

# Multinet Gas Asset Management CY2017- CY2022



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# Transmission Pipelines Strategy

CY2017 – CY2022

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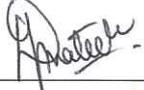
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### Originated By

Title	Name	Signature	Date
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## Executive Summary

This document outlines the capital expenditure strategy for Gas Transmission Mains on the Multinet Gas network.

Multinet plans to complete the following key programs to maintain its alignment with the Network Objectives, as detailed in Section 3.1, and remain compliant with its regulatory obligations under the Gas Safety Case, Gas Distribution System Code and AS 2885.

- Alteration of three (3) pipelines in order to facilitate integrity assessment by pigging methodologies; and
- Conduct assessment and replacement of aging marker posts in order to maintain compliance with AS 2885.

The primary drivers for the above mentioned programs are as follows:

- Maintain Integrity of Licenced Transmission Pipeline assets; and
- Maintain and Improve Operational, Safety and Regulatory requirements.

Table 0-1 provides the financial summary of the capital expenditure which is expected to be incurred in the calendar year period 2017 to 2022. Table 0-1 includes a breakdown of direct, overheads and labour escalators for the purpose of reconciliation with that of the overview documentations which support our forthcoming (2018-22) Access Arrangement submission.

**Table 0-1: Summary of Capital Expenditure (\$'000)**

Ref	Expenditure Category	CY2017	CY2018	CY2019	CY2020	CY2021	CY2022
4.2	Non-Piggable Pipeline Alteration Program	-	\$1,028	-	\$1,496	-	\$1,509
4.3	Marker Post Replacement	\$38	\$38	\$38	\$38	\$38	\$38
	<b>Total Direct Expenditure</b>	<b>\$38</b>	<b>\$1,066</b>	<b>\$38</b>	<b>\$1,534</b>	<b>\$38</b>	<b>\$1,547</b>
	Overhead	\$2	\$64	\$2	\$92	\$2	\$93
	<b>Subtotal</b>	<b>\$40</b>	<b>\$1,129</b>	<b>\$40</b>	<b>\$1,626</b>	<b>\$40</b>	<b>\$1,640</b>
	Real cost escalation	-	\$7	-	\$12	-	\$20
	<b>Total Expenditure</b>	<b>\$40</b>	<b>\$1,136</b>	<b>\$40</b>	<b>\$1,638</b>	<b>\$41</b>	<b>\$1,660</b>

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# 1. Document Overview

## 1.1. Objectives

This document articulates Multinet Gas' approach to the management of its expenditure relating to licensed transmission pipelines and their associated components.

It has the following objectives:

- Articulate the key areas of focus in relation to asset management, risk, investment, cost and service standard outcomes for Multinet's licenced transmission pipelines;
- It outlines Multinet's planned capital expenditure profile for the forecast period (2017–2022); and
- Show alignment of asset management practices with Gas Network Objectives.

The document is intended for use by:

- Multinet Gas staff (and it's contractors); and
- Regulators - Technical, Safety and Economic.

## 1.2. Scope

This strategy covers the management of Multinet Gas' existing licensed Transmission Pipelines and their associated components. In particular, this strategy covers licensed pipeline assets with a Maximum Allowable Operating Pressure (MAOP) above 1,050kPa.

This document defines the strategy to maintain public and personnel safety, integrity and security of supply in relation to Multinet Gas' transmission pipeline assets through compliance with regulatory, technical, and safety standards.

This strategy relates only to Multinet Gas' capital requirements in relation to transmission pipelines and excludes operational expenditure.

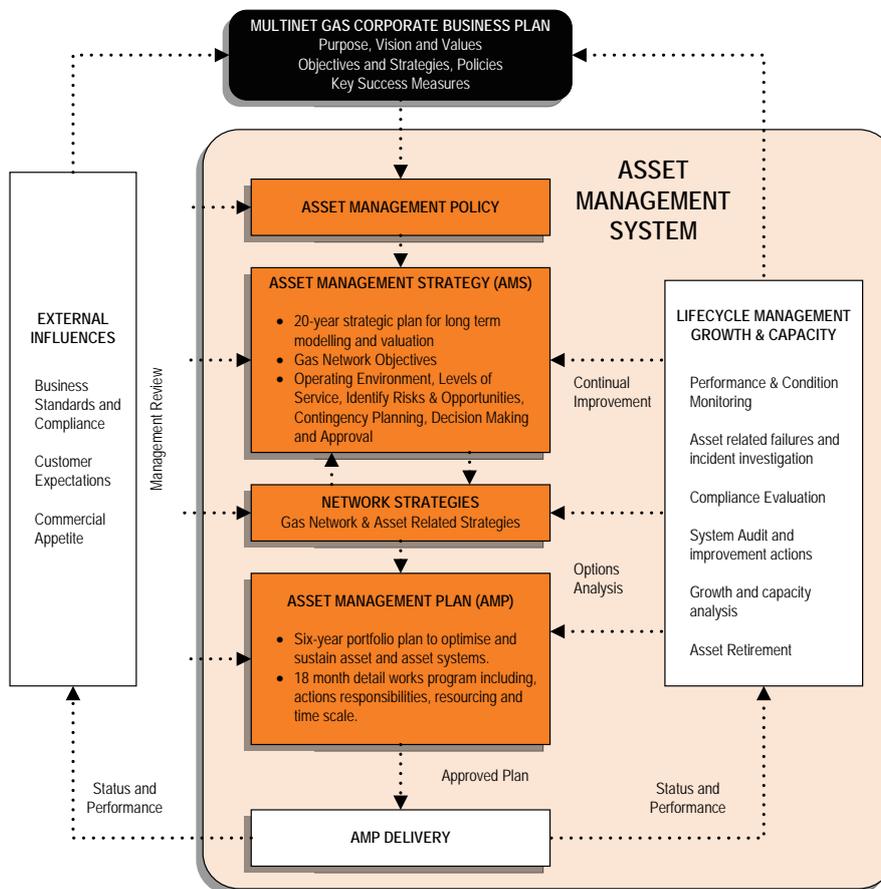
The strategy does not cover:

- Transmission pipeline operational and integrity management – Refer Pipeline Integrity Management Plan (MG-PL-0001); or
- Delicensed pipelines operating less than 1,050 kPa (known as High Pressure 2) – Refer Distribution Mains Strategy (MG-SP-0009).

## 1.3. Relationship with other Key Asset Management Documents

The Transmission Pipelines Strategy is one of a number of key asset management documents developed and published by Multinet Gas in relation to its gas network. As indicated in Figure 1-1, Detailed Networks Strategies - including the Transmission Pipelines Strategy – informs both the Asset Management Strategy (AMS) and Asset Management Plan (AMP) of the programs needed to achieve the long-term objectives of the gas distribution network.

**Figure 1-1: Asset Management Framework**



#### 1.4. Phasing and Financial Disclosure

All programs defined within this strategy are presented in calendar years consistent with the reporting requirements of the Australian Energy Regulator (AER) and where applicable the Gas Distribution System Code (Version 11).

Where required for conversion to financial year (July to June), dollars and volumes can be estimated using a 50:50 expenditure split.

All financial figures quoted within this document – unless otherwise specifically stated – have the following characteristics:

- Real Expenditure / Cost (reference year = 2017);
- Direct Expenditure only (i.e. excludes overheads and finance costs);
- In units of \$1,000 (i.e. '000); and
- All years are denoted in Calendar Year format.

Total values shown in tables and referred to in the text of this document may not reconcile due to rounding.

Conversion factors used in the escalation of historic expenditure to real 2017 equivalent expenditure is provided in Table 1-1. Cumulative conversion factors have been provided by Multinet Gas' Regulatory department.

**Table 1-1: CPI Conversion Factors**

	2012	2013	2014	2015	2016	2017
CPI Index - \$2017	1.09619	1.07465	1.05192	1.02819	1.01296	1.00000

## 1.5. Data Sources

The following data sources have been drawn upon in development of the Transmission Pipelines Strategy:

- SAP: [ERP tool used for data collection, analysis and maintenance management of MG assets]

Data anomalies (e.g. missing data, outliers, and unexpected variances) may be encountered upon examination of a data sets and the gathering of statistics and other relevant information for the purposes of analysis. Where encountered and relevant they will be noted within the body of the document.

## 1.6. References

- AS 2885 series – Pipelines—Gas and liquid petroleum
- Gas Safety Case
- Gas Distribution System Code Ver. 11.0
- Pipelines Act 2005
- Pipelines Regulations 2007
- Pipeline Integrity Management Plan (PIMP) MG-PL-0001

## 1.7. Document Review

This document shall be reviewed every two (2) years or earlier if required. The next review is due on or before 31 December 2018.

## 2. Asset Overview

### 2.1. Introduction

Multinet Gas operates and maintains its licensed transmission pipelines as per the regulatory requirement of the 'AS 2885: Pipelines—gas and liquid petroleum' (AS 2885), series. A total of 15 licences, totalling around 175 km of transmission pressure pipeline are distributed in Multinet Gas' metropolitan Melbourne territory and in the non-contiguous South Gippsland network. Details of the licences are provided in Section 5.2.

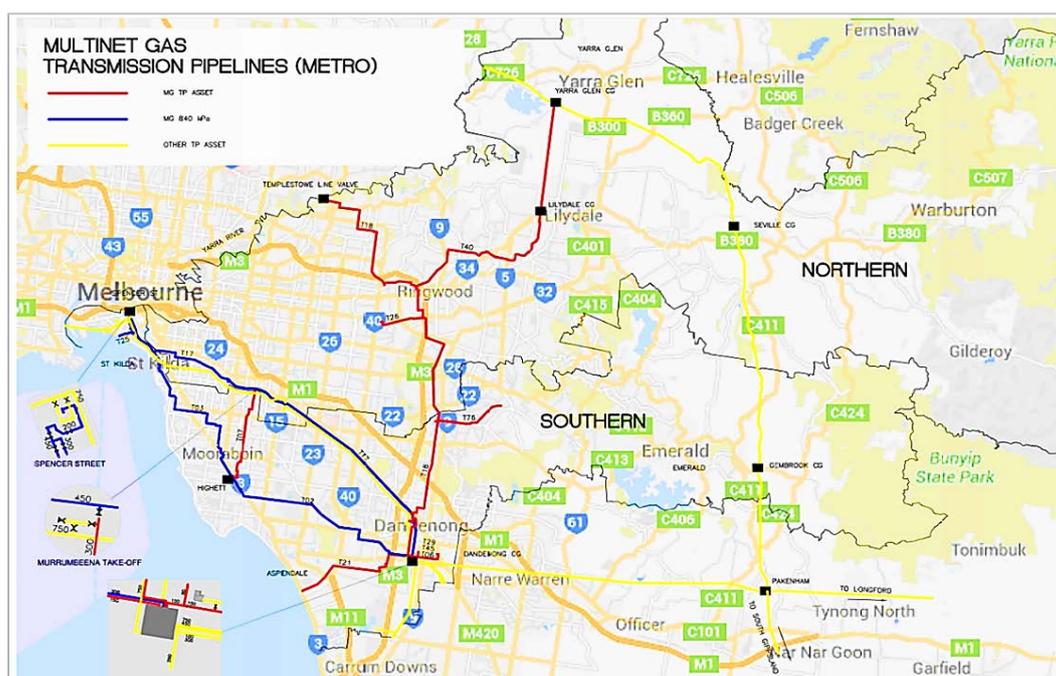
The 175 km of transmission pressure pipeline are segregated into two classifications, those operating above 1,050kPa and those operating below 1,050kPa. Lengths and locations in relation to these two classifications are provided in Table 2-1.

**Table 2-1: Transmission Pipeline Lengths**

Transmission Pipelines	Metropolitan	South Gippsland	
Operating above 1,050kPa	109.7 <sup>1</sup>	39.7	149.4
Operating below 1,050kPa	1.4 <sup>2</sup>	26.0	26.0
<b>Total</b>	<b>111.1</b>	<b>65.7</b>	<b>175.4</b>

The licenced transmission pipelines system in the metropolitan Melbourne territory transports gas from APA GasNet's gas transmission system known as the Declared Transmission System (DTS), to the Multinet Gas distribution network as depicted in Figure 2-1.

**Figure 2-1: Multinet Gas Melbourne Metropolitan Transmission Pipeline – Map**

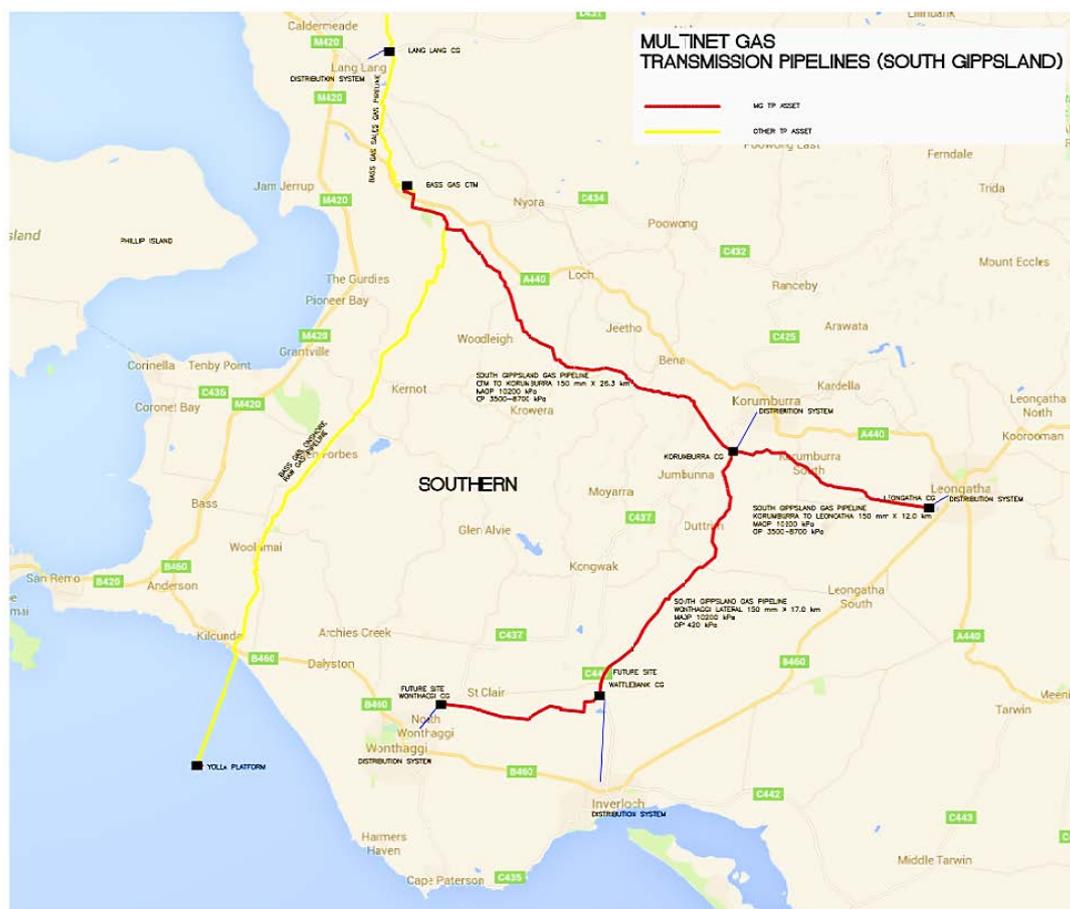


<sup>1</sup> Some data anomalies exist in SAP due to counting lengths of pipeline offtakes.

<sup>2</sup> License Number 204 South Melbourne pipeline

The South Gippsland Natural Gas Pipeline (SGP) is owned by Multinet Gas, classified as non-DTS and is fed from Bass Gas. This pipeline provides natural gas to the townships of Lang Lang, Korumburra, Leongatha, Inverloch and Wonthaggi. The commercial agreements regarding the gas transporting, gas quality and host retailer are separate to the rest of the Multinet Gas network in the metropolitan area. The Multinet Gas South Gippsland Pipeline is depicted in Figure 2-2.

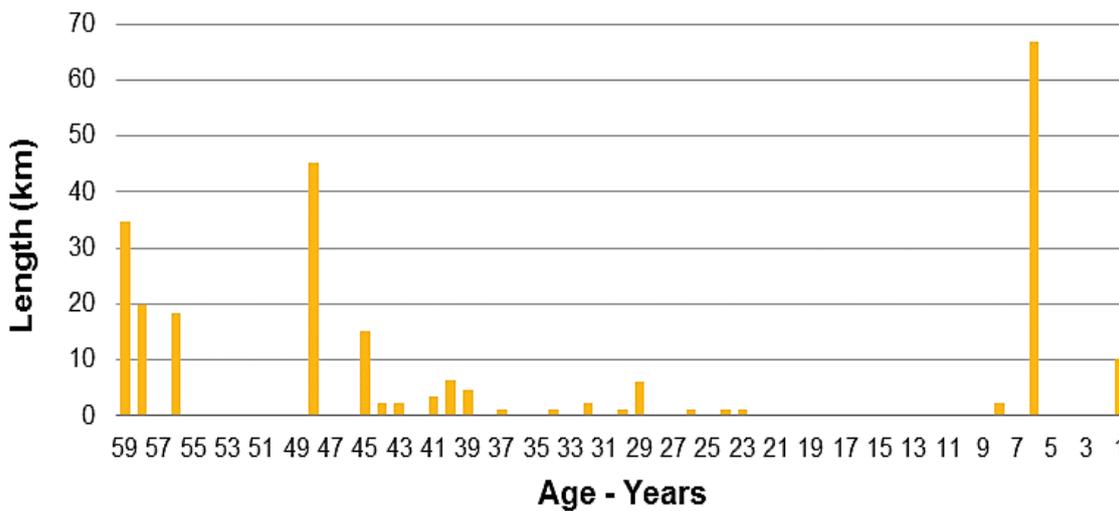
**Figure 2-2: Multinet Gas South Gippsland Transmission Pipeline – Map**



## 2.2. Asset Age Profile

Figure 2-3 provides an age profile in years and length in kilometres based on year of installation. Figure 2-3 shows a Multinet's gas transmission network dates back close to 60 years.

**Figure 2-3: Age Profile for Transmission Pipelines**



### 2.3. Asset Performance

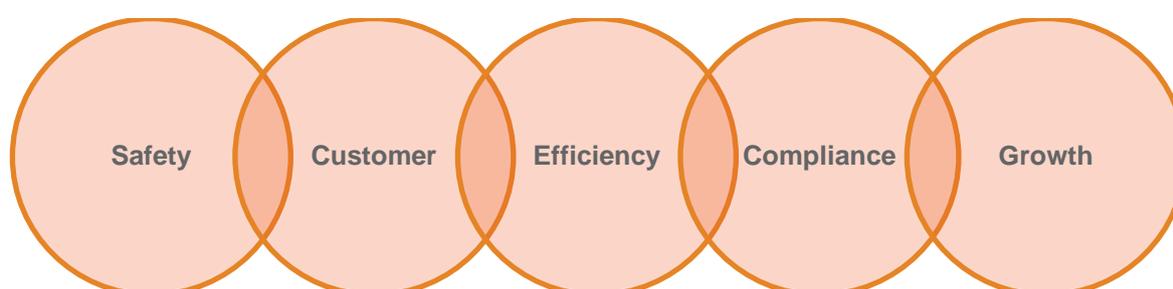
Refer to the Pipeline Integrity Management Plan (MG-PL-0001) for further details.

## 3. Asset Management Drivers

### 3.1. Network Objectives

Multinet Gas has established five (5) network objectives that govern how the network is operated and maintained. This is reflected mostly in regulatory obligations and in some cases prudent and responsible behaviour, justifiable on economic grounds. Achievement of these objectives ensures the sustainable and reliable operation of the gas distribution network.

**Figure 3-1: Gas Network Objectives**



The alignment between network objectives and the Transmission Pipelines strategy is detailed below.

#### 3.1.1. Safety – Achieve Zero Harm, while Maintaining Current Levels of Network Safety.

This strategy aims to achieve a high level of reliability and personnel / public safety through inspection, preventive and corrective maintenance and asset replacement.

Some of the older Multinet Gas Transmission pipelines have been designed and constructed in such a manner that they cannot be pigged without pipeline alterations. This strategy aims to achieve a high level of safety by proposing to carry out rectification works necessary to make Multinet’s gas transmission pipelines suitable for intelligent pigging. The aim of conducting intelligent pigging on a pipeline is to obtain data on its current physical condition, indicate the presence of any dents, gouges and any other anomalies.

#### 3.1.2. Customer – Effortless Customer Experience

This strategy aims to achieve a high level of customer satisfaction and experience by providing a reliable means of gas supply to the customer. The planned maintenance activities are designed to cause minimum or no interruption of supply to the customer to ensure that maintenance or replacement activities do not cause supply interruptions or financial loss to the customer.

Transmission pipelines form the supply backbone for all customers on the gas network. It is important to maintain a high level of asset integrity on these assets to ensure ongoing security of supply for all customers on the gas network. The non-piggable pipelines alterations program ensures that some of the older gas transmission pipelines are made piggable. The data obtained from intelligent pigging will enable Multinet Gas to continue maintaining these pipelines in a safe manner which in turn benefits the customers by providing a safe and reliable supply.

#### 3.1.3. Efficiency – Sustainable and prudent network investment

The maintenance strategies outlined in this document are aimed at improving the cost efficiency of the transmission pipelines operating in the MG network. This strategy aims to achieve a high level of efficiency by selecting three pipelines (as shown in Table 4-3) for rectification over a five year period (2018 to 2022). Multinet believes it can efficiently manage the workload and the technical complexities associated with these three pipelines with the available resources and in conjunction with other major projects currently underway. These works have been deferred due to delays in other major high-pressure pipeline work, notably Highett Asset Relocation and South Gippsland Pigging.

Multinet seeks to complete these projects efficiently by building up internal expertise by completing the least complex projects first and then assess the remaining non piggable pipelines for alteration and program them according to available resources. Multinet intends to make all non piggable pipelines piggable by 2027.

### **3.1.4. Compliance – Maintain Regulatory and Technical Compliance**

This strategy aims to achieve a high level of regulatory and technical compliance by ensuring that all maintenance and replacement activities are carried out to meet the requirements of Multinet Gas' Safety Case, AS 2885 and the Gas Distribution System Code.

This strategy aims to achieve a high level of compliance (with AS 2885 in particular) by implementing a program to make certain older transmission pipelines piggable. It is a requirement of current standards that all new pipelines have to be designed to accommodate intelligent pigging. By rectifying these older pipelines to make them piggable, Multinet will achieve compliance to AS 2885 requirements.

The marker post replacement program also aims to achieve compliance to AS 2885 as it is a requirement of this standard that all markers for transmission pipelines are clearly visible above ground, legible and carry relevant contact details.

### **3.1.5. Growth – Seek Opportunities for New Growth**

This strategy currently does not address any growth corridors for transmission pipelines.

## **3.2. Lifecycle Management**

The transmission pipelines are maintained by a combination of scheduled inspection and preventive maintenance activities undertaken by Multinet Gas to ensure the ongoing safe operation of these assets.

The Pipeline Integrity Management Plan (MG-PL-0001) provides further details on the preventive maintenance activities listed below:

- Corrosion Protection (includes scheduled Coating Defect Surveys);
- In-line Inspection activities;
- Scheduled Leakage Survey;
- Scheduled Heater inspections;
- Pipeline Surveillance & Patrolling;
- Pipeline Marking;
- Scheduled Valve Maintenance;
- Scheduled Regulator Stations and City Gate Maintenance; and
- Scheduled SCADA Maintenance

## 4. Capital Program – 2017 to 2022

### 4.1. Overview

The capital expenditure below only highlights pigging and marker post replacements as part of this strategy.

Integrity costs are not included in this strategy as they form operational expenditure and are contained within the Pipeline Integrity Management Plan.

Capex replacements for Transmission Pipelines are captured within the AER regulatory accounts of “Other”.

Table 4-1 and Figure 4-1 provide a breakdown of expenditure from 2017 to 2022 by program.

**Table 4-1: Capital Expenditure Forecast**

Ref	Program	2017	2018	2019	2020	2021	2022
4.2	Non-Piggable Pipeline Alteration Program	-	\$1,028	-	\$1,496	-	\$1,509
4.3	Marker Post Replacement	\$38	\$38	\$38	\$38	\$38	\$38
<b>Total Expenditure</b>		<b>\$38</b>	<b>\$1,066</b>	<b>\$38</b>	<b>\$1,534</b>	<b>\$38</b>	<b>\$1,547</b>

**Figure 4-1: Capital Expenditure Summary**



## 4.2. Non-Piggable Pipeline Alteration Program

### 4.2.1. Introduction

Generally, older pipelines were not designed with intelligent pigging in mind because intelligent pigging was an emerging technology available from the late 1980's in Australia.

Typically items that restrict intelligent pigging in the pre-1980s pipelines include absence of pig bars on branch tees, short radius, back-to-back bends and no provision for connection of pig launchers/receivers. Pipeline alterations such as removing short radius bends, installing new tees with pig bars and retrofitting pigging connections and valving are among the steps required to modify a pipeline to accommodate intelligent pigging. However this work is costly, not without risk and requires extensive pre-planning, approvals and lead time.

The non-piggable transmission pipelines within the Multinet's gas network are available in Table 4-2:

**Table 4-2: List of Non-Piggable Transmission Pipelines**

Pipeline Lic. No	Pipeline Number	Location	MAOP (kPa)	MOP (kPa)	Diameter (mm)	Length (km)
56	T07	Murrumbeena – Highett	2,760	2,760	300	8.3
28	T26	Ringwood – Vermont	2,758	2,758	200	3.5
33	T21	Dandenong-Edithvale	2,758	2,758	150	11.6
47	T29	Dandenong (Aust F'glass) (Dandenong To Insulation Solutions- Amatek Ltd)	2,760	2,760	150/80	0.85
47	T45	Dandenong (Dandenong To Hallam Valley Road)	2,760	2,760	150/100/80	2.21
77	T40	Croydon-Mooroolbark	2,760	2,760	250	3.43
51	T40	Ringwood – Lilydale (Stages 1-5) (Ringwood To Croydon)	2,760	2,760	250	6.52
100	T40	Mooroolbark-Lilydale	2,760	2,760	250	4.8
142	T76	Rowville - Ferntree Gully	2,900	2,760	150	6

### 4.2.2. Scope

The process to rectify pipelines for in line inspection (ILI, i.e. pigging) requires (at a minimum):

- The replacement of tight radius bends to swept bends to permit a pig to pass;
- The removal of reduced bore valves; and
- A valve configuration at each end of the pipeline to allow a pig launcher and receiver.

Multinet Gas has selected three (3) pipelines for rectification in the forecast period which are shown in Table 4-3.

**Table 4-3: Pipelines Targeted for ILI Rectification**

Pipeline Name	Pipeline Number	Licence No	Length (km)	Size (mm)	Number of Sharp Bends	Restrictive Valves	Provision for Piggig (Valve Config.)
Rowville to FTG	T76	142	6	150	0	None	Yes
Dandenong to Edithvale	T21	33	11.6	150	18	None	No
Murrumbeena to Highett	T07	56	8.3	300	28	None	Part

### 4.2.3. Business Drivers and Strategic Alignment

The primary driver to carry out this project is to achieve alignment with the following network objectives:

#### Safety

The ultimate purpose of this program is to ensure that the pipelines mentioned in Table 4-3 are made suitable for intelligent piggig. This will provide the following Safety related benefits.

- Ensure the structural integrity of the pipelines is maintained;
- Provide evidence of pipeline condition;
- Identify corrosion, dents, gouges and other anomalies that may be present; and
- Provide data for the remaining life reviews and Safety Management Studies.

#### Compliance

By rectifying these older pipelines to enable ILI, Multinet will achieve compliance to AS 2885 requirements.

The pipelines listed in Table 4-3 were selected for the following reasons:

- Rowville to FTG is the newest non piggigable pipeline and does have some facilities (pig pit and valving) already installed which should make it the least complex project. The pipeline diameter also lends itself to reuse of pig traps from the South Gippsland Pipeline piggig project.
- Dandenong to Edithvale pipeline is also 150mm diameter and can reuse pig traps from South Gippsland.
- Murrumbeena to Highett is in the process of being altered (Highett Asset Relocation) and the alteration includes installation of a piggig pit and valving at the termination of the pipeline at Highett so that the scope of alteration work is potentially less for this pipeline than others.

It is common for the integrity of non piggigable pipelines to be assessed by “External Corrosion Direct Assessment” processes which rely on indirect and direct inspection activities to detect corrosion and forecast the location of future corrosion. A disadvantage of ECDA is that it does not give a direct view of the condition of the entire pipeline at a point in time and requires the use of a limited number of site specific examinations to draw an inference on the condition of the pipeline overall. Australian Standards and safety regulators have an increasing bias away from ECDA in favour of making pipelines piggigable. High-profile pipeline explosions overseas in recent years which have resulted in significant loss of life are driving a view that intelligent piggig is an essential condition assessment tool for all high-pressure pipelines.

### 4.2.4. Works Program

Multinet has a number of pipelines targeted for in-line inspection which were designed and constructed such that they cannot be piggig without alterations. Such alterations include (at a minimum):

- The replacement of tight radius bends to swept bends to permit a pig to pass;

- The removal of reduced bore valves; and
- A valve configuration at each end of the pipeline to allow a pig launcher and receiver.

Table 4-4 lists the pipelines which are targeted under the Non Piggable pipeline alteration program. All three of the proposed alterations are considered “complex alterations” and require the full regulatory approval process. Multinet believes that a minimum of 2 years is required for engineering and approval processes. The proposed projects will commence with pipeline alterations. However until the South Gippsland pigging and the Highett Asset Relocation projects are formally completed, pigging operations cannot commence. This is due to the intent to reuse pig traps and because the Highett pig pit needs to be complete.

Current programming for the Highett Asset Relocation is December 2018. South Gippsland pigging is planned for completion by end Q1 2017.

**Table 4-4: Non-Piggable Pipeline Alteration Program**

Licence No	Size (mm)	Pipeline Number	Name	Length (km)	Year Commissioned	Rectification complete
142	150	T76	Rowville - Ferntree Gully	6.0	1984	2018
33	150	T21	Dandenong-Edithvale	11.6	1968	2020
56	300	T07	Murrumbeena – Highett	8.3	1965	2022

Table 4-5 shows the forecast cost required for alterations on three pipelines. The forecast has been drawn from an engineering feasibility study on the requirements to rectify each pipeline completed by OSD consultant in 2015.

**Table 4-5: Capital Expenditure Forecast – Non-Piggable Pipeline Alteration Program**

Transmission Pipeline	Pipeline Number	2017	2018	2019	2020	2021	2022
Rowville - Ferntree Gully	T76	-	\$1,028	-	-	-	-
Dandenong-Edithvale	T21	-	-	-	\$1,496	-	-
Murrumbeena – Highett	T07	-	-	-	-	-	\$1,509
<b>Program Expenditure</b>		<b>-</b>	<b>\$1,028</b>	<b>-</b>	<b>\$1,496</b>	<b>-</b>	<b>\$1,509</b>

### 4.3. Marker Post Replacement

#### 4.3.1. Introduction

Pipeline marker posts, as typified in Figure 4-2, highlight the presence of gas transmission pipelines to public and personnel operating in the close proximity of the asset. Marking of transmission pipelines is undertaken in accordance with AS 2885.1. The location of markers for new pipelines is driven by the outcomes of the Safety Management Study process undertaken during the pipeline design phase and taking into account the requirements of AS 2885.1. For existing pipelines, review of marker location and spacing is ongoing through feedback from Pipeline Surveillance activities as well as through the 5 yearly Safety Management Study process whilst also taking into account the requirements of AS 2885.1.

#### 4.3.2. Scope

Replacement of transmission pipeline markers and posts is primarily due to them getting damaged, vandalised or becoming illegible. Multinet intends to put a replacement program in place which will include the replacement of the

marker plates and post. An allowance of \$38k has been made to carry out the replacement of ■ marker plates and ■ marker posts annually. The replacement of these assets will be managed by the use of Multinet Gas Technical Standard Forms EC-PD-7971-A1 Licensed Pipelines Patrol Report and EC-PD-7972-A1 Licensed Pipelines Maintenance Request.

**Figure 4-2: Typical Transmission Pipeline Marker Post**



### **4.3.3. Business Drivers and Strategic Alignment**

The justification for the Transmission Pipeline Marker Replacement program is outlined below:

- Safety – Allowances for these works ensure that Multinet Gas transmission pipelines are well marked and can be clearly identified from a distance.
- Compliance – Allowances for these works ensure the pipelines are operated and maintained in compliance to AS 2885 series.

These works form a part of the key procedural controls to minimize the risks of external interference and Third-Party damage to Multinet Gas assets as they serve as a visual indicator to any one conducting works in the vicinity of gas transmission pipelines.

### **4.3.4. Works Program**

A summary of the capital expenditure for this program is listed in Table 4-6. The program was estimated utilising historical expenditure incurred on replacing these assets.

**Table 4-6: Capital Expenditure Forecast – Marker Post Replacement Program**

Program		2017	2018	2019	2020	2021	2022
Marker Post – Plate Replacement	Units	■	■	■	■	■	■
	Exp.	■	■	■	■	■	■
Marker Post – Total Replacement	Units	■	■	■	■	■	■
	Exp.	■	■	■	■	■	■
<b>Total Expenditure</b>		<b>\$38</b>	<b>\$38</b>	<b>\$38</b>	<b>\$38</b>	<b>\$38</b>	<b>\$38</b>

## 5. Appendix

### 5.1. Glossary & Definitions

Term	Meaning
AER	Australian Energy Regulator
AMP	Asset Management Plan
DTS	Declared Transmission System
ILI	In Line Inspection which is usually conducted by running a Pipeline Inspection Gauge (PIG)
kPa	Kilopascals
MAOP	Maximum Allowable Operating Pressure
MG	Multinet Gas
OPEX	Operating expenditure
OSD	Engineering consultancy firm
Other Expenditure	AER defined expenditure category including
PIG	Pipeline Inspection Gauge
SAP	Systems Applications and Products is an Enterprise Resource Planning tool which used at Multinet Gas for recording asset data and maintenance management.
SMS	Safety Management Study
TP	Transmission Pressure (Pressure Range: Above 1050 kPa)

## 5.2. Transmission Pipeline Description

### 5.2.1. MAOP 10,200kPa (South Gippsland Towns)

- Licence #261 - The 150mm South Gippsland Pipeline begins at the Bass Gas sales pipeline within Bass Gas travels in a south easterly direction for 38km and supplies Korumburra City Gate, Korumburra and Leongatha City Gate, Leongatha. The 27.7km lateral running from Korumburra to Wonthaggi and Inverloch operates with a Maximum Operating Pressure 515kPa despite a MAOP of 10,200kPa
- Licence #265 - The 50mm Lang Lang City Gate Connection is 65m long and transports gas from the Bass Gas sales pipeline to the City Gate in Lang Lang.

### 5.2.2. MAOP 6,980kPa (Lilydale Pipeline)

- Licence #276 - The 300mm Lilydale Pipeline begins at the Yarra Glen City Gate and travels in a southerly direction crossing under the Yarra River at Spadoni's Reserve and travelling down Victoria Road Lilydale and Terminating at the Lilydale City Gate.

### 5.2.3. MAOP 2760 kPa

- Licence #40 - The 450mm Dandenong-Templestowe line begins at the Henty Street Dandenong CTM and travels in a northerly direction to Wantirna, then travels north-westerly terminating at the new isolation valve and CTM in Fitzsimmons Lane, Templestowe.
- Licence #276 - The 300mm Lilydale Pipeline (T276) begins at the Lilydale City Gate and travels in a southerly direction down Victoria Road Lilydale before terminating at the Ringwood to Lilydale Pipeline at the corner of Victoria Road and Maroondah highway, Lilydale.
- Licence #51, #77 and #100 - The 250mm Ringwood-Lilydale transmission pipeline begins as a spur off the 450mm Dandenong-Templestowe pipeline in Ringwood and travels in a north-easterly direction to terminate at the Lilydale field regulator.
- Licence #142 - The 150mm Rowville-Ferntree Gully pipeline is supplied off the 450mm Dandenong-Templestowe line and terminates at the Glenfern Road regulating station supplying the Ferntree Gully high-pressure system.
- Licence #56 - The 300mm Murrumbeena-Hihett pipeline is supplied from the APA Group system at Murrumbeena and terminates at the Hihett regulator station.
- Licence #28 - The 200mm Ringwood-Vermont spur is supplied off the 450mm Dandenong-Templestowe line (T18) and terminates at the Vermont regulator-station, which supplies the Vermont high and medium pressure systems.
- Licence #33 - The 150mm Dandenong-Edithvale pipeline is supplied from the Dandenong Terminal Station and terminates at the Edithvale regulating station supplying the Edithvale high-pressure system.
- Licence #47 - The 150/80mm supply pipeline from Dandenong Terminal Station to Australian Fibreglass has a 150mm branch, which previously supplied the ex-GMH industrial complex.
- Licence #204 - The 200mm South Melbourne pipeline is supplied off the Dandenong -South Melbourne pipeline and terminates at the South Melbourne Outstation supplying medium and low-pressure systems.

### 5.3. Transmission Pipeline Table

**Table 5-1: Multinet Gas Transmission Pressure Pipelines**

Pipeline Lic. No	Pipeline Number	Location	MAOP (kPa)	Diameter (mm)	Length (km)	Year Commissioned
204	T25	South Melbourne	2,760 (1,050 OP)	200	1.4	1969
40	T18	Dandenong - West Melbourne (Ring Main) (Dandenong To Templestowe)	2,760	450	37.00	1965
56	T07	Murrumbeena – Highett	2,760	300	8.3	1965
28	T26	Ringwood – Vermont	2,758	200	3.5	1968
33	T21	Dandenong-Edithvale	2,758	150	11.6	1968
47	T29	Dandenong (Aust F'glass) (Dandenong To Insulation Solutions- Amatek Ltd)	2,760	150/80	0.85	1969
47	T45	Dandenong (Dandenong To Hallam Valley Road)	2,760	150	3.06	1970
77	T40	Croydon-Mooroolbark	2,760	250	3.43	1972
51	T40	Ringwood – Lilydale (Stages 1-5) (Ringwood To Croydon)	2,760	250	6.52	1973
100	T40	Mooroolbark-Lilydale	2,760	250	4.80	1974
276		Lilydale Pipeline - Yarra Glen to Lilydale City Gate (LCG)	6,980	300	7.5	2012
276		Lilydale Pipeline – LCG to Lilydale	2,760	300	3.3	2012
142	T76	Rowville - Ferntree Gully	2,900	150	6.00	1984
261		South Gippsland Pipeline	10,200	150	65.7	2007
205		Malvern (Offtake)	2,760	150/100		1976
209		Howe Parade (Offtake)	2,760	100		1979
205		St. Kilda East (Offtake)	2,760	100		1981
209		Lorimer Street (Offtake)	2,760	100		1981
205		Noble Park (Offtake)	2,760	150		1983
205		Oakleigh (Offtake)	2,760	200		1987
210		Gembrook City Gate (Offtake)	6,890	80/100		1989
205		Clayton (Offtake)	2,760	80/100		1990
209		Aughtie Drive (Offtake)	2,760	300/150		1988
210		Yarra Glen City Gate	6,890	80/50		2005
210		Seville East City Gate	6,890	80		2005

Pipeline Lic. No	Pipeline Number	Location	MAOP (kPa)	Diameter (mm)	Length (km)	Year Commissioned
265		Lang Lang CG Connection	10,200	50		2007
		Various Pipeline Off Take Total Length			12.5	
		Total Length Operating > 1050 kPa			175.4	

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