Wallarah Creek. The criteria governing this are set out in the Department's PAR and the Commission considers these are adequate.

The Commission considers that the principles that govern this process should include:

- *any offset requirement should be considered in two separate parts: (a) subsidence-induced catchment losses; and (b) potable supply usage;*
- *subsidence-induced losses should be compensated from the commencement of impacts on the alluvial lands. This may be as early as LW 5N, but more likely LW 6N. Compensation should continue until after any potential mining impacts on catchment yields ceases. The amount to be compensated should be set at 300 ML/y, although a review step may be required to adjust this if revised predictions of potential losses change significantly (including the 36.5 ML/y 'permanent' loss).*

- *the review should not occur until there is sufficient monitoring data available on which to form a judgement as to whether the 300 ML/y maximum loss prediction is valid or not. The Commission considers that this is unlikely before completion of LW 9N. It could therefore logically form part of the formal review of subsidence predictions recommended at that time. The results of the review would need to be assessed by the Water Authority and by NOW and any revision of the requirement for compensatory supply would need to be acceptable to both the Water Authority and NOW. The burden of proving any impact less than 300 ML/y rests with the Proponent;*
- *commencement at LW 5N or LW 6N will give more than adequate time to install and test the required infrastructure;*
- *the consent should require that no extraction be allowed beyond LW 5N unless the compensatory mechanisms are operational; and*
- *potable supply usage is more complex. The Proponent will be paying CCWS for access to potable water and therefore should not be required to compensate for this. However, it may be that in times of severe water restrictions an arrangement between the Water Authority and the Proponent could be of mutual benefit whereby continued potable supply to the mine was offset by a suitably enhanced volume of raw water supply from the mine. …*

NOW was also prepared to consider a different approach to compensating for the potential losses through bringing forward augmentation of the water supply scheme headworks, with the cost of bringing the augmentation forward (not the whole cost of augmentation) transferred to the mine. The Commission considers that this is much more difficult to structure properly in a consent and is therefore likely to be less certain. However, it may need to be explored in more detail if the more direct option of supplementation of supply cannot be implemented for some reason. …

The Commission's position is unequivocal. For this project to meet the public interest test in s79C of the Act there must be no net impact on water availability in the catchment under all climatic conditions. This cannot be determined and compensated for retrospectively. It must rely on up-front compensation for maximum predicted impacts. To be clear:

- *the Proponent has predicted a maximum impact of 300 ML/y;*
    - *that maximum impact is not to be exceeded unless there is no increase in environmental impact and compensatory supply is available;*
    - *that maximum impact is to be compensated for **during the period** of subsidence-induced impacts in the Project Area catchments;*
- *a monitoring system capable of confirming catchment losses from mine-related impacts is to be developed and implemented;*
    - *that monitoring system must be acceptable to the Central Coast Water Supply Authority and NOW;*

- *it is only if results from that monitoring system indicate that maximum predicted water losses should be revised downward that any change in compensatory supply can be considered;*
- *a formal review step after LW 9N is recommended to consider the monitoring results; and*
- *the burden of proving that monitoring results show that a reduction in compensatory supply is warranted rests with the Proponent. …" (P34-36)*

2.1.4 Commission's Recommendations Concerning Potential Impacts on the CCWS

Section 3.3.1.5 states "*The Commission recommends that:*

(i) the project be required to meet a no net impact performance outcome on catchment water resources during the life of the mine;

(ii) consideration be given to augmentation of CCWS supply by return of sufficient minewater treated to the required standards for raw water supply to compensate for estimated losses during the life of the mine;

(iii) the principles governing this augmentation of CCWS supply be as described in section 3.3.1.4 of this review report; and

(iv) that mining beyond LW 5N not be permitted until the mechanism to compensate for potential impacts on water availability for CCWS is operational; and

(v) that no compensation be required beyond mine closure for the predicted 36.5 ML/y loss provided that a review prior to mine closure confirms that the loss does not exceed 36.5 ML/y." (P37-38)

2.1.5 Conclusions and Findings

Section 4 states *"The principal findings and recommendations of this review can be summarised as follows:*

(ii) As presented, the project predicts risk of reduced availability of water for the Central Coast Water Supply in some years if the subsidence impacts on the catchment coincide with adverse climatic conditions. The maximum predicted impact on catchment yield is 300 ML/y.

The Commission has recommended that there be no net impact on potential catchment yield from the mining operation and that the maximum predicted impact should be offset by return of suitably treated water to the catchment side of the CCWS system for the period during which subsidence may impact on the Project Area catchments." (p75)

2.1.6 Recommendations

PAC1's recommendations are listed in Section 5 and state:

"Potential Losses of Baseflow from Impacts on Groundwater …

- *Potential impacts on shallow groundwater systems be included in the performance criteria in Schedule 3 of any consent, particularly in relation to potential losses that could contribute to decreases in baseflow to streams supplying CCWS. The maximum predicted impacts of 300 Ml/y should not be allowed to be exceeded unless the environmental impacts remain within existing predictions and any loss can be compensated. …"*

"Potential Impacts on the Central Coast Water Supply (CCWS) …

- *the project be required to meet a no net impact performance outcome on catchment water resources during the life of the mine;*
- *consideration be given to augmentation of CCWS supply by return of sufficient minewater treated to the required standards for raw water supply to compensate for estimated losses during the life of the mine;*
- *the principles governing this augmentation of CCWS supply be as described in section 3.3.1.4 of this review report; and*
- *that mining beyond LW 5N not be permitted until the mechanism to compensate for potential impacts on water availability for CCWS is operational; and*
- *that no compensation be required beyond mine closure for the predicted 36.5 ML/y loss provided that a review prior to mine closure confirms that the loss does not exceed 36.5 ML/y. (p77-78)"*

2.1.7 Appendices

Appendix 4 refers to a meeting with NSW Office of Water, Tuesday, 29 April 2014, the minutes from which do not refer to any discussion on where water should be returned to (p90-91).

Appendix 4 refers to two meetings with the proponent on 29 April 2014 and 30 May 2014 and states "... The competing views as to where the discharge point for the return of mine water into the water supply system should be located were discussed." (p91-93).

2.2 MEETINGS AND RESPONSES

2.2.1 PAC1 Meeting 29 April 2014

A meeting was held between representatives PAC1, WACJV, Hansen Bailey and its technical specialists on 29 April 2014 at 2 pm. The Hansen Bailey records of the meeting indicate:

- Neil Sheppard (NS) explained that NOW and WSC were receptive of the Project providing treated water to compensate for its impacts. He suggested that the proponent will need to consult with NOW and the Central Coast Water Authority (CCWA) to determine discharge volumes and locations.
- NS advised that the PAC stands by its requirement of no net loss to the water supply system. He further reiterated that water licensing alone is not an adequate mitigation measure.

2.2.2 PAC1 Response 2 May 2014

The document "Wallarah 2 Coal Project Response to Letter from the Planning Assessment Commission" dated 2 May 2014. Section 2.6 states *"WACJV acknowledges the PAC's expectation that the Project should ensure "No Net Loss" of water from the Gosford-Wyong Water Supply Scheme. WACJV confirms that it is technically feasible to return surplus treated water generated by the Project to the water supply catchment.*

WACJV agrees to consult with the Central Coast Water Corporation, WSC, NSW Office of Water and other appropriate Government authorities to develop a framework agreement (between all parties) regarding opportunities and strategies for managing surplus treated water for the benefit of the water supply scheme. The agreed strategy for the provision of surplus treated water will be implemented prior to the commencement of longwall extraction under the Jilliby Jilliby Creek alluvial floodplain. The framework agreement will encompass the principles of adaptive management through the combined application empirical monitoring data and calibrated predictive models."

2.2.3 DPI – Water 24 May 2014

A phone meeting was held between representatives of DPI – Water, WACJV and Hansen Bailey on 26 May 2014 at 1 pm to discuss matters surrounding proposed repatriation of treated mine water to the Central Coast water catchment following review of information provided by NOW to PAC after a request for further advice.

Hansen Bailey's records of the meeting indicate:

- DPI – Water agreed that water from an RO is of a quality that is suitable for repatriation to the CCWS;
- DPI – Water also noted that the question of whether or not mining does in fact result in a decrease in base flows in streams needs to be determined through a robust monitoring program to determine what those losses are before a decision can be made as to what volumes should be returned if any. Returns should be triggered during low flows and/or cease to pump conditions;
- DPI – Water also noted that in terms of a constant return of flows, *this would in fact be detrimental to the system,* which as a result of natural variability does not maintain a consistent flow regime over time.

2.2.4 PAC1 Response to Council Issues 27 May 2014

The document "Wallarah 2 Coal Project Response to Letter from the PAC" dated 27 May 2014 responds to the PAC1 on issues raised in correspondence from Wyong Shire Council (via PAC1) dated 16 May 2014. Relevant excerpts to the PAC1 from "Section 2 Impact on the Water Supply Scheme" are provided below.

- *"The impacts of the Project on the Central Coast water supply scheme are clearly presented in the proponent's response (dated 2 May 2014). The proponent advised that there are technically feasible options for returning treated water to the water supply scheme, thereby ensuring that there is no net loss of water. The proponent has considered WSC's comments on the proposal to return treated water to the catchment. ...*

- *Following further consultation with NOW, treated water could be repatriated during low flow or drought conditions to provide water for environmental flows, the Central Coast Water Corporation take and other users. It must be noted that it is not necessary for treated water to be of potable quality. Water that is returned to the water supply catchment will ultimately be treated at Mardi Water Treatment Plant for treatment to potable standards. …*
- *WSC Comment: The discharge would need to be located so that there is no short circuiting of return flows back to any loss areas. Proponent's Response: Discharge locations will be determined in consultation with the relevant authorities to ensure that there is no "short circuiting" of return flows."*

2.2.5 PAC1 Meeting 30 May 2014

A meeting was held between representatives PAC1, WACJV and Hansen Bailey on 30 May 2014 at 2 pm. Hansen Bailey's records of the meeting indicate:

- NS reconfirmed the PAC's position that the Project would have to replace the 300 ML per year of base flow that the PAC believes will be lost from the CCWS but that this replacement would not need to commence until the completion of mining of LW Panel 5N or before the commencement of LW Panel 6N when the first area of Jilliby Jilliby Creek alluvium area is undermined.
- NS said that the 300ML maximum loss to the base flow would not be able to be exceeded unless satisfactory alternative additional water was repatriated to the CCWS.
- NS stated that the PAC are of the opinion that water repatriated will only be for GWSWSC purposes, not environmental flow supplementation. NS strongly recommended that any water repatriated should not be placed in the natural river system as this would open up the need for a whole lot of additional environmental assessment. **NS recommended that the water be placed as close as possible to the water supply offtake (Lower Wyong Weir).**
- JB noted the discussions with NOW earlier in the week and the fact that it's' representatives had noted that repatriating water at all times in all conditions may be detrimental to the environment and unnecessary.

2.3 RESPONSE TO PAC 1 REPORT 1 JULY 2014

The 'Wallarah 2 Coal Project Response to Planning Assessment Commission Review Report' (Hansen Bailey, 1 July 2014) (PAC1 Response) responds to the PAC1 Report in relation to this issue in Section 2.1 as follows:

> *"**2.2.2 Compensatory Measures***
>
> *The proponent commits to developing a compensatory mechanism to ensure that there is no net impact on the water supply scheme. This mechanism will be developed in consultation with the Central Coast Water Authority (CCWA) and NSW Office of Water. (Now determined)*

The onsite water treatment plant will treat all mine water pumped from the underground workings and runoff from the stockpile area. The EIS proposes that surplus treated water will be circulated for underground use and discharged to Wallarah Creek, which is not part of the water supply scheme. It is feasible for the proponent to discharge surplus treated water back into the water supply catchment, thus replacing any water potentially taken from the water supply scheme.

NOW and the PAC also suggest that the proponent can compensate for its impacts on the water supply scheme by contributing funding to the costs of bringing forward the scheduled augmentation of the water supply scheme headworks. The proponent accepts this as an alternative to discharging treated water into the water supply catchment. However, if the option of returning water to the water supply catchment is adopted, there should be no need for the proponent to make any additional contribution to augmentation of the water supply scheme infrastructure."

2.4 PAC 2 REPORT

Key sections relevant to this issue from the PAC2 report (June 2017) are reproduced below:

"Having regard to the importance of the water supply system and the practicality and sustainability of loss compensation via water licences, the Commission's 2014 Review has recommended:

- *No net impact on catchment water resources during the life of the mine;*
- *Consideration be given to compensate the loss by return of treated mine water to the system;*
- *Compensation mechanism be operational before mining beyond LW 5N; and*
- *No compensation would be required following mine closure if a review confirms the loss will be less than the predicted 36.5 ML/year after mine closure.*

The Commission's 2014 Review report also indicated that "there was agreement in-principle by all agencies" to return suitably treated water to the raw water side of the water supply system as an appropriate way to offset the potential losses. "NOW (DPI Water) has provided formal in-principle endorsement of the (compensatory) proposal" at that time (p.35)." (p15)

"In relation to water supply, the Council is concerned that the current drafting of the performance measures when considered together with condition 2 (offsets) may mean "only CCWS water losses in excess of 300 ML/annum are offset/compensated. This was not the intent of the PAC in 2014. It would be more appropriate to change the performance measure to 'no net loss of water available to the Central Coast Water Supply'" (Council submission May 2017). (p18)

*"**7.1 Water Resources***

The Commission supports the recommendations of the Commission's 2014 Review report that "there be no net impact on potential catchment yield from the mining operation and that the maximum predicted impact should be offset by return of suitably treated water to the catchment side of the CCWS system for the period during which subsidence impact on the Project area catchments". Mining beyond longwall panel (LW) 5N should not be permitted until the compensatory mechanism is operational. No compensation is required after mine closure for the predicted loss of 36.5 ML/y, subject to the confirmation of an independent review before mine closure.

These recommendations have not been accurately or sufficiently reflected in the draft conditions.

Although the Commission's 2014 Review accepted the maximum predicted water loss is 300 ML/year, this may change in future as the water model is refined based on monitoring results. The burden of proving any impact less than 300 ML/y rests with the applicant.

The purchase of water licences may meet the requirements of the Water Management Act 2000. However, they do not compensate the loss of water particularly during low flow periods as the subsidence induced loss cannot be controlled by access restrictions. The draft condition has not accurately reflected this finding and recommendation in the Commission's 2014 Review report.

Recommendation 1:

The draft conditions should be updated to accurately reflect the recommendations in the Commission's 2014 Review, particularly the no net impact on potential catchment yield and the preferred compensation mechanism is by return of sufficiently treated water to the catchment side of the water supply system. The burden of proof of any impact being less than predicted rests with the applicant." (pg54)

*"**Potential Impacts on the Central Coast Water Supply (CCWS)***

- *the project be required to meet a no net impact performance outcome on catchment water resources during the life of the mine;*
- *consideration be given to augmentation of CCWS supply by return of sufficient minewater treated to the required standards for raw water supply to compensate for estimated losses during the life of the mine;*
- *the principles governing this augmentation of CCWS supply be as described in section 3.3.1.4 of this review report; and*
- *that mining beyond LW 5N not be permitted until the mechanism to compensate for potential impacts on water availability for CCWS is operational; and*
- *that no compensation be required beyond mine closure for the predicted 36.5 ML/y loss provided that a review prior to mine closure confirms that the loss does not exceed 36.5 ML/y." (pg60)*

"In response to the Commission's question, the DPI Water advised that the draft condition is not considered commensurate with the "no net impact" recommendation. It is of the view that:

"the loss of up to 300 ML/year may impact on the security of the CCWS and other users during drought periods. However, "no net impact" will be difficult to implement without clear definitions and triggers. Clear definition of 'impacts' is also required to ensure impacts can be identified, measured and managed.

Consideration should be given to whether "no net impact" is the only acceptable level of impact. It may be determined that some level of impact is considered acceptable.

The draft condition as proposed by the Department may be interpreted to significantly weaken the intent of the Commission's 2014 Review recommendation as it involves a protracted process. The Commission finds the principles of the proposed water supply compensation arrangement should be further advanced before consideration by the consent authority." (p19)

2.5 DISCUSSION AND JUSTIFICATION

The PAC1 Report **recommends** the following which clearly demonstrates its intention to augment the CCWS (not provide water for the purpose of environmental flows):

> *"(ii) consideration be given to augmentation of CCWS supply by return of sufficient minewater treated to the required standards for raw water supply to compensate for estimated losses during the life of the mine;…"*

The PAC1 document illustrates the significant consultation which occurred between PAC1, relevant regulators and WACJV to resolve this issue to facilitate compensatory water to the CCWS (via Mardi Dam or other mechanism) and states as follows:

- Sufficient water from the minewater make could be treated to the required standard to be returned to the raw water side of the CCWS system rather than being discharged to Wallarah Creek.
- PAC1 acknowledged that there was agreement in-principle by all agencies that this would be an appropriate way to offset the losses potentially caused by the project, although there are many matters of detail to be negotiated between the parties. The Commission also noted that diverting some of the excess water away from Wallarah Creek should be an environmental benefit.
- There are competing views on how and where the raw water compensation might be delivered to the CCWS system: either return water to the catchment at or above the zone of subsidence impact or return it close to the area where raw water offtake for the CCWS system could occur. It provide the following conclusion:

> *"While returning water to the catchment **appeared initially attractive to the Commission, there are a number of reasons why this may not be a sound proposition**. They include:*
>
> - *it would require an **extremely complex system** to enable supply of water at multiple sites to coincide with subsidence impacts;*
> - *supply of fixed quantities of water on a regular basis is **not likely to mimic natural flows and may not be environmentally sound**; and*
> - *the intended purpose of **compensatory supply is for the CCWS only**. There should be minimal opportunities for further loss of this compensatory supply."*

Only the executive summary and brief principal findings sections include a reference that suitably treated water should be returned to "to the catchment side of the CCWS system".

A meeting was held between representatives PAC1, WACJV and its technical specialists on 29 April 2014 where Neil Sheppard (NS) explained that the (former) NOW and (former) WSC were receptive of the Project providing treated water to compensate for its impacts. NS suggested that the proponent will need to consult with NOW and the Central Coast Water Authority (CCWA) to determine discharge volumes and locations (now DPI-Water and Council, respectively). This has occurred and is described at length in **Section 2.6**.

Further, at a meeting of 30 May with PAC1 a nd WACJV, Hansen Bailey's record of the meeting shows:

- NS stated that the PAC is of the opinion that **water repatriated will only be for CCWS purposes, not environmental flow supplementation**.
- NS strongly recommended that any water repatriated should not be placed in the natural river system.
- NS recommended that the w**ater be placed as close as possible to the water supply offtake** (Lower Wyong Weir).
- JB noted the discussions with NOW earlier in the week and the fact that it's' representatives had noted that repatriating water at all times in all conditions may be detrimental to the environment and unnecessary.

Consistently, Hansen Bailey's record of the meeting between DPI – Water and WACJV in May 2014 indicated that DPI – Water agreed that water from an RO is of a quality that is suitable for repatriation to the CCWS; and in terms of a constant return of flows, this would in fact be detrimental to the system, which as a result of natural variability does not maintain a consistent flow regime over time. The PAC2 report at recommendation 1 reiterates the 'executive summary' of the PAC 1 report.

In consideration of the detailed recommendations of PAC1 and relevant regulators above, multiple discussions between WACJV and Council's executive management have taken place since the PAC2 Report, culminating in a meeting with Council's Senior Manager Water and Sewer on 5 July 2017 where the design options described in **Section 2.7** were negotiated and agreed upon (see correspondence in **Appendix A**).

The conceptual alignments shown in **Figure 1** are not only practical from an engineering perspective but they will provide a good environmental outcome as they will provide treated water directly to the Wyong River, immediately upstream an existing take-off utilised by Council with minimal environmental impacts.

Specifically, WACJV also notes that repatriation of water "to the catchment side of the CCWS system" would likely have the following consequences when compared to the preferred location on Wyong River as agreed with Council:

- The proposed alignment of pipeline the will follow Hue Hue Road, which has previously been cleared. The proposed alignments will result in less vegetation clearing than a pipeline located within the Jilliby Jilliby Creek catchment;
- The Wyong River has higher flow rates than Jilliby Jilliby Creek or Little Jilliby Jilliby Creek. The additional treated water will represent less of a change to the flow regime of the Wyong River (compared to Jilliby Jilliby and Little Jilliby Jilliby Creeks);
- Repatriation to Jilliby Jilliby and Little Jilliby Jilliby Creeks poses potential for poor mixing and dilution during repatriation due to the smaller, largely ephemeral creek system(s) with little to no deep flowing or standing water bodies;
- The repatriation location on Wyong River contains a significant body of water (up to 300ML providing amply volume to dilute high quality treated water at a daily rate of approximately 0.3% of total volume (Council, 5 July 2017);
- The Water Treatment Plant (WTP) will treat water to high standard. The treated water is likely to differ in quality from the water in Jilliby Jilliby Creek (and its tributaries), which may have negative impacts to ecology and riparian vegetation; and
- Repatriated water regularly supplied in fixed quantities is not likely to reflect natural flow regimes, particularly during periods of natural low flow;
- Construction of a pipeline within the Jilliby Jilliby Creek catchment will likely require access to private properties, whereas the proposed alignment will maximise the use of public road corridors;
- A Complex system would be required to be designed to supply water to multiple sites if designed to mimic losses from discrete mining activities; and
- As the purpose of repatriation is to supply water for the CCWS only, there are greater opportunities for losses to occur through returning water to the catchment side of the CCWS.

2.6 REGULATORY MEETINGS POST-PAC TO DATE

2.6.1 RMS 21 April, 15 May and 6 July 2017

WACJV has had an ongoing dialogue with senior RMS Officers associated with the use of roadside land controlled by RMS. Recent meetings and correspondence toward finalising short term, and developing longer lead items has occurred via meetings on numerous occasions over the past 18 months, with more recent exchanges of information and emails on 21 April 2017, 15 May 2017 and 6 July 2017.

2.6.2 Council Meeting 5 July 2017

WACJV met with Central Coast Council's Senior Manager Water and Sewer and other Senior Staff on Wednesday, 5 July 2017 to finalise the details of an In-Principle Agreement following previous ongoing detailed consultative discussions regarding the repatriation of treated mine water.

Earlier discussions considered in detail the merits of repatriation of water upstream of the subsidence area, however consistent with the reasons put forward by the Commissioner in the 2014 PAC1 review report, the parties jointly concluded that upper catchment returns were an unsound proposition for the following reasons:

- It would require an extremely complex system to enable supply of water at multiple sites to coincide with subsidence impacts;
- Supply of fixes quantities of water on a regular basis is not likely to mimic natural flows and may not be environmentally sound; and
- The intended purpose of the compensatory supply is for the CCWS only. There should be minimal opportunities for further loss of the compensatory supply.

This meeting followed further review of the PAC1 and PAC2 report recommendations in tandem by both parties, and consideration of the most appropriate and feasible options for the repatriation of treated water where locations further upstream are considered unsuitable.

As a result of these extensive deliberations, the two options for the preferred route were agreed as described in **Section 2.7**.

2.7 WATER REPATRIATION OPTIONS

Figure 1 conceptually illustrates the two potential alignments however the final alignment will be subject to detailed design following additional consultation with relevant regulators:

- **Option 1** – From the WTP at Tooheys Road site, west across WACJV owned land, then via Hue Hue Road. The location for the water to be deposited is at Woodbury's Bridge on Yarramalong Road. This site is upstream of the Council's Existing Wyong River Raw Water Pumping Station Extraction Point which directs water to the Mardi Dam; and
- **Option 2** – From the WTP at Tooheys Road site, underground via the portal, surfacing at Buttonderry Site, then via Hue Hue Road. The location for the water to be deposited is at Woodbury's Bridge on Yarramalong Road. This site is upstream of the Council's Existing Wyong River Raw Water Pumping Station Extraction Point which directs water to the Mardi Dam.

Option 2 is WACJV's preferred model.

Should any components of the overland pipeline option be required to be buried, they will be subject to ecological and Archaeological due diligence assessments as part of the internal 'Ground Disturbance Permit' process previously documented and committed to in the "Wallarah 2 Coal Project Environmental Impact Statement" (Hansen Bailey, 2013).

Figure 1 particularly shows:

- Water treatment options and plant locations;
- Water treatment pipeline(s) options (i.e. underground and/or over ground) and routes; and
- Potential water transfer access points into the Central Coast Water Supply System.

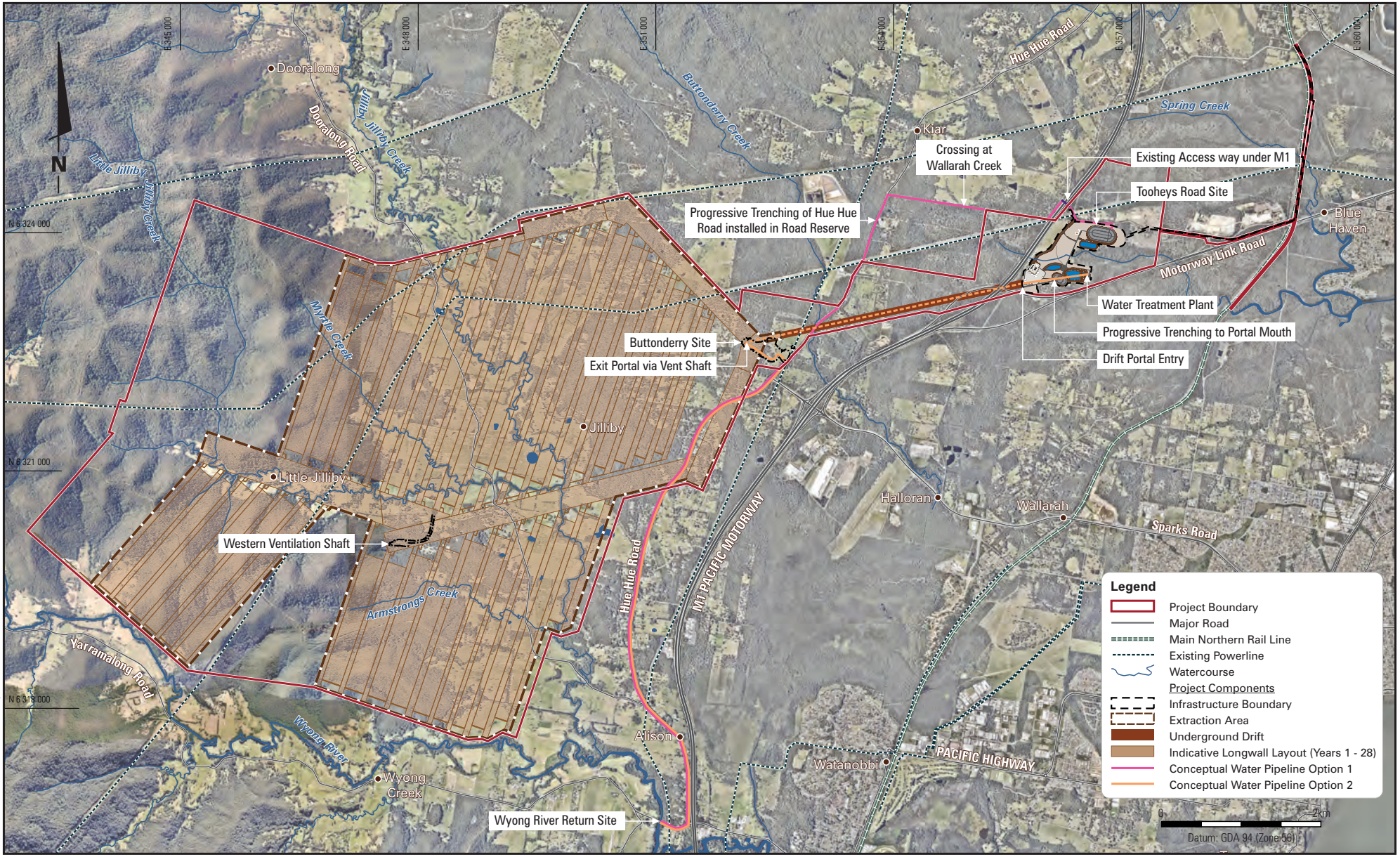
Final design and construction of the water treatment plant and transfer system will be completed during the extraction of Longwall Panels 4N - 5N. This will allow the plant to be trialled and commissioned, available to transfer treated water prior to the start of Longwall Panel 6N.

Costs of implementation of the system are covered under the Surface Infrastructure budget for the Tooheys Road complex and includes $5M for the WTP able to treat up to 3 ML/day (Osmoflow, 2017) and $4.46 – $5.72 M (Options dependent: (GHD, 2017)) for related water delivery pipeline which includes a 30% contingency. Related infrastructure including the compartmentalised mine operations, treated water and brine storage dam are costed within the broader surface infrastructure budget.

There are no additional implications to the overall project CIV as the full cost of the pipeline, and water treatment plant of up to $12M has been allocated within a much larger budget across both initial and sustaining capital budgets. WACJV also confirms that sufficient running costs of approximately $1.6 M per annum have been allowed for in the Project's operational budgets for the operation of the pipeline.

It should be noted that only a small portion of these costs are required to meet the additional infrastructure requirements for provision of water to the CCWS (i.e. the WTP and significant surface water infrastructure costs were always required for the Project). It has no impact on the economic model prepared for the Project or the economics assessment.

WACJV is confident that water make from the mining operations will ensure sufficient quality of treated water is available to meet repatriation requirements to the CCWS of up to 300 ML/annum after LW5N for the life of any development consent granted, and commit to the provision of this water throughout the operational life of the mine (identified in MER, 2013 as up to 2.5 ML/day). The timing of release of the water in any 12 month period will be determined in consultation with Council.



HB WALLARAH COAL 1163 F1 Conceptual Water Infrastructure – Return Water to CCWS 13 07 2017 Rev B

WALLARAH 2 COAL PROJECT

Wallarah 2 COAL PROJECT | HansenBailey ENVIRONMENTAL CONSULTANTS

Conceptual Water Infrastructure – Return Water to CCWS

FIGURE 1

3 NOISE – ISSUE 2

3.1 ISSUE

a) Wyong Coal noted in the RTS2 that consultation with receivers subject to noise impacts had commenced. The same statements have been made in response to the Commission's recommendation. Please provide a progress report regarding the discussions with impacted receivers over the past several months.

b) Please give an indication of the best available technology in noise reduction construction material for the conveyor, transfer station and train load out facility.

3.2 RESPONSE

a) Significant consultation effort has been undertaken in relation to properties P14, P15 and P16 which are predicted to experience noise impacts from the Project above relevant criteria. These discussions and advice have focussed around findings from the PAC2 Report and clarifying WACJV's commitments to each landholder in relation to attenuation at the residence and ongoing assistance during construction and operations.

Table 1 provides a detailed description of consultation efforts in May to 12 July 2017.

b) A summary of indicative "best available technology" is provided below.

Options for the use of sound attenuation systems was considered by WACJV. Two products were identified that could assist with the reduction in noise generated by the overland conveyor system, transfer station and train load out facility.

The first system is a cladding material that can replace the existing modelled Colorbond cladding, the replacement cladding product has a polymer layer sandwiched within two Colorbond sheets. The manufacturer's claim noise reductions across the frequency range and can be utilised for the noise exposed areas of the overland conveyor system.

The second technology to reduce the noise generated at the conveyor transfer facility adjacent to Link Road Bridge is a noise curtain system. This system consists of a series of small steel and polymer blocks which are placed inside the transfer within the product fall zone that are used to reduce the impact noise of the coal during the transfer process. Both of these systems have been used on mining sites and are suitable for use in the overland conveyor , transfer station and train load out facility for WACJV. WACJV will consider the use of this product during detailed design and implement where reasonable and/or feasible to do so.

The *'Response to Submissions: Amendment to Development Application SSD-4974'* (Hansen Bailey, November 2016) Section 5.1.4 at Table 3 provides a detailed "Noise Mitigation & Management Summary" for the Project. Specifically, in relation to the overland conveyor system, transfer station and train load out facility, it commits to:

- Noise suppression will be constructed and maintained on the conveyor system and transfer points;
- Low noise rated conveyors and motor drives;
- Conveyor structures with side and roof screens to provide effective directional noise amelioration;

- Acoustic treated train load out bin;
- Acoustic treatment to Transfer Building C;
- A 50 m long, 4.5 m high (above top of rail) cutting/ noise barrier at the southern end of the rail spur (or an alternative measure to achieve similar noise mitigation). Final details to be dependent on finished site RLs;
- To control impact noise, the coal out load bin will incorporate level sensors to maintain a coal base for falling coal;
- Acoustically insulated conveyor head/transfer plates;
- Conveyor motor drives and gearboxes on conveyors specified to achieve a noise level of less than 85dBA measured at one (1) metre; and
- Switching off the southern locomotive engines when on the rail spur.

4 NIKKO ROAD – ISSUE 3

4.1 ISSUE

a) Appendix D of the response contains your most recent correspondence to Darkinjung LALC. Please provide any response received from Darkinjung LALC indicating its view on the access arrangements proposed to its land during the construction and operation of the mine.

b) With reference to the Central Coast Council's letter (dated 20 June 2017), the Department requests comment from Wyong Coal regarding the Council's requests that:

- Wyong Coal be required to transfer the ownership back to council upon completion of its mining activities;
- The post-mining transfer be at no cost to Council, and that the road be in a good state of repair;
- A meeting to be held between Council and Wyong Coal 12 months prior to the transfer of the road, so that Council can nominate what capital improvements or infrastructure that may have been installed as part of mining activities are to be removed prior to the transfer; and
- Should Wyong Coal not remove the items prior to the transfer date, then Council at its discretion may remove the items, and Wyong Coal be required to reimburse Council for the cost of such removal.

4.2 RESPONSE

a) **Table 2** provides a summary of consultation with Darkinjung Local Aboriginal Lands Council (DLALC) from May to 12 July 2017. Consultation during the period has focused on preferred access to DLALC lands from a formed Nikko Road, as well as future infrastructure sharing opportunities.

b) WACJV is in agreement with the four points above.

Table 1

WACJV Consultation with Noise Affected Properties

Date	Individual	Contact	Purpose	Action	Future Action	Comments
31 May 2017	P14 - Kerry Mountain – 315 Thompson Vale Rd	Kenny Barry	Email letter. Invite to discuss PAC findings and access to Nikko Road	Phone and email	Follow up required	No response
13 June 2017	P14 - Kerry Mountain – 315 Thompson Vale Rd	Kenny Barry	Invite to discuss PAC findings and access to Nikko Road. Outline of noise impacts construction and operations.	Phone and email	Follow up required	No response
20 June 2017	P14 - Kerry Mountain – 315 Thompson Vale Rd	Kenny Barry	Further to earlier correspondence, please advise a suitable time and location to meet Kenny Barry.	Phone and email	Follow up required	No response
21 June 2017	P16 - 555 Bushells Ridge Rd	Peter Smith	Update on project assessment & PAC2 Review, noise mitigation measures and planning. Offer of temporary relocation during possible noisy construction and upfront noise mitigation offer as per NSW VLAMP.	Face to face	Agreed to follow as project progresses	Thanked WACJV for providing advice. WACJV to continue to liaise re noise mitigation work at residences following development consent
22 June 2017	P15 - 310 Thompson Vale Road	Peter Smith	Written update inviting further consultation.	Hand delivered	Follow up next week	
23 June 2017	P14 - Kerry Mountain – 315 Thompson Vale Rd.	Kenny Barry	Message left please call to confirm meeting with Project Manager.	Phone	Follow up required	No response
26 June 2017	P14 - Kerry Mountain – 315 Thompson Vale Rd.	Kenny Barry	Registered mail (and emailed) further request for meeting.	Registered mail and email	Follow up required	No response
28 June 2017	P15 - 310 Thompson Vale Road	Peter Smith	Update on project assessment & PAC2 Review, noise mitigation measures and planning. Offer of temporary relocation during possible noisy construction and upfront noise mitigation offer as per NSW VLAMP.	Phone	Agreed to follow as project progresses	Property owner believes existing noise of trains will be louder than W2 project inputs. Thanked Wyong Coal for providing advice. WACJV to continue to liaise re noise mitigation work at residences following development consent.

Date	Individual	Contact	Purpose	Action	Future Action	Comments
28 June 2017	P14 - Kerry Mountain – 315 Thompson Vale Rd.	Kenny Barry	Message left please call and confirm meeting with Project Manager as per multiple previous requests	Phone	Follow up required	No response
3 July 2017	P14 - Kerry Mountain – 315 Thompson Vale Rd.	Kenny Barry	Registered mail further request for meeting. Outlined in detail offer of temporary occupant relocation during noisy construction, and fast tracked noise mitigation available under VLAMP.	Registered mail	Follow up required.	No response
10 July 2017	P14 – Kerry Mountain 315 Thompson Vale Rd.	Kenny Barry	Letter from Kerry Mtn Pty Ltd regarding meeting arrangements	Email	Follow-up agreed meeting	Responded – WACJV agree to meeting
10 July 2017	P14 – Kerry Mountain 315 Thompson Vale Rd.	Kenny Barry	Email – meeting time arrangements	Email	Follow-up	Awaiting confirmation from Kerry Mtn

Table 2
WACJV Consultation with DLALC

Date	Individual	Contact	Purpose	Action	Future Action	Comments
30 May 2017	Lynne Hamilton	Kenny Barry	Arrange meeting.	Email KB to LH.	Follow up	
30 May 2017	Lynne Hamilton	Kenny Barry	Arrange meeting.	Email LH to KB.		Meeting confirmed for June 2017
5 June 2017	Lynne Hamilton	Kenny Barry	Discussions PAC findings, access options for DLALC to Nikko Road. Other business synergies supporting access to DLALC properties from Wyong Coal land at Tooheys Rd and potential infrastructure sharing opportunities.	In person meeting at DLALC		Further consultation required to define exact location of access points and infrastructure sharing opportunities.
6 June 2017	Lynne Hamilton	Kenny Barry	Request confirmation of discussions points	Email LH to KB	Provide discussion points	
6 June 2017	Lynne Hamilton	Kenny Barry	Response to request for discussion points	Email KB to LH	Continue consultation to define exact needs	Summary of discussion points provided. Gated access points for DLALC to Nikko Road.

Date	Individual	Contact	Purpose	Action	Future Action	Comments
						Wyong Coal willing to provide access to DLALCs Lot 195 from Tooheys Road. Shared development infrastructure opportunities.
13 June 2017	Lynne Hamilton	Kenny Barry	Presentation and review of PAC recommendations.	Face to face Doyalson RSL	LH to provide feedback on access specific for Nikko Road	Detailed overview of PAC findings and individual recommendations. Further discussed matters regarding access points to Nikko Road and infrastructure sharing opportunities. LH agreed to finalise access point plans as request and send to KB.
16 June 2017	Lynne Hamilton	Kenny Barry	Requesting feedback from DLALC	Email KB to LH		
16 June 2017	Lynne Hamilton	Kenny Barry	Response to request	Email LH to KB	19th June 2017	LH to provide requested information by 19 June 2019
19 June 2017	Lynne Hamilton	Kenny Barry	Provided detailed request including plans identifying required access points for DLALC as previously discussed. Outlined bi-directional access ramp requirements.	Email LH to KB	Review by Wyong Coal	Requests accepted
19 June 2017	Lynne Hamilton	Kenny Barry	Response all requests accepted	Email KB to LH	Wyong Coal will refine plans	Advice
22 June 2017	Lynne Hamilton	Kenny Barry	Discuss progress and arrange to provide letter and updated drawings to DLALC	Phone	Provide information	Sent to Lynne Hamilton and B Harb
22 June 2017	Lynne Hamilton	Kenny Barry	Provided letter drawings defining DLALC requests for access	Email WC Admin to LH and BH	Follow up	Information received

Date	Individual	Contact	Purpose	Action	Future Action	Comments
27 June 2017	Nick Andrews	Kevin Reed	Discuss water, sewer and power sharing options.	Phone and email	Follow up	Shared concept plans after conversation
28 June 2017	Nick Andrews	Kevin Reed	Water supply discussions	Phone	Follow up	
3 July 2017	Nick Andrews	Kevin Reed	Power supply discussions	Phone	Follow up	ADW (DLALC) working on power supply requirements. Will advise.
3 July 2017	Lynne Hamilton	Kenny Barry	Confirmation of drawings and advice from Wyong Coal and further advice Wyong Coal working well with DLALC Planning Consultants regarding shared infrastructure opportunities	Email KB to LH	Follow up	
3 July 2017	Lynne Hamilton	Kenny Barry	Response to email from KB. Please resend email to LH, lost from inbox	Email from LH to KB	Follow up	
3 July 2017	Lynne Hamilton	Kenny Barry	Response to LH. Email resent	Email from KB to LH	Follow up	
5 July 2017	Nick Andrews	Kevin Reed	Conceptual plans for W2CP Tooheys Rd site sewer and high voltage power layouts	Email from KR to NA	Follow up	
10 July 2017	Lynne Hamilton	Kenny Barry	Continued consultation	Email from KB to LH	Follow-up	

5 ECONOMIC DATA – ISSUE 4

5.1 ISSUE

The Department appreciated Wyong Coal's offer to share its commercially sensitive data. The Department takes up this offer in respect of all relevant capital investment value data (including consideration of potential compensatory water supply infrastructure), with the understanding that any commercially sensitive data will not be made public.

5.2 RESPONSE

Section 2 provides a summary in relation to the capital costs of the water repatriation system.

WACJV has discussed its commercially sensitive data separately with DP&E.

APPENDIX A

Council Correspondence

Dianne Munro

Subject: FW: Council Meeting
Attachments: Wallarah Coal Project - Water Supply Weir.pdf

Good afternoon Kevin,

Thank you for your time this morning.

As agreed, we confirm the following:

1. Treated water (including pH correction) will be returned to the location indicated on the attached sketch.
2. Mine will provide adequate storage to ensure water can be delivered at a pre-agreed rate to match supply and environment demands.
3. Monitoring of key parameters as determined by Council will be provided upstream and downstream of the nominated discharge point.
4. The pipeline route will follow Hue Hue Road.
5. Operating rules will be jointly developed to match demand.
6. All infrastructure will be integrated into Council's SCADA and monitoring systems.

Kind regards,

Bileen Nel
Senior Manager Water and Sewer
Water and Sewer
Central Coast Council
P.O. Box 20, WYONG NSW 2259
t: 02 4350 5497
m: 0418 953 568
e: Bileen.Nel@centralcoast.nsw.gov.au

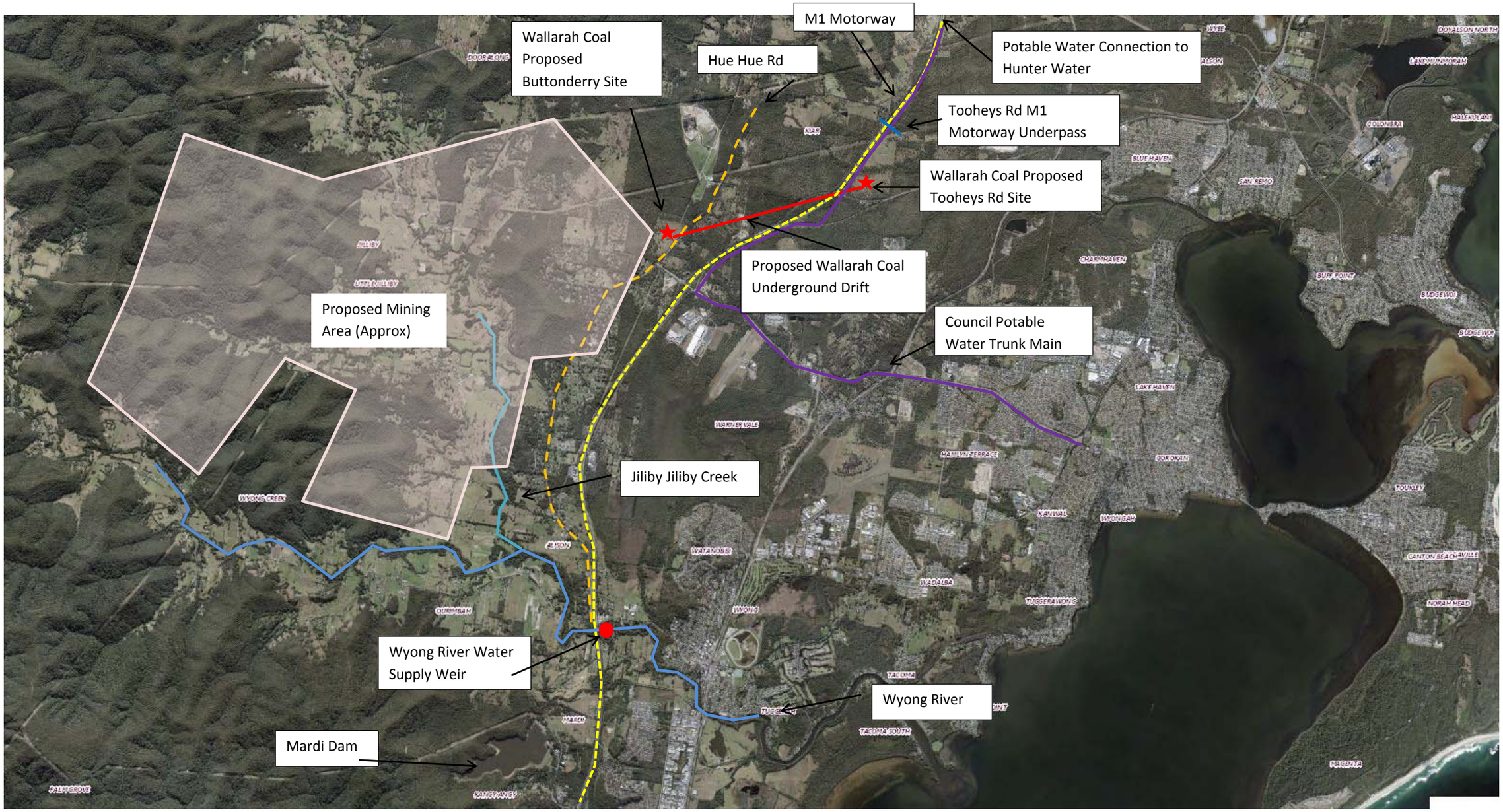


Figure 1 - Wallarah Coal Project – Proximity to Water Supply Weir and Key Features

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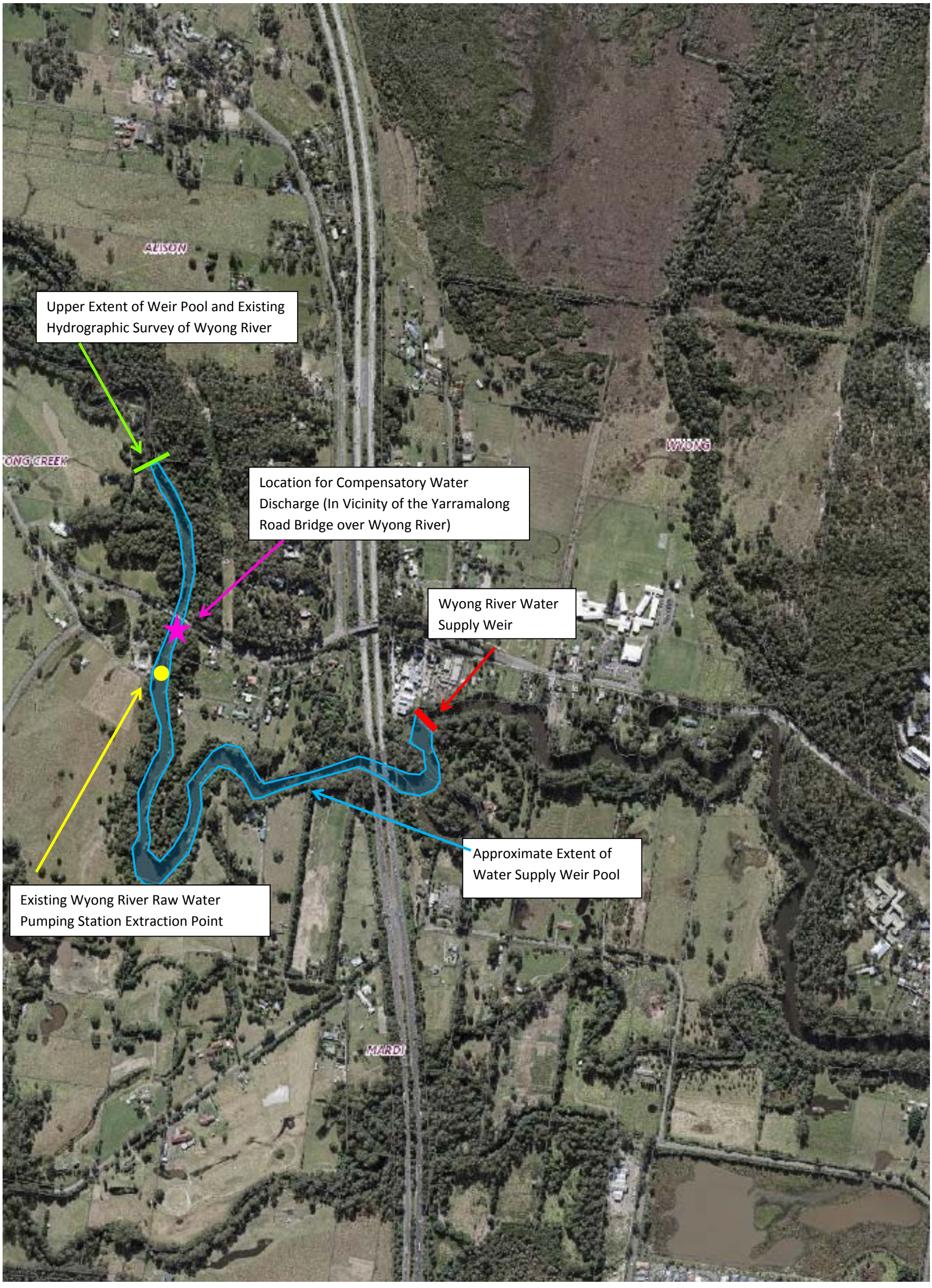

Figure 2 - Aerial View of Wyong River in Vicinity of Water Supply Weir Pool