Services Infrastructure

11

11.1 Introduction

Services infrastructure is a key component of Parafield Airport's operations both now and into the future. It comprises the power, water, sewer, telecommunications and stormwater networks that service aviation and non-aviation related developments across the airport.

The reliability, efficiency and sustainability of these networks and supply arrangements are the key objectives for Parafield Airport Limited (PAL) when planning for services infrastructure. The timing of new and upgraded services is influenced by demand and planning for services infrastructure needs to be adaptable to meet the needs of all of the aviation and commercial activities within the airport site. PAL works closely with external utilities providers to ensure these essential services are available to support the operation and growth of the airport.

11.2 Overview

Services infrastructure at Parafield Airport will continue to expand to meet increases in demand across the airport.

Augmentation of the existing utility networks will likely include:

- New services infrastructure to the Enterprise Precinct and western area of the Airport Business Precinct.
- Upgrades to existing infrastructure within the developed portion of the Airport Business Precinct to meet changing demands and support new technologies, such as electric aircraft.

11.3 Recent Developments

Improvements to the services infrastructure that have been implemented since Master Plan 2017 include:

- Installation of electrical smart meters.
- Upgrades to fire water mains through Airport Business Precinct (underway).

11.4 Electrical Network

PAL owns and operates a high-voltage embedded (private) electricity network within the Airport Business Precinct, which is supplied by a SA Power Networks (SAPN) owned and operated intake station and distributed internally by a network managed by PAL. The Commercial Precinct is supplied by SAPN infrastructure which provides power direct to the individual business and allotments. Figure 11.1 shows the existing high-voltage electrical network.

To support future growth and development, Parafield Airport's embedded electricity network will continue to be expanded and augmented, underpinned by PAL's objectives to:

- Optimise and maintain electricity infrastructure to ensure continuity of supply, meet development needs and allow for innovative technologies.
- Support carbon-reduction goals in energy infrastructure and framework management decisions.
- Ensure regulatory compliance.
- Maintain commercial viability of the embedded electricity networks.
- Drive continuous improvement.

The development of the Enterprise Precinct and western portion of the Airport Business Precinct will require a new SAPN high-voltage feed from which an embedded network will service new developments. PAL will continue to work closely with SAPN to ensure that growth can be supported in line with the objectives of PAL and support the development of a 20-Year State Infrastructure Strategy, by Infrastructure SA, which addresses the importance of the reliable and timely provision of services infrastructure to enable the objectives to be achieved and the ability for PAL to respond to opportunities to introduce new, sustainable and innovative technologies to the state, such as electric vertical take-off and landing (eVTOL) aircraft.

In an ongoing effort to minimise energy consumption, PAL will look to:

- **Upgrade existing lighting to LED fittings**
- **Identify and implement cost-effective energy reduction projects**
- **Expand the preventative maintenance program in alignment with development**
- **Educate employees and tenants on energy efficiency practices**
- **Identify opportunities to increase renewable-energy generation on site.**

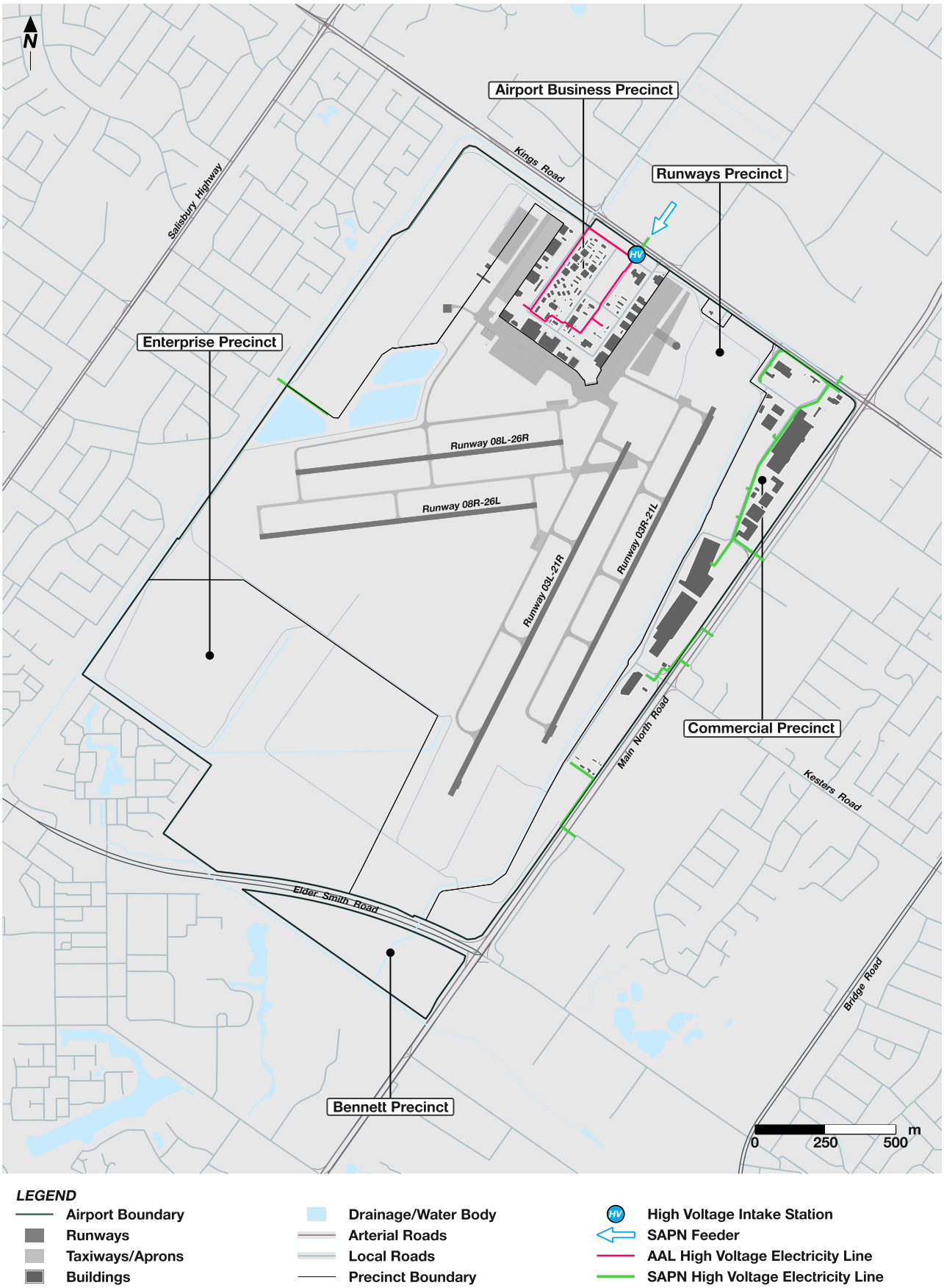


Figure 11.1: Existing electrical network

11.5 Water

11.5.1 Potable Water and Fire Water

The existing potable water and fire water supply to the Airport Business Precinct is obtained from SA Water mains along Kings Road at three locations and then distributed internally through a network of combined potable water and fire water pipes which are owned and maintained by PAL, extending through to the Enterprise Precinct. The Commercial Precinct is serviced by SA Water with direct connections off Main North Road and Kings Road for individual allotments and an internal main which passes within Lawrence Hargrave Way. Refer to Figure 11.2 for details of the existing water network.

A proposed upgrade to the fire protection services within the Airport Business Precinct in the short term will see a new pipe and hydrant network installed, separating the fire water supply from the potable water network. The development of the western portion of the Airport Business Precinct will require either an extension from the new pipe network or a new SA Water feed from which a Parafield Airport network will service new developments, as will be required to service the Enterprise Precinct. PAL will continue to work closely with SA Water to ensure that growth can be supported.

11.5.2 Wastewater

The Airport Business Precinct wastewater system is comprised of a PAL owned and maintained gravity drainage system which discharges into a sewer pumping station and sewer rising main located south of the precinct which passes below the existing airfield, connecting to SA Water infrastructure located within the Enterprise Precinct. The Commercial Precinct is serviced by SA Water with direct connections off Main North Road for individual allotments and an internal main which passes within Lawrence Hargrave Way. Refer to Figure 11.2 for details of the existing wastewater network.

New wastewater infrastructure will be required to support the development envisaged within the Enterprise Precinct and western portion of the Airport Business Precinct with potential additional connections to the SA Water network and/or expansion of existing infrastructure. PAL will continue to work with SA Water to investigate efficiencies that can be made in the existing and future wastewater network.

11.5.3 Recycled Water

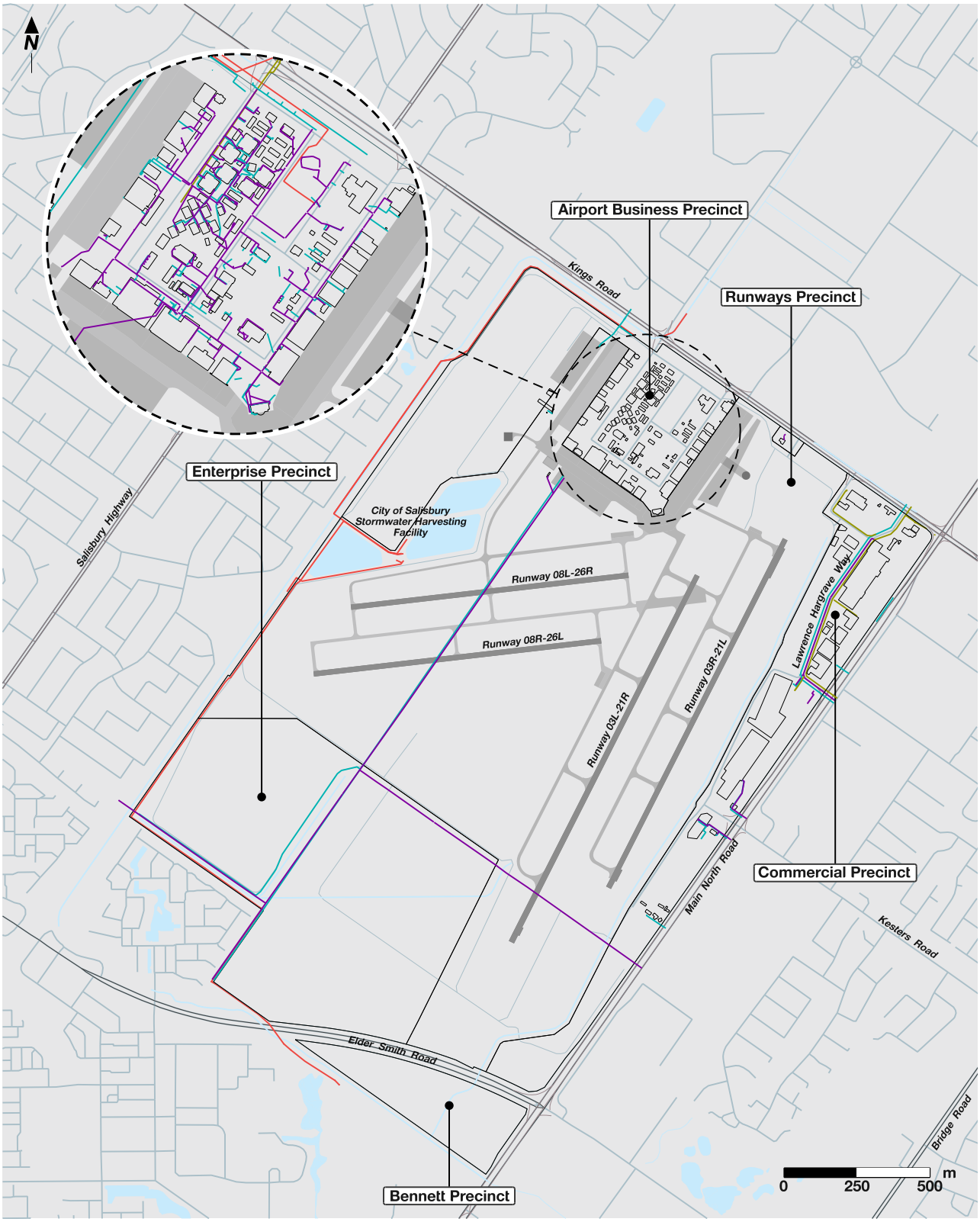
A Stormwater Harvesting Facility is located within the Runways Precinct which is owned and operated by the City of Salisbury for the purpose of collecting and cleansing stormwater before injecting the water into underground aquifers, and then reticulating the water for irrigation and use by local business in the region. City of Salisbury reclaimed water pipework is located along the southern, western, and northern boundary of the airport site, partially within the airport in some locations as illustrated in Figure 11.2.

The Bolivar Wastewater Treatment Plant is located approximately five kilometres north-west of the airport and is owned and operated by SA Water. It services the suburb of Mawson Lakes, directly adjacent to the airport.

Parafield Airport currently has no reclaimed water systems serving the site with the exception of one allotment within the Airport Business Precinct. PAL is committed to reducing its reliance on potable water sources through the expansion of non-potable water alternatives, use of rainwater tanks, use of water saving devices within new developments and use of drought-tolerant plants for landscaping to aid the reduction of water usage across the airport site. Arrangements are possible, under partnership with the City of Salisbury and SA Water, for future airport developments to increase use of recycled water from the City of Salisbury Stormwater Harvesting Facility or from the SA Water Bolivar Treatment Plant.

11.6 Gas

A natural gas supply is located within the Commercial Precinct of the airport, as shown in Figure 11.2, and is owned by Envestra. There is also a natural gas supply to the Airport Business Precinct, owned and operated by Australian Gas Networks. As PAL works towards decarbonisaton across the airport, it is envisaged that there will be a transition away from natural gas towards more sustainable alternatives.



LEGEND

- Airport/Precinct Boundary
- Runways
- Taxiways/Aprons
- Buildings
- Drainage/Water Body
- Arterial Roads
- Local Roads
- Water Main
- Waste Water Main
- Reclaim Water
- Gas Main

Figure 11.2: Existing water and gas networks at Parafield Airport

11.7
Stormwater Drainage

Parafield Airport is located within the Dry and Cobbler Creeks Catchment of metropolitan Adelaide within the Torrens River basin. All stormwater generated from the airport site discharges to networks which bound the site and drain to the Port River estuary, including:

- Airport West Drain is located outside the western perimeter of the airport boundary and a portion of the northern perimeter adjacent to Kings Road and joins the Bennett Road Drain leading into Dry Creek. It is under the control of the City of Salisbury.
- Airport East Drain is located within the airport boundary through an easement with the City of Salisbury. The first northern section of the drain is piped underground within the Commercial Precinct before connecting into an open unlined drain adjacent to the precinct and flowing into the Bennett Road Drain. It is under the control of the City of Salisbury and has been designed to receive excess stormwater events along Main North Road which are directed through a number of passages on airport land to flow into the City's drain through established drainage systems and along roadways.
- Bennett Road Drain is located adjacent to the southern boundary of the airport and receives flows from the Airport East Drain and areas beyond the airport, before draining into Dry Creek. It is under the control of the City of Salisbury.
- Airport Internal Drain is a series of Parafield Airport owned and maintained open channel and piped drains that are located within the airport to take water run-off to the City of Salisbury drainage system, both abutting the airport or within prescribed Council drainage easements. Stormwater from within the Airport Business Precinct is collected via an underground pit and pipe drainage network into a series of large diameter pipes (>1,000mm) to the south of the precinct before discharging into one of the open channel airport drains which flows into the Airport West Drain.

Parafield Airport's stormwater infrastructure includes grated drains that trap large debris to prevent it from entering the external drainage network.

Figure 11.3 shows major stormwater catchments for metropolitan Adelaide in the vicinity of Parafield Airport and Figure 11.4 shows the major drainage systems.

The overall management of stormwater is critical to the efficient use of airport land and controlling the potential bird hazard to aircraft operations in the vicinity, with this closely monitored by both the City of Salisbury (for its drainage channels) and PAL (for the airport's internal system of drains).

To inform stormwater design for future precinct and allotment developments, updated flood modelling for the airport site will be undertaken in the short-term including the preparation of a Stormwater Management Plan which will detail water sensitive urban design measures and water quality targets which are to be achieved. The effects of climate change on stormwater runoff and the performance of drainage systems will also be assessed with consideration of sea level rise, catchment changes and increased rainfall patterns. PAL will consult with relevant authorities through the preparation of the Stormwater Management Plan.

The management of stormwater quality is discussed in Section 14.10.

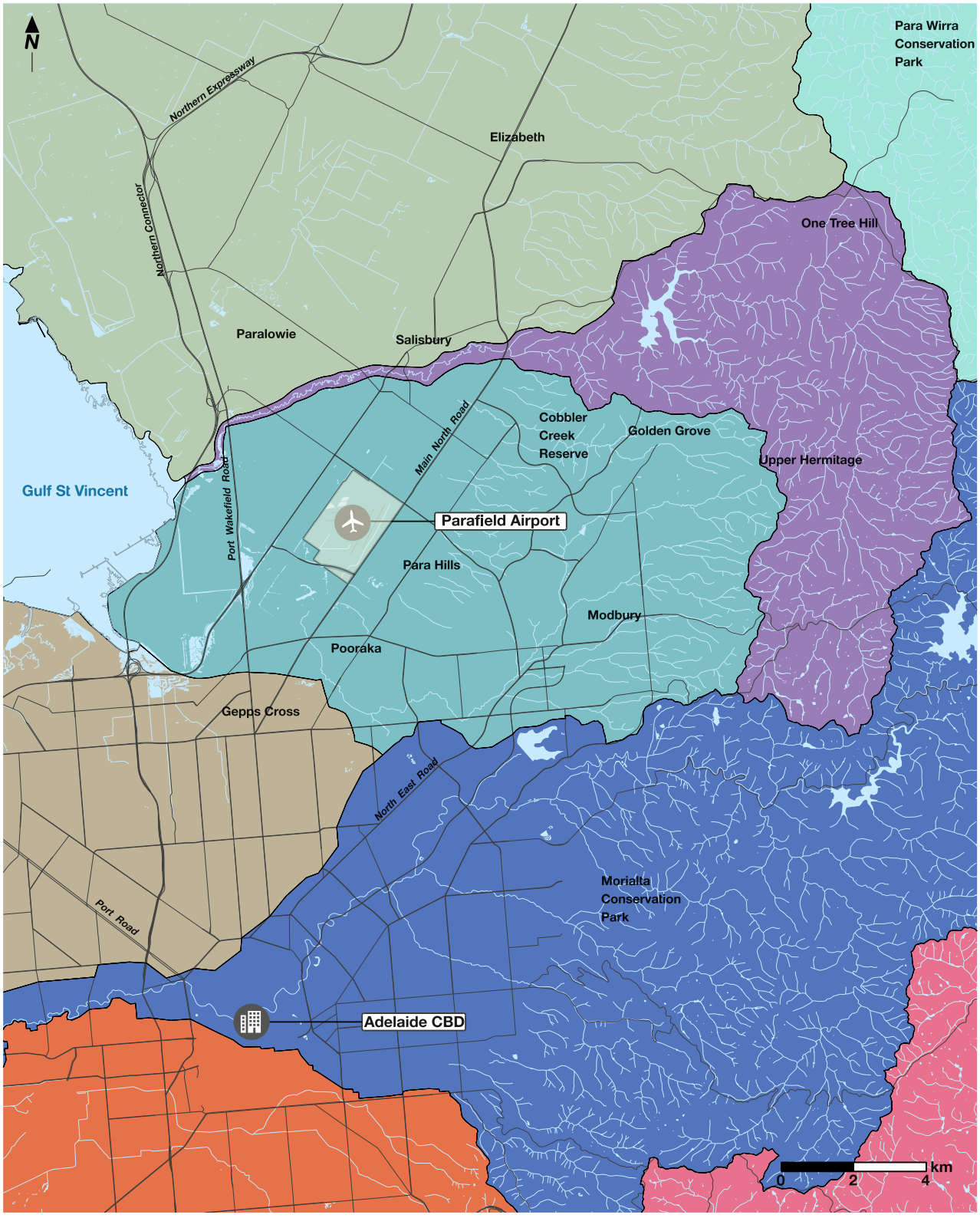


Figure 11.3: Major Adelaide stormwater catchments in the vicinity of Parafield Airport

Figure 11.4: Major drainage systems at Parafield Airport

11.8 Telecommunications

Telecommunications infrastructure within the airport site is owned and managed by PAL and various telecommunications providers. PAL will continue to facilitate improvements and expansion of the telecommunications infrastructure to meet customer needs and in response to changes in the communication industry.

11.9 Easements

There are several existing easements and licence agreements for authority owned infrastructure within the airport site which are shown in Figure 11.5. In any proposal for future development on airport land, PAL will act consistently with the obligations or interests that exist with service providers.

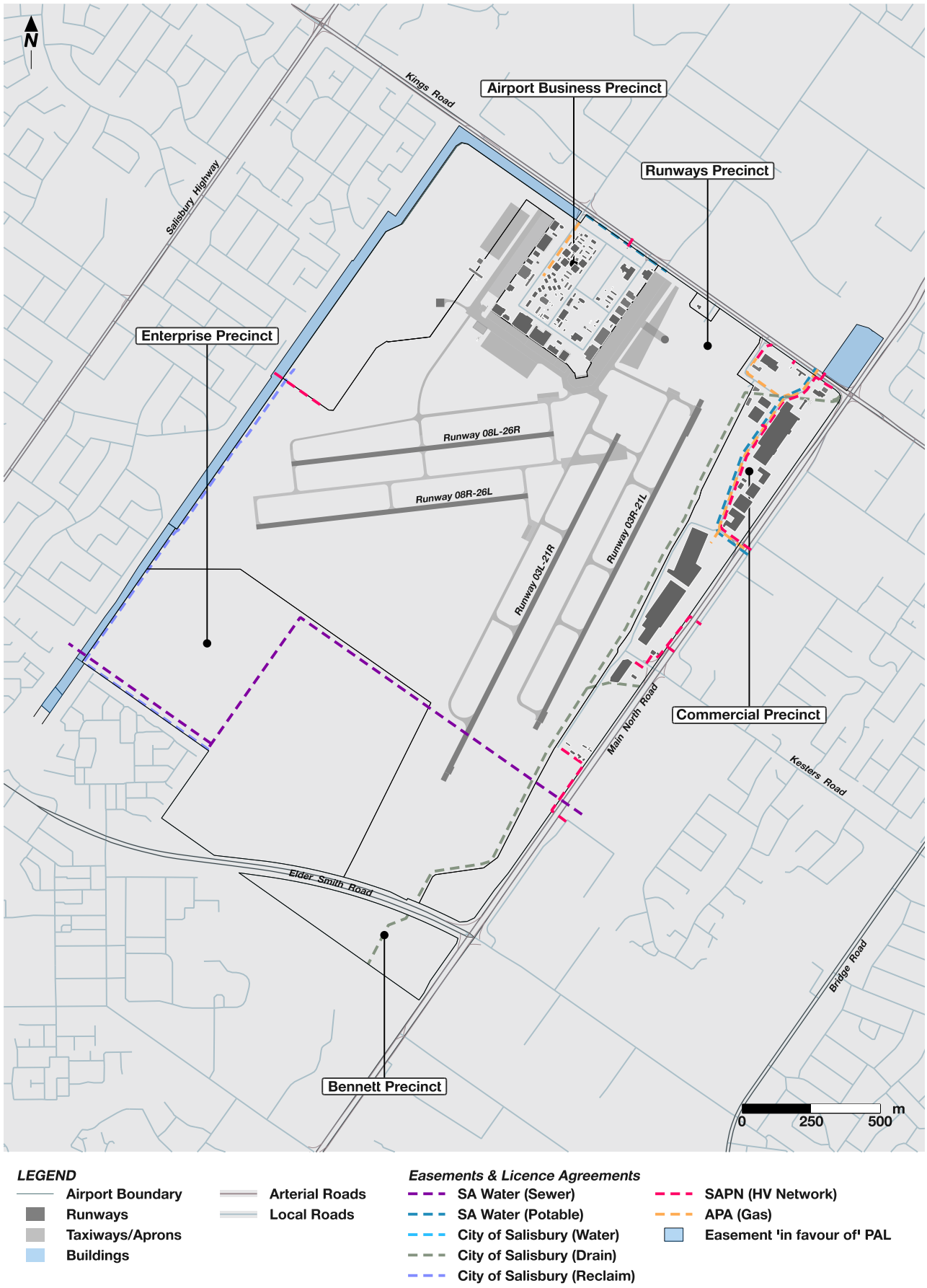


Figure 11.5: Existing easements and licence agreements at Parafield Airport

11