# Attachment 6B

## Additional Support for Penetration Rate Assumption

**June 2018**

# Attachment 6B – Additional support for Penetration Rate Assumption

## 1    Introduction

This Attachment provides additional support for the Penetration Rate assumption.

### 1.1    Residential Penetration

There are some limitations in the data and information available to estimate state and network wide penetration rates. While our billing and information systems provide accurate information for gas connections, we do not have the same information for homes not connected to our network. We therefore rely on external sources to estimate the total number of residential dwellings, by which we can then estimate a penetration rate.

With this in mind, the forecast penetration rates explained in this section have been arrived at on a reasonable basis and represent the best forecasts given the data and information constraints.

### 1.2    Residential penetration in Mount Barker

To support our penetration rate of 95% for residential gas connections in Mount Barker we have relied on two sources of data:

1.  Our residential connections count by suburb
2.  SA Power Networks' residential connections count by suburb

The raw data can be seen in *Attachment 6A* and show:

*   a suburb by suburb comparison yields an average penetration of 74%;
*   however, this does not reflect a true penetration rate as our network does not cover every suburb entirely;
*   newer suburbs (largely developed post-2000) have higher penetration than older suburbs; and
*   penetration rates in new developments of similar size to Mount Barker average 95%.

We observe significantly higher penetration rates in newer areas compared to our overall network penetration rates. Therefore, we compared residential gas connections to residential electricity connections in suburbs that have undergone significant new development to derive the likely penetration rate in Mount Barker.

We have compared connection growth for all suburbs as at March 2018. The test we have applied to determine if a suburb qualifies as a new development suburb is if the suburb constitutes significant new land release of a similar scale to those that will occur in Mount Barker and whose growth in gas customers over the 2011/12 to 2016/17 period falls within the top 10% of all suburbs (refer *Attachment 6A*, "1.1 New Dev Suburbs" for data).

Table 1 below lists the new development suburbs and shows the average penetration across these suburbs is 95%.

Table 1: Penetration rate, new development suburbs

| Suburb | Total gas customers^ | New gas customers 2011/12-16/17 | Total homes* | Penetration |
|---|---|---|---|---|
| Andrews Farm | 2,838 | 544 | 2,892 | 98% |
| Blakeview | 2,909 | 822 | 3,021 | 96% |
| Munno Para | 1,690 | 426 | 1,715 | 99% |
| Northfield | 1,489 | 344[#] | 1,713 | 87% |
| Northgate | 1,122 | 1,150[#] | 1,169 | 96% |
| Seaford Meadows | 1,626 | 886 | 1,702 | 96% |
| St Clair | 861 | 385 | 992 | 87% |
| Whyalla Jenkins | 768 | 252 | 818 | 94% |
| **Total** | **13,303** | **4,809** | **14,022** | **95%** |

^Number of residential gas connections as at March 2018
*Number of residential electricity connections as at March 2018
#A section of Northgate, Northfield and Greenacres was renamed to Lightsview in April 2016

We also note three new development suburbs which have been renamed after the individual developments, but are not within the fastest growing suburbs over the last six years.[1] Table 2 below shows the average penetration rate across these suburbs is 97%.

Table 2: Penetration rate, renamed new development suburbs, March 2018

| Suburb | Total gas customers^ | New gas customers 2011/12-16/17 | Total homes* | Penetration |
|---|---|---|---|---|
| Craigburn Farm | 894 | 232 | 937 | 95% |
| Eyre | 211 | 181[#] | 227 | 93% |
| Lightsview | 1,856 | 136[~] | 1,891 | 98% |
| **Total** | **2,961** | **368** | **3,055** | **97%** |

^Number of residential gas connections as at March 2018
*Number of residential electricity connections as at March 2018
#New home connections captured under old suburb name, Penfield
~Lightsview was created in April 2016 encompassing parts of Northgate, Northfield and Greenacres - therefore this only represents new gas customers from that date

In developing the above sample, we have focussed on areas most representative of newer housing developments, which developments are reflective of those in Mount Barker. We therefore consider we have used the most appropriate data available to estimate the penetration rate, which data shows that 95% is a reasonable expectation of the penetration rate we will achieve in Mount Barker, and as such is:

- the best possible forecast of residential penetration for Mount Barker in the circumstances; and
- has been arrived at on a reasonable basis (the observed residential gas and electricity connections for new development suburbs).[2]

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[1] While they fall outside the top 10%, all fall within the top 25% for growth over the last six years, with significant development in Lightsview prior to April 2016 captured under Northgate, Greenacres and Northfield, in Craigburn Farm occurring just prior to this period, and Eyre picking up more recently.
[2] National Gas Rules, 74.

## 1.3    Similarities between new development suburbs and Mount Barker

The suburbs selected to forecast penetration are:

- new development suburbs i.e. there is a material proportion of new homes compared to old homes, they are the fastest growing suburbs over the last six years and there have been significant land releases;
- are fully covered by our network; and
- include the development of primarily detached housing with some medium density townhouses.

The above is most reflective of the expectation for the housing developments in Mount Barker, and as such, provides a reliable expectation of the penetration rate that will occur in Mount Barker.

## 1.4    Time period used for above penetration rates

The estimated penetration rates are based on residential gas versus electricity connections/ developed lots for each suburb/subdivision and are provided 'as at' the date information was extracted from the billing system, Maximo, developers or physical surveys. It includes all connections/developed lots for that suburb on that date.

AGN and SAPN extracts by suburb were conducted in March 2018. New subdivision information was collected from GIS in February 2018. All ABS information uses the latest available data releases as at February 2018. We have therefore relied upon the most recent information to forecast expected penetration rates for Mount Barker.

## 1.5    Network wide residential penetration

Comparing our residential gas connections to SAPN residential electricity connections for each suburb where our network is present provides an average penetration of 74% (refer *Attachment 6A*). Breaking this average penetration rate down by suburb and region, we see:

- New suburbs exhibit strong penetration rates of 90% or higher (averaging 95%);
- Newer suburbs generally exhibit much higher penetration rates compared to older suburbs;
- Many suburbs exhibit lower penetration as our network does not cover the suburb fully;
- the Adelaide CBD and Glenelg (bayside) exhibit lower penetration as they have higher density residential living, including high rise apartments[3];
- suburbs that have had large areas of older style public housing which was not connected to gas exhibit lower penetration; and
- most other suburbs in Greater Adelaide exhibit penetration rates well above the network average of 74%.[4]

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[3] The typical arrangement for high rise apartments is to have a commercial gas connection to the building, but individual residential electricity connections to each apartment
[4] Of 373 suburbs in Greater Adelaide, 204 exhibit a penetration rate of 80% or more

We therefore do not consider the average penetration rate of 74% is suitable to use as an estimate of the likely penetration rate in Mount Barker as:

- new suburbs comprising significant new land releases, similar in size and scope to those in Mount Barker, exhibit gas penetration rates of approximately 95% as shown in section 1.1 above;
- the characteristics of those suburbs with lower penetration rates are very different to Mount Barker, which instead shares those characteristics associated with new suburbs comprising significant land releases; and
- also, the average penetration rate does not reflect our true total penetration rate as it makes no allowance for:
  - some suburbs not being fully served by our network, but whose electricity residential connections have been included; and
  - Adelaide CBD and Glenelg including significant high rise developments which have one commercial gas connections but each apartment is metered individually as an electricity connection.

## 1.6  Areas that exhibit low penetration

Table 3 below shows the largest suburbs exhibiting low penetration rates. The most common explanation for low penetration rates is our network doesn't fully cover the suburb. Second to this, the relatively high density living in Adelaide and Glenelg are driving lower observed penetration rates in those suburbs. Section 2 of Appendix A provides suburb and network maps for these areas that show which streets our network covers.

Table 3: Largest suburbs with low penetration rates

| Suburb | Total homes* | Penetration | Explanation |
|---|---|---|---|
| Adelaide | 8,268 | 31% | High density |
| Aldinga Beach | 4,866 | 46% | Network doesn't cover all areas |
| Berri | 2,041 | 4% | Network covers very small area |
| Blackwood | 1,893 | 40% | Network doesn't cover all areas |
| Elizabeth Downs | 2,194 | 27% | Network doesn't cover all areas – suburb dominated by older public housing which didn't connect to gas |
| Elizabeth East | 1,989 | 38% | Network doesn't cover all areas – suburb dominated by older public housing which didn't connect to gas |
| Elizabeth Vale | 1,861 | 36% | Network doesn't cover all areas – suburb dominated by older public housing which didn't connect to gas |
| Glenelg | 2,807 | 30% | High density |
| Murray Bridge | 6,752 | 6% | Network covers very small area |
| Nuriootpa | 2,950 | 35% | Network only covers newer areas |
| Renmark | 2,304 | 0% | Network covers very small area |
| Tanunda | 2,195 | 9% | Network is new network |
| Whyalla Norrie | 3,223 | 33% | Network doesn't cover all areas |
| Whyalla Stuart | 3,440 | 36% | Network doesn't cover all areas |

*Number of residential electricity connections as at March 2018

# Appendix A – Network maps

## Largest suburbs with low penetration

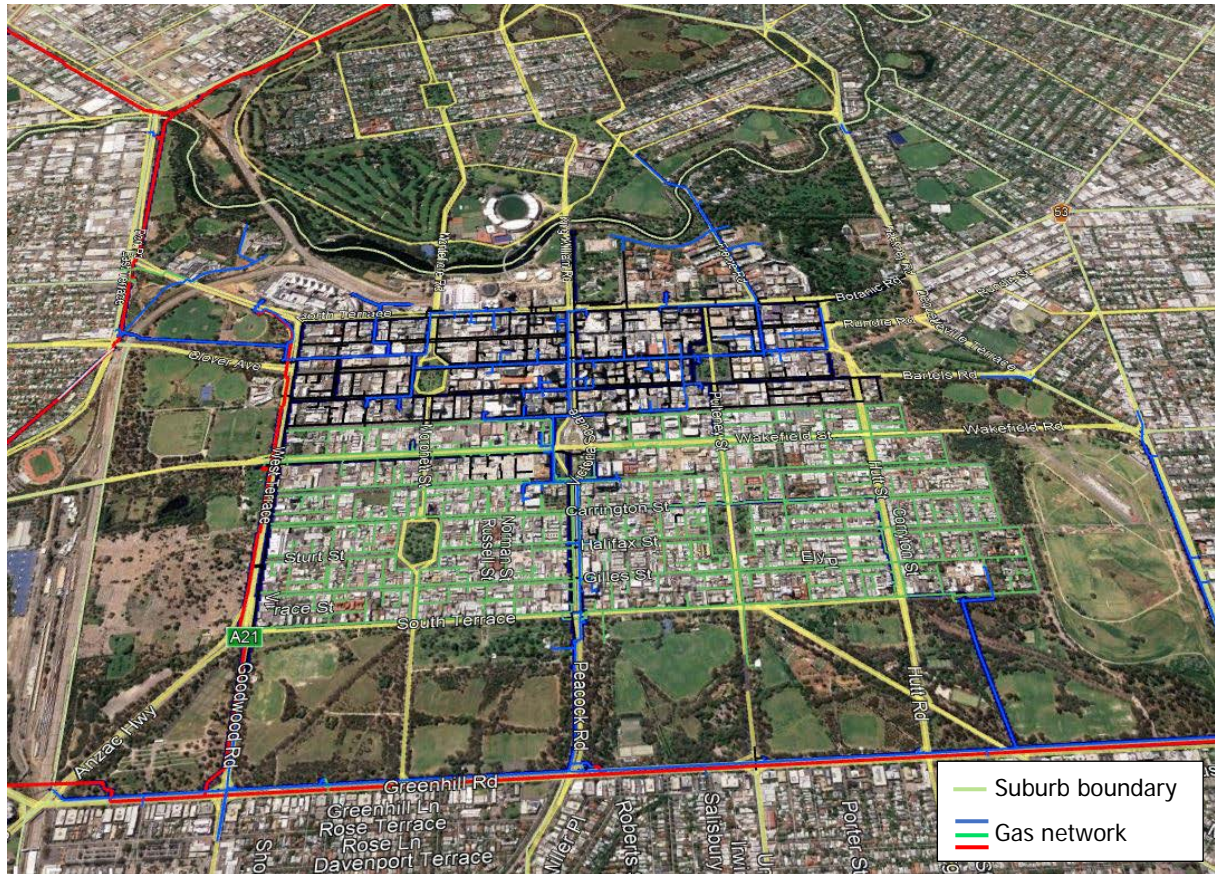Figure A-1: Adelaide suburb and network map

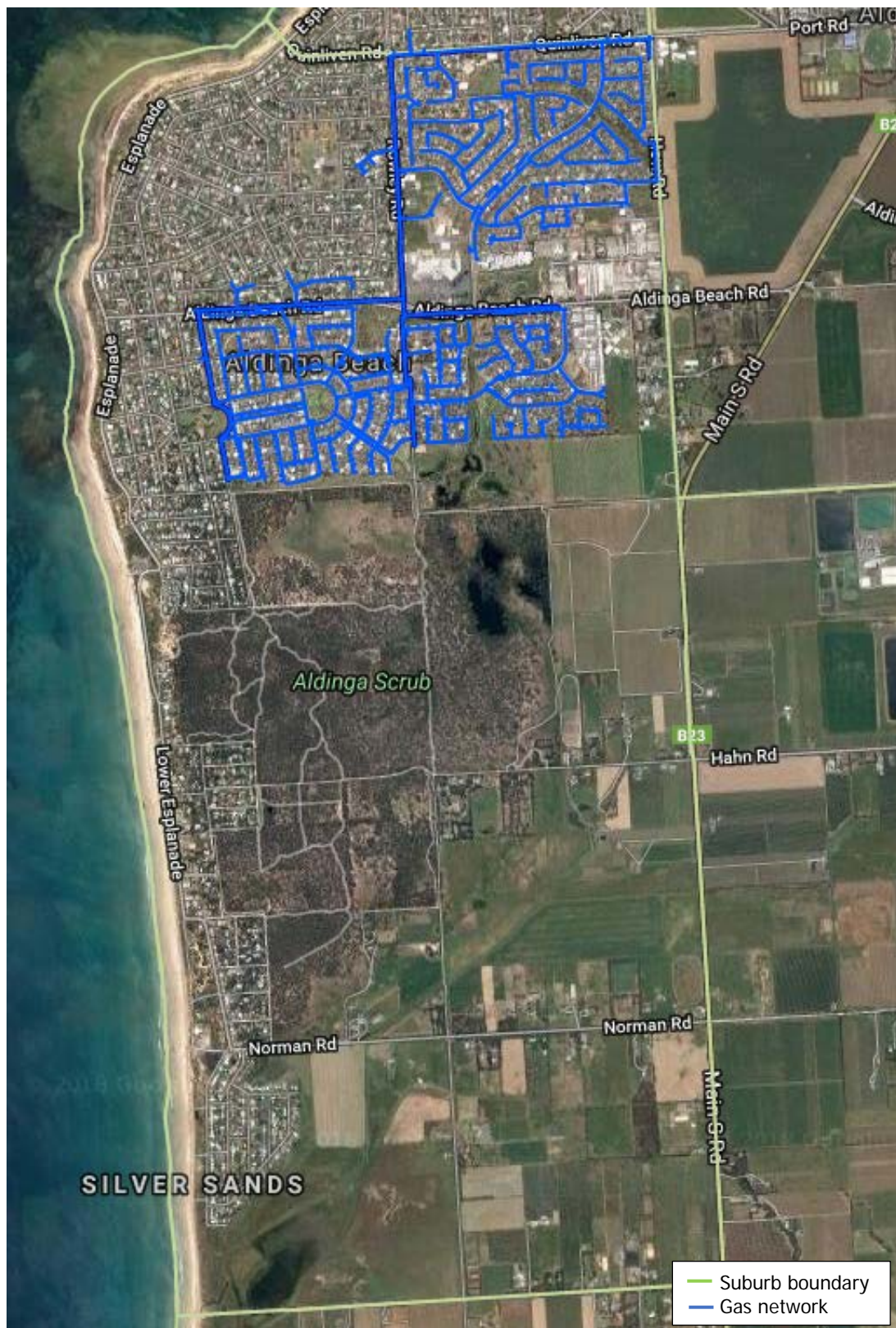Figure A-2: Aldinga Beach suburb and network map

Figure A-3: Berri suburb and network map

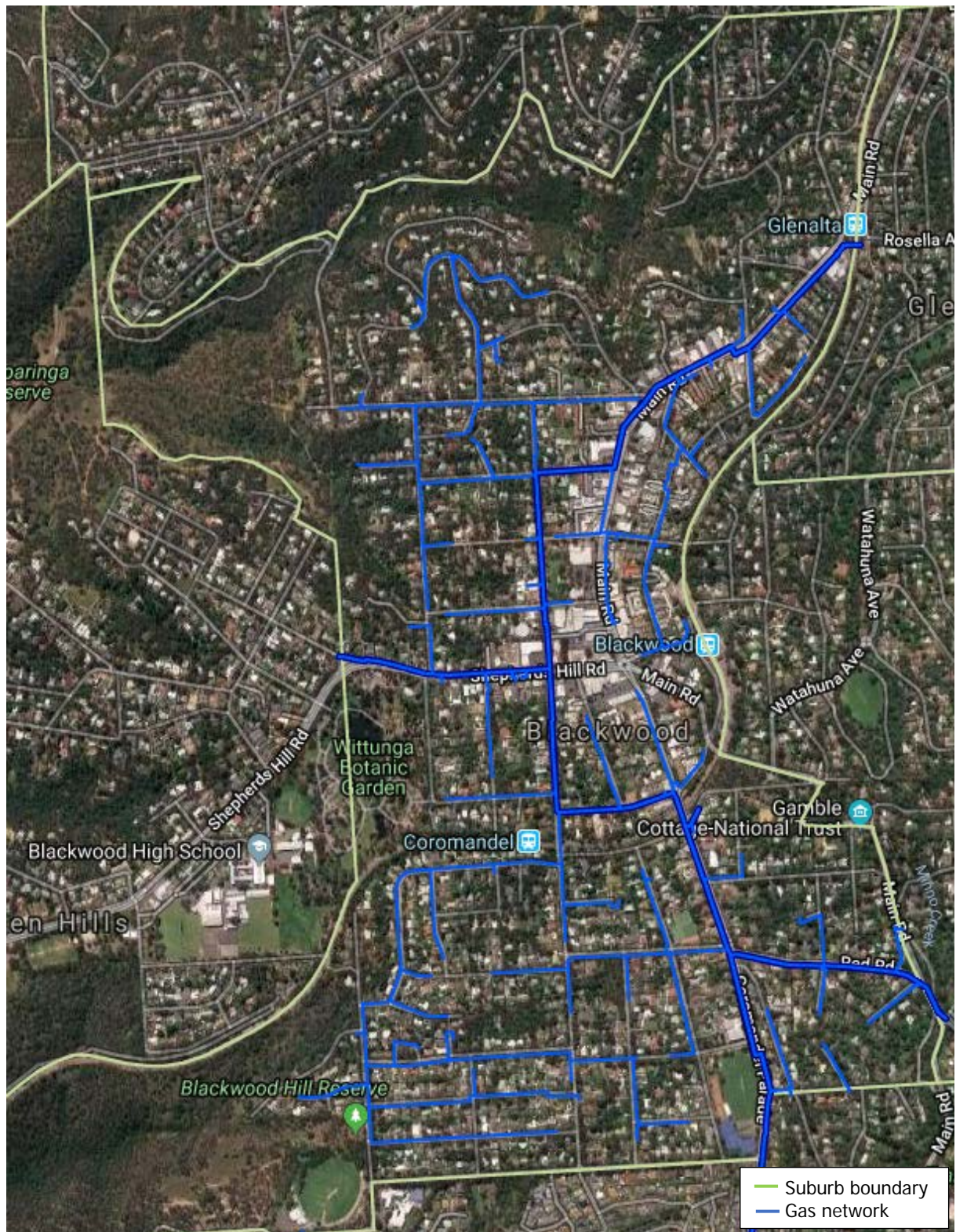Figure A-4: Blackwood suburb and network map

Figure A-5: Elizabeth Downs suburb and network map

Figure A-6: Elizabeth East suburb and network map

Figure A-7: Elizabeth Vale suburb and network map

Figure A-8: Glenelg suburb and network map

Figure A-9: Murray Bridge suburb and network map
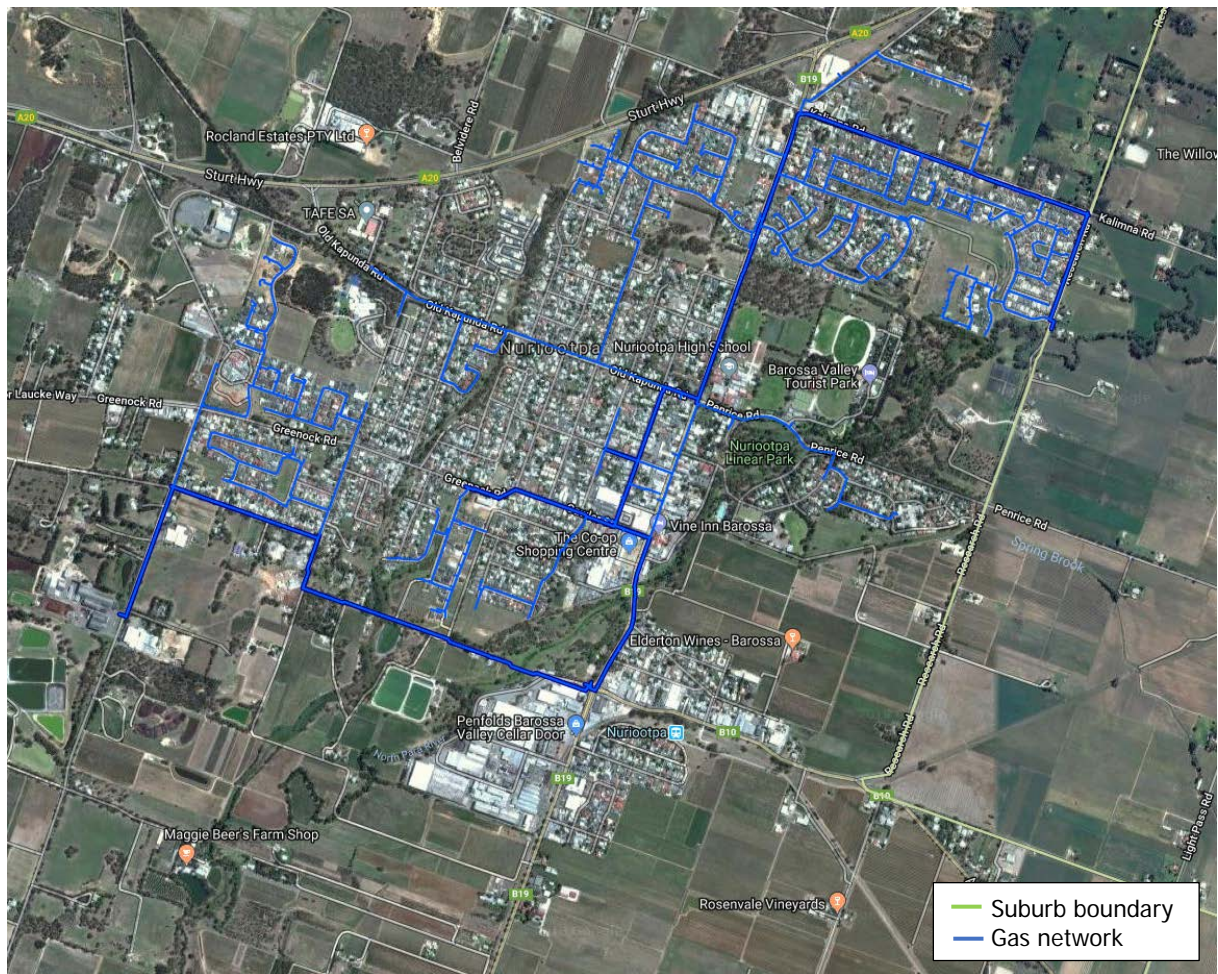
Figure A-10: Nuriootpa suburb and network map

Figure A-11: Renmark suburb and network map

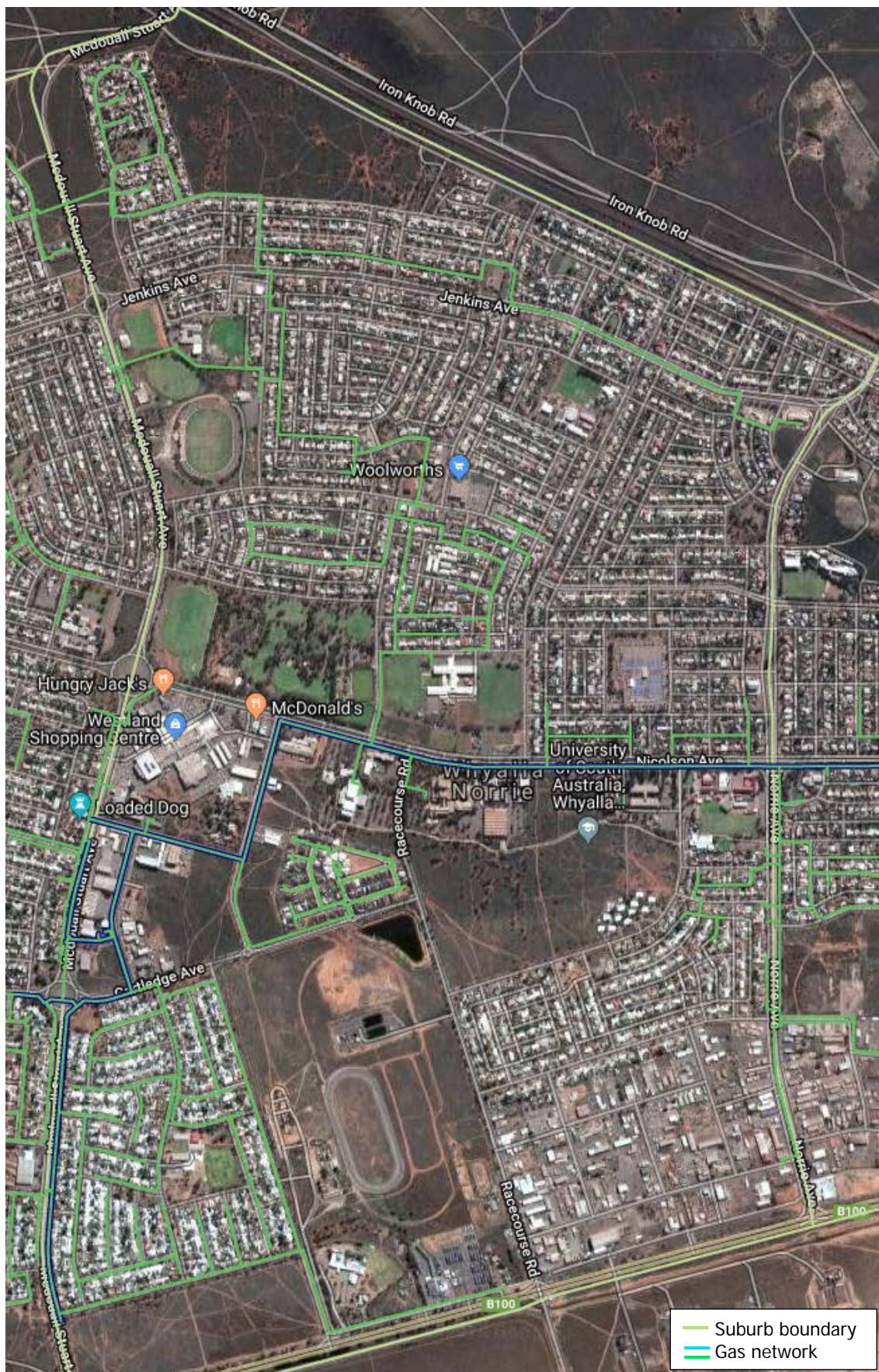Figure A-12: Tanunda suburb and network map

Figure A-13: Whyalla Norrie suburb and network map

Figure A-14: Whyalla Stuart suburb and network map