Appendix A Revised plant layout and elevation plans

PLANT

PRELIMINARY

NOTES

1. RL INDICATES FINISHED CONSTRUCTION LEVEL.
2. FCL INDICATES FINISH CONCRETE LEVEL.
3. FSL INDICATES FINISH GROUND SURFACE LEVEL.
4. ALL LEVELS ARE IN AUSTRALIAN HEIGHT DATUM & TO BE CONFIRMED BY FINAL SURVEY.

LEGEND

—— e —— INDICATES CABLE CONDUIT ROUTE
— — — — INDICATES UNDERGROUND PIPEWORK
—— sw —— INDICATES STORMWATER PIPEWORK

NORTH STREET
CONCRETE
BOUNDARY
PATH
TIMBER
LOG
WALL
VALVE PIT
GATE 3
BACKFILL RL 7.95
RECYCLED WATER STORAGE TANK
FCL 7.65
FEED BALANCE TANK
FLOW METER PIT
+ RAIN WATER TANK
DETENTION TANK
RL 7.90
FEED PUMPS
HARDSTAND AREA
STORM RETENTION POND
RL 5.40
BITUMEN
PARADE
TX1
TX2
TX3
PLC
PUMP STATION
GATE 2
SERVICE ROAD
RL 7.60
MICRO STRAINERS
DEGASSER FANS
DEGASSER
REGEN TANK
RO PERMEATE COLLECTION TANK
RO FEED BALANCE TANK
FLOCCULATION TANK
EAST
ADMIN. BUILDING
SWITCHROOM
CATION UNITS
WASTE WATER TANK
NEUTRALISATION TANK
CAR PARK
RAIN WATER TANK
ROLLER DOOR
FILTRATION BUILDING
RO PUMP PLINTH
MEMBRANE STORE
GENERAL STORE
BULKI BIN
WORKSHOP
BLOWER RM
CHEMICAL UNLOADING
GATE 1
SCALE 1:250

REV	REVISION	DRAWN	CHECKED	APPVD.	DATE
5	ROAD MOVED	JEM	SS	CD	29/01/09
4	BUILDING UPDATED	MR	SS	CD	23/12/08
3	TRANSFORMERS RELOCATED	JEM	SS	CD	12/12/08
2	SW & ELEC ROUTE ADDED	JEM	SS	CD	03/12/08
1	PUMP STATION RELOCATED	MR	SS	CD	06/11/08

- DO NOT SCALE THIS DRAWING
- IF IN DOUBT ASK
- THIRD ANGLE PROJECTION

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VEOLIA WATER Solutions & Technologies
Tel: 61 2 8572 0400
Fax: 61 2 8572 0410

CUSTOMER: SYDNEY WATER

TITLE: CAMELLIA RECYCLED WATER PROJECT
FAIRFIELD PLANT
RECYCLE WATER TREATMENT PLANT
SITE LAYOUT PLAN

SCALE 1:250 at A1
CLIENT DRAWING No.
SIZE A1
DRAWING No. A0123-C-0001-21
ISSUE 5

PLANT

PRELIMINARY

NOTES

1. RL INDICATES FINISHED CONSTRUCTION LEVEL.
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4. ALL LEVELS ARE IN AUSTRALIAN HEIGHT DATUM & TO BE CONFIRMED BY FINAL SURVEY.

LEGEND

—— e —— INDICATES CABLE CONDUIT ROUTE
— — — — INDICATES UNDERGROUND PIPEWORK
—— sw —— INDICATES STORMWATER PIPEWORK

NORTH STREET
EAST
PARADE
BOUNDARY
CONCRETE
PATH
BITUMEN
TIMBER
LOW
VALVE PIT
GATE 1
GATE 2
GATE 3
RECYCLED WATER STORAGE TANK
BACKFILL RL 7.95
FCL 7.70
FEED BALANCE TANK
FLOW METER PIT
DETENTION TANK
RL 7.90
+ RAIN WATER TANK
PLC
PUMP STATION
TX1
TX2
TX3
FEED PUMPS
HARDSTAND AREA
STORM RETENTION POND
RL 5.40
MICRO STRAINERS
SERVICE ROAD
RL 7.60
DEGASSER FANS
DEGASSER
REGEN TANK
RO PERMEATE COLLECTION TANK
RO FEED BALANCE TANK
FLOCCULATION TANK
CATION UNITS
ADMIN. BUILDING
SWITCHROOM
FCL 8.00
RAIN WATER TANK
CAR PARK
ROLLER DOOR
FILTRATION BUILDING
RO PUMP PLINTH
RO PLINTH
MEMBRANE STORE
GENERAL STORE
BULKI BIN
WORKSHOP
BLOWER RM
CHEMICAL UNLOADING
WASTE WATER TANK
NEUTRALISATION TANK
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REV	REVISION	DRAWN	CHECKED	APPVD.	DATE
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3	TRANSFORMERS RELOCATED	JEM	SS	CD	12/12/08
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1	PUMP STATION RELOCATED	MR	SS	CD	06/11/08

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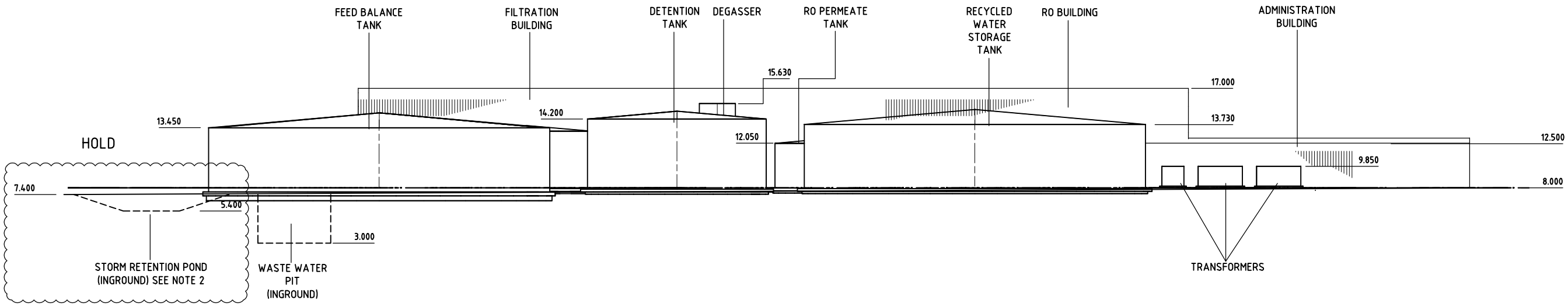
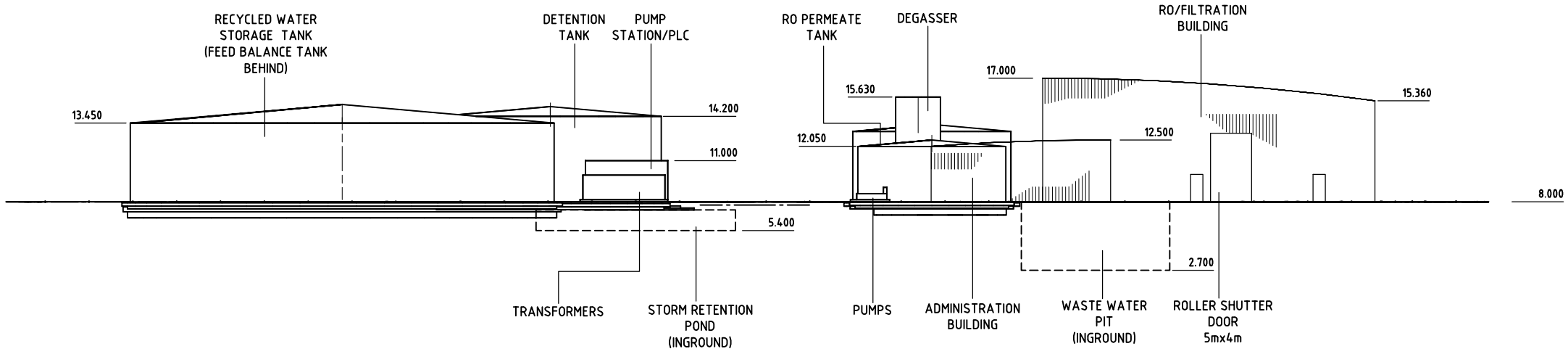
SCALE 1:250 at A1
CLIENT DRAWING No.
SIZE A1
DRAWING No. A0123-C-0001-21
ISSUE 5



NORTH ELEVATION



WEST ELEVATION

NOTES:

1. ALINTAS RECYCLE WATER PUMPING STATION SHALL BE HOUSED IN A BRICK BUILDING TO REDUCE THE NOISE LEVEL.
2. STORM RETENTION POND SIZE TO BE CONFIRMED BY CIVIL DESIGNER.

0 4 8 12 16 20m

SCALE 1:200

REV	REVISION	DRAWN	CHECKED	APPVD.	DATE
2	HEIGHTS REVISED	JEM	SS	CD	29/01/09
1	TRANSFORMERS RELOCATED	JEM	SS	CD	12/12/08
0	ORIGINAL	MR			06/11/08

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CUSTOMER: SYDNEY WATER

TITLE: CAMELLIA RECYCLED WATER PROJECT
FAIRFIELD PLANT
RECYCLE WATER TREATMENT PLANT
SITE ELEVATIONS

SCALE :1:200
CLIENT DRAWING No.
SIZE A1
DRAWING No. A0123-C-0001-22
ISSUE 2

Appendix B Revised alignment plan

Jemena

Distribution pipeline

Revised alignment (indicative)

Discarded alignment from Environmental Assesssment (Indicative)

Fairfiled water recycling plant

Proposed development site

SUBURB NAME

Suburb boundary

Rosehill Recycled Water Scheme
Revised pipeline alignment, North St
Doc No: PORRW-PL-A-0029 Rev: 1
Date: 16/03/09
Size: A4

Appendix C Additional noise modelling information

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ABN 80 078 004 798
NCSI Certified Quality System ISO 9001

Our reference: 2116732A/LT_9197/SW/fr

16 December 2008

John Fisher
Manager External Approvals
Major Projects Group
Jemena Asset Management Pty Ltd
PO Box 6507 Silverwater NSW 2128

Dear John

Rosehill Recycled Water Scheme – revised Noise and Vibration Impact Assessment

The proposed Rosehill Recycled Water Scheme would form a component of the NSW Government's 2006 Metropolitan Water Plan. The proposal comprises the construction of a reverse osmosis recycled water treatment plant (RWTP) at Fairfield, approximately 20 kilometres of water main, three above ground storage reservoirs, and pumping stations at two locations along the pipeline route.

An assessment of potential environmental impacts associated with the project has been undertaken as part of an Environmental Assessment (EA, PB, January 2009), required under Part 3A of the NSW Environmental Planning and Assessment Act 1979 (EP&A Act).

Rosehill Recycled Water Scheme Noise and Vibration Impact Assessment (PB, September 2008) has been prepared as part of the EA submission and provided a predictive assessment of potential operational noise impacts associated with the scheme. The RWTP was determined the primary operational noise generating infrastructure.

Predicted received noise impacts at the nearest residential receivers to RWTP have been assessed adopting NSW EPA *Industrial Noise Policy* (NSW, EPA, INP, 2000) guidance. A project specific operational night time noise goal of 40 dB(A) $L_{Aeq,\ 15min}$ has been adopted from measured ambient noise profiles. The night time period (10pm - 7am), where background noise levels are low, is considered the most sensitive period for RWTP operation.

Subsequent to the EA submission, the RWTP infrastructure has been subject to redesign including the relocation of the water pump station to the north-west of the site. Operation of the water pumps has been identified as the dominant noise generating activity. Revision to the operational noise assessment has been required to determine potential received operational noise impacts for the relocated pump station.

This letter details the revised noise impact assessment for the RWTP site.

1. RWTP infrastructure revision

The RWTP site has been redesigned as per drawing *A0123 – C 0001 – 21 Issue 1*, detailed in enclosed Figure 1. The water pumps, housed in the water pump station, have been relocated from the eastern site boundary to south of the Recycled Water Storage Tank at the western site boundary.

The revised pump station is approximately 70 - 150 meters from the nearest receivers on North Street, Lyndon Street and Railway Parade.

The specification of three 185 kW water pumps (2 operation, 1 stand by) with individual source sound power level (SWL) of 88 dB(A), derived from a provided source sound pressure level (SPL) of 80 dB(A) at 1 meter, has not been subject to revision.

The pump station is proposed to be an open structure with a roof shelter; this revised noise assessment has also included consideration of water pumps housed in a sheet steel building.

It has been assumed that potential operational noise from the proposed 3 electrical transformers would not be a dominant influence to received noise levels at nearest receivers.

2. Revised operational noise impact assessment

Predictive assessment of potential received noise impact has been undertaken for nearest receiver locations on North Street, Lyndon Street and Railway Parade. The revised operational assessment was undertaken adopting the following assumptions adopting from the original noise assessment:

- Revised pump station location as per enclosed Figure 1.
- Two pumps of SWL 88 dB(A) in cumulative operation, cumulative total SWL 91 dB(A).
- Adopting INP guidance, no modifying correctional factors for tonal or low frequency potential disturbing source noise characteristics have been applied.
- Pumps to operate on an as required basis during 24 hour periods.
- Nearest receivers located at 70 - 150 meters from the pump station.
- Potential attenuation to received noise levels of 10 dB(A) from the intervening 4.8 ML Recycled Water Storage Tank (6 meter height) at all receivers except Railway Parade
- Neutral metrological conditions

Indicative of the local environment, predicted noise levels determined through the application of the following noise propagation relationship:

$$SPLreceived = SWLsource - 20\log(\text{source to receiver distance}) - 8$$

Table 2-1 details predicted RWTP operational noise levels at nearest receiver locations in the surrounding environment. Received noise levels have been assessed to the adopted INP night time noise goal. No attenuation to received noise levels through barrier impedance from Recycled Water Storage Tank structure has been assumed receiver location on Railway parade.

Table 2-1 Predicted received pump station operational noise levels

Receiver location	Separation distance (m)	Previous received noise impact, $L_{Aeq, 15min}$ **	Predicted received noise impact, $L_{Aeq, 15min}$	Noise goal compliance
INP night time noise goal 40 dB(A) $L_{Aeq, 15min}$				
2 North Street	70	-	36	Yes
6 North Street	75	43.5	35.5	Yes
8 North Street	85	44	35	Yes
10 North Street	140	40	30	Yes
1 Lyndon Street	150	39.5	29.5	Yes
Railway Parade	85	39.5	44.5	No (+ 4.5)

Note: Values expressed as dB(A) to nearest 0.5 dB(A)

L_{Aeq} = equivalent continuous (energy average) A-weighted sound pressure level.

** previous noise impacts referenced from *Rosehill Recycled Water Scheme Noise and Vibration Impact Assessment* (PB, September 2008)

Predicted received noise levels of 29.5 – 36 dB(A) $L_{Aeq, 15min}$ at nearest residences on North Street and Lyndon Street are expected to be compliant with the 40 dB(A) $L_{Aeq, 15min}$ INP night time noise goal. Where compliance with the indicative worst case night time noise criteria is achieved, day time and evening noise goals are expected to be met.

The nearest residential receivers to the west of the pump station on Railway Parade may potentially be up to 4.5 dB(A) in exceedance of adopted noise goals. Predicted noise levels have not considered potential attenuation to received noise level from the intervening raised rail corridor. Indicative of noise propagation from ground level pump sources Railway Parade received noise levels may be attenuated by up to 3 dB for a potential peak rail corridor height of 2 meters above residual ground level.

Predicted received noise levels are expected to be intermittent during the day time, evening and night time periods indicative of required RWTP operations.

Upon confirmation of the water pump specification, analysis of source noise profiles should be undertaken, in accordance with INP guidance, to confirm the presence of potential tonal or low frequency noise source characteristics. Modifying correction factor additions of 5 dB(A) maybe applied dependent upon presence of potentially disturbing noise characteristics.

Where modifying 5 dB correction factor additions are applied received noise levels at 2 - 8 North Street may be in exceedance of the noise goal by up to 1 dB(A). The nearest Railway Parade receivers may be in exceedance by up to 9.5 dB(A).

In comparison to the predicted noise impacts for the original pump station location, receivers on North Street would be expected to achieve a reduction in received noise impact of up to 10 dB(A). At Railway

Parade nearest receivers a 5 dB(A) increase in potential noise impact has been predicted, indicative of the reduction in separation distance between the receivers and pump station.

3. Recommended noise management measures

Revised predicted noise levels are potentially up to 4.5 dB(A) in exceedance with adopted INP noise goals during the night time period. Predicted noise levels are indicative of no attenuation of noise breakout from the open pump station structure facades.

For the control of operational noise impacts the application of an earth bund at the northern site boundary and the relocation of the water pumps, as discussed in the EA noise assessment, have been confirmed as longer feasible due to the revised water tank design.

A design option to house the water pumps in a sheet steel structure comprising of continuous solid walls facades and a roof structure has been considered as a potential feasible noise control measure. The pump station housing would be expected to require ventilation openings and access doors on the side facades.

A solid façade pump station building would be expected to reduce noise breakout from the internal water pump operations. Predicted received operational noise impacts for two pumps in continuous operations within a pump station building have adopted a noise attenuation reduction performance of 25 dB(A) for individual sheet steel facades of approximately 1mm base metal thickness (Bies & Hansen, 1988). The building façades would be constructed from interlocking corrugated panels providing a sealed continuous surface.

A 25 dB(A) noise reduction applied to predicted unmitigated received noise levels in Table 2-1 would result in a received noise impact of approximately 10 - 20 dB(A) $L_{Aeq,\ 15min}$ at nearest receivers. Compliance with the adopted 40 dB(A) $L_{Aeq,\ 15min}$ noise goal would be expected at all receiver locations within the surrounding environment.

To ensure noise breakout through required façade ventilation and access doors would achieve compliance with adopted noise goals, assuming no attenuation to received noise levels from Recycled Water Tank barrier attenuation, external building façade total source noise emissions should not exceed approximately 85 dB(A) $L_{Aeq,\ 15min}$.

The location of required ventilation openings and access doors to the south façade of the pump station or the application of acoustic pressure relief louvers and solid doors with doors seals would be expected to provide required reductions to internal noise breakout to meet the design objective of 85 dB(A) $L_{Aeq,\ 15min}$.

Detailed design of the pump station housing and required façade noise reduction performance should be undertaken upon confirmation of the final RWTP design.

3.1 Sleep disturbance assessment

A sleep disturbance noise goal of 51 dB(A) L_{A1} has been applied from the EA in reference to *Environmental Noise Control Manual* (ENCM, EPA, 1994) guidance adopting measured ambient night time noise profiles on North Street in 2007.

To achieve compliance with the nearest residential receivers on North Street and Railway Parade individual water pumps peak source noise emissions should not exceed 94 dB(A) L_{A1}, or a total source noise of 97 dB(A) L_{A1} for two pump cumulative noise emissions, for the existing opening configuration pump station design.

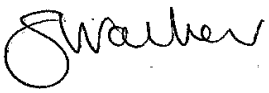
4. Conclusion

Operational noise impacts for the RWTP have been revised for the amending pump station location for an opening façade configuration pump station building. Predicted noise levels are expected to be compliant with an adopted worst case INP night time 40 dB(A) $L_{Aeq,\ 15min}$ noise goal at nearest receiver locations on North Street and Lyndon Street. A potential 4.5 dB(A) noise goal exceedance has been predicted for the nearest receiver on Railway Parade.

The application of a continuous sheet steel façade water station building would be expected to provide required noise reduction performance to achieve compliance at all receptors with the adopted INP and sleep disturbance noise goals where external facade noise levels do not exceed 85 dB(A) L_{Aeq} and 97 dB(A) L_{A1}.

Acoustic performance specifications for operational plant, including the proposed electrical transformers, should be established with confirmation determined during the detailed design stage.

Yours faithfully,



Steven Walker

Senior Environmental Acoustician
Parsons Brinckerhoff Australia Pty Limited

References

Bies, D.A and Hansen, C.H. 1988. *Engineering Noise Control*. Unwin Hyman

New South Wales Environment Protection Authority *Industrial Noise Policy* (NSW, EPA , 2000)

New South Wales Environment Protection Authority *Environmental Noise Control Manual* (NSW, EPA, 1994)

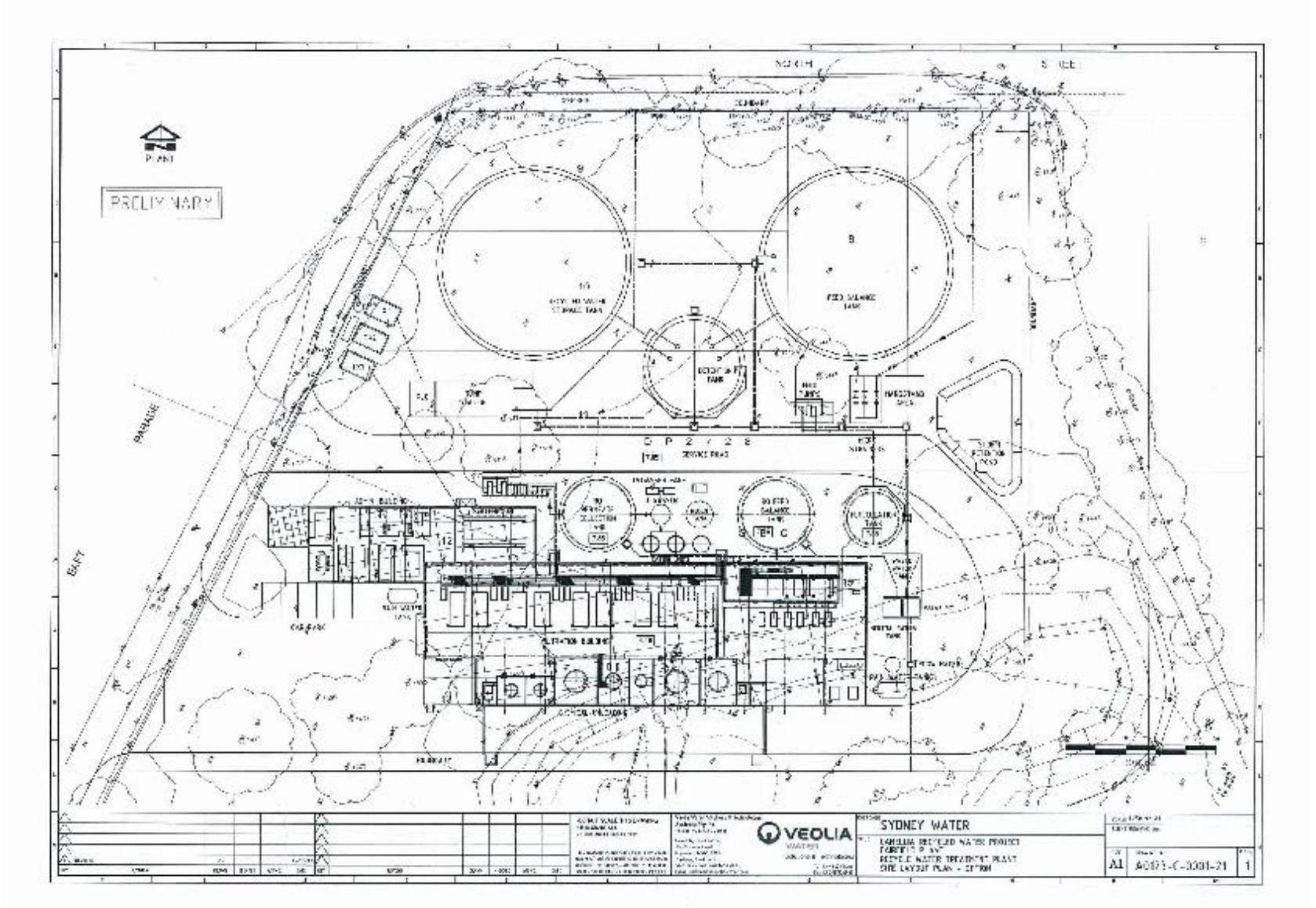


Figure 1 Proposed revised Fairfield Recycled Water Treatment Plant

MEMORANDUM

Date:	5 March 2009
To:	Adam Littman
Copy :	
From:	Steven Walker
Job no:	2116732A
Re:	Fairfield Recycled Water Treatment Plant – Revised noise impact assessment for transformer operation

Parsons Brinckerhoff Australia Pty Limited
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Adam,
Further to the revised noise impact assessment for the Fairfield Recycled Water Treatment Plant (RWTP) (LT_9197, PB, 16 December 2008) pleased find detailed an assessment of operational noise from the Fairfield RTWP site inclusive of proposed high voltage and low voltage transformer scenarios.

Predicted operational noise impacts for a 2 x 2500 kVa transformer high voltage scenario, (PB email 11 February 2008), have been updated for a confirmed 3 transformer simultaneous operational requirement.

1. RWTP infrastructure revision

The RWTP site has been redesigned as per drawing *A0123 – C 0001 – 21 Issue 3*, detailed in enclosed Figure 1. The 3 transformers are located to the south of the 4.8 ML Recycled Water Storage Tank.

High voltage and low voltage transformer operational scenarios have been proposed:

- High voltage 2 x 2500 kVa transformers plus 1 x 500 kVa transformer
- Low voltage 2 x 1500 kVa transformers plus 1 x 500 kVa transformer.

Simultaneous 3 transformers operation is required during normal operational load conditions.

2. Revised operational noise impact assessment

Predictive assessment of potential received noise impact has been undertaken for nearest receiver locations on North Street, Lyndon Street and Railway Parade. The revised operational assessment adopted the following parameters and transformer sound power levels (SWL) provided by Jemena.

- Revised RWTP and transformer location as per enclosed Figure 1.
- 2500 kVa transformer SWL of 79.8 dB(A), 1500 kVa transformer SWL of 76.5 dB(A) and 500 kVa transformer SWL of 69.8 dB(A), provided by Jemena (23 February 2009)
- RWTP operational noise impacts adopted from LT_9197.
- RWTP and 3 transformer simultaneous operation under normal load.
- Nearest receivers located at 70 - 150 metres from the pump station.
- Potential attenuation to received noise levels of 10 dB(A) from the intervening 4.8 ML Recycled Water Storage Tank (6 meter height) at all receivers except Railway Parade.

- No noise control measures or solid facade enclosure have been applied to the water pumps.
- Neutral metrological conditions.

For a nearest separation distance of 70 metres between the transformers and the nearest receivers, potentially disturbing transformer tonal source noise characteristics are unlikely to be experienced at the receivers. Adopting INP guidance, no modifying correctional factors for tonal or low frequency potential disturbing source noise characteristics have been applied.

3. Operational noise compliance requirement

Predicted received noise impacts at the nearest residential receivers to RWTP have been assessed adopting NSW EPA *Industrial Noise Policy* (NSW, EPA, INP, 2000) guidance.

A project specific operational night time noise goal of 40 dB(A) $L_{Aeq,\ 15min}$ for has been adopted from measured ambient noise profiles for simultaneous RWTP and transformer site operations. The night time period (10 pm – 7 am), where background noise levels are low, is considered the most sensitive period for operations.

4. Predicted operational noise impacts

Operational noise impacts have been determined for high voltage and low voltage 3 transformer operations detailed in Section 1.

Indicative of the local environment, predicted noise levels determined through the application of the following noise propagation relationship:

$$SPLreceived = SWLsource - 20\log \textit{(source to receiver distance) - 8}$$

Table 1 and Table 2 detail predicted received noise impacts at nearest receivers for transformer high voltage and low voltage scenarios and cumulative RWTP operations.

Table 1 High voltage transformer operations

Receiver	Distance (m)	Transformer noise impact $L_{Aeq,\ 15min}$	RWTP noise impact $L_{Aeq,\ 15min}$	Cumulative noise impact $L_{Aeq,\ 15min}$	Noise goal compliance
INP night time noise goal 40 dB(A) $L_{Aeq,\ 15min}$					
2 North Street	70	28	36	36.5	Yes
6 North Street	75	28	35.5	36	Yes
8 North Street	85	26.5	35	36	Yes
10 North Street	140	24	30	31	Yes
1 Lyndon Street	150	21.5	29.5	30	Yes
Railway Parade	85	36.5	44.5	45	+ 5

Note: all noise levels in dB(A) to nearest 0.5 dB

L_{Aeq} equivalent noise level (average)

The high voltage 3 transformer scenario is predicted to result in received noise impacts of 21.5 – 36.5 dB(A) L_{Aeq} at the nearest receivers.

Transformers are required to be in simultaneous operation with the RWTP, cumulative received noise impacts of 30 – 45 dB(A) L_{Aeq} have been predicted.

The RWTP water pumps are the dominant influence on received noise impacts; the operation of the high voltage transformer scenario has been determined to result in a 0.5 – 1 dB(A) increase in noise level at all receivers.

Compliance with the adopted 40 dB(A) $L_{Aeq,\ 15min}$ operation noise goal is predicted to be achieved at all receivers on North Street and Lyndon Street. At the nearest receivers on Railway Parade, predicted cumulative noise levels of 45 dB(A) are potentially up to 5 dB(A) in exceedance.

Table 2 Low voltage transformer operations

Receiver	Distance (m)	Transformer noise impact $L_{Aeq, 15min}$	RWTP noise impact $L_{Aeq, 15min}$	Cumulative noise impact $L_{Aeq, 15min}$	Noise goal compliance
INP night time noise goal 40 dB(A) $L_{Aeq, 15min}$					
2 North Street	70	25	36	36	Yes
6 North Street	75	25	35.5	35.5	Yes
8 North Street	85	23.5	35	35	Yes
10 North Street	140	19	30	30	Yes
1 Lyndon Street	150	18.5	29.5	29.5	Yes
Railway Parade	85	33.5	44.5	44.5	+4.5

Note: all noise levels in dB(A) to nearest 0.5 dB

L_{Aeq} equivalent noise level (average)

The low voltage 3 transformer scenario is predicted to result in received noise impacts of 18.5 – 33.5 dB(A) L_{Aeq} at the nearest receivers.

The operation of the low voltage transformers has been predicted to result in no increase to received cumulative noise impact from the RWTP site.

Compliance with the 40 dB(A) $L_{Aeq, 15min}$ noise goal is achieved at all receptors on North Street and Lyndon Street. As previously reported in LT_9197, a potential 4.5 dB(A) exceedance of the noise goal has been predicted at Railway Parade nearest receivers from water pump operation.

5. Recommended noise management

Jemena should confirm transformer SWL's and no potentially disturbing low frequency or tonal characteristics are present in transformer source noise emissions.

To achieve compliance with the adopted 40 dB(A) $L_{Aeq, 15min}$, total received noise level at Railway Parade would require a 4.5 – 5 dB(A) reduction. The water pumps are the dominant operational noise source to received noise impacts.

Detailed in LT_9197 (PB, 16 December 2008), a design option to house the water pumps in a sheet steel structure comprising of continuous solid walls facades and a roof structure has been considered as a potential feasible noise control measure.

Compliance with the noise goal at all receivers during high voltage and low voltage scenarios would be expected to be achieved where the housing structure provides a minimum noise reduction of 7 dB(A) to total water pump source noise emissions.

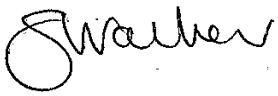
6. Conclusion

The low voltage transformer scenario is predicted to result in no incremental increase in total received noise impacts at all nearest receivers. The high voltage transformer scenario is predicted to increase total received noise impacts by up to 1 dB(A) at nearest receivers.

Cumulative RWTP and transformer predicted received noise impacts are potentially up to 5 dB(A) in exceedance with an adopted 40 dB(A) $_{LAeq}$ noise goal at Railway Parade.

To achieve compliance with the adopted noise goal, the dominant water pump noise influence is recommended to be reduced by at least 7 dB(A) through a solid façade housing.

Regards



Steven Walker

Senior Environmental Scientist (Acoustics)

Parsons Brinckerhoff Australia Pty Limited

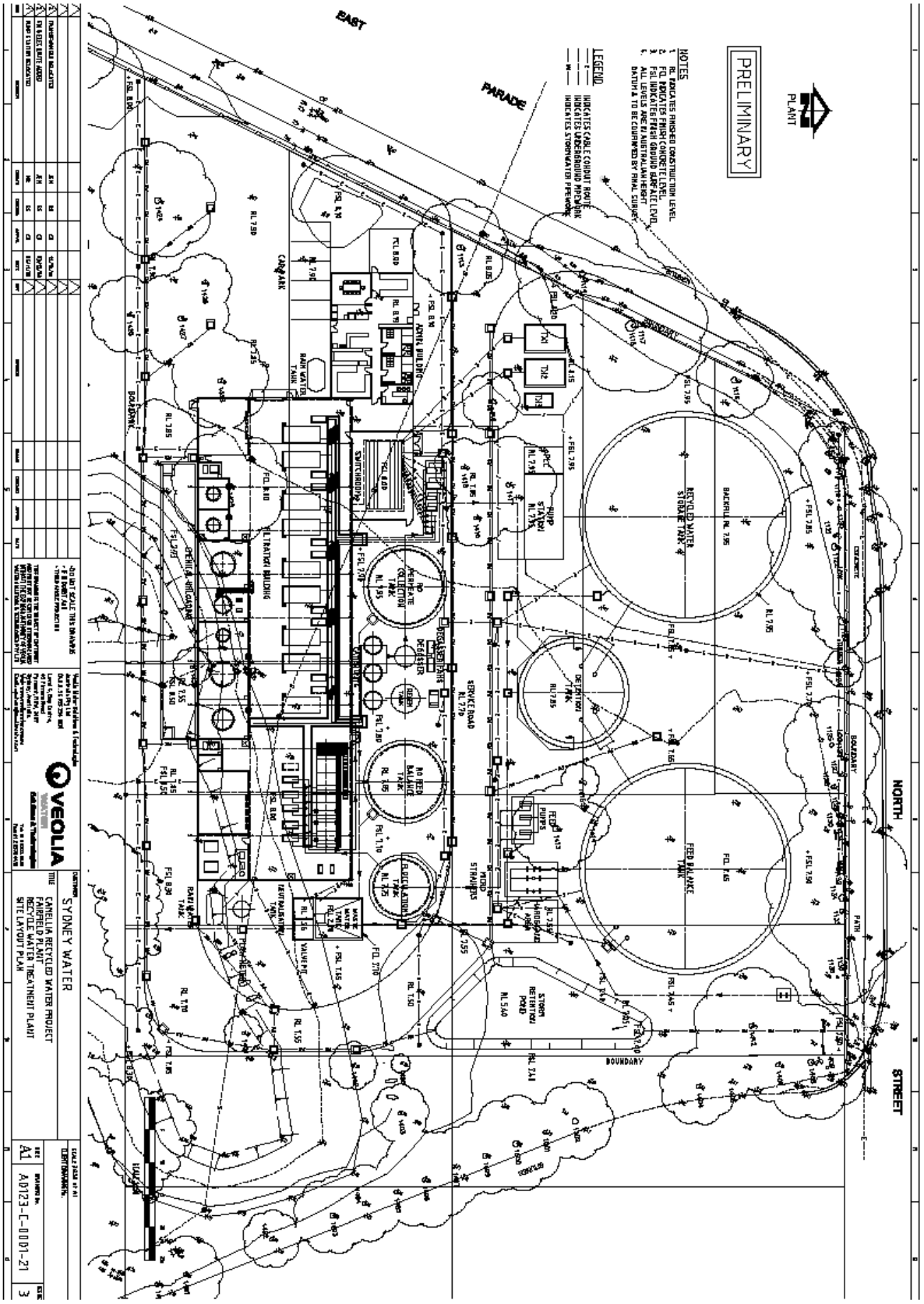


Figure1: Proposed site layout (A0123 – C 0001 – 21 Issue 3)

Appendix D Detailed response - Fairfield City Council

ISSUE	PROJECT RESPONSE
Fairfield City Council Submission	
Summary Items	
Flooding: The site is flood affected by overland and main stream flooding. Additional information is required to ensure the project addresses the significant flood affectation at this site. A major issue has arisen by the plant being located over an existing 1200mm stormwater culvert owned by Council. The culvert will need to be relocated and this will result in considerable overland flow issues that will need to be addressed by the proponent.	The 1200mm stormwater culvert located within the proposed water recycling plant location has been subject to an internal inspection to determine the exact location, alignment and depth. Plans to realign the stormwater drain within the proposed site boundary have been developed and will be submitted to Council for review and approval prior to preparation of a detailed design by an appropriately qualified party. The plant has been design with potential overland flow issues in mind, the low points are kerbed access roads the follow the grade of the land and discharge at the low point. However, the likely depths and extent of overland flooding and potential effects of flood behaviour due to the plant are not known. Modelling and risk analysis is proposed prior to design finalisation to determine potential impacts. Appropriate information will be provided to Council. Refer to the response to **Section 15** of Council's submission below for a more detailed discussion.
Noise Impacts: Residents within 150m of the treatment plant at North Street are likely to suffer noise impacts including sleep disruption.	The main contributing noise source at the proposed water recycling plant was identified as the pumping station, which had open sides. The pumping station will now be fully enclosed to reduce potential noise impacts. The location has changed due to the adoption of a low voltage power source. Noise modelling has been undertaken to assess potential noise performance. The report is included within this report. The current design is within operational noise design goals. Design specifications are proposed for the enclosure to ensure compliance with sleep disturbance goals. Operational compliance monitoring will be undertaken. Refer to the response to **Section 4** of Council's submission below for a more detailed discussion.

ISSUE	PROJECT RESPONSE
Visual Amenity: The project will involve significant change to the North Street site with the construction of several storage tanks up to 9.5m in height by 23m wide and buildings approximately 80m in length and 7.6m high. The number of dwellings in the immediate vicinity of the plant is less than 10.	The revised plant design features larger diameter tanks that are lower in height. The silhouette of the plant is now more compact and regular. Revised photomontages have been prepared and are included in this PPR. A final landscaping plan will prepared which details appropriate plantings on the site boundary to further screen the plant form adjacent residents. This will be provided to Fairfield City Council. Refer to the response to **Section 10** of Council's submission below for a more detailed discussion.
Energy Consumption: The plant will add to the overall energy consumption of the city contrary to the requirements of Council's Environmental Management Plan. The impacts of this additional consumption can be offset with the use of renewable energy.	The scheme has been costed based on the use of normal (non-renewable) energy sources. The adoption of energy sourced from renewable sources would add considerable cost to the scheme and may render it uneconomic. No change is proposed at this stage to energy sources. Refer to the response to **Section 16** of Council's submission below for a more detailed discussion
Planning Controls: Additional information is required to determine compliance with State Environmental Planning Policies on Hazardous Industry and Infrastructure. Further assessment against the provisions of GMREP 2 (Georges River Catchment) should also be completed.	Refer to the response to **Section 2** of Council's submission below for a more detailed discussion of the issues raised. Further information is outlined in the response to **Section 11** of Council's submissions regarding the potential for chlorine gas generation. A brief discussion of the applicability of each planning instrument to the project is provided below: <u>SEPP 55</u> Additional information has been sourced from the plant designers regarding the potential generation of chlorine gas at the chemical unloading and storage facilities at the proposed water recycling plant. This information indicates that procedural and engineering controls are sufficient to ensure that the generation off significant volumes off chlorine gas are highly unlikely and risks are therefore negligible, as such, the current qualitative preliminary hazard analysis provide in the Environmental Assessment is deemed to be sufficient. <u>Infrastructure SEPP</u> Provisions of the Infrastructure SEPP relating the development type have been reviewed. The development is consistent with current and future provisions of the SEPP. <u>Georges River REP</u>

ISSUE	PROJECT RESPONSE
	Section 75R of the NSW *Environmental Planning and Assessment Act 1979* specifically outlines that environmental planning instruments (other than state environmental planning policies) do not apply in respect to a project approved under Part 3A of that act. Therefore GMREP 2 (Georges River Catchment) does not apply. However, an assessment off GMREP 2 (Georges River Catchment) is included in the report and measures that will be taken to address items that would be considered are outlined.
Odour: Insufficient detail has been submitted to determine the potential odour impacts.	The plant will utilise treated (not raw) effluent in which the majority of biosoilds have already been removed. Additionally, the recycling process does not feature any anaerobic processes (such as sludge digestion), which may result in odour. All wastes will be discharged directly to sewer. This system is also closed. As such, there is minimal potential for the plant to generate any odour. The current level of information provided is considered to be acceptable. No additional information can be provided relating to this comment. Refer to the response to **Section 12** of Council's submission below for a more detailed discussion.
Environmental Damage: The construction of the pipeline through the North Street site and Fairfield Park has the potential to damage and remove native vegetation.	The proposed pipeline has been realigned away from native vegetation between the proposed plant and Taylor Street, Fairfield. The proposed alignment now follows the cleared road corridor of North Street. The alignment in Fairfield Park has been chosen to follow cleared road corridors, thus avoiding potential removal of native vegetation. Whilst the final pipeline alignment through this park will generally be chosen to avoid the need to remove mature native trees, some tree removal may be unavoidable. Appropriate clearing and inspection protocols will be observed. Refer to the response to **Section 5** of Council's submission below for a more detailed discussion.
Air Pollution: Additional information is required to allow for the assessment of the potential for a chlorine gas discharge in the event of a plant malfunction.	Additional information has been sought on this issue and is presented. Due to procedural and engineering controls, the generation and release of significant volumes of chlorine gas is considered to be of negligible risk. Refer to the response to **Section 11** and **Section 12** of Council's submission below for a more detailed discussion.

ISSUE	PROJECT RESPONSE
Infrastructure: Construction and operation of the plant will result in heavy vehicle damage to local roads and traffic management devices which will need to be repaired or protected.	Dilapidation surveys will occur prior to construction and will be provided to the relevant local council(s). All damage to road pavements and traffic management devices due to project activities will be repaired. Refer to the response to **Section 17** of Council's submission below for a more detailed discussion.
Land Contamination: The site is affected by asbestos and ash deposits that will have to be managed during construction.	A remediation contractor, environmental consultant and accredited contaminated sites auditors have been engaged to undertake the remediation in accordance with all appropriate legislation and guidelines. A Remedial Action Plan is currently under preparation and will be provided to Fairfield City Council when approved. Refer to the response to **Section 13** of Council's submission below for a more detailed discussion.
Construction of the pipeline will result in disruption to local traffic, parking, pedestrian movement, access to individual properties and bus routes.	Traffic management plans will be prepared and submitted to the relevant local councils prior to construction of each pipeline section. Road Occupancy Licences will be obtained from the relevant roads authority as required. Traffic and access impacts at most locations will occur over a 1-2 days period only as construction moves along the roadway. Works will be scheduled where possible to avoid traffic impacts in peak times and around sensitive locations such as schools. Consultation will occur with public transport operations, including bus companies, to manage potential impacts to services. Refer to the response to **Section 3** of Council's submission below for a more detailed discussion.
Construction of the pipeline will have a negative impact on road safety at two local schools and work at these locations should be constructed during school holidays.	Construction schedule will take into account the location of schools. Works in the vicinity off schools will be scheduled to coincide with school holiday periods or weekends wherever practicable. Refer to the response to **Section 3** of Council's submission below for a more detailed discussion.

ISSUE	PROJECT RESPONSE
The storage of chemicals at the site and potential pollution of the local creek systems.	The chemical unloading and storage facility at the water recycling plant will be inside a bunded area that is isolated from the plant's stormwater system. Minor spills will be pumped to the waste neutralisation tanks for treatment prior to discharge to the sewer. Major spills inside the bunded area will be removed by licensed waste removal contractors and disposed of appropriately. Any spills outside the bunded area will be captured by the plant's stormwater system and end up in the stormwater retention pond. The pond is pumped to the stormwater system manually. In the event of chemical spill and contamination the captured water will not be discharged but removed and disposed of by another means. Refer to the responses to **Section 9**, **Section 11** and **Section 15** of Council's submission below for a more detailed discussion.
2 Strategic and Project Justification	
Mitigation proposed by Council:	

ISSUE	PROJECT RESPONSE
• Pursuant to the provisions of SEPP 33, the proponents to submit additional information to demonstrate that the proposal does not constitute a hazardous industry and to ensure the proposal meets with relevant provisions of s.75R of Part 3A of the EP&A Act.	The distinction between hazardous industry and potentially hazardous industry is defined in SEPP 33 as whether or not the development still poses a significant risk to the locality all with measures to reduce hazards and impacts adequately implemented. Specifically, Council has raised concerns about potential generation of chlorine gas at the plant's chemical storage facility, whether or not this classifies the development as hazardous industry as opposed to potentially hazardous industry and whether a qualitative hazard analysis is appropriate. Additional information has been sought regarding this potential issue. This information is presented in more detail in the response to **Section 11** of Council's submission below. A summary discussion is provided below; The engineering and procedural controls proposed at the plant will be sufficient to ensure that the risk of generation and release of large volumes of chlorine gas will be negligible. As such the classification of the plant as potentially hazardous industry is still valid. The qualitative hazard analysis undertaken combined with the additional information presented in this report is sufficient to demonstrate that there will be no significant risk. The guideline *Applying SEPP 33* (Consultation Draft) (DOP, 2008) provides some guidance as to whether a qualitative or quantitative hazard analysis is appropriate. Conditions and circumstances are presented where a qualitative hazard analysis is appropriate. The development generally meets these conditions and circumstances. *Applying SEPP 33* outlines that if a qualitative analysis cannot demonstrate there will be no significant risk, a further level of analysis will be required. The qualitative hazard analysis undertaken combined with the additional information presented in this report is sufficient to demonstrate that there will be no significant risk. As such it is considered that the development satisfies the definition of potentially hazardous development and the level and type of hazard analysis is consistent with the requirements of SEPP33 and as such section 75R of the EP&A Act is satisfied in this regard.

ISSUE	PROJECT RESPONSE
• Additional information to be provided on the relationship and consistency of the proposal with the provisions of SEPP (Infrastructure) to ensure the proposal addresses the provisions of s.75R of Part 3A of the EP&A Act.	Division 18 of *State Environmental Planning Policy (Infrastructure) 2007* (Infrastructure SEPP) outlines that development for the purpose of a water recycling facility licensed under the NSW *Water Industry Competition Act 2006* may be carried out without consent on land in a prescribed zone. The definition of 'prescribed zone' include land zoned zoned a 'SP2 (Infrastructure)'. Recent advice from Fairfield Council indicates that council is in the process of rezoning the land required for the plant as SP2 (Water Recycling Facility). The zoning will likely take effect when Fairfield City Council's revised local environmental plan is finalised. As such, thee plant is consistent with future land zoning under this SEPP. For such development outside the prescribed zone, as is the case under the current land zoning ('5(a) Special Uses (Water Board)'), the development for the purposes of a water recycling facility licensed under the NSW *Water Industry Competition Act 2006* may be carried out without consent on can occur with consent. For the purpose of this SEPP consent is defined as development consent and any other type of consent, licence, permission, approval or authorisation that is required by or under an environmental planning instrument. The statutory section and information in the report outline statutory considerations for the project including an assessment of the applicability of various applicable environmental planning instruments. Approval for the project under Part 3A off the EP&A Act will satisfy this requirement. The project is therefore consistent with requirement of, both current and future of the Infrastructure SEPP. Section 75R of the EP&A Act is satisfied in this regard.
• Additional information should be provided on the relationship and consistency of the proposal with the provisions of GMREP 2 (Georges River Catchment).	The Greater Metropolitan Regional Environmental Plan No 2—Georges River Catchment (Georges River REP) is aimed at managing development in the Georges River Catchment to ensure that water quality and river flows in the Georges River and its tributaries are maintained. The proposed recycling plant and parts of the distribution pipeline are within the Georges River Catchment. Clause 75R of the EP&A Act outlines that Regional Environmental Plans (including the Georges River REP) do not apply to projects approved under part 3A. But to satisfy Fairfield Council, the following assessment is provided: Clause 11 of the REP outlines a planning control table which specifies planning controls for various development categories within the catchment. Two categories (4 and 7) in the planning control table relate directly to the proposed chemical storage area at the proposed recycling plant at North Street, Fairfield, which

ISSUE	PROJECT RESPONSE
	is within the catchment. The proposed location of the chemical storage facility at the recycling plant is above the 1 in 100 year flood level but below the probable maximum flood level and is therefore flood liable by definition. Category 4 of the planning control table would prohibit chemical and fuel storage on flood liable land. Category 7 would prohibit hazardous or offensive, or potentially hazardous or offensive industries in flood liable land. However, by action of section 75R of the EP&A Act, this REP and these provisions do not apply to the project. Nonetheless, controls discussed further in the responses to **Section 11** and **Section 15** of Council's submission will be sufficient in managing risk and ensuring the development has no effect on water quality and river flows in the Georges River and its tributaries, in line with overall aim of the Georges River REP. Category 20 of the planning control table outlines that development consent is required for the carrying out of works designed to collect, channel, store, treat or disperse stormwater runoff from areas of urban development or from development adjacent to the Georges River or its tributaries. The stormwater collection system proposed for the recycling plant constitute such as work. However, by action of section 75R of the EP&A Act, this provision does not apply. Furthermore, approval for the project under part 3A of the EP&A Act would generally satisfy the intent of this provision. As such, the proposed development is generally consistent with the aims of the Georges River REP, even though it does not apply.
• The three (3) Management Recommendations under s.6.2.2 (p.181) of the Environmental Assessment relating to preservation of Aboriginal Cultural Heritage to be incorporated into any conditions of approval.	Accepted. The management recommendations relating to the preservation of Aboriginal cultural heritage outlined in the Environmental Assessment will be incorporated in the Construction Environmental Management Plan as a matter of course.
3 Traffic and Transport	
Mitigation proposed by Council:	
• Affected bus services should be re-routed in consultation with the bus companies and Council	Accepted. Consultation will occur with all affected bus companies and Council prior to undertaking any works that could impact upon bus services. Re-routing options will be included in this consultation

ISSUE	PROJECT RESPONSE
• Road Occupancy Licences should be obtained from relevant road authority (RTA or Council) by submitting Road Occupancy applications. These applications must include Traffic Management Plans for all works to be undertaken within road corridors	Accepted. Traffic Management Plans (TMPs) will be prepared for each section of affected road and submitted to the relevant roads authority prior to construction in that section. Road Occupancy Licences (ROLs) will be obtained as required.
• Work staging is required to maintain safe passage of pedestrians across pedestrian facilities and along footpaths. Work shall not be conducted during the school morning and afternoon restricted traffic times	Accepted. Safe passage for pedestrian will be maintained around work sites. Works shall be staged to prevent traffic and access impacts in areas adjacent to schools during pick up and drop off times. Wherever, practicable works in area adjacent to schools will be scheduled for school holiday periods.
• Measures should be undertaken to minimise project related car parking impacts on street parking. Details are to be negotiated with Council prior to work commencing	Accepted. As construction of the pipeline will occur within the roadway, some impacts to parking will be unavoidable. Such impacts will likely be around 1-2 days at any one location as construction work move along the roadway. Details will be provided in TMPs submitted to the relevant roads authority (relevant councils and RTA where appropriate).
• Construction work on Tangerine Street near Villawood North Primary and on Ellis Parade near Yennora Primary is not to be conducted between 8.00am - 9.30am and 2.30pm - 4.00pm on school days and to ensure the posted speed limits between 8.00am - 9.30am and 2.30am - 4.00pm are complied with by construction traffic. This work should be constructed during school holidays	Accepted. Works shall be staged to prevent traffic and access impacts in areas adjacent to schools during pick up and drop off times. Wherever, practicable works in area adjacent to schools will be scheduled for school holiday periods.
• Advance notices should be provided to all affected property owners and businesses, schools and Veolia Transport so that traffic disruptions can be minimised and managed. The project managers to include these public consultation tasks in their public consultation plan. Final arrangements are to discussed with Council prior to work commencing	Accepted. A system of community notifications will be delivered via letter box drop to potentially affected properties, business and schools etc from around 1 month prior to construction, as described in a Community Consultation Plan. The notification shall contain information about construction duration, hours and impacts. Appropriate details of the notification schedule from the Community Consultation plan will be included with the Construction Environmental Management Plan, which will be provided to Council.
• Traffic impacts from maintenance works should be managed through the development and implementation of Traffic Management Plans, developed in consultation with the relevant road authority, Council or the RTA	Accepted. Traffic Management Plans (TMPs) will be prepared for each section of affected road and submitted to the relevant roads authority prior to construction in that section.

ISSUE	PROJECT RESPONSE
4 Noise and Vibration	
Operational Noise from Plant	
The information submitted indicates that residents in North Street, Lyndon Street and Railway Parade will be impacted by noise from the site when all three pumps are in operation. It is acknowledged that the third pump would not be operating during normal operation; however, the plant has the potential to operate all three pumps at various periods when required.	Two pumps only would be required in simultaneous operation. The maximum amount of pumping required in governed by the capacity of the network and maximum output of the recycling plant, both off which are fixed. Two pumps only in simultaneous operation are required to drive the network at its peak capacity. The third pump is on standby and would only be used if one of the other pumps fails or requires maintenance (i.e. duty – duty – standby operation).
Residents in North Street are likely to suffer from sleep disturbance due to plant noise. Potential mitigation measures are suggested, however, further information is required to resolve the noise issues. One option mentioned is the construction of an earth bank to act as a noise wall, however, this solution may have an adverse impact on overland flow and flooding.	The revised design incorporates a full enclosed building for the pumping station to address potential noise issues. The earth bank has been abandoned in the revised plant design.
The proponent has failed to adequately justify that there will not likely be noise impacts on neighbouring residential properties.	Noise modelling has been revised and is presented in **Appendix C** of the report. The assessment outlines that for the revised pump station location and with the predicted attenuation to noise levels provided by the proposed pump station enclosure compliance with operational noise goals, particularly the night time goal of 40 dB(A) $L_{Aeq,\ 15min}$, would be achieved for all receivers within the surrounding area. Noise compliance monitoring will be undertaken at the commencement of operation of the plant and pump station to confirmed compliance with operational noise design goals. Furthermore, the pump station enclosure will be designed so that façade noise levels do not exceed 85 dB(A) L_{Aeq} and 97 dB(A) L_{A1}.
Noise compliance testing (including sleep disturbance) is required following the construction of the proposed RWTP. An Operational Noise and Vibration Management Plan outlining noise mitigation measures must be submitted prior to the commencement of operation.	Noise compliance testing will occur post-construction. The Operational Environmental Management Plan will include and Noise and Vibration management sub-plan.
Construction Noise	

ISSUE	PROJECT RESPONSE
The construction noise levels presented within the report, predict non-compliance with noise design goals for worst case noise levels received at the nearest potentially affected properties. The major areas of concern have a non compliance up to 29.5 dB(A) LA10, including North Street a non-compliance of up to 18 dB(A) LA10, and a non-compliance of 17.5 dB(A) LA10 at Barbers Street. Mitigation measures are proposed by the proponent however additional measures are recommended.	Construction noise design goals for construction of the pipeline will likely occur over a 1-2 day period only as construction moves along the roadway. Due to the close proximity of residences to the works location, such exceedences are difficult to avoid. As noise modelling assumes simultaneous operation of all equipment at the same location, the cumulative sound levels are considered to be worst case scenario. In reality, all equipment will generally not operate simultaneously or will operate distributed throughout the work areas (typically 50-100m long along the roadway). This will lower noise levels at adjacent sensitive receivers. Noise compliance modelling is proposed to assess actual noise level against those predicted in the Environmental Assessment. Where exceedences are measured, additional controls will be investigated and implemented.
Mitigation proposed by Council:	
• A CEMP must be prepared in accordance with the Department of Infrastructure, Planning and Natural Resources (2004) Guidelines for the Preparation of Environmental Management Plans and submitted to the relevant authorities at least four weeks prior to the commencement of construction.	Agreed and accepted
• The CEMP must be prepared and implemented in accordance with the procedures, safeguards and mitigation measures identified in the EA and in consultation with relevant stakeholders	Agreed and accepted
• The CEMP must contain all the Construction Sub Plans, including Construction Noise and Vibration Management Sub Plan	Agreed and accepted
• The approved CEMP must be made publicly available	The approved CEMP will be placed on the project website as required
• An Operation Environmental Management Plan (OEMP) must be prepared in accordance with the Department of Infrastructure, Planning and Natural Resources (2004) Guidelines for the Preparation of Environmental Management Plans and submitted to the relevant authority at least four weeks prior to the commencement of operation. The OEMP must be prepared and implemented in accordance with the procedures, safeguards and mitigation measures identified in the EA and in consultation with relevant stakeholders.	Agreed and accepted

ISSUE	PROJECT RESPONSE
• The OEMP must incorporate a monitoring and review program which contains (but is not limited to):	
a) an Operation Noise Management Sub Plan	Agreed and accepted
b) an Operation Air Quality/Odour Management Sub Plan,	Agreed and accepted
c) a Quantitative Final Hazard Analysis,	Based on information and discussions presented in this report in response to **Section 2** and **Section 11** of Council's submission, a quantitative hazard analysis is not appropriate. A Qualitative Final Hazard Analysis will be prepared in accordance with appropriate guidelines and advisory papers issued by DOP. Any controls and recommendations from this analysis will be included in the OEMP.
• The approved OEMP must be made publicly available	The approved OEMP will be made publicly available upon request.
5 Flora and Fauna	
North Street Site	
The proposal suggests that the pipeline has been designed to minimise damage and that further alterations are possible, particularly at the North Street site to minimize damage, however, no details are provided on the alternate location. The level of impact can be significantly reduced by redirecting the pipeline along the site access roadway to North Street. This route is already highly disturbed and the roadway acts as a buffer to the vegetation with high conservation significance. This site is relatively isolated and is currently free of the fungal disease Phytophthora cinnamomi. This fungal disease which seriously threatens native vegetation communities has been recorded in many areas of Sydney and it will be important that work on this site does not introduce the disease through truck movements and construction activity.	The revised pipeline alignment would exit the proposed recycling plant site directly onto North Street and will be placed entirely within the cleared road corridor. Thus, impacts to the native vegetation to the south of North Street between the proposed plant and Taylor Street will be avoided. Refer to plan PORRW-PL-A-0029 in **Appendix B** of the report which displays the revised alignment along North Street at this location. Avoiding this area of native bushland completely will also remove any chance of impact associated with the potential introduction of *Phytophthora cinnamomi*.
Fairfield Park	

ISSUE	PROJECT RESPONSE
The pipeline has the potential to kill up to five mature trees. The pipeline location can be amended to reduce this impact and regeneration work can help minimise the damage.	The proposed pipeline alignment through Fairfield Park has generally adopted internal park road corridor and existing cleared areas to avoid the need to remove native vegetation. Whilst all efforts will be made when determining the final pipeline alignment in the park to avoid the need to remove trees any mature native trees, removal may be unavoidable. Measures outlined in the Environmental Assessment to manage such impacts will be incorporated into the Construction Environmental Management Plan and adhered to during construction.
Threatened Fauna Species	
An assessment of the potential habitat for Eastern Pygmy Possums is absent. Anecdotal evidence suggests that the species persists in riparian areas adjacent to Orphan School Creek and the drainage channel identified in the proposed pipeline area. Swift Parrots have also been known to utilise the drainage area during annual migration of the species. The occurrence of these species highlights the area's significance and the continuing need for hollows. The removal of a number of semimature eucalypt trees will significantly delay the creation of new hollows in the area. Habitat creation works should consider the desperate need for hollows in the area and the threatened species dependent on these hollows.	The riparian areas adjacent to Orphan School Creek (the area south of North Street, Fairfield) are now avoided by the proposed pipeline alignment. As such, the potential to impact upon potential habitat for Eastern Pigmy Possums, Swift parrots and other threatened fauna species is limited. As such, further habitat assessment would yield limited information relevant to the project and is not required. If potential habitat trees require removal, appropriate inspection and felling protocols will be observed. Replacement nesting boxes, suitable for the target species, will be installed in surrounding area. When the final 'for construction' pipeline route is known and the need for tree removal can be accurately quantified, further consultation will occur with Council regarding the installation of nesting boxes, including ratios (tree removed to box numbers) and target species.
Artificial Habitat	
Removed trees are proposed to be utilised to replace habitat in the drainage line area. A number of habitat features could be created or enhanced through this work. Examples of habitat features that could be created include leaf litter, terrestrial and aquatic logs, artificial hollows and mulch. Given the level of disturbance and diversity of native fauna occupying sensitive sites, the creation of artificial habitat is a key element of rehabilitation works.	With current route revision the only area where habitat could potentially be impacted upon would be Fairfield Park. As the pipeline alignment adopted utilises existing access road corridors and areas with cleared and highly modified under stories (exotic grasses) the requirement for rehabilitation works is limited. Options for the reuse of any trees removed to create potential habitat features in Fairfield Park will be developed in consultation with Fairfield Council and documented in the Construction Environmental Management Plan (note relevant to network construction only). Rehabilitation works will seek to restore surfaces disturbed as a result of project activities as close as reasonably practicable to their pre-existing condition in a manner that facilitates the intended land use.

ISSUE	PROJECT RESPONSE
Mitigation proposed by Council:	
• The pipeline route from the plant shall be relocated in consultation with Council. The preferred route is for the pipeline to be from the plant to North St parallel to the western side of the existing access roadway.	The proposed alignment has already been amended in this area. Refer to plan PORRW-PL-A-0029 in **Appendix B** of the report for the revised alignment at this location.
• Regeneration of all sites in Fairfield be undertaken using indigenous plants of local provenance, preferably sourced through or in consultation with the Council's native nursery. This will preserve the ecological significance of each area.	Accepted for the regeneration of any native areas disturbed in Fairfield LGA. Highly modified environments such as road verges and nature strips etc will be revegetated as close as possible to pre-existing condition using species already species at that location.
• Details of habitat features to be created or enhanced through this work shall be included in the OEMP and CEMP. Examples of habitat features that could be created include leaf litter, terrestrial and aquatic logs, artificial hollows and mulch.	Options for the reuse of any trees removed to create potential habitat features in Fairfield Park will be developed in consultation with Fairfield Council and documented in the Construction Environmental Management Plan (note relevant to network construction only).
• Hygiene protocols and on-going sampling for Chytridiomycosis or Amphibian Chytrid disease and Phytophthora cinnamomi disease for the course of construction shall be conducted. Details of these protocols to be included in the Construction Environmental Management Plan. The protocols should be prepared in consultation with Council staff.	All excavation equipment will be received onsite free from a buildup of soil and organic matter. Equipment failing such inspection will not be accepted on-site and sent away from cleaning. Protocols will be outlined in the CEMP. As minimal works in timbered areas and no surfaces works are proposed directly within watercourses (beds and banks) are proposed, sampling for Chytridiomycosis (Amphibian Chytrid disease) and Phytophthora cinnamomi disease is considered unnecessary.
• More detail should be provided on plans to provide nesting/habitat boxes, in particular how many boxes will be installed, where they will be installed and who is responsible for the maintenance of these boxes. The boxes should use best practice design in order to provide specific habitat for rare species, prevent vandalism and most importantly, prevent use of the boxes by feral bird species such as the Common Myna (*Acridotheres tristis*).	If potential habitat trees require removal, appropriate inspection and felling protocols will be observed. Replacement nesting boxes, suitable for the target species, will be installed in surrounding area. When the final 'for construction' pipeline route is known and the need for tree removal can be accurately quantified, further consultation will occur with Council regarding the installation of nesting boxes, including ratios (tree removed to box numbers) and target species.
6 Aquatic Ecology	
Mitigation proposed by Council:	

ISSUE	PROJECT RESPONSE
• Chemical spill – Include details in the Operational Environmental Management Plans on how accidental chemical spills will be managed when working in and around aquatic environments, particularly, how aquatic environments will be rehabilitated following a spill.	Accepted. The OEMP will include appropriate requirements for preventing spills when working in an around aquatic environments and how any such spills will be managed.
• Use of herbicide – Provide details if the application of herbicide will be used in weed control/maintenance works. Consideration should be given to the impact of herbicide spraying to frog species and water quality. Detail is to be provided in the OEMP.	Details and requirement when using herbicides for weed control/maintenance works will be included in the OEMP. Measures will include appropriate herbicide selection and application to prevent potential impact to aquatic environments.
Effects from Project Operations and Maintenance	
Mitigation proposed by Council:	
• The proposal should outline a contingency plan for the replacement of plants and document what survival rate of plantings is expected for the rehabilitation works to be a success. The proposal should also include commitment to maintenance of these areas for a minimum period of three years.	Areas of native vegetation have been avoided almost entirely with revised alignments presented in the report. As such the need for removal of plants has been reduced further. When native vegetation does require removal (potentially only a few mature trees within Fairfield Park) appropriate details for survival rates and monitoring shall be agreed to with Council.
• The proposal should indicate if there will be any need to establish access paths or verges within the creek corridor area for maintenance of other purpose. If this is the case, specifications of these requirements should be provided.	Disturbance to the area between the proposed recycling plant and Taylor Street, Fairfield has been avoided via a route change. No access to this area will be required and as such there will be no need to establish access tracks etc in this area. Access to areas within Fairfield Park will occur using existing access tracks and roads. However, a temporary access track will be required to obtain access over grassed surface to the location where the proposed directional drill rig will be set up to install the pipeline under Prospect Creek. This access track will be removed and the disturbed area restored on completion of construction at this location.
7 Weed Control	
Mitigation proposed by Council	
• Detail on these works is to be included in a flora and fauna management sub-plan. Additional detail on the method and frequency of weed control is to be provided in this document.	Accepted. Weed control requirement will be included within the CEMP and OEMP.
8 Waste Generation and Management	
Mitigation proposed by Council:	

ISSUE	PROJECT RESPONSE
• There would be no discharge of any wastes from the recycling process to land or water during normal operation of the RWTP.	No response required
9 Water Quality	
The proponent has not addressed the possibility and consequences of the sumps within the pipe system overflowing, which may potentially cause pollution and how pollutants will be contained on-site.	All wastes from the recycling process will be pumped to a waste neutralisation tank for treatment prior to discharge to the sewerage system under a trade waste Agreement with SWC. There is no possibility of a spill or release from this system. The chemical storage and unloading area would be completely isolated from the onsite stormwater collection system and site in general via bunding. Minor spills would be pumped to the waste neutralisation tanks for treatment prior to disposal as described above. Major spills would be removed by appropriately licensed waste removal contractors and disposed of at appropriately licensed waste facilities. Other spills outside the chemical storage and unloading facilities may enter the onsite stormwater collection and detection system. However, it is noted that potential chemical contamination of stormwater is highly unlikely as all chemical handling will occur within the bunded handling and storage area. In the unlikely event of such a contamination event, the contaminated water will likely enter the stormwater retention pond onsite. This pond can only be emptied by operating the pumping system, would pump directly to the stormwater system. In the event of contaminated water entering the pond appropriate measures will be implemented to removed and appropriately dispose of all contaminated material. There would be no pump8ing to the stormwater system. Appropriate handling and disposal protocols for management to potentially contaminated water on site will be include with plant operational procedures and the referenced in the OEMP.
The proponent has not provided detailed sedimentation control measures for the proposed development. The Soil and Water Management Sub-Plan should include, but not be limited to, sedimentation control measures which are to be put in place for the stabilising of disturbed areas to minimise dust generation, covering materials carried on vehicles travelling to and from construction sites, regularly cleaning construction spoil and other loose material from roads and paved surfaces, ceasing potential dust generating activities during windy conditions and maintaining plant to prevent emissions	Prior to construction, a Soil and Water Management Plan will be developed in accordance with requirements of the Blue Book for the proposed plant site at Fairfield. This plan will form part of the CEMP. The CEMP will contain appropriate management measures to address issues such as dust generation, covering loads, spoil from construction site impacting upon roads etc.

ISSUE	PROJECT RESPONSE
Mitigation proposed by Council:	
• The proponent shall liaise with the Department of Environment and Climate Change (DECC) following the construction of the development to ensure that any potential escape from the proposed blind sumps is subject to control by way of an appropriate environmental pollution license.	Accepted. Prior to the commencement of operations consultation shall occur with DECC regarding potential licensing requirement for the plant site stormwater and other wastewater distribution systems.
• Prior to construction, the proponent must submit for approval, a Soil and Water Management Sub-Plan to accompany the CEMP.	Accepted. A Soil and water Management plan for the plant will be prepared in accordance with the Blue Book and submitted to Council prior to the commencement of construction. The CEMP will contain soil and water management sub-plan. Prior to the commencement of construction the CEMP will be submitted to Council for approval in accordance with approval conditions.
• A pollution control valve be installed that will contain all pollutants on the property so that all stormwater outlets from the property are capable of being closed off from a conspicuous position.	The bunded chemical unloading and storage areas will be isolated from site stormwater collection and detention systems. All site water will drain to the stormwater retention pond, can only be pumped to the stormwater system outside the site by a manually operated pumping system. As such a pollution control valve is not required.
• The proponent must obtain the necessary licence DECC to control pollution resulting from any spill.	Accepted. Requirements for licences to control pollution from any spills will be discussed with DECC prior to the commencement of operations and licences obtained as required. Appropriate protocols will be included in the OEMP.
10 Visual Amenity	
Mitigation proposed by Council:	
• Additional screen planting to include low level native shrubs that complements existing mature trees should be developed by the proponent in consultation with Council and the local residents. Details to be included in the OEMP.	Accepted. Additional landscaping requirements to provide further vegetative screening of the plant from North Street residents will be developed in consultation with Fairfield Council. Details will be provided in post-construction requirements in the CEMP.
11 Hazards and Risk	
Hazardous Materials	
The proponent has claimed that the potential for a chlorine gas discharge should not be considered a worst case consequence. Assessment by Council's staff does not agree with this position. The potential production of chlorine gas should be considered a worst	Additional information was sought from the plant designer regarding this potential; risk. The risk of chemical reaction and the generation of significant volumes of chlorine gas have been considered and are mitigated at design and operation level. Engineering and procedural controls will be implemented at the chemical storage and

ISSUE	PROJECT RESPONSE
case major consequence.	unloading area to ensure that the potential for chlorine gas generation in large volumes is not possible. Details are provided below. Firstly acid and hypochlorite storages are separated and in individually bunded locations, in accordance with the requirements of AS 3780-1994 The storage and handling of corrosive substances. Any spillage and leakage of chemical within the bunded area will be contained, monitored, and operator intervention will be required dispose of or neutralise any spills as described in the response to **Section 9** of Council's submission above. Secondary, if any chemicals are spilled during loading and unloading, the spillage will be contained within bunded truck unloading bay area. Spillage at unloading bay bund will be contained, monitored and operator intervention will be required to dispose of or neutralise the spilled material. All spillages are drained into a sump within the bund (isolated). The sump will be alarmed by level sensors so that plant operators will be warned of a spillage to take emergency actions. Sump overflows will be contained within the bund. When the operator is informed by the emergency alarm, they will attend and investigate and if necessary either bring in a suction truck to suck away the chemical spillage and dispose, or in case of minor spillage, start a submersible pump at the sump to pump away to the waste neutralisation tank, prior to discharge to the sewer system. The operators will be trained and procedures established to ensure the sumps, when alarmed, will be pumped away so that no spillages are left in the sumps. Thirdly, as soon as the water at neutralisation tank is neutralised, it will be pumped away to sewer. This will ensure all process waste dumps, which are initiated by operator, will not be mixed with other discharged wastes in the neutralisation tank. Fourthly, dosing pumps into the neutralisation tanks are control interlocked to avoid any mixing of chemicals at the neutralisation tank. Finally the process building will have forced ventilation which will remove and contain insignificant volumes of chlorine gas released, not because of chemical reactions, but instead due to gas that naturally escapes from the hypochlorite. It should be noted that the volumes of such releases will be insignificant and will only occur during infrequent 'Clean in Place' cleaning of the process equipment (backwashing), when hypochlorite is dosed. As such the potential for chlorine gas generation in anything other than insignificant

ISSUE	PROJECT RESPONSE
	and inconsequential volumes is actively managed via engineering and procedural controls and should not be considered as worst case scenario.
Hazards involving toxic substances (such as the production and escape of chlorine gas) are less predictable than fire or explosion. A quantitative PHA would therefore be more appropriate to determine if there is likely to be serious potential consequences from a hazardous event. Further, the Department of Planning Consultation Draft (July 2008) titled "Applying SEPP 33" makes reference to material incompatibility and considerations consent authorities should give towards these potential hazards, with specific reference to chlorine gas.	Applying SEPP 33 (Consultation Draft)(DOP, 2008) outlines that the hazard analysis may be done qualitatively and/or quantitatively, depending on the circumstances of the proposal and its location. The level and extent of qualitative or quantitative assessment will depend on the nature and scale of the development and, as importantly, its proposed location in relation to surrounding land uses and the natural environment. The guideline outlines that a qualitative analysis may be sufficient in the following circumstances: - where the materials are relatively non-hazardous (for example, corrosive substances and some classes of flammables); - where there are no major worst-case consequences; - where the technical and management safeguards are self-evident and readily implemented; and - where the surrounding land uses are relatively non-sensitive. Whilst chlorine gas itself is hazardous, given the rate at which could be released with the above controls in place it would be considered as relatively non-hazardous, both immediately at the plant and to the surrounding areas. The proposed controls are self evident, readily implementable and sufficient to ensure that there are no major worst-case consequences from either chlorine gas generation. The closest properties are approximately 130m away from the chemical storage area to the North. Given the insignificant volumes of chlorine has that could be generated and released, sensitive surrounding land use are considered to be a sufficient distance away. Appendix 5 provides further guidance that a qualitative assessment may suffice provided all or most of the following conditions are met: - screening and risk classification and prioritisation indicate there are no major offsite consequences and societal risk is negligible; - the necessary technical and management safeguards are well understood and readily implemented; and - there are no sensitive surrounding land uses.

ISSUE	PROJECT RESPONSE
	The engineering and procedural controls will ensure that the potential for a significant release of chlorine gas able to cause major offsite consequences is negligible. From the description off the controls that will be implemented it can be seen that the issues and appropriate controls are well understood. Given that the only real likelihood of chlorine gas generation and release is for insignificant volumes of chlorine during infrequent hypochlorite dosing, all sensitive receptors and land use are sufficient distances away from any potential minor gas releases (refer to **Figure 5-1** in report and plan **PORRW-PL-A-0030** attached to this appendix). The guideline outlines that a quantitative analysis would be required if the qualitative analysis cannot demonstrate there will be no significant risk. The qualitative analysis undertaken combined with the additional information presented in this report is sufficient to demonstrate that there will be no significant risk and no qualitative analysis is warranted.
The PHA states that "residential areas surrounding the RWTP are all located at least 100 m from the chemical storage areas". Council has been unable to verify this statement. Also, as no site plans (to an adequate scale) were submitted with the Environmental Assessment the Council has been unable to confirm that there would be "little or no risk from any hazards" as the proponent asserts. In addition, the measurement should be taken at the closest property boundary, irrespective of where residential dwellings are located.	The closest residences to the chemical unloading and storage area are approximately: - 100 metres to the north, - 100 metres to the west, - 400 metres to the south and - 350 metres to the east. Plan **PORRW-PL-A-0030** (attached to this attached) shows the location of the proposed chemical storage area from the nearest residences and provides a scale for Council's information. Given the potential for the release of infrequent release of chlorine gas in insignificant and inconsequential quantities only, these distances provide more than enough clearance, regardless of whether they are measured from the appropriate lot boundary.
The impact of the Probable Maximum Flood which affects this site on the storage of chemicals and hazardous material and measure to prevent the material entering the Georges River via Prospect Creek must be considered.	Additional information has been sought from the designer regarding performance of the chemical storage apparatus under probable maximum flood conditions. This information presented below. The chemical storage and handling area is designed to Australian Standard AS3780 and to comply with NSW EPA and other statutory requirements.

ISSUE	PROJECT RESPONSE
	The finished concrete level of bulk chemical storage area is 8.00 m AHD, above the predicted peak level of the 1 in 100 year design flood of 6.8 m AHD. A plinth height of 150 mm will be provided so that all bulk chemical tanks will be anchored at the finished level of 8.15 m AHD. The overall height of bulk chemical tanks will be designed to be a minimum of 3.1 m above the anchor point level, with overflow pipes invert level at 300 mm below this level. This makes the pipe invert level of the overflow pipes for all chemical tanks 10.95 m AHD, minimum. All chemical tanks will be firmly anchored to floor and restrained from any uplifting flotation. All bulk chemical tanks are checked for leaks when installed and all connections are pressure tested to ensure nil chemical leaks. The predicted peak water level of the Probable Maximum Flood is predicted to be 10.8 m AHD, which is below the invert level of the tank overflow pipes. Therefore, even at the highest theoretical flood level that could ever be experienced at the site, flood waters would not be able to enter the bulk chemical tanks and there is no risk of any chemical release from the tanks into any surrounding flood waters. Through discussions with Fairfield Council it has been identified that flood behaviour at this location in a Probable Maximum Flood will be governed by flood levels in the Georges River and that this location will be a large inundated backwater. As such, flood velocities are expected at this location are expected to be minimal to negligible. Therefore potential hydrodynamic loads on the tanks would be expected to be low and the risk of impact to the tanks from debris causing damage and movement is also low. Other chemicals will be stored in 'bulki bins'. The bulk bin storage area has a finished concrete level at 8.00 m AHD. It is expected that two industrial standard container bins ('bulki bins') of $1m^3$ each of citric acid and sodium metabisulphite will be stored at this location. The height of the lip of the bulki bins will be approximately at 8.9 m AHD, well above the predicated 1 in 100 year flood level. It should be mentioned that container bins are usually cap sealed. In case if PMF flood level is reached, there is a minor risk that the container bins will float (empty bins or partially filled). In the worst case scenario, which is unlikely if the bulk bins float, is that the chemicals stored within the bulki bins are washed out. In this event, each chemical would become excessively diluted due to the shear volume of the flood waters during a PMF. Excessively diluted citric acid poses an insignificant risk to the environment. Sodium metabisulphite is an oxygen scavenger

ISSUE	PROJECT RESPONSE
	and breaks down on contact with dissolved oxygen to form innocuous sodium sulphate, which would in turn be excessively diluted and an insignificant risk to the environment. As described above, the risk of contamination of floodwaters during a PMF flood event and contaminants entering the Georges River via Prospect Creek from the plant chemical unloading and storage is minimal due to the engineering control that are proposed at the site.
Therefore, Council is of the opinion that the qualitative assessment is not appropriate and a quantitative PHA should be undertaken	Based on the above discussion a qualitative analysis is considered sufficient in accordance with the requirements of SEP33 and appropriate guidelines.
Mitigation proposed by Council:	
• Preparation of a quantitative PHA to determine if there is likely to be serious potential consequences from a hazardous event. Further, the Department of Planning Consultation Draft (July 2008) titled "Applying SEPP 33" makes reference to material incompatibility and considerations consent authorities should give towards these potential hazards, with specific reference to chlorine gas. To confirm that there would be "little or no risk from any hazards" as the proponent asserts. The measurement should be taken at the closest property boundary, irrespective of where residential dwellings are located.	Based on proposed engineering and procedural controls discussed above, the qualitative PHA in accordance with SEPP33 and appropriate guidelines and is considered to be sufficient. A Quantitative PHA is considered unwarranted and will likely yield no additional information or controls, both engineering and procedural.
• The impact of the Probable Maximum Flood which affects this site on the storage of chemicals and hazardous material and measure to prevent the material entering the Georges River via Prospect Creek must be considered.	Based on the discussions above, the current proposal is sufficient to prevent the release of hazardous chemicals into the flood waters during the probable maximum flood. Chemicals that could potentially be released are not considered as hazardous, would be excessively diluted and would pose little risk to the environment. The impact of the PMF and the potential impacts of the plant on water quality in such an event have been considered and appropriate control measures included within the plant design.
• The site should contain a pollution control valve that will contain all pollutants on the property so that all stormwater outlets from the property are capable of being closed off from a conspicuous position.	As described above and in the response to **Section 9** of Council's submission, the chemical unloading and storage area is isolated from the rest of the plant and requires operator attention to empty. The proposal includes an internal stormwater collection and retention system. The stormwater retention pond also requires manual attention from the operator to pump to the stormwater system or otherwise. As such, a pollution control valve is not required, as the plant design already features

ISSUE	PROJECT RESPONSE
	appropriate isolation systems and controls.
12 Environmental Risk Analysis	
Odour	
The proponent believes any odour will be minimal and asserts that the design is expected to control any potential odour impacts. However, the Environmental Assessment notes that the final design has not been agreed to and without specific site plans it is difficult to determine the final design. Without the final design it is impossible for a final assessment of potential odour impacts to be completed.	Whilst the final design of the plant is yet to be complete, all the processes and equipment that will be used is known and has been adequately described on the Environmental Assessment. Only the layout has changed slightly and final touches are being made to electrical and control systems. The revised plant layout is shown in plan **A0123-C-0001-21** in **APPENDIX A** of this report. The plant will utilise treated (not raw) effluent in which the majority of biosoilds have already been removed. Additionally, the recycling process does not feature any anaerobic processes (such as sludge digestion) which could generate potentially odorous gases such a hydrogen sulphide. All wastes will be discharged directly to sewer and will not be processed or treated on site. This recycling system is also closed. As such, there is minimal potential for the plant to generate any odour. The current level of information provided is considered to be acceptable. The processes proposed are not able to generate odorous gases. No additional information can be provided relating to this comment.
Air Quality	
During plant operation the plant will use a wide range of hazardous chemicals. The potential production of chlorine gas should be considered a worst case major consequence. As no site plans (to a suitable scale) were submitted with the Environmental Assessment, the 100m buffer distance can not be verified. Therefore, the submitted qualitative Preliminary Hazards Assessment (PHA) does not suffice and it is recommended that prior to construction of the RWTP a quantitative PHA should be undertaken There is potential for chlorine gas to be released if the plant malfunctions. This matter is dealt with in the Hazard Analysis section.	Council comments and potential issues associated with chlorine gas generation are discussed in the response to **Section 11** of Council's submission above. The potential for chlorine gas generation during plant operation in any significant quantities is managed via engineering and procedural controls. The risks associated with chlorine gas generation at the plant are considered to be negligible. The Quantitative PHA provided in the Environmental Assessment is considered to be sufficient.

ISSUE	PROJECT RESPONSE
During construction, there may be some temporary and localised air quality impacts from construction vehicles, construction work sites, and equipment emissions. The proponent should prepare a Construction Soil and Water Management Sub-Plan to ensure sedimentation and control measures are put in place such as the stabilising of disturbed areas to minimise dust generation, covering materials carried on vehicles travelling to and from construction sites, regularly cleaning construction spoil and other loose material from roads and paved surfaces, ceasing potentially dust generating activities during windy conditions and maintaining plant to prevent emissions.	Appropriate controls to manage air quality impacts associated with construction sites and equipment will be included in the Construction Environmental Management Plan.
Mitigation proposed by Council:	
• Following construction and prior to commissioning of the RWTP an Odour Impact Assessment should be undertaken and included within an Operation Air Quality/Odour Management Sub-Plan submitted to the appropriate authorities for approval.	The plant will not support processes and/or handle/process material that has the potential to cause the generation of odorous gases. An odour impact assessment is not warranted.
• The proponent shall prepare a Construction Soil and Water Management Sub-Plan as part of the CEMP.	Accepted.
13 Land Contamination	
Mitigation proposed by Council:	
• Prior to construction, further assessment must be undertaken to determine the extent of asbestos and ensure the ash layer will not be disturbed during construction and operation of the RWT. Mitigation methods shall be included in the CEMP.	Further assessment has already been undertaken by Coffey Environments in December 2008. A Remedial Action Plan is currently under development that will provide the methodology to remove all potentially contaminated material that may be disturbed during construction or operation. An accredited contaminated site auditor has been engaged to review all previous investigations and the draft Remedial Action Plan for adequacy. Appropriate mitigation measures will be included within appropriate site plans.
• Prepare a Construction Contaminated Land Management Sub Plan (to further assess the extent of asbestos and ensure the ash layer will not be disturbed during construction in addition to any relevant Remedial Action Plan),	Remediation of the site will occur in accordance with an approved Remedial Action Plan as described above. Further assessment will be undertaken as directed by the contaminated site auditor.

ISSUE	PROJECT RESPONSE
• An Environmental Impact Audit Report – Construction must be prepared and submitted to the relevant authority a maximum three months after Construction is complete. The Environmental Impact Audit Report – Construction must: a. Identify the major environmental controls used during Construction and assess their effectiveness (the assessment of effectiveness should be based on a comparison of actual impacts against performance criteria identified in the CEMP). b. Identify any innovation in Construction methodology used to improve environmental management, and c. Discuss the lessons learnt during Construction, including recommendations for future projects.	An Environmental Impact Audit Report – Construction shall be prepared submitted to the relevant authorities as directed by the Minster for Planning in the project approval conditions.
• An Environmental Impact Audit Report – Operation must be prepared and submitted to the relevant authority a maximum twelve months after the project begins operation and construction is complete. The Environmental Impact Audit Report – Operation must: a. Compare the operation impact predictions made in the EA, and any supplementary studies with the actual impacts. b. Assess the effectiveness of implementation mitigation measures and safeguards. c. Assess compliance with the systems for operation maintenance and monitoring. d. Be certified by an independent person at the Proponent's expense. e. The Environmental Impact Audit Report – Operation must be made publicly available.	An Environmental Impact Audit Report – Operation shall be prepared and submitted to the relevant authorities as directed by the Minster for Planning in the project approval conditions.
14 Consultation	
Mitigation proposed by Council:	

ISSUE	PROJECT RESPONSE
• Consultation with the Western Sydney Cycling Network to ensure no rides are organised through this area during construction. Details to be included in the Consultation sub Plan of the CEMP.	This consultation requirement will be added to the project Community Consultation plan, appropriate details of which will be included within the CEMP.
• The community consultation feedback has requested to be kept informed of the progress. To increase contact with the community by making contact with key community groups in the areas affected by the changes and deliver newsletters to these places as well as homes. Keeping the community abreast of changes and progress by attending the 2GLF Community Radio Station in Liverpool.	These consultation requirements will be added to the project Community Consultation plan, appropriate details of which will be included within the CEMP.
15 Flooding – Mainstream and Overland	

ISSUE	PROJECT RESPONSE
It is noted that the site is above the 100 year flood extent, but nevertheless could be inundated up to 10.8m AHD in a Probable Maximum Flood event. Existing ground levels are in the order of 6.7AHD and finished ground levels shown to be filled up to 8.0m AHD throughout the site. This means that all buildings have the potential to be flooded to 2.8m deep under existing conditions. Flood risk analysis must be carried out addressing the effects on hazardous chemical storage, loss of flood storage and the cumulative impact this development would have on the floodplain.	Existing ground levels across the proposed site of the recycling plant site range from around 6.8 m AHD up to 8.2 m AHD. A large fill mound exists at the southern edge of the site with surfaces levels up to 10 m AHD. The plant will be built roughly at the existing ground surface level across the site. Little cut and fill will be required, with the exception of the fill mound which will be removed within the site boundary. As the predicted Probable Maximum Flood (PMF) level is around 4m higher than the predicted 1 in 100 year flood level, it is impractical to design the plant to be 100% safe during such an event. The potential for inundation by flood waters during the PMF has been considered in the plant design, particularly with reference to the chemical storage. The risks to and from the chemical storage area during such an event has been adequately addressed via engineering and procedural controls. This is discussed in the response to **Section 11** of Council's submission above. The large difference between the predicted peak water levels during the PMF and 1 in 100 year flood indicate that an enormous volume of water will be present and over an incredibly wide area. This is confirmed by Council's flood risk maps at this location. Furthermore, the area will be a backwater with water levels governed by peak water levels in the Georges River downstream rather than water flowing along the St Elmo's Drain watercourse to the east. In this context there is very limited potential for the proposed development at this location to have any significant effect on flood levels, floodplain storage or flood behaviour in PMF (or any other) event. The proposed development is entirely above the predicted peak level of the 1 in 100 year design flood. It is impractical to expect, given flood behaviour at this location, that this development can be protected from inundation from during a PMF event. As such it is considered that a Flood Risk Analysis, other than the discussion provided in this report, is warranted or would yield any useful information in terms off managing any perceived impacts.

ISSUE	PROJECT RESPONSE
The plant is also located in an overland flowpath. Mapping required to categorise the risk of this flowpath has not been undertaken, however, a 1200 mm culvert is located on this site and serves to drain a catchment of 22 hectares. This culvert is part of St Elmo's Drain and was upgraded by Council in the mid 1990s.	A culvert is present underneath the raised railway embankment immediately west of the proposed plant location. This culvert will effectively restrict the passage of overland flow from the catchment to the west of the railway and hence restrict the volume of surface water runoff that may potentially be experienced at the proposed development site. In discussions with Council regarding the potential overland flow issue, Council provided anecdotal evidence that a significant volume of water pools on the western side of the railway line at the location of this culvert, confirming assessment above. The plant designers noted the potential for an overland flow path across the site and have designed the plant, internal access roads and stormwater collection system accordingly. The two access roads are to be constructed to grade and will be the low points across the site, as can be seen from the finished construction levels shown on plan **A0123-C-0001-21** in **APPENDIX A** of this report. The access roads will convey any overland flows during excessive precipitation events across the site from west to east. Depths up to 1500mm (kerb height would) be contained entirely within the access roads.
The application indicates that the main building is to be situated over an existing 1200mm culvert although the application includes no mention of the culvert or any relocation. Discussions with company representatives indicate that they were unaware on the location of the culvert. Significant work will be required to determine how to manage this issue.	At the time of exhibition of the Environmental Assessment the proponent had no knowledge of the stormwater culvert as it does not appear on any site plans obtained through Dial Before You Dig and no drainage easement has been registered over the asset. Upon becoming aware of the issue and internal inspection of the drain was arranged. Appropriate information was provided to council to enable positive location of the asset in future. An alternative alignment of the stormwater drain is being developed entirely within the proposed site boundary, in such a manner that an appropriately wide easement can be executed over the asset and access to the asset in the event of maintenance requirements can be maintained. When draft design plans become available, these will be provided to Council for review and comment.
New modelling to determine the capacity of the existing culvert is not complete hence the flood event at which the culvert will surcharge cannot be determined without further investigation.	Accepted. The designers of the plant have considered the potential for overland flow. A certain amount of overland can be accommodated by the current design. The plant designer's will undertake some modelling prior to the finalisation of design. The modelling shall be provided to Council. The current design makes provisions use the internal site access roads to convey overland flow across the site.

ISSUE	PROJECT RESPONSE
The proposal includes the potential use of a large earth bund as part of the noise mitigation measures and the design and location of any bunding will need to consider the overland flow path and the loss of flood storage. A bund cannot be permitted unless the flood impact is quantified and it can be demonstrated there is no adverse impact on flooding.	Accepted. The proposed earth bund/bank has been removed from the current plant layout
If the culvert is relocated, investigation about the capacity and the potential overland flow will need to be completed by the proponent.	The current proposal to relocate the drain within the site boundary will not affect the drain upstream or downstream of the site boundaries. As the size of the drain will remained unchanged, drain performance will be unaffected. The current pant design makes provisions for conveying overland flows along the access roads and offsite at the low point into existing overland flow paths down gradient from the site.
If the culvert is relocated, it must have the capacity to transport the 100 year flow greater than the 100 year frequency.	The stormwater drain will be relocated within the site boundary only. As no change will occur to the drain diameter and capacity down gradient from the site, changing the diameter and capacity of the drain within the site boundary will have no effect on capacity and is inappropriate. The relocated drain will also have a diameter of 1200 mm.
The application needs to consider the impact of all floods including the Probable Maximum Flood (PMF) and address Council's DCP – Chapter 3 and 11 with respect to flooding and storage of hazardous material in the floodplain. The DCP indicates that this development will fall under the precinct category of Utilities Installations.	As the proposed plant and all components, including floor levels, driveways and car parking areas, is above the 1 in 100 year flood level plus appropriate freeboard, the development is generally consistent with all requirements outlined in Chapters 3 and Chapter 11 of Fairfield City-Wide Development Control Plan 2006.
While mainstream flooding falls within the low flood risk, mapping to determine the risk from overland flow is not expected to be completed by Council until June 2009. The proponent should take the risk assessment into account and implement measures to mitigate any impacts identified by the risk precinct, particularly in regard to storage of chemicals.	Accepted. The risks associated with overland flooding will be assessed and considered prior to finalising the plant design. Impacts to and from chemical storage due to overland flow are already considered and minimised as described in response to **Section 11** of Council's submission.
Discharges to St Elmo's Drain	

ISSUE	PROJECT RESPONSE
There has been no discussion of overflows from the site during times of high floods. The site layout indicates there are storm retention ponds and other tanks. The RWTP is within 100m of St Elmos Drain, and only 500m away from its confluence with Prospect Creek. Physical and operational measures will need to be put in place to ensure that discharge from the plant during normal operation or emergencies, does not reach St Elmo's Drain.	The proposed stormwater retention system for the plant and its connection and discharge to the stormwater systems has been discussed in the response to **Section 9** and **Section 11** of Council's submission above. The chemical storage and unloading area is bunded and isolated from the rest of the plant and the proposed site stormwater system as described in detail above. Overland flows from up gradient of the site would be conveyed across the site via the proposed access roads, which will be constructed to grade and will from depressions in the finished surfaces levels. Waste streams from the plant will be discharged directly to eth sewer system under a Trade Waste Agreement with Sydney Water.
The plant has been designed for sewer mining. A more positive outcome could be achieved if storm water from St Elmo's Drain could be diverted and treated for reuse at this plant.	The plant is designing to process treated sewage effluent of a defined quality range. The variability in quality of the stormwater flowing along this drain may have adverse reactions of the water recycling process and causes issues with the plant and the quality of the recycled water it produces.
Mitigation proposed by Council: The following information is to be reviewed by the proponent and mitigation measures included in the CEMP and the OEMP.	
• The impact of the proposed Fairfield RWTP development on mainstream flood behaviour is to be considered, including the potential for loss of flood storage and flow conveyance across the site. It is noted that the site is above the 100 year flood extent, but nevertheless could be inundated up to 10.8m AHD in a Probable Maximum Flood event. With ground levels shown to be filled to 8.0m AHD throughout the site in Figure 5-10, this means that all buildings have the potential for 2.8m deep flooding under existing conditions. Flood risk analysis must be carried out addressing the effects on hazardous chemical storage, loss of flood storage and the cumulative impact this development would have on the floodplain.	The development will have no effect on flood behaviour and levels during a 100 year flood. Due to the predicted extent, depth and 'backwater' scenario during a PMF event, any impacts to floodplain storage and flow conveyance due to the proposed development would be negligible. There is a very large difference between the PMF and 100 years flood levels it is impractical to design the plant for the PMF. However, the PMF and potential inundation to 2.8m depth has been considered when design the chemical storage facilities. The discussion of flood risk provided in this report is considered sufficient. No further flood risk analysis is required relating to mainstream flooding.

ISSUE	PROJECT RESPONSE
• A detailed study is required to quantify and risk categorise overland flooding across the Fairfield RWTP as there is a known overland flow path running towards St Elmo's Drain that crosses the site. Filling in this area (as proposed by Figure 5-10 showing the new ground level at 8.0m AHD across the site) would block this overland flow path, therefore compensatory measures must be considered to ensure that neighbouring properties are not adversely affected. The 1200mm culvert through the property may need to be relocated and/or upgraded to convey the estimated 100 year stormwater flow. The pipe should be designed assuming a pit blockage factor of 30%. An easement or drainage reserve over the top of the pipeline should be provided to carry excess flows in the 100 year flood assuming 50% blockage of the pipeline.	The culvert under the raised railway line to the west of the proposed development site will act as the hydraulic control for all waters from the catchment to the west that might affect the site. This culvert will significantly reduce the overland flow volumes and rates potentially experienced at the proposed development site. The overland flow path across the proposed was identified by the plant designers and the plant designed accordingly. Contrary to Council's comment, the footings of the plant components will generally be at the existing ground surface levels, with only minor cut and fill to create level surfaces for construction. The access roads will be constructed to form low points across the site and will roughly follow the existing grade to convey any overland flow across the site. Survey information and finished surface levels are provided on plan **A0123-C-0001-21 in APPENDIX A** of this report. Whilst some allowance has been made in the design to accommodate overland flow, modelling will occur to determine likely depths, extents across the site and potential impacts and risk to the plant and surrounding areas.
• The impact of the proposed visual barrier embankment to the north of the Fairfield RWTP on mainstream and overland flood behaviour should be considered.	The earth embankment has been removed from the current plant design. Noise issues have been addressed and alternative vegetative visual screening options will be considered in consultation with Fairfield Council.
• An analysis of the proposal should also be carried out in regard to the provisions of the Greater Metropolitan Regional Environmental Plan (GMREP) 2 – Georges River Catchment which applies to the Fairfield LGA.	Complete. Refer to response above to **Section 2** of Council's submission regarding the application of Greater Metropolitan Regional Environmental Plan (GMREP) 2 – Georges River Catchment
• To maintain a consistent assessment approach (the application has considered SREP 28 – Parramatta) an analysis of the provisions of the GMREP shall be completed. Consideration shall include the storage of chemicals or potentially hazardous materials and any safeguard measures to prevent such material leaving the site in a PMF event.	Complete. Refer to response above to **Section 2** and **Section 11** of Council's submission regarding the application of Greater Metropolitan Regional Environmental Plan (GMREP) 2 – Georges River Catchment
• Further details are required on the proposed pipeline crossings of Prospect Creek and Burns Creek. The pipeline crossing, and any associated structures or earthworks that are located within the floodplain of these creeks should not impede the free flow of floodwater.	The pipeline will be installed underneath these creeks using horizontal directional drilling to avoid impacts to the beds and banks. The pipeline and all its components would be installed underneath the ground along in the vicinity of these creeks. As such, they will not impact upon the free flow of floodwater.

ISSUE	PROJECT RESPONSE
• Further details are required on the proposed pipeline along the Prospect Creek floodplain from Yennora to Smithfield. All excavated material should be removed from the floodplain so that flood storage and flow conveyance is not reduced.	The pipeline will be constructed underground along the entire length from Smithfield to Yennora. During trenching works, all excavated material will be removed from the trench and replaced or disposed of within the hours of construction each day. Construction of the pipeline will not involve the creation and use of persistent stockpiles of excavated material within the floodplain. As such, construction off the pipeline along this section will have no effect on floodplain storage or conveyance.
16 Energy Consumption	
Mitigation proposed by Council	
• That the proponent be required to purchase energy from renewable sources for the component of the energy consumed that exceeds the combined consumption for the production of a kilolitre of potable water and the treatment and disposal of sewerage which is estimated at 0.91Kwhr/KL.	The scheme has been priced using energy from non-renewable sources. Switching to energy from renewable sources would significantly alter the financial models and may potentially render the scheme uneconomical. Pricing of recycled water and revenue received from the sale of recycled water will be set by the NSW Independent Pricing and Regulatory Tribunal. If future pricing models and tariffs, etc take into account the cost of using (in part) energy from renewable sources, Council's suggestion will be considered. No change is proposed at this stage to energy sources.
17 Infrastructure Impacts	
The current average traffic volumes for each of the local roads around the site is currently 1900 vehicles per day which includes approximately 10% as heavy traffic. The proponent claims that traffic impacts will be minimal, however, Council's staff have estimated that the average traffic volumes will increase by approximately 10% to 2090 vehicles per day and that based on the current traffic patterns associated with the adjoining existing Sydney Water site that heavy vehicle traffic will double from 10% to 20% of the total traffic volume.	The plant will be located within a very quiet closed system of streets with two access points only (Ulverstone Street and Wilga Street) into the wider road network to the north. The system supports predominantly local residential traffic with some heavy vehicle movements (infrequent) to the Fairfield Storm Sewage Treatment Plant and the Integral Energy substation to the south of the proposed development site. There are no 'through' traffic options in this area. As such, Fairfield Council's statistic of 1900 vehicles per day in the local roads around the site appears to be an order of magnitude greater than site observations would suggest. Furthermore, the operation of the plant will not add 190 vehicles per day to the local road network as Council suggests. The figures for daily vehicles trips to and from the plant during operation outlined in the Environmental Assessment (60 one way truck movements per day during construction (page 83 of EA) and around 190 truck movements per annum during operation (page 96 of EA)) are a fair and indicative estimation.

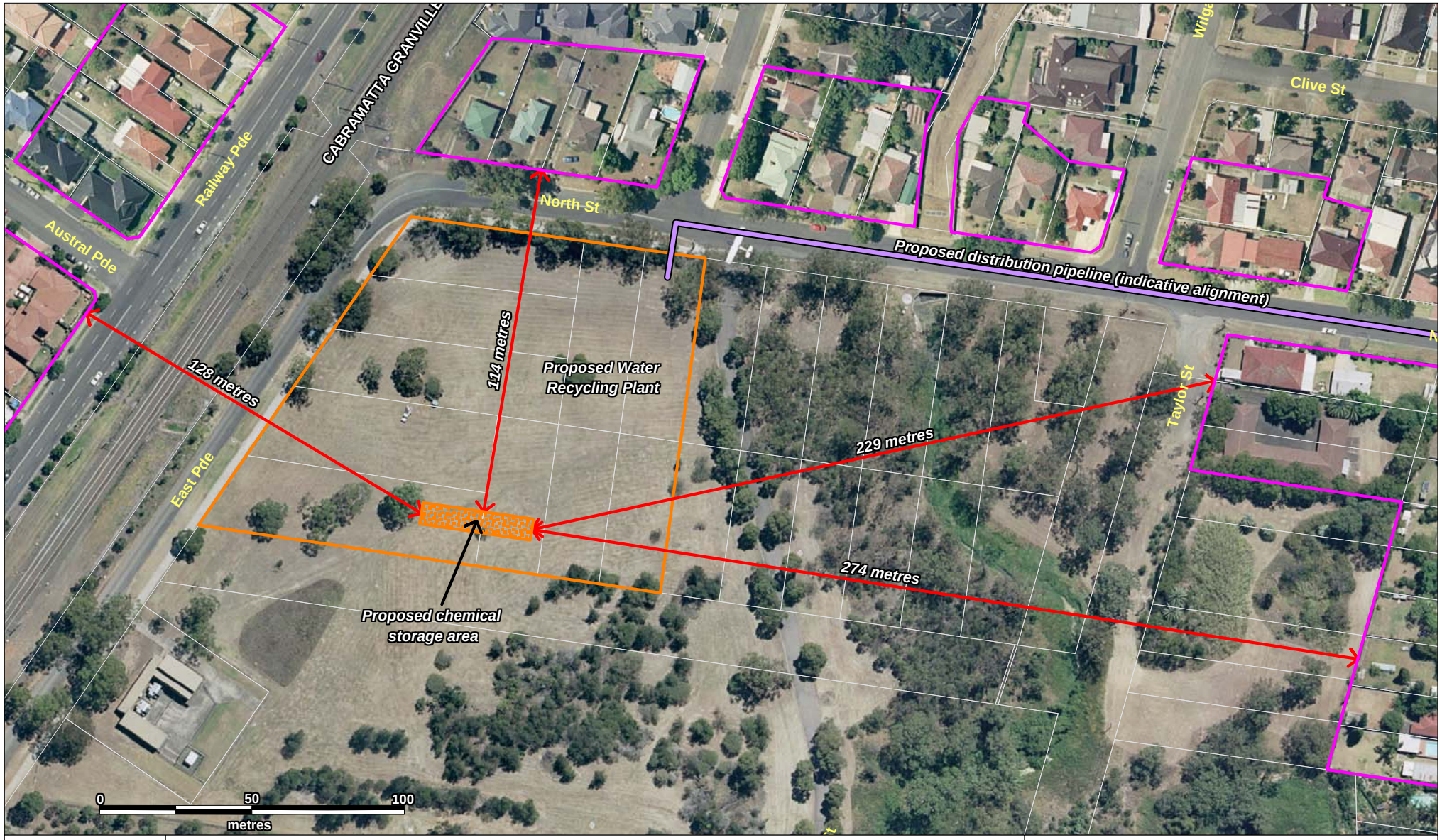
ISSUE	PROJECT RESPONSE
Discussions have been held with the proponent in an attempt to confirm traffic volumes so that a complete assessment on potential road damage can be completed.	The traffic volumes quoted in the Environmental Assessment are indicative of what is expected during construction. Consideration input from construction personnel has been sought in the estimation of these figures.
There is potential for damage to be caused by heavy vehicles when negotiating the four existing roundabouts along Tangerine Street. Pavement markings are also likely to be damaged during construction and should be reinstated once the project is complete.	Dilapidation surveys will be undertaken prior to construction. Restoration scopes and specifications for Council owned assets will be determined in consultation with Council prior to construction. Council sign-off will be sought for all restoration works on completion.
The report identifies the waterway crossing construction method but there are no detailed design plans provided indicating depth of cover or other details. The concept plans indicate that most creeks will be crossed using a horizontal directional drilling method. This method has been previously tested at Fairfield and failed due to the soft clayey nature of the material under the creek systems. Before any construction method is specified, it is suggested that geotechnical investigation be carried out. Horizontal directional drilling will only be successful in stronger clays or rock material. Thrust boring might be a more suitable type of technique for creek crossings at Fairfield. Pipes will need to be located at least 700-1000mm below creek inverts and well secured to avoid constant scour and to ensure they do not surface during times of high flood.	Full geotechnical investigations will be undertaken for each watercourse crossing prior to construction and finalisation of drilling design plans. If unsuitable conditions are detected, alternative methods will be considered. Council will be advised of any changes to the proposed crossing methods. Suitable clearances will be maintained between the pipeline and creek inverts to account for any future river morphological changes. Clearances between the top of the pipeline and creek inverts would usually be minimum 3-4 metres.
The report shows that the pipes will be constructed by trenching through Fairfield Park. This will have a significant impact on the park and eco system in the area. The pipe layout is also in close proximity to Prospect Creek in various locations, especially Fairfield Park. Due to the geomorphic nature of our creek lines they are prone to constant movement. Pipeline locations should give consideration to this factor and be placed accordingly.	The alignment will follow existing road corridors and cleared areas within the park, minimising the potential for ecosystem damage. Entry and exit pits for the horizontal directional drilling will be set back 40-50 metres from the bank of the creek to allow for future river morphological and alignment changes.
Location of the pipeline in Fairfield Park will add another limitation to development in the park and the proponent should compensate the community for this potential loss by the provision of a suitable benefit offset. It is suggested that this benefit offset would include provision of recycled water to the Park and the Leisure Centre.	As the pipeline would be constructed predominantly along cleared road corridor and existing cleared ground, and beside the Liverpool to Ashfield Pipeline along much of its length through the park, future development opportunities will are unlikely to be impacted. Discussions are underway with Council to provide recycled water to Council in Fairfield Park.
Mitigation proposed by Council:	

ISSUE	PROJECT RESPONSE
• The Proponent shall make a cash contribution or lodge a bond with Council towards the rehabilitation/upgrade of roads damaged as part of construction and operation of the project. The extent of the contribution or bond to be determined in consultation with the proponent and Council once traffic volumes have been clarified and prior to work commencing.	Dilapidation studies will be undertaken prior to commencement works and lodged with the Councils. Restoration specifications for council-owned assets will be agreed with the relevant council prior to the commencement of construction. Restoration scopes will be agreed to with Council and council sign-off on all restorations will be a requirement. This is a model that is used effectively by Jemena (responsible for the construction of the network) throughout Sydney when constructing, operating and maintaining the gas distribution network. This model is preferred to making cash contributions or lodging bonds with Councils.
• Road opening permits are to be obtained prior to the commencements of works within Fairfield City.	Road occupancy licences rather than road opening permits will be obtained prior to all works that require the occupation off a road.
• All reinstatement works to be carried out in accordance with Council's specification or other specifications agreed by the Council.	Agreed and accepted
• All pavement materials for the trench reinstatement works must match with the adjacent pavement materials.	Agreed. Restorations will reinstate affected surfaces as close as reasonably practicable to pre-existing condition.
• Restoration width should be agreed with the Council (for example, if the trench is 1m away from the gutter lip then the entire area up to the gutter should be reinstated).	Agreed. Restoration scopes and specification be agreed in consultation with the relevant council.
• The Proponent is required obtain all necessary permits from all relevant authorities prior to the commencements of works.	Agreed.
• All areas/assets damaged during the construction works must be repaired and replaced to Council's satisfaction and to the same condition that existed before the construction.	Agreed. Restorations will reinstate affected surfaces as close as reasonably practicable to pre-existing condition.
• A dilapidation survey shall be undertaken by the Proponent in consultation with Council before the commencement of the works for the construction route, detour route and all other routes used by the construction traffic.	Agreed.

ISSUE	PROJECT RESPONSE
• An inspection by the Proponent needs to be undertaken within one month of the completion of the construction to determine the extent of damage to Council's assets to various routes and a report shall be submitted to the Council outlining further proposed works. The proposed works should be agreed by the Council.	Agreed. Restoration scopes will be agreed in consultation with Council.
• The construction/detour route must be maintained to a satisfactory standard by the Proponent to make the road safe during the construction period.	Agreed.
• Honour Avenue, located within Fairfield Park, cannot be used for the vehicular traffic	Currently, Honour Avenue is the only access point into Fairfield Park, as the potential access point from McIntosh Street is blocked off with a wooden fence. If Honour Avenue is not to be used to access the park, Fairfield Council will have to agree to the reopening of the access point into the park of MacIntosh Street.
• The final pipeline location in Fairfield Park will need to be determined in consultation with Council staff to ensure that threatened species are not damaged during construction. Details of construction team parking and storage of equipment shall be located to ensure trees are protected.	Council will be consulted regarding the alignment in Fairfield Park when a surveyed pipeline centreline becomes available.
• A connection point shall be provided from the main pipeline to allow water draw off for use in Fairfield Park and the Fairfield Leisure Centre. This connection point will include the necessary holdings tanks and pumping equipment to facilitate use of recycled water in the park.	Connection options are currently being discussed by Fairfield Council and AquaNet Sydney Pty Ltd.
• The proponent shall provide a service delivery line to Knight Park.	Supply to additional council parks currently being discussed by Fairfield Council and AquaNet Sydney Pty Ltd and options assessed.
• Significant trees in Fairfield Park shall be protected from construction work including storage and/or parking of equipment. A bond shall be lodged with Council prior to work commencing.	Construction will occur along a cleared roadway. Appropriate controls to protect significant trees from harm will be included in the Construction Environmental Management Plan.
18 Access to Recycled Water	
Mitigation proposed by Council	
• A mains pipeline be provided to Knight Park to facilitate use of recycled water for irrigation and use in the amenities building.	Supply to additional council parks is currently being discussed by Fairfield Council and AquaNet Sydney Pty Ltd and options assessed.

Attachments:

A. PORRW-PL-A-0030 Closest residences to proposed plant Rev 0 A4



Jemena

Proposed distribution pipeline
Indicative alignment

Residential receivers
Property boundaries

Chemical storage area
Distances
Storage location

Proposed site

Rosehill Recycled Water Scheme
Proximity of residences to stored chemicals
Doc No: PORRW-PL-A-0030 Rev: 1
Date: 16/03/09
Size: A4

Appendix E Detailed response - Bankstown City Council

ISSUE	PROJECT RESPONSE
Bankstown City Council	
Existing land use in the vicinity of the proposed distribution network	
The property at No. 1 Barbers Road is currently occupied by a childcare centre which may be adversely affected by the proposed trenching along Barbers Road and activities associated with the construction of the Woodville Reservoir.	Consultation will occur with the childcare centre prior to the commencement of construction to develop appropriate controls to manage the potential impacts. Traffic management plans (TMPs) will be prepared for trenching along Barbers Road and construction of thee Woodville Reservoir, which will be provided to Council for review and approval prior to the commencement of construction.
Traffic and access matters	
Council raises significant concerns about the impact of noise from the night time pipebursting activities along Woodville Road during the proposed construction times. The estimated duration of construction of the Woodville reservoir is 5 months during which surrounding properties will experience elevated noise levels.	The surrounding properties will be subject to elevated noise levels during construction. However, in most cases nose levels above construction noise design goals will occur for only 1-2 days as construction moves along the road way. Receivers around the Woodville Reservoir may experience increased noise levels during the construction period. However, the noise levels presented in the Environmental Assessment are considered to be the worst case and would only ever be expected to occur briefly, if all equipment is operating simultaneously. A description of more likely persistent construction noise levels is provided in the Environmental Assessment, which are below the construction noise compliance goals. Woodville Road is an RTA controlled road subject to significant traffic volumes. The RTA advised that pipebursting activities during the day time would cause unacceptable impacts to traffic. Working hours for the pipebursting will occur as advised by the RTA. Elevated noise levels for some properties are unavoidable. However, as sated in the Environmental Assessment, works and therefore elevated noise levels will be focussed at the entry and exit pits.

ISSUE	PROJECT RESPONSE
The local road surfaces of Barbers Road is not suitable for heavy traffic movement. Instead Council considers that the investigation of nearby Sydney water pipeline easement may form a more appropriate alternative to minimise traffic congestion, access problems and possible damages to local road surfaces.	Locating the recycled water pipeline along the Sydney water pipeline easement was considered early in the life of the project. However, due to limited clearance between the fence line and the water pipelines and the presence of below ground services throughout the corridor, this option not was not feasible. A full dilapidation survey will be undertaken prior to the commencement of the construction. All surfaces disturbed as a result of project activities will be restored as close as reasonably practicably to the pre-existing condition on completion of construction. Restoration specification wand scopes will be developed in consultation with the relevant Council prior to construction. Council sign-off will be sought for all restoration of council assets.
Council proposed that a Construction Traffic Management Plan be prepared and submitted to Council prior to project approval to thoroughly assess the predicted traffic impact on the surrounding land uses and local roads.	Traffic management plans (TMPs) will be prepared for all road sections affected by the project and construction sites prior to the commencement of construction and submitted to the relevant Council or Road Authority for review and approval.
Construction Access	
The proposed construction access route via Roger Bowman Lane, Middleton Road and Barbers Road is unacceptable to Council. The preferred construction access would be from the north only, entering and leaving Barbers Road directly from Woodville Road. If this route is not feasible, the most appropriate south./west access route is via Christina Road and Miller Road, which has not been assessed. These options will be discussed further with Council's Traffic Engineering staff.	Detailed construction traffic access routes will be outlined in TMPs prepared and submitted to the relevant Council or Road Authority for review and approval.
Demobilisation and site restoration	
The light duty pavement of Barbers Road is not designed to carry large volumes of heavy vehicles and the condition and remaining life of the pavement s will be adversely affected.	A full dilapidation survey will be undertaken prior to the commencement of the construction. All surfaces disturbed as a result of project activities will be restored as close as reasonably practicably to the pre-existing condition on completion of construction. Restoration specification wand scopes will be developed in consultation with the relevant Council prior to construction. Council sign-off will be sought for all restoration of council assets.
Council requires site restoration to include not just the repair of open trenches, but also repair to deterioration along any access routes.	The Dilapidation Survey will include proposed access routes. Appropriate restorations will occur to address any damage to access routes resulting from construction traffic.

ISSUE	PROJECT RESPONSE
Noise Impacts	
Council notes the potential for significant exceedances of construction noise design goals by up to 4.5 to 26.5 dB(A). Noise monitoring programs are recommended.	Due to the nature of the construction and the close proximity of residences to the works zones, elevated noise levels at residences are unavoidable. However, the noise levels presented in the Environmental Assessment are the worst case scenarios, based on all equipment operating simultaneously at peak sound power levels at exactly the same locations, which is unlikely. In reality noisy equipment will be spread over a 50-100m work front, limiting cumulative noise levels. As the impacts will only likely occur at any one location for 1-2 days as construction moves along the road corridor, further assessment is considered unnecessary. Noise compliance monitoring will be implemented in response complaints relating to excessive construction noise. A Community Consultation Plan will be developed outlining consultation and notification requirements with potentially affected parties and systems for receiving and addressing any complaints. Appropriate details of this plan will be included in the Construction Environmental Management Plan, which will be provide to relevant stakeholders for review and approval prior to construction.
Air Quality	
There is a concern that there may be an impact to the properties in the vicinity of Barbers Road due to dust generated during the proposed trenching and construction of the reservoir.	Appropriate dust controls will be outlined in an Air Quality sub plan in the Construction Environmental Management Plan.
Risk and Mitigation Measures for "Pipe Bursting' Activities	
It can be assumed that potentially contaminated sludges are present in the isolated gas mains and there may be residual transferred contamination in the access pits and siphons.	An internal condition assessment was undertaken on the isolated gas main along Woodville Road in order to determine whether the main was suitable for pipebursting. The main was found to be in suitable conditions and relatively clean. Some residual materials, mostly water, were found to be collected at the low points along the isolated main. These materials will be removed from the isolated main prior to the pipebursting process. The Construction Environmental Management Plan will contain protocols and requirements with respect to the identification, testing, remediation and/or removal and disposal of any potentially contaminated soil adjacent to the isolated gas main at the access pits. Due to the logistical issues associated with opening test pits in Woodville Road, this process will be left until actual pipebursting activities commence.
Access to Recycled Water	

ISSUE	PROJECT RESPONSE
Council proposes that access to the recycled water be provided to the Villawood Industrial Precinct.	An assessment of a potential extension of the network into Villawood is underway.
Visual Impacts of the Woodville Reservoir	
Council recommends additional screening vegetation be provided to buffer the reservoir.	A final landscape plan will be developed for the reservoir location which includes additional vegetative screening. The plan will be developed in consultation with Council.

Appendix F Detailed response - Parramatta City Council

ISSUE	PROJECT RESPONSE
Parramatta City Council Submission	
Contaminated Land Assessment	Groundwater has been considered in all environmental site assessments/contamination assessments undertaken across all project area. A summary off all investigations is provided in section 5.4.3 of the Environmental Assessment (page 143). The Stage 1 and 2 assessment at the proposed site of the storage reservoirs and pumping station at Rosehill undertaken by ERM included an assessment of groundwater. The legal identifier for the site is Lot 1 in Deposited Plan 109739. This is a very large lot on which the Clyde Petroleum Refinery is located. Parts of the site are known to be contaminated with hexavalent chromium. How ever, as the portion of this site where the proposed reservoir and pumping station would be located is at the north eastern corner. The ERM site assessment found that hexavalent chromium was below the limits of reporting in all but two samples analysed. In the samples where hexavalent chromium was detected, levels were below health investigation levels for commercial/industrial land use. An independent auditor has been engaged and is reviewing the site investigation reports and Remedial Action Plan for the Fairfield Site at present. A RAP will be prepared for the site and submitted to Council for review. The RAP and appropriate site management plans shall include specific controls address all potential environment impacts associated with the remediation works, including dust management, sediment and erosion control, waste classification and disposal. A Construction Environmental Management Plan (CEMP) will be developed to cover construction of the reservoir, pumping station and network following remediation of the Durham Street/Grand Avenue site. The RAP will include a summary of previous investigations and site issues and provide the methodology for addressing contamination issues across the site. The RAP shall detail the requirements for any material brought to site to be used as fills. Appropriate records shall be kept and maintained. A Validation Report detailing the remediation of the land in context of the methodology outlined in the RAP will also be produced and submitted to Council. All material to be disposed of during remediation, construction and operation will be classified in accordance with the Waste Classification Guidelines (DECC, 2008) and dispose of at appropriately licensed waste facilities. Appropriate
Rosehill Reservoir and Pumping Station	The areas of the proposed development not underneath the pumping station, tanks or sealed access roads and parking areas will be stabilised to prevent dust and erosion/sedimentation issues. Options will include either stabilised gravel of lawn.

ISSUE	PROJECT RESPONSE
	Fuels will not be stored at the proposed Rosehill reservoir and pumping station. A traffic management plan (TMP) will be developed for the site remediation works, will shall detail truck routes and other traffic controls. This TMP will be submitted to Parramatta City Council (PCC) prior to site establishment for the remediation works for review and approval as required.
Woodville Golf Course	Detailed design of the recycled water distribution network and associated facilities is about to commence. The design of the Woodville Reservoir will occur as part of this process. Designs for the reservoir will be forwarded to PCC when they become available. Construction of the reservoir will required the removal of some planted *Casuarina spp*. trees. A large fig tree present adjacent to the proposed development site will be retained. Council will be provided with details of tree removal requirement. However, as the tree removal is included within the project description contained within the Environmental Assessment, no separate approval will be sought from PCC. Replacement trees will be provided along the site fence line to re-establish visual screening.
Noise and Vibration	A noise assessment is presented in the Environmental Assessment of the proposed pumping station at the Fairfield site. This assessment indicated the potential for noise from the pump station at the Fairfield location to exceed design noise goals at residential receivers around 100m away by very small amounts. As noise impacts drop off significantly with distance, it is highly unlikely that the proposed pumping station at Rosehill would have any impacts upon noise levels at receivers in the Ermington area some 700m away. Whilst slightly differing figures are presented in the Traffic and Noise sections of the Environmental Assessment regarding heavy vehicles trips, the estimated numbers are still comparable (particularly in the Parramatta LGA) and would not change the potential noise impacts presented in Section 5.2.5 of the Environmental Assessment. It should also be noted that in most cases elevated noise levels from increased truck movement would only be experienced for a few days at any one location as construction of the pipeline moves along the road corridor. Whilst the vibration levels from the pipe bursting may have the potential to exceed levels for annoyance/human, such impacts would be very brief in nature and limiting to one night on any one location. Vibration levels are not expected to exceed the structural damage criterion. Operational noise compliance modelling will occur at the water recycling plant site at Fairfield. However, no such compliance modelling will occur at the Woodville Reservoir site as no operational noise sources will be present. Complaints relating to noise will be recorded and managed in accordance with a Community Consultation Plan which will be developed for the project. Relevant information from the Community Consultation Plan regarding complaints handling shall also be presented in the CEMP, which will be provided to relevant stakeholders review and for approval prior to commencement of construction.

ISSUE	PROJECT RESPONSE
Future submission of Plans and Sub-plans	Prior to commencing works a Construction Environmental management Plan will be prepared and provided to PCC for review and comment. The CEMP will generally contain all sub-plans indicated in the PCC submission with the exception of the following: - A separate Operational Environmental Management Plan will be prepared prior to the commencement of operation. It will not be included in the CEMP. - Site specific Traffic Management Plans (TMPs) will be prepared and submitted to PCC for review and approval. Individual TMPs will not be included in the CEMP. - Site specific Erosion and Sediment Control Plans will be developed for the construction of the fixed permanent sites only, not construction of the network within the road corridor and parks, as this construction will generally move on a day to day basis. The general requirements for erosion and sediment control for construction in the road corridor will be outlined in the Soil and Water Management sub-plan of the CEMP and will be in accordance with guidance provide in *Managing Urban Stormwater - Soils and Construction* (the "Blue Book"). - Separate Emergency Response Plans and Procedures will be developed for the network and the water recycling facilities. Appropriate information will be included in the CEMP.
Hazards and Risks	The entire project has been assessed in relation to the requirements of SEPP 33. Only the chemical storage at the proposed water recycling plant was deemed to trigger the requirement of a preliminary hazards analysis (PHA). As such a PHA was undertaken and is presented in the Environmental Assessment. For further information on the application of SEPP33 to chemical storage at the water recycling facility, refer to the response to the submission made by Fairfield City Council regarding the proposal. The need for a Dangerous Goods Licence was not identified during the Environmental Assessment process.
Traffic	The freight line will not be disturbed due to construction traffic Truck movement associated with remediation ad construction of the Proposed Rosehill Reservoir and Pumping Station are presented in Table 5-5 in the Environmental Assessment (page 84). This includes the removal of approximately 4,000 m^3 of contaminated spoil and importation of replacement clean fill. Heavy vehicle movements will be unavoidable within school zones during construction of the distribution pipeline in the road corridor adjacent to schools. However, construction adjacent to schools will be scheduled for school holiday periods. If this is not possible, consultation will occur with the schools to minimise impacts, particularly during morning and afternoon pick-up and drop-off periods.
Odour Management	Appropriate controls will be included in Remedial Action Plans and Acid Sulphate Soils Management sub-plans to

ISSUE	PROJECT RESPONSE
	manage any potential odours.

Appendix G Detailed response - Holroyd City Council

ISSUE	PROJECT RESPONSE
Holroyd City Council	
1. Landscape Matters	
i. The main report suggest a 10m wide clearance is required to install the piping through the Prospect Creek reserve area, but plans indicate actual width of 20-25m.	Throughout the Prospect Creek reserve area the pipeline alignment has been chosen to adopt previously cleared and grassed areas, minimising the needs to remove native vegetation. Detail maps showing the indicative alignment through the Prospect Creek reserves are provided as **PORRW-PL-A-0031** – **PORRW-PL-A-0034** (attached to this appendix). Given the areas of grassed open space in between native vegetation through these areas, there is ample potential to stage works areas around areas in close proximity to native vegetation to avoid the need for removal. The final alignment will be determined during the detailed design phase using the same principles to avoid damage to native vegetation.
ii. Alternative methods of installing pipes within the reserve has not been explored or recommended. Methods such as under boring would have minimal impact on existing vegetation within the reserve.	The alignment of the pipeline will adopt open and cleared grassed surfaces throughout the reserve to avoid impacts to native vegetation. Work site will be staged to avoid impacts to adjacent vegetation wherever possible. Open trenching is considered to be the most efficient method of construction though these areas. Method such as under boring and horizontal directional drilling are proposed in EA for the construction underneath sensitive features such and watercourses, busy roads and railway line. However, such methods are expensive more expensive than trenching and are therefore unsuitable for construction where no sensitive features are present.
iii. It is noted that open trenching is proposed along street where existing street tree plantings exist and this method of installation would either require the removal of trees or have significant impact on the health of the trees due to damage to root systems.	The final alignment of the pipeline within the road corridor will be determined during detailed design. The final alignment will take into account both underground and above ground features and constraints. Due to the presence of driveways, footpaths, existing utility assets under the footpaths and street vegetation, adopting an alignment in the road verge is usually inappropriate. As such, the alignment of the pipeline will more than likely be within the paved road surface. Experience from similar construction projects in urban road networks indicates that it is unlikely to encounter significant root systems of planted under the road pavement and the impervious road surface prevents the infiltration of water. As such, the installation of pipework via open trenching is not expected to have significant impacts to street vegetation with the affected road corridors.

ISSUE	PROJECT RESPONSE
iv. Further to item iii above, the report does not indicate the exact number of street trees that will be removed/impacted upon.	As stated above, impacts to street trees will be avoided by appropriate alignment of thee proposed recycled water pipeline. Exact impacts on street trees (if any) will be able to be determined when detailed design of the network is complete.
v. trenching is not generally supported and an alternative method such as under boring is proposed as an effective alternative	Trenching is the most appropriate method for installing the proposed recycled water pipeline. Potential Impacts to vegetation have been and will be avoided through appropriate alignment selection and work site staging. Under boring is suitable for and will be adopted for special crossings. However, it is an inappropriate method installation of the entire pipeline.
2. Engineering Matters	
i. The proposal within Holroyd City Council area will impact on access/egress points (vehicular and pedestrian) to properties adjoining the proposed works. Consultation with the affected property owners shall be undertaken and any concerns/requests from affected owners shall be addressed.	Access impacts to vehicles and pedestrian are noted and discussed in the Environmental Assessment. A Community Consultation Plan will be developed to manage potential impacts and provide systems for accepting and dealing with complaints. Appropriate details from the Community Consultation Plan will be included in the Construction Environmental Management Plan
ii. the proposal will impact upon pedestrian access and loss of parking at Yennora railway station.	The Environmental Assessment described parking impacts at Yennora rail station and alternative pedestrian access arrangement that will bee implemented. 90^0 angle parking is provided for 500m to the east of Yennora rail station on the southern side and adjacent to the railway. The project will affect a small number of these car spaces over a two week period. This impact is considered acceptable. Construction will also impact upon some car parking on the northern side of Yennora rail station. However, ample alternative parking is available within the street adjacent to the station.
iii. Holroyd Cioty Council has undertaken a road reconstruction program within Loftus Road Yennora. In this regard alternative methods of construction shall be considered to eliminate the impact on the new road.	Impacts to the new road and restoration requirements will be considered during detailed design of the proposed pipeline in this road. If impacts to the road surfaces are unavoidable, restoration specifications and scopes will bee agreed to in consultation with Council and Council sign-off will be sought for any restorations.
3. Environmental Health Matters	

ISSUE	PROJECT RESPONSE
i. Contamination Concerns – the area of roadway next to the 'Alcoa' site at Yennora may be subject to localised contamination. A preliminary contamination assessment in recommended.	The proposed alignment of the pipeline has already been subject to a preliminary contamination assessment, including this area. The CEMP will contain protocols and requirements if previously unknown area of contamination or suspected contamination is uncovered.
ii. Erosion & Sediment Control – a detailed erosion and sediment control plan is recommended for the pipeline within the Prospect Creek reserve corridor.	Site-specific erosion and sediment control plans are proposed for the fixed project sites and construction compounds only. Due to the transient nature of work site associated with network construction and the fact that the work site will generally move on a daily basis, detailed erosion and sediment control plans are not appropriate. Relevant erosion and sediment controls (with reference to *Managing Urban Stormwater: Soils and Construction* (the Blue Book)) will be specified within the CEMP
4. Parks Matters	
i. The Environmental Assessment total underestimates the impact the construction of the pipeline will have on the existing vegetation communities in the Prospect Creek reserves. 0.63 ha not 0.1 ha of native vegetation will be cleared based on a 10m wide construction zone.	As stated above, the alignment adopted for the pipeline through this reserve will follow the existing cleared and grassed surfaces and avoid native vegetation. Detail maps showing the indicative alignment through the Prospect Creek reserves are provided as **PORRW-PL-A-0031** – **PORRW-PL-A-0034** (attached to this appendix). As can be seen little native vegetation will require removal. The figure stated in the Environmental Assessment (0.1 ha) is therefore appropriate. Similarly, if a construction compound is required in these reserves, it will be sited where cleared and grassed surfaces are available and avoid areas of native vegetation.
ii. The prospect Creek Plan of Management 2004 identified five stands of regionally significant vegetation communities as well as a diversity of habitats for wildlife in the reserve. The construction of the pipeline will result in the clearance of up to 50% of the vegetation where the reserve measures 20m in width.	As outlined above, the pipeline alignment will favour the existing cleared and grassed surface and avoid impacts to native vegetation. Where the pipeline alignment is in close proximity to the native vegetation the works area will be staged to avoid the need to clear any vegetation. The 10m wide construction zone described in the Environmental Assessment is indicative only and can be expanded and contracted to avoid sensitive features within the reserve.
iii. Construction of the pipeline will adversely affect the existing access paths in the reserve.	Dilapidation studies will be undertaken prior to the commencement of any construction. Any impacts to the access paths will be restored as close a reasonable practicable to the pre-existing condition, to the satisfaction of Council.
iv. The proposal can not be adequately assessed at this time due to the lack of detailed information.	The information in the Environmental Assessment and additional information provided in this report is sufficient to allow the adequate assessment of the proposal.

ISSUE	PROJECT RESPONSE
Recommendations	
• The report fails to indicate alternative methods of pipe installations.	The report details several alternative pipe installation methods including open trenching, thrust boring, horizontal directional drilling, pipe bursting and pipe bridges. The most appropriate installation method has been proposed for each section.
• The use of open trenching along street will lead to unacceptable impacts to street trees due to damage to root systems.	The alignment of the pipeline in the road corridor will likely be within the paved surface of the road. Experience from similar construction projects within urban road networks has shown that it is unlikely that significant roots will be encountered in such locations due to the impervious nature of the paved surface above and corresponding lack of sufficient water infiltration
• The removal of a large number of existing street trees is considered to create a significant decline in the streetscape amenity. The exact numbers are not indicated.	The final alignment will be determined as part of the detailed design process. As indicate above, the final alignment is likely to be under the paved surfaces of the roads, rather than the road verge. As such, the need to remove street trees will be limited. Exact numbers of street trees requiring removal will be determined (if any) following detailed design of the pipeline.
• The proposal will create significant impact to access/egress points for properties and adjoining the proposed works.	Impacts will likely be 1-2 days at any one location and works move along the road corridor. Consultation and notification will occur prior to the commencement of works to manage the potential impacts.
• The proposal will create short term parking and pedestrian access constraints at Yennora Station.	Pedestrian access to the stations will be maintained as described in the Environmental Assessment. The surrounding areas have sufficient parking capacity to accommodate the few car parking spaces that would be lost during construction. Impacts are expected to be for up to 2 weeks only at this location.
• Trenching adjacent to the Alcoa site may be subject to localised soil contamination.	Protocols for addressing soil contamination not identified during the preliminary investigations will be included in the Construction Environmental Management Plan.
• The proposal does provide details of sediment and erosion controls plans for the works in close proximity to Prospect Creek.	The Construction Environmental Management Plan will provide adequate details of sediment and erosion controls that must be implemented at construction sites in this and all other areas.

ISSUE	PROJECT RESPONSE
• The Environmental Assessment significantly underestimates the impacts to the Prospect Creek reserve.	Additional plans are attached providing more detail concerning the proposed alignment through this reserve. The Environmental Assessment provides and accurate indication of the likely impacts
• Construction work through the Prospect Creek reserve will result in significant clearance of regionally significant vegetation.	The proposed alignment of the pipeline through this reserve has been chosen to follow existing cleared and grassed area and avoid native vegetation. Significant clearing is not proposed in this area. The Environmental Assessment provides and accurate indication of the likely impacts

Jemena

Proposed recycled water piepline

Indicative alignment

Rosehill Recycled Water Scheme
Prospect Creek Detail Map 1
Doc No: PORRW-PL-A-0031 Rev: 0
Date: 09/03/09
Size: A4

Jemena

Proposed recycled water piepline

Indicative alignment

Rosehill Recycled Water Scheme
Prospect Creek Detail Map 2
Doc No: PORRW-PL-A-0032 Rev: 0
Date: 09/03/09
Size: A4

Jemena

Proposed recycled water piepline

Indicative alignment

Rosehill Recycled Water Scheme
Prospect Creek Detail Map 3
Doc No: PORRW-PL-A-0033 Rev: 0
Date: 09/03/09
Size: A4

Jemena

Proposed recycled water piepline

Indicative alignment

Rosehill Recycled Water Scheme
Prospect Creek Detail Map 4
Doc No: PORRW-PL-A-0034 Rev: 0
Date: 09/03/09
Size: A4

Appendix H Detailed response - Department of Environment and Climate Change

ISSUE	PROJECT RESPONSE
NSW Department of Environment and Climate Change	
Noise and Vibration	
Conditions of approval relating to the change of stated working hours: replacing "*unless otherwise approved by DECC*" to "*unless for the deliveries of materials as requested by Police or other authorities for safety reasons; emergency work to avoid the loss of lives, property and/or top prevent environmental harm; approved by the Director-General of Planning*"	Accepted. Revised Statement of Commitments in report modified accordingly.
Noise from operation of the WRP is not to exceed 40dBA LAeq, 15min at the potentially most affected noise sensitive receiver, at any time including under temperature inversion conditions or wind speeds of up to three metres per second and is to be free of tonal or other annoying characteristics.	Accepted.
Odour	
DECC notes that no odours or other air quality impacts are expected to emanate from the WRP by nature of its processes.	Noted
Flora and Fauna	
Potential impacts to Green and Golden Bell Frog (GGBF) habitats along the creek lines.	The alignment of the proposed distribution pipeline has modified at a key location between the proposed water recycling plant and Taylor Street, Fairfield to avoid direct impacts to riparian zone and creel lines. The proposed crossing of Prospect Creek at Fairfield Park and Burns Creek at Fairfield east would occur via horizontal directional drilling methods to avoid impacts to creek beds, banks and riparian corridors. Other creek crossings will occur via cased thrust bores from within the paved road network or pipe bridges across highly altered stormwater canals. In-stream works are not proposed. As such, the potential for impacts to GGBF habitat is very low limited to short durations only.
Minor impacts only to River-Flat Eucalypt Forest, Cumberland plain Woodland, Shale Gravel Transition Forest and Castlereagh Swamp Woodland.	Noted

ISSUE	PROJECT RESPONSE
Aboriginal Heritage	
Induction required for employees and contractors to outline protocols and offences relating to knowingly disturbing or destroying Aboriginal relics	A project Induction will be given to all project personnel prior to their involvement in the construction process. The Induction will include relevant information regarding the potential for Aboriginal relics in project work areas, appropriate protocols is potential relic items are uncovered and offences relating to the wilful disturbance or destruction of relics.
Within Recommendation 3 any uncovered Aboriginal objects or places should be reported immediately to DECC's Planning and Aboriginal Heritage Section	Noted. This requirement will be included in project induction and the Construction Environmental Management Plan
Water Quality - Surface and Ground Waters	
DECC suggests that Erosion and Sediment Control Plans for each work area should be developed during the detailed design phase and prior to the commencement of construction. This will ensure that there is sufficient room for the installation of sediment and erosion controls.	Soil and Water Managements Plans or Erosion and Sediment Control Plans would be prepared for all project sites (i.e. plant, reservoirs and pumping station) and construction compounds etc in accordance with requirements of *Managing Urban Stormwater: Soils and Construction* (the Blue Book).
Groundwater contamination is not likely to be an issue	Noted

ISSUE	PROJECT RESPONSE
DECC suggest the Department of Planning seek clarification on the volume of the waste stream indicated. The ratio of the waste stream compared to the feedwater seems high in comparison to the replacement Flows Plant at Penrith.	The ratio of the waste stream to feedwater for any water recycling plant is affected by: - Feedwater quality - Recycled water product quality and - Discharge water quality requirements. The ratio of waste stream to feedwater of each plant is therefore individual. As no information is known about the quality of the feedwater for each plant, no comment can be made on this point. As the recycled water from the proposed plant at Fairfield is destined for industrial uses, rather than replacement flows in waterways, the water quality requirements are more stringent. More impurities in the feedwater must be removed, which in turn increases the relative quantity of the waste stream. Furthermore, as the proposed plant at Fairfield will discharge to sewer under a trade waste agreement, quality parameters of the waste stream are set. Some dilution is required of the waste stream in order to meet waste water quality requirements with respect to ammonia levels. Such requirements may not be present for the plants associated with the Replacement Flows scheme. The plant has been designed by Veolia Water Australia, who has a proven record in the design and construction of such plants in Australia and throughout the worlds. As such, the quoted ratio of the waste stream is indicative of the actual ratio expected.
Site Contamination Asbestos and acid sulphate soils noted during soil investigations	Remedial Action Plans will be prepared for the proposed location of the water recycling plant at Fairfield and the Rosehill Reservoir and Pumping Stations. The Construction Environmental Management Plan will contain an Acid Sulphate Soil Management sub plan
Dust It is important that dust mitigation measures outlined in the EA are implemented.	Dust mitigation measures outline din the EA and in DECC's submission will be included in the Air Quality Management sub plan in the CEMP.
Sustainability	

ISSUE	PROJECT RESPONSE
The EA does not include any measures for the minimisation, reuse, recycling or capture of stormwater	The revised site layout for the proposed water recycling plant at Fairfield includes two rainwater collections tanks associated with the administration building and the main filtration building (refer to plan A0123-C-0001-21 attached). The roof area covers 4,207m^2 (total site area 13,881m^2). Therefore during operation 30% of the total site footprint will have rainwater collection. Collected rainwater will be used for landscaping purposes and other water needs across the site. The recycled water produced by the plant could also be used for this purposes if required. The proposed plant will use little potable water for site maintenance purposes. As the Woodville Reservoir and Rosehill Reservoir and Pumping Stations Sites are much smaller, feature less structures and equipment and will be unmanned, the volumes of potable water required at these sites will be minimal. As such, no rainwater collection systems are proposed. In practical terms the options for using collected rainwater as a water source during construction are limited. The surfaces available at construction compounds etc to collect rainwater from will be limited and the volumes will be insufficient to accommodate project needs.
Site Establishment Environmental controls should be established on work sites before the general construction commences. The establishment of key compounds, followed by progressive opening of construction site, should occur only after environmental management and community communication system are operational	Noted and accepted. Appropriate environmental controls will be established at each works site prior to construction commencing. The community consultation process and systems will be in place prior to works commencing in any one location.

Appendix I Detailed response - Department of Water and Energy

ISSUE	PROJECT RESPONSE
NSW Department of Water and Energy	
Licensing under the NSW *Water Industry Competition Act 2006*.	It is understood the scheme requires licensing under the NSW *Water Industry Competition Act 2006* and that construction can not commence until such a licence is require for all required project components. It is expected that this will form a condition of approval. Applications for licences under the NSW *Water Industry Competition Act 2006* for water recycling plant and the recycled water distribution network and all associated facilities are currently being assed by IPART.
Figure 3-2 of the EA indicates a proposed Storm Retention Pond however it is not clear what the purpose, size of or catchment of this facility is. DWE advises that the design and operation of the pond must be consistent with the NSW farm Dams Policy and the relevant exemptions for either stormwater management or effluent management. It is recommended that the applicant contact DWE to confirm any licensing requirements for the proposed pond.	The purpose of the proposed stormwater retention pond is to collect and detain stormwater run-off from within the boundaries of the proposed site, prior to being pumped to the existing stormwater drain system. Details of the proposed stormwater collection and retention system are provided on the revised site layout plan **A0123-C-0001-21** in **Appendix A**. No harvesting and/or use of the collected and detained stormwater is proposed. Following collection, the stormwater will be pumped to the local stormwater system. Following conversations with a number of different people from the department regarding the issues, an email was sent to Mr Wayne Conners of the Department on 12/03/09. At the time of writing no response has been received. Outcomes of this consultation and any licensing requirements will included in the Construction Environmental Management Plan as required.
At site where works are to occur within 40m of the banks of … watercourses DWE requires the works to be consistent with the *Guidelines for Controlled Activities*	The proposed watercourse crossings are consistent with the DWE *Guidelines for Controlled Activities.* The methods elected for crossing each watercourse as outlined in the Environmental Assessment have been selected to be compatible with each watercourse type and associated riparian corridor. No in-stream works are proposed. Footprints of disturbance for each crossing will be minimised in extent and appropriately located to avoid impacts to riparian zones and vegetation. For all proposed subsurface crossings (via horizontal direction drill or cased thrust bore) direct impacts to beds and banks will be avoided entirely. Where pipe bridges are to be used the watercourses are highly modified stormwater canals with no riparian zones. Geomorphic, hydrologic, hydraulic and ecological functions at each watercourse will remain unaffected by the proposed crossings

ISSUE	PROJECT RESPONSE
Table 402 of the ERA indicates the potential requirement for minor dewatering at the Rosehill reservoir and pumping station site, in addition to minor dewatering of the trenches required for the distribution pipeline. Due to the short term proposed for the excavations to be open (1 day) and the expected minor dewatering requirements, DWE does not require this activity to be licensed under the *Water Act 1912/Water Management Act 2000*. Disposal of any trench water sourced from dewatering into a surface water source would need to comply with the requirements of the Department of Environment and Climate Change and the objectives of the *Water Management Act 2000*.	Further consultation will occur with the Department of Environment and Climate Change (DECC) and DWE regarding the discharge of water sourced from dewatering in such a manner as it may impact upon surface water. Outcomes of this consultation will be incorporate into the Construction Environmental Management Plan.
DWE recommends the standards of trenching and pipeline installation activities are in accordance with relevant industry standards, eg *AS2885 – Gas and Liquid Petroleum*, and made a condition of approval.	*AS2885 – Gas and Liquid Petroleum* is more appropriate for high pressure steel pipelines built to convey hydrocarbons, and as not relevant to the design and construction for water reticulation systems. As such, it should not be made a condition of approval. The recycled water distribution network will be designed and constructed to *WSA03-2002-2.2 Version 1 Sydney Edition - Water Supply Code* (Water Services Association of Australia, 2007) and the supplement *Dual Water Supply Systems First Edition Version 1.2* which form the appropriate industry standard. This code and supplement contain specific requirements relating to recycled water reticulation systems. If a specific code is to be included as an approval condition, it should be this one.
DWE does not require the pipeline route to be licensed under the *Pipelines Act 1967* due to Section 15(1d) of this act not requiring a licence for pipelines constructed for the purpose of the supply of water or conveyance of wastewater.	Noted
DWE supports the draft Statement of Commitments detailed in the EA, particularly the proposal for a Construction Environmental Management Plan, Soil and Water Management sub plan and an Acid Sulphate Soil Management sub plan. DWE requests to be engaged in the final approval of these plans.	Noted. A Construction Environmental Management Plan (CEMP) will be prepared which incorporates the sub plans mentioned. The CEMP will be distributed for review and approval by relevant stakeholders as required by project approval conditions.