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On behalf of AquaNet Sydney Pty Ltd

Camellia and Rosehill Recycled Water Scheme

Preferred Project Report

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1 Introduction and Overview

1.1 General

The Camellia and Rosehill Recycled Water Scheme (the project) is proposed in Western Sydney to reduce the demand on Sydney's drinking water supply by providing recycled water high volume water users in Rosehill and Smithfield. Jemena Asset Management Pty Ltd is responsible for securing planning approval for the project on behalf of the project proponent AquaNet Sydney Pty Ltd.

On 13 August 2007, the Director-General of the NSW Department of Planning, under delegation from the Minister for Planning, formed the opinion that the Rosehill Recycled Water Project would be assessed under Part 3A of the EP&A Act.

A planning focus meeting regarding the proposal and site visit was held on 28 August 2007, chaired by the NSW Department of Planning. The planning focus meeting was attended by representatives of the project team and Sydney Water Corporation as well as the following NSW and local Government agencies:

- NSW Department of Planning (chair)
- Department of Environment and Climate Change
- Bankstown City Council
- Fairfield City Council
- Holroyd City Council
- Parramatta City Council
- NSW Roads and Traffic Authority
- RailCorp.

The NSW Department of Health and representatives from the Department of Water and Energy were also invited, but were unable to attend.

Following the planning focus meeting and correspondence between the NSW Department of Planning, relevant local councils and NSW government agencies, the environmental assessment requirements for the proposal were issued on 4 October 2007. An Environmental Assessment was prepared in accordance with the environmental assessment requirements and submitted on 30 November 2008 to the Department of Planning. Following an adequacy review and subsequent revision, the Environmental Assessment was finalised.

The Environmental Assessment was publicly exhibited by the Department of Planning from 14 January 2009 to 27 February 2009. The Department of Planning received submissions in response to the Environmental Assessment and forwarded them to Jemena Asset Management Pty Ltd on 5 March 2009. The Director-General also advised that a response to issues raised in the submissions was required and that if any changes to the project were proposed a Preferred Project Report may be required.

1.2 Purpose of this report

This Preferred Project Report documents and considers the submissions received on the proposed Camellia and Rosehill Recycled Water Scheme Environmental Assessment (the Environmental Assessment) and outlines AquaNet Sydney's responses to these submissions, as required under Section 75H(6) of the *Environmental Planning and Assessment Act 1979* (EP&A Act). The report also outlines proposed modifications to the project and assesses the potential environmental impacts of those modifications.

1.3 Structure of this report

General information regarding the project including a brief review of the Environmental Assessment is provided in **Section 1**.

Modifications to the project proposed since the commencement of the public exhibition period are outlined in **Section 2**.

The exhibition process, consultation and the submissions received regarding the project and Environmental Assessment are summarised in **Section 3**.

Additional studies undertaken to assess any potential environmental impacts from the proposed modifications are outlined in **Section 4**.

General and key issues raised in the submissions are considered and responded to in **Section 5**.

The preferred project is described in **Section 6**.

A revised Statement of Commitments is provided in **Section 7**.

A request for the project to be approved by the Minister for Planning is made in **Section 8**.

Various other information, including detailed responses to the submissions received are provided in the report appendices.

1.4 Summary of the original proposal

The project comprises the following key components:

- a connection to the Liverpool to Ashfield pipeline (LAP) – the source of feed effluent for the water recycling process
- a water recycling plant at North Street, Fairfield, including a feed effluent storage tank, recycled water storage tank, pumping station and other equipment
- a distribution system including:
    - an elevated surface reservoir at Woodville Golf Course on Barbers Road, Guildford
    - two surface reservoirs and one pumping station on the north-eastern corner of Durham Street and Grand Avenue, Rosehill
    - approximately 20 kilometres of distribution pipeline.

An innovative feature of the project is reline and use existing, isolated gas mains under Woodville Road owned by Jemena to serve as the recycled water distribution main. This would substantially reduce disturbance to the community associated with construction of the project.

1.5 Overview of the Environmental Assessment

Need and benefits

The need for the project is consistent with the aim of the Metropolitan Water Plan which is to provide a secure supply of water that can meet the long term needs of Sydney. The Metropolitan Water Plan identifies a number of strategies to diversify demand and supply options, including an increase of water recycling. This project is specifically included in that plan (referred to as the 'Camellia Recycled Water Project').

The following benefits would accrue from the project if it was implemented:

- A reduction in potable water demand by high volume industrial water users.
- An increase in the security and reliability of existing drinking water supplies.
- Enhancement of the benefits associated with the NSW Government's investment in the Liverpool Ashfield Pipeline.
- Deferring investment in additional water supply and sewerage infrastructure.
- Enabling the future fulfilment of the NSW Government's target reductions in potable water use and target volumes of recycled water supply.
- Private sector leadership in the provision of recycled water in NSW.

These benefits are significant and would be lost if the Project did not proceed.

There are few feasible alternatives comparable to the Project.

Construction impacts

The Environmental Assessment provides a comprehensive assessment of the likely impacts from construction of the project. The key environmental impacts would include:

- disruption to property access,
- traffic congestion and
- construction noise.

Impacts associated with the construction of the distribution pipeline would be transient in nature and usually limited to a maximum of three days at any one location as construction of the pipeline progresses along the road corridor. Construction works would also require the temporary re-routing of up to six bus services and relocation of some associated bus stops.

As the proposed alignment of the distribution pipeline has been chosen to follow road corridors and pre-existing cleared areas within public reserves, potential biodiversity impacts have been limited. Additional changes to the proposed alignment are outlined in this report to reduce potential biodiversity impacts further.

Construction works associated with the proposed aboveground facilities would be longer in duration than for the distribution pipeline. Temporary construction noise impacts at the Fairfield water recycling plant and the Woodville reservoir have the potential to exceed criteria at the nearest potentially affected receptors at time during the construction process. The surrounding areas would also be subject to increased construction traffic for the duration of the construction works. Mitigation measures, including consultation with affected property owners would be conducted and noise mitigation measures implemented to reduce impacts to acceptable levels.

Operational impacts

The Environmental Assessment provides a comprehensive assessment of the likely impacts from operation of the project.

As the distribution pipeline network would be underground along the entire length, impacts due to the operation of this asset are expected to be minimal.

Potential impacts associated with the operation of the Fairfield water recycling plant include:

- Noise (from pumps and other equipment)
- Increased heavy vehicle movements in adjacent local streets and

- Change in visual amenity

Environmental management

A comprehensive set of environmental management measures would be implemented to ensure that the construction and operation of the project is carried out in accordance with all environmental requirements and legislative standards. These measures are specified in the draft Statement of Commitments included in Section 7 of the Environmental Assessment.

Principal among these is the requirement to prepare a Construction Environmental Management Plan to guide construction and manage and reduce expected environmental impacts. This plan would form the principal means by which the environment would be protected during the construction stage and would include as a minimum the environmental management measures outlined in the Environmental Assessment.

Conclusion of the Environmental Assessment

This Environmental Assessment investigated the environmental issues associated with the construction and operation of the project and concluded that the long term project benefits would out weigh the generally short-term project impacts.

Additionally the Environmental Assessment concluded that the project would contribute to the conservation of potable water for current and future generations, therefore the project is considered justified and should proceed.

2 Project changes during the public exhibition period

Between the submission of the Environmental Assessment to the Department of Planning for adequacy review and the close of the public exhibition and submission period a number of changes to the project were proposed. The changes relate to the design and layout of the Fairfield water recycling plant and the proposed alignment of the distribution pipeline. These changes are discussed in the following sections.

2.1 Fairfield water recycling plant

Transformer voltage and location change

Through negotiations with the electricity provider for the proposed water recycling plant at Fairfield, it was identified that the proposed high voltage power supply for the plant would not be acceptable. Furthermore, the electricity provider requires that the transformers must be directly accessible from the existing road network without requiring direct access to the plant. Therefore a low voltage system had to be adopted and the plant redesigned accordingly.

The plant design has been advised to accommodate the requirements of the energy provider. The original proposal included a high voltage transformer located immediately east of the main filtration building in the south eastern portion of the site. The revised design now includes three low voltage transformers (2 x 1250kVA and 1 x 500kVA) located on the western boundary of the site off East Parade. The revised transformer location and configuration is outlined in the revised plant design plans shown in **Figure 2-1** below. A detailed plan of the revised plant layout is provided in **Appendix A**.

Pumping station relocation

As a result of the transformer relocation and the drop in voltage, the pumping station also required relocation. The pumping station was originally proposed for the south eastern corner of the site. A new position was required for the pumping station close to the new location of the transformers on the western boundary of the site.

In assessing potential locations, consideration was given to advice contained in Section 5.2.7 of the Environmental Assessment regarding the barrier effect of structures in between the pump station and the residences along the northern side of North Street.

The revised location has been chosen in between the recycled water storage tank and the main filtration building directly adjacent to the transformer as shown in **Figure 2-1** and **Appendix A**. At this location, line of sight between the pump station and the residences is limited by recycled water storage tank, detention tank and feed balance tank, providing noise attenuation for the adjacent residents along North Street.

Even with noise attenuation provided by the change in location of the pump station has potential to impact on plant operational noise levels and plant performance against operation noise design goals outlined in the Environmental Assessment. As such additional noise modelling has been undertaken to quantify any potential impacts. This additional modelling is presented in **Section 4.1**.

Pumping station enclosure

The original pumping station was to be housed inside an open sided structure. It was identified in the Environmental Assessment that this could potentially exceed night-time operational noise design goals. Complete or partial enclosure of the structure was proposed as an appropriate mitigation measure.

As the revised location of the pumping station is now significantly closer to potential residential noise receivers along North Street and Railway Parade, the current design incorporates a fully enclosed and acoustically designed structure around the pumps to attenuate pump noise.

This change has also been taken into account in the additional modelling as presented in **Section 4.1**.

Plant layout refinement

Due to the relocation of the transformers and the pumping station, a change to the plant layout was required in order to maintain sufficient clearance between the various plant components. The numbers and type of components has remained the same. However, the configurations and dimensions of structures have changed.

In order to reduce energy requirements the heights of the recycled water storage tank, feed balance tank and detention tank have been reduced. To maintain storage volumes, the diameters of the tanks have increased accordingly, as shown in the revised plant layout plan **Appendix A**.

The revised layout potentially affects the visual amenity of the site. In general, the heights of all the tanks, buildings and other structures proposed at the Fairfield water recycling plant have been reduced in the revised design, and the overall silhouette of the plant will be more compact. The original and revised section plans are shown in **Figure 2-2** below. A revised elevation plan for thee plan is provided in **Appendix A** of this report. A summary of revised heights and height changes is provided in **Table 2-1** below.

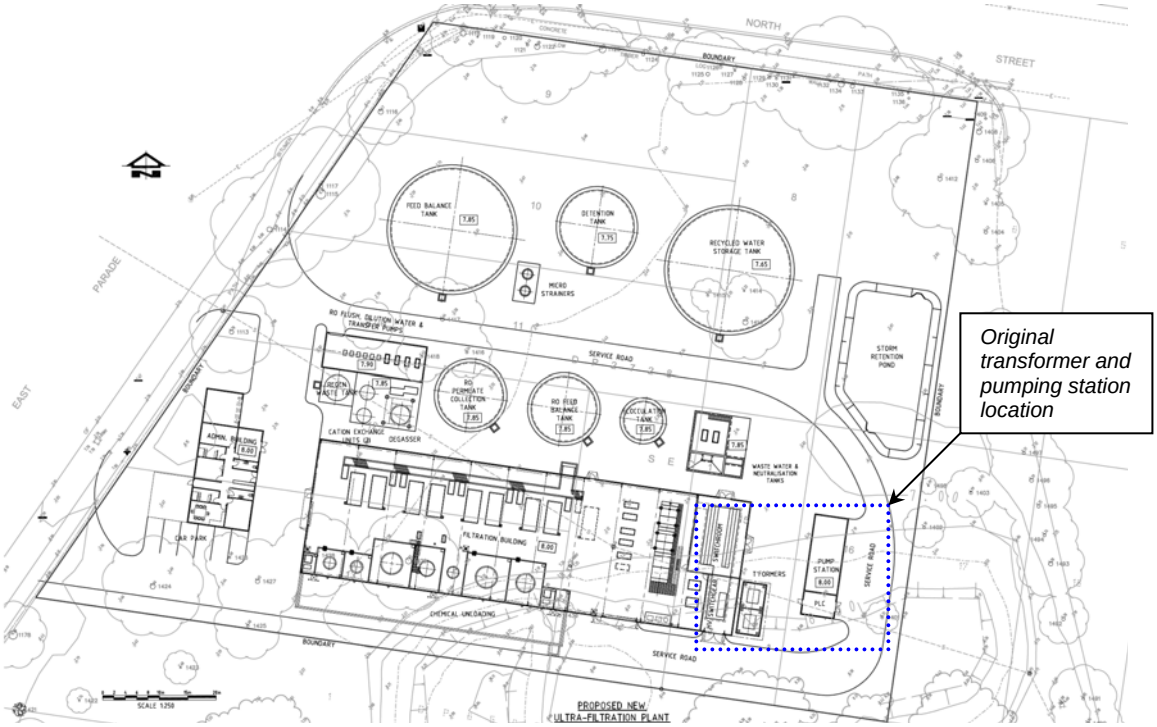
Table 2-1 Height changes at the Fairfield water recycling plant

ITEM	ORIGINAL HEIGHT (m AHD)	REVISED HEIGHT (m AHD)	CHANGE (m)
Recycled Water Storage Tank	17.15	15.06	-3.09
Feed Balance Tank	17.35	14.73	-2.62
Detention Tank	16.93	14.92	-2.01
Filtration (Reverse Osmosis) Building	17.10	17.10	0.0
Degasser	17.51	15.93	-1.58
Flocculation Tank	17.15	13.5	-3.65
Reverse Osmosis Balance Tank	16.9	13.63	-3.27
Reverse Osmosis Permeate Collection Tank	13.85	11.95	-1.9

An outcome of this layout revision is the loss of sufficient room along the northern boundary of the site for an earth embankment to mitigate plant operational noise (as described in Section 5.2.7 of the Environmental Assessment).

As a result of the proposed plant layout changes and the revised heights of the structures, the photomontages presented as Figures 5.6, 5.7 and 5.8 in the Environmental Assessment have been revised. The revised photomontages are presented in **Section 4.2** of this report.

Original plant layout (from Environmental Assessment)



Revised plant layout

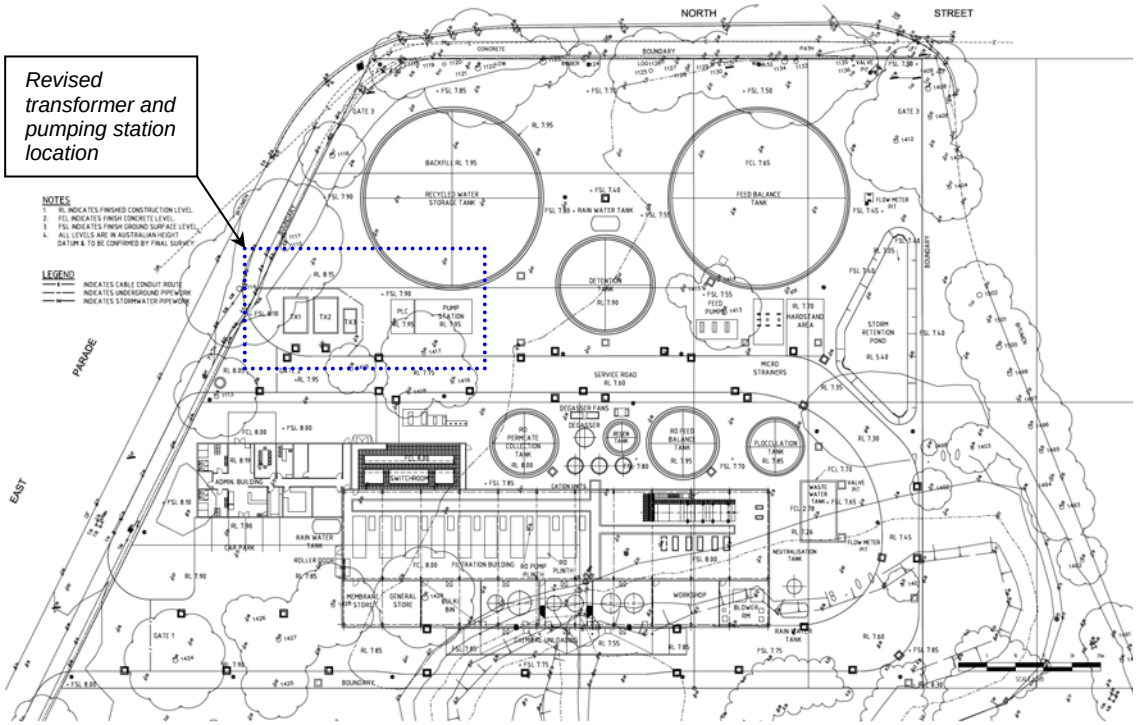
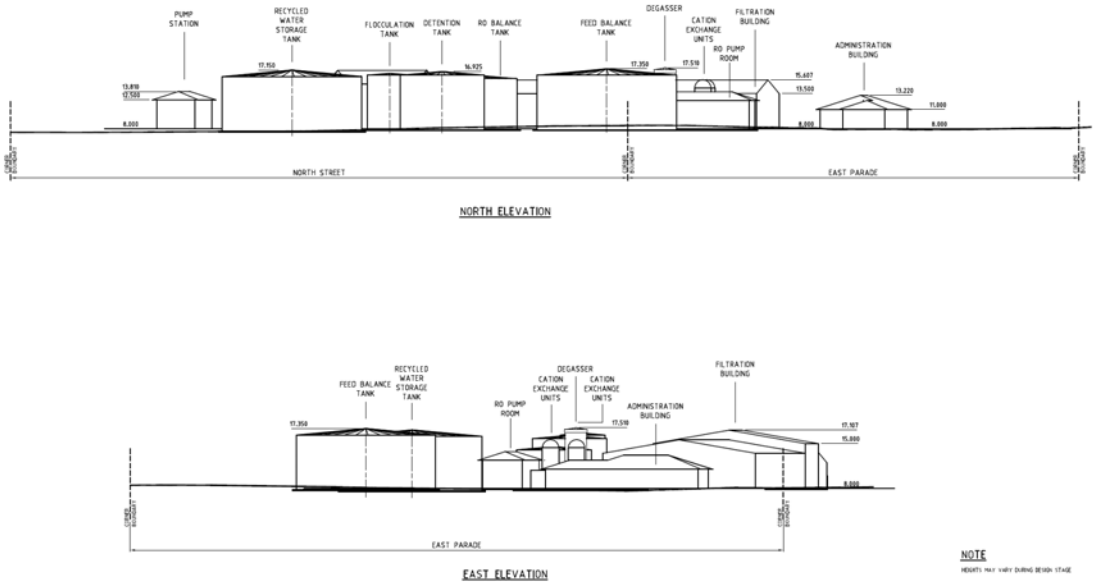


Figure 2-1 Revised and original layouts for Fairfield water recycling plant

Original plant elevations (from Environmental Assessment)



Revised plant layout

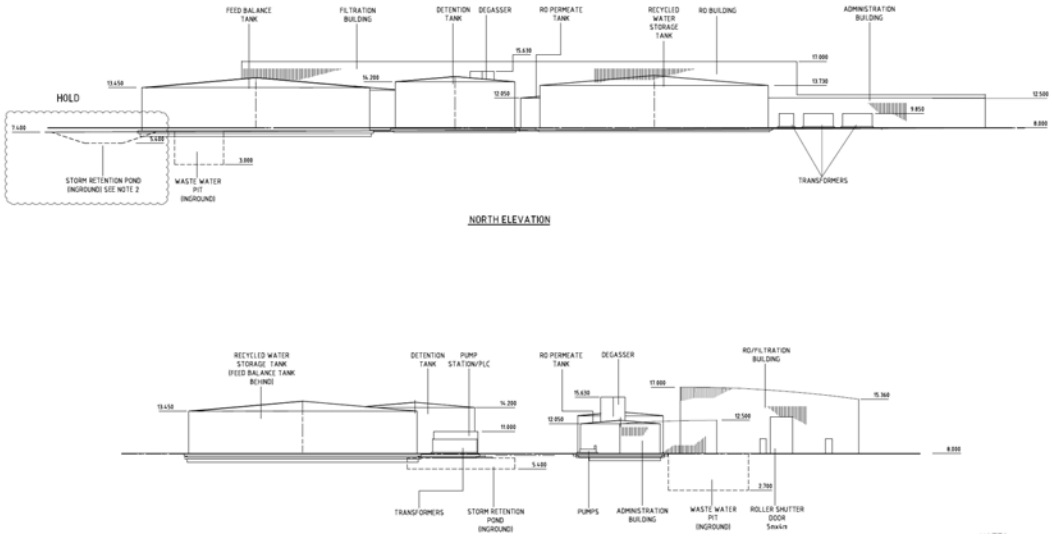


Figure 2-2 Revised and original elevations for Fairfield water recycling plant

2.2 Distribution pipeline

Route change North Street

Figure 3-12 in the Environmental Assessment indicates the proposed alignment of the distribution pipeline traversing due east as it exits the proposed plant at North Street, Fairfield through an area featuring a stand of significant native vegetation associated with the riparian zone along a unformed drainage line running south from North Street (St Elmo's Drain) before intersecting with Taylor Street, Fairfield.

In consideration of the conservation and biodiversity significance of this location and the potential impacts to the native vegetation, the riparian corridor and the watercourse this proposed alignment has now been modified.

The revised proposal adopts an alignment directly north out of the proposed plant site into the North Street road corridor. The distribution pipeline would then be constructed entirely within the road corridor of North Street in an easterly direction. The pipeline would be installed underneath the box culvert that conveys stormwater underneath North Street via a cased thrust bore. The revised alignment is shown in **Figure 2-3**.

The revised alignment avoids potential impacts to significant trees and other vegetation associated with the riparian corridor to the south of North Street between the proposed site location and Taylor Street. A number of existing smaller trees and shrubs (planted) along the boundary of the proposed site may require removal at the location where the distribution pipeline would leave the plant site. However, the crossing location shall be chosen to avoid impacts to the significant eucalypts currently located along the boundary line.

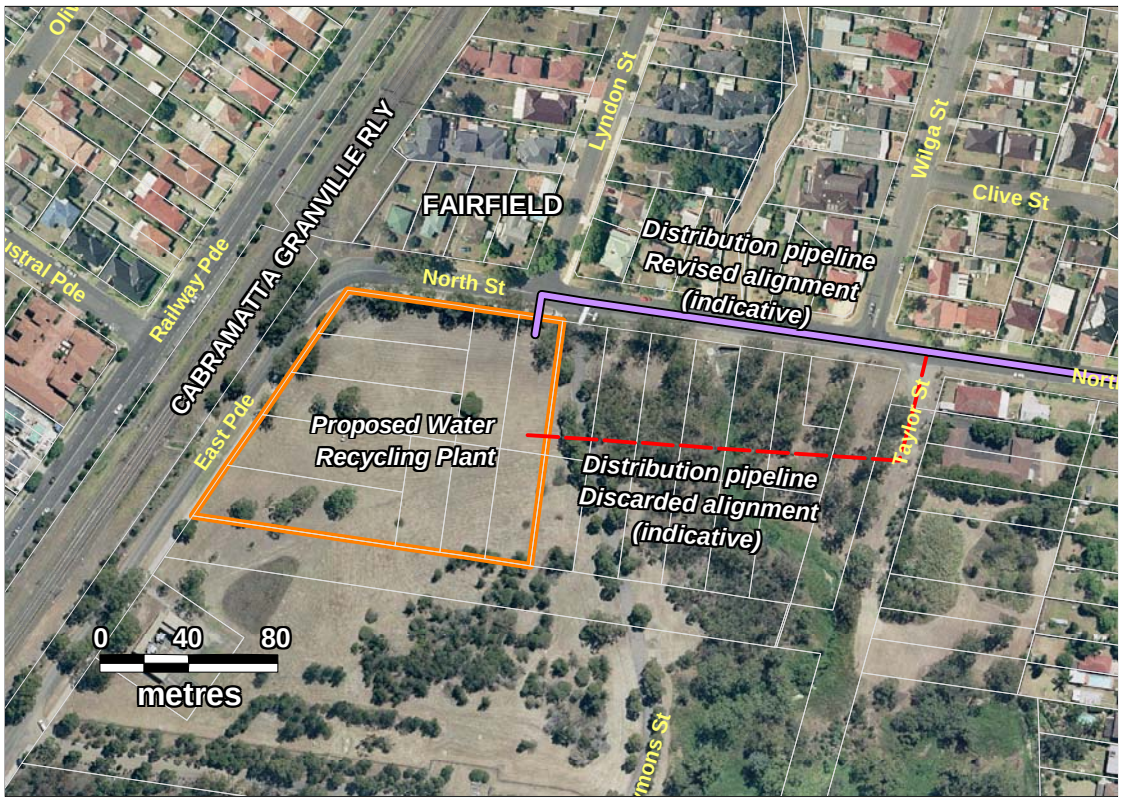


Figure 2-3 Revised distribution pipeline alignment on North Street, Fairfield

3 Exhibition process

3.1 Pre-exhibition consultation

Prior to completion of this environmental assessment AquaNet actively consulted with the wider community along the route of the pipeline and where facilities would be located. A range of tools were used to facilitate the community consultation process, including newsletters, advertisements in local newspapers (both English and foreign language), stakeholder meetings, letters to stakeholders, a project information line, website information and community meetings.

Key issues raised by the community pertaining to construction include traffic (pedestrian and cyclists along North Street, disruption at Yennora railway station) and access impacts, noise and water quality impacts of nearby watercourses. Operational issues identified include visual impacts due to the Woodville reservoir. All issues raised were addressed in the Environmental Assessment prior to public exhibition.

Further details of the consultation process are provided in Section 4 and Technical Paper 6 of the Environmental Assessment.

3.2 Consultation during the exhibition period

The Department of Planning exhibited the Environmental Assessment from 14 January 2009 to 27 February 2009. During the exhibition period interested government agencies, local councils and the general public were able to review the document and make submissions to the Department of Planning.

To support the exhibition process and encourage response from the affected community, a project newsletter was prepared and distributed to approximately 4,500 properties along the proposed alignment of the distribution pipeline and adjacent to proposed facilities. The newsletter outlined the progress of the Environmental Assessment, advised of options for reviewing the document and requested that submissions by forwarded to the Department of Planning. The newsletter also outlined the community free call hotline and project email address for any enquiries.

Letters were sent to the directly affected residences adjacent to the proposed site of the Fairfield water recycling plant, advising that the Environmental Assessment was now available for public review and submissions should be sent to the Department of Planning. A copy of the revised newsletter was enclosed with the letter to the residents.

Letters were sent to General Managers of the affected local councils advising that the Environmental Assessment was on exhibition and available for review and comment. Offers were extended to make presentation to the Councils or contact members of the project team directly. A response was received from Fairfield City Council only and a meeting was held to discuss Fairfield's intended submission to the Department of Planning regarding the proposal.

Letters were sent to relevant state parliament members advising that the Environmental Assessment was on exhibition and available for review and comment. Offers were extended to make meet with the members to discuss the proposal and its impacts. These offers were not accepted.

The dedicated project website also was updated to include the progress of the Environmental Assessment and make the document available for download.

3.3 Submissions

Respondents

The NSW Department of Planning received nine written submissions regarding the proposal. Submissions were received both prior to and after the end of the exhibition period. All submissions received have been addressed in this report.

Formal submissions were received from:

- NSW Department of Environment and Climate Change
- NSW Department of Primary Industries
- NSW Department of Water and Energy
- NSW Department of Health
- NSW Roads and Traffic Authority
- Fairfield City Council
- Bankstown City Council
- Holroyd City Council and
- Parramatta City Council

No informal submissions were received regarding the proposal. No submissions were received from the general public.

Summary of issues raised in submissions

A summary of the issues raised in the submissions received is outlined below in **Table 3-1**. The submissions received from the NSW Department of Health and the NSW Department of Primary Industries generally endorsed the Environmental Assessment and the environmental management measures proposed. No issues were raised in those submissions.

Table 3-1 Summary of issues raised by respondents

RESPONDENT	SUMMARY OF ISSUES
Bankstown City Council	- Consideration of construction impacts on Childcare Centre on Barbers Rd. Consultation required - Construction noise, particularly associated with night-time pipebursting on Woodville Rd - Damage to council roads (construction locations and truck routes) and appropriate restoration - Construction vehicles access routes - Traffic management - Dust generation - Potentially contaminated soil during pipebursting - Access to recycled water – Viilawood Industrial Precinct

RESPONDENT	SUMMARY OF ISSUES
Fairfield City Council	- Overland flooding - Significant stormwater drain (St Elmo's drain) crossing proposed plant site at Fairfield - Noise from plant operation - Changes to visual amenity due to plant - Energy consumption - Planning controls – applicability and consideration of various environmental planning instruments - Removal of vegetation, damage to habitat and riparian corridors - Potential odour from the plant - Potential chlorine gas generation at water recycling plant - Infrastructure damage (council roads and parks) - Land contamination and remediation - Traffic and access impacts - Road safety at local schools - Chemical storage on floodplain - Potential pollution of local waterways
Holroyd City Council	- Inappropriate pipe installation methods - Excessive damage to street trees - Excessive and unacceptable vegetation clearing in Prospect Creek reserve - Significant impacts to property access/egress - Short term parking and access impacts at Yennora Station - Sediment and erosion control in Prospect Creek reserve - Potential for localised soil contamination adjacent to Alcoa
Parramatta City Council	- Contamination and remediation at the Rosehill reservoir and pumping station site - Traffic impacts and management in the Rosehill peninsula - Traffic impacts and road safety at local schools - Removal of trees and revegetation at the proposed Woodville reservoir site - Elevated noise levels from the operation of the Rosehill reservoir and pumping station site - Vibration levels from pipebursting - Environmental management (construction and operation) - hazards and risks (fuel and chemical storage) - Odour due to site remediation and acid sulphate soil excavation/handling
Department of Water and Energy	- Licensing under *Water Industry Competition Act 2006* - Potential Licensing requirements of stormwater retention pond at Fairfield water recycling plant in relation to NSW *Farm dams Policy* - Works in riparian zones in accordance with *Guidelines for Controlled Activities* - Disposal of water from trench dewatering - Appropriate construction guidelines for the distribution pipeline - Project environmental management

RESPONDENT	SUMMARY OF ISSUES
Department of Environment and Climate Change	- Changes to approved construction hours - Operational noise compliance from water recycling plant - Potential for impacts to Green and Golden bell frog habitats in riparian zones - Minor impacts only to River Flat Eucalypt Forest - Aboriginal heritage management - Sediment and erosion control - Feedwater to waste stream ratio for the water recycling plant - Dust generation - Rainwater collection and use - Environmental management
NSW Roads and Traffic Authority	- Works and road closures in RTA controlled roads
Department Primary Industries	- No issues raised
Department of Health	- No issues raised

The submissions received covered a wide variety of issues. The main issues discussed in the submissions are outlined below:

- Damage to and restoration of roads and other council assets
- Potential vegetation removal (street trees and riparian forest)
- Sediment and erosion control
- Dust generation during construction
- Elevated noise levels during construction and operation
- Parking and access impacts during construction (vehicular and pedestrian)
- General traffic impacts during construction including potential impacts adjacent to schools along the distribution pipeline
- Soil and water contamination (known and unknown) and site remediation
- Environmental management (construction and operation)
- Community engagement and complaints management

General comments on these issues and how they are or will be addressed are provided in **Section 5.1**.

Some specific issues have also been raised in the submissions that require specific attention. A discussion of these key issues, how they have been addressed in design and how they will be addressed during construction and operation is provided in **Section 5.2**.

Full and detailed responses to all the issues raised in each of the submissions received are provided in the appendices to this report.

3.4 Post-exhibition period consultation

Fairfield City Council

Following the close of the exhibition and submission period a meeting was held with Fairfield City Council on 12 March 2009 regarding key issues raised in the Fairfield City Council submissions, specifically regarding:

- Chemical storage design and performance during probable maximum flood conditions;
- Engineering and procedural controls to address potential chlorine gas generation at the chemical storage;
- Relocation of the 1200mm diameter stormwater drain across the site; and,
- Overland flooding issues.

Prior to the meeting additional information had been obtained from the plant designer in relation to chemical storage facility design and performance under probable maximum flood conditions and proposed controls to reduce or eliminate potential chlorine gas generation and release in significant quantities due to the mixing of certain chemicals proposed to be stored on-site. These details were presented to and discussed with Council. Further information relating to these issues is provided in **Section 5.2** of this report.

A proposal to relocate the stormwater drain within the proposed site boundary was tabled and discussed. Further information relating to the relocation of this drain is provided in **Section 5.2** of this report.

The issues associated with potential overland flooding were discussed. Potential flooding issues due to overland flow and related project commitments are discussed in **Section 5.2** of this report.

Department of Water and Energy

In accordance with the advice in the submission received from the Department of Water and Energy, the appropriate section of the Department was contacted regarding the application of the NSW *Farm Dams Policy* to the proposed stormwater retention pond at the Fairfield water recycling facility and any potential licensing requirements. A formal request for advice was forwarded to the Department on 12 March 2009. Appropriate advice from the Department on this matter will be included in pre-construction requirements for the pond in the Construction Environmental Management Plan.

4 Additional studies

4.1 Noise modelling

Additional noise modelling was undertaken for the pumping station and transformers at the revised location (refer to **Appendix C**). The detailed design for the proposed enclosure structure around the pumps is not available at this time. However, the approximate noise attenuation from the structure is also considered in the assessment.

As no detailed design information was available for the proposed pump enclosure, modelling was undertaken assuming an open sided structure, as described in the Environmental Assessment. Predicted noise levels at receivers along North Street and Lyndon Street were found to be compliant with the night time operational noise goals of 40 dB(A) $L_{Aeq, 15min}$ outlined in Section 5.2 of the Environmental Assessment. This is due to an expected attenuation of noise levels by 10 dB(A) due to the recycled water storage tanks and other equipment in between the proposed pump station location and the receivers to the north.

Noise levels were expected to exceed night time operational noise goals at the closest residences on Railway Parade to the west by up to 4.5 dB(A). However, the assessment notes that raised railway embankment (up to 2m high) may attenuate received noise levels at receivers on Railway Parade to the west of the site by up to 3 dB.

The low voltage transformer scenario is predicted to result in no incremental increase in total received noise impacts at all nearest receivers.

Enclosing the pumps in a structure with solid façades and a roof is estimated to provide additional attenuation of 25 dB(A) to received noise levels is predicted. This attenuation would result in a received noise impact of approximately 10 - 20 dB(A) $L_{Aeq, 15min}$ at nearest receivers. With the pumps enclosed as proposed, compliance with the adopted night time operational noise goal of 40 dB(A) $L_{Aeq, 15min}$ would be expected at all receiver locations within the surrounding environment.

Furthermore, the application of solid façades and a roof to the pump station structure would be expected to provide required noise reduction performance to achieve compliance at all receptors with the sleep disturbance noise goals where external facade noise levels do not exceed 85 dB(A) L_{Aeq} and 97 dB(A) L_{A1}. The pump enclosure will be designed to meet or exceed these noise performance requirements.

4.2 Photomontages

As the proposed layout of the Fairfield water recycling plant has been revised, the potential impacts to visual amenity have changed. The visual photomontages presented for the proposed plant in the Environmental Assessment have therefore been revised to reflect the revised design. The revised photomontages are presented in **Figure 4-1**, **Figure 4-2** and **Figure 4-3**.

Figure 4-1 **Revised visual photomontage of Fairfield water recycling plant from North Street**

Figure 4-2 **Revised visual photomontage of Fairfield water recycling plant from eastern boundary on North Street**

Figure 4-3 Revised visual photomontage of Fairfield water recycling plant from Railway Parade

4.3 St Elmo's Drain inspections

During consultation with Fairfield City Council during the exhibition period, it was identified that a large and significant stormwater drain, referred to by Council as 'St Elmo's Drain', crosses the proposed site of the Fairfield water recycling plant. Council indicated that the drain was a 1200mm diameter concrete stormwater pipe that traverses the site in an east-west direction. However, the exact location of the drain was not known to Council. The pipe conveys stormwater collected from significant catchment to the west of the railway line across the site and into the unformed vegetated drainage line to the east of the proposed development site. Council identified that the drain conveys significant volumes of water during storm events and that the asset is critical to stormwater management in the area.

The asset was previously unknown to the applicant as it is not located within a registered drainage easement and information about the asset does not appear in dial before you dig information. As such, an investigation was required to determine the exact location and condition of the assets.

An internal inspection of the stormwater drain was undertaken on 25 February 2009. A remote-controlled device was passed along the inside of the drain from the upstream end and the location of the device tracked. From the information collected, the exact location of the drain was identified and is shown in **Figure 4-4**.

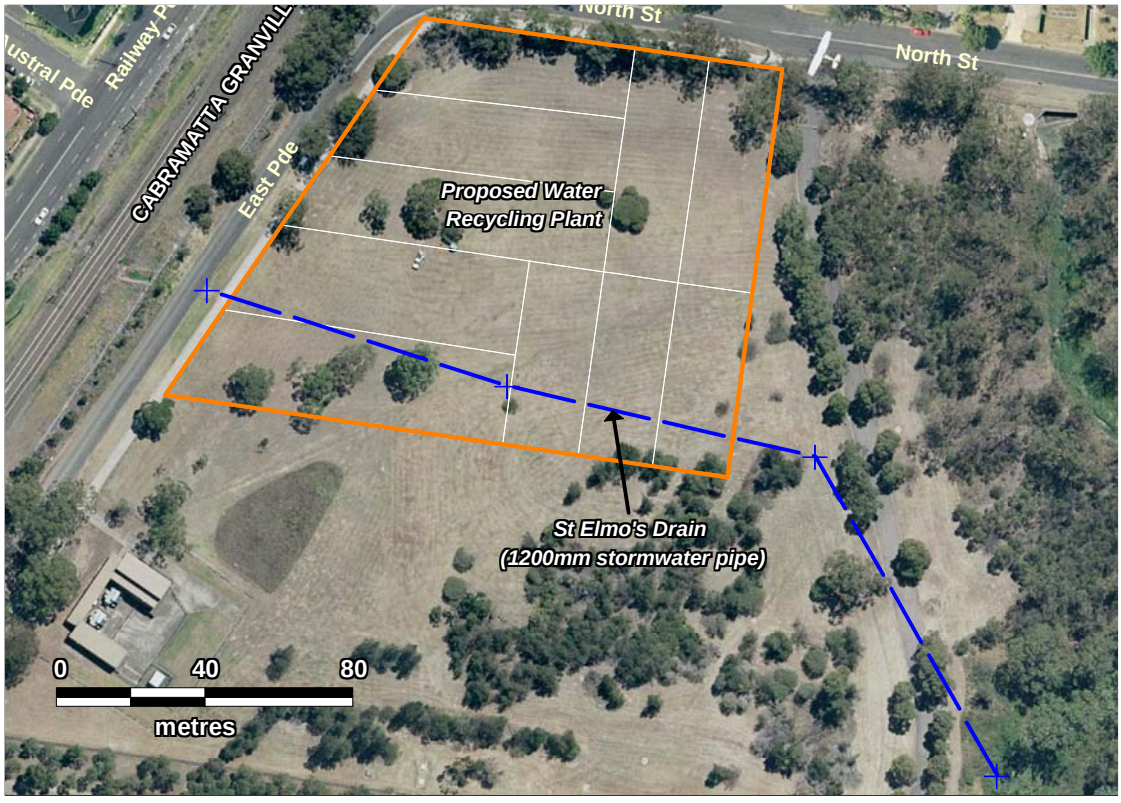


Figure 4-4 Location of St Elmo's Drain at proposed development site

From the investigation it was identified that the drain passes directly underneath the proposed location of the main filtration building of the water recycling plant and that options for relocating the drain would need to be considered. Relocation of the stormwater drain is discussed further in **Section 5.2**.

5 Consideration and response to submissions

A consideration of the submissions received regarding the proposal is provided in the following sections. Consideration of and responses to general issues raised in the submissions are provided in **Section 5.1**. Consideration of and responses to specific key issues are provided in **Section 5.2**. Detailed responses to each of the submissions are attached to this report as appendices

Appendix D - Fairfield City Council

Appendix E - Bankstown City Council

Appendix F- Parramatta City Council

Appendix G - Holroyd City Council

Appendix H - Department of Environment and Climate Change

Appendix I - Department of Water and Energy

As outlined in **Section 3.3**, the NSW Department of Health and the NSW Department Primary Industries submissions generally endorsed the Environmental Assessment and the project in general and required no additional information. The NSW Roads and Traffic Authority submission simply requested consultation for works in RTA-controlled roads.

5.1 Consideration of general issues

Damage to roads and other assets

The issue of damage to road pavements and other assets such as footpaths etc due to construction and heavy vehicles movement was raised in a number of submissions, both for the roads in which construction would occur and the roads used to access construction sites by heavy vehicles.

Prior to the commencement of construction, traffic management plans (TMPs), including proposed truck routes, will be prepared and submitted to the relevant road authority (local council or the Roads and Traffic Authority) for approval.

Dilapidation studies will be undertaken for all directly affected roads and trucks routes as specified in the TMPs. The dilapidation studies will be provided to the relevant roads authority prior to the commencement of construction.

Appropriate road restoration specifications will be agreed in consultation with the relevant road authority prior to the commencement of construction of the distribution pipeline. Road restoration scopes will be developed in consultation with the appropriate road authority prior to the commencement of restoration activities. On completion of restoration works, sign-off will be obtained from the roads authority for all road (and other) restorations. The revised Statement of Commitments presented in **Section 7** of the report has been amended accordingly.

Vegetation removal

Impacts to vegetation between the proposed water recycling plant at Fairfield and Taylor Street have now been avoided by a revision of the proposed alignment for the distribution pipeline, as described in **Section 2.2** and shown in **Figure 2-3** of this report.

Impacts to significant trees within Fairfield Park will be avoided wherever practicable during final alignment selection during detailed design of the distribution pipeline.

Where the alignment of the distribution pipeline is within the road corridor, the final alignment is likely to be within the paved road surfaces, rather than the road verge. This will avoid the need to remove trees and other street vegetation and also limit the potential to cause damage to associated root systems. Where street trees require removal, prior consultation shall occur with the relevant parties to quantify impacts. The revised Statement of Commitments presented in **Section 7** of the report has been amended accordingly.

Specific consideration of potential impacts to vegetation within Prospect Creek reserve is provided in **Section 5.2** below.

Sediment and erosion control

As stated in the Draft Statement of Commitments outlined in Section 7 of the Environmental Assessment, erosion and sediment controls will be installed, maintained and managed prior to and throughout construction. The principles in Managing Urban Stormwater – Soils and Construction (Landcom 2004) will be applied. Erosion and Sediment Controls Plans or Soil and Water Management Plans in accordance with Managing Urban Stormwater: Soils and Construction (Landcom, 2004) will be prepared for all construction sites and construction compounds associated with the project.

Dust generation

Appropriate control to address dust generation at all project site sites and during all project stages will be included with an Air Quality management sub-plan within the construction and operational environmental management plans. These plans will be submitted to relevant project stakeholders for review and approval prior to the commencement of construction and operation.

Construction noise

Noise levels from construction of the distribution pipeline and project facilities are predicted to exceed construction noise design goals outlined in the Environmental Assessment. Given the nature of the proposed construction activities and the close proximity of residential receptors, particularly for works within the roadway, elevated noise levels and residential receivers are unavoidable. They will in most cases be limited to 1-2 days at any one location as construction moves along the roadway.

However, it must be noted that the predictions in the Environmental Assessment are based on all noisy equipment operating simultaneously at peak sound power levels at the one location. In reality, equipment would be spread out over a 50-100m long work area and it would be unlikely that all equipment would operate at full sound power levels simultaneously. This will reduce likely construction noise generation and the potential for exceeding construction noise design goals at adjacent residences.

Measures to reduce noise impacts will be included with the CEMP, which will be distributed to relevant stakeholders for review and approvals. A community consultation program will be implemented to inform potentially affected residents of likely impacts. Construction noise compliance monitoring will be implemented in response to receiving more than 5 complaints on any one day regarding excessive noise levels from construction. The revised Statement of Commitments presented in **Section 7** of the report has been amended accordingly.

Parking and access

As construction of the distribution pipeline will occur largely within the road corridor, impacts to property access and parking along the roadway will be largely unavoidable. However, impacts

are only likely to occur for 1-2 days at any one location as construction moves along the roadway. Property access and street parking will be re-established at the completion of construction in the roadway each day.

The length of the construction area within the roadway is likely to be 50-100m at any given location. Given the nature of the majority of streets selected as part of the route selection process, sufficient parking will be available in areas and streets adjacent to the works zone to fulfil street parking requirements.

Residents and businesses will be provided with a series of advance notifications regarding the upcoming construction work in the roadway. Expected impacts to parking and property access and likely durations will be communicated as part of the notifications.

Traffic impacts

Traffic impacts and congestion associated with construction of the distribution pipeline are largely unavoidable.

Traffic management plans (TMPs) will be prepared for each section of work within the road network. TMPs will detail likely traffic impacts, signage, management controls, detours and other relevant information. The TMPs will be submitted to the appropriate road authority for review, comment and approval prior to the commencement of construction.

Likely traffic impacts will be communicated to affected residents and businesses as part of the notification process.

Prior to any construction within the network, local public transport service providers will be contacted regarding potential disruption to services and possible detours or works scheduling to manage impacts.

Soil and water contamination

For areas of known contamination, remedial action plans will be developed to address the contamination present and provide fit-for-purpose construction sites. Appropriate input from accredited contaminated site auditors will be obtained as required. Validation reports will be prepared on completion of site remediation works and distributed as required by project approval conditions.

The CEMP shall contain appropriate protocols and requirements in the event of uncovering previously unidentified soil and groundwater contamination during all project excavations. The CEMP shall be forwarded to relevant project stakeholders for review and approval prior to the commencement of construction.

Changes in visual amenity due to aboveground facilities

The presence of the Fairfield water recycling plant will impact upon the visual amenity of the adjacent residents along the northern side of North Street, Fairfield. Additional vegetation will be planted along the site boundary fence to provide additional vegetative screening for the residents along North Street. Suitable low to mid-height species will be planted. Appropriate native species in character with the surrounding area will be selected.

Similarly the presence of the Woodville reservoir will affect visual amenity of the area. Additional vegetation will be planted along the site boundary fence at the Woodville reservoir to provide additional screening of the site from the surrounding areas.

Landscaping plans will be developed for both facilities in consultation with the relevant local council. The revised Statement of Commitments presented in **Section 7** of the report has been amended accordingly.

Environmental management

A number of respondents to the Environmental Assessment expressed an interest to be involved the development and approval of the Construction Environmental Management Plan(s) and Operational Environmental Management Plan(s) for the project.

As stated in the Environmental Assessment, separate CEMPs and OEMPs are proposed covering construction of the water recycling plant at Fairfield and construction of the distribution pipeline and all other components. These plans would include as a minimum the environmental management measures proposed in the Environmental Assessment, including the draft statement of commitments and other additional environmental management measures and consultation outline din this report.

The CEMPs and OEMPs will be distributed to relevant stakeholders for review, comment and approval prior to the commencement of construction and operation respectively of the relevant project components, in accordance with the requirement of project approval conditions.

Community engagement and complaints management

A Community Consultation Plan will be developed for the project. The plan will include as a minimum community notification requirements and complaint recording and handling systems and performance criteria. Relevant details from the community Consultation Plan will be reproduced within the CEMP, which will be provided to the relevant project stakeholders for review, comment and approval. The revised Statement of Commitments presented in **Section 7** of the report has been amended accordingly.

5.2 Consideration of key issues

Chlorine generation at Fairfield water recycling plant

Fairfield City Council raised concerns regarding the potential for the generation and release of chlorine gas in significant volumes due to the potential for mixing and reaction between the acids and hypochlorite stored at the Fairfield water recycling plant. Furthermore, Fairfield City Council indicate that based on the risk of chlorine gas generation and the potential for major offsite impacts a quantitative preliminary hazard analysis, rather than the qualitative preliminary hazard analysis presented in the Environmental Assessment, is more appropriate.

Additional information from the plant designers was sought on design and procedural controls proposed to address this issue. The risks of chemical reaction and the generation of significant volumes of chlorine gas have been considered and are mitigated at design and operation level. Whilst insignificant (trace) volumes of chlorine gas could emanate from the plant during hypochlorite dosing of the recycling process, any impacts would be limited to the immediate vicinity of the dosing location. Significant volumes of chlorine gas could not be generated and no off-site impacts would be likely. Additional information regarding chlorine gas generation minimisation is outlined below:

(i) The acid and hypochlorite storage tanks are at separated at opposite ends of the chemical storage area, will be appropriately designed and have individual bunding, in accordance with the requirements of *AS 3780-1994 The storage and handling of corrosive substances*. The chemical storage bunds would be completely isolated from the onsite stormwater collection system.

(ii) Any chemicals are spilled during loading and unloading will be contained within bunded truck unloading bay area. Spillage at the unloading bay bund will be contained, monitored and operator intervention required to dispose of or neutralise any spilled material.

All spillages will be 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. Major spills would be removed by appropriately licensed waste removal contractors and disposed of at appropriately licensed waste facilities.

The operators will be trained and procedures established to ensure the sumps, when alarmed, will be pumped away so that no spilled materials are left in the sumps. Appropriate handling and disposal protocols for management of spills will be included in the plant operational procedures and training and the referenced in the Operation Environmental Management Plan.

(iii) As soon as the water at neutralisation tank is neutralised, it will be pumped away to sewer, under a trade waste agreement with Sydney Water Corporation. This will ensure all process waste dumps, which are initiated by the operator, will not be mixed with other discharged wastes inside the neutralisation tank, further limiting the potential for reaction.

(iv) Dosing pumps into the neutralisation tanks are control interlocked to avoid any mixing of chemicals at the neutralisation tank.

(v) 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. Any gas released would affect only the immediate vicinity. Given the proposed chemical storage area is a minimum of 100m away from the nearest residential receptors (as shown in **Figure 5-1**) the potential for any impacts to residents is minimal.

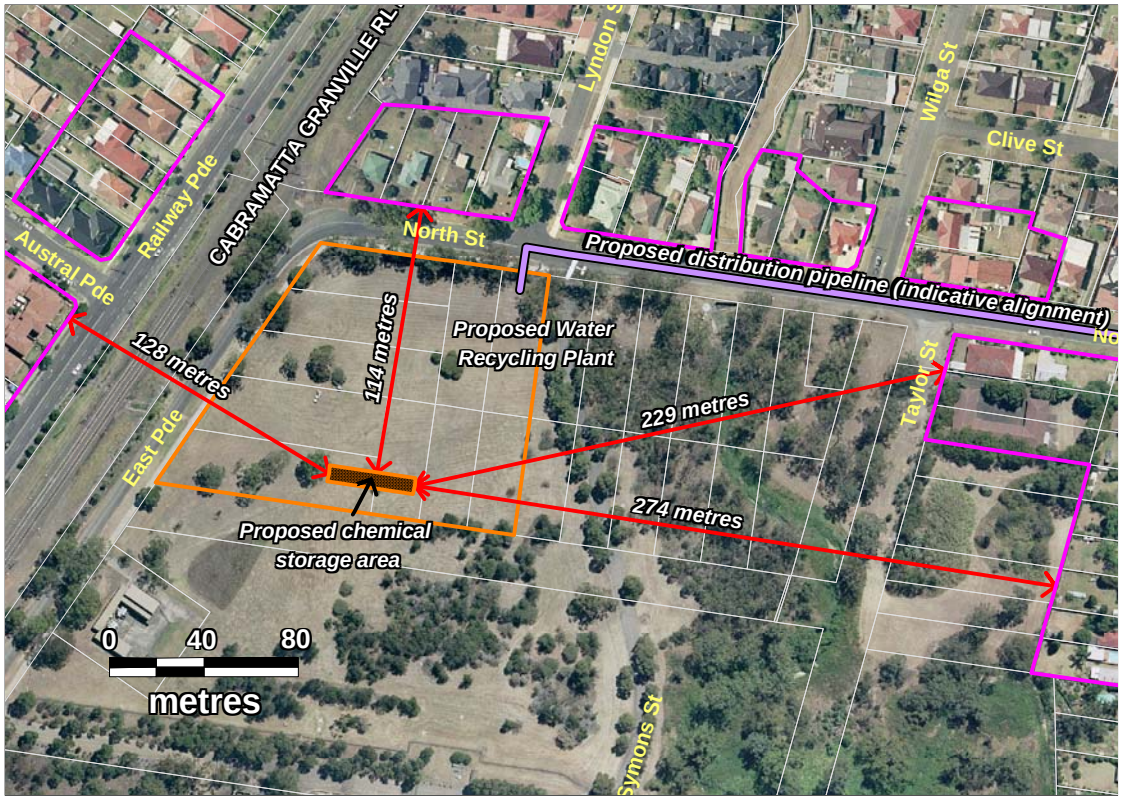


Figure 5-1 Distances of closest residential receptors to chemical storage area

The potential for generation of significant volumes of chlorine gas at the chemical storage area is actively managed via both design and procedural controls, in accordance with *AS 3780-1994 The storage and handling of corrosive substances*. As such, the potential for major and widespread off-site impacts associated with chlorine gas generation is limited. Therefore, the qualitative preliminary hazard analysis presented in the Environmental Assessment is considered sufficient and no quantitative preliminary hazard analysis is required.

Chemical storage in flood prone areas

Fairfield City Council raised concerns regarding potential inundation to depths of up to 2.8m at the proposed Fairfield water recycling plant at the peak of a probable maximum flood (PMF). Council requested that a flood risk analysis be carried out addressing the effects on hazardous chemical storage, loss of floodplain storage and the cumulative impact this development would have on the floodplain.

The Fairfield water recycling plant will feature finished ground and floor levels around 7.7 – 8.0 m AHD, which is well above the predicted peak water level of 6.8 m AHD during a 100 year average recurrence interval (ARI) design flood. However, the predicted peak water levels during a probable maximum flood are indicated by Council to be around 10.8 m AHD. Substantial inundation of the site and surrounding areas would occur under such conditions.

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 large difference between the predicted peak water levels during the PMF and 100 year ARI design flood indicate that an enormous volume of water will be present and over an incredibly wide floodplain. This is confirmed by Council's flood risk maps at this location. Furthermore, through discussions with Council it was established that the high tail water levels downstream in the Georges River, rather than large flood volumes along St Elmo's Drain, would be the dominant factor producing the high water levels predicted at the plant location. As such, it can be expected that this area would be a large inundated 'backwater' subject to low flow velocities and low subsequent hydrodynamic forces.

Additional information has been obtained from the plant designer regarding chemical storage and potential impacts during the probable maximum flood. The chemical storage facilities have been designed with potential inundation in mind. This information presented below.

The chemical storage and handling area is designed to *AS 3780-1994 The storage and handling of corrosive substances* and to comply with NSW EPA and other statutory requirements.

The finished concrete level of the bulk chemical storage area will be 8.00 m AHD, above the predicted peak level of the 100 year ARI 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 with tank bases 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 pipe invert levels 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 10.8 m AHD, which would be minimum 150 mm below the invert level of the tank overflow pipes. Therefore, even at the highest theoretical flood level, flood waters would not be able to enter the bulk chemical tanks and there is no risk of subsequent chemical release from the tanks into any surrounding flood waters. As the tanks are checked for leaks during installation and all fittings and pipes pressure tested, there is minimal potential for the materials within the tanks to leak out into adjacent floodwaters when inundated.

As the area is likely to be a large inundated backwater, flood velocities at this location are expected to be minimal. Therefore potential hydrodynamic loads on the tanks would also be expected to be minimal and the potential for damage to the tanks due to shear stresses and forces low. Similarly, due to low flood velocities, the risk of damage to the chemical storage tanks due to impact with floating debris and movement is also very low.

Other chemicals will be stored at the plant 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 1 m^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 predicted 100 year ARI flood level. These container bins will usually be cap sealed.

If peak probable maximum flood water levels are experienced, there is a minor risk that the container bins will float (empty bins or partially filled). The worst case scenario, which is unlikely if the bulk bins float, is that the chemicals stored within the bulki bins enter the floodwaters. In this event, each chemical would become excessively diluted due to the large volume of the flood waters during the probable maximum flood. Excessively diluted citric acid poses an insignificant risk to the environment. Sodium metabisulphite is an oxygen scavenger 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 mainstream probable maximum flood and contaminants entering the Georges River via Prospect Creek or Orphan School Creek from the plant chemical unloading and storage is minimal due to the engineering controls that are proposed at the site.

St Elmo's drain relocation

Fairfield City Council noted in its submission that the 1200mm stormwater pipe that crosses the proposed development site for the water recycling plant at Fairfield may need to be relocated and/or upgraded to convey the estimated 100 year stormwater flow. Council noted that the pipe should be designed assuming a pit blockage factor of 30% and that a drainage

easement over the top of the pipeline should be provided to carry excess flows in the 100 year ARI design flood assuming 50% blockage of the pipeline.

A preliminary alternative alignment for the stormwater drain relocation has been developed. The relocation would occur entirely within the proposed development site boundaries. The existing stormwater drain would not be affected upstream or downstream of the site boundary. The preliminary realignment option is shown in **Figure 5-2**. The drain in its current location would be abandoned within the site boundaries.

The stormwater drain would be realigned within the internal site access road between the main filtration building and the southern site boundary. At this location sufficient clearance would be available to establish a 3.5-4.0 m wide drainage easement over the drain if required, in accordance with the requirements of Fairfield City Council's Stormwater Drainage Policy. At this location access to the asset would also be maintained to accommodate any future maintenance requirements.

As no changes would be made to the pipe upstream or downstream from the site boundaries, the scope for redesigning the pipe to increase capacity is limited, as conveyance would be controlled by the downstream pipe sections. As such, the relocation would adopt a 'like for like' replacement approach, replacing the abandoned section of stormwater pipe with a similarly sized 1200mm diameter concrete pipe. As such, no modelling of the performance of the stormwater pipe and subsequent redesign to increase capacity is appropriate. Potential overland flooding associated with surcharge from this stormwater drain upstream of the site boundaries is discussed below.

The intent to relocate the stormwater pipe entirely within the site on a 'like for like' basis and the preliminary alignment option has been communicated to Fairfield City Council. The plant designers will prepare detailed engineering plans for the relocated stormwater drain which will be submitted to Council for review, comment and approval prior to relocation of the pipe.

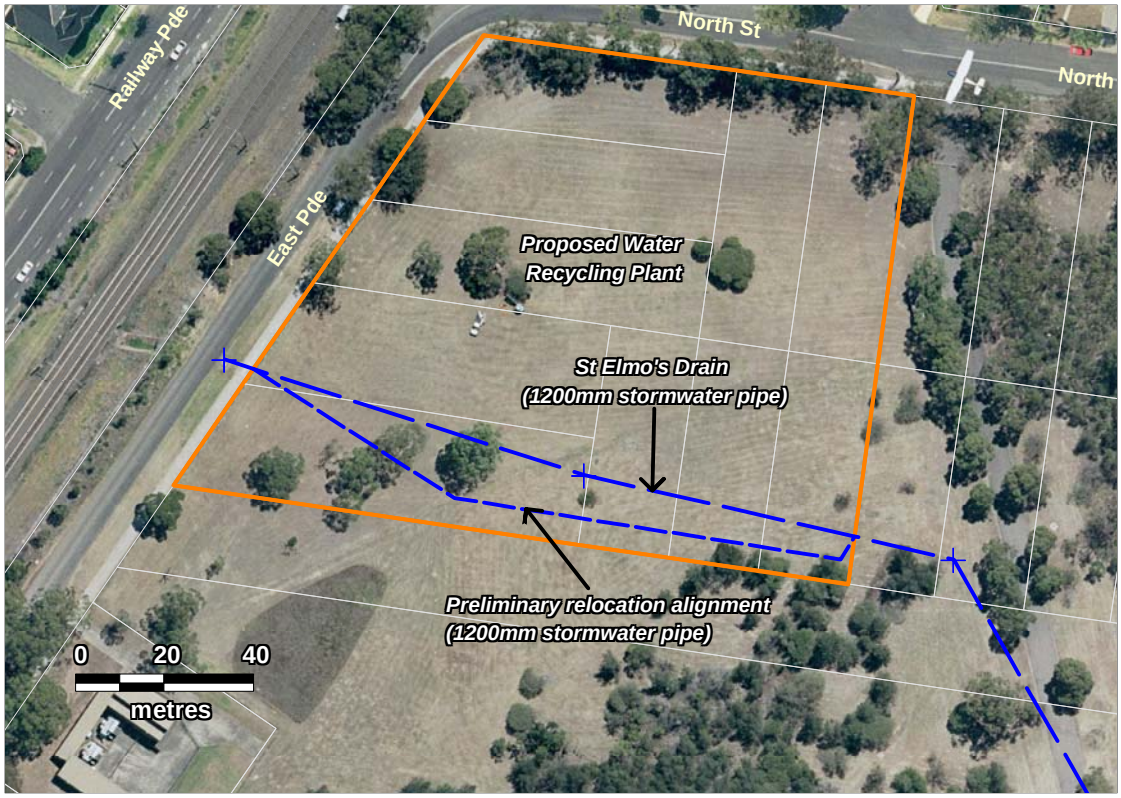


Figure 5-2 Preliminary relocation alignment for St Elmo's Drain

Overland flooding at proposed plant location

Fairfield City Council raised concerns about the potential for significant overland flooding of the proposed Fairfield water recycling plant due to surcharge of St Elmo's Drain to the west of the development site. Council advised that a detailed study is required to quantify and risk categorise overland flooding across the Fairfield site. Furthermore Council suggest that filling the site (from 6.7m AHD to around 8.0m AHD) would block the overland flow path and therefore compensatory measures must be considered to ensure that neighbouring properties are not adversely affected.

Existing ground levels across the proposed site of the recycling plant site range from around 6.8m AHD up to 8.2m AHD. A large fill mound exists at the southern edge of the site with surfaces levels up to 10m AHD. Contrary to the comments in Council's submission, the plant and related components will be built roughly at the existing ground surface level across the site. Small amounts of cut and fill will be required in order to provide flat surfaces on which to construction the tanks etc. The exception is the large fill mound at the southern edge of the site. This mound will be removed from within the site boundary due to issues with soil contamination. Therefore, it is unlikely that the overland flow path would become blocked as Council have suggested.

The potential overland flow path was identified by the plant designer and the plant designed accordingly to accommodate overland flow. The internal site access roads have been designed to lie along the site low points and follow the existing gradient of the land, in order to convey any surface water during overland flow conditions across the site and into the existing drainage line to the east of the site. The access roads would have minimum kerb height of 150mm and therefore be able to contain overland flow across the site to a depth of around 150mm. The proposed overland flow paths across the site along the internal access roads are shown schematically in **Figure 5-3**.

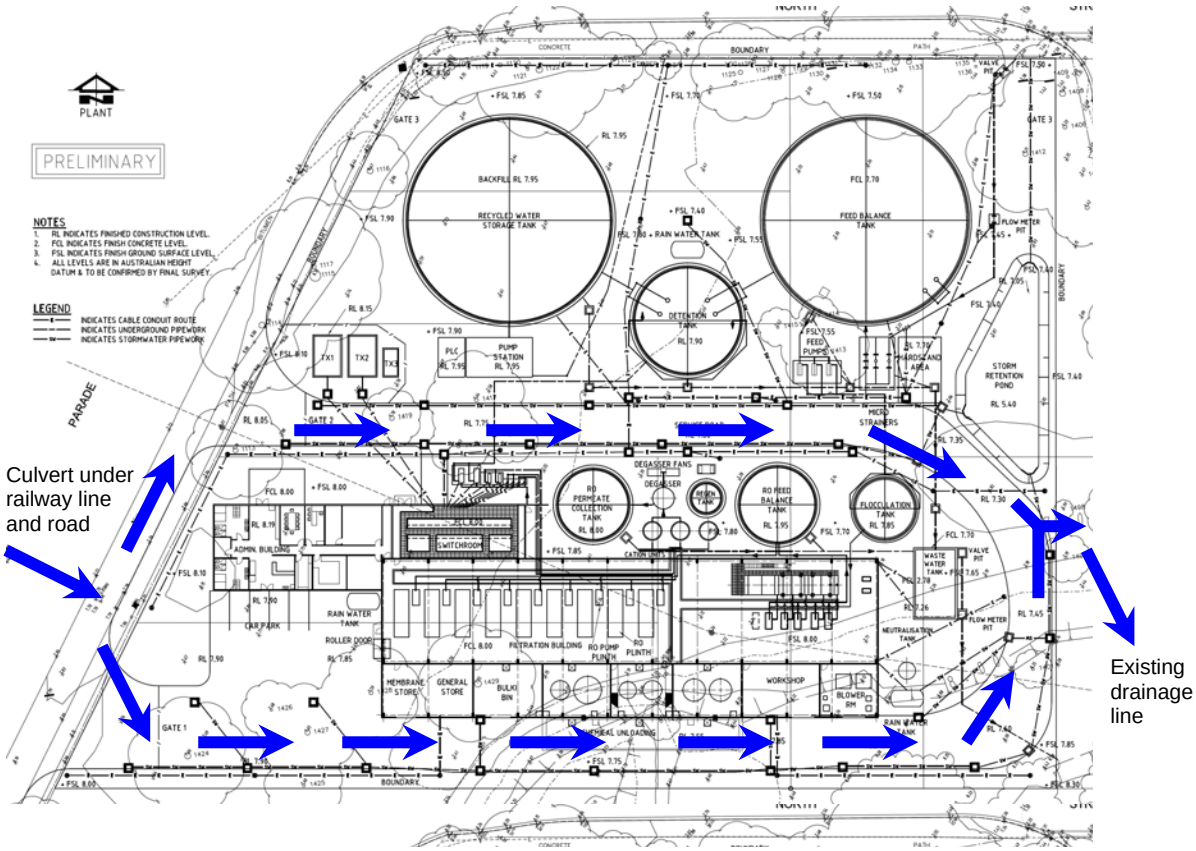


Figure 5-3 Overland flow paths across the Fairfield water recycling plant

A culvert is present underneath the raised railway embankment immediately west of the proposed plant location. The culvert consists of an open drain fed by a 1200mm diameter pipe. Stormwater passes back into a 1200mm diameter stormwater pipe before passing under East Parade and across the proposed development site. Two box culverts are installed above the 1200mm pipe underneath the railway line to provide for additional capacity during pipe surcharge and overland flow. The culvert is shown in **Figure 5-4**.

Figure 5-4 St Elmo's Drain underneath the railway line

This culvert will restrict the passage of overland flow from the catchment to the west of the railway and hence restrict the potential volume of surface water runoff across the proposed development site. In discussions with Council regarding the overland flow, 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, indicating that the culvert is a flow control point. As such, it is considered likely that potential overland flow volumes and flow rates will be reduced by the culvert.

The two culverts have approximate dimensions of 0.6m high by 2.0m wide. This would provide an estimated cross section available for stormwater conveyance of around 2.4m^2. The two access roads within the site would have a width of 7m. Bank full flow across both roads would have a depth of 150mm (maximum kerb height). This would provide a cross-sectional area of approximately 2.1m^2. This information is presented schematically in **Figure 5-5**. This information suggests whilst the capacities of the roads and culvert are comparable, roads on site may not have sufficient capacity to contain the peak flows that might be expected through the railway culvert.

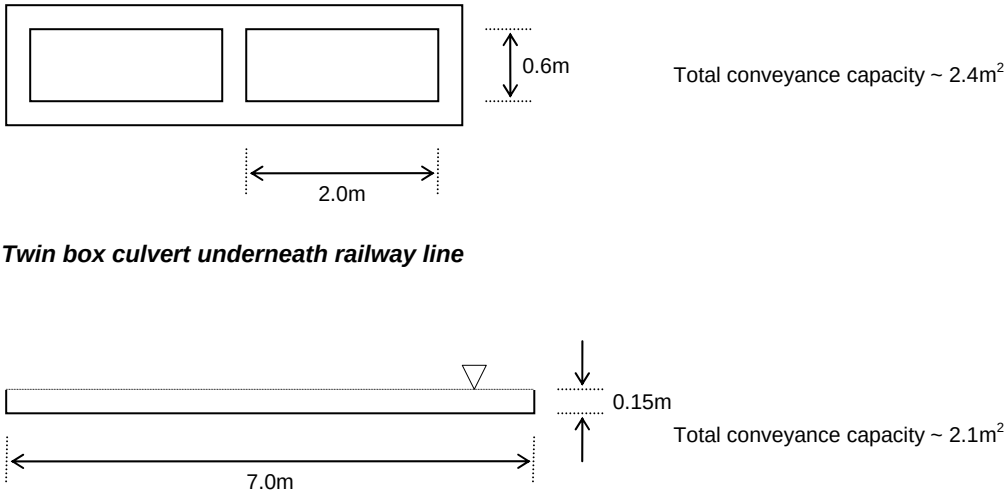


Figure 5-5 Potential stormwater conveyance schematic

The internal site access roads will accommodate overland flow across the site to a depth of 150mm (kerb height). However, as Fairfield City Council have noted, it is not known to what depth overland flow might be expected across the site and to what extent the site and surrounding areas would be subject to overland flooding. Furthermore, the effect of overland flow on the proposed development and the effect of the proposed development on peak water levels and flood behaviour during overland flow events are also unknown.

Prior to the finalisation of the plant design and the commencement of plant construction an overland flood risk analysis for the site including modelling of overland flows during the 100 year ARI overland flow design flood will be undertaken. A copy of the overland flow modelling results shall be provided to Fairfield City Council on completion.

Operational noise from water recycling plant

The additional noise modelling undertaken to assess the changes in potential noise impacts due to the change in location of the pump station and transformers and thee enclosure of the pumps within a walled and roofed structure are discussed in **Section 4.1** and provided in **Appendix C**. The pump station was determined to be the dominant noise source. The transformers were found to make no contribution to noise levels at the closest receivers.

The assessment concluded that with:

- the pump station shielded from the residences to the north by the recycled water storage tank and other structures and

- the predicted attenuation to noise levels provided by the 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}. The revised Statement of Commitments (**Section 7**) has been updated accordingly.

Excessive vegetation removal within Prospect Creek reserve

Holroyd City Council raised significant concerns regarding the underestimation of vegetation removal requirements within the reserves adjacent to Prospect Creek from Fairfield Road through to the termination of the distribution pipeline at Visy. Council suggest that 0.63 hectare of existing vegetation communities in the Prospect Creek reserves, rather than 0.1hectare as outlined in the Environmental Assessment, will be cleared based on a 10m wide construction zone. Council suggests alternative methods of installing pipes within the reserve (including under boring) should be investigated to reduce the need to remove native vegetation.

In selecting the proposed alignment of the distribution pipeline within the Prospect Creek reserves the biodiversity conservation significance of the native vegetation throughout the riparian corridor has been taken into account. The proposed alignment has been chosen to avoid the need to remove native vegetation by following the paved access pathway through the corridor. The cleared and grassed areas adjacent to the existing access pathway would be used to accommodate the distribution pipeline and construction activities, avoiding the need to clear native vegetation. Detail of the areas affected by the proposed alignment of the distribution pipeline through the prospect Creek reserves are provided in **Figure 5-6** - **Figure 5-9**.

Figure 5-6 Prospect Creek reserve alignment - detail map 1

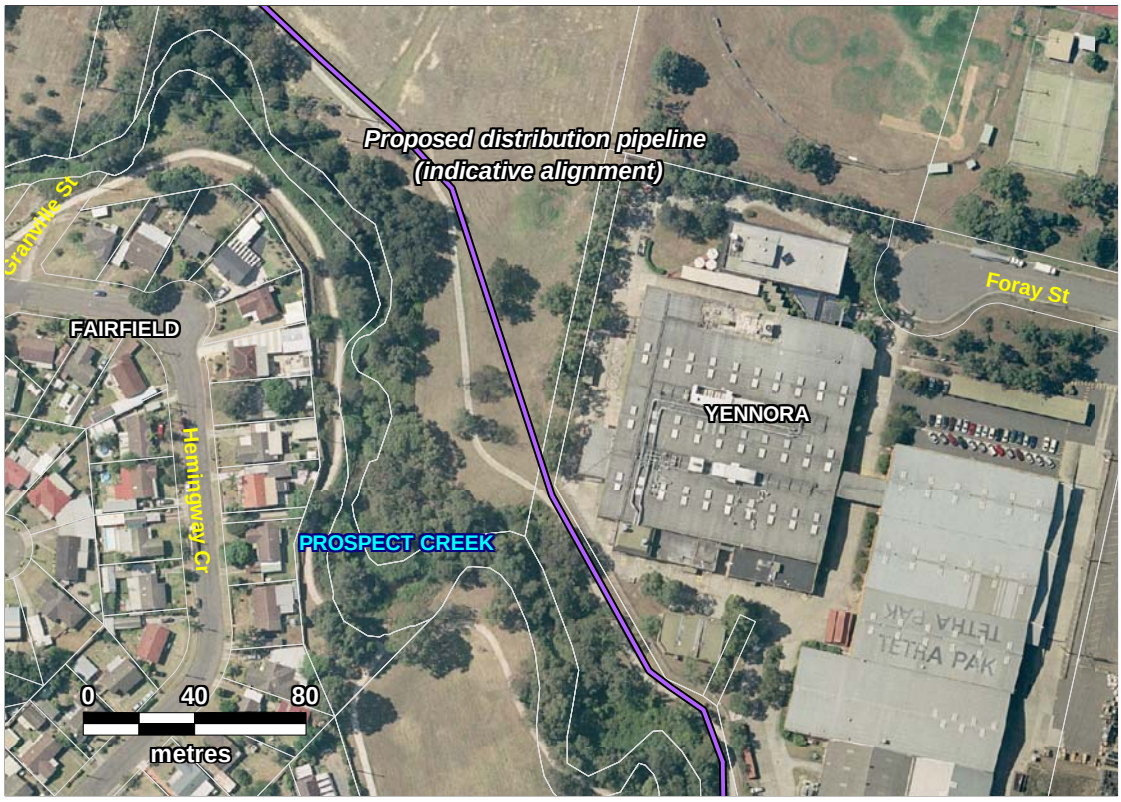


Figure 5-7 Prospect Creek reserve alignment - detail map 2

Figure 5-8 Prospect Creek reserve alignment - detail map 3

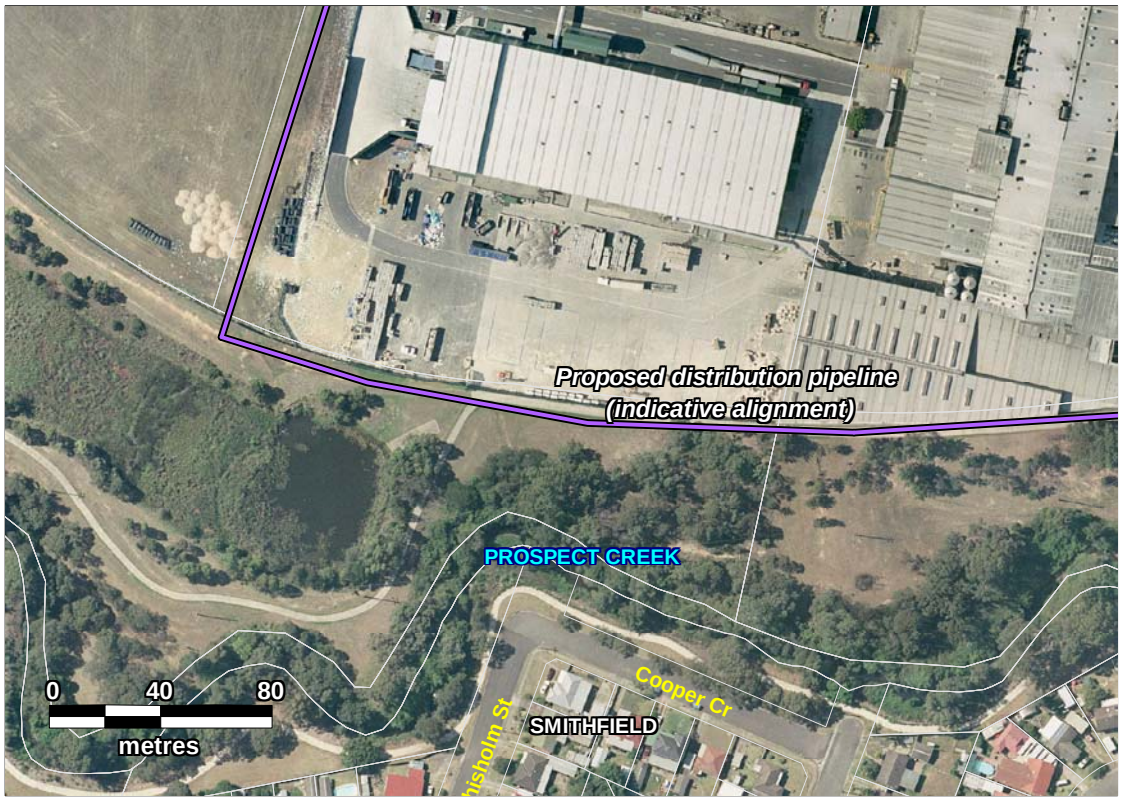


Figure 5-9 Prospect Creek reserve alignment - detail map 4

The 10m wide construction zone quoted in the Environmental Assessment is indicative only. Construction will not be preceded by a blanket clearing of a 10m wide strip through existing native vegetation. The construction zone will be staged and configured to avoid the need to remove trees or native vegetation. In areas where the riparian corridor is narrow or where the proposed alignment is immediately adjacent to an adjoining property boundary there is scope to narrow the construction area width to avoid vegetation by utilising existing cleared spaces elsewhere adjacent to the alignment. Similarly, any construction compounds will be located in cleared and grassed areas, avoiding native vegetation. Where the removal of trees and native vegetation is unavoidable Council will be consulted prior to any clearing.

The value for the amount of native vegetation that would be cleared in the Prospect Creek reserves outlined in the Environmental Assessment (0.1 hectare) is therefore considered to be an accurate indication. Along these lines, open trenching is the most appropriate method of pipeline construction in this area and will be adopted.

6 The preferred project

The preferred project is the project presented and assessed in the Environmental Assessment, with the addition of the changes discussed in **Section 2** of this report. In summary the changes are:

- General changes to the layout and design of the proposed water recycling plant at the corner of North Street and East Parade, Fairfield. (refer to site layout plan A0123-C-0001-21 and elevation plan A0123-C-0001-22 provided in **Appendix A)**;

- The pump station at the water recycling plant will be located within a walled and roofed structure designed so that façade noise levels do not exceed 85 dB(A) L_{Aeq} and 97 dB(A) L_{A1}; and,

- A change in the proposed route alignment in the area from the proposed water recycling plant to Taylor Street, Fairfield to avoid the impacts to the riparian corridor (refer to revised alignment plan PORRW-PL-A-0029 in **Appendix B)**.

As a result of the plant design change, the option of constructing an earth embankment across the northern boundary of the proposed water recycling plant is no longer feasible and has been abandoned. However, Fairfield City Council have advised that this option is undesirable due to potential impacts to flood behaviour and loss of floodplain storage

7 Revised Statement of Commitments

Following consideration of the responses received by the Department of Planning regarding the proposed recycled water scheme and the Environmental Assessment, the commitments outlined in Section 7 of the Environmental Assessment have been reviewed. A Revised Statement of Commitments is presented in **Table 7-1**. Amendments and additions to the original table are displayed in bold font. Due to additions the original commitments have been renumbered.

Table 7-1 Revised Statement of Commitments

Objective	Reference	Commitment	Timing
General			
Ensure compliance with environmental management measures	1	The activity would be carried out consistent with the procedures, safeguards and mitigation measures identified in this Environmental Assessment.	Pre-construction and construction
	2	Systems to track compliance with all environmental management measures will be implemented throughout construction.	Pre-construction and construction
	3	AquaNet would ensure (as reasonably practical) compliance with all of its commitments. Pre-construction and pre-operation compliance reports would be submitted to the Director-General of the Department of Planning prior to construction/operation, and construction compliance reports would be provided to the Director-General and relevant councils at 6 monthly intervals during construction.	Pre-construction and construction
	4	An environmental impact audit report (construction) would be submitted to the Director-General no later than 3 months after construction is complete. An environmental impact audit report (operation) will be submitted to the Director-General a maximum of 24 months after the project begins operation.	Pre-construction and construction
	5	**Construction environmental management plans (CEMPs) will be prepared each for construction of the Fairfield water recycling plant and construction of the recycled water distribution pipeline and facilities (i.e. two separate plans). These plans will incorporate the mitigation measures contained in the Environmental Assessment, Statement of Commitments and any additional measures identified in the this Preferred Project Report.**	**Pre-construction and construction**
	6	**The CEMPs will be distributed to relevant stakeholders for review, comment and approval prior to the commencement of construction, subject to the requirements of project approval conditions**	**Pre-construction**

Objective	Reference	Commitment	Timing
	7	**Prior to the commencement of operations, separate operational environmental management plans (OEMPs) will be prepared for the water recycling plant and the distribution network. These plans will be distributed to relevant stakeholders for review, comment and approval prior to the commencement of operation, subject approval conditions.**	**Post-construction**
Communications			
Ensure proactive and timely information is provided to the community and stakeholders	**8**	Newsletters and other communications tools will be used detailing the proposed works schedule, areas in which these works are proposed, the potential impact of the works and the proposed construction hours. The newsletters and other communications tools will also provide relevant contact details	Pre-construction and construction
	9	An internet site will be established and contain periodic updates of work progress, construction activities (including notifications) and upcoming works. The internet sire will provide details of phone and email contact points.	Pre-construction and construction
	10	A program of regular mobile community information displays will be developed and implemented.	Pre-construction and construction
	11	**A Community Consultation Plan will be developed and implemented for the project. Relevant details of the plan will be reproduced in the Construction Environmental Management Plan**	**Pre-construction**
	12	Construction Community Liaison Groups (CCLG) will be established to distribute information to the community and receive ongoing feedback. CCLGs will include representatives from the community (i.e. residents, property owners, business groups, Councils, etc)	Construction
	13	Communication made available in multiple languages	Construction
Ensure effective management of complaints	**14**	A 24 hour toll-free complaints and enquiries contact telephone number will be established for the duration of the Project.	Pre-construction and construction
	15	A procedure will be developed to ensure effective and timely management of complaints and enquiries is achieved. This will include details of a system to receive, record, track and respond to complaints and enquiries.	Pre-construction and construction
Traffic and transport and access			
Minimise cumulative impacts from multiple construction work sites	**16**	Traffic management plans (TMP) for each zone will be prepared in consultation with the RTA and relevant local councils. TMPs will include consideration of cumulative impacts where feasible.	Construction

Objective	Reference	Commitment	Timing
Minimise disruptions to traffic during construction	**17**	Construction works will be planned to minimise disruption to traffic through the use of appropriate traffic management controls, including temporary speed restrictions, precautionary signs, illuminated warning devices, manual and/or electronic traffic control and provision of temporary barriers and markers.	Construction
	18	Detour plans would be developed as part of traffic management plans (TMPs) that would re-direct traffic around the work zones by use of other parallel routes, where practicable	Construction
	19	Access to all directly affect properties along the distribution pipeline would be reinstated outside of construction hours or alternative arrangements made	Construction
Repair any damage to road surfaces as a result of the construction works	**20**	Condition surveys **(dilapidation)** of roads **and areas** used by construction traffic will be undertaken. Any necessary repairs of deterioration attributable to the impacts of construction traffic will be undertaken. Two road condition surveys will be prepared for each construction work site: the first will be prepared prior to the commencement of construction at each work site; the second following completion of construction works.	Pre-construction and post-construction
	21	**Road restoration specification and scopes will be developed is consultation with the appropriate road authority prior to the comment of restoration activities.**	**Pre-construction**
	22	**Sign-off from the appropriate road authority will be sought on completion of all road and other restorations**	**Post-construction**
Noise and Vibration			
Minimise construction noise and vibration impacts throughout construction	**23**	Construction noise and vibration management will be implemented through a noise and vibration sub plan.	Construction
	24	**Construction noise compliance monitoring will be implemented in response to receiving more than 5 complaints on any one day or night regarding excessive noise levels from construction.**	**Construction**
	25	Consultation with, and notification to, residents close to the works will be carried out before undertaking works that are audible at the nearest sensitive receiver outside approved construction hours (excluding emergency works required for safety reasons).	Construction
	26	All plant and equipment will be well maintained and, where practical, fitted with silencers.	Construction

Objective	Reference	Commitment	Timing
	27	Construction works at the facility locations to between 7am to 6pm Monday to Friday and 8am to 1pm on Saturday **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 to prevent environmental harm; approved by the Director-General of Planning.** Construction works along the distribution pipeline to 7am to 6pm Monday to Saturday in areas where the pipeline would be installed by trenching **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 to prevent environmental harm; approved by the Director-General of Planning.** **(Note: Proposed night works associated with pipebursting along Woodville Road would be excluded from this requirement. Working hours for pipebursting will be as specified by the appropriate roads authority)**	**Construction**
Ensure appropriate operational noise performance from water recycling plant and compliance with noise goals	**28**	**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.**	**Design and Operation**
	29	**The pumps at the water recycling plant will be housed inside a walled and roofed enclosure designed so that façade noise levels do not exceed 85 dB(A) L_{Aeq} and 97 dB(A) L_{A1}.**	**Design and Operation**
	30	Following completion of construction, operational noise monitoring shall be undertaken to confirm compliance with the predicted noise levels identified in the Environmental Assessment. Should the results of monitoring show that the predicted noise levels are exceeded then further feasible and reasonable mitigation measures shall be implemented in consultation with the affected property owners.	Post-construction
Flora and Fauna			
Minimise impacts to flora and fauna during the construction of the works	**31**	No degradation of bed or bank stability in any of the watercourses to be crossed as a result of the Project	Design, Construction and Operation

Objective	Reference	Commitment	Timing
	32	All feasible and reasonable measures would be undertaken to minimise the impact of construction on vegetation. Vegetation clearance would be kept to a minimum. Infrastructure would be designed to avoid significant flora species and communities.	Construction
	33	All feasible and reasonable measures would be undertaken to minimise the impact of construction on fauna. Disturbance to native fauna would be kept to a minimum. Infrastructure would be designed to avoid significant fauna habitat areas.	Construction
	34	Equipment storage areas and stockpile areas will be located in cleared areas and not within drip zones of trees.	Construction
	35	Precautions for any habitat trees removed including removal procedures, inspection of hollows and habitat reinstatement (nesting boxes etc) if required.	Construction
	36	Progressive rehabilitation of construction areas including replanting with native species where possible. In particular, replacement at a 2:1 ratio of any eucalyptus trees removed at Fairfield Park.	Construction
	37	**Prior consultation will occur with the relevant council prior to the removal of trees and other native vegetation**	**Construction**
Avoid the spread of weeds during the construction of the works	**38**	All weed removal will be undertaken in accordance with the *Noxious Weeds Act*.	Construction
Waste management (including contaminated land)			
Minimise the impacts of any contaminated soil on the surrounding environment during the construction of the works	**39**	A waste management sub plan will be prepared focussing on spoil management and contamination issues	Construction
	40	Wastes would be minimised. Reuse and recycling would be optimised. All waste would be assessed and stored in accordance with the NSW Department of Environment and Climate Change *Waste Classification Guidelines 2008*	Construction and Operation
	41	Remedial actions plans would be prepared for the water recycling plant and Rosehill reservoir and pumping station locations.	Construction
	42	Asbestos containing materials to be handled and removed by a suitably licensed contractor in accordance with Workcover NSW guidelines and disposed of in accordance with DECC guidelines.	Construction

Objective	Reference	Commitment	Timing
	43	**The CEMP shall contain appropriate protocols and requirements in the event of uncovering previously unidentified soil and groundwater contamination during all project excavations.**	**Pre-construction and Construction**
	44	Contaminated waste and asbestos to be transported in accordance with POEO (Waste) Regulation 2005	Construction
	45	An Acid Sulphate Soil Management Sub Plan (ASSMP) in consultation with relevant government Departments should be prepared prior to the commencement of the trench excavation works. The ASSMP should be based on the ASS mitigation principles set out in the *ASSMAC Management Guidelines* (1998). and should provide a framework for the ongoing management and monitoring of the impacts throughout the construction and operation phases of the project.	Construction
Waste generation during construction of the works is minimised and the re-use and recycling of waste is maximised. Waste is only disposed to landfill where re-use or recycling is not possible	**46**	Strategies for reuse, recycling and avoidance will be adopted in accordance with NSW Government's *Waste Avoidance and Resource Recovery Strategy 2006* and DECC (2008) *Waste Classification Guidelines*. These strategies must include report of waste where required by legislation.	Construction
Ensure all waste, where it is unable to be reused or recycled, is disposed of to an appropriate location	**47**	Waste materials will be classified and managed in accordance with *DECC Environmental Guidelines: Assessment, Classification and Management of Liquid and Non-liquid Wastes*.	Construction
Water quality			
Manage the generation of dust during construction	**48**	Hardstand material, rumble grids or other appropriate measures will be installed at entry and exit points to minimise the tracking of dirt onto roadways.	Construction
Ensure that erosion and sedimentation control devices are implemented and maintained such that they minimise erosion and sediment loads in surface water runoff	**49**	Erosion and sediment controls will be installed, maintained and managed prior to and throughout construction. The principles in *Managing Urban Stormwater – Soils and Construction* (Landcom 2004) will be applied).	Construction
	50	Erosion and Sediment Control Plans (ESCP) will be developed for each work area prior to the start of the construction and would be regularly updated as the works progress. These would be in the form of marked-up site drawings.	Construction

Objective	Reference	Commitment	Timing
	51	Spill kits will be provided and maintained at all major worksites taking into consideration: ▪ the sensitivity of the receiving environment ▪ the likelihood of an accident occurring that would result in a spill ▪ the proximity of the discharge point to the receiving waters ▪ the condition of the receiving water	Construction
	52	Any construction materials and fuels stored or used on site will be managed to minimise the risk of water contamination	Construction
	53	Bunded storage areas will be established for oils and other hazardous liquids in accordance with Australian Standards and EPA guidelines. Spillages will be contained and collected for appropriate disposal.	Construction
	54	Activities with the potential for spillage such as refuelling and maintenance of equipment will be conducted within appropriately bunded or covered areas to prevent uncontrolled discharge.	Construction
Visual amenity			
Minimise the visual impact of the works to receivers	**55**	Construction worksites would be rehabilitated progressively.	Construction
	56	Progressive rehabilitation of pipeline route will be undertaken.	Construction
	57	Consultation with affected residents regarding visual amenity and screening of facilities	Construction
	58	Storage of major construction equipment away from open areas	Construction
	59	Incorporate safety in-design principles for design of fixed installations	Construction
	60	Vegetation would be planted within the proposed sites to aid in ameliorating the visual impact at a broad visual catchment scale.	Construction
	61	**Landscaping Plans will be developed for both the water recycling plant and Woodville reservoir sites in consultation with the relevant local council.**	
Hazards and Risk			
Minimise impact hazardous materials to the surrounding environment	**62**	Chemicals would be used and stored in accordance with appropriate guidelines.	Construction and Operation

Objective	Reference	Commitment	Timing
	63	**The plant designer shall undertake a flood risk analysis for overland flow across the proposed water recycling plant site, including modelling of overland flows during the 100 year ARI overland flow design flood. A copy of the overland flow modelling results shall be provided to Fairfield City Council on completion.**	**Pre-construction**
Other issues			
Indigenous Heritage			
Minimise impacts of the works on items of Aboriginal heritage	**64**	Heritage assessment and ongoing consultation with registered Aboriginal groups in accordance with DECC's *Part 6 Approval – Interim Community Consultation Requirements for Applicants*	Construction
	65	Develop a Cultural Heritage Management Plan to manage impacts including a stop work provision for any unidentified Aboriginal objects found during construction.	Construction
Air Quality			
Minimise air quality impacts	**66**	All feasible and reasonable measures would be undertaken to minimise the impact of dust on sensitive receivers.	Construction
	67	**Appropriate dust controls and minimisation measures will be outlined in the CEMP**	**Pre-construction**
Utilities and Services			
Minimise impacts of the works on surrounding utilities and services	**68**	Ongoing consultation with utility and service providers to identify and locate services which interface with the project.	Construction
	69	Consultation with utility and service providers to agree any permanent protection required or utility adjustments.	Construction
	70	Contingency management plan would be developed to detail contingency planning in case of service interruption.	Operation
	71	**Engineering plans will be prepared for the proposed relocation of the stormwater drain across the proposed water recycling plant. The plans will be submitted to Fairfield City Council for review, comment and approval prior to relocation of the pipe.**	**Pre-construction**

8 Request for approval

All submissions received by the Department of Planning regarding the proposed Camellia and Rosehill Recycled Water Scheme have been considered by the proponent. Responses to general issues and key issues raised in the submissions are provided in **Section 4** of this report. Detailed responses to the submissions are provided inn the report appendices. Where required, additional information has been obtained and is presented and discussed in this report. Proposed minor changes to the project are outlined and potential impacts discussed.

On review of this report, it is anticipated that the Department will be in a position to prepare the Director-General's Assessment Report for the proposed development, for submission to the Minster of Planning for consideration,

As such, AquaNet Sydney Pty Ltd requests that the Minister for Planning grants approval for the project under Section 75J of the NSW *Environmental Planning and Assessment Act 1979*.