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MOUNT GILEAD PTY LTD AND S & A DZWONNIK

Mount Gilead Rezoning Infrastructure Services Report

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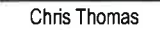
MOUNT GILEAD REZONING INFRASTRUCTURE SERVICES REPORT

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Project 301015-03252 - MOUNT GILEAD REZONING – INFRASTRUCTURE SERVICES

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1 INTRODUCTION

This Infrastructure Services Report has been commissioned by Mount Gilead Pty Ltd and S & A Dzwonnik to identify infrastructure required to service the proposed redevelopment of a parcel of land referred to as Mount Gilead (the Site). This report also identifies existing infrastructure in the vicinity of the site, capacity limitations associated with that infrastructure and potential upgrades and/or extension works that will be required to adequately service the site.

The site is located within the Campbelltown City Council Local Government Area (LGA) and comprises Part Lots 1 and 2 Deposited Plan 807555 and Lot 59 Deposited Plan 752042, which are in the ownership of Mount Gilead Pty Ltd, and Lot 61 Deposited Plan 752042, which is in the ownership of S & A Dzwonnik.

The Infrastructure Services Report has been prepared to accompany a Planning Proposal for the proposed rezoning of the site for residential development and outlines strategies to provide the following services to the site for the proposed development:

- Potable Water;
- Wastewater;
- Electricity;
- Gas; and,
- Telecommunications

Dial Before You Dig (DBYD) plans have been sourced to identify all existing services in the vicinity of the site. These plans identify services currently within or adjacent to the site and include assets under the ownership of Sydney Water, Trility, Endeavour Energy, Jemena and Telstra.



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2 REZONING PROPOSAL

A concept for the proposed urban development of Mount Gilead is presented in the Mount Gilead Site Masterplan (refer to **Appendix 1**). This concept has been prepared under a Planning Proposal that was submitted by Campbelltown City Council to the former NSW Department of Planning and Infrastructure (DPI) (*now the NSW Department of Planning & Environment*).

It is proposed to rezone Mount Gilead for urban purposes under an amendment to the *Campbelltown Local Environmental Plan 2014*. The rezoning proposal seeks to convert a rural landholding to urban land uses, which will require provision for utility services.

Planning studies supporting the proposed rezoning have been used as a basis for determining a lot yield that will deliver in the range of 1400 to 1700 residential dwellings. This report has been prepared based on a total residential yield of 1700 residential dwellings, as per the current Site Masterplan (refer to **Appendix 1**).



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3 POTABLE WATER

3.1 Existing Services

Mount Gilead is located within Sydney Water's area of operation. There is currently no potable water reticulation infrastructure in the vicinity of the site. The site is located adjacent to Sydney Water's Rosemeadow reservoir zone.

A 1200 mm diameter (DN1200) water main is located to the west of the site on land owned by Mt Gilead Pty Ltd. This pipeline is owned and operated by Trility, who operate and maintain the nearby Macarthur Water Treatment Plant (WTP). This DN1200 main feeds into the Sydney Water trunk network at Sugarloaf, which is located to the north of Rosemeadow. The Trility pipeline is the ultimate bulk water source for Sydney Water's Rosemeadow Elevated Supply System.

3.2 Future Requirements

WorleyParsons has prepared a 'Stage 1 – Strategic Planning Investigation' for potable water servicing options for Mount Gilead (*WorleyParsons, 2014*). The Stage 1 Strategic Planning Investigation has identified and assessed a range of options for the supply of potable water to the site, including options for connection to the Rosemeadow reservoir zone and connection to the DN1200 Trility pipeline.

The preferred potable water servicing option for the site involves connection to Sydney Water's Rosemeadow reservoir zone and creation of a new reservoir zone to service high level lots within the site. The infrastructure required to fulfil this preferred option would include:

- A DN250 supply main (*approximately 580 metres long*) along Appin Road from the north-eastern corner of the site to an existing DN450 main located at the intersection of Appin Road and Kellerman Drive, Rosemeadow.
- A 24 kW water pumping station (*approximate duty point 28 l/s @ 52m*), which to be located at the northern boundary of the Mount Gilead site.
- A DN150/200 trunk main (*approximately 2.3 km long*) which is to be adjacent to the eastern boundary of the site (*Appin Road*).
- An elevated security reservoir with a nominal capacity of 0.85 ML and top water level elevation of 207 mAHD, which is to be located at the southern extent of the site.



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4 WASTEWATER

4.1 Existing Services

There is currently no wastewater reticulation system in the vicinity of the site. The nearest wastewater reticulation system to the site is Sydney Water's system that services the suburb of Rosemeadow to the north of Mount Gilead.

The nearest wastewater infrastructure to the site is a pressure main that services the township of Appin, located approximately 7 km south of Mount Gilead. This main ultimately discharges into the Rosemeadow wastewater reticulation system north of Mount Gilead.

4.2 Future Requirements

WorleyParsons has prepared a 'Stage 1 – Strategic Planning Investigation' which identifies and assesses wastewater servicing options for the Mount Gilead site (*WorleyParsons, 2014*). A number of wastewater servicing options have been investigated, including connection to the Glenfield-Liverpool wastewater system and construction of an on-site treatment plant.

The preferred wastewater servicing option involves connection to the Glenfield-Liverpool gravity wastewater system. This would require the following trunk infrastructure:

- A new 310 kW wastewater pumping station, which would need to be located at the lowest point in the Mount Gilead site.
- Two rising mains, each approximately 1.2 km long, which would extend from the wastewater pumping station to a local high point in Rosemeadow. A DN150 rising main would be required to service initial stages of the development and would have sufficient capacity to cater for development of approximately 500 lots. A DN200 main would be required to service subsequent stages of the development.
- A DN300 gravity sewer, approximately 3.8 km long, which would convey wastewater from the local high point in Rosemeadow to a point of connection in the Glenfield wastewater system at Woodhouse Drive, Ambarvale.

It is unknown if there is sufficient capacity in the Appin Road pressure main to service any development at Mount Gilead. The potential to connect the site to this main would be assessed in the Detailed Planning phase of the project subsequent to site rezoning.



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5 ELECTRICITY

5.1 Existing Services

The Mount Gilead site is located within Endeavour Energy's area of operation. DBYD plans provided by Endeavour Energy show that there is currently no adequate existing electricity infrastructure in the vicinity of the site. There are existing electricity lines that run parallel to Appin Road adjacent to the site. However, it is understood that these lines would not have sufficient capacity to service Mount Gilead.

Other than the electricity lines that run parallel to Appin Road, the nearest electricity infrastructure to the site services existing residential dwellings in the suburb of Rosemeadow, located just north of Mount Gilead.

5.2 Future Requirements

Initial discussions with Endeavour Energy suggest that the proposed development can be supplied with electricity from the Ambarvale Zone Substation. Advice provided by Endeavour Energy is as follows:

- Initial supply to the site of the proposed development could be provided from the existing network, as determined from the current 11 kV feeder load reading. This would need to be confirmed during detailed design.
- In order to service the proposed development in its entirety (*i.e. up to 1700 lots*), two new 11 kV feeders would need to be installed from the Ambarvale zone substation to the site. These new 11 kV feeders would need to be connected to the existing high voltage network.
- It is likely that a new zone substation will need to be installed within the region to service the future development of the region. Endeavour Energy continually monitors the load on the Ambarvale zone substation and will determine when the zone substation needs to be augmented.
- The existing power poles running along Appin Road cannot accommodate the new 11 kV feeders. Therefore, either new poles would be required or the feeders would need to be installed underground, preferably within the Appin Road reservation.

Any further requirements for the upgrade of electricity infrastructure to service the site would be confirmed subsequent to a formal connection request to Endeavour Energy. A formal connection request would need to be completed at the Development Application (DA) phase of the development.



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6 GAS

6.1 Existing Services

There is currently no reticulated gas service in the vicinity of the site. The nearest gas main to the site is the 'Eastern Gas Pipeline' which is a 457mm diameter high pressure Primary Main that is the major gas supply line between Sydney and the Gippsland Basin in Victoria. This main is owned and operated by Jemena and is located approximately 600 metres from the western site boundary.

Limited detail regarding existing reticulated gas infrastructure is available. However, it is understood that there is reticulated gas infrastructure to the north of the site in the suburbs of Rosemeadow and St Helens Park and to the south of the site at Appin.

6.2 Future Requirements

In order to provide gas supply to the site, connection to the existing reticulated gas network to the north of Mount Gilead would be required.

Initial discussions with Jemena have established that at this stage there is sufficient capacity within the existing infrastructure to service the proposed development. It is most likely that the gas connection would be made at Rosemeadow and would run down Appin Road and into the site.

The feasibility of connection to Jemena's existing system at Rosemeadow or St Helens Park would be subject to confirmation after a Commercial Connection Application has been processed by Jemena. This would need to be undertaken at the Development Application phase of the project.

A direct connection from the Eastern Gas Pipeline to the site is unlikely to be a feasible option for servicing the development as it would require construction of a Primary Receiving Station, which is likely to be cost prohibitive.



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7 TELECOMMUNICATIONS

7.1 Existing Services

Telstra's existing copper and fibre optic cabling is located in existing residential areas to the north of Mount Gilead. Nearby Telstra telephone exchanges are located at St Helens Park and Menangle. The St Helens Park exchange is less than 2 km from the Mount Gilead site.

A high intensity copper main line runs north-south through the Mt Gilead site. In addition, an optic fibre line is located along the eastern side of Appin Road adjacent to the site.

7.2 Future Requirements

Telecommunications services would be provided within the proposed development site by Telstra under the Universal Service Obligation arrangement referenced under the *Telecommunications Act 1997*. Existing Telstra infrastructure would need to be extended from the north via Appin Road to reach the site.

Initial discussions with NBN Co. indicate that the proposed development may be eligible for the National Broadband Network (NBN). The final arrangement of telecommunications providers would be established during the Development Application and detailed design stages of the project.

Telstra's Network Integrity team have advised that relocation of the high intensity copper main and all associated infrastructure (*e.g. pits, access chambers, poles, lead-ins, pillars and elevated joints*) can be relocated and would be done so at subsequent phases of the development. The scope of relocation works would be confirmed once a final development layout has been prepared.



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8 CONCLUSIONS

This report documents the preferred infrastructure servicing strategy for the proposed rezoning of the Mount Gilead site. The strategy outlines servicing requirements for the provision of potable water, wastewater, electricity, gas and telecommunications for the proposed future development of the site for residential land use.

In summary, the proposed servicing strategy comprises the following augmentation works to existing infrastructure:

- **Potable Water**

Connection to Sydney Water's Rosemeadow elevated system and construction of a new reservoir zone to service high level lots within Mount Gilead, including construction of a DN450 water main connecting to the Rosemeadow system, a DN150/200 main parallel to Appin Road, a water pumping station at the north-eastern corner of the site and an elevated security reservoir at the south-eastern corner of the site.

The requirements for potable water servicing will be confirmed in close consultation with Sydney Water during the 'Stage 2 – Detailed Planning Phase'.

- **Wastewater**

Construction of a wastewater pumping station (*approximately 130 l/s*) and twin rising main system (*approximately 1200m long*) in order to discharge into the existing Glenfield wastewater transportation system. This will also involve construction of approximately 3.8 km of DN300 gravity sewer through the suburbs of Rosemeadow and Ambarvale to connect to Sydney Water's existing system.

The requirements for wastewater servicing will be confirmed in close consultation with Sydney Water during the 'Stage 2 – Detailed Planning Phase'.

- **Electricity**

Two new 11 kV feeders would need to be installed from the Ambarvale zone substation to the site and the new 11 kV feeders would need to be connected to the existing high voltage network. It is likely that a new zone substation will need to be installed within the region to service the future development of the region.

- **Gas**

Connection to Jemena's existing reticulated gas network at Rosemeadow via a new trunk main which will be located along Appin Road. The feasibility of this connection will be confirmed by Jemena upon completion of a Connection Application, which will be undertaken at the Development Application phase of the project.



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- **Telecommunications**

Connection to Telstra's network of copper and fibre optic cabling and potential connection to the NBN (subject to confirmation of rollout details by NBN Co.). The final arrangement of telecommunications providers will be established during the Development Application and detailed design stages of the project.



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9 REFERENCES

- WorleyParsons (April, 2014), 'Mount Gilead Water & Wastewater Servicing Strategy'



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Appendix 1 Mount Gilead Site Masterplan

(Source: Cox Richardson, 14th July 2014)

