WAGGA WAGGA WATER TREATMENT PLANT REPLACEMENT

MAY 2015

Response to Submissions Report

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Report Details

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List of Abbreviations

ARI	Average Recurrence Interval
CEMP	Construction Environmental Management Plan
CMP	Conservation Management Plan
DGRs	Director-General's Requirements
DP&E	Department of Planning & Environment
EIS	Environmental Impact Statement
EPA	Environment Protection Authority
EP&A Act	*Environmental Planning and Assessment Act 1979*
EP&A Regulation	*Environmental Planning and Assessment Regulation 2000*
EPL	environment protection licence
ESCP	Erosion and Sediment Control Plan
GHFF	Grey-headed Flying-fox
HIS	Heritage Impact Statement
ICNG	Interim Construction Noise Guidelines
NOW	NSW Office of Water
OEH	Office of Environment and Heritage
POEO Act	*Protection of the Environment Operations Act 1997*
RMS	Roads & Maritime Services
RWCC	Riverina Water County Council
SSD	State Significant Development
WTP	Water Treatment Plant

1 INTRODUCTION AND BACKGROUND

1.1 The Project

Riverina Water County Council (RWCC) is seeking approval for a new Water Treatment Plant (WTP). The proposed WTP would be constructed within the boundary of the existing Wagga Wagga WTP site which is located off the Sturt Highway (Hammond Avenue) (Lot 2, DP 540063) in Wagga Wagga.

The approval is sought under Part 4, Division 4.1 of the *Environmental Planning and Assessment Act* 1979 (EP&A Act).

The project would involve the construction of a new WTP at the site of an existing plant. It is proposed to replace the WTP to address both water quality issues and to provide increased capacity in the plant for predicted increases in demand. The new WTP would have an ultimate capacity of 55 ML/d. A conventional water treatment process has been proposed.

1.2 EIS Exhibition

In accordance with section 89F of the EP&A Act and the *Environmental Planning and Assessment Regulation* 2000 (EP&A Regulation), an Environmental Impact Statement (EIS) is required to be placed on exhibition for not less than 30 days.

Exhibition of the EIS commenced on 26th January 2015 and finished on 2nd March 2015.

The EIS was made available on the Department of Planning & Environment (DP&E) web site.

1.3 Purpose of the Report

The purpose of this report is to identify the issues raised in submissions received during the exhibition of the EIS and to provide responses to the issues.

2 RESPONSE TO ISSUES

2.1 Respondents and Issues Raised

A total of 8 submissions were received in response to the EIS. Of these, 7 were from government authorities and 1 was from a member of the public.

2.2 Overview of Issues Raised in the Public Submission

One submission from the public was received. The submission was received from the Wagga Floodplain Residents Protection Association Ltd. The submission was an objection to the proposed development because the new WTP adds to, and upgrades, essential infrastructure being located on the Wagga Floodplain of the Murrumbidgee River. The issues raised in the submission are summarised in Table 2-1.

Table 2-1: Overview of Issues Raised by the Public Submission

Issue	Where Addressed in the EIS	Where Addressed in the Submissions Report
WTP infrastructure is at risk of flood damage and flood event related downtime when located on the floodplain.	Section 6.4	Section 2.4.1 and 2.4.2
The WTP will be protected by a levee, whether it is the existing levee or a future increased/improved levee. The levee impacts on the flood behaviour on the floodplain. In particular the levee will impact nearby properties.	Section 6.4	Section 2.4.2
Essential infrastructure should be sited away from the floodplain where possible.	Section 3.8.2	Section 2.2.1
If the WTP is not re-sited then RWCC should commit to full mitigation to affected properties from any flood impacts due to the levee.	Section 6.4	Section 2.4.2

2.3 Overview of Issues raised by government authorities

Submissions were received from the following state and local government agencies:

- Environment Protection Authority
- City of Wagga Wagga
- Urana Shire Council
- Department of Primary Industries
- Roads & Maritime Services
- Office of Environment & Heritage
- NSW Health

Urana Shire Council and NSW Health had no objections to the proposed development and did not raise any issues. The City of Wagga Wagga noted that it is supportive of the proposed development. A summary of issues raised by government authorities is provided in Table 2-2.

Table 2-2: Overview of Issues Raised by Government Authorities

Government Authority	Issue	Issue Summary	Where Addressed in the EIS	Where Addressed in the Submissions Report
Environment Protection Authority	Backwash water discharge into Marshalls Creek	No objection to the proposed increase in annual volume discharge of filter backwash water into Marshalls Creek, provided the discharge does not exceed the water quality limits on the Environment Protection Licence.	Section 6.12.4. The EIS identified that the discharge would not exceed the water quality limits.	No further response provided.
	Erosion and Sediment Control during construction	Prepare and implement an erosion and sediment control plan in accordance with *Managing Urban Stormwater: Soils and Construction* (Landcom, 2004) to prevent the pollution of water during construction.	Section 6.4.3 and Table 7.1, Section 7.2.1 The EIS includes this management measure.	No further response provided.
	Dust management during construction	Implement measures to control and minimise dust from the premises during the construction phase.	Section 6.4.3, Section 6.8.3 and Table 7.1, Section 7.2.1 The EIS includes this management measure.	No further response provided.
	Operational noise	Design, build and operate the new plant to achieve the project specific noise levels identified in Section 6.9.6 of the EIS.	Section 6.9.6	Section 2.4.4

	Construction noise management	Implement the best practice approaches described in the *Interim Guidelines for Construction Noise* to minimise impact during the construction phase.	Section 6.9.5 and Table 7.1, Section 7.2.1 The EIS includes this management measure	No further response provided.
	Amendment to the EPL	Current Environment Protection Licence (EPL) No 614 held by RWCC adequately addresses most operational aspects. Apply to the EPA to increase volume discharge limit and to add noise limit conditions identified in the EIS to RWCC's EPL.	Table 2-3, Section 2-8	Section 2.4.5
City of Wagga Wagga	Heritage Conservation Management Plan (CMP)	The heritage assessment is updated to include further reference to the final CMP and this form part of the final consent document for the water treatment plant.	Section 6.6.4	Section 2.4.6
	Heritage Conservation Management Plan	The CMP that Council has viewed does not provide detail on the ongoing use and management of the heritage items on the site and could be expanded to include: • A diagrammatic analysis of the development of the place using overlays or mark ups indicating dates of the buildings • Ranking diagrams to complement the written assessment • Conservation guidelines expanded to include policies as to the use and treatment of the historic buildings on the site, adaptations, additions and alterations etc	CMP not included as part of the EIS.	Section 2.4.6
	S94A contribution	The Council's levy contribution plan does not provide any relief from paying a contribution under Section 94A of the EP&A Act for this type of development. Council defers to the Department of Environment and Planning as to whether	Not addressed in the EIS.	Section 2.4.7

		a contribution under S94A should be imposed as the proposed development is for public infrastructure.		
	Development contribution - Sewage	Assumed that wastewater is not discharged to sewer, nor any floor areas that generate the need for a contribution under Council's '*Development Servicing Plan No 1: Sewage Services*'	Not addressed in the EIS.	Section 2.4.8
	Development contribution - stormwater	Assumed that there is no stormwater entering Council infrastructure that would generate the need for a contribution under '*Development Servicing Plan – Stormwater*'	Not addressed in the EIS.	Section 2.4.9
	Flood Management and Evacuation Plan	A Flood Management and Evacuation Plan be prepared for the site.	Not addressed in the EIS.	Section 2.4.3
	Flood Levee	Noted that RWCC propose to construct a levee around the site and there is no requirement for this to happen at any particular time in the future.	Section 6.4.1	Section 2.4.2
Department of Primary Industries	Flood Levee	Noted that the proposed levee is subject to further assessment. A levee would require consideration of flood related impacts and potential approval requirements under Part 8 of the *Water Act* 1912.	Section 6.4.1	Section 2.4.2
	Approval for raw water intake	Existing raw water intake and high and low level pumps that are to be decommissioned relate to current approval 40WA400025 under the *Water Management Act.* These are to be replaced with a new water intake.	Section 3.4.1	Advice noted. No further response provided.

	Apply controlled activities guidelines to waterfront land works.	Detailed design for stability of the final structure (river water intake and coffer dams) during high flows is critical. Recommend that the design, construction and rehabilitation works are in accordance with the NSW Office of Water's *Guidelines for Controlled Activities on Waterfront Land* (July 2012).	Section 2.5.3, Section 6.4.2, Section 6.4.3 and Table 7.1, Section 7.2.1 The EIS includes this management measure	No further response provided.
	Approval for dewatering during construction and decommissioning of the river intake.	If total groundwater take is less than 3 ML over a 12 month period for the river intake construction then a groundwater license is not required under the *Water Act* 1912. If the take exceeds 3 ML then a Part 5 licence under the *Water Act* 1912 would be required. If surface water is taken this may need to be accounted in the RWCC water entitlement.	Section 2.5.3 and Section 2.8	Section 2.4.10
	Dewatering during construction and decommissioning of the river intake.	Further assessment is recommended to clarify the dewatering requirements and potential impacts.	Section 6.4.2	Section 2.4.10
	S60 Approval under the *Local Government Act* 1993	S60 approval under the *Local Government Act* 1993 to construct or extend water treatment works is required. Consultation with the Urban Water Branch of NSW Office of Water is expected to continue to facilitate the approval process.	Table 2-3, Section 2.8 and Section 5.1. The requirement for S60 approval is identified in the EIS. RWCC will continue to consult with the Urban Water Branch of NSW Office of Water during the approval process.	No further response provided.

	Prepare Construction Environmental Management Plan	Recommended Condition of Approval – The proponent shall prepare a Construction Environmental Management Plan (CEMP) for the project prior to commencement of activities. This plan must be developed in consultation with NSW Office of Water.	Section 7.1. The requirement to prepare a CEMP is included in the EIS. RWCC will consult with NSW Office of Water.	No further response provided.
Roads & Maritime Services	Traffic Management Plan	The Construction Traffic Management Plan is to outline measures to manage vehicular access, particularly construction vehicles between the site and Sturt Highway. The plan shall address potential impacts associated with construction aspects of the development, the measures to be implemented to maintain the standard and safety of the road network, and procedures to monitor and ensure compliance.	Section 6.10.3 and Table 7-1, Section 7.2.1	Section 2.4.11
	Access to and from the site	Vehicular access to and from the site needs to be carefully managed due to limited frontage of the site to the highway.	Section 6.10	Section 2.4.12
	Egress to the site	Egress to the site is to be restricted to left turn only to the Highway. Appropriate signage shall be erected and maintained within the driveway to provide for the legal enforcement of this left turn restriction.	Section 6.10	Section 2.4.12
	Entrance Driveway	Consideration to be given to delineating the 2 way traffic flow at the entrance driveway to the highway. A splitter island or the like within the driveway would decrease the potential for vehicles exiting the site to cause delay to vehicles entering the site from the highway. The splitter island to be a raised concrete structure within the site and painted on the driveway within the road reserve. Associated directional marking to be installed in accordance with Australian Standards.	Section 6.10	Section 2.4.12

	Entrance driveway	Access driveway to be designed and constructed to accommodate the swept path of the largest vehicle in accordance with Australian Standards. The access driveway shall be designed to allow all vehicles to enter and exit the subject site in a forward direction and not be required to reverse onto the adjoining road reserve.	Section 6.10	Section 2.4.12
	S138 approval under the *Roads Act* 1993	Any works in the road reserve of the Sturt Highway (Hammond Avenue), which is a classified road, requires concurrence from the Roads & Maritime Services under s138 of the *Roads Act* 1993	Not addressed in the EIS as works in the road reserve are not proposed. Should line markings be painted on the driveway in the road reserve it is noted that a S138 Approval would be required.	No further response provided.
	Advice on future road proposals	Advice to RWCC from RMS is that : • A raised central medium may be constructed within the Sturt Highway adjacent to the development site in the future when traffic volume and/or safety needs warrant. • Any options for the widening of Marshalls Creek Bridge will likely alter the horizontal and vertical design of the current access driveway to the subject site from the Sturt Highway	Not addressed in the EIS. Advice noted by RWCC.	No further response provided.
Office of Environment & Heritage	Assessment of flood levee in the EIS.	OEH recommended for the DGRs that an assessment of flood impacts of the levee upgrade to the 100 year flood level (and development of mitigation measures where necessary) and other feasible options for flood protection should be incorporated into the EIS.	Section 6.4	Section 2.4.2

	Assessment of flood levee in the EIS.	The EIS does not take into account the potential impact of 1 in 100 year Average Recurrence Interval (ARI) flood levee on adjacent areas, including businesses situated on either side of Hammond Avenue in the East Wagga Industrial Area.	Section 6.4	Section 2.4.2
	Approval of WTP upgrade deferred until flood levee assessed and determined.	Recommend that approval of the WTP upgrade be deferred until the levee upgrade is determined under Part 5 of the EP&A Act, as there is no assessment of flood impacts in the EIS. Concerned that if approval is granted for the WTP without approval for the levee, that the assessment may be compromised, particularly in relation to upstream flooding, because there may be potential changes to the WTP design if the 100 year ARI flood level cannot be guaranteed.	Section 6.4	Section 2.4.2
	Approval of the WTP and Flood Levee	If approval for the WTP upgrade is not deferred until the levee has been assessed and approved, it is recommended that a condition of approval is included that the construction of the WTP not commence until the levee has been assessed and constructed. The assessment of the levee upgrade should adequately address upstream flooding issues, including consultation with landholders potentially impacted by subsequent changes to flooding.	Section 6.4	Section 2.4.2
	Grey-headed Flying-fox (GHFF) construction timing mitigation measure	An appropriate mitigation measure for protection of GHFF is provided in Section 6.1 of the Ecology Assessment (*No pile driving or high noise generating construction works are to occur during the breeding months of the Grey-headed Flying-fox to ensure construction noise does not disturb breeding. Therefore, construction time is limited to between April and October*.)	Section 6.5 and Table 7-1, Section 7.2.1.	Section 2.4.13

		However the corresponding mitigation measure in Table 7-1 of the EIS limits the winter construction timing safeguard to the river intake site only. It is recommended that all construction work generating loud noise is limited to between April and October to minimise impacts to the GHFF.		
	CEMP Protocol for GHFF	Recommended that a protocol for management of the impact on the GHFF colony during construction be prepared. The recommendations are summarised as: • Targeted survey prior to construction; • Actions to be undertaken if GHFF are found in the vicinity of the development site; • Provision for ongoing monitoring; • Measure for reducing impact to GHFF, including screening; • Consideration of flyways for above-ground electrical transmission lines.	Section 6.5.4	Section 2.4.14
	Aboriginal cultural heritage	The indicative landscape features of the Murrumbidgee River and Marshalls Creek increases the likelihood of sites existing within the proposed activity area and there remains potential for impact on Aboriginal cultural heritage, particularly where soil disturbance and earthworks occur.	Section 6.7.2	Section 2.4.15
	Stop Work Provisions for Aboriginal sites	If an Aboriginal site is found recommended stop work provisions provided.	Section 6.7.4 and Table 7.1 in Section 7.2.1	Section 2.4.15

2.4 Response to Issues

2.4.1 Location of the new WTP

Summary of issue raised

Essential infrastructure such as WTPs should not be sited on the floodplain of the Murrumbidgee River where possible. WTP infrastructure is at risk of flood damage and flood event related downtime due to the location on the floodplain.

Response

Section 3.8.2 of the EIS identified that only one option was considered for the location of the WTP. Siting a new WTP in a different location from the existing WTP would be a higher cost than constructing at the existing site. The replacement WTP would be located close to the Murrumbidgee River water source, minimising environmental costs and impacts associated with pumping water over a long distance and the need for construction and maintaining new pipelines.

The WTP site is at risk of flooding. The site is currently protected by a 1 in 20 year flood levee. RWCC is committed to building a 1 in 100 year flood protection levee.

If the Wagga Wagga WTP is not able to operate due to a flood event, treated water can be supplied from East Wagga, West Wagga and North Wagga WTPs. These plants treat groundwater and are not impacted by floods and would continue to operate. Consideration of flood impacts is included in Section 2.4.2.

2.4.2 Flood Levee around the WTP

Summary of issue raised

The existing WTP is protected by a flood levee which is designed for a 1 in 20 year flood. RWCC is proposing to construct a 1 in 100 year levee around the WTP. The upgraded levee is being assessed under Part 5 of the EP&A Act. The EIS assumed that the levee would be constructed prior to the new WTP and therefore the new WTP would be protected from a 1 in 100 year flood.

Issues raised in regards to the flood levee are:

Assessment of the Flood Levee in the EIS

- The impacts of the flood levee and other feasible options for flood protection recommended to be assessed in the EIS.
- The EIS does not take into account the potential impact of a 1 in 100 year Average Recurrence Interval (ARI) flood on adjacent areas, including business situated on either side of Hammond Avenue in the East Wagga Industrial area.

Assessment of the impacts of the Levee

- A levee would require consideration of flood related impacts and potential approval requirements under Part 8 of the *Water Act* 1912, for the part 5 EP&A Act assessment.
- The levee will impact on flood behaviour and will impact nearby properties.

Approval of WTP and Flood Levee

- Recommended that approval of the WTP upgrade be deferred until the levee upgrade is determined under Part 5 of the EP&A Act, as there is no assessment of flood impact in the EIS.
- Concerned that if approval is granted for the WTP prior to approval for the levee, that the assessment may be compromised, particularly in relation to upstream flooding, because there may be potential changes to the WTP design if the 100 year ARI flood level cannot be guaranteed.
- If approval for the WTP upgrade is not deferred until the levee has been assessed and approved, it is recommend that a condition of approval is included that the construction of the WTP not commence until the levee has been assessed and constructed. The assessment of the levee upgrade should adequately address upstream flooding issues, including consultation with landholders potentially impacted by subsequent changes to flooding.

Mitigation of Affected Properties from levee upgrade

- RWCC should commit to full mitigation to affected properties from any planned levee upgrade.

Response

Flood Levee Construction

The existing protection of the WTP site is for a 1 in 20 flood with 0.5m freeboard. RWCC are committed to building a 1 in 100 levee.

The proposed 1 in 100 year levee is being assessed in a Review of Environmental Factors (REF) under Part 5 of the *Environmental Planning and Assessment Act* 1979. Impacts of flooding due to the levee have not been assessed in the EIS as they are being considered in the REF. The REF will include flood modelling that has been undertaken for the 1 in 100 year flood levee.

The EIS indicated that the 1 in 100 year flood levee would be constructed prior to the construction of the new WTP. The construction of the upgraded levee is now scheduled for construction after the completion of the new WTP. The delay to the original construction program has been due to design issues. The levee design has been changed to accommodate the new WTP footprint and the design and determination of the levee under Part 5 of the EP&A Act is anticipated to be complete by the end of 2014/15 financial year. Due to limited space on site during construction of the new WTP, the levee would not be constructed concurrently with the WTP. RWCC is committed to building the 1 in 100 levee at earliest practical time, immediately following construction of the WTP. The RWCC 2015/16 budget includes funding for the levee. It is anticipated that the levee would commence construction during the commissioning of the new WTP and that the construction programme would be approximately 26 weeks.

Prior to construction of the 1 in 100 year levee the WTP site would have protection for a 1 in 20 flood with 0.5m freeboard, as per the current flood protection of the existing WTP.

Impacts in the event of flooding during construction

The 1 in 20 year levee was constructed around the WTP site in 2012. The levee would protect the construction works for a 1 in 20 year flood.

Flood water would enter the construction site for floods greater than a 1 in 20 year flood. This would result in delays to the construction program.

There would be typically three days warning prior to a riverine flood occurring. The construction contractor would relocate plant and equipment off site prior to flooding and relevant temporary works carried out to minimise impact of the flood

Any flood damage, demobilisation and remobilisation costs during construction are covered by works insurance.

Impacts in the event of flooding during operation prior to construction of the 1 in 100 year levee

When the WTP is first commissioned it would be protected for floods up to a 1 in 20 year flood event, due to the existing levee. For smaller flood events there would be no impact on the operation of the WTP. The 1 in 100 levee construction is scheduled to commence during the commissioning phase of WTP and is estimated to take 26 weeks to complete. Once the 1 in 100 year flood level is constructed the plant would be protected from a 1 in 100 year flood.

Prior to construction of the new levee the impact of a flood greater than 1 in 20 during operation of new WTP would be similar to the impact on the existing WTP. The WTP would not operate during a flood. A flood has potential to impact on structures and equipment and result in power outage to the WTP.

The new WTP includes design measures that would minimise impact if a flood event occurs. The design measures include:

- The WTP control room, switchroom, clear water pumps, centrifuges, IT networks and communication systems and electrical control systems are elevated above the 1 in 100 year flood level. This would protect them from flood waters.
- The chemical storage tanks would all be located within buildings which provides greater flood protection than tanks in the open. The buildings would be robust tilt panel construction which would help to protect the contents from damage in the event of a flood.
- The new WTP would treat sludge within enclosed structures and not within open sludge lagoons that can become inundated with flood waters. As described below there is unlikely to be production of sludge before a flood impacts the site.

With advance warning of a riverine flood the following actions would be undertaken:

- RWCC would ensure that chemical storage tanks are full before the flood to eliminate the risk of tanks floating. Chemical dosing pumps and electrical equipment and control systems would be disconnected and relocated prior to the flood and then reinstalled as part of recovery works.
- leading into flood events, due to low demand, it is very unlikely the WTP filtration process would be operated to treat surface river water, therefore no production of sludge is anticipated before the flood impacts the site. Demand will be met

using bore water for some time beforehand and afterwards. Electrical equipment and control systems would be disconnected and relocated and reinstalled as part of recovery works.
- RWCC would move equipment to high ground to minimise impact. This may be on site or taken off site with the use of trucks. This would include equipment such as critical pumps, motors, switchboards, compressors, valve actuators, control systems and any spare parts which can be relocated.

Operational measures would be put in place to maintain water supply if the Wagga Wagga WTP is temporarily not able to operate due to a flood. These measures include:

- Operation of the East Wagga, West Wagga and North Wagga WTPs. These plants are not impacted by floods and would continue to operate. These plants treat groundwater. If Wagga Wagga WTP is not able to operate due to power outage associated with flooding these other water treatment plants are able to operate as they are supplied with power from other parts of the electrical network. It would be very unlikely that power supply is affected to all water treatment plants at the same time.
- When there is a flood warning, potable water reservoirs are filled prior to flood. Chlorination systems dose at higher concentrations to mitigate against possible biological contamination.
- Other actions can include provision of bottled water or potable water supply points can be arranged at designated locations with consultation with NSW Health and the Regional Emergency Management Committee.

One of the risks to the WTP during a flood is power outage. As indicated above critical pumps, motors, switchboards and control systems may be relocated with advance warning. This would assist with being able to return electricity supply to the WTP efficiently after a flood. There are multiple feeds into various transformers in the Essential Energy network if one of the feeds is affected. There is a risk that transformers (sub-stations) on site may be impacted by flood waters. An earth levee would be constructed just around all three sub-stations within the WTP site. The electrical conduits containing the cables to and from all these sub-stations, will be sealed on all sides to prevent water from entering and damaging the sub-station. RWCC also works with the Regional Emergency Management Committee during a flood event. This can include the committee providing recommendations regarding supply of generators if required.

During a flood, treatment plants can be remotely operated by RWCC. However RWCC would plan to have staff on site during a flood with the administration building, and waterworks building being used.

Equipment and electrical systems would be reinstalled as soon as possible after cleaning up the WTP site, following a flood. During and after a flood event, river turbidity would be expected to be high and water demands are expected to be low during the flood period. Therefore treatment of surface water would not be required. While equipment is being reinstalled at the WTP and the plant is being brought back onto line following a flood event, groundwater would be used for water supply.

2.4.3 Flood Management and Evacuation Plan

Summary of issue raised

A Flood Management and Evacuation Plan be prepared for the site. The plan is to include the following:

- Operation of the site in times of flood (including any need for access to the site and how this will be achieved)
- Details of safe evacuation of personnel
- Management of stockpiles and any other loose material
- Management of machinery
- Storage of chemicals/liquids

Response

RWCC does not have a Flood Management and Evacuation Plan for the WTP site. Typically there is three days warning when a flood is going to occur. Actions are taken by RWCC to prepare the site when flood warnings are in place, such as securing loose material, planning access arrangements and relocating equipment as described in Section 2.4.2.

2.4.4 Operational noise

Summary of issue raised

Design, build and operate the new plant to achieve the project specific noise levels identified in Section 6.9.6 of the EIS.

Response

The project criteria of 38 dBA was established for operational noise for the closest sensitive noise receivers based on the noise assessment prepared for the proposal. The noise assessment was prepared in consideration of the *NSW Industrial Noise Policy* (EPA 2000). In Section 6.9.6 of the EIS it was noted that under a worst case scenario that the predicted noise level would be 41 dBA at the adjoining Holiday Park and that the project criteria would be exceeded. The WTP is being designed to achieve the predicted noise levels in the EIS.

2.4.5 Amendment to the EPL

Summary of issue raised

RWCC will need to apply to the EPA to increase the volume discharge limit and to add noise limit conditions identified in the EIS to their EPL (EPL Number 614).

Response

RWCC is licensed to discharge 1 ML/day of treated wastewater to Marshalls Creek. As identified in Section 2.8 of the EIS, RWCC is required to apply to obtain a variation of the EPL to increase the limit on the volume of discharge, as the highest discharge estimated from the new WTP is 2.22 ML/day.

EPA requested that noise limit conditions are added to the EPL. The EPL held by RWCC regulates the discharge of wastewater to Marshalls Creek. The WTP is not a scheduled premises under the *Protection of the Environment Operations Act* 1997 (POEO Act). Condition O2.1 of EPL 614 requires that the plant and equipment installed at the premises or used in connection with the licenced activity must be:

- maintained in a proper and efficient condition; and
- operated in a proper and efficient manner.

Condition O2.1 is consistent with the requirements under Section 139 of the *Protection of the Environment Operations Act* 1997 which regulates noise pollution. RWCC considers that an amendment is not required for the EPL to add a noise limit condition, as the EPL already contains a condition which is consistent with the regulation of noise pollution under the POEO Act.

2.4.6 Heritage Conservation Management Plan

Summary of issue raised

The Heritage Assessment does not include reference to the final CMP. The Heritage Assessment should be updated to include a reference to the final CMP.

The CMP does not provide detail on the ongoing use and management of the heritage items on the site and it is recommended to be expanded to include:

- A diagrammatic analysis of the development of the place using overlays or mark ups indicating dates of the buildings
- Ranking diagrams to complement the written assessment
- Conservation guidelines expanded to include policies as to the use and treatment of the historic buildings on the site, adaptations, additions and alterations etc

Response

The CMP has been completed. The CMP has been prepared to aid RWCC in the long term management of the heritage assets and values of the RWCC site. The Heritage Impact Statement (HIS) in the EIS assessed the impact of the new WTP and identified management measures for the construction and operation of the new WTP. The findings of significance of individual buildings contained in the CMP were available for the preparation of the HIS. The final CMP does not change the outcome of the heritage assessment or management measures contained in the EIS.

2.4.7 Section 94A Contribution

Summary of issue raised

City of Wagga Wagga defers to the Department of Planning and Environment as to whether a Section 94A levy contribution should be imposed, as the development is for public infrastructure.

Response

The proposed development is providing essential community infrastructure for the provision of water supply. Therefore RWCC requests that a Section 94A Levy Contribution is not required to be paid.

2.4.8 Development Servicing: Sewage Services

Summary of issue raised

Assumed that wastewater is not discharged to sewer, nor any floor areas that generate the need for a contribution under Council's '*Development Servicing Plan No 1: Sewage Services*'

Response

The development will include one toilet in the control room. There will be no increase in employee numbers required to operate the new WTP.

2.4.9 Development Servicing Plan – Stormwater

Summary of issue raised

Assumed that there is no stormwater entering Council infrastructure that would generate the need for a contribution under '*Development Servicing Plan – Stormwater'.*

Response

The new WTP will not be discharging stormwater to the Council stormwater system.

2.4.10 Dewatering for Construction of the River Water Intake

Summary of issue raised

If total groundwater take is less than 3 ML over a 12 month period for the river intake construction then a groundwater license is not required under the *Water Act* 1912.

If the take exceeds 3 ML then a Part 5 licence under the *Water Act* 1912 would be required.

If surface water is taken this may need to be accounted in the RWCC water entitlement.

Recommend further assessment of dewatering requirements.

Response

Results of groundwater investigations presented in Coffey (2013) indicate that groundwater underlying the WTP site occurs at between 8 m and 10 m beneath the existing ground surface and is likely to be hydraulically connected to the adjacent river (Coffey 2013).

Potential impacts on groundwater during construction of the river water intake would be temporary and localised, and operation of the new WTP would not require an increase in the current volume of groundwater extracted.

Section 6.5.2.1 of the EIS notes that during construction of the river water intake, excavation works may encounter groundwater, necessitating dewatering. It is considered that this is unlikely to result in pressure on groundwater resources, nor is any Groundwater Dependent Ecosystem in the locality likely to be impacted, as the dewatering would be temporary and localised. The extracted groundwater would be pumped and passed through erosion and sediment controls (sediment filters and traps, barley bales) and across grassed areas to infiltrate the soil and/ or evaporate or discharge to the river if treated and it can be

demonstrated to be of a suitable quality that is not considered to be polluting the receiving waters of the river.

Section 2.8 of the EIS indicated that a groundwater licence would be required for construction of the river intake works depending on volumes to be dewatered and prevailing conditions.

The construction contractor would estimate likely volumes of groundwater prior to construction depending on their proposed construction methodology and would obtain a dewatering permit if volumes are predicted to be more than 3 ML in a 12 month period.

Section 7.1 of the EIS identified that the CEMP would include a Water Quality and Groundwater Management Plan. The Water Quality and Groundwater Plan will include a work method statement for the management of groundwater that is dewatered during the river intake construction and decommissioning works. This would include documenting environmental aspects and how they would be managed. The plan would outline measures for monitoring volumes of surface water pumped from the coffer dam and groundwater extracted during the river intake works.

2.4.11 Traffic Management Plan

Summary of issue raised

RMS requested that a Traffic Management Plan (TMP) is prepared. It is recommended that the plan includes the following:

- measures to manage vehicular access, particularly construction vehicles between the site and Sturt Highway.
- potential impacts associated with construction aspects of the development,
- the measures to be implemented to maintain the standard and safety of the road network; and
- procedures to monitor and ensure compliance.

Response

Section 6.10.3 of the EIS identifies that a Traffic Management Plan will be prepared for construction. Factors listed by the RMS will be considered in the preparation of the TMP.

2.4.12 Site Access

Summary of issue raised

Vehicular access to and from the site needs to be carefully managed due to limited frontage to the site to the highway. RMS recommends:

- Egress to the site is to be restricted to left turn only to the highway. Appropriate signage shall be erected and maintained within the driveway to provide for the legal enforcement of this left turn restriction.
- Consideration to be given to delineating the 2 way traffic flow at the entrance driveway to the highway with a splitter island. A splitter island or the like within the driveway would decrease the potential for vehicles exiting the site to cause delay to vehicles entering the site from the highway.

- The splitter island to be a raised concrete structure within the site and painted on the driveway within the road reserve. Associated directional marking to be installed in accordance with Australian Standards. The splitter island is not to protrude into the carriageway.
- Access driveway to be designed and constructed to accommodate the swept path of the largest vehicle in accordance with Australian Standards. The access driveway shall be designed to allow all vehicles to enter and exit the subject site in a forward direction and not be required to reverse onto the adjoining road reserve.

Response

RWCC already have left turn only egress and that will remain in place. RWCC has considered the recommendation of the installation of the concrete splitter. It is not considered that there is sufficient width in the driveway to install a permanent concrete splitter as it would restrict the ability for semi-trailers to enter and exit site. A temporary mountable splitter island could be installed for construction of the WTP.

Due to the limited frontage the access driveway can not accommodate the swept path of the largest vehicle.

2.4.13 Grey-headed Flying-fox Construction Timing

Summary of issue raised

An appropriate mitigation measure for protection of GHFF is provided in Section 6.1 of the Ecology Assessment (*No pile driving or high noise generating construction works are to occur during the breeding months of the Grey-headed Flying-fox to ensure construction noise does not disturb breeding. Therefore, construction time is limited to between April and October.*)

However the corresponding mitigation measure in Table 7-1 of the EIS limits the winter construction timing safeguard to the river intake site only.

OEH recommended that all construction work generating loud noise is limited to between April and October to minimise impacts to the GHFF.

Response

Construction of the river intake was identified as the activity most likely to generate loud noise due to the use of sheet-piling to construct the coffer dam. In addition, as the river intake is the component of the proposed works that is closest to the roost site (around 100 m) and is at river level (sound tends to carry further across water) it is the component of the proposed works that is considered the most likely to create a noise disturbance for Grey-headed Flying-foxes roosting on Bat Island. It is therefore considered appropriate that construction of the river intake be undertaken during April to October to avoid the risk of adult flying-foxes abandoning young at the camp site, if adversely disturbed by loud construction noise.

Commencement of construction activities associated with the water treatment plant itself, such as site preparation, foundation works and installation of pre-fabricated building structures, would likely be concurrent with construction of the river intake, and would occur

around 200 m from the roost site, at its closest point. The construction period is expected to take 12 to 16 months, with the majority of the louder noise-generating activities likely taking place during the non-breeding period of the Grey-headed Flying-fox. It is likely that by the time the colony returns with young in the spring, much of the loud noise-generating aspects of the construction works would be complete.

It is noted that the recent construction of the Masters Improvement Centre, which is situated around 300 m to the south-east of the GHFF roost site and covers an area of 13,200 m^2, did not result in the abandonment of the roost site by GHFF. This would have been a large construction project involving similar noise-generating equipment to that which would be used to construct the water treatment plant (e.g. electric powered saws, plate compactors, small road roller, hand tools, bobcat, hydraulic crane, excavator, small truck, concrete mixer truck).

It is also noted that the reference to chainsaws, whipper snippers and lawn mowers in the SEQ Catchment's *Management and Restoration of Flying-fox Camps: Guidelines and Recommendations* identified in OEH's submission is in relation to the use of such equipment during vegetation management activities in flying-fox camp sites and is not necessarily relevant to the proposed works.

The mitigation measure pertaining to timing of the proposed works has been amended as follows:

Construction of the river intake site is to be undertaken during April to October when dependent flying-fox young are unlikely to be present in the Grey-headed Flying-fox colony on Bat Island and dependent Platypus young are unlikely to be present in burrows.

2.4.14 Grey-headed Flying-Fox Construction Protocol

Summary of issue raised

OEH recommend a protocol for mitigating impacts of construction on the GHFF be prepared and implemented as part of the CEMP. The requirements are summarised as:

- Targeted survey for GHFF prior to construction by an appropriately qualified ecologist, including trees between the development site and the river and the known camp locations in riverine vegetation up to 500 m to the east of the existing WTP
- Actions to be undertaken if GHFF are found in the vicinity of the development site
- Provision for ongoing monitoring during construction
- Additional measures for reducing impact to GHFF, including screening
- Consideration of flyways for above-ground electrical transmission lines

Response

The following provides a response to the protocols for the GHFF that OEH recommended for consideration.

- Targeted survey for GHFF prior to construction by an appropriately qualified ecologist, including trees between the development site and the river and the known camp locations in riverine vegetation up to 500 m to the east of the existing WTP

Undertaking the survey prior to construction is considered unnecessary. Targeted surveys for the species were undertaken during preparation of the EIS and it was established that flying-foxes were present on Bat Island as well as the northern side of the river. Construction of the river intake is scheduled to commence during late autumn / early winter when the colony is absent from the roost site, so a pre-construction survey is unlikely to yield useful data. Therefore survey work should not be undertaken until September.

- Additional measures for reducing impact to GHFF, including screening

In addition to timing of the construction works, measures for mitigating the impact of noise disturbance have been provided in the Noise and Vibration section of the EIS (Section 6.9.5 of the EIS). Whilst these measures have been designed to minimise noise impacts on the human environment, they would also serve to reduce noise disturbance for the Grey-headed Flying-fox.

- Consideration of flyways for above-ground electrical transmission lines.

The proposed works do not involve construction of above-ground electrical transmission lines, therefore consideration of flyways is not required.

The following GHFF protocol is proposed for construction:

- Prior to commencement of construction, contact is to be made with the local wildlife rescue organisation regarding the proposed works and their willingness to accept injured fauna including flying-foxes.
- Undertake a targeted survey for Grey-headed Flying-fox on Bat Island as well as within riparian vegetation up to 500 m east of the construction site during September when adults are due to return with young. The aim of the survey would be to establish whether adult members of the colony have returned with dependent young and to monitor potential impacts from noise, particularly desertion of young.
- In the event that construction activities involving loud noise-generating equipment outdoors (such as electric-powered saws, plate compactors, concrete mixer truck) extend beyond October and into spring / summer, a targeted survey of flying-foxes on Bat Island and within riparian vegetation up to 300 m east of the site is to be undertaken during mid to late October to ascertain whether flying-foxes are showing signs of being adversely disturbed by noise from the site.
- If the targeted survey determines flying-foxes within the colony are showing signs of being adversely or unduly disturbed by construction noise, monitoring is to be undertaken on days when such equipment is being used to ascertain whether adults are being disturbed to the point of abandoning young at the camp site.
- In the unlikely event that monitoring determines that young are being abandoned at the camp site, use of loud noise-generating equipment outdoors is to cease until a Fauna Ecologist experienced in the management of Grey-headed Flying-foxes is consulted and an appropriate strategy developed.
- Monitoring of the flying-fox colony is to continue on a weekly basis (or as described above) during spring-summer until the use of loud noise-generating equipment is no longer required.
- Should an injured or orphaned flying-fox be found, either within the construction site or in adjacent habitat, the wildlife rescue organisation is to be contacted immediately. Under no circumstances are flying-foxes to be handled, except by a wildlife carer, as the species is known to carry Australian Bat Lyssavirus and Hendra virus.

2.4.15 Aboriginal Cultural Heritage

Summary of issue raised

The indicative landscape features of the Murrumbidgee River and Marshalls Creek increases the likelihood of sites existing within the proposed activity area and there remains potential for impact on Aboriginal cultural heritage, particularly where soil disturbance and earthworks occur.

If an Aboriginal object is found recommended stop work provisions provided by OEH are:

- Not further harm the object
- Immediately cease all work at that particular location
- Secure the area so as to avoid further harm to the Aboriginal object
- Notify OEH as soon as practical on 131 555, providing any details of the Aboriginal object and its location
- Not recommence any work at the particular location unless authorised in writing by OEH

Response

An Aboriginal Heritage Due Diligence Assessment was undertaken in the EIS which concluded that no potential archaeological deposits (PADs) or areas likely to contain Aboriginal cultural heritage were identified within the activity area. The desktop assessment and visual inspection indicated that there are unlikely to be any Aboriginal objects present at the site. This was based on a site assessment and also by referencing the Wiradjuri Heritage Study.

As a precautionary measure, Section 6.7.4 of the EIS includes stop work provisions in the event of the discovery of suspected Aboriginal objects. The stop work provisions outlined in the EIS are similar to the principles contained in the OEH recommendation for stop work procedures in the event that an Aboriginal object is located. Based on a review of the OEH stop works provisions the following will be added to the mitigation measures contained in the EIS:

- Secure the area so as to avoid harm if an Aboriginal object is suspected of being discovered

3 PROJECT MODIFICATIONS AND MANAGEMENT MEASURES

Following receipt and consideration of submissions the proposed project and management measures contained in the EIS were reviewed. This section outlines any proposed amendments to the scope of works and mitigation measures.

3.1 Changes to the Proposal

No changes are proposed for the construction and design of the WTP.

3.2 Additional Mitigation Measures

Additions proposed to management measures included in Table 7-1, Section 7.2.1 of the EIS are shown in Table 3-1.

Table 3-1: Additional Construction Mitigation Measure

Issue	Additional Construction Mitigation Measure
Water Quality, Hydrology and Soils	The construction contractor would estimate likely volumes of groundwater prior to construction based on their proposed construction methodology and would obtain a dewatering permit from NSW Office of Water if required. The Water Quality and Groundwater Plan will include a work method statement for the management of groundwater that is dewatered during the river intake construction and decommissioning works. This would include documenting environmental aspects and how they would be managed. The plan would outline measures for monitoring volumes of surface water pumped from the coffer dam and groundwater extracted during the river intake works.
Aboriginal Heritage	Add to the Aboriginal object stop work protocol the following: *Secure the area so as to avoid harm if an Aboriginal object is suspected of being discovered*.
GHFF – timing of construction	The mitigation measures in the EIS in regards to timing of construction in regards to minimising impact to the GHFF be reworded to: Construction of the river intake site is to be undertaken during April to October when dependent flying-fox young are unlikely to be present in the Grey-headed Flying-fox colony on Bat Island and dependent Platypus young are unlikely to be present in burrows.
GHFF – construction protocol	A GHFF construction protocol will be included in the CEMP which will include monitoring provisions for the GHFF. This would include: • Prior to commencement of construction, contact is to be made with the local wildlife rescue organisation regarding the proposed works and their willingness to accept injured fauna including flying-foxes. • Undertake a targeted survey for Grey-headed Flying-fox on Bat Island as well as within riparian vegetation up to 500 m east of the construction site during September when adults are due to return with young. The aim of the survey would be to establish whether adult members of the colony have returned with dependent young and to monitor potential impacts from noise, particularly desertion of young. • In the event that construction activities involving loud noise-generating equipment outdoors (such as electric-powered saws, plate compactors, concrete mixer truck) extend beyond October and into spring / summer, a targeted survey of flying-foxes on Bat Island and within riparian vegetation up to 300 m

	east of the site is to be undertaken during mid to late October to ascertain whether flying-foxes are showing signs of being adversely disturbed by noise from the site. • If the targeted survey determines flying-foxes within the colony are showing signs of being adversely or unduly disturbed by construction noise, monitoring is to be undertaken on days when such equipment is being used to ascertain whether adults are being disturbed to the point of abandoning young at the camp site. • In the unlikely event that monitoring determines that young are being abandoned at the camp site, use of loud noise-generating equipment outdoors is to cease until a Fauna Ecologist experienced in the management of Grey-headed Flying-foxes is consulted and an appropriate strategy developed. • Monitoring of the flying-fox colony is to continue on a weekly basis (or as described above) during spring-summer until the use of loud noise-generating equipment is no longer required. • Should an injured or orphaned flying-fox be found, either within the construction site or in adjacent habitat, the wildlife rescue organisation is to be contacted immediately. Under no circumstances are flying-foxes to be handled, except by a wildlife carer, as the species is known to carry Australian Bat Lyssavirus and Hendra virus

4 REFERENCES

Coffey (2013). *Geotechnical Investigation: Wagga Wagga Water Treatment Plant and Flood Levee – Draft.* Prepared for Riverina Water County Council by Coffey Geotechnics Pty Ltd.