

# Network Performance Report 2016

## Korumburra HP Networks (SG2/SG4/SG5)



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## Preparation Record

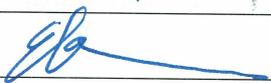
### Controlled Copy Register

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### Amendment Record

| Version | Date       | Amended by     | Description of Change          |
|---------|------------|----------------|--------------------------------|
| 1.0     | 30/06/2016 | Elsie Zhao     | Initial 2016 draft             |
| 1.1     | 19/12/2016 | Anja Trifkovic | Issue 2016 draft – for review  |
| 2.0     | 19/12/2016 | Troy Praag     | Final version – issued for use |

### Originated By

| Title                            | Name       | Signature  | Date       |
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### Reviewed & Approved By

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## 1. Executive Summary

Korumburra HP (high pressure) networks will require reinforcement to maintain minimum system pressure above 140 kPa as required by the Gas Distribution System Code:

### 2018

- Construct a monitor fringe RTU at Burra Food.

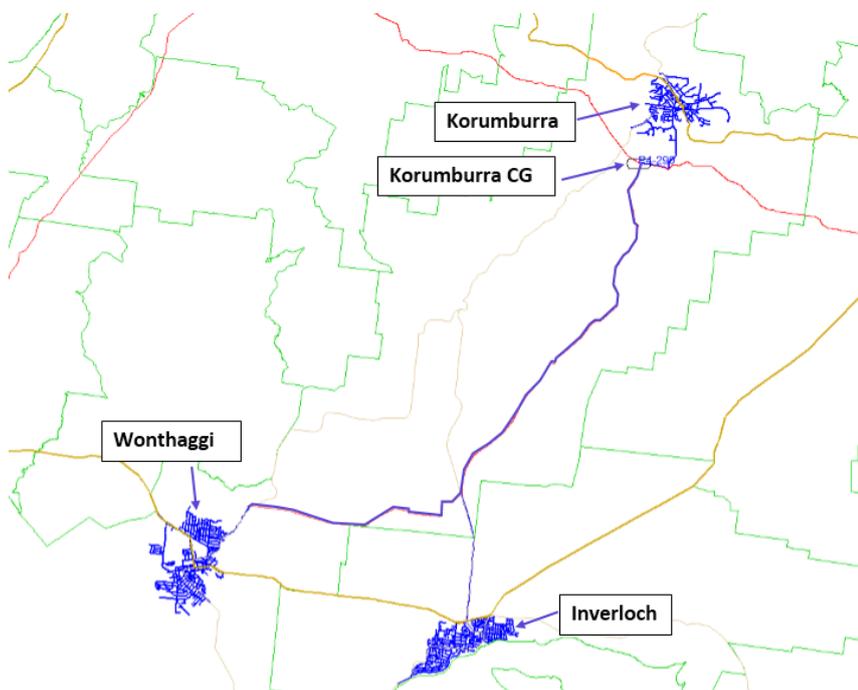
### 2019

- Lay approximately 500 m of 100 mm steel main and 1.9 km of 125 P10 main from Korumburra City Gate; and
- Construct a monitor fringe RTU in Inverloch.

## 2. Introduction

Korumburra HP network is an isolated high pressure network in South Gippsland region and supplied solely by Korumburra City Gate P4-290. It supplies towns of Korumburra, Wonthaggi and Inverloch. These areas have been experiencing higher than average growth in the past few years.

*Figure 2-1 Overview of Korumburra HP*



### 3. Analysis

This review is based on the latest available matched model from 2015. Forecast load growth data by postcode provided by NIEIR in June 2016 was used to forecast network capacity and augmentation works for next regulatory period from 2018 to 2022.

Forecast growth rate:

| Postcode | Suburb     | 2016 | 2017 | 2018 | 2019 | 2020 | 2021 | 2022 |
|----------|------------|------|------|------|------|------|------|------|
| 3950     | Korumburra | 6.1% | 6.2% | 4.8% | 4.4% | 3.6% | 3.2% | 3.2% |
| 3995     | Wonthaggi  | 7.8% | 8.0% | 6.3% | 5.8% | 4.7% | 4.0% | 3.9% |
| 3996     | Inverloch  | 7.3% | 7.5% | 6.1% | 5.6% | 4.8% | 4.4% | 4.3% |

### 4. Legend

The report includes schematics of the networks to visualise the network before reinforcement and the effects after reinforcement.

The legend depicting the colours for pressure ranges has been used throughout this report. The legend is as follows:

|   |                         |
|---|-------------------------|
|  | Below 140 kPa           |
|  | Between 140 and 250 kPa |
|  | Between 250 and 350 kPa |
|  | Between 350 and 450 kPa |
|  | Greater than 450 kPa    |

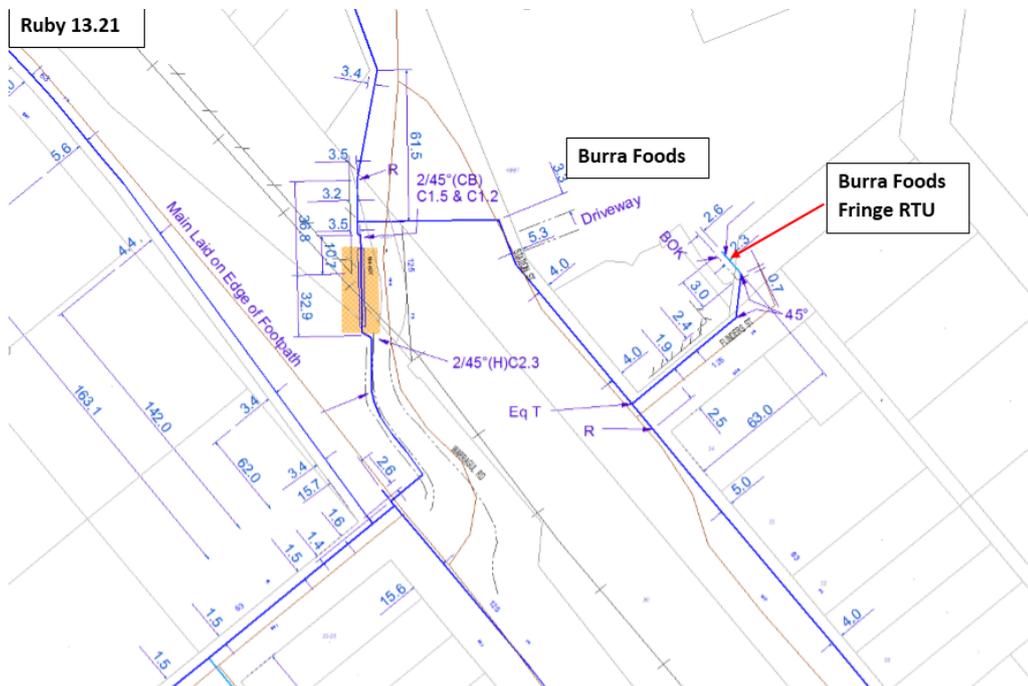
### 5. Results and Recommendations

#### Winter 2018

Burra Foods in Korumburra is a large Tariff D customer. Its load accounts for 70% of the total demand for the township of Korumburra.

Construct a monitor fringe RTU at Burra Food as shown in the Figure 5-1 in order to effectively monitor the minimum network pressure.

**Figure 5-1 Burra Foods Fringe RTU Location**



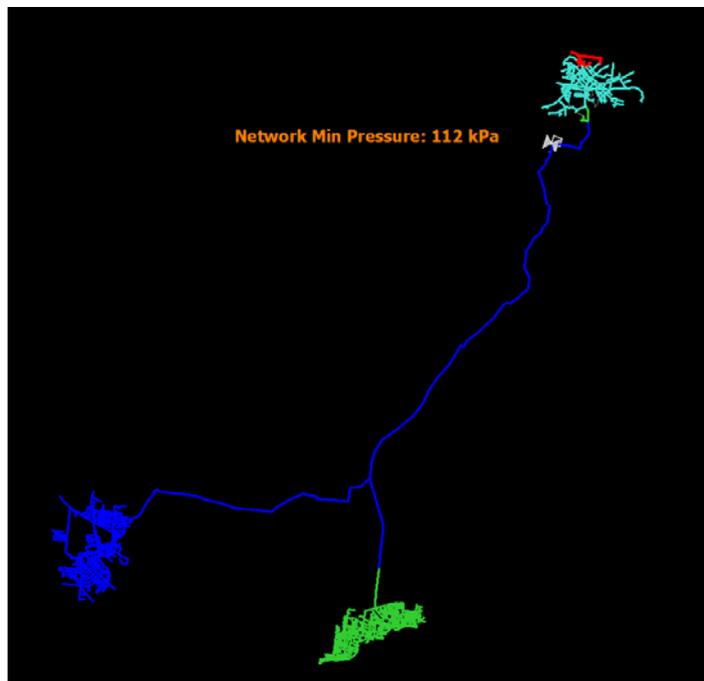
### **Winter 2019**

As shown in Figure 5-2, the Korumburra network will be experiencing main's pressure less than 140 kPa. In order to maintain pressure above 140 kPa (Refer to Figure 5-3), the following reinforcement is recommended:

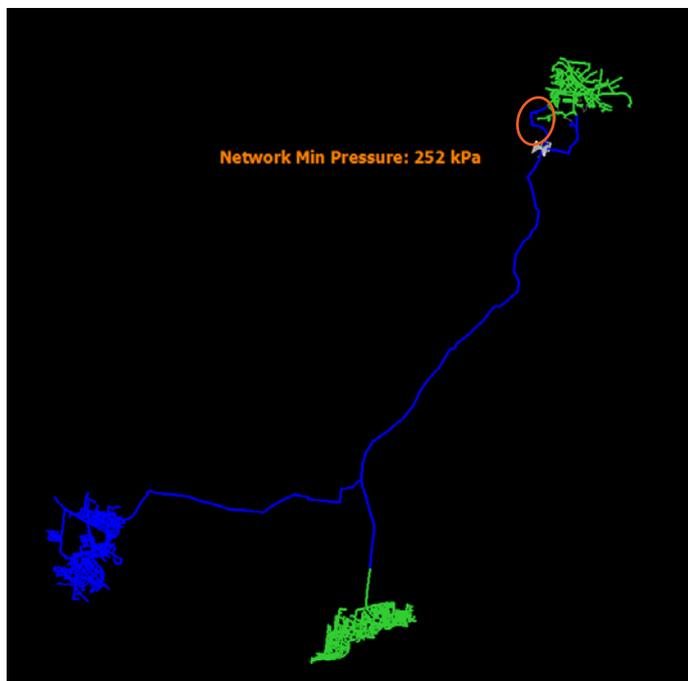
- Lay approximately 500 m of 100 mm<sup>1</sup> steel main in Clancys Rd from the existing 150 mm steel main at the intersection of Scott And Faheys Rd and Clancys Rd, and continue this main with 125 mm P10 along Clancys Rd northwards to the intersection of Clancys Rd and Korumburra – Wonthaggi Rd, and northwards towards the intersection of Korumburra – Wonthaggi Rd and Jumbunna Rd and tie in to the existing 63 mm main (Refer Figure to 5-4 for details).
- Built a monitor fringe RTU in Cape Paterson – Inverloch Rd in Inverloch as shown in the Figure 5-5.

<sup>1</sup> The length of steel required will be dependent on the calculation results determining the minimum length of steel for temperature recovery

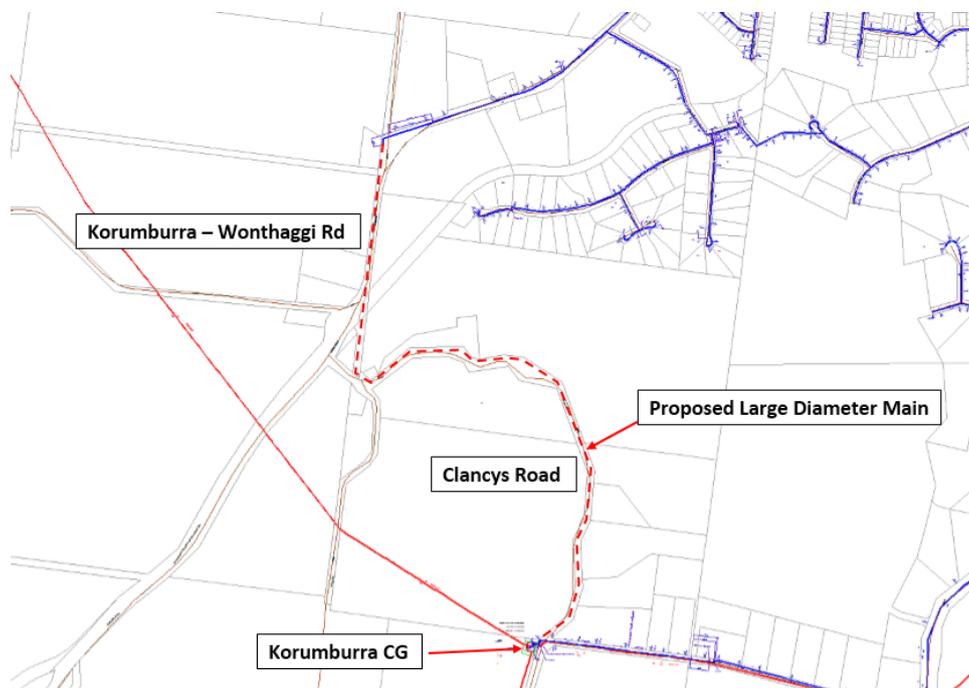
*Figure 5-2 Pressure Profiles before Reinforcement*



*Figure 5-3 Pressure Profiles after Reinforcement*



**Figure 5-4 Proposed Main's Detail**

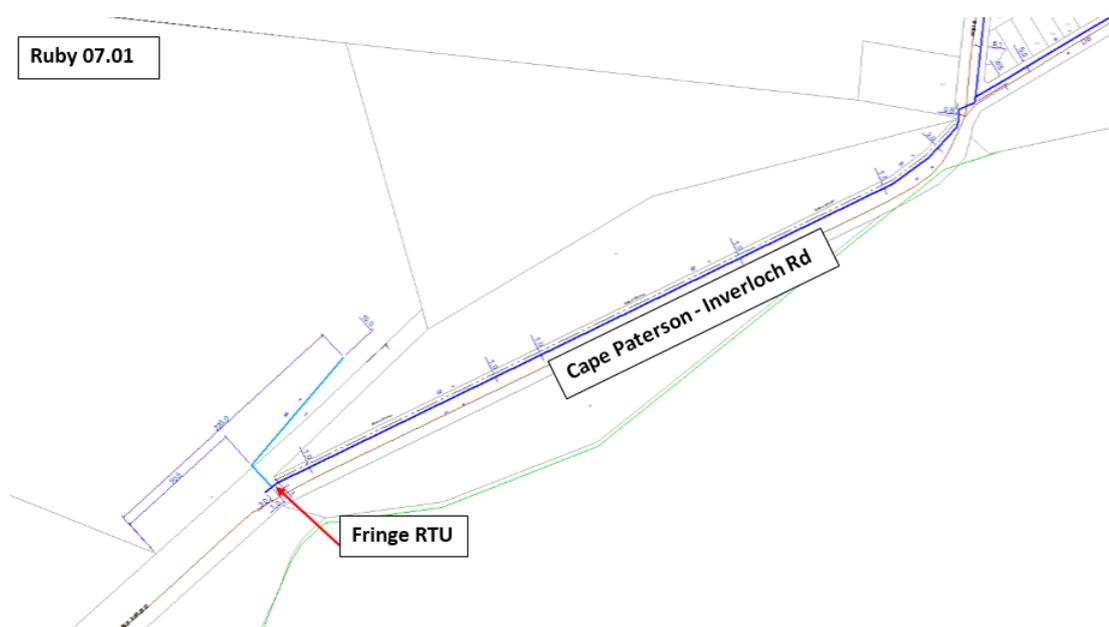


The following table shows the forecast minimum network pressure for the regulatory period:

| 2018 | 2019 | 2019R | 2020 | 2021 | 2022 |
|------|------|-------|------|------|------|
| 147  | 112  | 252   | 248  | 244  | 240  |

*R denotes Reinforcement*

**Figure 5-5 Inverloch New Fringe RTU Location**



## Appendix A Reference Files and Models

All SynerGEE models are saved under folder: \1. Asset Planning & Strategy\1.0 System Planning Synergiee \HP\\_GAAR2016\SGP\

Matching spreadsheet is saved under folder: \3.0 System Planning\\_Annual Planning\Winter Testing\Winter Testing Spreadsheet\GAAR

Forecast growth by postcode can be accessed via folder: \1. Asset Planning & Strategy\3.0 System Planning\\_Annual Planning\Winter Testing\Winter Testing Spreadsheet\GAAR

## Appendix B Forecast Regulator Flow

| Regulator No | Reg. Name            | Forecast Network Flow m3/h |       |       |       |       |
|--------------|----------------------|----------------------------|-------|-------|-------|-------|
|              |                      | 2018                       | 2019  | 2020  | 2021  | 2022  |
| P4-290       | Korumburra City Gate | 3,523                      | 3,625 | 3,714 | 3,796 | 3,877 |