10. Service Infrastructure

NORTHERN TERRITORY
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10.1 Power Supply

The Ron Goodin Power Station was commissioned in 1973 and is a major source of electricity in the Alice Springs area. It has a capacity of 44.6MW and used natural gas for fuel.

The Owen Springs Power Station uses the latest dual fuel reciprocating technology, with the majority of the capacity 36 MW commissioned in 2011. The planned expansion of Owen Springs will enhance local generation.

Brewer Power Station is owned and operated by Central Energy Power (CEP). Territory Generation purchases electricity from CEP under a Power Purchase Agreement, for supply to the Alice Springs Grid.

As advised by Power Water Corporation, the Alice Spring Power Network has capacity to support the existing electrical demand together with medium term demands for power (i.e next 5-10 years).

Changes in customer behaviour such as the installation of roof top PV systems and efficiency measures are likely to help reduce electricity peak demand.

Power and Water are currently developing solutions in addressing these capacity issues and to ensure the existing assets are fully utilised, before further capital investment is made.

Key implications in terms of power supply are identified below:

- residential infill and existing developments in the areas of Kilgariff, Larapinta Valley and limited CBD infill are likely to have less impact on the power network and lower headworks costs than developments in the Sadadeen, Mount John's Valley and Undoolya Valley.
- a new industrial land release may require more significant power network development depending on the size of development and cannot be assessed at the time.

Industrial development in the Brewer area is likely to have less impact on the power network than other areas.

10.2 Water Supply

The Amadeus Basin Aquifers are the source of the town's potable water supply, and were last estimated to contain more than 4800 GL of water with Total Dissolved Solids (TDS) of less than 1000 mg/l. It is anticipated that any further use of water will continue to be mainly for public water supply.

The water drawn from the Amadeus Basin Aquifers is estimated to be between 10,000 to 30,000 years old and contemporary recharge is minimal in the context of the resource. This water resource is therefore considered a non-renewable water resource.

The current water extraction regime which was documented and capped under Alice Springs Water Resource Strategy in 2007 acknowledges that this resource is effectively being mined in order to sustain the population of Alice Springs.

The Draft Alice Springs Water Allocation Plan maintains the allocation of the majority of groundwater in the Amadeus Basin Aquifers for use as public water supply.

Due to the non-renewable nature of the water supply, water sensitive urban design should be of high consideration when developing in the Alice Springs region.

As previously noted, water is currently extracted from the Roe Creek Borefield, located approximately 15km south of Alice Springs town centre.

Noting that a new bore will be required for each additional 4,000 people, at some stage in the future a new borefield will be required at Rocky Hill about 15km south west of the Airport along the Santa Teresa Road.

This demand for water needs to consider the existing use of Rocky Hill water for horticulture.

Service corridors for water mains, power lines and road access to the new borefield should be reserved and considered when planning for development in the Kilgariff/Airport area.

Generally when developing south of the Gap, water infrastructure will require significant investment to be able to service the proposed development areas. The key considerations of the masterplan will need to be:

- tank (Ground level and Elevated) locations and sacred sites;
- pump overall economics (currently energy is wasted pumping water into town, then back feeding through the Gap);
- lengths and size of transfer mains;
- security of supply;
- trigger points for infrastructure construction.

10.3 Sewer

The existing sewer mains located through Heavitree Gap has approximate capacity for an additional 3000 Equivalent Population (EP).

Development north of the Gap, which exceeds this population level, would require additional capacity to be established through the Gap.

The nature and extent of upgrades would be dependent on the overall level of development north of the Gap.

Due to the topography most of the areas will need to be serviced with the use of sewage pump stations. The main considerations for the masterplan will need to be:

- service corridors for rising mains;
- pump station catchments;
- interaction between pump stations; and
- consideration of a new sewage treatment plant may one day be economic to the south to save pumping back up hill.

10.4 Gas

The Amadeus Gas Pipeline provides gas to Darwin, Alice Springs and other regional centres. It is a major infrastructure asset which will influence land use planning adjacent to its alignment, for safety reasons.

10.5 Summary

Key service infrastructure considerations are spatially identified by Figure 10.1.

Any urban development within Alice Springs is likely to require some form of augmentation. Some services have greater capacity than others, depending on the spatial location of the land.

In order to ensure the orderly and economic provision of utilities an Infrastructure Plan is recommended to support the final Alice Springs Regional Land Use Plan, once decisions are made in respect to future development areas.

An Infrastructure Plan would require detailed concepts and feasibility analysis for each key development area. Development can then be staged and prioritised with infrastructure planned accordingly.

An Infrastructure Plan can also:

- identify priorities from a whole-of-territory and/or Alice Springs perspective;
- highlight specific initiatives, and associated timeframes;
- identify new investment opportunities; and
- consider options for deferring costly capital expenditure by better managing demand.

Figure 10.1: Service Infrastructure