

Utility Services Infrastructure

Romsey Structure Plan

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Executive Summary

Macedon Ranges Shire Council has engaged a consultant team led by Plan2Place Consulting to prepare a structure plan to guide the long term development of the township of Romsey. As part of this team, Cardno has undertaken an assessment of the availability of utility services infrastructure in the town to inform the structure plan of any constraints and opportunities associated with this infrastructure.

Following is a summary of the outcomes of this investigation:

Sewerage

The Romsey Recycled Water Plant treats sewage from Romsey and Lancefield and is nearing capacity. Greater Western Water are planning a significant upgrade of the capacity of the RWP. The buffer from the RWP to residential development is currently under assessment including the impact of the upgrade.

GWW has advised that large areas of development would need to be assessed on a case by case basis to understand its impact on the sewer network.

Water Supply

Greater Western Water expect that there is some capacity in their existing potable water supply network to cater for additional growth in Romsey, with peak day water demands dropping significantly from allowances in their previous modelling. Network modelling is required to assess the impact of both the water supply demands and the location of proposed large scale development.

Integrated Water Management options have been recently assessed by Council and opportunities have been identified for the use of recycled and alternative water sources to reduce potable water demand and increase the availability of potable water.

Electricity Supply

Powercor's 22kV overhead feeder that currently supplies Romsey has reached capacity and a new feeder is required to be brought to the area to provide more load for future development. The provision of underground cables to new development areas requires additional electrical infrastructure for bushfire protection and needs to be assessed by Powercor to ensure that this additional infrastructure can be provided.

Gas Supply

Ausnet Services gas supply infrastructure in Romsey will require upgrading to service significant additional growth in the town.

Telecommunications

NBN Co provides fixed line services to Romsey and they advise that their current infrastructure has capacity to service any long term planned expansion of the township without the need for any new key infrastructure.

Council has previously assessed the provision of mobile internet in the municipality. Council engagement with the individual carriers is important to achieving improvement in mobile internet.

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1 Introduction

Cardno has been engaged by Macedon Shire Ranges Council as part of a consultant team led by Plan2Place Consulting to prepare a Structure Plan for the township of Romsey. The Structure Plan aims to establish a settlement boundary to guide the long term development of the town.



Cardno's role is to undertake a high level assessment of the availability of utility services infrastructure servicing the town, its current capacity, and key opportunities and constraints for the provision of utility services infrastructure for future development. Issues requiring further investigation are to be identified.

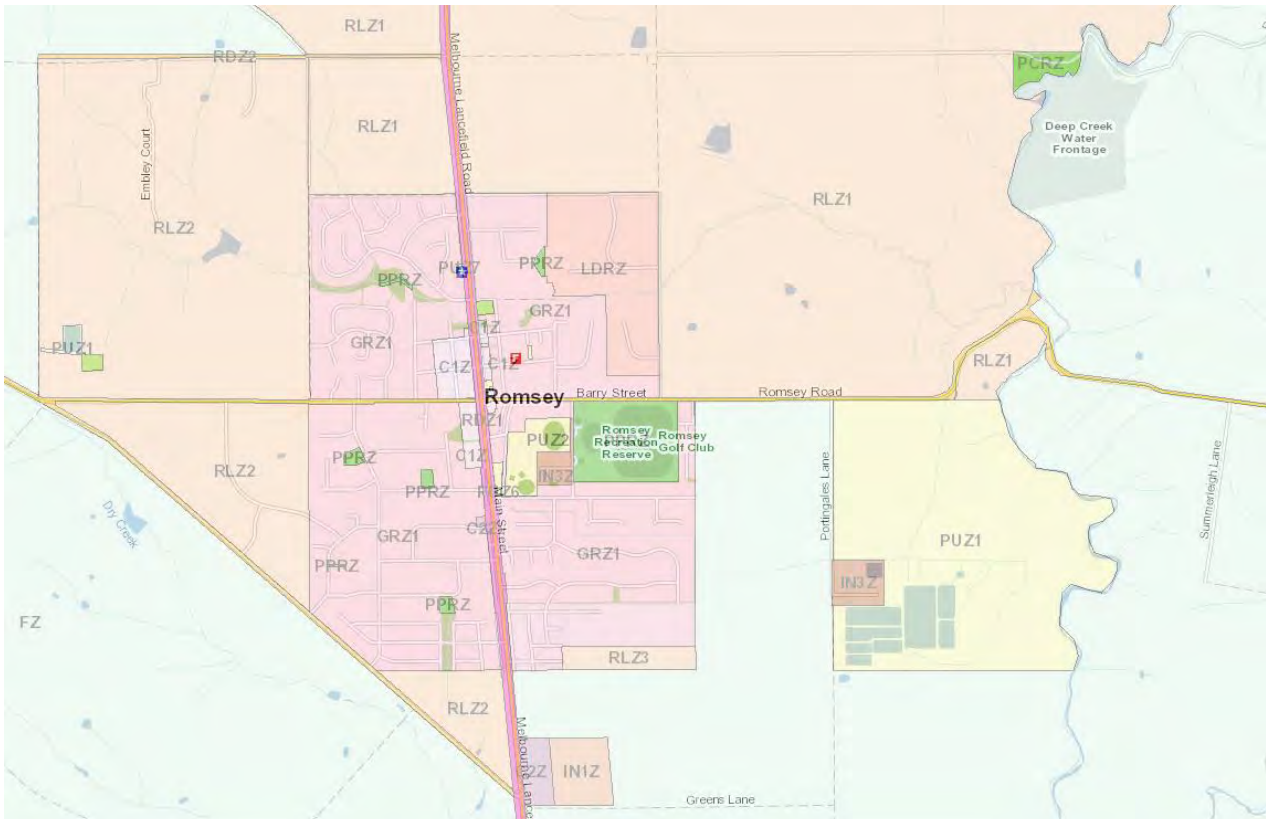
Under this assessment, Cardno has initially undertaken a background review of the structure plan area including existing development and land uses, topography and existing utility services infrastructure. Subsequently we have liaised with the relevant utility services authorities regarding the capacity of their existing infrastructure and any known constraints and opportunities, and any other considerations that may impact on the provision of utility services for future development.

The following report summarises the outcomes of this assessment.

2 Structure Plan Area

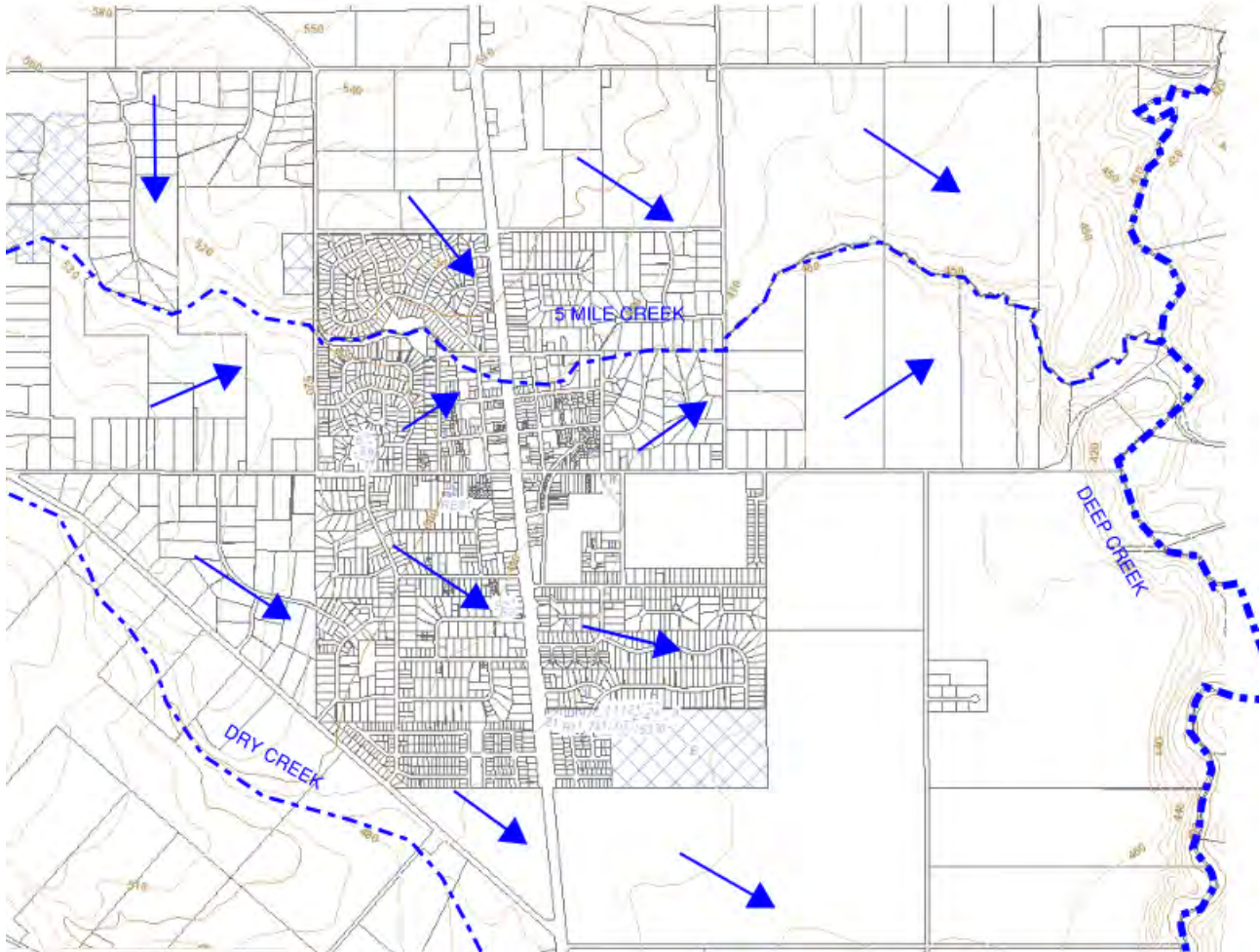
The following planning map extract shows the existing land zonings of Romsey, with the town centre and commercial heart surrounded by standard density residential development and a pocket of low density residential in the north east, encircled by rural living farming zones.

Melbourne Lancefield Road bisects the town running north – south, and Barry Street / Romsey Road is the main east - west road. A small parcel of land at the southern edge of the town on the east side of Melbourne Lancefield Road (north of Greens Lane) is zoned commercial / industrial but is currently undeveloped.



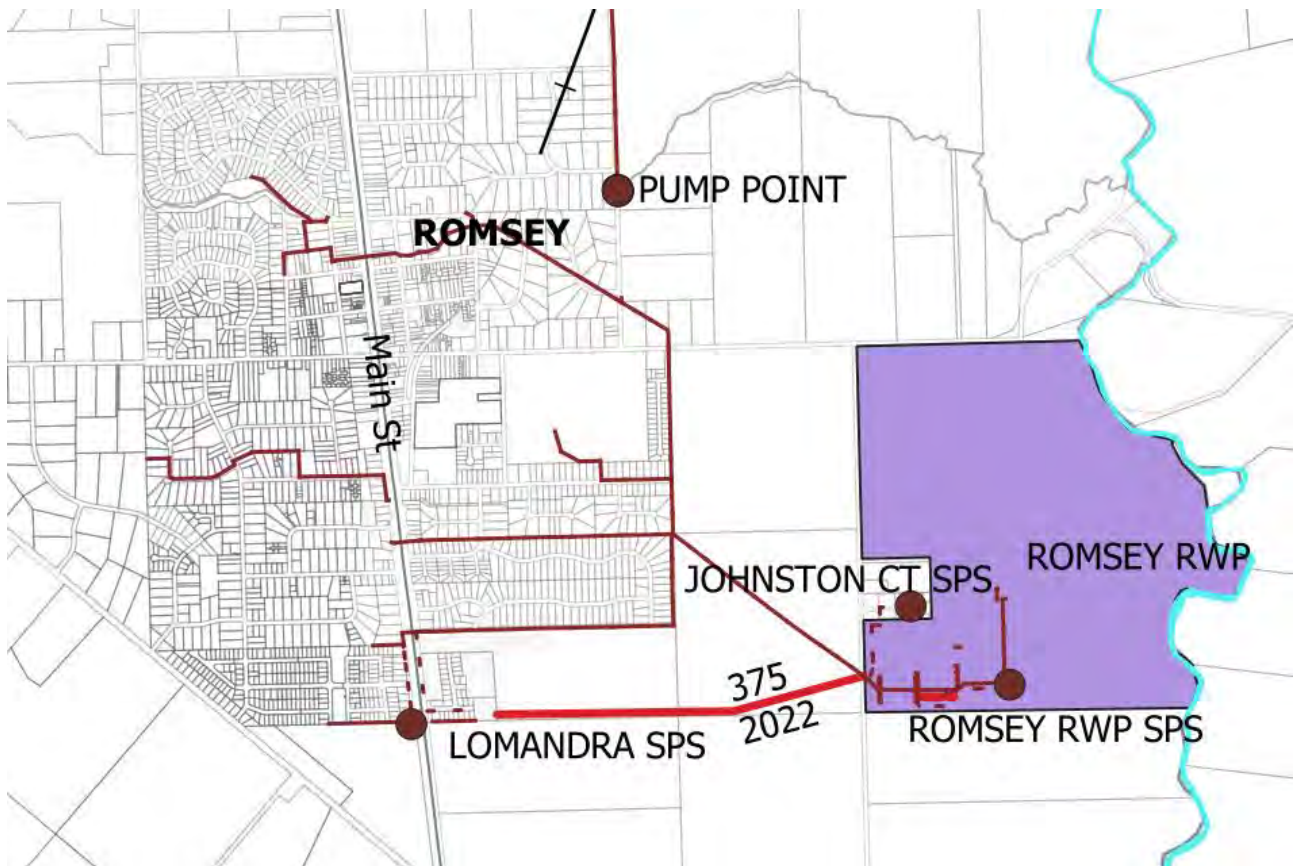
Notable other features include the Romsey Recreation Reserve and Golf Club to the east of the town centre, and the Romsey Recycled Water Plant (RWP) on the Public Use zoned land approximately 800 m east of the eastern edge of the towns residential zoned land. A small parcel of industrial zoned land that is partially developed abuts the RWP.

The following plan illustrates the topography of the town, which general falls from the high, steeper land to the west of the town to the flatter land abutting Deep Creek to the east. 5 Mile Creek flows west to east bisecting the northern section of the town, with Barry Road / Romsey Road nominally the southern ridge line for this northern catchment. The land to the south of this generally falls to the south east.



3 Sewerage Reticulation

Greater Western Water (GWW) is the authority responsible for sewerage reticulation facilities for the region. The following extract from GWW's sewer network planning map shows their existing trunk sewer infrastructure in the area in brown.



The majority of the existing town is sewered via gravity to the RWP for treatment. The low density residential area is not sewered. The Pump Point shown to the north east of town is part of the system that conveys sewage from Lancefield to the RWP for treatment.

GWW has advised that their sewer network planning is based on the population of Romsey almost doubling from the current population of 6000 to approximately 11,500 by 2067. This translates to an increase in lots connected to the sewerage network of 1400 lots, slightly below the expected growth in population as some new lots may not be sewered.

The RWP has limited capacity to cater for additional sewerage flows from future development. GWW are progressing planning for the upgrade of the RWP to more than double its capacity. Construction of the upgrade is planned to commence in mid to late 2022 and be completed within the next 5 years.

The land between the RWP and residential development provides a buffer for odour from the RWP. The extents of the buffer are currently under assessment and will be influenced by the planned upgrade.

GWW's only planned future sewer asset in Romsey is shown in red in the plan above. This comprises a proposed branch sewer to provide gravity outfall for the Lomandra and Autumn Views residential estates at the southern edge of town. This will allow for the removal of the temporary sewer pump stations currently servicing this area. Further detail is shown on the following plan.

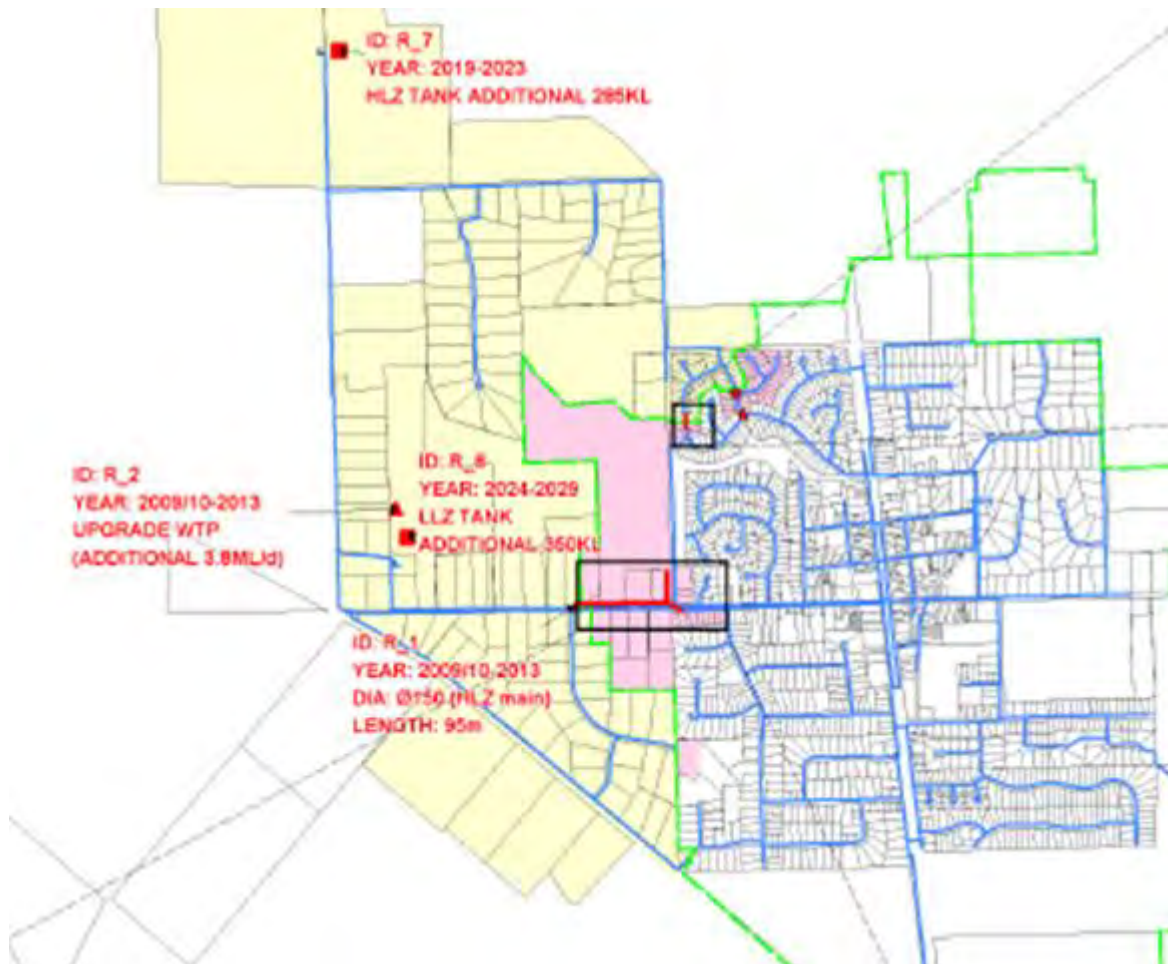


GWW has advised that generally land to the south of this is too low to be controlled by the existing sewer. A dedicated sewerage pump station and rising main back to the RWP would be required to service growth to the south.

GWW has advised that large areas of growth would need to be assessed on a case by case basis to understand the impact of this growth on the sewer network. Any significant growth to the west of Romsey may be problematic as it is the furthest point from the RWP and the network here is of minimal size. Significant augmentation of the sewer network through the centre of Romsey may be required to have sufficient capacity to cater for growth to the west.

4 Potable Water Supply

Greater Western Water (GWW) is the authority responsible for water reticulation facilities for the region. The following extract from GWW's 2009 master plan shows the areas proposed to be rezoned at that time in pink. The yellow represents the high level water zone. Existing water reticulation infrastructure in the area is shown in blue and future upgrades planned at that time in red.



As with sewer, GWW has based their water network planning on the population of Romsey almost doubling from the current population of 6000 to approximately 11,500 by 2067.

Romsey's potable water supply is currently sourced from a combination of the Kerrie and Wright Reservoirs and the Melbourne Supply systems, with options to source additional water from the Rosslyne Reservoir and a local groundwater bore. GWW is currently investigating options for the long term water supply for Romsey and Lancefield. The current supply sources can supply both towns for the short to medium term, with further investigations required for longer term solutions including a mass water balance project for the region.

Water from these supply sources is transferred to water storage tanks located on high ground to the west and north west of town, from where water supply is reticulated to the town. The lower, western tank supplies the majority of the town up to RL 555m, whilst the higher north western tank supplies the high level zone up to RL 582 m.

No significant water supply infrastructure augmentations were suggested in the above 2009 master plan and to date GWW has seen little change to the growth fronts that suggests this would need to change. Since the 2009 master plan, peak day water demands have significantly dropped providing some scope for additional development without the need for augmentations.

Network modelling is required to confirm the extent of growth that can be accommodated without augmentation of the network. Large scale areas of development would need to be assessed on a case by case basis with their impacts on the water network dependant on both their water supply demands and their location.

5 Recycled & Alternative Water Supply

The Romsey RWP currently treats sewage to Class C standard suitable for irrigation in controlled situations. The recycled water is supplied to the Romsey Recreation Reserve, the Romsey Golf Club and local farms for irrigation purposes.

The RWP currently has limited capacity to manage additional recycled water produced from additional development through local reuse solutions. The planned upgrade of the RWP will include additional recycled water storage to better manage recycled water levels across the year. GWW are also progressing Stage 2 of the Romsey Irrigation Upgrade which allows for more recycled water to be supplied to the irrigation site south of the plant.

There are no proposals to upgrade the RWP to provide a higher class of recycled water.

The improvement of the management of water resources across the water cycle in the region has been assessed in the Southern Macedon Ranges Integrated Water Management Plan of April 2020. The options proposed for Romsey include:

- Lot scale initiatives to reduce stormwater runoff from new developments, including rainwater harvesting and re-use which would reduce the potable water demand;
- Large scale end of line stormwater harvesting for open space and agricultural irrigation, with a long term option to inject this water into the aquifer helping to increase the supply of local bore water for potable use;
- Substitution of existing groundwater extraction licenses through provision of an alternative source to agricultural uses, enabling the reallocation of the licenses for potable use.

Opportunities to expand the use of recycled water from the RWP are also proposed.

6 Electricity Supply

Powercor is the authority responsible for electricity supply facilities for the region. Supply in the region is fed from two zone substations, at Gisborne and Woodend.

Powercor has advised that the 22kV overhead feeder from the zone substations that currently supplies Romsey has reached its capacity. To provide for more load, a new feeder is required to be brought to the area.

The substations have Rapid Earth Fault Current Limiters (REFCL) to reduce the probability of fire starts from high voltage electrical assets. This restricts Powercor's ability to supply any new development areas with underground cables, unless additional electrical infrastructure assets such as isolating transformers or mini-RECLs are included.

Any new development areas requiring underground cable need to be assessed by Powercor to ensure that these additional assets are able to be provided as part of the new electrical supply infrastructure to these areas, including the provision of reserves for these assets.

7 Gas Supply

Ausnet Services are the authority responsible authority for gas supply facilities for the area. Their trunk gas main in the town is located on the western side of the Melbourne – Lancefield Road, which extends north to Lancefield and south to the extent of residential zoned land. Smaller reticulation mains extend from this trunk main to service most of the residential development in the town.

Ausnet Services has advised previously that an upgrade to their existing network will be required to cater for significant additional growth in the town. This would include an upgrade to the existing Citygate facility, which reduces gas pressure in the transmission pipeline to pressures suitable for local reticulation.

8 Telecommunications

NBN Co are the authority responsible for telecommunications facilities for the area. NBN has advised that the current township is within the Fixed Line footprint of the NBN network, serviced via a FAN site in Main Street behind the library. A mixture of Fibre To The Node and Fibre To The Premise technologies are available within the current township boundary.

NBN has advised that the FAN site has capacity to service any long term planned expansion of the township and they consider it highly unlikely that any new key infrastructure will be required.

Romsey has been identified by NBN as a potential Business Fibre growth area, within which NBN offers Enterprise Ethernet to service providers with no up-front build costs and with their most competitive wholesale service pricing. Another NBN initiative is the Regional Connectivity Program that looks to allow enhanced connectivity over the NBN network for customers across regional and rural Australia.

The provision of mobile internet services is the domain of individual carriers. Council commissioned an assessment of mobile internet connectivity in 2014 that showed that Telstra and Optus provided a reasonable level of mobile internet service in Romsey. The assessment noted opportunities at that time for the carriers to improve their service, and also noted the importance of Council engagement with the carriers to drive network upgrades.