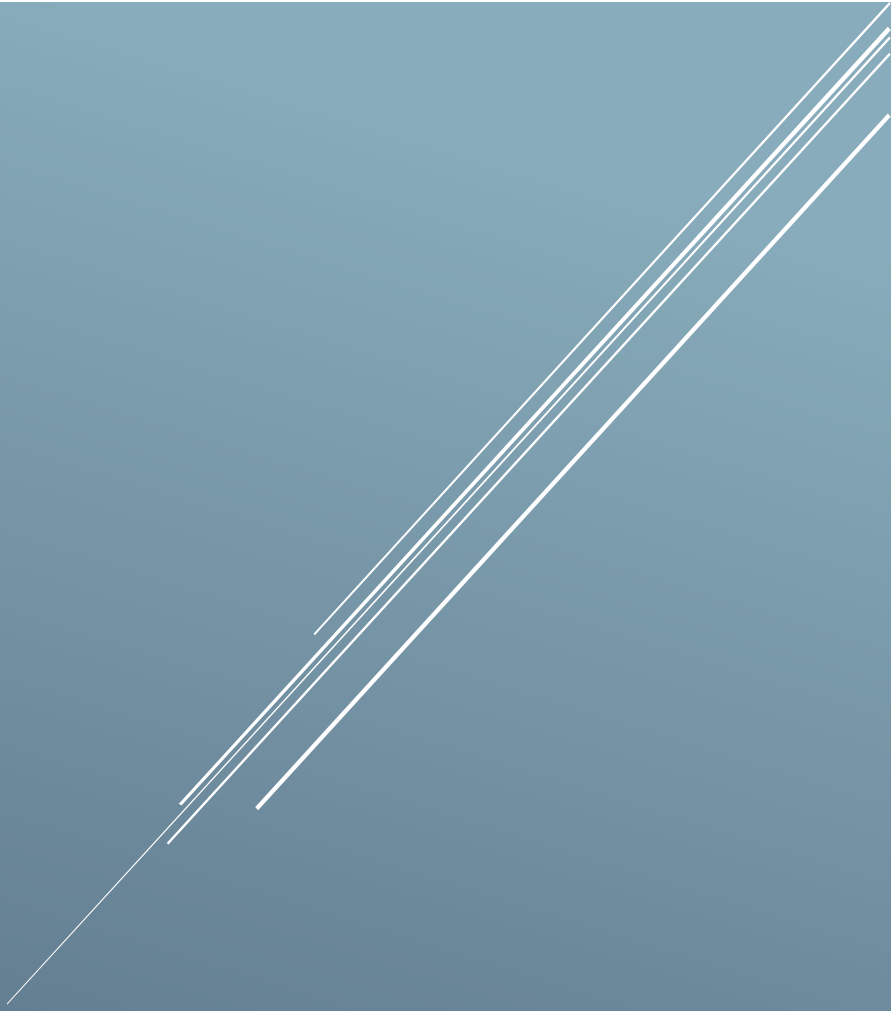


Appendix F – Precinct Water Supply Considerations



SUNNYSIDE ESTATE

Precinct water supply considerations

Contents

1. Introduction.....	2
2. Zoning	2
3. Dwelling Assessment	3
4. Existing Water supply network	5
5. Water Network Upgrade.....	6
6. Proposed Sunnyside Estate.....	6
Figure 1: indicative area for investigation (source: WWCC 2020)	2
Figure 2: Zoning (source: WWCC).....	3
Figure 3: developed and undeveloped areas in the indicative area for the investigation	4
Figure 4: Water supply network (Source: RWCC)	5
Table 1: Sunnyside Estate landuse (source: Siva Projects 2020)	4

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1. Introduction

In response to the initial submissions for the proposed LEP Variation for the Sunnyside Estate development the following advice was received from WWCC:

“I confirm that Council is requesting that the planning proposal investigates, and has consideration to, infrastructure provision across a wider precinct than just the planning proposal subject site. A wider precinct area was identified, and is referenced in your planning proposal, in the 2013 Spatial Plan and this should be considered as the minimum area for further investigation and assessment for infrastructure. We would also request that this area be extended to include rural residential areas between your site and the wider precinct area (as referenced from the Spatial Plan 2013). This consideration should include that area of rural residential development through to the existing urban development”.

“I have included a plan with this email which provides an indicative area for investigation and reflects that described above” (refer Figure 1).

“Following our meeting, further discussions with our Infrastructure team have identified that there are potential issues with the capacity of the Koorngal Sewerage Treatment Plant and its ability to cater for expansion and intensification across the catchment. It is anticipated that your investigations will provide further information and detail that will assist with this planning and analysis to determine the capacity of the sewerage treatment plant and any staging required to cater for any future expansion and intensification of development in the catchment.”

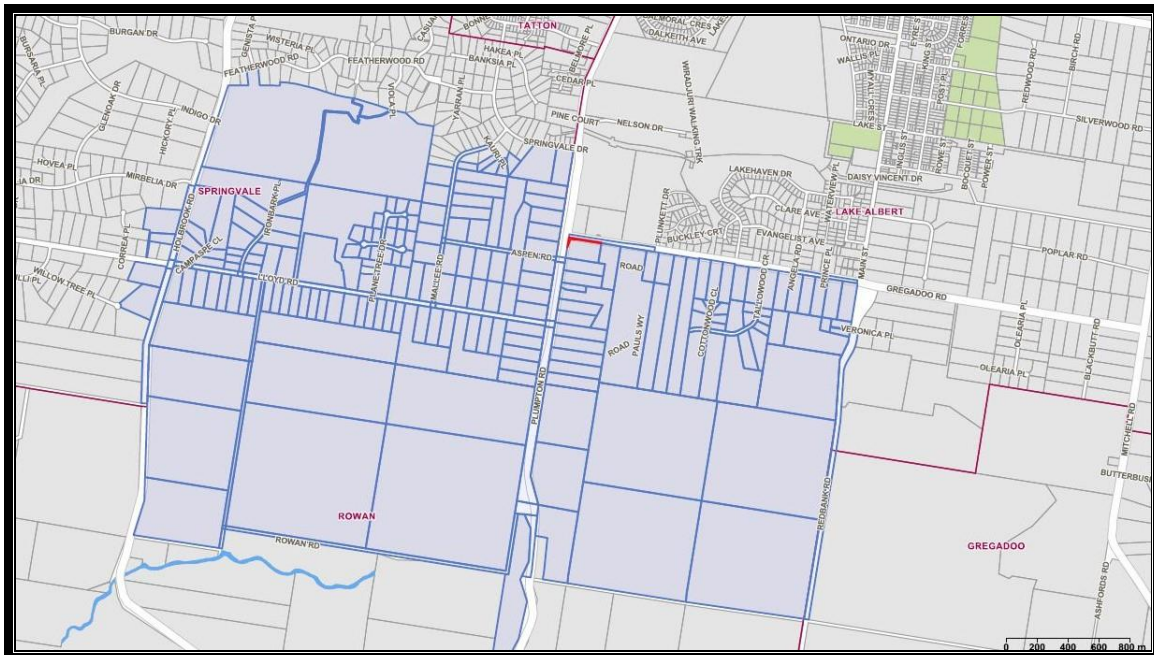


Figure 1: indicative area for investigation (source: WWCC 2020)

The indicative area for investigation is shown in Figure 1 and comprises approximately 1,111 hectares including the proposed Sunnyside Estate (110ha).

2. Zoning

The current zoning within the indicative area for the investigation comprises R5 (Large Lot Residential), RU6 (Transition) and a small area of RE1 (Public Recreation) to the north and RU1 (Primary Production) to the south.

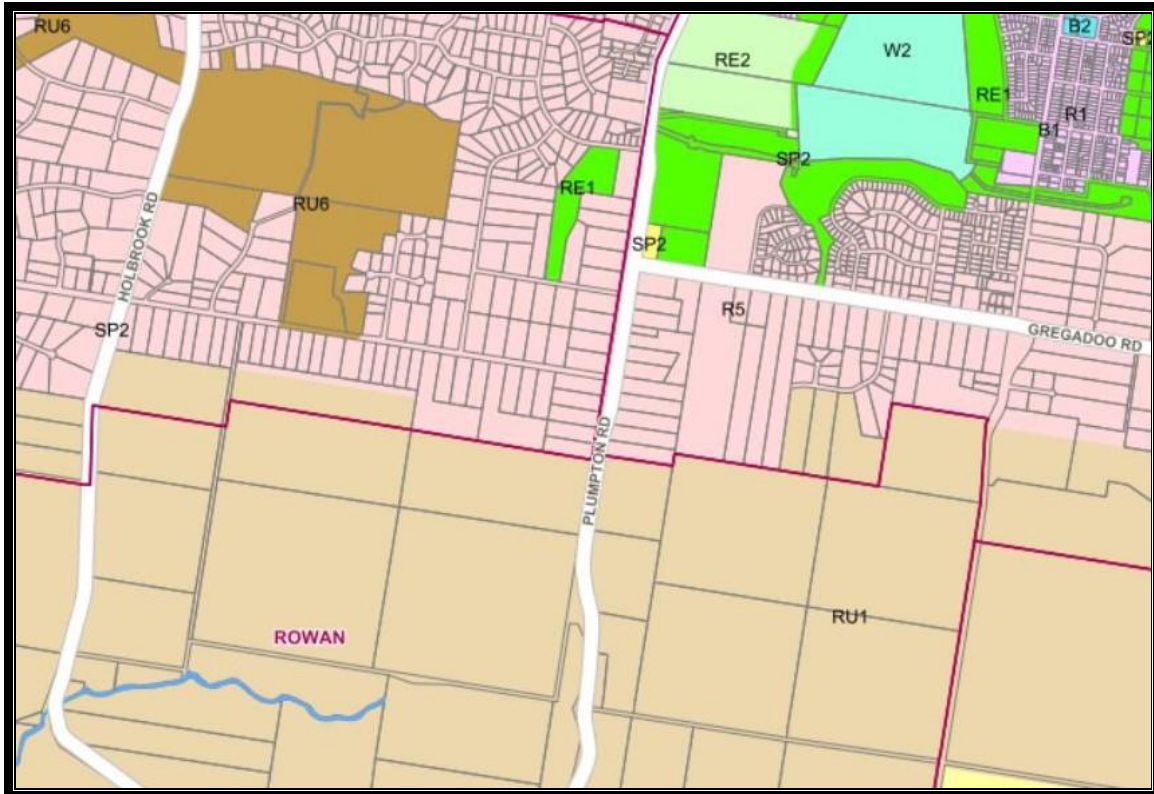


Figure 2: Zoning (source: WWCC)

3. Dwelling Assessment

Wagga wagga City Council advised that the assessment of the potential development within the area should be based on dwellings of 1,200sqm blocks or 8 dwellings per hectare as per the draft Local Strategic Planning Statement (page 40, par 3) development assumption.

The area across the south of the indicative area for the investigation being un-developed rural land (yellow area Figure 3) could be developed in a planned manner whereas the areas across the northern part of the indicative area for the investigation (blue area Figure 3) currently has housing on large blocks hence redevelopment would be constrained by the existing dwellings and various owners' decisions whether to redevelop or subdivide their blocks.

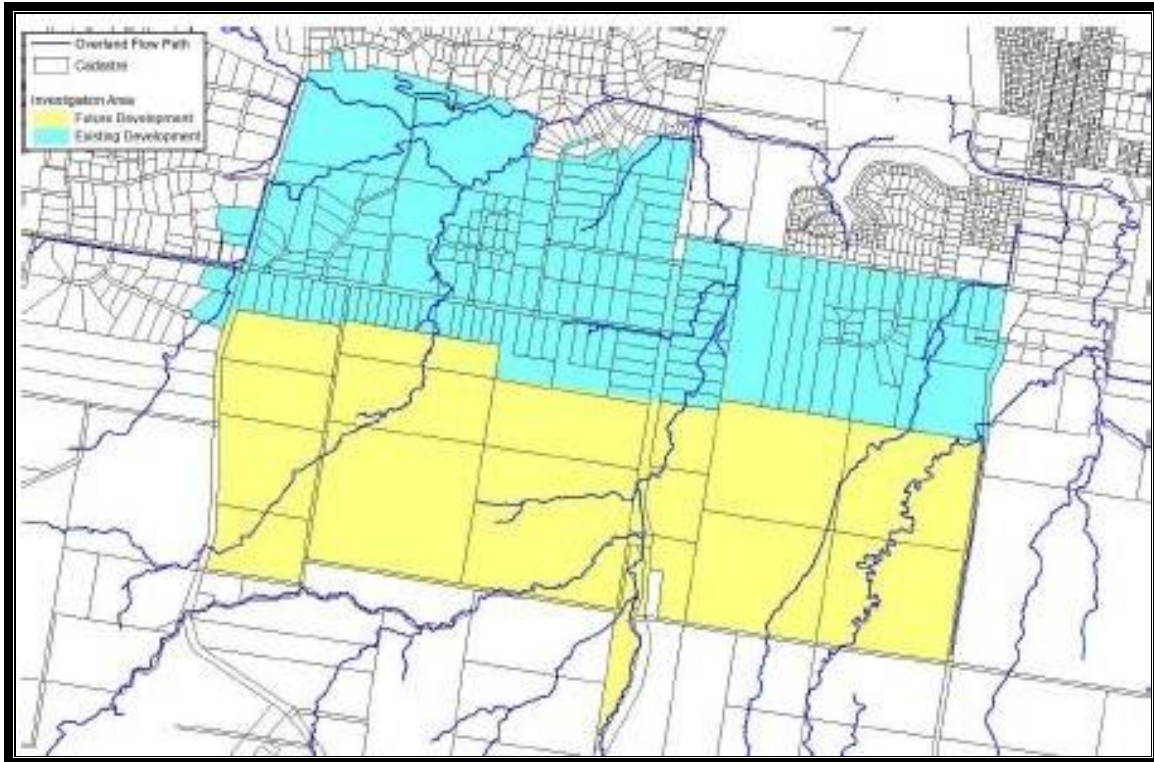


Figure 3: developed and undeveloped areas in the indicative area for the investigation

The concept plan for the proposed Sunnyside Estate which covers 110ha has the following land take:

Landuse	Ha	% of estate
Residential	48.75	44.32%
Shop	0.56	0.51%
Homestead	3.25	2.95%
Open space corridors	25.19	22.90%
Ponds/wetlands	4.20	3.82%
Roads	11.70	10.64%
Electrical easements	16.35	14.86%
Totals	110.00	100.00%

Table 1: Sunnyside Estate landuse (source: Siva Projects 2020)

The areas to the east and west of the proposed Sunnyside estate both have significant areas of open space/waterway areas/wetlands.

As noted above, the indicative area for the investigation comprises approximately 1,111ha of land. Assuming 30% of the area is dedicated to roads, wetlands, open space, easements etc. and 8 dwellings per hectare the yield for the indicative area for the investigation would be 6,222 dwellings, say 6,000 dwellings (or 6,000 ET) and at 2.6 persons per dwelling this would equate to a potential population of 15,600 people. (1ET = 2.6 persons per tenement in 2011 and expected to decrease to approx. 1ET = 2.47 in 2031).

4. Existing Water supply network

Figure 4 below shows a schematic view of the subject land in relation to existing water supply infrastructure. The water supply network comprises pipework of varying sizes and materials.

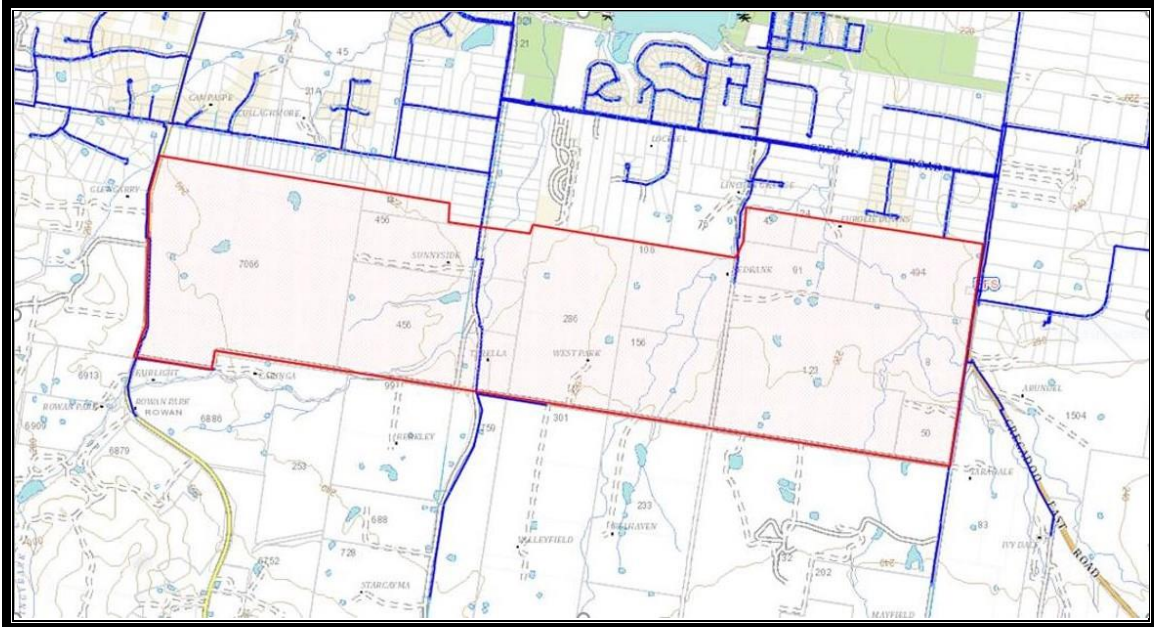


Figure 4: Water supply network (Source: RWCC)

RWCC advised that:

“Further advice relating to the larger/broader area you’ve highlighted will be very similar to the original advice given for the Sunnyside Estate.

There are existing water mains servicing part of the area in question. Some of this infrastructure could be extended to supply additional development, however some of the existing water supply infrastructure would need to be upgraded to supply any additional development. There is insufficient capacity within the system in its current configuration to supply the scale of development indicated. To overcome this, there may be significant new infrastructure, as well as significant upgrade of existing infrastructure required. This may be in relation to the water main network, but may also impact on both pumping operations and reservoir storage. Further detailed analysis would be required to determine the scope of works required to supply the development (either fully or in part), as well as detail any service or supply limitations or restrictions.

The land highlighted is at a serviceable elevation, however this land is currently supplied by 2 separate water supply systems due to capacity and elevation. This adds complexity to the analysis of the subject land, as it involves the water main network, but also numerous reservoirs, pump stations and treatment plants spread over multiple systems.

At present, there has not been any detailed analysis done regarding water supply in this area relating to development on this scale. The subject land is at the very southern side of the Wagga Wagga reticulation network. The land highlighted would form a significant

development area, and would therefore require significant assessment and analysis to determine any more detailed information regarding the serviceability of the subject land.”

5. Water Network Upgrade

As noted in Section 4, significant water infrastructure upgrades would be required to service the whole of the indicative area for the investigation. This work would involve upgrades of:

- Watermains
- Water pump stations
- Reservoirs

As the development of the area would occur over considerable time, the upgrades could be undertaken incrementally as required as the area was developed.

Masterplanning of the water network required for the whole area would identify the ultimate pipe size requirements and could, subject to water quality considerations, minimise the installation of pipework that had to be upsized at a later date as development of the area continued.

6. Proposed Sunnyside Estate

The proposed Sunnyside Residential Estate with circa 400 dwellings would be developed over a period of several years with possibly 50 to 100 blocks in the initial stage then subsequent stages of approx. 50 blocks per year depending on demand. In this development scenario, the maximum water demand from the residential estate would not occur for approx. 8 to 10 years.

RWCC advised in relation to the proposed Sunnyside Estate that:

“The land is situated at an elevation (approx. 220m – 230m AHD) that is potentially serviceable from our existing Wagga High Level supply system. This system has a maximum serviceable elevation of 240m AHD.

To enable the additional demand to be supplied, there would be significant new infrastructure and upgrades required to increase the supply capacity south of the Plumpton Rd and Gregadoo Rd intersection. Further detailed analysis would be required to determine the exact scope (and associated cost) of works required, including any potential impacts on supply to surrounding areas” (Refer Reference 2).

References

1. RWCC email dated 4th February 2021
2. Sunnyside Estate Infrastructure Report, Aug 2020, John Randall Consulting Pty Ltd
3. Wagga Wagga Draft Local Strategic Planning Statement - September 2020
4. Wagga Wagga City Council website
5. Wagga Wagga City Council Engineering Guidelines for Subdivisions and Development Standards