

12 April 2022

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Attention: William Hodgkinson



Serviceability of Glenmore Park Stage 3

Background:

Mirvac Homes (NSW) Pty Ltd (Mirvac) has engaged Qalchek to provide a brief summary of the provision of water and wastewater services for the Glenmore Park Stage 3 (Development).

The Development is located south of Glenmore Park Stage 2 and extends to Chain-O-Ponds Road. It will consist of a total of approximately 2400 residential lots as well as community facilities, a local center and a school.

The Development is assumed to take place between 2023 and is planned to be completed by 2030.

An options assessment report was prepared for Sydney Water to show that the Development is serviceable. The outcome of that report is that the Development will be serviced via the Bringelly Road water supply zone with regards to potable water and will be discharging the waste water into the existing Penrith waste water system. The options assessment was done following Sydney Water's planning criteria.

Potable Water:

With regards to potable water the servicing strategy is based on 3 main points:

- The proposed development will be serviced via the Bringelly Road water supply zone by extending and where necessary amplifying the existing system coming out of Glenmore Park Stage 2
- A water main amplification within the existing Glenmore Park Stage 2 development to give an additional major feed into the site and create a resilience link to de-risk potable water supply
- Due to the height of some parts of the development in relation to the supply levels of the Bringelly Road water supply zone a water booster pumping station and associated pipework will be required to guarantee adequate pressure supply for all proposed development areas.

Figures 1, 2 and 3 show the servicing plan for the development site with regards to potable water as well as the forecast for the delivery of the main infrastructure items. The servicing plan has been updated to show the new proposed development layout and timing of delivery.

Figure 1 – Potable Water Staging Plan and Schematic layout

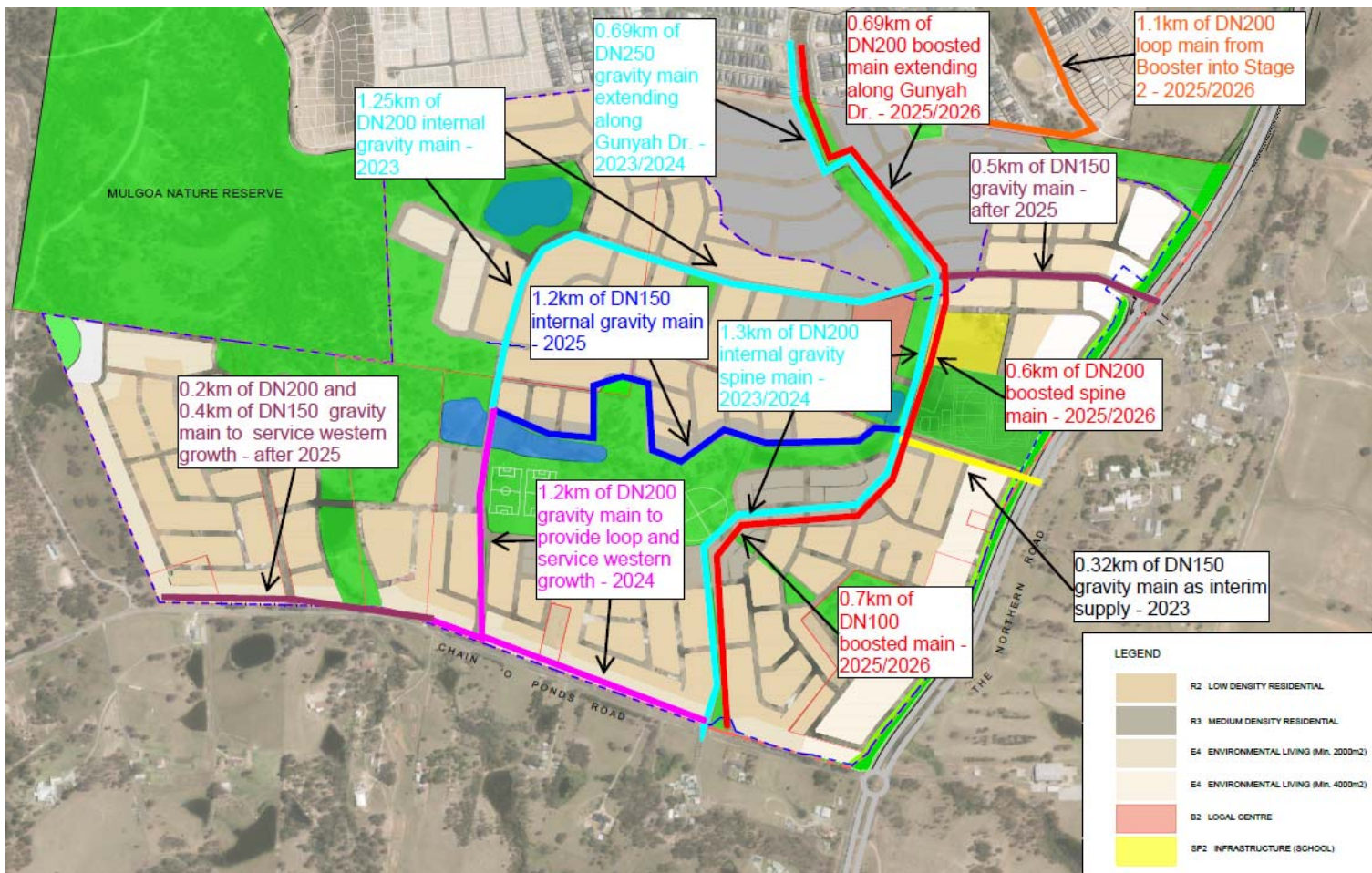


Figure 2 – Potable Water Resiliency Link



Figure 3 – Potable Water possible Water Booster Pumping Station locations



Stage	Assets
2023-25 (excl. Booster)	<ul style="list-style-type: none"> • 0.69km, DN250 • 3.75km, DN200 • 1.52km, DN150 • 1.2km, DN300 resiliency link
After 2025 (Booster Included here)	<ul style="list-style-type: none"> • 5.8ML booster • 2.59km, DN200 • 1.5km, DN150 • 0.7km, DN100

This technical proposal has been in principle endorsed as the preferred servicing solution by Sydney Water.

Waste Water:

With regards to waste water the servicing strategy is based on three main points:

- The proposed development does have two distinctive catchments based on the surface levels, these catchments will be serviced by two new waste water pumping stations (C3 and C6 in Figure 4 below)
- The rising mains coming from these pumping stations will discharge into the existing waste water system in Glenmore Park Stage 2
- Due to the increased loading a section of downstream gravity waste water system will have to be upgraded as to ensure that Sydney Water's environmental license conditions with regards to overflows are met.

Figures 4 and 5 show the servicing plan for the development site with regards to waste water as well as the forecast for the delivery of the main infrastructure items.

Figure 4 – Waste Water Schematic Layout

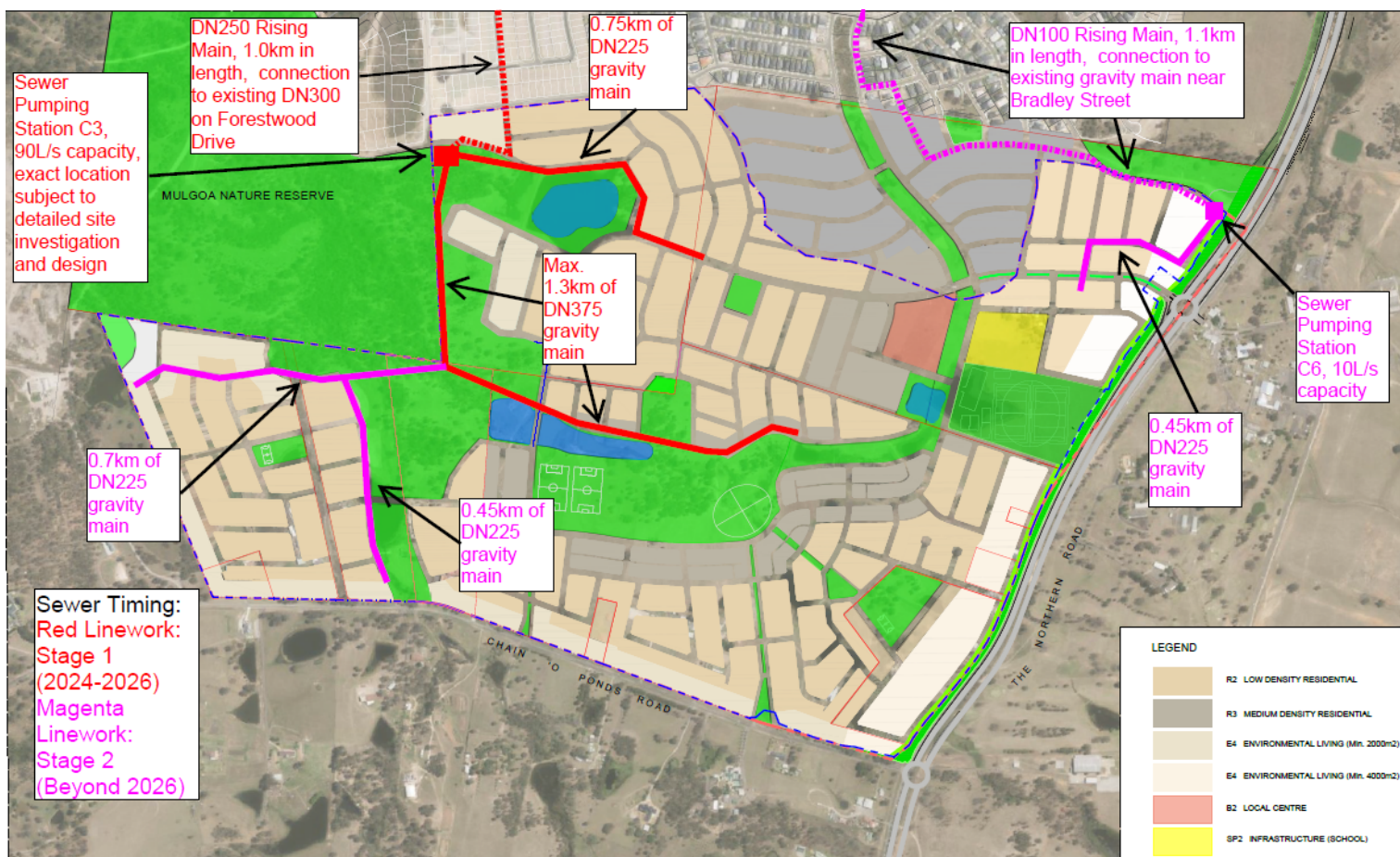


Figure 5 – Schematic of DN450 waste water main amplification along Surveyors Creek Road



Stage	Assets
2023-25	<ul style="list-style-type: none"> • Pump Station C3 and 1.0km Rising Main • 0.75km, DN225 • 1.3km, DN375 • 0.9km, DN450 duplication
After 2025	<ul style="list-style-type: none"> • Pump Station C6 and 1.1km Rising Main • 1.6km, DN225

This technical proposal has been in principle endorsed as the preferred servicing solution by Sydney Water.

Other Comments:

It is to be noted with regards to the waste water servicing strategy that the two existing sewer pumping stations in Glenmore Park will require upgrades, however Sydney Water have advised that they will undertake these works independently from this development project as part of their Penrith system upgrade works scheme.

It is also noted that as part of the review of the system a sensitivity analysis was done to model the impact of infill growth in the entire Glenmore Park area. The outcome determined some of the upgrades that are mentioned above and the review found that the abovementioned planned extension and amplification works will be able to service the proposed new development as well as the forecasted infill.

If there are any questions please do not hesitate to contact Florian Jaehne from Qalc hek on 02 4722 8181.

Kind Regards

A handwritten signature in black ink, appearing to read 'F. Jaehne', with a stylized, cursive script.

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