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 LAHC 2020/642
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Response to Submissions: Infrastructure Services Addendum

26th September 2023

For the attention of: Susan Oktay

Dear Susan,

The Riverwood Estate Planning Proposal was placed on public exhibition between 12 August and 25 September 2022.

The project has been affected by recent market changes primarily because of significant increases in construction costs impacting on the overall viability of the project.

LAHC has implemented a revised strategy that will now focus on the delivery of an exemplar first stage of the project which will deliver approximately 420 new dwellings with less impact on existing local infrastructure. This will enable the wider masterplan to be considered in the future to ensure it meets the aspirations of the local community and allow identified local infrastructure to be delivered in tandem.

Rezoning of an exemplar first stage will build on the previous renewal work at Washington Park noting that the land and proposed redevelopment in this stage mirrors the 2022 exhibited planning proposal. As the proposed first stage sits within the exhibited proposal, this means the land needed for future infrastructure such as road widening will be unaffected. The subject site is shown below in Figure 1 below:



Figure 1 Riverwood LAHC Rezoning

To suit the revised scope of the precinct, an addendum letter has been prepared that summaries the specific items relevant to the revised scope. Specifically, this letter is an addendum to the following:

1. Riverwood Estate State Significant Precinct Infrastructure Services Report (Mott MacDonald, 2022)
2. Response to Submissions: Engineering Items (Mott MacDonald, 2022)

1. Study Requirements

The purpose of the Infrastructure Services Study is to:

- Identify the existing capacity, required capacity and augmentation need for the proposal, as well as sustainability measures (WSUD) (as separate reports) and staging;
- Identify key service infrastructure including electricity, alternative energy systems, water, sewer, gas and telecommunications;
- Digital and telecommunications infrastructure which is inclusive of and not limited to precinct-wide Wi-Fi, fibre to the premises and supporting data centres;
- Forecast peak demand and generation forecasts based on proposed yields;
- Integrated water cycle management, alternative water supply, on-site generation and water recycling, end uses of drinking and non-drinking water (as a separate report);
- Identify capacity in the existing sewerage system to cater for additional loads, and, if required, propose actions to ensure the systems environmental performance will not be compromised;
- Provide a high-level assessment of the capacity of Sydney Water's network to service the development and the proposed servicing options considered for the development;
- Outline any integrates water cycle management and/or sustainability initiatives proposed for the development, particularly if they result in a reduction in drinking water demand;
- Show the location of service assets in the precinct and outline how asset risk is managed;
- Demonstrate that it has been undertaken in consultation with Ausgrid and Sydney Water, digital infrastructure and telecommunications providers and any other relevant providers. Consultation is also required with the Department's Hazard team in relation to High Pressure Gas Pipelines (Jemena Primary Loop Pipeline and APA Group Pipeline);
- Inform and supports the preparation of the proposed planning framework including any recommended planning controls or DCP/Design Guideline.

2. Infrastructure Services Report

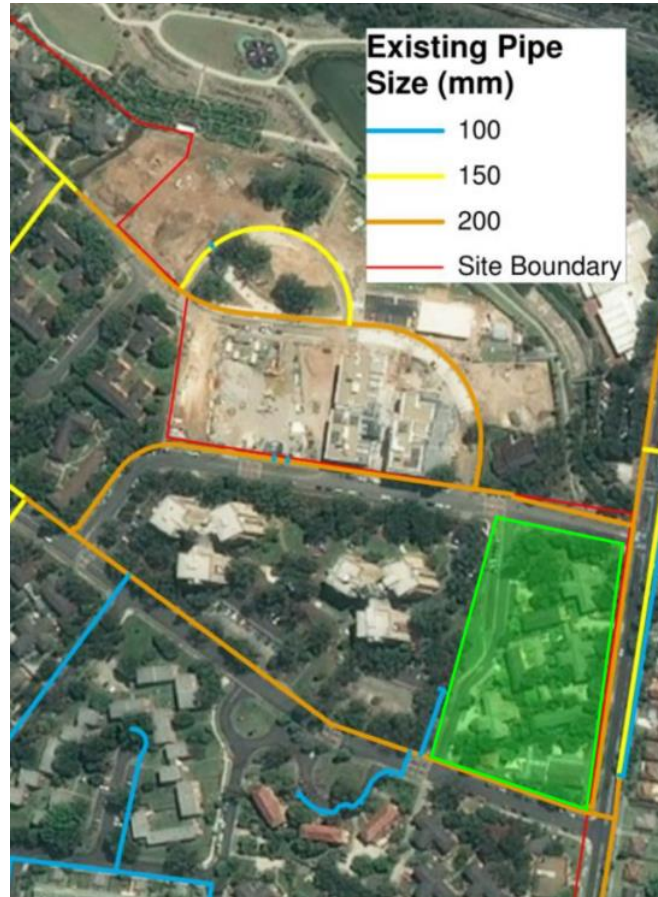
LAHC is preparing a master plan to guide the revitalisation and renewal of the Riverwood Estate SSP. Mott MacDonald has been engaged to identify existing opportunities, constraints and risks associated with civil engineering and services infrastructure to support the delivery of the master plan.

Water

The 200 mm main follows Belmore Road South where minor reticulation for the subject site connects into the water network. The Study Area contains a network of smaller existing reticulation lines, typically located within the standard trench allocation of the road reserve and 100-200 mm in size.

City of Canterbury Bankstown Council has recommended a minimum length for Roosevelt Avenue of 320m (from Belmore Road) Should be provided in the first stage to enable the road network to function appropriately during the later stages of the redevelopment. It is noted that these works would being the road widening over the existing Bankstown Sewer Sub-main.

Discussions with Sydney Water over the preferred option for this asset (relocation or adjustment) and any initial widening may mean that parts of this road will have to be reconstructed as a part of any future sewer trunk works in future stages. It is recommended that a condition be added to include a requirement for road widening of the first 260m from Belmore Road in the first stage and that consultation with council be continued prior to any development application approval for the remaining 60m pending finalisation of the strategy of the trunk sewer works with Sydney Water.



The peak hourly demand was calculated using the average hour demand for the peak day and a peak hour factor of 2. Assuming a design velocity of 1.2 m/s for the pipe, the minimum pipe size required to meet the demand is between a 300 mm and 375 mm pipe, however, a 300 mm pipe has been adopted to provide a conservative estimate and account for losses experienced over the length of the pipe. The results of this assessment are shown in Table 1 below.

Table 1: Water Main Calculations

	Result
Average Daily Demand (L/s)	2.03
Peak Daily Demand (L/s)	5.79
Peak Hourly Demand (L/s)	11.58
Velocity (m/s)	0.16
Minimum Required Pipe Size (mm)	300
Pipe Size Adopted (mm)	300

Sewer

The site is serviced via a 1,350 x 1,200 mm reinforced concrete box culvert trunk sewer main which traverses through the middle of the site. The main enters the site from the north-east corner of the site and exits through the south.

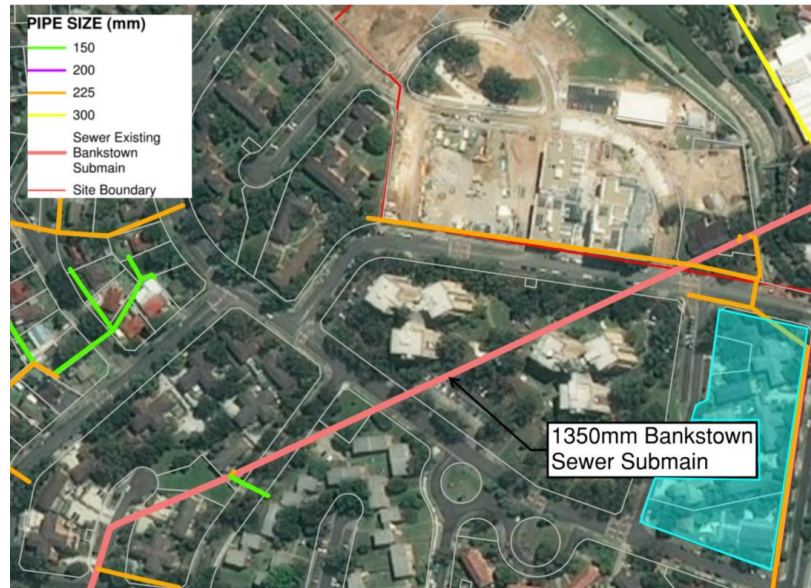


Figure 2 Existing Sewer Infrastructure with adjusted boundary in cyan



Catchment 3 drains via a series of smaller (150-225 mm) sewer mains directly to the trunk main. There are three main connection points into the trunk main, which will likely be utilised for any future connections required.

A summary of the total overall EP for the Riverwood Study Area is summarised in **Error! Reference source not found.** Sewer network for the new development is required to service an additional 7,125 EP.

Development	Assumed Dwellings	WSA 02-2002-2.2 Classification	EP / Dwelling	Total EP
Proposed Riverwood Development	417	Single Occupancy High Density Dwelling Units	2.5	1,043
Total Additional Demand				1,043

Source: Sydney Water WSA 02-2002-2.2 / A2.1.3

Electricity

The site and surrounding area receive electricity from Ausgrid, likely via the Bankstown Sub-Transmission Substation, located 1 km north-west of the site. The Riverwood Zone Substation is located approximately 1 km south-east of the site. Ausgrid's high voltage (HV) electrical network is shown in the figure below.

The ultimate Riverwood Renewal project load was estimated by Mott MacDonald at 1.251 MVA. This estimate is based on current industry standard calculations for units. It is noted that if the developers build small, energy efficient units with gas cook tops, hot water, no air conditioning and include energy efficient lighting and appliances, the load calculations could be less than those predicted. As a conservative estimate for the purpose of master planning the 1.251MVA load has been used. This can be refined as the development progresses. A breakdown of the estimated loads is provided in the table below.

Table 2: Electrical Demands

Land Use	Yield	Unit	VA per dwelling/sq m	Total Load (MVA)	Diversified
Medium / High Density Residential	572	units	3,000	1.251	1
Total				1.251	1

Further investigation of new and upgraded sewer pumping stations be undertaken in consultation with Council's Asset Planning Team and Sydney Water as required.

Gas

Gas is supplied to the site and surrounding area by Jemena. A series of 32 mm and 50 mm network mains services the existing dwellings in the Study Area.

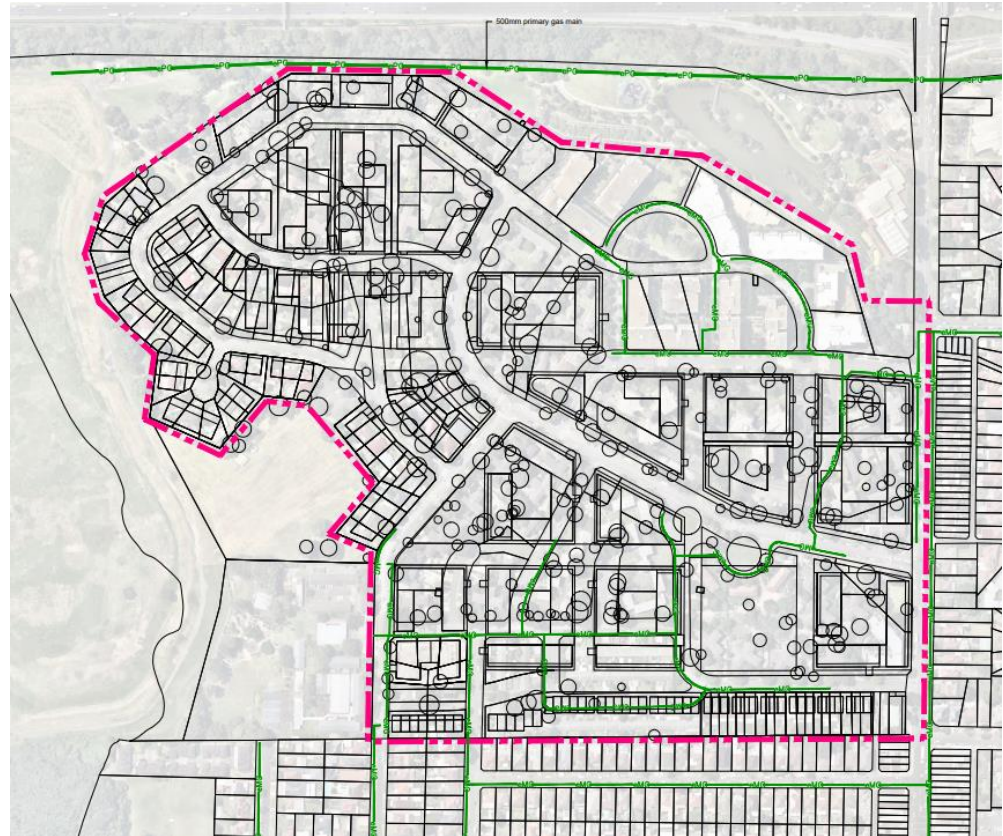


Figure 3 Existing Gas Infrastructure

As described in the Riverwood infrastructure report, the Riverwood estate is located in between two existing dangerous goods pipelines. They are Moomba-Sydney Liquid Ethane pipeline which is licensed under the Pipeline Act 1967, and the Jemena’s primary gas main, which is licensed under the Gas Supply Act.

As identified within the APA response (dated 4th October 2022) and the Department of Planning (DPE) Hazard response, the pipeline is outside of the area of concern in relation to societal risk, which describes the risk from an incident that may critically injure significant population.

APA have indicated that overall, they do not have any objection to the proposed zoning adjustments for the subject site and additionally the DPE hazard team noted that the site is also far enough from this particular pipeline that would likely comply with individual risk criteria for residential uses and sensitive uses. As such, the proposed location is considered suitable for residential uses and sensitive uses.

As a part of any future development application it is recommend that any future proposal is assessed against AS2885 and referred to APA to determine if a Safety Management Study (SMS) is required for the site.

As noted in the Department of Planning (DPE) Hazard response to the Jemena gas pipeline, for land use safety consideration and in accordance with the current Clause 2.77 of the Transport and Infrastructure SEPP, we are only considering the risk exposure from the existing high pressure dangerous goods pipelines that are licensed under the Pipeline Act 1967. As such, the risk exposure from the Jemena’s Primary Gas Main does not require to be further investigated.

As part of any future development application for sites near the primary gas main that continued coordination with Jemena occur to ensure that any protection requirements for the assets are met.

Telecommunications

Existing telecommunications infrastructure within the site boundary will be decommissioned and removed. Care should be taken to ensure that the existing NBN infrastructure servicing the Washington Park development and fibre optic cabling to Riverwood Public School are retained.

3. Response to Submissions

As part of the Riverwood Estate State Significant Precinct (SSP), The Department of Planning and Environment (DPE) has received a number of Council comments regarding the long-term renewal and redevelopment of the Riverwood Housing Estate as proposed by Land and Housing Corporation (LAHC).

These have been responded to below with a specific focus on the revised rezoning extent:

A Land Use Safety Study be prepared in accordance with the Department's Hazard Analysis Guidelines to provide guidance on the separation distances between pipelines and nearby land uses, and potential limits to population intensification. The recommendations of the report may require changes to the proposed LEP Amendments which must be undertaken and the Planning Proposal re-exhibited.

Moomba-Sydney Liquid Ethane pipeline

Gorodok Pty Ltd (APA) owns and operates the Moomba to Sydney Ethane Pipeline predominantly located within the East Hills railway corridor that runs approximately 230 to 370m south of the project area (including the revised project extent).

As identified within the APA response (dated 4th October 2022) and the Department of Planning (DPE) Hazard response, the pipeline is outside of the area of concern in relation to societal risk, which describes the risk from an incident that may critically injure significant population.

APA have indicated that overall, they do not have any objection to the proposed zoning adjustments for the subject site and additionally the DPE hazard team noted that the site is also far enough from this particular pipeline that would likely comply with individual risk criteria for residential uses and sensitive uses. As such, the proposed location is considered suitable for residential uses and sensitive uses.

As a part of any future development application it is recommend that any future proposal is assessed against AS2885 and referred to APA to determine if a Safety Management Study (SMS) is required for the site.

Jemena primary gas main

As noted in the Department of Planning (DPE) Hazard response to the Jemena gas pipeline, for land use safety consideration and in accordance with the current Clause 2.77 of the Transport and Infrastructure SEPP, we are only considering the risk exposure from the existing high pressure dangerous goods pipelines that are licensed under the Pipeline Act 1967. As such, the risk exposure from the Jemena's Primary Gas Main does not require to be further investigated.

As part of any future development application for sites near the primary gas main that continued coordination with Jemena occur to ensure that any protection requirements for the assets are met.

Widening and upgrades to Roosevelt Avenue (including the traffic signals) should be delivered in Stage One. Council recommends a minimum length for Roosevelt Avenue of 320m (from Belmore Road) should be provided in this first stage to enable the road network to function appropriately during later stages of the redevelopment

It is noted that the revised extent of the project would drastically reduce the need for any widening and upgrade to Roosevelt Avenue and as such this is not proposed for the revised project extent.

If any future precinct works or further rezonings occur and the upgraded to be triggered, it is noted that this would bring the road widening over the existing Bankstown Sewer Sub-main. Discussions with Sydney Water over the preferred option for this asset (relocation or adjustment) and any initial widening may mean that parts of this road will have to be reconstructed as a part of any future sewer trunk works in future stages.

The summary of infrastructure service items outlined in the main Riverwood Estate State Significant Precinct Infrastructure Services Report and summarised for the revised project extent, are valid for the new extent and adequately address the SEARS requirements and respond appropriately to the relevant submissions.

Yours sincerely,

For and on behalf of
Mott MacDonald Australia Pty Ltd



Daniel Fettell

Pronouns: he, him, his

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