

Network Performance Report 2016

Oakleigh HP Networks (H29)



Issued 19/12/2016
Document. No. MG-PR-2016-03
Version 2.0
Owner Multinet Gas
Gas Network – Asset Management

Preparation Record

Controlled Copy Register

Issue:	Version 2.0
Operative Date:	19/12/2016
Document Number:	MG-PR-2016-03

Amendment Record

Version	Date	Amended by	Description of Change
1.0	30/05/2016	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
Senior Engineer Network Planning	Elsie Zhao		30/05/2016

Reviewed & Approved By

	Title	Name	Signature	Date
Reviewer	Network Planning Engineer	Anja Trifkovic		19/12/2016
Endorsed	Asset Development Manager	Mark Cooper		19/12/2016
Approved	Head of Gas Network Strategy and Performance	Troy Praag		19/12/2016

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1. Executive Summary

The (H29) Oakleigh high pressure (HP) network will require reinforcement to maintain minimum system pressure above 140 kPa as required by the Gas Distribution System Code:

2017 to 2020

- Construct a new Princes Hwy regulator station off the 840 kPa system at the intersection of Darling Rd and Princes Hwy; and
- Lay approximately 6.7 km of 300 mm steel main from the new regulator station to the intersection of Toorak Rd and Myrning St and tie into the existing 200 mm steel main.

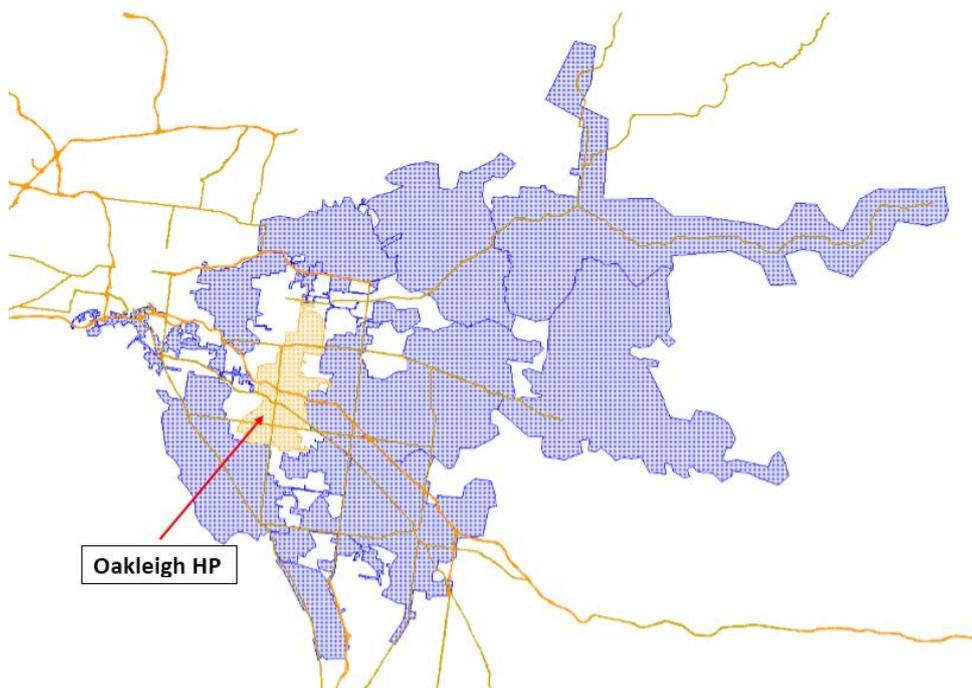
Due to the complexity and the scale of this project, it is recommended to carry out the reinforcement over a number of years. However, until the project has been completed as a whole, the advantageous benefits of this project cannot be realised.

2. Introduction

Oakleigh HP network is a high pressure network and is fed by 3 field regulators: P3-018 Atkinsons St, P4-239 Regent St and P4-009 East Boundary Rd supplying suburbs of Oakleigh, Box Hill, Burwood, Mt Waverley, Surrey Hills, Chadstone, etc. It is planned to be converted from a SCADA monitored network to a SCADA controlled network by the end of 2016.

Atkinsons St and Regent St regulators have been running consistently above 490 kPa in the past winters in order to maintain minimum pressure above 140 kPa due to lack of capacity, and have been running at 510 kPa during high demand hours.

Figure 2-1 Oakleigh High Pressure Networks Coverage



3. Analysis

This review is based on the latest available matched model from 2014. 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.

There is no forecast load growth in these suburbs.

2017	2018	2019	2020	2021	2022
0.6%	0.0%	0.0%	0.0%	0.0%	0.0%

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

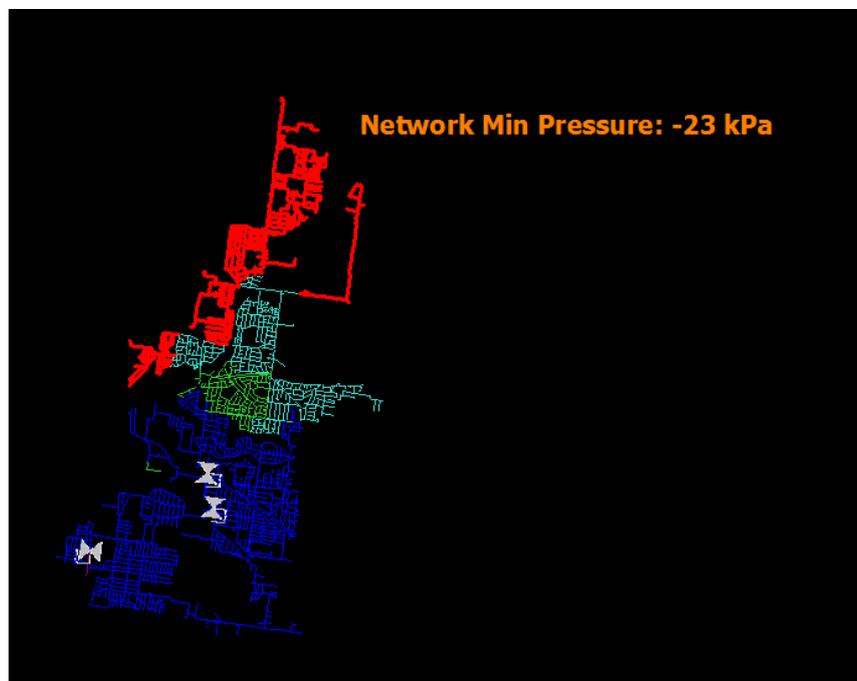
5. Results and Recommendations

Winter 2017

Synergi modelling indicates that under normal operation conditions where supply regulators are set at 450 kPa, almost 1/3 of entire network will be experiencing main's pressure less than 140 kPa as shown in Figure 5-1.

Multinet Gas (MG) has been operating Oakleigh network outside of normal standard operating pressures in the past few years. MG increased network pressures to 515 kPa during evening and morning peak demand hours during past winters in order to maintain the minimum network pressure above 140 kPa.

Figure 5-1 Pressure Profiles in winter 2017



It is recommended to reinforce the network by doing the followings works as shown in Figure 5-2:

- Construct a new supply regulator station off the 840 kPa system at the intersection of Darling Rd and Princes Hwy;
- Lay approximately 1.6 km of 300 mm steel main from the supply regulator station northwards along Darling Rd to the intersection of Malvern Rd and Princes Hwy;
- Lay approximately 1.5 km of 300 mm steel main from the intersection of Malvern Rd and Princes Hwy and along the existing medium pressure (MP) route north-eastwards to the intersection of Vale St and Hilltop Ave and tie into the existing 150 steel main;
- Lay approximately 2 km of 300 steel main from the intersection of Vale St and Hilltop Ave and along the existing MP route northwards to the intersection of Summerhill Rd and Toorak Rd;
- Lay approximately 1.6 km of 300 steel main from the intersection of Summerhill Rd and Toorak Rd and eastwards along Toorak Rd to the intersection of Toorak Rd and Myrniong St and tie into the existing 200 mm steel main;
- Lay approximately 800 m of 180 P10 main from Toorak Rd and westwards along Toorak Rd to tie in to the existing 180 P6 main at the intersection of Toorak Road and Glen Iris Rd; and
- Install a new network separation valve.

Figure 5-2 Oakleigh HP Grid Project Overview

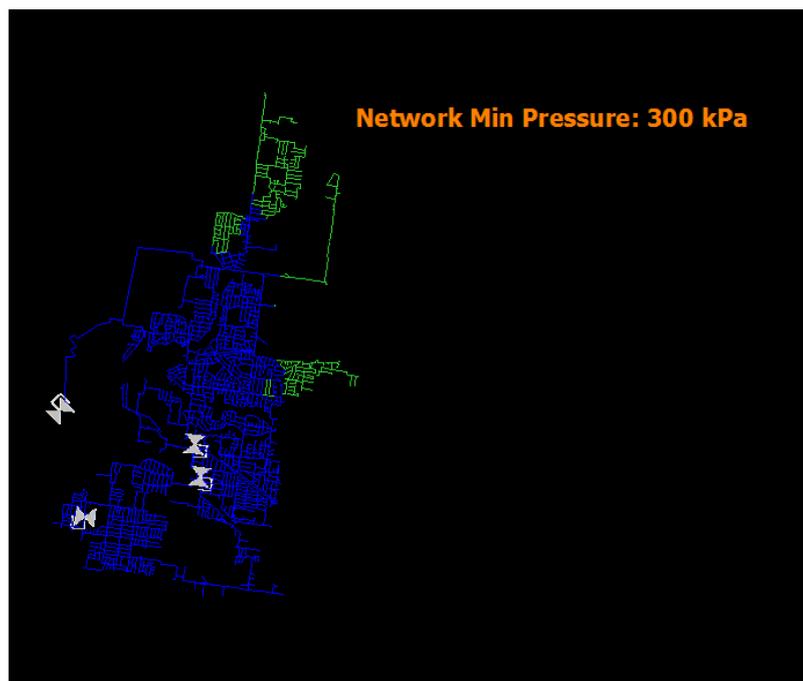


Winter 2021

It is projected that the entire augmentation project will be completed by winter 2021.

After the completion of the entire project, network pressure will be improved greatly as shown in Figure 5-3. The minimum network pressure will be improved from -23 kPa to 300 kPa under normal operation conditions.

Figure 5-2 Network Pressure Profile in 2021 after the completion of the project



Appendix A Reference Files and Models

All SynerGEE models are saved under folder: \1. Asset Planning & Strategy\1.0 System Planning Synergiee \HP_GAAR2016\Oakleigh\

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