

menanglepark



INFRASTRUCTURE REPORT

Infrastructure Report

January 2010



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1.0 Introduction

This report has been prepared on behalf of Campbelltown City Council and Landcom to summarise the major 'lead in' works necessary to service the proposed Menangle Park release area, consisting of approximately 3400 lots.

The proposed Menangle Park release area is bounded on the West and South by the Nepean River, on the East by Menangle Road and to the north by the water supply channel and Mount Annan Botanic Gardens. The F5 freeway passes through the eastern portion of the release area.

The infrastructure addressed in this report is restricted to the major services ie, Sewerage, Potable Water, Recycled Water, Electricity, Telecommunications and Gas services. This report seeks to provide a summary of the scope and extent of work required and an expected timing for the provision of these services.

2.0 Existing Services

Various servicing plans were obtained through an underground services searching agent, producing advice from:-

AGL
Telstra
Integral Energy
Duke Energy &
Optus

No specific underground search was received in relation to Sydney Water facilities, these services have been verified by reference to Sydney Water's Hydra system.

A plan showing the existing services within and adjacent to the release area is attached as Appendix A.

2.1 Services Identified

2.11 Potable Water

The existing village of Menangle Park is serviced by a 200mm diameter main from the Campbelltown South System, with distribution mains down to 100 mm diameter within the existing village.

Filtered water gravitates via a privately built, owned and operated 1200mm diameter pipeline to Sugarloaf. A 750mm diameter main extends from the Sugarloaf pipeline on to supply Narellan South Reservoir, located approximately 3km north west of the release area.

2.12 Recycled Water

No recycled water facilities exist within the vicinity of the release area.

2.13 Waste Water

The villages of Menangle and Menangle Park are currently unsewered and are serviced by on-site sewerage systems. There is no sewerage system existing within the vicinity of the development area.

Due to the level of environmental sensitivity of the Nepean River and the environmental health risks of the onsite sewerage management, the existing villages of Menangle and Menangle Park are required by the government under Sydney Water's Operating License to be serviced under stage 1 of the New South Wales Government's Priority Sewerage Program, subject to approved funding. The scheme was put on hold because of the government's announcement to proceed with the Menangle Park rezoning. Sydney

Water has requested that provision be made in the Menangle Park servicing for the flows from Menangle village.

2.14 Electricity

TransGrid has recently completed the construction of a 330/132/66kV electricity substation on 9.74 hectares acquired from Landcom in the north of the release area. This substation is to augment the supply capability of the South West Sydney Growth Area particularly the fast growing Macarthur areas within Campbelltown, Wollondilly and Camden local government areas.

A 330kv transmission line traverses the northeast corner of the release area from Menangle Road to north of the Freeway contained within a 60.96 metre wide easement.

Two 66kv lines traverse the northeast corner of the release area from Menangle Road to the TransGrid site and are contained within an easement up to 43.4 metres wide.

11kv lines exist in the vicinity generally located along Menangle Road and within the existing roads of Menangle Park village providing services to the village and adjoining properties.

2.15 Communications

Optus and Telecom both have optical fibre cables that extend from the south adjacent to the Freeway and pass to the east and are within the site adjoining Menangle Road.

Telstra also have a number of optical fibres running from the south west along Menangle Road, one cable extends through the Menangle Park village along Cummins Road and Station Street, then extending north along the western side of the Main Southern Railway.

Telstra also have coaxial cables running from the south through the release area as well as local mains servicing the village including a small exchange located on Menangle Road, east of the Cummins road intersection

2.16 Gas

The main Sydney Moomba natural gas pipeline runs through the northeast portion of the site contained within a 24.385 metre wide easement, contained within a 3 metre easement running within the existing gas easement is the Ethane Gas pipeline owned by Agility.

Duke Energy owns the eastern gas pipeline which is located within the eastern easement boundary of the 330kv Transmission easement.

AGL have a dual gas gathering well in the northwest of the site, adjacent to the Glenlee Washery together with a dual Gas gathering line that runs along the western side of the Main Southern Railway. Up to 8 wells together with gas gathering lines and access rights are proposed within the release area, agreement between landowners and AGL is needed to confirm the final location of these wells.

3.0 Servicing the release Area

Maunsell Australia Pty Ltd were engaged on behalf of Landcom to Review the Water and Waste Water Servicing strategy for Menangle Park release area. The requirements for servicing the Menangle Park release area were set out in Sydney Waters's letter dated 6th February 2008 (Appendix B) to Maunsells. These requirements were fully investigated and costed by Maunsell in their report dated 8th April 2008, the findings of this report are summarised as follows:

3.1 Water

The Macarthur Water Filtration Plant provides potable water to the Macarthur Delivery Area and services developments in the Campbelltown, Camden and Wollondilly local government area's and is located on Wilton Road, between Broughton Pass and Appin about 20 km south of the Campbelltown Central Business district.

The Macarthur plant has spare headwork capacity. The latest Sydney Water Asset Management Plan indicates that the plant has:

- A maximum Day capacity~160MLD
- A Design Maximum Day Capacity =265MLD
- A 2030 projected Maximum Day Demand ~210 MLD

Filtered water gravitates via a privately built, owned and operated 1200mm diameter pipeline to Sugarloaf near Glen Alpine to serve the Narellan and Campbelltown South Water Supply systems. At Sugarloaf a 750mm inlet pipeline continues on to supply Narellan South Reservoir, located approximately 3 km North West of the study area. The Narellan South Reservoir serves the Camden LGA and has a capacity of 60ML and a full service level of 161 metres AHD. There are no plans in Sydney Water's current Growth Servicing Plan to upgrade the reservoir.

The existing village of Menangle Park is served by a 200mm diameter main from the Campbelltown system and would not have sufficient capacity to serve the proposed development.

Sydney Water have advised that because of the future demand on Narellan South Reservoir by the future Oran Park and Turner Road precincts the developers of Menangle Park will need to consider the provision of an additional reserve storage capacity via a 2-3ML elevated reservoir on the site. Sydney Water normally provides one third of the maximum daily demand of the reservoir as reserve storage capacity for operational and fire fighting needs.

Sydney Water also advise that as development in the South West Growth proceeds, a duplication of the 750mm inlet main to Narellan reservoir will be required.

3.2 Waste Water Servicing

There is no sewerage system existing within the Menangle Park release area, the existing village is currently serviced by individual on-site sewerage systems.

There are three options for servicing the release area;

- Provision of Pumping stations and rising mains delivering to West Camden Sewerage Treatment Plant
- Provision of Pumping stations and rising mains delivering to Glenfield
- Provision of a new Sewerage Treatment Plant in close proximity to the site.

3.2.1 West Camden

An upgrade of the West Camden Sewerage Treatment Plant has recently been completed allowing the Plant to process 23ML per day, more than double its previous capacity of 10.8 ML per day. Allowances for the flows from Menangle Park have been included in the current upgrade, including Menangle village. Sydney Water has advised that “there is no capacity in the system network east of the Nepean River without major amplifications being undertaken”. Accordingly the only likely point of connection to the West Camden system is at the headworks of the Treatment Plant near Sewer Pump Station 440. Therefore servicing and connection to West Camden Sewerage Treatment Plant may involve the construction of up to 3 pumping Stations and a rising main of approximately 12.5 km.

3.2.2 Glenfield

Sydney Water has indicated that the Glenfield Sewerage Treatment Plant has a rating of 46ML/day Average Dry Weather Flow(ADWF), and a current gauged inflow of 41ML/day ADWF, excluding Menangle Park, there is the potential for up to 26,500 residential lots that may potentially be developed in the future within the catchment. Preliminary calculations indicate this could produce additional flow in the order of 16-17ML/day of ADWF, significantly in excess of the 5ML/day spare capacity. Therefore the Glenfield Sewerage Treatment Plant may not have capacity to serve Menangle Park without further augmentation.

3.2.3 New Menangle Sewerage Treatment Plant

The third possibility for servicing Menangle Park involves the construction of a new Sewerage Treatment Plant (STP) in the local area. This would need to satisfy buffer-zone and environmental requirements, and go through an approvals process involving the preparation of a Review of Environmental Factors. The time required to undertake this process, and then construct the plant, would need to be considered in regard to potential delays to development.

A STP in the vicinity of Menangle Park could also service other developments in the area, such as Mount Gilead and other future developments in the Macarthur South region. However, the effluent quality will need to meet Australia & New Zealand Environmental Conservation Council guidelines and water quality objectives set by Department of Environment & Climate Change & Water/Environmental Protection Authority for discharges to the river.

3.3 Recycled Water

There is no reticulated recycled water scheme in the Menangle Park area. Sydney Water undertook an investigation of a recycled water network sourced from West Camden only to confirm that there was only sufficient recycled water to supply the Growth Centres release areas.

Recycled Water sourced from West Camden would, however, come at a significant cost, due to the length of the infrastructure needed to reticulate recycled water within Menangle Park; accordingly this cost would need to be balanced against the provision of individual rainwater tanks to satisfy BASIX requirements.

The provision of a local STP may however, provide a more economical source of recycled water, subject to the capital cost of the provision of the new Treatment Plant

A new 2ML elevated reservoir would need to be built to facilitate storage and reticulation of recycled water, regardless of the source of supply.

Landcom has commissioned MWH to prepare an Integrated Servicing Strategy for Waste Supply, Recycled Water and Waste Water for the release area including Menangle Village, The Sada rezoning and possibly Gilead.

This report will be finalised in collaboration with Sydney Water and is expected to be completed mid 2010.

3.4 Electricity

Integral Energy has confirmed that a Zone Substation will be required to service the Menangle Park development. The Zone Substation will be 66kv/11kv and will require 2x66kv feeders to supply it. The 66kv lines will require easements of 18-25 metres in width. Easement widths can reduce to 6 metres if the 66kv are underground, however the difference in cost would need to be funded by the developer.

The Zone substation would take 3-5 years to establish from the time that Integral Energy gains ownership of an appropriate substation site, refer Integral Energy's letter 7th June 2007(Appendix C).

Landcom engaged Connect Infrastructure to undertake a feasibility study to determine a suitable site for the location of the Zone Substation within the release area. Connect considered and costed several sites with the 3 sites shown in (Appendix F, drawing 75723.08.M19C) being shortlisted. Negotiations with the landowners for options 1 & 2 are continuing, together with further investigations to ensure compliance with Integral Energy's requirements.

3.5 Telecommunications

Telstra have confirmed that their network is currently not sufficient to meet the likely demand of the Menangle Park Development. The technology and level of services to be provided would be determined closer to the time of commencement of development, depending on Telstra's deployment policy and any negotiations based on a commercial agreement, refer Telstra correspondence 19th February 2008(Appendix D).

3.6 Gas

No gas service is located within the vicinity of Menangle Park, Alinta have advised that the Camden-Narellan 210kPa network may be able to supply with a PE main extension depending upon the number of lots for each stage alternatively a 6 kilometre extension of 250 mm steel main from the Campbelltown Trunk Reduction Station with a Secondary Reduction Station are required to service the release area see email 1st August 2008 (Appendix E).

4.0 Summary

This report summarises the required 'lead in' works and major infrastructure required to provide the necessary services to the Menangle Park release area.

All services, with possibly the exception of sewerage services, can be provided to the proposed release area from trunk services that exist within or adjacent to the site. The provision of sewerage services may involve significant 'lead in' works depending on the alternative of supply that is recommended following the completion of the Integrated Servicing Strategy.



Appendix A; Plan of Existing Services



Appendix B; Sydney Water Letter



Appendix C; Integral Energy Letter



Appendix D; Telstra Letter



Appendix E; Email from Alinta



Appendix F; Plan of Preferred Zone Substation Sites