



**FINAL REPORT**

**Review of Gas Pipeline Businesses' Asset  
Management Plans**

Prepared for New Zealand Commerce Commission

16 October 2015



This document has been prepared for the benefit of New Zealand Commerce Commission. No liability is accepted by this company or any employee or sub-consultant of this company with respect to its use by any other person.

This disclaimer shall apply notwithstanding that the report may be made available to other persons for an application for permission or approval to fulfil a legal requirement.

## QUALITY STATEMENT

### PROJECT MANAGER

Grant Lorimer

### PROJECT TECHNICAL LEAD

Mark Plested

### PREPARED BY

Mark Plested

16/10/2015

### CHECKED BY

Andrew Maughan

16/10/2015

### REVIEWED BY

Andrew Atkinson

16/10/2015

### APPROVED FOR ISSUE BY

Grant Lorimer

16/10/2015



### AUCKLAND

MWH House Level 3, 111 Carlton Gore Road, Newmarket, Auckland 1023  
 PO Box 9176, Newmarket, Auckland 1149  
 TEL +64 9 580 4500, FAX +64 9 580 7600

## REVISION SCHEDULE

Rev No	Date	Description	Signature or Typed Name (documentation on file).			
			Prepared by	Checked by	Reviewed by	Approved by

## Executive Summary

Gas Transmission Businesses (GTBs) and Gas Distribution Businesses (GDBs) – collectively referred to as gas pipeline businesses (GPBs) – are subject to information disclosure regulation under Part 4 of the Commerce Act 1986 (Act). There are three GDBs:

- GasNet Limited,
- Powerco Limited, and
- Vector Limited.

There are two GTBs:

- Maui Development Limited and
- Vector Limited.

This report summarises the results of a review of the 2013 Asset Management Plans (AMPs) and any 2014 updates with the expectation that it will facilitate improvements in future AMPs. AMPs were prepared under either the less stringent transitional requirements or the full disclosure requirements as defined for each business. Compliance with relevant disclosure requirements was scored based on the following scale to develop an indicative overall assessment score for each AMP:

- 1 non-compliant
- 2 partially compliant
- 3 compliant

All AMP's demonstrated overall good compliance with the requirements. While some areas were deemed non-compliant or partially compliant the review showed that each company has generally complied with the intent of the Determinations and should be commended. Overall scores assessed are as follows:

### Transitional AMPs

Maui Development Transmission AMP	2.5/3.0
GasNet Distribution AMP	2.6/3.0

### Full AMPs

Vector Transmission AMP	2.9/3.0
Vector Distribution AMP	2.9/3.0
Powerco Distribution AMP	2.9/3.0

Appendix A presents detailed spreadsheets for each AMP review listing the scoring and rationale against each disclosure requirement. Comments made in the determination review are intended to facilitate the process of continuous improvement of these initial AMPs and should be taken constructively.

The reviewer met and discussed the review findings with each GPB. All were cooperative and supportive of this process and felt that the assessments were fair and reasonable. Additional comments and clarifications were taken into consideration but did not substantially change the assessment results. The reviewer did however get a better sense of the alignment of role, responsibility, process, and implementation of practice through these discussions. As a whole, this would appear to be much better in practice than described in the 2013 AMPs and their updates. The GPBs also generally felt that the disclosure process and AMP were beneficial, and improved their internal management processes. Several commented that the AMPs were not just a compliance document, but are used to manage the business. This contributed further to the generally positive impression of the GPBs commitment to good asset management practice left with the reviewer.

As can be seen by the evaluation results, the reviewer generally found the disclosure requirement information required had been presented. However, the AMPs were not necessarily easy to understand or enabled the reader to determine if what was described as being done was achieving the desired results. The purpose of the AMP is to ensure that sufficient information is readily available to interested persons to assess whether the Part 4 purpose is being met. However products while compliant, are much too complicated to be able to achieve the purpose and some of the information needed to do so is presented in other disclosure documents..

# New Zealand Commerce Commission

## Review of Gas Pipeline Businesses' Asset Management Plans

### CONTENTS

Executive Summary .....	i
1 Introduction.....	1
1.1 Background.....	1
1.2 Project Scope.....	2
1.3 Overview of the Gas Pipeline Businesses .....	3
1.3.1 Powerco Limited - Distribution.....	3
1.3.2 GasNet Limited - Distribution .....	4
1.3.3 Vector Limited – Distribution .....	4
1.3.4 Vector Limited - Transmission .....	5
1.3.5 Maui Development Limited - Transmission .....	5
2 Project Findings .....	6
2.1 Compliance with Relevant Determinations .....	6
2.1.1 Introduction.....	6
2.1.2 Findings Review and Face-to-Face Meeting .....	6
2.1.3 Conclusions.....	7
2.2 Overall AMP Quality and Improvements Required.....	8
2.2.1 General .....	9
2.2.1.1 Are the AMPs able to be understood? .....	9
2.2.1.2 Can you see what is or might be impacting the business and what is being done about it? .....	9
2.2.1.3 Can you see that the Asset Management Strategy is Sustainable and Affordable now and in the Future? .....	10
2.2.1.4 To what degree can you see the practices described in the AMP being actually applied? .....	10
2.2.2 Executive Summary.....	10
2.2.3 Information Disclosure Cross Reference Matrix .....	11
2.2.4 The Contents of the AMP .....	11
2.2.5 Network Development Planning .....	11
2.2.6 Non-network Development, Maintenance and Renewal .....	11
2.2.7 Risk Management.....	11
2.2.8 Continuous Improvement/Improvement Plans.....	12
2.3 Asset Management Quality and the ISO 55000 Standards .....	13
2.4 High Level Review of Expenditure Variability .....	14

## APPENDICES

### Appendix A Specific Comments on AMPs

- A.1 GasNet Limited Compliance Rating = 2.6/3.0
- A.2 Maui Development Limited Compliance Rating = 2.5/3.0
- A.3 Powerco Limited Compliance Rating = 2.9/3.0
- A.4 Vector Limited – Gas Transmission Compliance Rating = 2.9/3.0
- A.5 Vector Limited – Gas Distribution Compliance Rating = 2.9/3.0

Cover Photo Credit : Arivumathi (Own work) [CC BY-SA 3.0 (<http://creativecommons.org/licenses/by-sa/3.0>)], via Wikimedia Commons from Wikimedia Commons

# 1 Introduction

MWH, a 7,000 strong global infrastructure, energy, and environmental consulting firm with over 500 employees in New Zealand, has undertaken a review of the publicly disclosed Gas Pipeline Businesses (GPBs) Asset Management Plans (AMPs), covering the period from 2014-2023. The AMPs being reviewed include those of both the Gas Transmission Businesses (GTBs) and Gas Distribution Businesses (GDBs). The intent of the review process is to facilitate improvements in the 2015 and 2016 AMPs which are expected to provide information to support the next default price-quality path (DPP).

This report presents the results of a desktop review of the AMPs during which each GPB was given the opportunity to respond to evaluations, including face-to-face interviews and discussions. The results of this process are summarised in this report. Detailed assessment results for each AMP can be found in Appendix A.

## 1.1 Background

Gas Transmission Businesses and Gas Distribution Businesses – collectively referred to as gas pipeline businesses (GPBs) – are subject to information disclosure regulation under Part 4 of the Commerce Act 1986 (Act). There are three GDBs:

- GasNet Limited,
- Powerco Limited, and
- Vector Limited.

There are two GTBs:

- Maui Development Limited and
- Vector Limited.

The purpose of the information disclosure is to ensure that sufficient information is readily available to interested persons to assess whether the Part 4 purpose is being met (Section 53A, Commerce Act 1986). Under the information disclosure requirements, GPBs are required to publicly disclose an AMP each year. The AMP provides information on how the business intends to manage its network assets to meet consumer requirements. The AMP disclosure requirements for GTBs are set out in the Gas Transmission Information Disclosure Determination 2012 while those for GDBs are set out in the Gas Distribution Information Disclosure Determination 2012 (Determinations).

A GPB's AMP is a ten-year plan that sets out how the GPB intends to manage its assets. This includes:

- How it will meet its service and performance targets,
- The considerations behind its investment and operating decisions, and
- The way that it intends to manage risk.

The AMP also contains

- Details of network assets,
- Planned network developments,
- Future maintenance needs, and
- Forecast expenditures.

As well as being used by the GPB itself, the AMP is used by consumers, retailers, consultancies, investment analysts and investors, policy makers, the Commission and other interested persons who wish to understand how well a GPB is managing its assets, responding to consumer needs, and what projects to improve services are planned.

This review of the 2013 AMPs and any 2014 updates is expected to facilitate improvements in future AMPs. These future AMPs will provide information that may be useful to the Commission in establishing the next default price-quality path (DPP), which will commence 1 October 2017. The AMPs also describe the asset management processes of the GPBs that underpin other information to be disclosed by the GPBs. This other information may also be used to support the next DPPs for GPBs.

## 1.2 Project Scope

MWH was commissioned by the Commerce Commission to review each of the five AMPs and any applicable updates submitted by GPBs for 2013 and 2014 for compliance with the relevant Determination and for overall quality.

GasNet Limited and Maui Development Limited produced transitional AMPs, while Powerco Limited and Vector Limited produced full AMPs. The latest AMPs and AMP updates were disclosed in 2014. The assessment of the Vector Limited and Powerco Limited AMPs consider the 2013 AMPs alongside the 2014 AMP updates.

Specifically the AMPs reviewed were:

### Gas Distribution AMPs:

GasNet Ltd	Transitional AMP for 2014 disclosure year
Powerco Ltd	2013 AMP and 2014 update
Vector Ltd	2013 AMP and 2014 update

### Gas Transmission AMPs:

Maui Development Ltd	Transitional AMP for 2014 disclosure year
Vector Ltd	2013 AMP and 2014 update

MWH distributed an initial findings assessment to each GPB and then meet to discuss any concerns, enable the GPBs to clarify information in the AMP, and to enable the reviewer to better understand the asset management practices of each GPB.

The work then resulted in preparation of two documents addressing the following:

#### AMP Review

- Each of the GPB AMP's compliance with the relevant determination
- Each AMP's overall quality and key potential improvements
- A high level review of annual expenditure variability in each of the AMPs, and where variability exists explanation within the AMPs of that variability
- A review of asset management quality with the ISO 55000 standards representing good practice

#### Requirement Process Review

- A consideration of the AMP disclosure requirements in the Determination and recommended improvements

This document presents the results of the AMP review.

The Requirement Process Review was submitted as a separate letterform report to the Commerce Commission.



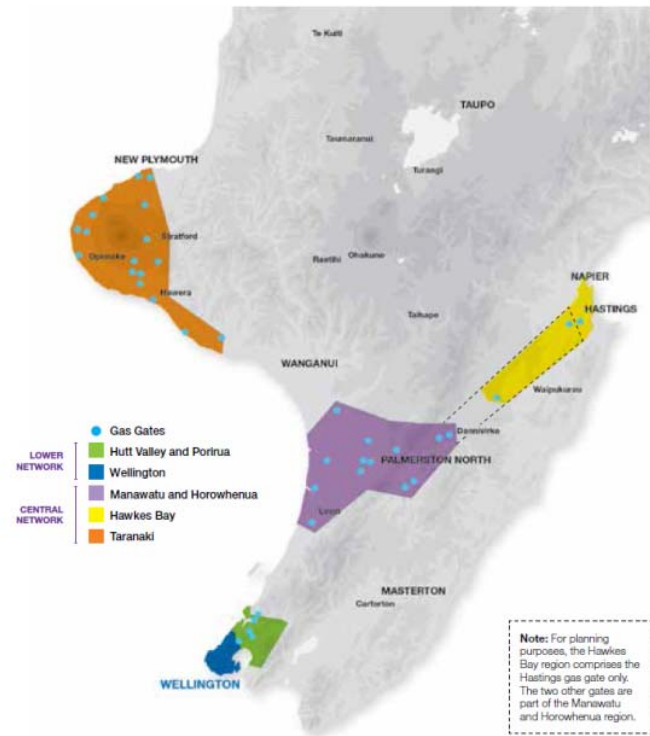
## 1.3 Overview of the Gas Pipeline Businesses

The descriptions of the individual businesses and associated figures presented below can be found in their respective AMPs but are summarised here to provide a perspective of the scale of each GPB's business and the assets addressed in each AMP.

### 1.3.1 Powerco Limited - Distribution

Powerco's gas distribution system starts where Powerco receives a retailer's gas from the Transmission System Operator (TSO) at a designated gate station handover point. It usually ends at the inlet of the Gas Measurement System (GMS) that supplies the consumer. Powerco owns and operates 52,000 GMS, which are not covered by the AMP. The gate station and assets upstream of the handover point belong to the TSO, with Powerco owning the distribution assets downstream from the handover point. The Powerco gas network is non-contiguous in nature and not interconnected. Five separate regions are serviced as shown in the adjacent figure. The five operating regions are:

- Wellington;
- The Hutt Valley and Porirua;
- Taranaki;
- Manawatu and Horowhenua; and
- Hawkes Bay.



These regions can be further subdivided into 36 gate stations that feed 34 distribution segments.

The gas network comprises:

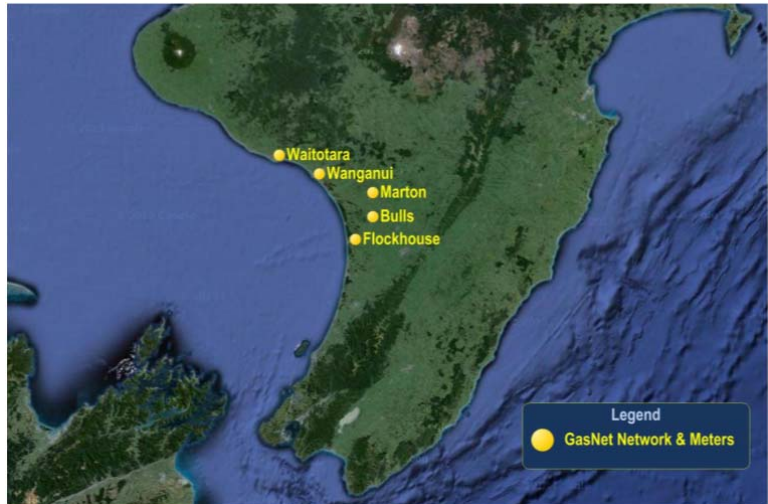
- Mains, the underground pipes, operating at different pressures that are typically placed within the road corridor to move gas to individual service points.
- Services, the smaller underground pipes that branch off the mains and deliver gas to individual customers; and
- Additional equipment providing:
  - Pressure regulation (District Regulation Stations – DRS);
  - Isolation (line and service valves);
  - Corrosion protection (cathodic protection systems);
  - Safety and protection; and
  - Communication of data (SCADA).

Together, these assets supply around 103,000 customers (around 40% of total gas connections in New Zealand) in the North Island and comprise over 6,200km of mains and service pipes. The network is the second largest in New Zealand in terms of length and number of customers connected.

### 1.3.2 GasNet Limited - Distribution

GasNet owns and operates five natural gas distribution networks. The five networks are known as Wanganui, Marton, Bulls, Waitotara, and Flockhouse and are located in the Wanganui, Rangitikei and South Taranaki regions. Each network begins at the designated outlet of each Sales Gate station. Natural gas is transported through a combination of metallic and polyethylene pipes, typically reducing in pressure to the consumer's property. The outlet of the gas service valve at a consumer's property represents the end of the network being the 'demarcation point' between network and Gas Measurement System (GMS) assets. The gas network comprises:

- 389km of mains,
- 231km of services; and
- Additional equipment providing:
  - Pressure regulation (District Regulation Stations – DRS);
  - Isolation (line and service valves);
  - Corrosion protection (cathodic protection systems);
  - Safety and protection; and
  - Communication of data (SCADA).



### 1.3.3 Vector Limited – Distribution

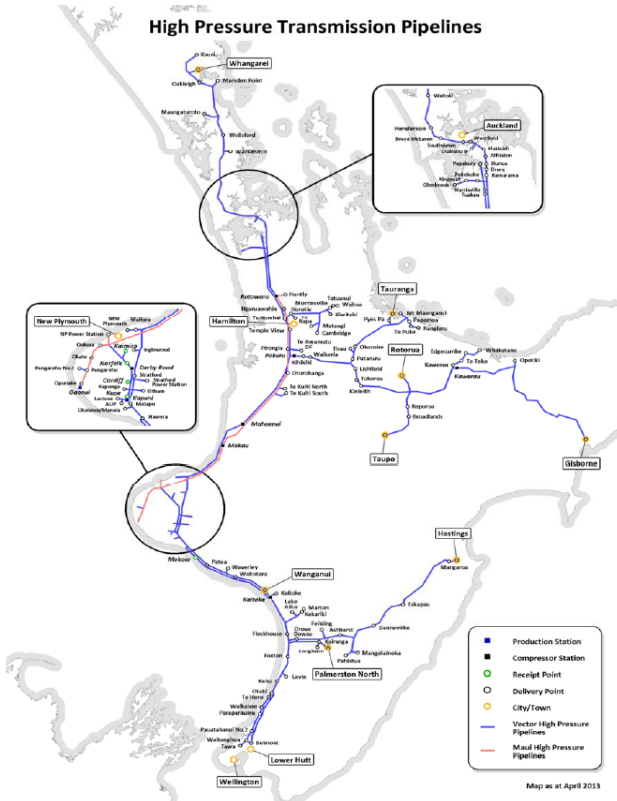
Vector provides gas to over 30 towns and cities across the North Island as shown in the adjacent map.

The gas network comprises:

- Mains;
- Services; and
- Additional equipment providing:
  - Pressure regulation (District Regulation Stations – DRS);
  - Isolation (line and service valves);
  - Corrosion protection (cathodic protection systems);
  - Safety and protection; and
  - Communication of data.

Together, these assets supply around 150,000 customers in the North Island and comprise over 10,300km of mains and service pipes. The network is the largest in New Zealand in terms of length and number of customers connected.





### 1.3.4 Vector Limited - Transmission

Presently, New Zealand’s natural gas is sourced in the Taranaki region, from where it is transported by Vector through a high pressure gas transmission system consisting of pipelines, stations and non-network assets that supplies natural gas to most cities and large towns in the North Island of New Zealand (see adjacent Figure).

The total pipeline length is approximately 2,200 km of which approximately 71 km are installed in urban areas and the remainder in rural areas. There are eight strategically located compressor stations where gas is compressed for onward transportation. An increase in gas pressure is required to maintain satisfactory terminal pressure at the extremities of the system.

Other stations include 124 delivery points (DPs), main line valve (MLV) stations and pipeline inspection gauge (PIG) launcher and receiver stations (also known as scraper stations). DPs are stations where gas pressure is reduced and delivered to downstream gas distribution networks and/or direct to commercial/industrial users.

### 1.3.5 Maui Development Limited - Transmission

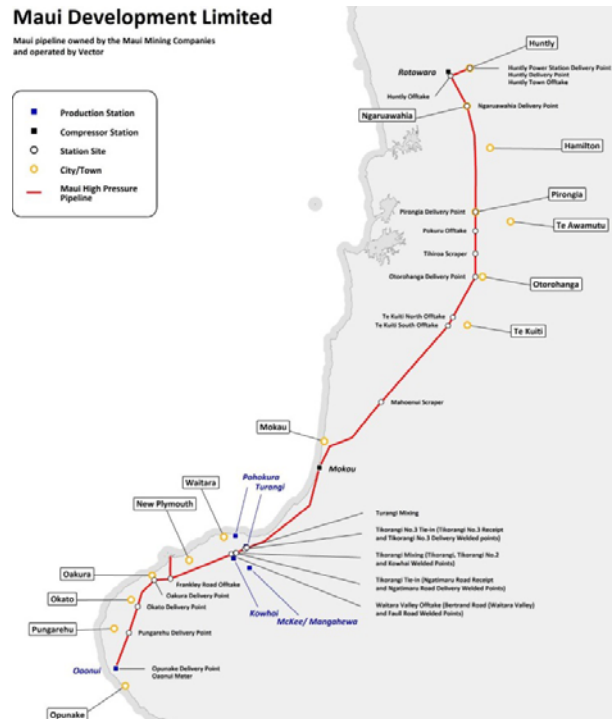
The Maui Pipeline is a 309 km long high pressure gas transmission pipeline running from Maui Production Station at Oaonui to Huntly Power Station (south of Auckland). The pipeline includes laterals to Huntly and New Plymouth power stations, the Mokau compressor station and 22 other connections comprising intake and offtake stations, valves and metering facilities.

The pipeline is the largest capacity high pressure gas transmission pipeline in New Zealand. It transports gas directly to large gas users such as electricity generators and petrochemical plants, as well as being the primary source of supply for other gas transmission and distribution pipelines. It is paralleled by part of the Vector system - the Kapuni to Rotowaro pipeline - which has a capacity of 10 to 11 PJ per annum into those same areas.

The customers of the Maui Pipeline comprise Shippers (who wish to have gas transported through the Maui pipeline) and Welded Parties (owners of pipelines or interconnection facilities directly connected to the Maui pipeline, who either supply or receive gas).

#### Maui Development Limited

Maui pipeline owned by the Maui Mining Companies and operated by Vector



## 2 Project Findings

This section includes the summary results from the five individual GPB AMP reviews.

### 2.1 Compliance with Relevant Determinations

#### 2.1.1 Introduction

The Powerco and two Vector AMPs were reviewed against the relevant determination, and the GasNet and Maui Development transitional AMPs were reviewed against the less stringent transitional AMP requirements. With different determinations for GTBs and GDBs this means there are effectively four different determination evaluations for five different GPBs.

The desktop review included:

- Each of the GPB AMP's compliance with the relevant determination
- Each AMP's overall quality and key potential improvements
- A high level review of annual expenditure variability in each of the AMPs, and where variability exists explanation within the AMPs of that variability
- A consideration of the AMP disclosure requirements in the Determination and recommended improvements
- A review of asset management quality with the ISO 55000 standards representing good practice.

A measure of the degree of compliance of each AMP was determined using a 1-3 scale as previously done for Electricity Distribution Businesses'. Compliance with relevant disclosure requirements were scored based on the following scale:

- 1 non-compliant
- 2 partially compliant
- 3 compliant

A purely arithmetic average approach was used to assess an overall score for each compliance area and the AMP as a whole. The key to this scoring methodology is creation of a hierarchical structure for the compliance criteria, averaging subfactor scores to create a disclosure requirement score, and then averaging those to create the total score. The hierarchy is colour coded for ease of review.

While this scoring system is useful in determining gaps in compliance with the requirements, the significantly different interpretations of the level of detail, quantity, quality and relevance of information presented in the individual AMPs required additional comment where gaps and areas of concern were identified. These comments are included in the individual AMP review summaries contained in Appendix A. Each summary consists of:

- a detailed spreadsheet listing the disclosure requirement,
- scoring and rationale against each requirement, and
- a summary of identified gaps and areas of concern.

Comments made in the determination review and included in the spreadsheet are intended to facilitate the process of continuous improvement of these initial AMPs and should be taken constructively.

#### 2.1.2 Findings Review and Face-to-Face Meeting

An initial draft of each AMP's compliance assessment was sent to each business for comment. Those comments were then reviewed and addressed in face-to-face meetings with the business during the week of 14 September 2015. During this meeting the reviewer also gauged the level of actual use of the principles and practices documented in the AMP.

The two key findings of this process were:

- Where non-or partial compliance had been assessed based on the AMP alone, explanations of what was actually practiced resulted in improvement in compliance score on several requirements while none were found less compliant. Where such adjustments were made, these are noted in the compliance discussion for the relevant requirement.
- A better appreciation was also gained of organisational role, responsibility, and commitment to asset management as a result of the face-to-face meetings. All businesses demonstrated a connection between the content of the AMP, those responsible for it, its implementation, and improvement. All had to some degree modified their organisational structure to better integrate asset management priorities in decision making and service delivery. Even where this was perhaps done least formally, the business management team was the smallest, numbering less than 15. In all cases the reviewer was satisfied that the philosophy and objective of asset management was accepted, and that the businesses were not just using the AMP as a compliance document, but as a means to improve the management of the business.

These two outcomes were interpreted by the reviewer as evidence of better asset management practice in the field than was conveyed by the content of the AMPs alone.

### 2.1.3 Conclusions

Generally good compliance with the disclosure requirements was achieved for both the Transitional and more so, the Full AMPs as can be seen by the overall scores presented in Table 2.1.

**Table 2.1 Evaluation Summary**

AMP Requirements	Maui Development	Vector	Vector	Powerco	GasNet
	Transitional	Full	Full	Full	Transitional
	Transmission	Transmission	Distribution	Distribution	Distribution
	2.5	2.9	2.9	2.9	2.6
<b>Contents of the AMP</b>	2.5	3.0	2.9	2.8	2.6
<b>Assets covered</b>		3.0	3.0	3.0	
<b>Network assets by category</b>		Included	3.0	2.5	
<b>Transmission system capacity</b>		2.4	NA	NA	
<b>Service Levels</b>		3.0	3.0	3.0	
<b>Network Development Planning</b>		Included	2.8	3.0	
<b>Lifecycle Asset Management Planning (Maintenance and Renewal)</b>		3.0	3.0	3.0	
<b>Non-Network Development, Maintenance and Renewal</b>		2.8	2.8	2.5	
<b>Risk Management</b>		3.0	2.8	2.8	
<b>Evaluation of performance</b>		3.0	3.0	3.0	
<b>Capability to deliver</b>		3.0	3.0	3.0	
<b>Schedules as per Section 2.6.1 of disclosure determination</b>		3.0	3.0	3.0	

(Included – indicates that the requirement area is included in the line above due to a difference in structure between the Transmission and Distribution disclosure requirements)

Given the transitional nature of the Maui Development Limited and GasNet AMPs, it is to be expected that such AMPs will be somewhat incomplete in areas as they move towards full disclosure compliance.



While it is clear the businesses understand and endeavour to comply with the determination requirements, the level of asset management maturity in doing so varies. Specific areas for future AMP improvement varied in degree between the AMPs but generally were found to be needed in discussing requirements for:

- the contents of the AMP;
- network development planning,
- non-network development, maintenance and renewal,
- risk, and
- continuous improvement plans

These and other areas where improvement could be made are discussed further below.

## 2.2 Overall AMP Quality and Improvements Required

As can be seen by the evaluation results in Table 2.1, the reviewer generally found the disclosure requirement information required had been presented. The AMPs were deemed generally compliant but were not necessarily easy to understand or enable the reader to determine if what was described as being done was achieving the desired results. The full AMPs were very long and this complicated development of an overall understanding on the quality of asset management being practiced while providing more detail than may be required to be compliant with the relevant determinations. The transitional AMPs, while generally compliant with the transitional requirements, were less detailed, had less determination requirements to report against, and were still approximately 100 pages in length. While not a bad thing in terms of understanding the details of the businesses asset management processes, it highlighted the need to be able to clearly see what needed to be done from how it was being done. All AMPs could improve in the area of how to easily draw the reader's attention to "plan, do, check, act" type information rather than static and less variable organisation, process, and procedure information. This will improve the quality of the AMPs because reader can focus on risk, cost and sustainability trends which need to be clear and easy to find.

Three of the AMPs contained compliance cross reference tables that were extremely helpful given their size. They also helped the reviewer understand how compliance was intended to be achieved versus how the content of the AMP communicated that intent. Where this issue created a material difference of opinion as to the degree of compliance, the reviewer has offered a suggestion as to how this might be remedied. This has been done to reduce the effort in getting to a common understanding and improving the efficiency of the AMP preparation and review process. This was not possible with the other two AMPs. For this reason we recommend that a compliance cross reference table should be included in future AMPs. Navigation and comparison of the various plans to determine compliance without such a reference was time consuming and difficult. If the documents are to be used as intended, the cross reference is almost essential. A more easily understood and concise document might also be achieved through consolidation of compliance information in fewer cross referenced sections.

As well as being used by the GPB itself, the AMP is used by consumers, retailers, consultancies, investment analysts and investors, policy makers, the Commission and other interested persons who wish to understand how well a GPB is managing its assets and responding to consumer needs, and what projects to improve services are planned. Because of this, the AMPs were also assessed for general ease of understanding of each disclosure requirement and the manner in which assets are being managed overall. Stakeholder understanding would be enhanced if a standardised AMP template were used. This would increase the ease with which the consumer and infrastructure management practitioners can see the relative strengths of companies in the same service area. Consideration should also be given to creating greater focus on analysing trends in performance, and explaining what will be done about them.

The requirements for a Transitional AMP implied a lower level of detail and as such the reviews for those AMPs cannot be compared to the reviews for full AMPs. The contents of the transitional AMPs, while generally compliant with requirements, exhibited greater variation in quality with respect to the standard set by the transitional AMP disclosure requirements. This will undoubtedly reduce as the organisations move towards full disclosure compliance.

## **2.2.1 General**

### **2.2.1.1 Are the AMPs able to be understood?**

Yes – but with greater effort than should be necessary.

Given the purpose of the AMPs is to ensure that sufficient information is readily available to interested persons to assess whether the Part 4 purpose is being met, the products being produced are much 'too complicated' to be able to do that in a reasonable time by those it was meant to inform.

With documents of the size being created, combined with the fact that determination requirement compliance was often claimed by reference to multiple different sections which might also refer to other sections, even an individual familiar with infrastructure management practices has difficulty understanding exactly how to interpret the content for compliance purposes. While all AMPs give the impression that Asset Management is being addressed seriously and that genuine effort is being applied to ensure compliance with Part 4 of the Commerce Act, it is difficult to develop an appreciation of the quality of asset management actually occurring using the AMP alone. Other key disclosure documents are needed to complete such an understanding but were not part of this review including valuations, and an understanding of asset depreciation funding.

The use of all of the AMPs as a tool to drive and manage the business as opposed to having been prepared for compliance, will become clearer as each AMP is updated and trends in business outcome and performance are reported. More importantly, as those trends emerge the AMPs should discuss the issues that are causing them, associated risk, and how that risk will be managed or mitigated.

### **2.2.1.2 Can you see what is or might be impacting the business and what is being done about it?**

Yes – but not easily and in a manner where emerging trends can be understood and tracked.

The AMPs could improve in the manner in which issues either internal or external to the organisation are impacting the ability to provide the service. Currently the AMPs are written in a traditional report or text story style. Instead, the AMPs should be seen as a document which communicates a snapshot of the status of the organisation in a journey of service delivery and continuous improvement. As such, a more tabular format which facilitates the tracking of assumptions, issues, outcomes and actions supported by brief explanatory summary text may be more efficient and effective. These could be included in the Improvement Plan section but arranged more easily to facilitate review and understanding of progress in the future. Such a structure can also enable the process to be supported by an electronic Knowledge Management Toolset that can be queried and used to manage the business, rather than having a static annual report. Several of the GPBs indicated that they already use the AMP and its content to direct and prioritise activities and it has been beneficial to operations in this way. Comments were also made that the AMP helped better inform the Board of Directors, and ensured visibility and accountability for decisions needed and made at that level. In this regard, all AMPs could improve on the issue of:

- Identification of assumptions by subject area in one clear location along with the associated:
  - Current and future uncertainty
  - How that uncertainty will be monitored
  - The degree of associated risk (likelihood and consequence)
  - The degree of cost exposure (if relevant)
  - Triggers for action

- Discussing and managing assumptions, uncertainties and risks, whether asset, business environment, or social in a consistent manner and discussing them in a single location rather than in discrete subject areas of the AMP
- Where issues are identified in the way the business is performing, whether it be a process, technology, organisational, information, or other issue, ensure that such issues are discussed, prioritised, and actioned with responsible persons and a target completion date as part of the improvement plan. This extends beyond the improvements needed merely for disclosure compliance. Such a process should be visible in some way in the AMP.

### **2.2.1.3 Can you see that the Asset Management Strategy is sustainable and affordable now and in the future?**

No – but then the AMP disclosure requirements do not create this ability in the AMP alone.

The AMPs in their present form are more a detailed record of what the assets are that the companies own and how they manage them at a particular point in time. AMP content, even in the current format should focus on plans for the future based on clear reporting and interpretation of

- results, trends, risks, and assumptions (where, when, why, and what is going to be done),
- 'how much' it is going to cost,
- how it's going to be funded,
- what risks are managed in the process,
- the impact that that is going to have on the services provided,
- evidence that the assets are being managed sustainably, and
- identification of areas requiring improvement and what's intended to be done regarding them.

One AMP refers to the fact that their information on asset age is uncertain then uses age as an indicator of asset condition. Based on this an assumption is made regarding future sustainment costs over the next 10 years. It is also disclosed that the asset age profile will result in a significant portion of the asset portfolio reaching the end of its useful life 20 years or more beyond the end of the current 10 year reporting window. However, due to the reporting requirements the company's strategy to address or plan for this and similar future issues is not clear in the AMPs. Visibility of management strategies for issues beyond the planning window required in the AMPs therefore could also be improved.

### **2.2.1.4 To what degree can you see the practices described in the AMP being actually applied?**

This was addressed through a general review of the face-to-face meetings held with each GPB, the manner and ease with which they explained their process, and how they explained how the AMP itself informs the day-to-day business. The reviewer feels that the commitment to and use of good asset management practice was present in all GPBs even though they may be at different levels of maturity. The culture has certainly been embedded, and the organisations are in the process of adapting structure, roles and responsibilities accordingly. While the AMPs were deemed non-compliant or partially compliant in some areas, the fact that this was acknowledged and accepted, and more importantly, improvements were already being implemented or planned as a result, reinforced to the reviewer that the GPBs intentions are to use this process constructively to improve their business.

## **2.2.2 Executive Summary**

While not a compliance criteria, in terms of good Asset Management communication, the AMP Executive Summaries should inform a reader 'who' each company is, what they do, what they own, and who they serve. They should start with a **very short** description of the business including its relative size and scope so the reader can get an idea of the general scale of the business. Examples of this have been provided in Section 1 of this document. That description should also inform the reader that the AMPs are



for the ten year period commencing and explain the extent to which inflation has been/has not been allowed for, the main issues facing the business and what is being done about them.

The Executive Summaries are also of varying quality and generally don't do at all what they should – tell a reader in succinct way what the assets that are being managed are (and their value), what their current state and condition is, what the issues facing the business are, what the company is intending to do to address them (and when) and how much it is likely to cost.

### **2.2.3 Information Disclosure Cross Reference Matrix**

When provided the cross referencing to the Information Disclosure Requirements was good and easy to follow. This should be a mandatory requirement for all AMPs requiring compliance review. However, the ability to reference multiple sections within the AMP to demonstrate compliance should be restricted as this significantly increases the effort for compliance verification. It also tends to give the appearance that the means of demonstrating compliance is derived from multiple processes that may not yet be all that well integrated. A reduction in cross referencing in future AMPs will indicate an improvement in AMP clarity, and process integration.

### **2.2.4 The Contents of the AMP**

The AMPs were generally weaker in the areas of discussion of policy, strategy and alignment with organisational goals, and roles and responsibilities within the management structure, especially in transitional AMPs. Discussions on stakeholders and the identification of their interests could generally be improved as could the discussions of documentation of the asset management systems and its controls.

The Disclosure requirements also ask for all significant assumptions to be quantified where possible and the sources of uncertainty and the potential effect of the uncertainty described. In general assumptions were not quantified or discussed in terms impact. Tables where assumptions or risks are listed would be enhanced by including a discussion of how those assumptions or risks will be monitored or managed (acceptable range indicators etc. and triggered actions). While uncertainties are addressed in the AMPs they are not always easy to identify in the text, nor are the impacts on the information in the AMP clearly explained.

### **2.2.5 Network Development Planning**

For full AMPs, a description of the process and criteria used to prioritise network development projects is required along with a description of how these processes and criteria align with the overall corporate goals and vision. While this was addressed in general terms, it is often unclear from the AMPs how projects are integrated into an affordable investment programme, the year of execution is determined, and how interim risks will be managed and mitigated if the work cannot be afforded in the desired year. It is therefore unclear to the reader how the risk of "carryover" requirements are managed. While discussions with the businesses indicate that such risks are discussed, managed, and mitigated, this process is not all that clear in the AMPs.

### **2.2.6 Non-network Development, Maintenance and Renewal**

In the full AMPs, the disclosures require a description of development, maintenance and renewal policies that cover non-network assets, however this was generally not well addressed.

### **2.2.7 Risk Management**

The AMPs address risk management in different ways as follows:

- The Vector AMPs each have 20 pages of comment about how risks are managed but don't say what the principal risks facing the company are. The comments in the two AMPs about how risks are managed also differ.

- The Powerco AMP has three pages about how risks are managed and then seven pages of identified risks in an appendix at the back of the AMP but does not provide any information on the uncontrolled risk;
- The Maui Development AMP has a page about how risks are managed, an asset criticality table, and mentions potential major risks but doesn't say how they are to be mitigated or avoided. The 'Asset Criticality Table' also implies criticality was assessed based on asset age as it seems to rely on asset remaining life. The rationale for each asset's criticality needs to be explained.
- The GasNet AMP has 1.5 pages about how risks are managed but references use of ISO 31000 and a Risk Register. More detail could be provided to explain this process.

Strategies used to identify areas of the network that are vulnerable to high impact low probability events and a description of the resilience of the network and asset management systems to such events were generally not described well. This concern was mitigated to some degree during face-to-face meetings when processes were described in more detail. Better documentation and examples of the application of such practices to specific assets or components would be beneficial.

A key aspect of good asset management, irrespective of the standard or guidance used, is that all potential risks are identified and documented; that the organisation has a written plan for mitigating or avoiding each, that each is being proactively managed at the appropriate level, and that the current status of the most significant risks is reported to senior managers and the governing board regularly. It is clear from the significant variation in AMP documentation level regarding risk management, that additional guidance might be required.

### **2.2.8 Continuous Improvement/Improvement Plans**

Probably the most important output of every asset management plan is a prioritised improvement plan for the future. The AMP development process should identify all problems and weaknesses and the action that needs to be taken to address them. If a budget allocation is required for the associated work provision for it will need to be included in the AMP. All improvement items should be recorded in one place, the responsibility for resolving each one allocated to a named person, a target date for completing each one set, and the improvement plan subsequently proactively managed to ensure its implementation. The starting point for the next AMP update therefore becomes the degree to which all problems, weaknesses, and opportunities that were identified when the AMP was last prepared have been addressed/resolved.

## 2.3 Asset Management Quality and the ISO 55000 Standards

This section comments on the applicability of ISO 55000 or other standards for good practice to the plans. ISO 55000 does not specifically set out the contents of the AMPs, but rather sets out a framework for asset management systems and processes. The best use of ISO 55000 in this instance would be to replace the Asset Management Maturity Tool (AMMAT) which was based on PAS55, with the elements of ISO 55000 in future AM plans. ISO 55000 essentially evolved from PAS55 and has the following advantages:

- ISO 55000 is an internationally recognized standard for AM maturity based on best practice
- It allows greater potential for benchmarking and improvement against the global utilities industry
- There is an existing framework for external review and certification
- There are some additional public relations benefits in ISO certification
- Independent certification and review processes are in place to drive improvement

Opinion on adopting such standards and measures is divided in the industry. For example Vector notes in Section 2.14.1 of its AMPs:

*'Vector is not convinced that the AMMAT, or indeed PAS 55, is necessarily an appropriate tool to measure asset management maturity for New Zealand GTBs...'*

*'Over the years Vector has been striving to strike an appropriate balance between operating efficiency and the increased workload and bureaucracy associated with adopting formal asset management standards such as PAS 55'*

On the other hand Powerco says:

*'It is our goal to fully align our asset management practices with the International standard PAS 55:2008 within the next three years.'*

There is a lot of confusion in the infrastructure management sector generally about what ISO 55000 (and PAS 55 before it) actually requires. For compliance with ISO 55000 it's the Organisation's practises and processes that matter – not the AMP. MWH agrees with this opinion in that the AMP should be able to be produced at any time as a record of the business stance at that time. In this way, the practices and procedures become essential and must be in place. The situation is as follows:

- PAS 55 is a Publically Available Specification published by the British Standards Institution. It was originally produced by a number of organisations under the leadership of the Institute of Management (in the UK) in 2004. It gives guidance and a 28-point checklist of good practices in physical asset management.
- After the launch of PAS 55 the Institute of Asset Management worked with the British Standards Association to explore the best way to produce a formal International Standard through the International Organization for Standardization (ISO) (as opposed to PAS 55 just being a publically available specification). The outcome of that has been the new ISO standard - ISO 55000 – that came into being last year.
- A criticism of the former PAS 55 was that it was too asset focussed and didn't sufficiently address all of the matters associated with 'services' led' asset management. That matter has been addressed in ISO 55000.
- The International Infrastructure Management Manual (IIMM) produced by the former New Zealand Asset Management Support (NAMS) Group in New Zealand and now by the Institute Of Public Works Engineering Australia (IPWEA) and ISO 55000 essentially do the same thing – provide sound guidance for asset management. The intent in both documents is to explain the various facets of asset management and (especially) in the IIMM to give examples of good

practice. They concentrate on explaining all aspects of asset management that need to be addressed.

- Information management associated with achieving corporate goals and the role of asset lifecycles in their attainment and sustainment is address in BS 1192:2007 Parts 1 through 4. This document should also be considered when comparing not just process management but information alignment.

## 2.4 High Level Review of Expenditure Variability

The brief requires the final report to the Commission to:

*'Describe the quality of the AMPs in more detail in regards to their explanation of the most prominent expenditure changes'*

Our interpretation of each AMP in regard to this issue is included in the respective AMP reviews in Appendix A. In general the degree of change or variability from year to year could be understood as were changes to annual numbers in subsequent updates. There were some discrepancies between figures provided in the body of the AMP versus those in the disclosure Schedules. Such differences have been noted but were not the focus of this review.

## **Appendix A Specific Comments on AMPs**

## A.1 GasNet Limited Compliance Rating = 2.6/3.0

### ADVISORY

Comments made in this review are provided with the intention of supporting continuous improvement of the process of asset management and subsequent AMPs to the benefit of the consumer and the company providing the service. Consequently while the review has been performed from a compliance perspective, it has also been completed and comments made with this objective in mind. Comments are provided for the purpose of clarification, consideration and discussion, not as instruction.

### A.1.1 Compliance with Relevant Determinations

This AMP is a transitional AMP under the relevant determination. Using a purely arithmetic average approach to summing compliance scores, the AMP was rated at 2.6/3.0. The key to this scoring methodology is creation of a hierarchical structure for the compliance criteria, averaging subfactor scores to create a disclosure requirement score, and then averaging those to create the total score. The hierarchy is colour coded and stair-stepped for ease of review.

These findings were reviewed with the GPB during the week of 14 September 2015. Each area of non- and partial compliance was discussed and either clarified by the GPB or accepted. Based on the discussion a final evaluation was then made. The meeting was concluded with an understanding between the reviewer and the GPB that the evaluation was reasonable. GPB responses or clarifications were added to the evaluation comments for each respective requirement along with the effect that clarification had on the evaluation score.

Areas of specific concern identified relevant to the determination requirements are:

- Linkage from the AMP to financial forecasts information disclosed is very weak or non-existent.
- Under clause 2.12.8(3) the transitional AMP must include a description of stakeholder interests (owners, consumers, etc.) which identifies important stakeholders and indicates (a) how the interests of stakeholders are identified, (b) what these interests are (c) how these interests are accommodated in asset management practices (d) how conflicting interests are managed. Section 2.5 of the AMP addresses most disclosure requirements except the means by which stakeholder interests are identified. There is one statement to the effect that GasNet uses a wide range of methods for engagement, both planned and adhoc. (pg. 6). The purpose of this requirement is to encourage thought regarding engagement in such a manner that the diverse interests of stakeholders are clearly understood and validated by both parties. Interests are identified however some could be redefined or augmented to better focus GasNet resources on key stakeholder issues. There is a brief statement that stakeholder interests are considered and GasNet asset management practices are reviewed and modified over time in response. The priority for addressing concerns against five criteria are summarised. However based on the contents of the AMP, the reviewer believes that GasNet may only be aware of some of the stakeholders areas of interest or concern. Finally, there is a brief statement to the effect that GasNet does its best to address and minimise conflicts and refers to an internal and external complaints resolution process. It would help this discussion if further reference were made to how stakeholder feedback is monitored and related to changes in procedure, priorities and trends.
- Due to a lack of information specifically in regard to asset management policy, strategy, alignment with organisational goals, missing information in required schedules, insufficient detail in risk management, maintenance and lifecycle management process and roles and responsibilities descriptions, it is the opinion of the reviewer that this AMP is partially compliant with Clause 2.6.1(2). That said, it is apparent from statements in the AMP that GasNet is moving to address these issues but should also review other similar disclosures for examples of others have responded to requirements and/or amend Section 10 of the AMP in future submissions based on this review and their own reassessment.

- Section 2.12.8 (2) (f) and (g) of the determination requires GDBs preparing transitional AMPs to set out actions the GDB is taking to ensure the AMP will conform to the full AMP requirements in 2.6.1. The level of detail describing how GasNet is responding to those issues it has self-identified in Section 9 and 10 could be improved. Discussion might also be extended in future AMPs to address the findings of this review.
- Section 2.12.8 (3) (k)(l)(m) requires details of performance indicators, lifecycle management process description, risk policies, assessment and mitigation. GasNet states that what has been provided are performance indicators used in previous disclosures. They acknowledge that other KPIs may be reported in future AMPs but have not identified what those might be. The reviewer acknowledges that the Asset Management Strategy and associated policies, scheduled for completion in late 2014, would be required to identify appropriate performance measures and targets for future AMPs. The reviewer could not locate a description of the process of lifecycle management as required by this disclosure requirement. The objectives of network development and lifecycle maintenance are described in the introductory paragraph to each section. However, the means for determining what work is done in what year and how the work is prioritised as a process is not discussed. Section 8 of the AMP is largely theory on risk management with little connection with asset risks, and mitigation strategies. For example:
  - Given the age profile of assets stated in Section 3.1.4 and unknown age of some 54km of mains pipeline (14% of mains portfolio), 20km of service line (9% of portfolio), and reported “as-new” condition of 100% of the assets it for both in Schedule 12a (Data accuracy 2 - good quality data is available for some assets but not for others and the data provided includes estimates of uncounted assets within the category) and 50% of installation dates are unconfirmed, the AMP would be enhanced by discussion of how the risks associated with such condition assumptions and data quality issues will be addressed or monitored.

The details of evaluation are presented in Table A.1.

### **A.1.2 Overall AMP Quality and Improvements Required**

Overall this plan is very high level, and our opinion is that while all areas of the requirements are covered in the plan, many areas could be enhanced by provision of additional information to more clearly demonstrate the intent the information disclosure requirements. Addition of a cross reference matrix would also greatly improve both preparation compliance validation and review.

### **A.1.3 High level Review of Expenditure Variability**

There isn't a detailed expenditure summary in the body of the AMP – only Schedules 11a and 11b at the back – starting at 2014. Therefore no historic review of trends could be performed.

Total operational expenditure is consistent throughout the ten year period – actually decreasing from \$1,766,000 in 2013/14 to \$1,669,000 in 2022/23 (in constant prices). Likewise capital expenditure increases from only \$682,000 in 2013/14 to \$730,000 in 2022/23. The company says that 100% of the assets in 14 of its 22 asset categories are 'Grade 4 – Good or as new' - and that in the other four the percentages in Grade 4 are 90%, 95%, 98% and 98%. Based on the stated data accuracy for some assets in Schedule 12a, and unknown age of portions of the portfolio, the reviewer is unsure if a decreasing operational expenditure and static capital expenditure assumption is reasonable. However, it must be recognised that this is a transitional AMP and as GasNet moves towards preparation of a full AMP, such issues will be addressed and discussed.



TABLE A.1 – Compliance Review – GasNet

		GAS DISTRIBUTION BUSINESSES AM PLANS			
		GasNet			
Disclosure Requirement	Relevant AMP sections	Overall Rating	Rating		Comments
			1 = non-compliant, 2= partially compliant, 3=fully compliant		
		2.6			
A Contents of the AMP		2.6			
(2) The transitional AMP must-			2.6		
a (a) relate to the gas distribution services supplied by the GDB;			3		
b (b) be identifiable as a transitional AMP prepared pursuant to clause 2.12.8(2) of this determination;	Cover Page		3		
c (c) include the minimum requirements set out in sub clause 2.12.8(3);			2.5		See Sub factor scoring below - rollup scores are arithmetic average
2.12.8.(3) The transitional AMP must include the following-					
(a) a summary that provides a brief overview of the contents and highlights information that the GDB considers significant;	Section 1		3		
(b) details of the background and objectives of the GDB's asset management and planning processes;	Section 2.8		3		
(c) details of the AMP planning period, which must cover at least a projected period of 10 years commencing with the disclosure year following the date on which the AMP is required to be disclosed;	Section 2.3		3		
(d) the date that it was approved by the directors;	Section 2.4		3		
(e) a description of stakeholder interests, as set out in sub clause 3.7 of attachment A;	Section 2.5		2.0		
3.7 A description of stakeholder interests (owners, consumers, etc.) which identifies important stakeholders and indicates:					
(a) how the interests of stakeholders are identified			2		Section 2.5 addresses most disclosure requirements except the means by which stakeholder interests are identified. There is one statement to the effect that GasNet uses a wide range of methods for engagement, both planned and adhoc. (pg. 6). The purpose of this requirement is to encourage thought regarding engagement in such a manner that the diverse interests of stakeholders are clearly understood and validated by both parties.
(b) what these interests are	Table 1		2		Interests are identified however some could be redefined or augmented to better focus GasNet resources on key issues. For example Employees interest is defined as "Implement GasNet's policies and procedures to maximise the utilisation and performance of its assets." This seems more like an objective for GasNet regarding its employees. The intention may have been however to imply that through policies and procedures regarding asset management processes, employees health and safety is protected, career development is enhanced, and GasNet is a preferred employer resulting in less employee turnover and better service delivery to customers. The Employees interests are therefore, health and safety, job satisfaction, opportunity, and of course competitive remuneration. A shareholder, other than an adequate return on investment, might be interested in minimizing environmental impact from operations, ensuring appropriate regulatory compliance, transparency, affordability etc.
(c) how these interests are accommodated in asset management practices	Section 2.5		2		There is a brief statement that stakeholder interests are considered and GasNet Asset Management practices are reviewed and modified over time in response. The priority for addressing concerns against five criteria are summarised. However based on the contents of Table 1, the reviewer believes that GasNet may only be aware of some of the stakeholders areas of interest or concern. This section should be reviewed after addressing item (b) above.
(d) how conflicting interests are managed	Section 2.5		2		There is a brief statement to the effect that GasNet does its best to address and minimise conflicts and refers to an internal and external complaints resolution process. It would help this discussion if further reference were made to how stakeholder feedback is monitored and related to changes in procedure, priorities and trends. For example, what is the process for elevating a stakeholder issue or trend in complaints or even comments about future need get raised to the awareness of higher management? What outreach and ongoing engagement is implemented when conflicts occur if any?
(f) a description of the accountabilities and responsibilities for asset management, as set out in sub clause 3.8 of attachment A;	Section 2.6 & 2.7		2.7		
A description of the accountabilities and responsibilities for asset management on at least 3 levels, including:					



		GAS DISTRIBUTION BUSINESSES AM PLANS				
		GasNet				
Disclosure Requirement	Relevant AMP sections	Overall Rating	Rating			Comments
			1 = non-compliant,	2 = partially compliant,	3 = fully compliant	
(a) governance—a description of the extent of director approval required for key asset management decisions and the extent to which asset management outcomes are regularly reported to directors					3	
(b) executive—an indication of how the in-house asset management and planning organisation is structured					3	<p>While the organisational structure is clear, the roles and responsibilities for making risk based asset lifecycle management decisions and prioritisation of investment needs is not. Accountabilities are functional and definitely needed for technical management of assets, however, who has the final say as to how board direction and priorities affects asset decision making is not clear to the reviewer. It would seem, however, that the Engineering Manager would have this role based, supported and informed by Finance and Information Services. The final prioritisation and risk balancing might be done through discussion with the General Manager. A discussion of this nature would help the reader understand the nature of the decision making process.</p> <p>The structure of the organisation is the structure of the asset management function as well due to the size of the organisation.</p>
(c) field operations—an overview of how field operations are managed, including a description of the extent to which field work is undertaken in-house and the areas where outsourced contractors are used.					2	<p>The reviewer could not find a description of the maintenance renewals management strategy or the extent to which such work is conducted in-house. It would seem a field work management system is in place based on the use of KernMobile for works management. Partial compliance has been assessed on this basis however the reviewer recommends this aspect of Asset Management be discussed in more detail so an informed asset manager can understand the work type selection, risk management decision making process during field work planning and execution.</p>
(g) an overview of asset management strategy and delivery;	Section 2.9				2	<p>This section discloses that GasNet does not yet have a formal asset management strategy but does implement asset management strategies to address asset issues impacting service risk and performance. The section goes on to say the Asset Management Strategy will be completed in late 2014.</p>
(h) an overview of systems and information management data;	Section 2.10				3	
(i) an overview of asset management documentation, controls and review processes;	Section 2.11				3	
(j) details of the assets covered;	Section 3				3	<p>This section is well developed with good information on age, pressure, quantity and overview GIS map detail regarding location</p>
(k) a clear identification or definition of a set of asset management performance indicators;	Section 5				2	<p>GasNet states that what has been provided are performance indicators used in previous disclosures. They acknowledge that other KPIs may be reported in future AMPs but have not identified what those might be. The reviewer acknowledges that the Asset Management Strategy and associated policies, scheduled for completion in late 2014, would be required to identify appropriate performance measures and targets for future AMPs. For this reason this requirement has been scored as partially compliant.</p>
(l) a description of network development plans and lifecycle management processes, covering material projects and programmes across the planning period;	Sections 6 & 7				2	<p>There is no description in Section 7 of the PROCESS of lifecycle management as required by this disclosure requirement. The objectives of network development and lifecycle maintenance are described in the introductory paragraph to each section however the means for determining what work is done in what year and how the work is prioritised as a process is not discussed. In Section 6 growth assumptions are stated by asset type not network making it difficult to see what work is planned in what networks affecting which customers. This can create the impression that the process of asset management is still very asset centric rather than customer centric and service outcome oriented in GasNet.</p>
(m) details of risk policies, assessment and mitigation.	Section 8				3	<p>The risk assessment process described is very theoretical, asset centric and does not address other areas where asset management and service delivery incur risk. Examples include cost, schedule, legal, regulatory, institutional knowledge loss, stakeholder expectations, reputation, service affordability, etc. However, the discussion does cite the use of ISO 31000 as an overarching process standard, and the formal implementation of a risk register. Specific examples are given regarding the manner in which risks are and have been identified and the circumstances under which reviews or audits are undertaken to ensure control measures are effective.</p> <p>It was explained during the 17 September 2015 review meeting with GasNet management that while a formal policy on risk management may not exist, the practice and processes do. For this reason, and given the transitional status of this AMP the reviewer has determined that risk management has been described to a detail that represents the practice at GasNet. Compliance was therefore modified from partial (2) to full (3) based on this additional information.</p>

		GAS DISTRIBUTION BUSINESSES AM PLANS			
		GasNet			
Disclosure Requirement	Relevant AMP sections	Overall Rating	Rating		Comments
			1 = non-compliant, 2= partially compliant, 3=fully compliant		
d	(d) include the forecast information set out in clause 2.6.5;	Appendix 3.1	2.6		
	2.6.5 Every GDB must-				
	(1) Before the start of each disclosure year, complete each of the following reports by inserting all information relating to the gas distribution services supplied by the GDB for the disclosure years provided for in the following reports-				
	(a) the Report on Forecast Capital Expenditure in Schedule 11a;			3	
	(b) the Report on Forecast Operational Expenditure in Schedule 11b;			3	
	(c) the Report on Asset Condition in Schedule 12a;			3	
	(d) the Report on Forecast Utilisation in Schedule 12b;			1	GasNet has acknowledged inability to provide Utilisation Information and has stated their strategy for addressing this deficiency in Section 10
	(e) the Report on Forecast Demand in Schedule 12c.			3	
e	(e) include the Report on Asset Management Maturity in Schedule 13;	Appendix 3.1	3		
f	(f) identify where the GDB considers the AMP does not yet conform to the requirements in clause 2.6.1, and set out the actions the GDB is taking to ensure the AMP will conform before the end of the first DPP regulatory period;	Section 10	2		Section 10 needs to be amended to address the non-compliance assessments in this review, accordingly.
g	(g) identify any actions the GDB has completed in order to conform to the requirements in clause 2.6.1;	Section 10	2.4		This section has been evaluated based on GasNets understanding of deficiencies in the Transitional AMP at the time it was produced. It is clear from the discussion in this section that GasNet was working to address those deficiencies.
	2.6.1 Subject to clause 2.6.3 of this section, before the start of each disclosure year commencing with the disclosure year 2014, every GDB must complete and publicly disclose an AMP that-				
	(1) Relates to the gas distribution services supplied by the GDB;			3	
	(2) Meets the purposes of AMP disclosure set out in clause 2.6.2;			2	Due to a lack of information specifically in regard to Asset Management policy, strategy, alignment with organisational goals, missing information in required schedules, insufficient detail in risk management, maintenance and lifecycle management process and roles and responsibilities descriptions, it is the opinion of the reviewer that this AMP is partially compliant with this requirement. That said, it is apparent from statements in the AMP that GasNet is moving to address these issues but should also review other similar disclosures for examples of where others have responded to requirements and/or amend Section 10 of the AMP in future submissions based on this review and their own reassessment.
	(3) Has been prepared in accordance with Attachment A;			2	See comment above.
	(4) Contains the completed tables required in clause 2.6.5(2);			2	Utilisation data is not provided in Schedule 12b. In Appendix 3.3 – Schedule 15: Voluntary Explanatory Notes, GasNet states it " is unable to estimate physical capacity of systems in aggregate or that of an individual system due the complexity of the network modelling, lack of operational data and sites throughout each network and the absence of sophisticated modelling software to achieve robust reproducible results.  GasNet has reviewed how it could go about calculating current and thus future utilisation of each network as sought in the Report. GasNet has concluded that while some improved data capture instrumentation is now available on the Wanganui network, and with similar instrumentation to be added to other networks in coming financial years, there is both a lack of sufficient time series of data points and confirmation that all necessary sites are being sampled to enable any sensible estimates to be made at this time. In addition, GasNet is considering evaluation of network modelling software, but critical to its effectiveness is data."

		GAS DISTRIBUTION BUSINESSES AM PLANS			
		GasNet			
Disclosure Requirement	Relevant AMP sections	Overall Rating	Rating		Comments
			1 = non-compliant, 2= partially compliant, 3=fully compliant		
(5) Contains the Report on Asset Management Maturity set out in Schedule 13.				3	In Section 10 - Improvement Plan GasNet states " In respect to non-compliance with Schedule 12b: Forecast Utilisation, GasNet is planning to implement a proprietary network modelling analysis application in the 2014/15 financial year commencing 1 July 2014 and was at the time of preparing this AMP, in the final stages of its evaluation. Whilst this was considered a logical next step once the Geographical Information Systems (GIS) was fully functional, it was never considered a certainty as it would be subject to a business case to ensure it would be cost effective. Subject to a satisfactory evaluation and acceptance of the commercial terms under which GasNet will acquire and use the application it is hoped that it will be operational by the end of the 2014 calendar year and that GasNet may be in a position to provide some network utilisation information by 30 June 2015. There are however a number of potentially significant influences that may hinder implementation such as the availability of the supplier to meet GasNet's requirements and potential issues with integrating the network analysis application with GasNet's existing information systems, in particular the GIS."

## A.2 Maui Development Limited Compliance Rating = 2.5/3.0

### ADVISORY

Comments made in this review are provided with the intention of supporting continuous improvement of the process of asset management and subsequent AMPs to the benefit of the consumer and the company providing the service. Consequently while the review has been performed from a compliance perspective, it has also been completed and comments made with this objective in mind. Comments are provided for the purpose of clarification, consideration and discussion, not as instruction.

### A.2.1 Compliance with Relevant Determinations

This AMP is a transitional AMP under the relevant determination. Using a purely arithmetic average approach to summing compliance scores, the AMP was rated at 2.5/3.0. The key to this scoring methodology is creation of a hierarchical structure for the compliance criteria, averaging subfactor scores to create a disclosure requirement score, and then averaging those to create the total score. The hierarchy is colour coded and stair-stepped for ease of review.

These findings were reviewed with the GPB during the week of 14 September 2015. Each area of non- and partial compliance was discussed and either clarified by the GPB or accepted. Based on the discussion a final evaluation was then made. The meeting was concluded with an understanding between the reviewer and the GPB that the evaluation was reasonable. GPB responses or clarifications were added to the evaluation comments for each respective requirement along with the effect that clarification had on the evaluation score.

Areas of specific concern identified relevant to the determination requirements are:

- Section 2.12.12 (2) (h) and (i) of the determination requires GTBs preparing transitional AMPs to set out actions the GTB is taking to ensure the AMP will conform to the full AMP requirements in 2.6.1. The level of detail describing how Maui Development is responding to those issues it has self-identified in Section 12 could be improved. Discussion might also be extended in future AMPs to address the findings of this review.
- Section 2.12.12(3)(f) requires a description of accountabilities and responsibilities. Description of the roles and responsibility of Maui Development staff engaged in managing the Contractors and informing the Maui Development board via the Pipeline Sub-Committee is missing and needs further discussion. From Figure 2 of the AMP, the reviewer has concluded that the three management tiers are the Maui Development Board, the Pipeline Subcommittee, which consists of Maui Development representatives and the three principle Contractors, whom jointly but independently form the third level of management. A meeting with Maui Development staff on 15 September to review this evaluation clarified that the governance arrangement is complicated by the 1973 contract between the original parties which remains in force to this day. Since most functions are outsourced to remove potential conflicts of interest or to meet the requirements of pre-existing contracts, the responsibilities for various aspects of Asset Management governance are included in both the contractual arrangements with the various parties (Transact and Vector), and the governance structure depicted in Figure 2 of the AMP. The extent of directorial approval/engagement is via monthly meeting of the PSC or quarterly Technical Committee meetings. Clarification as to how the board is engaged in the decision making process and prioritisation would help in this area. For example, capital and operational expenditure spend recommendations are made by Vector to meet their contractual obligations as Technical Operator, Pipeline Manager, informed by Commercial information provided by Transact, and understanding, and acceptance of associated risk exposure and mitigation by the Maui Development board. In addition the recent creation of the role of Asset Manager by Maui Development could be described in more detail for clarity.

- Section 2.12.12 (3) (m) requires details of risk policies, assessment and mitigation. Sections 9 and 10 of the AMP deal with these issues. Table 9.3 “Asset Criticality Table” provides the only asset specific information in risk sections of the plan, and just seems to be a remaining life table, with little connection to the risk management sections of the plan and no expenditure relating to asset risk. Sections 9 and 10 discuss the basic principles of risk management and key risks identified by Maui Development. Further discussion of how those risks are reviewed might be added to include, but not limited to: how likelihood and consequence information is updated based on market intelligence and operations data; where in the monthly, quarterly or annual asset management review process these issues are reviewed; how portfolio risk exposure vs tolerance are reviewed and investment or other actions reprioritised. If this is better discussed in other sections, a reference to the information in those sections would help the reader understand how this process is applied. For example, specific mention in Section 11, (Reporting) on trends in performance metrics and associated data, combined with an assessment of completed and planned work relative to equipment failures would better describe to the reader the proactive risk management strategies Maui Development has in place and how it is used to continuously improve service delivery and asset performance.
- Section 2.12.12(2)(h) requires the GTB considers where the AMP does not yet conform to the requirements in clause 2.6.1. As specified in this clause future AMPs should include a discussion of gaps in current AMP information and management strategies, policies, procedures that will be addressed to enable preparation of a full AMP in the near future. It is the reviewers opinion that the AMP does not analyse the requirements of a full AMP and discuss gaps and gap mitigation strategies relative to clause 2.6.1. This review has identified some areas where additional discussion would help understanding from a transitional AMP perspective but stops short of reviewing the content from the perspective of compliance with full AMPs requirements. We suggest the discussion in Section 12 be expanded to include the gap analysis and proposed actions. During a meeting with MDL staff on 15 September to review this evaluation MDL representatives explained that a detailed gap analysis has been performed with respect to full disclosure requirements and those gaps are being addressed.

The details of the full evaluation are presented in Table A.2.

## **A.2.2 Overall AMP Quality and Improvements Required**

The AMP generally met the disclosure requirements for a transitional AMP except as noted above. It is the reviewer’s opinion that the AMP does not provide detail or analyse the requirements of a full AMP and discuss gaps and gap mitigation strategies relative to clause 2.6.1. This review has identified some areas where additional discussion would help understanding from a transitional AMP perspective but stops short of reviewing the content from the perspective of compliance with full AMPs requirements.

The transitional AMP could be further improved by:

- 2.12.12.(3)(f) - a more detailed description and how the board is engaged in the decision making process and prioritisation. Descriptions of the roles and responsibility of MDL staff engaged in managing the Contractors and informing the MDL board from both a contractual and service delivery perspective needs further discussion given Contractors apparently also participate in the Pipeline Subcommittee
- 2.12.12.(3)(i) - discussion of controls and review processes. Discussion of workflow process management, data quality and completeness assessments, business process performance audits etc. would help compliance with this requirement.
- 2.12.12.(3)(j) - adding a summary of the key characteristics and quantities of the Asset Categories described in Section 7.
- 2.12.12.(3)(m) - adding a discussion of how risks are reviewed, likelihood and consequence information is updated based on market intelligence and operations data, and where in the

monthly, quarterly or annual asset management review process these issues are reviewed and risk consequence and likelihood matrices and exposure vs tolerance reviewed and by whom.

### A.2.3 High Level Review of Expenditure Variability

The financial forecasts for this AMP start at 2015. Maui Development hasn't provided a separate 2014 Information Disclosure in the template format. Presumably the fact that its forecasts in the AMP start at 2015 fulfils that function.

The proposed capital works programme varies significantly from year to year until 2019 – predominantly because of the proposed expenditure on Whitecliffs Realignment (\$41.7m), \$4m on 'Scheduling and IX Software Replacement', and \$1m for SCADA Master Station replacement. Its average annual capital expenditure for the first five years is \$5.87m; after that it reduces to about \$1.6m per year. The reason for variations was easy to understand and was justified.

Some discrepancies were noted between the figures quoted in the body of the report and the disclosure Schedules. For example:

- Total operating expenditure is shown in Section 7.8 in the body of the report as totalling \$6.915M for 2015. In Schedule 11b it is \$16.917M as detailed below. The capital expenditure forecasts (for 2015) are also different – but not by very much :

	<b>Body of AMP</b>	<b>Sch 11b</b>
Service Interruptions, incidents and emergencies	\$ 130	\$ 130
Routine and corrective maintenance and protection	\$3,969	\$3,969
Asset replacement and renewal	\$2,816	\$2,550
System operation	Not Provided	\$1,930
Network support	Not Provided	\$1,789
Business support	Not Provided	\$5,082
Compressor Fuel	Not Provided	\$1,350
Land management and associated activity	Not Provided	\$ 117
<b>TOTAL (\$,000)</b>	<b>\$6,915</b>	<b>\$16,917</b>



**TABLE A.2 – Compliance Review – Maui Development Limited**

		GAS TRANSMISSION BUSINESSES TRANSITIONAL AM PLANS			
		Maui Development Limited			
Disclosure Requirement	Relevant AMP sections	Overall Rating	Rating	Comments	
			1 = non-compliant, 2= partially compliant, 3=fully compliant		
		2.5			
<b>Contents of the AMP</b>		2.5			
2.12.12(2)	(2) The transitional AMP must-		2.5		
a	(a) relate to the gas transmission services supplied by the GTB;		3		
b	(b) be identifiable as a transitional AMP prepared pursuant to clause 2.12.12(2) of this determination;	Cover Page	3		
c	(c) include the minimum requirements set out in sub clause 2.12.12(3) ;	1.1	2.8		
	2.12.12(3) The transitional AMP must include the following-				
	(a) a summary that provides a brief overview of the contents and highlights information that the GTB considers significant;	Section 1	3		
	(b) details of the background and objectives of the GTB's asset management and planning processes;	Section 3, 3.9, Section 4	3		
	(c) details of the AMP planning period, which must cover at least a projected period of 10 years commencing with the disclosure year following the date on which the AMP is required to be disclosed;	Section 1.1	3		
	(d) the date that it was approved by the directors;	Table of Contents	3		
	(e) a description of stakeholder interests, as set out in sub clause 3.7 of Attachment A;	Section 3.5&3.6	3		
	(f) a description of the accountabilities and responsibilities for asset management, as set out in sub clause 3.8 of Attachment A;	Section 3.3, 4.1	2.3	<p>From Figure 2 the reviewer has concluded that the three management tiers are the MDL Board, the Pipeline Subcommittee, which consists of MDL representatives and the three principle Contractors, whom jointly but independently form the third level of management. Section 4.1 final paragraph provides a summary of this information and has been used to assess compliance with this requirement Descriptions of the roles and responsibility of MDL staff engaged in managing the Contractors and informing the MDL board from both a contractual and service delivery perspective needs further discussion.</p> <p>A meeting with MDL staff on 15 September to review this evaluation clarified that the governance arrangement is complicated by the 1973 contract between the original parties which remains in force to this day.</p>	
	A description of the accountabilities and responsibilities for asset management on at least 3 levels, including-				
	3.8.1 governance—a description of the extent of director approval required for key asset management decisions and the extent to which asset management outcomes are regularly reported to directors		2	<p>A meeting with MDL staff on 15 September to review this evaluation clarified that as it pertains to the contractual arrangements in force since 1973, the governance structure for asset management has been described in Section 3.3. Since most functions are outsourced to remove potential conflicts of interest or to meet the requirements of pre-existing contracts, the responsibilities for various aspects of Asset Management governance are included in both the contractual arrangements with the various parties (Transact and Vector), and the governance structure depicted in Figure 2. The extent of directorial approval/engagement is via monthly meeting of the PSC or quarterly Technical Committee meetings. Clarification as to how the board is engaged in the decision making process and prioritisation would help in this area. For example, CAPEX and OPEX spend recommendations are made by Vector to meet their contractual obligations as Technical Operator, Pipeline Manager, informed by Commercial information provided by Transact, and understanding, and acceptance of associated risk exposure and mitigation by the MDL board. Based on this understanding the initial compliance assessment of non-compliant (1) has been changed to partially compliant (2)</p>	

		GAS TRANSMISSION BUSINESSES TRANSITIONAL AM PLANS				
		Maui Development Limited				
Disclosure Requirement	Relevant AMP sections	Overall Rating	Rating			Comments
			1 = non-compliant,	2 = partially compliant,	3 = fully compliant	
3.8.2 executive—an indication of how the in-house asset management and planning organisation is structured  3.8.3 field operations—an overview of how field operations are managed, including a description of the extent to which field work is undertaken in-house and the areas where outsourced contractors are used.  (g) an overview of asset management strategy and delivery; (h) an overview of systems and information management data;  (i) an overview of asset management documentation, controls and review processes;  (j) details of the assets covered;  (k) a clear identification or definition of a set of asset management performance indicators; (l) a description of network development plans and lifecycle management processes, covering material projects and programmes across the planning period;  (m) details of risk policies, assessment and mitigation.  d (d) include the forecast information set out in clause 2.6.5;  2.6.5 Every GTB must— (1) Before the start of each disclosure year, complete each of the following reports by inserting all information relating to the gas transmission services supplied by the GTB for the disclosure years provided for in the following reports— (a) the Report on Forecast Capital Expenditure in Schedule 11a; (b) the Report on Forecast Operational Expenditure in Schedule 11b;					2	A meeting with MDL staff on 15 September to review this evaluation clarified that asset management is structured by the contractual arrangement between MDL, Transact, and Vector and to a large extent is outsourced. The recent creation of the role of Asset Manager by MDL in this structure could be described in more detail for clarity. Based on this understanding the initial compliance assessment of non-compliant (1) has been changed to partially compliant (2)
					3	During a meeting with MDL staff on 15 September to review this evaluation MDL representatives explained that as stated in the AMP all field work is outsourced to Vector. Based on this understanding the initial compliance assessment of non-compliant (1) has been changed to compliant (3)
		Section 4			3	
		Section 4			3	
		Section 3.10			2	Asset Management documentation is described however controls and review processes are not. Discussion of workflow process management, data quality and completeness assessments, business process performance audits etc. would help compliance with this requirement.  During the 15 September review, MDL clarified that monthly PSC meetings govern this. A quarterly review via the Technical Committee Meeting is also performed.
		Section 2.0, Section 7			3	Section 2 and Figure 1 provide a brief summary of the assets covered. A summary of the key characteristics and quantities of the assets by category is described in Section 7.  During a meeting with MDL staff on 15 September to review this evaluation MDL representatives explained that most of the assets and all the non-network assets are owned and maintained by Vector - so essentially outsourced services. Based on this understanding the initial compliance assessment of partial compliance (2) has been changed to compliant (3)
		Section 5			3	
		Sections 6,7 & 8			3	
		Section 9 & 10			2	These sections discuss the basic principles of risk management and key risks identified by MDL. Further discussion of how those risks are reviewed, likelihood and consequence information is updated based on market intelligence and operations data, and where in the monthly, quarterly or annual asset management review process these issues are reviewed and risk consequence and likelihood matrices and exposure vs tolerance reviewed. If this is better discussed in other sections, a reference to the information in those sections would help the reader understand how this process is applied. For example specific mention in Section 11, reporting on trends in performance metrics and associated data as well as completed and planned work and equipment failures would better describe to the reader the proactive management strategies MDL has in place and how those are used to continuously improve service delivery and asset performance. During a meeting with MDL staff on 15 September to review this evaluation MDL representatives explained that AS 2885 has detailed processes for risk management that address specific risk areas associated with Transmission pipeline management that MDL and its contractors comply with and are audited against. This section continues to be developed as MDL moves to full disclosure.
		Appendix 1			3	
				3		
				3		



		GAS TRANSMISSION BUSINESSES TRANSITIONAL AM PLANS					
		Maui Development Limited					
	Disclosure Requirement	Relevant AMP sections	Overall Rating	Rating		Comments	
				1 = non-compliant, 2 = partially compliant, 3 = fully compliant			
e	(c) the Report on Asset Condition in Schedule 12a;				3		
	(d) the Report on Forecast Demand in Schedule 12b;				3		
	(2) Include, in the AMP or AMP update as applicable, the information contained in each of the reports described in sub clause 2.6.5(1);				3		
	(3) Within 5 working days after publicly disclosing the AMP or AMP update as applicable, disclose these reports described in sub clause 2.6.5(1) to the Commission;				3	Assumed to have been done	
	(4) Within 6 months after the start of the disclosure year, publicly disclose these reports.				3	Assumed to have been done	
	(e) provide an assessment of transmission capacity as set out in clause 8 of Attachment A;	Appendix 4			3		
	8. The AMP must include an assessment of the extent to which physical pipeline capacity is adequate to address the current and anticipated future needs of consumers, taking into account expected demands on the transmission system and the GTB's investment plans.						
	8.1 The assessment must include the following-						
	8.1.1 Subject to clauses 8.2, 8.3 and 8.4 below, for each offtake point with a throughput of gas during the system peak flow period of 2,000 GJ or more, an analysis of available capacity, including a description of any potential transmission system constraints	Appendix 4 Section 1				3	
	8.1.2 a description of the extent to which the GTB's planned investments will affect the constraints identified in sub clause 8.1.1 of this attachment	Appendix 4 Section 2				3	
	8.1.3 a description of the extent to which constraints identified in sub clause 8.1.1 of this attachment are impacting upon the quality of service provided to existing consumers.	Appendix 4 Section 3				3	
	8.2 The analysis of available capacity disclosed pursuant to clause 8.1.1 of this attachment for each offtake point must separately assume that the throughput of gas or the gas pressure requirements at the other offtake points on the transmission system-						
	8.2.1 occurred during a recent system peak flow period	Appendix 4 Section 1				3	
	8.2.2 maintain observed trends, e.g., growth trends, peak demand factors and trendline adjustments, or other modelled behaviours.	Appendix 4 Section 1				3	
8.3 For the purposes of clause 8.1.1 of this attachment, the AMP-							
8.3.1 may treat offtake points that are supplied from a common physical connection to a pipeline as a single offtake point, provided that this is noted in the AMP	Appendix 4 Section 1				3		
8.3.2 must describe the modelling methodology and include all material assumptions, including peak flow period throughputs not contributing to capacity constraints (e.g., interruptible flows); physical boundaries of the transmission system; sources of data used; modelled representation of the transmission systems and its operational constraints	Appendix 4 Section 1				3		
8.3.3 must identify the recent system peak flow periods used in the clause 8.2.1 analysis, and must either set out the peak flow information specified in subclauses 2.5.2(1)(a) and 2.5.2(1)(b) of the determination, or provide reference to a website at which interested persons can readily access the same information at no charge as specified in sub clause 2.5.2(4) of the determination	Appendix 4 Section 1				3	Cited previous disclosure of peak flow information dated 3 November 2014	

		GAS TRANSMISSION BUSINESSES TRANSITIONAL AM PLANS				
		Maui Development Limited				
	Disclosure Requirement	Relevant AMP sections	Overall Rating	Rating		Comments
				1 = non-compliant, 2= partially compliant, 3=fully compliant		
f	8.3.4 must include the name, version and source of any commercial computer software used to simulate the transmission system.	Appendix 4 Section 1			3	Analysis was included in the AMP.
	8.4 If the analysis specified in sub clause 8.1.1 of this attachment is posted on a website normally used by the GTB for the publication of information and/or CANNOT be readily accessed at no charge by interested persons.	Appendix 4 Section 1			3	
	(f) provide the information related to legislative requirements as set out in sub clause 3.6 of Attachment A;	Appendix 4			2.7	
	3.6 A description of each of the legislative requirements directly affecting management of the assets, and details of-	3.7			2.7	
	3.6.1 how the GTB 3.6.2 meets the requirements; and	3.7			3	
	3.6.3 the impact on asset management	3.7 & 3.8			2	Section 3.7 implies that the regulations and associated standards impact Asset Management by the need for a Certificate of Fitness from an approved inspection body. Other legislation is cited in 3.7 but the impacts are not discussed. Section 3.8 goes on to review other regulations and regulatory bodies but does not describe the impact they have on Asset Management. Some expansion on this would help the reader understand the intent of each and how MDL has addressed the relevant requirements in the asset management planning and sustainment processes. The discussion could focus on KEY regulations such as AS2885 rather than those applicable to businesses as a whole.
g	(g) include the Report on Asset Management Maturity set out in Schedule 13;	Appendix 1			3	As specified in this clause future AMPs should include a discussion of gaps in current AMP information and management strategies, policies, procedures that will be addressed to enable preparation of a full AMP in the near future. Section 12 states that in some respects the AMP goes beyond the requirements of a transitional AMP. However it is the reviewer's opinion that it does not analyse the requirements of a full AMP and discuss gaps and gap mitigation strategies relative to clause 2.6.1. This review has identified some areas where additional discussion would help understanding from a transitional AMP perspective but stops short of reviewing the content from the perspective of compliance with full AMPs requirements.
h	(h) identify where the GTB considers the AMP does not yet conform to the requirements in clause 2.6.1, and set out the actions the GTB is taking to ensure the AMP will conform before the end of the first DPP regulatory period;	Section 12			1	During a meeting with MDL staff on 15 September to review this evaluation, MDL representatives explained that a detailed gap analysis has been performed with respect to full disclosure requirements and those gaps are being addressed.  Not detailed
i	(i) identify any actions the GTB has completed in order to conform to the requirements in clause 2.6.1;				1	During a meeting with MDL staff on 15 September to review this evaluation, MDL representatives explained that a detailed gap analysis has been performed with respect to full disclosure requirements and those gaps are being addressed.

## A.3 Powerco Limited Compliance Rating = 2.9/3.0

### ADVISORY

Comments made in this review are provided with the intention of supporting continuous improvement of the process of asset management and subsequent AMPs to the benefit of the consumer and the company providing the service. Consequently while the review has been performed from a compliance perspective, it has also been completed and comments made with this objective in mind. Comments are provided for the purpose of clarification, consideration and discussion, not as instruction.

### A.3.1 Compliance with Relevant Determinations

#### 2013 AMP

This AMP is a GDB AMP under the relevant determination. Using a purely arithmetic average approach to summing compliance scores, the AMP was rated at 2.9/3.0. The key to this scoring methodology is creation of a hierarchical structure for the compliance criteria, averaging subfactor scores to create a disclosure requirement score, and then averaging those to create the total score. The hierarchy is colour coded and stair-stepped for ease of review.

These findings were reviewed with the GPB during the week of 14 September 2015. Each area of non- and partial compliance was discussed and either clarified by the GPB or accepted. Based on the discussion a final evaluation was then made. The meeting was concluded with an understanding between the reviewer and the GPB that the evaluation was reasonable. GPB responses or clarifications were added to the evaluation comments for each respective requirement along with the effect that clarification had on the evaluation score.

Overall the 2013 document and 2014 update were comprehensive and substantially met the requirements of the IDD. The details of the full evaluation are presented in Table A.3.

Areas of specific concern identified relevant to the determination requirements are:

- Clause 3.3.3 requires that the AMP identifies the documented plans produced as outputs of the annual business planning process adopted by the GDB. Wording in the AMP is confusing and in some places refers to business processes that have been replaced by the AMP management process. The discussion in the AMP needs to be refined and corrected as necessary.
- Clause 3.6.2 requires a discussion of how legislative requirements impact on asset management. This was not addressed.
- Clause 3.7.3 requires identification of how stakeholder interests are accommodated in asset management practices but the AMP did not address this. Powerco has indicated this has already been addressed this in the next version of the AMP.
- Clause 3.9.1 requires all significant assumptions to be quantified where possible. In general assumptions were not quantified in terms of expected variability or discussed in terms of the potential impact on the cost or quality of service. Powerco has acknowledged this is an area of focus and improvement for future AMPs. It should be noted however that the wording of the requirement leaves the ability to quantify a specific assumption open to interpretation.
- Clause 3.12.3&4 requires an overview of systems and controls to ensure the quality and accuracy of asset management information; and the extent to which the systems, processes and controls are integrated. The controls process description could be enhanced by reference to audit process that validate and verify asset register completeness and accuracy. It has been our experience that despite the best intentions, as assets age and components of systems get replaced, data flow to the register is interrupted, asset register data accuracy deteriorates and confidence and hence use wanes. A regular process of asset data validation through representative sampling of asset classes could be considered. The difficulty of system

integration is described but not processes or controls. Given there are several systems used to manage asset data, references to other sections in the AMP where there is coordination of condition, maintenance, renewal, and performance management processes and the process used for identification of improvement recommendations would enhance this disclosure. During the 16 September review meeting, Powerco acknowledged this is a work in progress.

- Clause 3.15 requires an overview of asset management documentation, controls and review processes to, in part, identify the documentation that describes the key components of the asset management system and the links between the key components; describe the processes developed around documentation, control and review of key components of the asset management system; and audit or review procedures undertaken in respect of the asset management system. The key components are described in summary form but the links between them, and how data and knowledge is transferred, needs to be strengthened. Section 3.1.5 states formal document control processes are in place but they are not described. Finally, while the existence of internal audit processes are specifically stated in Section 3.1.5 and reviews of several key processes are cited in 3.1.5.1, details of exactly what audits, reviews are undertaken, when, and how results are reviewed and actioned by management is difficult to determine. This could be clarified by providing a specific list of audits and reviews, and their schedule relative to informing the annual planning process and day-to-day management decision making.
- Clause 6 requires a discussion of the results of formal risk assessments of the assets, further broken down by subcategory as appropriate. Systemic issues leading to the premature replacement of assets or parts of assets should be discussed at the asset class level for assets defined in 6.2 through 6.8. While the risk assessment process is described in Section 3.3.3 there is no breakdown by network, asset class, age, condition or asset location relative to critical consumer service requirements of risk in the detail that would be expected in the section cited for demonstrating compliance with this requirement in Appendix 10 (Section 7). However, Appendix 5 addresses risk from the perspective of different types of assets, different pressure regimes, and different events. The analysis includes an assessment of the controlled risk but does not elaborate on the risk if left uncontrolled which would be helpful to gauge uncontrolled risk exposure. Appendix 5 presents such risks from the perspective of the risk event not the asset category involved. Asset types or categories associated with specific events or risks are discussed but it is not clear that all asset categories have been assessed for risk. For example Appendix 5.3 Risk 2 - Earth movement, refers generally to assets while Risk 6 specifically mentions bridges but only in the controls column. Addition of a column in Appendix 5 indicating which asset categories are relevant to each risk would achieve compliance with this requirement. As a result there is little information on specific high risk assets and the plans for risk mitigation for those specific assets. Despite these areas of potential improvement, the general quality of the AMP combined with discussions regarding risk management process elsewhere, including identification of systemic issues such as polyethylene pipe performance and age uncertainty, leads the reviewer to believe that Powerco has a robust risk management process.
- Clause 14.2 requires a description of development, maintenance and renewal policies that cover non-network assets. These were not described and this was acknowledged as an area of improvement by Powerco at the 16 September review meeting.
- Clause 15.2 requires a description of strategies used to identify areas of the network that are vulnerable to high impact low probability events and a description of the resilience of the network and asset management systems to such events. Section 3.3.3.1 describes the mitigations for high impact – low probability (HI/LP) events but does not elaborate on strategies used to identify where such risks might occur on the network. For example - a fault trace and network overlay to show network segments that are at earthquake risk, or in locations subject to land movement (subsidence or liquefaction). Section 3.3.3.1 describes risk mitigations but

not where the vulnerability is. During the 16 September review meeting Powerco stated that this has been done but was not described in the AMP. Powerco will look at options to address this in future AMPs.

### 2014 Update

No change in the scoring of any requirement evaluation criteria for the 2013 AMP was made based on the update. This update states that "Since publishing the 2013 AMP we have continued to develop and refine our asset management approach including project justification and whole-of-life options analysis. These changes, coupled with delays during the transition to new field service and engineering arrangements, resulted in some projects planned for 2013 and 2014 being deferred or cancelled. Consequently network capital expenditure in 2013 was lower than forecast. The deferred network capital expenditure has altered the expenditure profile but the total across the planning period has not altered significantly. "

Only minor amendments to the network plans are noted. There is however a planned increase in non-network capital expenditure over the 2013-2017 period to bring forward the implementation of an Enterprise Asset Management (EAM) system. The intent is to advance asset management capability, and other IT-related projects that will improve our monitoring and fault-response capability. While such plans are underway, and other initiatives are being implemented, Powerco do not feel they have materially impacted the Asset Management Maturity Assessment at the time of the update. The balance of the update focuses on material changes in service delivery strategy for each network and the reason for such changes. No material delivery or supply capacity impacts were identified by the reviewer.

### A.3.2 Overall AMP Quality and Improvements Required

Our opinion is that the Powerco AMP is a high quality document. Key to our review was Section 10, which maps the relevant determination requirement to the plan contents.

### A.3.3 High Level Review of Expenditure Variability

There isn't a detailed expenditure summary within the body of the AMP – only some 'bar chart' tables. The Operations and Maintenance costs in Schedule 11(b) at the back of the AMP and in the 2014 Information Disclosure vary – but only very slightly – and these are not considered material.

The following compares the Capital Expenditure forecasts:

	<b>AMP</b>	<b>Sched 11a</b>
Consumer connections	\$ 3,767	\$ 3,990
System growth	\$ 3,177	\$ 1,200
Asset replacement and renewal	\$ 1,736	\$ 1,550
Asset relocation	\$ 116	\$ 76
Quality of supply	\$ 2,534	\$ 2,473
Other reliability, safety and environmental	\$ 1,620	\$ 1,873
Non-network assets	\$ 859	\$ 1,620
<b>TOTAL (\$000's)</b>	<b>\$13,749</b>	<b>\$12,783</b>

There is no significant variation in any line items during the ten year period in either the 2013 AMP or the 2014 Update (see excerpt table below).

(in\$000's)	13/14	14/15	15/16	16/17	17/18	18/19	19/20	20/21	21/22	22/23	23/24
<b>CAPEX</b>	\$12,783	\$14,684	\$16,231	\$16,618	\$13,878	\$14,162	\$14,511	\$14,839	\$15,241	\$15,652	\$16,187
<b>OPEX</b>	\$15,986	\$15,656	\$15,633	\$15,368	\$15,291	\$15,317	\$15,343	\$15,369	\$15,396	\$15,422	\$15,449

CAPEX is from Schedule 11a, while OPEX is from Schedule 11b.

TABLE A.3 – Compliance Review –Powerco Limited

Attachment A Clause	Disclosure Requirement	Powerco				
		Relevant AMP sections	Overall Rating	Rating <i>1 = non-compliant, 2= partially compliant, 3=fully compliant</i>	2014 Update	Comments
<b>2.9</b>						
<b>A</b>	<b>Contents of the AMP</b>	<b>2.8</b>				
<b>3</b>	The AMP must include the following-		<b>2.8</b>			
3.1	A summary that provides a brief overview of the contents and highlights information that the GDB considers significant	1		3		
3.2	Details of the background and objectives of the GDB's asset management and planning processes	2.3, 3.2, 4.0		3		
3.3	A purpose statement which-	2		2.6		
3.3.1	<ul style="list-style-type: none"> <li>Makes clear the purpose and status of the AMP in the GDB's asset management practices. The purpose statement must also include a statement of the objective of the asset management and planning processes</li> </ul>	1.1		3		
3.3.2	<ul style="list-style-type: none"> <li>states the corporate mission or vision as it relates to asset management</li> </ul>	2.1		3	Appendix 10 refers to 2.3 and .8. It would be helpful if 2.3.4.2 specifically listed the regional network plan by title. (i.e. Wellington Plan, Hutt Valley and Porirua etc.)	
3.3.3	<ul style="list-style-type: none"> <li>identifies the documented plans produced as outputs of the annual business planning process adopted by the GDB</li> </ul>	2.3,8.0		2	Some confusion is created when 3.2.2.2 refers to creating work plans, 3.2.3 refers to a gas works plan and maintenance programme; 3.2.3.3 refers to a Network Project Approval memorandum. It is unclear if there are plans for general area of need including knowledge capture on issues such as condition assessment, asset capacity, material type, location, remaining life, etc. or if these are addressed in regional plans. If there is central coordinated plans for addressing such systemic issues those plans too should be cited.  Section 8 has Network Plans that focus on projects, but do not address changes to O&M or risk acceptance in the short term that might be required due to a lack of available funding to do needed work and how that will be mitigated (as referred to in 3.2.3.2 )	
3.3.4	<ul style="list-style-type: none"> <li>states how the different documented plans relate to one another, with particular reference to any plans specifically dealing with asset management</li> </ul>	2.1,2.3,6.0		2	During a meeting with Powerco on 16 September it was explained that the strategic plan informs the AMP which creates the lifecycle plan, and thus the CAPEX OPEX plans. Demand is not a separate planning process but part of model sustainment. Workflow process outputs inform the AMP (see Appdx 6-8) but do not independently create a Plan in their own right. Individual network plans are part of the AMP not separate and distinct so should not be viewed as such or expected to be separate outputs. The reference to Network plans in Section 3.2.2.2 is a terminology carryover. The work plans and maintenance plans etc are now integrated and managed as part of the AMP itself.  The wording in the AMP could be modified to better reflect this actual operations process. This criterion was rescored from non-compliant to partial based on this explanation.	
3.3.5	<ul style="list-style-type: none"> <li>The purpose statement should be consistent with the GDB's vision and mission statements, and show a clear recognition of stakeholder interest.</li> </ul>	2.1,2.3		3	See above	
3.4	Details of the AMP planning period, which must cover at least a projected period of 10 years commencing with the disclosure year following the date on which the AMP is disclosed.  <i>Good asset management practice recognises the greater accuracy of short-to-medium term planning, and will allow for this in the AMP. The asset management information planning information for the second 5 years of the AMP planning period need not be presented in the same detail as the first 5 years.</i>	1.1,2.0		3	The objective of asset management is clearly defined in Para 23 of Section 2 introduction. Organisation vision, mission, values and objectives are described (2.3.3) and used to frame the asset management plan.	
3.5	The date that it was approved by the directors			3	Approval date located in Section 1.1	



Attachment A Clause	Disclosure Requirement	Powerco					
		Relevant AMP sections	Overall Rating	Rating		2014 Update	Comments
				1 = non-compliant, 2 = partially compliant, 3 = fully compliant			
3.6	A description of each of the legislative requirements directly affecting management of the assets, and details of:			2.0		List of legislation is not exhaustive but does address principle Gas industry related regulations. Some are listed in 2.3.7 that could be added to Appendix 4 for completeness. Others that might be added include Health and Safety in Employment Act; Civil Defence and Emergency Management Act; Hazardous Substances and New Organisms Act; AS/NZS 2885 Pipelines – Gas and liquid petroleum; NZS 5263 Gas detection and odourisation;	
3.6.1	<ul style="list-style-type: none"> <li>how the GDB meets the requirements; and</li> </ul>	2.3.7, Appdx 4		3		Through incorporation in standards and using industry CoPs. Changed from partial to full compliance based on further explanation by Powerco during the meeting on 16 September.	
3.6.2	<ul style="list-style-type: none"> <li>the impact on asset management</li> </ul>	2.3.7, Appdx 4		1		Not discussed	
3.7	A description of stakeholder interests (owners, consumers, etc.) which identifies important stakeholders and indicates:			2.5			
3.7.1	<ul style="list-style-type: none"> <li>how the interests of stakeholders are identified</li> </ul>	2.2		3		Table 2.1	
3.7.2	<ul style="list-style-type: none"> <li>what these interests are</li> </ul>	2.2		3			
3.7.3	<ul style="list-style-type: none"> <li>how these interests are accommodated in asset management practices</li> </ul>	2.2		1		A comment could be added to Section 2.2., explaining how stakeholder input is used to develop and govern strategies, adjust prioritisation and risk processes and exposures, and therefore the timing of and nature of work programmed and performed by Powerco. It is highly likely, based on the quality of this AMP that these suggested actions are already occurring and merely need to be explained in response to this criterion.  Powerco has already addressed this in the next version of the AMP.	
3.7.4	<ul style="list-style-type: none"> <li>how conflicting interests are managed</li> </ul>	2.2		3		Brief Summary	
3.8	A description of the accountabilities and responsibilities for asset management on at least 3 levels, including:			3			
3.8.1	<ul style="list-style-type: none"> <li>governance—a description of the extent of director approval required for key asset management decisions and the extent to which asset management outcomes are regularly reported to directors</li> </ul>	3.1.1		3			
3.8.2	<ul style="list-style-type: none"> <li>executive—an indication of how the in-house asset management and planning organisation is structured</li> </ul>	3.1.2		3			
3.8.3	<ul style="list-style-type: none"> <li>field operations—an overview of how field operations are managed, including a description of the extent to which field work is undertaken in-house and the areas where outsourced contractors are used.</li> </ul>	3.1.3		3			
3.9	All significant assumptions			2.6			
3.9.1	<ul style="list-style-type: none"> <li>quantified where possible</li> </ul>	6.0,8.0,9.2		1		In general assumptions were not quantified in terms of expected variability or discussed in terms of the potential impact on the cost or quality of service  Assumptions are generally business as usual per Section 2.4	
3.9.2	<ul style="list-style-type: none"> <li>clearly identified in a manner that makes their significance understandable to interested persons, including</li> </ul>	2.4, 9.2,7.2.1		3		Specific assumptions for Renewals, Growth, System Improvements, and All categories. Under the discussion of Section 9.2.2. Ensuring Reliable Long-Term Forecasts and 9.2.3 Ensuring Efficient Cost Outcomes, contain tables that refer to assumptions and approach. While the mitigation approach is well described the assumption text is more of a statement of the area of risk. Understanding of the need for an assumption and the nature of the assumption itself. For example Table 9.6. Major Works - the uncertainty might be " We will have the ability to manage estimated costs of works in the next 3-5 years within a range of -10 to +15% of actual".	
3.9.3	<ul style="list-style-type: none"> <li>a description of changes proposed where the information is not based on the GDB's existing business</li> </ul>	N/A		3			
3.9.4	<ul style="list-style-type: none"> <li>the sources of uncertainty and the potential effect of the uncertainty on the prospective information</li> </ul>	9.2, Table 9.5		3			
3.9.5	<ul style="list-style-type: none"> <li>the price inflator assumptions used to prepare the financial information disclosed in nominal New Zealand dollars in the Report on Forecast Capital Expenditure set out in Schedule 11a and the Report on Forecast Operational Expenditure set out in Schedule 11b.</li> </ul>			3			

Attachment A Clause	Disclosure Requirement	Powerco					
		Relevant AMP sections	Overall Rating	Rating		2014 Update	Comments
				1 = non-compliant, 2= partially compliant, 3=fully compliant			
3.10	<ul style="list-style-type: none"> <li>a description of the factors that may lead to a material difference between the prospective information disclosed and the corresponding actual information recorded in future disclosures</li> </ul>	9		2			<p>The AMP states this is addressed throughout Section 9 but the reviewer could not find information relevant to this requirement. Section 9 addresses expenditure forecasts and generally refers to Estimating Uncertainty in Section 9.3.2. The AMP does imply through Assumptions, though not completely explained in some instances (see 3.9.2), that uncertainty exists and measures are being taken to mitigate this. Section 3.10 is also looking towards the management of the impact of uncertainty on future disclosures. Given this is the first AMP of its kind, retrospective review of data to inform the viewer on Powerco's ability to do so is not yet available.</p> <p>Appendix 10 refers to Section 6 as compliant with this disclosure. However the reviewer feels Section 7, Asset Lifecycle Plans, which references the Asset Strategy in Section 6 is a more compliant reference. The score has been based on this interpretation.</p> <p>The discussion in Section 3 would be enhanced with a reference to where the performance measures and targets listed in Tables 4.1 through 4.8 were to be reviewed and the frequency. Section 3.1.5.1 lists other criteria while Section 3.2.1 talks about target setting but not ongoing results review and response management. As time progresses and performance measure trends can be reported, this section will provide valuable information as to whether the Asset Management Strategies are achieving desired performance measures, whether those measures and targets are appropriate, correctly prioritised, and affordable.</p> <p>On review 3.1.5.12 does state that the KPIs are reviewed monthly and trends monitored and actions taken accordingly -&gt; based on this the partial compliant has been changed to full.</p> <p>This could be enhanced by describing the process used to identify asset information needed to support overarching business goals from a project and asset perspective. Such data management frameworks are described in standards and Publicly Available Standards such as BS 1192:2007 and BS 1192:2 through 4</p> <p>The controls process description could be enhanced by reference to audit process that validate and verify asset register completeness and accuracy. It has been our experience that as assets age and components of systems get replaced, and despite the best intentions, data flow to the register is interrupted, asset register data accuracy erodes. A regular process of asset data validation through representative sampling of asset classes could be considered.</p> <p>Powerco is currently implementing a formal and ongoing data validation process to address this issue and a statement to this effect is included in the 2015 AMP.</p> <p>The difficulty of system integration is described but not processes or controls. Given there are several systems used to manage asset data, references to other sections in the AMP where there is coordination of condition, maintenance, renewal, and performance management processes and the process used for identification of improvement recommendations would enhance this disclosure.</p>
3.11	An overview of asset management strategy and delivery  <i>To support the AMMAT disclosure and assist interested persons to assess the maturity of asset management strategy and delivery, the AMP should identify:</i>			3			
3.11.1	<ul style="list-style-type: none"> <li>how the asset management strategy is consistent with the GDB's other strategy and policies;</li> </ul>	2.3		3			
3.11.2	<ul style="list-style-type: none"> <li>how the asset strategy takes into account the life cycle of the asset;</li> </ul>	6		3			
3.11.3	<ul style="list-style-type: none"> <li>the link between the asset management strategy and the AMP;</li> </ul>	2.3.8		3			
3.11.4	<ul style="list-style-type: none"> <li>processes that ensure costs, risks and system performance will be effectively controlled when the AMP is implemented.</li> </ul>	3, 7		3			
3.12	An overview of systems and information management data  <i>To support the AMMAT disclosure and assist interested persons to assess the maturity of systems and information management, the AMP should describe:</i>			2.5			
3.12.1	<ul style="list-style-type: none"> <li>the processes used to identify asset management data requirements that cover the whole of life cycle of the assets;</li> </ul>	3.3.2.1		3			
3.12.2	<ul style="list-style-type: none"> <li>the systems used to manage asset data and where the data is used, including an overview of the systems to record asset conditions and operation capacity and to monitor the performance of assets;</li> </ul>	5.8.1		3			
3.12.3	<ul style="list-style-type: none"> <li>the systems and controls to ensure the quality and accuracy of asset management information; and</li> </ul>	3.3.2.2		2			
3.12.4	<ul style="list-style-type: none"> <li>the extent to which the systems, processes and controls are integrated.</li> </ul>	3.3.2.3		2			
3.13	A statement covering any limitations in the availability or completeness of asset management data and disclose any initiatives intended to improve the quality of this data  <i>Discussion of the limitations of asset management data is intended to enhance the transparency of the AMP and identify gaps in the asset management system.</i>	3.3.2.4,5,7,8.8.1		3			

Attachment A Clause	Disclosure Requirement	Powerco					
		Relevant AMP sections	Overall Rating	Rating		2014 Update	Comments
				1 = non-compliant, 2= partially compliant, 3=fully compliant			
3.14	A description of the processes used within the GDB for:			3			The activities performed as part of the routine inspections and maintenance activities are described in Section 3.2.2 as well as in Section 3.1.3.1, 3.1.5.1, 6.1, 6.3, and 6.4, to some degree in Section 1, and Section 9.5.1 and 9.5.3 and Appendix 8. The score against this criterion has been provided based on these discussions as a whole and specifically 9.5.1. Routine Corrective Maintenance and Inspection and 9.5.3 Service Interruption, Incident, and Emergency Maintenance. Section 3.1.5.1 indicates an the ongoing quarterly process for reviewing maintenance frequencies, impact on reliability, and review of emergency events to adjust inspection frequencies, maintenance, or lifecycle investment plans and projects. The Workflow process in Appendix 8, applied on the basis of reviewing unexpected events indicates management identification and response to emerging maintenance trends especially given the stated uncertainty regarding age of assets and assumption that asset management strategy is based partially on age being an appropriate metric.
3.14.1	<ul style="list-style-type: none"> <li>managing routine asset inspections and network maintenance</li> </ul>	3.2		3			
3.14.2	<ul style="list-style-type: none"> <li>planning and implementing network development projects</li> </ul>	3.2.4		3			
3.14.3	<ul style="list-style-type: none"> <li>measuring network performance.</li> </ul>	6.2.2		3			
3.15	An overview of asset management documentation, controls and review processes  <i>To support the AMMAT disclosure and assist interested persons to assess the maturity of asset management documentation, controls and review processes, the AMP should:</i>			2.4			The key components are described in summary form but the links between them, how data and knowledge is transferred, needs to be strengthened  Section 3.1.5 states formal document control processes are in place but they are not described. Section 3.1.5.1 addresses the review process  The existence of internal audit processes are specifically stated in Section 3.1.5 and reviews of several key processes are cited in 3.1.5.1. However details of exactly what audits, reviews are undertaken, when, and how results are reviewed and actioned by management is difficult to determine. This could be clarified by providing a specific list of audits and reviews, and their schedule relative to informing the annual planning process and day-to-day management decision making.
3.15.1	<ul style="list-style-type: none"> <li>identify the documentation that describes the key components of the asset management system and the links between the key components;</li> </ul>	2.3		2			
3.15.2	<ul style="list-style-type: none"> <li>describe the processes developed around documentation, control and review of key components of the asset management system;</li> </ul>	3.13,3.1.5.1		2			
3.15.3	<ul style="list-style-type: none"> <li>where the GDB outsources components of the asset management system, the processes and controls that the GDB uses to ensure efficient and cost effective delivery of its asset management strategy;</li> </ul>	3.1.3		3			
3.15.4	<ul style="list-style-type: none"> <li>where the GDB outsources components of the asset management system, the systems it uses to retain core asset knowledge in-house; and</li> </ul>	3.3.1.2		3			
3.15.5	<ul style="list-style-type: none"> <li>audit or review procedures undertaken in respect of the asset management system.</li> </ul>	3.3.3,2.3.6		2			
3.16	An overview of communication and participation processes  <i>To support the AMMAT disclosure and assist interested persons to assess the maturity of asset management documentation, controls and review processes, the AMP should:</i>			3			Section 2.2 also supports compliance with this requirement
3.16.1	<ul style="list-style-type: none"> <li>communicate asset management strategies, objectives, policies and plans to stakeholders involved in the delivery of the asset management requirements, including contractors and consultants;</li> </ul>	3.1.5		3			
3.16.2	<ul style="list-style-type: none"> <li>demonstrate staff engagement in the efficient and cost effective delivery of the asset management requirements.</li> </ul>	3.1.5		3			
3.17	The AMP must present all financial values in constant price New Zealand dollars except where specified otherwise;			3			Appendix 10 demonstrates Powerco's intent for the AMP to comply with the disclosure requirements. This Appendix though was critical to the reviewer's ability to locate relevant information to evaluate such compliance given the size of the AMP and in several cases the fact that compliance required reference to multiple sections to get the complete picture. This was however one of the better AMPs reviewed for the 2013 planning year and Powers is to be commended.
3.18	The AMP must be structured and presented in a way that the GDB considers will support the purposes of AMP disclosure set out in clause 2.6.2 of the determination.			3			

Attachment A Clause	Disclosure Requirement	Relevant AMP sections	Overall Rating	Powerco		2014 Update	Comments
				Rating			
				1 = non-compliant, 2= partially compliant, 3=fully compliant			
<b>A</b>	<b>Assets covered</b>		<b>3</b>				
4	The AMP must provide details of the assets covered, including:			3			
4.1	A map and high-level description of the areas covered by the GDB, including the region(s) covered	5.3,5.4,5.5, 3.3,		3			
4.2	A description of the network configuration, including: <i>if sub-networks exist, the network configuration information should be disclosed for each sub-network.</i>	Appdx 9,5.6		3			
4.2.1	A map or maps, with any cross-referenced information contained in an accompanying schedule, showing the physical location of:			3			
	(i) All main pipes, distinguished by operating pressure			3			
	(ii) All ICPs that have a significant impact on network operations or asset management priorities, and a description of that impact	5.2.2		3			Appendix 9 maps indicate Industrial Connections with an (M) symbol. However no description of whether they are considered significant ICPs and the impact on asset management priorities is provided.  During the review meeting Powerco drew the reviewer's attention to text in Section 5.2.2 which addresses this issue.
	(iii) All gate stations			3			
	(iv) All pressure regulation stations			3			
4.2.2	if applicable, the locations where a significant change has occurred since the previous disclosure of the information referred to in subclause 4.2(a) above, including-			3			Section 5.6 relates to asset classes - this appears to be a mis-reference. Section 5.5.6 appears to be correct and has been used for this evaluation.
	(i) a description of the parts of the network that are affected by the change			3			
	(ii) a description of the nature of the change			3			
<b>A</b>	<b>Network assets by category</b>		<b>2.5</b>				
5	The AMP must describe the network assets by providing the following information for each asset category:	5.6,7.0		3			
5.1	• pressure			3			Section 5.6 and 5.7 address these criteria and have been used for this evaluation
5.2	• description and quantity of assets			3			Section 5.6 and 5.7 address these criteria and have been used for this evaluation
5.3	• age profiles			3			Section 5.6 and 5.7 address these criteria and have been used for this evaluation
5.4	The asset categories discussed in clause 5 above should include at least the following:	Appendix 5		3			While the risk assessment process is described in Section 3.3.3 there is no breakdown by network, asset class, age, condition, or asset location relative to critical consumer service requirements of risk in the detail that would be expected in the Section cited for demonstrating compliance with this requirement in Appendix 10 (Section 7). However, Appendix 5 addresses risk from the perspective of different types of assets, different pressure regimes, and different events. The analysis includes an assessment of the controlled risk but does not elaborate on the risk if left uncontrolled which would be helpful to gauge uncontrolled risk exposure. The general quality of the AMP, combined with discussions regarding risk management process elsewhere including identification of systemic issues such as PE pipe performance and age uncertainty, leads the reviewer to believe that Powers has a robust risk management process.
6		5.6,7.0		2.0			
6.1	• main pipe	Appendix 5		2			Appendix 5 presents such risks from the perspective of the risk event not the asset category involved. Asset types or categories associated with specific events or risks are discussed but it is not clear that all asset categories have been assessed for risk. For example Appendix 5.3 Risk 2 - Earth movement, refers generally to assets while Risk 6 specifically mentions bridges but only in the controls column. Addition of a column in Appendix 5 indicating which asset categories are relevant to each risk would achieve compliance with this requirement.  During discussions with Powerco the reviewer was informed that risks were assessed by Asset class and specifically by location (high population areas etc.)
6.2	• service pipe			2			See above
6.3	• stations			2			See above
6.4	• line valve			2			See above

Attachment A Clause	Disclosure Requirement	Powerco					
		Relevant AMP sections	Overall Rating	Rating		2014 Update	Comments
				1 = non-compliant, 2= partially compliant, 3=fully compliant			
6.5	<ul style="list-style-type: none"> <li>special crossings</li> </ul>			2		See above	
6.6	<ul style="list-style-type: none"> <li>monitoring and control systems</li> </ul>			2		See above	
6.7	<ul style="list-style-type: none"> <li>cathodic protection systems</li> </ul>			2		See above	
6.8	<ul style="list-style-type: none"> <li>assets owned by the GDB but installed at gate stations owned by others.</li> </ul>			2		See above	
<b>A</b>	<b>Service Levels</b>		<b>3</b>				
7	The AMP must clearly identify or define a set of performance indicators for which annual performance targets have been defined. The annual performance targets must be consistent with business strategies and asset management objectives and be provided for each year of the AMP planning period. The targets should reflect what is practically achievable given the current network configuration, condition and planned expenditure levels. The targets should be disclosed for each year of the AMP planning period.	4		3			
8	Performance indicators for which targets are defined in clause 7 above must include-	4,4.8		2.8			
8.1	<ul style="list-style-type: none"> <li>the DPP requirements required under the price quality path determination applying to the regulatory assessment period in which the next disclosure year falls.</li> </ul>			3			
8.2	<ul style="list-style-type: none"> <li>consumer oriented indicators that preferably differentiate between different consumer types</li> </ul>			2		There is limited differentiation between customer types in the performance measures cited in Section 4.	
8.3	<ul style="list-style-type: none"> <li>indicators of asset performance, asset efficiency and effectiveness, and service efficiency, such as technical and financial performance indicators related to the efficiency of asset utilisation and operation</li> </ul>			3		Performance compliance is indicated at an overall organisation level in Section 4. However compliance relative to individual subnetworks would also be helpful. Powerco clarified that some performance indicators are applied to all users. With respect to subnetworks the only indicator that is relevant is capacity to ensure quality of supply.	
8.4	<ul style="list-style-type: none"> <li>the performance indicators disclosed in Schedule 10b of the determination.</li> </ul>			3			
9	The AMP must describe the basis on which the target level for each performance indicator was determined. Justification for target levels of service includes consumer expectations or demands, legislative, regulatory, and other stakeholders' requirements or considerations. The AMP should demonstrate how stakeholder needs were ascertained and translated into service level targets.	4.0,2.2,3.2.1		3		Most indicators cite historic value as the basis for selection. The stakeholder consultation list referred to in Section 2.2 and standard setting process described in Section 3.2.1 indicate future standards will be identified as appropriate.	
10	Targets should be compared to historic values where available to provide context and scale to the reader.	4.8		3			
11	Where forecast expenditure is expected to materially affect performance against a target defined in clause 7 above, the target should be consistent with the expected change in the level of performance. <i>Performance against target must be monitored for disclosure in the Evaluation of Performance section of each subsequent AMP.</i>	N/A		3		Stated as not relevant. The reviewer has assumed that there are no such events.	
<b>A</b>	<b>Network Development Planning</b>		<b>3</b>				
12	AMPs must provide a detailed description of network development plans, including—	8		3			
12.1	A description of the planning criteria and assumptions for network development;	3.2,6.2,8.0		3			
12.2	Planning criteria for network developments should be described logically and succinctly. Where probabilistic or scenario-based planning techniques are used, this should be indicated and the methodology briefly described;	3.2,8.0		3			
12.3	The use of standardised designs may lead to improved cost efficiencies. This section should discuss:	6.4.3		3			
12.3.1	<ul style="list-style-type: none"> <li>the categories of assets and designs that are standardised;</li> </ul>			3			
12.3.2	<ul style="list-style-type: none"> <li>the approach used to identify standard designs.</li> </ul>			3			



Attachment A Clause	Disclosure Requirement	Powerco					
		Relevant AMP sections	Overall Rating	Rating		2014 Update	Comments
				1 = non-compliant, 2= partially compliant, 3=fully compliant			
12.4	A description of the criteria used to determine the capacity of equipment for different types of assets or different parts of the network. <i>The criteria described should relate to the GDB's philosophy in managing planning risks.</i>	3.2.2,3.3.3,6.0		3			
12.5	A description of the process and criteria used to prioritise network development projects and how these processes and criteria align with the overall corporate goals and vision	2.3,4.0,5.2.2,7.0 3.2.3.2		3		Section 4.6.1 describes investment optimisation to meet stakeholder expectations and business objectives and refers to more detail provided in Section 6.4 Efficiency. The reference to Section 5.2.2 does not appear relevant. While the AMP as a whole gives a good impression that there is a robust process for identifying and prioritizing lifecycle and service related projects and activities, a summary of the prioritisation process, including how service performance target progress is factored into priority weightings and the management of risk associated with projects that cannot be afforded in any given year, and between subsystems, is not well explained or easily interpreted from the AMP.  During AMP review with Powerco Section 3.2.3.2 was added to the compliance check to meet this requirement	
12.6	Details of demand forecasts, the basis on which they are derived, and the specific network locations where constraints are expected due to forecast increases in demand:			3			
12.6.1	explain the load forecasting methodology and indicate all the factors used in preparing the load estimates;	6.2		3			
12.6.2	<ul style="list-style-type: none"> <li>provide separate forecasts to at least system level covering at least a minimum five year forecast period. Discuss how uncertain but substantial individual projects/developments that affect load are taken into account in the forecasts, making clear the extent to which these uncertain increases in demand are reflected in the forecasts;</li> </ul>	8		3		The general approach to load forecasting is provided in Section 6 and the results, specific areas when load issues result in projects, are discussed at the system level in Section 8 and separate forecasts for each system were depicted in Table 8.2 with respect to pressure performance in the planning period based on sustaining the status quo. Table 8.2 summaries all projects, their cost and expected year of execution. Discussion of demand uncertainty could be improved.	
12.6.3	<ul style="list-style-type: none"> <li>identify any network or equipment constraints that may arise due to the anticipated growth in demand during the AMP planning period.</li> </ul> <p><i>The AMP should include a description of the methodology and assumptions used to produce the utilisation and capacity forecasts and a discussion of the limitations of the forecasts, methodology and assumptions. The AMP should also discuss any capacity limitations identified or resolved in years during which an AMP was not disclosed.</i></p>			3		In Section 8 constraints are defined in the description of projects planned to mitigate them.	
12.7	Analysis of the significant network level development options identified and details of the decisions made to satisfy and meet target levels of service, including:	8.0,6.4		3			
12.7.1	<ul style="list-style-type: none"> <li>the reasons for choosing a selected option for projects where decisions have been made;</li> </ul>			3			
12.7.2	<ul style="list-style-type: none"> <li>alternative options considered for projects that are planned to start in the next five years;</li> </ul>			3			
12.7.3	<ul style="list-style-type: none"> <li>consideration of planned innovations that improve efficiencies within the network, such as improved utilisation, extended asset lives, and deferred investment.</li> </ul>			3			
12.8	<ul style="list-style-type: none"> <li>A description and identification of the network development programme and actions to be taken, including associated expenditure projections. The network development plan must include:</li> </ul>	8		3			
12.8.1	<ul style="list-style-type: none"> <li>a detailed description of the material projects and a summary description of the non-material projects currently underway or planned to start within the next 12 months;</li> </ul>			3			
12.8.2	<ul style="list-style-type: none"> <li>a summary description of the programmes and projects planned for the following four years (where known); and</li> </ul>			3			
12.8.3	<ul style="list-style-type: none"> <li>an overview of the material projects being considered for the remainder of the AMP planning period.</li> </ul> <p><i>For projects included in the AMP where decisions have been made, the reasons for choosing the selected option should be stated which should include how target levels of service will be impacted. For other projects planned to start in the next five years, alternative options should be discussed.</i></p>			3			



Attachment A Clause	Disclosure Requirement	Relevant AMP sections	Overall Rating	Rating		2014 Update	Comments
				1 = non-compliant, 2= partially compliant, 3=fully compliant			
<b>Powerco</b>							
<b>A</b>	<b>Lifecycle Asset Management Planning (Maintenance and Renewal)</b>		<b>3</b>				
13	The AMP must provide a detailed description of the lifecycle asset management processes, including—			3			
13.1	The key drivers for maintenance planning and assumptions;	7		3			
13.2	Identification of routine and corrective maintenance and inspection policies and programmes and actions to be taken for each asset category, including associated expenditure projections. This must include:	3,2,9,0		3			
13.2.1	<ul style="list-style-type: none"> <li>the approach to inspecting and maintaining each category of assets, including a description of the types of inspections, tests and condition monitoring carried out and the intervals at which this is done;</li> </ul>	7		3			
13.2.2	<ul style="list-style-type: none"> <li>any systemic problems identified with any particular asset types and the proposed actions to address these problems; and</li> </ul>	7		3			
13.2.3	<ul style="list-style-type: none"> <li>budgets for maintenance activities broken down by asset category for the AMP planning period.</li> </ul>	7.8		3			
13.3	Identification of asset replacement and renewal policies and programmes and actions to be taken for each asset category, including associated expenditure projections. This must include:	7,6,4,7,8		3			
13.3.1	<ul style="list-style-type: none"> <li>the processes used to decide when and whether an asset is replaced or refurbished, including a description of the factors on which decisions are based, and consideration of future demands on the network and the optimum use of existing network assets;</li> </ul>			3			Section 6.4 describes the process and factors used in lifecycle management and determining the nature of work to be done including renewals
13.3.2	<ul style="list-style-type: none"> <li>a description of innovations that have deferred asset replacements;</li> </ul>			3			Innovations resulting in deferral of asset replacement are not specifically cited with example assets however such decisions are being made and strategies include demand management and deferring work until other coordination with other projects and efficiencies justify expenditure.
13.3.3	<ul style="list-style-type: none"> <li>a description of the projects currently underway or planned for the next 12 months</li> </ul>			3			
13.3.4	<ul style="list-style-type: none"> <li>a summary of the projects planned for the following four years (where known); and</li> </ul>			3			
13.3.5	<ul style="list-style-type: none"> <li>an overview of other work being considered for the remainder of the AMP planning period.</li> </ul>			3			
13.4	The asset categories discussed in subclauses 13.2 and 13.3 above should include at least the categories in subclause 6 above.	7		3			
<b>A</b>	<b>Non-Network Development, Maintenance and Renewal</b>		<b>2.5</b>				
14	AMPs must provide a summary description of material non-network development, maintenance and renewal plans, including—			2.5			
14.1	<ul style="list-style-type: none"> <li>A description of non-network assets;</li> </ul>	5.8		3			
14.2	<ul style="list-style-type: none"> <li>Development, maintenance and renewal policies that cover them;</li> </ul>	8,7,8,8		1			Policies are not cited in Section 5.8
14.3	<ul style="list-style-type: none"> <li>A description of material capital expenditure projects (where known) planned for the next five years;</li> </ul>	8.8.1		3			
14.4	<ul style="list-style-type: none"> <li>A description of material maintenance and renewal projects planned (where known) for the next five years.</li> </ul>	N/A		3			
<b>A</b>	<b>Risk Management</b>		<b>2.8</b>				
15	AMPs must provide details of risk policies, assessment, and mitigation, including-	3.3.3		2.8			
15.1	<ul style="list-style-type: none"> <li>Methods, details and conclusions of risk analysis;</li> </ul>			3			

Attachment A Clause	Disclosure Requirement	Powerco					
		Relevant AMP sections	Overall Rating	Rating		2014 Update	Comments
				1 = non-compliant, 2= partially compliant, 3=fully compliant			
15.2	<ul style="list-style-type: none"> <li>Strategies used to identify areas of the network that are vulnerable to high impact low probability events and a description of the resilience of the network and asset management systems to such events;</li> </ul>			2		Section 3.3.3.1 describes the mitigations for HI/LP events but does not elaborate on strategies used to identify where such risks might occur on the network. For example - a fault trace and network overlay to show network segments that are at earthquake risk, or in locations subject to land movement (subsidence or liquefaction). A partial compliance has been assessed in recognition that a process is in use that enables identification of high impact low probability events, and identification of three such events in 3.3.3.1. For example - long-term loss of service due to a natural disaster (e.g. earthquake, volcanic activity, or landslide) is cited as a HILP event. Appendix 5 describes such events from the perspective of the residual risk after the mitigations cited in 3.3.3.1 are taken into consideration. An explanation of the strategy for identifying where each risk might be relevant on the network, the method for identifying consequence in terms of local and specific impacts rather than a generalised impact, and then the methodology for selecting the appropriate mitigation and how its effectiveness and implementation is monitored would help understanding of Powerco's process. Also addition of the initial unmitigated risk in terms of their Likelihood consequence level per Appendix 5 would help the reader better identify HI/LP risks from Table 5.1 in Appendix 5.	
15.3	<ul style="list-style-type: none"> <li>A description of the policies to mitigate or manage the risks of events identified in subclause 15.2 above;</li> <li>Details of emergency response and contingency plans.</li> </ul>			3			
15.4	<p><i>Asset risk management forms a component of a GDB's overall risk management plan or policy, focusing on the risks to assets and maintaining service levels. AMPs should demonstrate how the GDB identifies and assesses asset related risks and describe the main risks within the network. The focus should be on credible low-probability, high-impact risks. Risk evaluation may highlight the need for specific development projects or maintenance programmes. Where this is the case, the resulting projects or actions should be discussed, linking back to the development plan or maintenance programme.</i></p>			3			
<b>A</b>	<b>Evaluation of performance</b>		<b>3</b>				
16	AMPs must provide details of performance measurement, evaluation, and improvement, including—			3		Not possible until next year when results can be compared to Projected	
16.1	<ul style="list-style-type: none"> <li>A review of progress against plan, both physical and financial;</li> </ul>	4.0,4.8		3			
16.1.1	<ul style="list-style-type: none"> <li>referring to the most recent disclosures made under subclause 2.5.1 of the determination, discussing any significant differences and highlighting reasons for substantial variances</li> </ul>			3			
16.1.2	<ul style="list-style-type: none"> <li>commenting on the progress of development projects against that planned in the previous AMP and provide reasons for substantial variances along with any significant construction or other problems experienced</li> </ul>			3			
16.1.3	<ul style="list-style-type: none"> <li>commenting on progress against maintenance initiatives and programmes and discuss the effectiveness of these programmes noted.</li> </ul>			3			
16.2	<ul style="list-style-type: none"> <li>An evaluation and comparison of actual service level performance against targeted performance</li> </ul>	4.8,8.1		3			
16.2.1	<ul style="list-style-type: none"> <li>in particular, comparing the actual and target service level performance for all the targets discussed in the previous AMP under clause 7 above and explain any significant variances.</li> </ul>			3			
16.3	<ul style="list-style-type: none"> <li>An evaluation and comparison of the results of the asset management maturity assessment disclosed in the Report on Asset Management Maturity set out in Schedule 13 against relevant objectives of the GDB's asset management and planning processes.</li> </ul>	2.3.6		3			
16.4	<ul style="list-style-type: none"> <li>An analysis of gaps identified in subclauses 16.2 and 16.3 above. Where significant gaps exist (not caused by one-off factors), the AMP must describe any planned initiatives to address the situation.</li> </ul>	2.3.6,8.8		3			
<b>A</b>	<b>Capability to deliver</b>		<b>3</b>				
17	AMPs must describe the processes used by the GDB to ensure that:			3			
17.1	The AMP is realistic and the objectives set out in the plan can be achieved	3.1.4,3.2.1		3			

Attachment A Clause	Disclosure Requirement	Powerco				
		Relevant AMP sections	Overall Rating	Rating	2014 Update	Comments
				1 = non-compliant, 2= partially compliant, 3=fully compliant		
17.2	The organisation structure and the processes for authorisation and business capabilities will support the implementation of the AMP plans.	3.1		3		
<b>A</b>	<b>Commerce Commission Information Disclosure Schedules</b>		<b>3</b>			
2.6.1	Schedule 11a Report on Forecast Capital Expenditure			3		
2.6.1	Schedule 11b Report on Forecast Operational Expenditure			3		
2.6.1	Schedule 12a Report on Asset Condition			3		
2.6.1	Schedule 12b Report on Forecast Utilisation			3		
2.6.1	Schedule 12c Report on Forecast Demand			3		
2.6.1	Schedule 13 Report on Asset Management Maturity Assessment			3		

## A.4 Vector Limited – Gas Transmission Compliance Rating = 2.9/3.0

### ADVISORY

Comments made in this review are provided with the intention of supporting continuous improvement of the process of asset management and subsequent AMPs to the benefit of the consumer and the company providing the service. Consequently while the review has been performed from a compliance perspective, it has also been completed and comments made with this objective in mind. Comments are provided for the purpose of clarification, consideration and discussion, not as instruction.

### A.4.1 Compliance with Relevant Determinations

Overall the 2013 document and 2014 update were comprehensive and substantially met the requirements of the IDD. The details of the full evaluation are presented in Table A.4.

#### 2013 AMP

This AMP is a GTB AMP under the relevant determination. Using a purely arithmetic average approach to summing compliance scores, the AMP was rated at 2.9/3.0. The key to this scoring methodology is creation of a hierarchical structure for the compliance criteria, averaging subfactor scores to create a disclosure requirement score, and then averaging those to create the total score. The hierarchy is colour coded and stair-stepped for ease of review.

These findings were reviewed with the GPB during the week of 14 September 2015. Each area of non- and partial compliance was discussed and either clarified by the GPB or accepted. Based on the discussion a final evaluation was then made. The meeting was concluded with an understanding between the reviewer and the GPB that the evaluation was reasonable. GPB responses or clarifications were added to the evaluation comments for each respective requirement along with the effect that clarification had on the evaluation score.

Areas of specific concern identified relevant to the determination requirements are:

- Clause 3.3.3. requires that the AMP identifies the documented plans produced as outputs of the annual business planning process adopted by the GDB. Section 2.8 through 12 explain the various steps Vector uses to manage the AMP process, the outcome of which are the Development Programmes in Section 5 and Maintenance and Renewals Planning described in Section 6. There are likely to be other process outputs such as recommended changes to prioritisation factors and weightings, strategies, KPI targets and the like that would be documented in support of this process. Those outputs, in conjunction with the actual investment plans, should be listed. The reviewer suggests that if a process workflow diagram with output steps defining planning deliverables were available, this could be used to complete the necessary list. A meeting with Vector staff on 14 September to review this evaluation clarified that Vector has a process for AMP investment planning but that it is an ongoing process. The AMP itself is used to manage the day to day business and annual updates merely result in updated content within the AMP. Vector clarified that there are control steps that monitor performance of the annual process of output generation from risk reviews, fault data, defect data, and incident reports. Also Vector have a suite of technical standards which govern this process and are internally and externally audited for compliance. Vector's explanation that the AMP was the output was therefore deemed to partially meet (2) this requirement.
- Clause 3.9 requires all significant assumptions to be quantified where possible and the sources of uncertainty and the potential effect of the uncertainty on the prospective information described. In general assumptions were not quantified in terms of expected variability or discussed in terms of the potential impact on the cost or quality of service. Ability to quantify each assumption was not evaluated by the reviewer however none of the assumptions other than historic economic growth were quantified in the AMP. Tables where assumptions or risks are listed would be enhanced by including a discussion of how those assumptions or risks will

be monitored or managed (acceptable range indicators etc. and triggered actions). While uncertainties are addressed in the AMP they are not always easy to identify, nor are the impacts on the perspective information in the AMP clearly explained. Section 1.2.1 first paragraph clearly links two uncertainties with impacts on the AMP as does Section 2.4. Uncertainties in Section 5.3 are not easy to identify. For example in Section 5.3 there are references to the need for assumption and judgement (5.3.1). Section 5.3.2 explains the difficulty of gas pressure variability, demand profile development, operating limits etc. In Section 5.4 there are assumptions regarding Demand Forecasting which would imply some uncertainty but no discussion of the impact of that uncertainty or how it will be managed. Tables where assumptions or risks are listed would be enhanced by including a discussion of how those assumptions or risks will be monitored or managed (acceptable range indicators etc. and triggered actions). A meeting with Vector staff on 14 September to review this evaluation determined that further detail would be beneficial.

- Clause 3.15 requires an overview of asset management documentation, controls and review processes to, in part, identify the documentation that describes the key components of the asset management system and the links between the key components; describe the processes developed around documentation; control and review of key components of the asset management system; and audit or review procedures undertaken in respect of the asset management system. A generalised list of asset management control documents is described towards the end of Section 7.1 but specific document names are not provided. Several controlling documents are implied in the text such as the reference to a Data Source Verification methodology and a Corporate Data Catalogue. Compliance with this criteria would be enhanced if a list of such documents as they relate to the System Components in Figure 7-1 was provided. Links between discrete information systems are described but relate more to asset information management not the system as a whole. Section 7.1 describes the implementation of a Corporate Data Catalogue, Data Source Verification method, and has designated specific data repositories as the single source of truth for specific data sets. (Table 7.1). Section 7.4 refers to an audit process of business systems and processes that has identified many of the improvements cited in Section 7.5. However there is little information regarding how documentation and control of asset management systems is implemented. Section 2.14.1 acknowledges that *"Vector's asset management practices were developed over several decades and help to ensure a high-quality, safe gas supply to its customers. However, formal documentation relating to these practices is somewhat incomplete, or exists in varying formats and degrees of detail. There are also some gaps in documented asset management processes, and no formal, board-approved asset management policy is in place."* This section goes on to say *"Vector is systematically reviewing and updating asset management documentation and processes. This includes better documentation, improved communication of formal asset management documentation and requirements, documenting the resource and training requirements for asset management and more formally measuring performance against asset management requirements. In addition, a formal asset management policy document is being developed which will be formally approved by the Vector board, and widely communicated to stakeholders."* A meeting with Vector staff on 14 September to review this evaluation determined that further detail would be beneficial.
- Clause 16.2 requires a description of development, maintenance and renewal policies that cover non-network assets. It is clear that Vector has a development, maintenance and renewal process for their core data systems as described in Section 7.1. It appears the Corporate Data Catalogue and the Data Source Verification methodology define information needs and standards. Reference is made to an asset information policy and business process maps but it is not clear how these affect maintenance and renewal of the systems and process architecture itself.

## 2014 Update

This update states that “although a number of initiatives to improve overall asset management maturity were initiated over the course of the last year, the majority of these initiatives are longer term programmes that will not immediately result in a material change to the overall Asset Management Maturity Assessment Tool (AMMAT) score provided in the 2013 AMP. “

The balance of the update focuses on material changes in service delivery strategy that affect the capital investment and operations programmes. Principle amongst this is “*that it is now assumed that demand at the aging thermal power generating plant at Otahuhu B delivery point will reduce to zero by FY24.* This assumption has been addressed in the Northern System predicted delivery point maximum flow and the pipeline capacity assessment. No material delivery or supply capacity impacts were identified by the reviewer.

Compliance with requirement 8.3.3 which must identify peak flow information was improved by reference to the peak flow period in Table 3 of the 2014 Update. A change in the scoring of this criterion was made from partially compliant (2) to compliant (3). Overall AMP score remains at 2.9.

### A.4.2 Overall AMP Quality and Improvements Required

The AMP is 400 plus page highly detailed technical documents, providing more detail than may be required to be compliant with the relevant determinations. Despite provision of a cross reference table, navigation and comparison of the content of various sections to determine compliance with the relevant determination is somewhat time consuming and difficult even for those familiar with asset management practices. Recommended improvements relative to the disclosure requirements have been included in the Comment section of Table A.4. We would encourage a review of AMP content to determine what might be moved to one or more reference documents and generate focus on trends in performance metrics, risk exposure versus risk tolerance, planned versus executed work, the reasons for and lessons learned from these things, and the actions to be taken to address them.

### A.4.3 High level Review of Expenditure Variability

In the Executive Summary, Section 1.10 contains the expenditure forecasts for the period 2013/14 – 2022/23. The figures in Sections 9.2 and 9.3 (Summary of the Expenditure Forecast) are the same as in the Executive Summary. The figures in Schedule 11b at the back of the AMP are however quite different. The various years aren't shown but the heading says the planning period is for the ten years from 1 July 2013 – 31 June 2023. However the table is for eleven years. We assumed therefore that the second column is 2013/2014. For 2013/14 in the body of the report the Operations and Maintenance cost total is \$16,786,000. In Schedule 11b at the back it is \$36,630 and in the 2014 Information disclosure it is different again - \$30,797,000. The comparison is as follows:

	<b>Body of AMP</b>	<b>Sch 11b In AMP</b>	<b>Sch 11b 2014 ID</b>
Service interruptions, incidents and emergencies	\$ 904	\$ 904	\$ 644
Routine and Corrective Maintenance	\$ 8,574	\$ 8,573	\$11,322
System Operations	\$ 666	\$ 1,917	\$ 394
Network Support	\$ 1,812	\$12,137	\$ 7,761
Business Support	\$ 155	\$ 9,325	\$ 6,830
Compressor Fuel	\$ 3,990	\$ 3,990	\$ 3,710
Land Management and Associated Activity	\$ 685	\$ 684	\$ 136
<b>TOTAL (\$,000)</b>	<b>\$16,786</b>	<b>\$36,630</b>	<b>\$30,797</b>



Similarly with the capital assets (For 2014 it is \$18.68m in the body of the AMP, \$20.47m in Schedule 11a at the back of the AMP and \$15.94m in schedule 11a in the 2014 Information Disclosure).

Evaluating the explanation for the most prominent expenditures (as the Commission has asked us to do) is difficult because where proposed changes are explained in the information disclosure the tables start at 2015 and don't show past 'actuals' (or in respect of 2014 – the budget). However, as demonstrated in the 2014 Update summary provided in Section A.4.1, Vector has done a good job of explaining impacts on budget projections based on emergent operational issues, growth, and market affordability.

Vector says in the 2014 AMP that operating expenditure is now forecasted to be \$59.8m less over the next nine years than was estimated in the 2013 AMP due to improved recovery of rechargeable activity, reduced share of intercompany costs, an erroneous inclusion of unaccounted for gas, reduced insurance premiums and lower consultancy costs. The reduction is \$6.54m per year for every year after 2015. For 2015 the reduction is \$7.44m.

While capital expenditure is forecasted to also be \$6.54m less (in total) over the next nine years it is forecasted to be \$12.5m **more** in the next two years as depicted in the table below.

(Values in thousands\$)	2013 AMP		2014 AMP	
	FY 2015	FY 2016	FY 2015	FY 2016
Consumer connections	\$ 1,027	\$1,027	\$ 0	\$ 1,000
System growth	\$ 205	\$1,130	\$ 3,600	\$ 1,150
Replacement and renewals	\$ 8,492	\$10,797	\$ 8,430	\$10,515
Asset relocations	\$ 3,183	\$2,567	\$10,450	\$ 8,268
Non-network assets	\$ 3,446	\$3,205	\$ 1,842	\$ 2,296
<b>TOTAL (\$,000)</b>	<b>\$16,353</b>	<b>\$18,726</b>	<b>\$24,322</b>	<b>\$23,229</b>

The main reasons for the difference between the 2013 AMP and the 2014 AMP are said to be:

- (a) \$2,984,000 increase in the system growth category for FY2015 dues to specific requirements for large consumer growth being identified which will be supplied form existing delivery points: (and)
- (b) Increase in the asset relocation category due to the deferment of FY 2014 expenditure associated with NZTA roads projects.
- (c) The forecast for asset relocations after 2017 is reduced from \$2,567,000 per year to \$1,567,000 per year

**TABLE A.4 – Compliance Review –Vector Limited – Gas Transmission**

Disclosure Requirement		COMMERCE COMMISSION DISCLOSURE REQUIREMENTS FOR GTBs				
		Vector				
		Relevant AMP sections	Overall Rating	Rating	2014 Update	Comments
1 = non-compliant, 2= partially compliant, 3=fully compliant						
		<b>2.9</b>				
<b>A Contents of the AMP</b>		<b>3</b>				
3	The AMP must include the following-		2.9			
3.1	A summary that provides a brief overview of the contents and highlights information that the GTB considers significant	Section 1, 1.2.1		3		
3.2	Details of the background and objectives of the GTB's asset management and planning processes	Section 2, 3.5		3		
3.3	A purpose statement which-			2.6		
3.3.1	<ul style="list-style-type: none"> <li>• makes clear the purpose and status of the AMP in the GTB's asset management practices. The purpose statement must also include a statement of the objectives of the asset management and planning processes</li> </ul>	2.2, 2.3, 2.5, 2.6		3		
3.3.2	<ul style="list-style-type: none"> <li>• states the corporate mission or vision as it relates to asset management</li> </ul>			3		
3.3.3	<ul style="list-style-type: none"> <li>• identifies the documented plans produced as outputs of the annual business planning process adopted by the GTB</li> </ul>	2.1, 2.13		2	<p>The compliance table on Page 41 of Section 2 refers to 2.1 and 2.13 for this requirement. Neither actually list the documents produced as a result of the annual planning process.</p> <p>Section 2.8 through 12 explain the various steps Vector uses to manage the AMP process, the outcome of which are the Development Programmes in Section 5 and Maintenance and Renewals Planning described in Section 6. There are likely to be other process outputs such as recommended changes to prioritisation factors and weightings, strategies, KPI targets and the like that would be documented in support of this process. Those outputs, in conjunction with the actual investment plans, should be listed. The reviewer suggests that if a Process workflow diagram with output steps defining planning deliverables were available, this could be used to complete the necessary list.</p> <p>A meeting with Vector staff on 14 September to review this evaluation clarified that Vector has a process for AMP investment planning but that it is an ongoing process. The AMP itself is used to manage the day to day business and annual updates merely result in updated content within the AMP. Vector clarified that there are control steps that monitor performance of the annual process of output generation from risk reviews, fault data, defect data, and incident reports. Also Vector has a suite of technical standards which govern this process and are internally and externally audited for compliance. Vector's explanation that the AMP was the output was therefore deemed to partially meet (2) this requirement and, upgraded from the initial (1) non-compliant finding.</p>	
3.3.4	<ul style="list-style-type: none"> <li>• states how the different documented plans relate to one another, with particular reference to any plans specifically dealing with asset management</li> </ul>	2.3,2.8,2.13		2	See above	
3.3.5	<ul style="list-style-type: none"> <li>• includes a description of the interaction between the objectives of the AMP and other corporate goals, business planning processes, and plans</li> </ul>	Section 2		3		
3.4	<ul style="list-style-type: none"> <li>• Details of the AMP planning period, which must cover at least a projected 10 year asset management planning period commencing with the disclosure year following the date on which the AMP is disclosed</li> </ul>	2.2		3		
3.5	<ul style="list-style-type: none"> <li>• The date that it was approved by the directors</li> </ul>	2.2		3		
3.6	A description of each of the legislative requirements directly affecting management of the assets, and details of-			3		
3.6.1	how the GTB			3		
3.6.2	<ul style="list-style-type: none"> <li>• meets the requirements; and</li> </ul>	1.2, 6.1, 6.2, 6.3, 6.4 and 6.5		3	<p>A summary table cross referencing the Act or regulator and where Vector compliance is discussed in the AMP would help improve visibility of Vector's management of compliance requirements. By comparison to other GPB AMPs Vector's discussion of regulations affecting asset management may or may not be exhaustive but does address principle Gas industry related regulations. Other sections refer to various acts that affect asset management activities and describe how Vector responds to those requirements. Examples include Sections 3.4.4,3.4.15, 5.1.2.</p>	

Disclosure Requirement		COMMERCE COMMISSION DISCLOSURE REQUIREMENTS FOR GTBs				
		Vector				
		Relevant AMP sections	Overall Rating	Rating		2014 Update
1 = non-compliant, 2= partially compliant, 3=fully compliant						
3.6.3	<ul style="list-style-type: none"> <li>the impact on asset management</li> </ul>	1.2, 6.1, 6.2, 6.3, 6.4,6.5			3	
3.7	A description of stakeholder interests (owners, consumers, etc.) which identifies important stakeholders and indicates-				3	
3.7.1	<ul style="list-style-type: none"> <li>how the interests of stakeholders are identified</li> </ul>	2.5 and 2.6			3	
3.7.2	<ul style="list-style-type: none"> <li>what these interests are</li> </ul>	2.6			3	
3.7.3	<ul style="list-style-type: none"> <li>how these interests are accommodated in asset management practices</li> </ul>	2.6			3	
3.7.4	<ul style="list-style-type: none"> <li>how conflicting interests are managed.</li> </ul>	2.6			3	
3.8	A description of the accountabilities and responsibilities for asset management on at least 3 levels, including-	2.1, 2.7, 2.8, 2.9, 2.10,2.12			3	
3.8.1	<ul style="list-style-type: none"> <li>governance—a description of the extent of director approval required for key asset management decisions and the extent to which asset management outcomes are regularly reported to directors</li> </ul>	2.1, 2.8, 2.9 and 2.10			3	
3.8.2	<ul style="list-style-type: none"> <li>executive—an indication of how the in-house asset management and planning organisation is structured</li> </ul>	2.1 and 2.7			3	
3.8.3	<ul style="list-style-type: none"> <li>field operations—an overview of how field operations are managed, including a description of the extent to which field work is undertaken in-house and the areas where outsourced contractors are used.</li> </ul>	2.1, 2.7 and 2.12			3	
3.9	All significant assumptions-				2.6	
3.9.1	<ul style="list-style-type: none"> <li>quantified where possible</li> </ul>	2.3,9.3			2	<p>Section 2.3.3. and 9.4 were also used to verify compliance with this requirement. Ability to quantify each assumption was not evaluated by the reviewer however none of the assumptions other than historic economic growth were quantified in the AMP.</p> <p>Tables where assumptions or risks are listed would be enhanced by including a discussion of how those assumptions or risks will be monitored or managed (acceptable range indicators etc. and triggered actions).</p> <p>A meeting with Vector staff on 14 September to review this evaluation determined that further detail would be beneficial.</p>
3.9.2	<ul style="list-style-type: none"> <li>clearly identified in a manner that makes their significance understandable to interested persons, and including</li> </ul>	2.3, 2.4 and 6.1			3	
3.9.3	<ul style="list-style-type: none"> <li>a description of changes proposed where the information is not based on the GTB's existing business</li> </ul>	n/a			3	Not applicable
3.9.4	<ul style="list-style-type: none"> <li>the sources of uncertainty and the potential effect of the uncertainty on the prospective information</li> </ul>	1.2,2.4,5.3,5.4,9.3			2	<p>While uncertainties are addressed in the AMP they are not always easy to identify, nor are the impacts on the perspective information in the AMP clearly explained.</p> <p>Section 1.2.1 first paragraph clearly links two uncertainties with impacts on the AMP as does Section2.4. Uncertainties in Section 5.3 are not easy to identify. For example in Section 5.3 there are references to the need for assumption and judgement (5.3.1). Section 5.3.2 explains the difficulty of gas pressure variability, demand profile development, operating limits etc. In Section 5.4 there are assumptions regarding Demand Forecasting which would imply some uncertainty but no discussion of the impact of that uncertainty or how it will be managed.</p> <p>Tables where assumptions or risks are listed would be enhanced by including a discussion of how those assumptions or risks will be monitored or managed (acceptable range indicators etc. and triggered actions).</p> <p>A meeting with Vector staff on 14 September to review this evaluation determined that further detail would be beneficial.</p>
3.9.5	<ul style="list-style-type: none"> <li>the price inflator assumptions used to prepare the financial information disclosed in nominal New Zealand dollars in the Report of Forecast Capital Expenditure set out in Schedule 11a and the Forecast on Forecast Operational Expenditure set out in Schedule 11b.</li> </ul>	9.5			3	
3.10	A description of the factors that may lead to a material difference between the prospective information disclosed and the corresponding actual information recorded in future disclosures	1.2, 2.5, 9.3			3	Such factors are discussed but within the context of subject areas such as 5.4.1.1 - Key Demand Forecasting Assumptions. Section 5.3.5.1 and 5.3.5.4 present two examples of factors that can materially affect disclosures. However in general comments as to whether these factors will materially affect future disclosures were not easily found by this reviewer. Section 2.11 refers to the fact that future requirements are likely to vary materially from the situation faced today and that such changes have to be anticipated in the current development plans (p32 of 53). See also discussion under 3.9.4

Disclosure Requirement		COMMERCE COMMISSION DISCLOSURE REQUIREMENTS FOR GTBs					
		Vector					
		Relevant AMP sections	Overall Rating	Rating		2014 Update	Comments
1 = non-compliant, 2= partially compliant, 3=fully compliant							
3.11	An overview of asset management strategy and delivery	2.1, 2.3, 5.1, 6.1, 6.2, 6.3, 6.4, 6.5 and 8.4				The annual process for renewals planning and refinement of the maintenance strategy based on asset condition and performance is described. This could be enhanced by a comparison of the expected lifecycle cost with actual lifecycle cost and remaining useful life cost efficiency and risk. For example, while the plan only requires forecasting for ten years, where there are significant quantities of assets that have an end of life coincident at a particular point in time, there may be a need to accumulate reserves, bring work forward, defer work, and manage risk to ensure service sustainability. This issue has been stated as a key premise in Table 2-3. The planning horizon of the AMP does not require such issues to be explicitly addressed. However, as noted in other comments, the discussion on management of the portfolio as a whole and business level impact management in the long term to monitor and avoid potential; "bow-wave" impacts could be strengthened.	
3.11	<i>To support the AMMAT disclosure and assist interested persons to assess the maturity of asset management strategy and delivery, the AMP should identify-</i>				3		
3.11	1. <i>how the asset management strategy is consistent with the GTB's other strategy and policies;</i>						3
3.11	2.. <i>how the asset strategy takes into account the life cycle of the assets;</i>						3
3.11	3. <i>the link between the asset management strategy and the AMP;</i>	2.11, Section 7 – Systems and Data, 6.2, 6.3, 6.4, 6.5, 8.4					
3.11	4. <i>processes that ensure costs, risks and system performance will be effectively controlled when the AMP is implemented.</i>					3	
3.12	An overview of systems and information management data					3	
3.12	<i>To support the AMMAT disclosure and assist interested persons to assess the maturity of systems and information management, the AMP should describe-</i>						
3.12	1. <i>the processes used to identify asset management data requirements that cover the whole of life cycle of the assets;</i>	Section 7 – Systems and Data				Section 6, pg. 7 of 58 describes the Pipeline Integrity Management System. SAP-PM is used for Stations condition data management. Asset condition is also based on field surveys, observations, tests, and defect work schedules plus analysis of data (oil analysis etc.) (pg. 9-58) but it is unclear what system this information is stored in. Clarification of how inspection or test results are stored by individual asset rather than in individual reports for each year or asset type would help this discussion.	
3.12	2. <i>the systems used to manage asset data and where the data is used, including an overview of the systems to record asset conditions and operation capacity and to monitor the performance of assets;</i>						3
3.12	3. <i>the systems and controls to ensure the quality and accuracy of asset management information; and</i>						3
3.12	4. <i>the extent to which these systems, processes and controls are integrated.</i>						3
3.13	A statement covering any limitations in the availability or completeness of asset management data and disclose any initiatives intended to improve the quality of this data	Section 7 – Systems and Data				Section 7.4, 7.5 and Table 7-2 were assessed for compliance with this requirement.	
3.13	<i>Discussion of the limitations of asset management data is intended to enhance the transparency of the AMP and identify gaps in the asset management system.</i>						3
3.14	A description of the processes used within the GTB for-	Section 6 – Asset Integrity and Maintenance Section 5 – System Development Planning					
3.14.1	• managing routine asset inspections and network maintenance					3	
3.14.2	• planning and implementing network development projects					3	

Disclosure Requirement		COMMERCE COMMISSION DISCLOSURE REQUIREMENTS FOR GTBs					
		Vector					
		Relevant AMP sections	Overall Rating	Rating			2014 Update
1 = non-compliant, 2= partially compliant, 3=fully compliant							
3.14.3	<ul style="list-style-type: none"> <li>measuring network performance.</li> </ul>	Section 4 – Service Levels				3	
3.15	An overview of asset management documentation, controls and review processes					2.4	
3.15	To support the AMMAT disclosure and assist interested persons to assess the maturity of asset management documentation, controls and review processes, the AMP should-						
3.15	1. identify the documentation that describes the key components of the asset management system and the links between the key components;	Section 7, 6.2,6.3,6.4,6.5,8.4				2	<p>A generalised list of asset management control documents is described towards the end of Section 7.1 but specific document names are not provided. Several controlling documents are implied in the text such as the reference to a Data Source Verification methodology and a Corporate Data Catalogue.</p> <p>Compliance with this criterion would be enhanced if a list of such documents as they relate to the System Components in Figure 7-1 was provided. Links between discrete information systems are described but relate more to asset information management not the system as a whole. Section 2.14.1 acknowledges that "Vector's asset management practices were developed over several decades and help to ensure a high-quality, safe gas supply to its customers. However, formal documentation relating to these practices is somewhat incomplete, or exists in varying formats and degrees of detail. There are also some gaps in documented asset management processes, and no formal, board-approved asset management policy is in place. This section goes on to say "Vector is systematically reviewing and updating asset management documentation and processes. This includes better documentation, improved communication of formal asset management documentation and requirements, documenting the resource and training requirements for asset management and more formally measuring performance against asset management requirements. In addition, a formal asset management policy document is being developed which will be formally approved by the Vector board, and widely communicated to stakeholders."</p> <p>Compliance has been assessed based on the initial understanding of the links between system components presented in this AMP. This will obviously be improved by further documentation of the asset management system.</p> <p>A meeting with Vector staff on 14 September to review this evaluation determined that further detail would be beneficial.</p> <p>Section 7.1 describes the implementation of a Corporate Data Catalogue, Data Source Verification method, and has designated specific data repositories as the single source of truth for specific data sets. (Table 7.1). Section 7.4 refers to an audit process of business systems and processes that has identified many of the improvements cited in Section 7.5. However there is little information regarding how documentation and control of asset management systems is implemented. See discussion under Item 1 above and specifically the issue regarding process documentation self-identified by Vector in Section 2.14.1.A meeting with Vector staff on 14 September to review this evaluation determined that further detail would be beneficial.</p>
3.15	2. describe the processes developed around documentation, control and review of key components of the asset management system;	Section 7, 6.2,6.3,6.4,6.5,8.4				2	
3.15	3. where the GTB outsources components of the asset management system, the processes and controls that the GTB uses to ensure efficient and cost effective delivery of its asset management strategy;					3	Not Applicable
3.15	4. where the GTB outsources components of the asset management system, the systems it uses to retain core asset knowledge in-house; and					3	Not Applicable



Disclosure Requirement		COMMERCE COMMISSION DISCLOSURE REQUIREMENTS FOR GTBs						
		Vector						
		Relevant AMP sections	Overall Rating	Rating			2014 Update	Comments
1 = non-compliant, 2 = partially compliant, 3 = fully compliant								
3.15	5. audit or review procedures undertaken in respect of the asset management system.	Section 7, 6.2,6.3,6.4,6.5,8.4				2		<p>The demonstration of compliance with this requirement could be enhanced by presenting further description of the review procedures when Vector completes its documentation of asset management processes as stated in Section 2.14.1 (See 3.15 above).</p> <p>Section 6.2.1 States "The maintenance strategy is reviewed periodically...". Section 1.2.7 discusses external reviews of the asset management system in 2011. This and other similar statements indicate there is an ongoing internal review and refinement process for individual elements of the asset management system but it appears this is adhoc rather than systematic in nature. Section 2.14.2 also refers to reviews of asset management practices by external experts. Section 7.1 states that Vector uses UML 2.0 standard for data flow diagrams specifically for auditability. Section 7.2.4 refers to links between SAP-PM and FAR via the EARP interface to support auditability. Section 7.4 refers to an audit process of business systems and processes that has identified many of the improvements cited in Section 7.5. Section 8.2.1 indicates internal audits of the risk management process occur that are overseen by the Board Risk and Assurance Committee and supported by an independent third party review on a periodic basis (Section 8.3.5). Section 3.4.7 refers to audits of SCADA data. Section 4, page 13-24 refers to internal audits of data related to non-significant and significant events.</p> <p>A meeting with Vector staff on 14 September to review this evaluation determined that further detail would be beneficial. The reviewer still feels that a more focused discussion of the means by which Vector audits its asset management systems, both related to the physical network and non-network systems (including training of staff, skill and qualifications, and information and communication systems) would be beneficial to future AMPs.</p>
3.16	An overview of communication and participation processes	2.5				3	Well described	
3.16	To support the AMMAT disclosure and assist interested persons to assess the maturity of asset management documentation, controls and review processes, the AMP should-							
3.16	1. communicate asset management strategies, objectives, policies and plans to stakeholders involved in the delivery of the asset management requirements, including contractors and consultants;					3	Well described	
3.16	2. demonstrate staff engagement in the efficient and cost effective delivery of the asset management requirements.					3	Well described	
4	The AMP must present all financial values in constant price New Zealand dollars except where specified otherwise;	5, 6, 7 and 9				3		
5	The AMP must be structured and presented in a way that the GTB considers will support the purposes of AMP disclosure set out in clause 2 of the determination.					3	The cross reference matrix was key to facilitating review and compliance verification	
<b>A</b>	<b>Assets covered</b>					<b>3</b>		
6	The AMP must provide details of the assets covered, including—					3		
6.1	A high level map indicating the geographic location of the network	1.4 and 3.1				3		
6.2	A diagram, with any cross-referenced information contained in an accompanying schedule, of each transmission system of the pipeline owner showing the following details-					3		
6.2.1	all assets in the system with notations showing-	Section 3				3		
6.2.1	(a) internal, external, or nominal pipe diameters used (identifying whether internal, external, or nominal pipe diameters are used); and					3	Marked on Schematics and in Section 3.7	
6.2.1	(b) pipe design pressure ratings; and					3	Marked on Schematics and in Section 3.7	
6.2.1	(c) all stations, main line valves, intake and offtake points, including a unique identifier for each item					3	Marked on Schematics and in Section 3.7	
6.2.1	(d) the distance between the items referred to in sub clause 6.2.1(c) of this attachment					3	Section 3.7	
6.2.2	if applicable, the points where a significant change has occurred since the previous disclosure of the information referred to in sub clause 6.2.1 of this attachment, including-	n/a				3		
6.2.2	(a) a clear description of every point on the network that is affected by the change; and					3	Not Applicable	



Disclosure Requirement		COMMERCE COMMISSION DISCLOSURE REQUIREMENTS FOR GTBs						
		Relevant AMP sections	Overall Rating	Rating			2014 Update	Comments
				1 = non-compliant, 2= partially compliant, 3=fully compliant				
6.2.2	(b) a statement as to whether the capacity of the network, at the points where the change has occurred, or other points (as the case may be) has increased or decreased or is not affected					3	Not Applicable	
6.2.2	(c) a description of the change					3	Not Applicable	
6.3	The AMP must describe the network assets by providing the following information for each asset category-	Section 3				3		
6.4	Description and quantity of assets;	Section 3				3	Section 3.7	
6.5	Age profiles;	Section 3				3	Table 3-6	
6.6	A discussion of the condition of the assets, further broken down into more detailed categories as appropriate. Systemic issues leading to the premature replacement of assets or parts of assets should be discussed.	Section 6				3	Section 6.3 - 6.9 - discusses maintenance and renewal work as well as Exceptional Maintenance projects and emergency response. Specific assets are mentioned in details where appropriate (i.e. Unit 5 Gas Turbine)	
7	The asset categories discussed in clause 6.3 of this attachment should include at least the following-					3		
7.1	<ul style="list-style-type: none"> <li>the categories listed in the Report on Forecast Capital Expenditure in Schedule 11a;</li> </ul>	Section 3				3	Covered in Section 3 and Section 6	
7.2	<ul style="list-style-type: none"> <li>assets owned by the GTB but installed at facilities owned by others.</li> </ul>	3.2 and 3.4.1				3	Assets owned by Vector and installed at facilities owned by others are referred to in Section 3.2 and Stations are specifically listed in Section 3.4.1. The reviewer also assumes there are pipelines to and from these stations that cross land owned by others. The discussion would be clarified if these other asset categories, if present, were also listed.	
<b>A Transmission system capacity</b>						<b>2.4</b>		
8	The AMP must include an assessment of the extent to which physical pipeline capacity is adequate to address the current and anticipated future needs of consumers, taking into account expected demands on the transmission system and the GTB's investment plans.	5.3.2				2.4		
8.1	The assessment must include the following-					3		
8.1.1	Subject to clauses 8.2, 8.3 and 8.4 below, for each offtake point with a throughput of gas during the system peak flow period of 2,000 GJ or more, an analysis of available capacity, including a description of any potential transmission system constraints	Section 5				3	Tables in Section 5.6-5.11 present a summary of delivery points and when capacity breaches are expected to occur. Table 5.6.3 (GY/day is assumed GJ/day). Analysis is provided for all delivery points not just those >2000GJ/day	
8.1.2	a description of the extent to which the GTB's planned investments will affect the constraints identified in sub clause 8.1.1 of this attachment	5.6-5.11				3	Text in the AMP summarises the plan for capacity mitigation by system component. The planned upgrades are described but not the extent to which they will address the constraint. A meeting with Vector staff on 14 September to review this evaluation determined that projects proposed are intended to fully address the constraints. For this reason the evaluation of this requirement was modified from partially compliant (2) to compliant (3).	
8.1.3	a description of the extent to which constraints identified in sub clause 8.1.1 of this attachment are impacting upon the quality of service provided to existing consumers.	5.6-5.11				3	For each system, projects that impact capacity of users now are described including the analysis of actual versus theoretical performance and an assessment of whether the capacity should be addressed by a project and if so when.	
8.2	The analysis of available capacity disclosed pursuant to clause 8.1.1 of this attachment for each offtake point must separately assume that the throughput of gas or the gas pressure requirements at the other offtake points on the transmission system-					2.5		
8.2.1	<ul style="list-style-type: none"> <li>occurred during a recent system peak flow period</li> </ul>	5.6-5.11				2	Section 5.3.5 explains Vector uses a 5-day peak flow analysis. Section 5.4.2 states " Each network analysis model (above) has been validated against real operationally recorded pressures to check for accuracy and the models have each been found to be in good agreement with real data, within a tolerance of 200kPa pressure at any point." However the reviewer could not find a statement that would demonstrate compliance with this requirement. A meeting with Vector staff on 14 September to review this evaluation determined that Section 5.3.5 was intended to fully address this requirement. For this reason the evaluation of this requirement was modified from non-compliant (1) to partially compliant (2). Vector further clarified by email that "We believe we have applied this requirement and explained it in Section 5.3.5 of the 2013 AMP. Sections 2.1 - 2.6 of the 2014 AMP update include notes indicating when the peak week occurred." The reviewer concurs as noted in the evaluation of Section 8.3.3.	

Disclosure Requirement		COMMERCE COMMISSION DISCLOSURE REQUIREMENTS FOR GTBs					
		Vector					
		Relevant AMP sections	Overall Rating	Rating		2014 Update	Comments
1 = non-compliant, 2 = partially compliant, 3 = fully compliant							
8.2.2	<ul style="list-style-type: none"> <li>maintain observed trends, e.g., growth trends, peak demand factors and trendline adjustments, or other modelled behaviours.</li> </ul>	5.6-5.11			3		
8.3	For the purposes of clause 8.1.1 of this attachment, the AMP-				3		
8.3.1	<ul style="list-style-type: none"> <li>may treat offtake points that are supplied from a common physical connection to a pipeline as a single offtake point, provided that this is noted in the AMP</li> </ul>	5.3, 5.6-5.11			3		
8.3.2	<ul style="list-style-type: none"> <li>must describe the modelling methodology and include all material assumptions, including peak flow period throughputs not contributing to capacity constraints (e.g., interruptible flows); physical boundaries of the transmission system; sources of data used; modelled representation of the transmission systems and its operational constraints</li> </ul>	5.4.4, 5.6-5.11			3		
8.3.3	<ul style="list-style-type: none"> <li>must identify the recent system peak flow periods used in the clause 8.2.1 analysis, and must either set out the peak flow information specified in sub clauses 2.5.2(1)(a) and 2.5.2(1)(b) of the determination, or provide reference to a website at which interested persons can readily access the same information at no charge as specified in sub clause 2.5.2(4) of the determination</li> </ul> <p>2.5.2 Peak flow information-(1) Subject to sub clause 2.5.2(4) below, by the end of November in each year, every GTB must publicly disclose in respect of the most recent 12 month period ended 30 September-</p> <p>(a) for each transmission system, the information specified in sub clause 2.5.2(2) below; (b) for each offtake point with a throughput of gas during the system peak flow period of 2,000 GJ or more, the information specified in clause 2.5.2(3) below;</p> <p>(2) The information referred to in sub clause 2.5.3(1)(a) above is-</p> <p>(a) the end date and duration of the system peak flow period;(b) the total throughput of gas (in GJ) at each intake point during the system peak flow period;(3) The information referred to in sub clause 2.5.2(1)(b) above is-(a) the end date and duration of the offtake peak flow period;(b) the throughput of gas (in GJ) at the offtake point in each hour of the system peak flow period;(c) the total throughput of gas (in GJ) at the offtake point during the system peak flow period;(d) the total throughput of gas (in GJ) at the offtake point during the offtake peak flow period;(4) Notwithstanding sub clause 2.5.2(1) above, public disclosure is deemed to have occurred if the information specified in sub clauses 2.5.2(2) and 2.5.2(3) is posted on a website normally used for the publication of the GTB's transmission data within one week after the end of the disclosure year and can be readily accessed at no charge by interested persons, with the information retained on such a website for a period of not less than five years.</p>	5.6-5.11			2	3	The information requested was not provided nor was a reference to the website where the information is provided. The reviewer has determined that the Gas Peak Flow Disclosure for the period ending 30 September 2013 and 2014 are available at <a href="http://vector.co.nz/disclosures/gas/peak-flow">http://vector.co.nz/disclosures/gas/peak-flow</a> . Tables in Section 5.6-5.11 present a summary of delivery points and when capacity breaches are expected to occur. Table 5.6.3 (GY/day is assumed GJ/day). Analysis is provided for all delivery points not just those >2000GJ/day. The actual Max Flow period is cited as 2012. No data appears to be reported for 2013. The peak flow period is referred to in Table 3,6,9,12,15, and 18 of the 2014 Update hence a change in the scoring of this criterion.
8.3.4	<ul style="list-style-type: none"> <li>must include the name, version and source of any commercial computer software used to simulate the transmission system.</li> </ul>	5.3.1			3	3	
8.4	If the analysis specified in sub clause 8.1.1 of this attachment is posted on a website normally used by the GTB for the publication of information and can be readily accessed at no charge by interested persons, the analysis may be incorporated in the AMP by reference subject to the information being retained on such a website for a period of not less than five years.	N/A			1		The reference could not be located.
<b>A Service Levels</b>					<b>3</b>		
9	The AMP must clearly identify or define a set of performance indicators for which annual performance targets have been defined. The annual performance targets must be consistent with business strategies and asset management objectives and be provided for each year of the AMP planning period. The targets should reflect what is practically achievable given the current network configuration, condition and planned expenditure levels. The targets should be disclosed for each year of the AMP planning period.	Section 4			3		
10	Performance indicators for which targets have been defined in clause 9 above must include the DPP requirements required under the price quality path determination applying to the regulatory assessment period in which the next disclosure year falls.	4.1.1, 4.1, 4.2			3		

Disclosure Requirement		COMMERCE COMMISSION DISCLOSURE REQUIREMENTS FOR GTBs				
		Vector				
		Relevant AMP sections	Overall Rating	Rating		2014 Update
1 = non-compliant, 2= partially compliant, 3=fully compliant						
11	Performance indicators for which targets have been defined in clause 9 above should also include-	2.6.1, 4.1, 4.2		3		
	1. consumer oriented indicators that preferably differentiate between different consumer groups;			3		
	2. indicators of asset performance, asset efficiency and effectiveness, and service efficiency, such as technical and financial performance indicators related to the efficiency of asset utilisation and operation.			3		
	The AMP must describe the basis on which the target level for each performance indicator was determined. Justification for target levels of service includes consumer expectations or demands, legislative, regulatory, and other stakeholders' requirements or considerations. The AMP should demonstrate how stakeholder needs were ascertained and translated into service level targets.			3		
	12 Targets should be compared to historic values where available to provide context and scale to the reader.			3		
	13 Where forecast expenditure is expected to materially affect performance against a target defined in clause 9 above, the target should be consistent with the expected change in the level of performance.			3		
	Performance against target must be monitored for disclosure in the Evaluation of Performance section of each subsequent AMP.			3		
	14 AMPs must provide a detailed description of network development plans, including—			3		
	14.1 A description of the planning criteria and assumptions for network development;			3		
	Planning criteria for network developments should be described logically and succinctly. Where probabilistic or scenario-based planning techniques are used, this should be indicated and the methodology briefly described.			3		
	14.2 A description of strategies or processes (if any) used by the GTB that promote cost efficiency including through the use of standardised assets and designs;			3		
	14.2 The use of standardised designs may lead to improved cost efficiencies. This section should discuss-			3		
	14.2 1. the categories of assets and designs that are standardised;			3		
	14.2 2. the approach used to identify standard designs.			3		
14.3 A description of the criteria used to determine the capacity of new equipment for different types of assets or different parts of the network.	3					
14.3 The criteria described should relate to the GTB's philosophy in managing planning risks.	3					
14.4 A description of the process and criteria used to prioritise network development projects and how these processes and criteria align with the overall corporate goals and vision.	3					
14.4.1 Details of demand forecasts, the basis on which they are derived, and the specific network locations where constraints are expected due to forecast increases in demand;	3					
14.4.2 Explain the load forecasting methodology and indicate all the factors used in preparing the load estimates;	3					

Disclosure Requirement		COMMERCE COMMISSION DISCLOSURE REQUIREMENTS FOR GTBs						
		Relevant AMP sections	Overall Rating	Rating			2014 Update	Comments
				1 = non-compliant, 2= partially compliant, 3=fully compliant				
		Vector						
14.4.3	Provide separate forecasts to at least off-take points covering at least a minimum 5 year forecast period. Discuss how uncertain but substantial individual projects/developments that affect load are taken into account in the forecasts, making clear the extent to which these uncertain increases in demand are reflected in the forecasts;	5.3, 5.6-5.11				3		
14.4.4	Identify any network or equipment constraints that may arise due to the anticipated growth in demand during the AMP planning period;	5.6-5.11				3		
14.5	Analysis of the significant network level development options identified and details of the decisions made to satisfy and meet target levels of service, including-					3		
14.5.1	<ul style="list-style-type: none"> <li>the reasons for choosing a selected option for projects where decisions have been made;</li> </ul>					3		No significant development options within the planning period
14.5.2	<ul style="list-style-type: none"> <li>the alternative options considered for projects that are planned to start in the next 5 years;</li> </ul>					3		No significant development options within the planning period
14.5.3	<ul style="list-style-type: none"> <li>consideration of planned innovations that improve efficiencies within the network, such as improved utilisation, extended asset lives, and deferred investment.</li> </ul>					3		No significant development options within the planning period
14.6	A description and identification of the network development programme and actions to be taken, including associated expenditure projections. The network development plan must include-					3		
14.6.1	a detailed description of the material projects and a summary description of the non-material projects currently underway or planned to start within the next 12 months;	5.14				3		Section 5 discusses each project. These are then summarised in Table 5-28 of Section 5.14.
14.6.2	a summary description of the programmes and projects planned for the following 4 years (where known); and	5.14				3		Section 5 discusses each project. These are then summarised in Table 5-28 of Section 5.14.
14.6.3	an overview of the material projects being considered for the remainder of the AMP planning period.	5.14				3		Section 5 discusses each project. These are then summarised in Table 5-28 of Section 5.14.
	<i>For projects included in the AMP where decisions have been made, the reasons for choosing the selected option should be stated which should include how target levels of service will be impacted. For other projects planned to start in the next 5 years, alternative options should be discussed.</i>					3		
14.7	description of the extent to which the disclosed network development plans meet the loads anticipated in current gas demand forecasts prepared by the Gas Industry Company or any Government department or agency.	5.4.1.3				3		
<b>A</b>	<b>Lifecycle Asset Management Planning (Maintenance and Renewal)</b>					<b>3</b>		
15	The AMP must provide a detailed description of the lifecycle asset management processes, including—					3		
15.1	The key drivers for maintenance planning and assumptions;	6.1, 6.2				3		
15.2	Identification of routine and corrective maintenance and inspection policies and programmes and actions to be taken for each asset category, including associated expenditure projections. This must include-					3		
15.2.1	<ul style="list-style-type: none"> <li>the approach to inspecting and maintaining each category of assets, including a description of the types of inspections, tests and condition monitoring carried out and the intervals at which this is done;</li> </ul>	Section 6				3		
15.2.2	<ul style="list-style-type: none"> <li>any systemic problems identified with any particular asset types and the proposed actions to address these problems; and</li> </ul>	Section 6				3		
15.2.3	<ul style="list-style-type: none"> <li>budgets for maintenance activities broken down by asset category for the AMP planning period.</li> </ul>	Section 6				3		

Disclosure Requirement		COMMERCE COMMISSION DISCLOSURE REQUIREMENTS FOR GTBs				
		Vector				
		Relevant AMP sections	Overall Rating	Rating		2014 Update
1 = non-compliant, 2 = partially compliant, 3 = fully compliant						
15.3	Identification of asset replacement and renewal policies and programmes and actions to be taken for each asset category, including associated expenditure projections. This must include-				3	
15.3.1	<ul style="list-style-type: none"> <li>the processes used to decide when and whether an asset is replaced or refurbished, including a description of the factors on which decisions are based;</li> </ul>	6.1.2			3	
15.3.2	<ul style="list-style-type: none"> <li>a description of the projects currently underway or planned for the next 12 months;</li> </ul>	Section 6, 6.5.1			3	
15.3.3	<ul style="list-style-type: none"> <li>a summary of the projects planned for the following 4 years (where known); and</li> </ul>	Section 6, 6.5.1			3	
15.3.4	<ul style="list-style-type: none"> <li>an overview of other work being considered for the remainder of the AMP planning period.</li> </ul>	Section 6, 6.5.1			3	
15.4	The asset categories discussed in sub clauses 15.2 and 15.3 above should include at least the categories in sub clause 7.				3	
<b>A Non-Network Development, Maintenance and Renewal</b>					<b>2.8</b>	
16	AMPs must provide a summary description of material non-network development, maintenance and renewal plans, including—				2.8	
16.1	<ul style="list-style-type: none"> <li>a description of non-network assets;</li> </ul>	Section 7			3	In addition to Section 7 the reviewer also evaluated relevant content in Section 9.2.1
16.2	<ul style="list-style-type: none"> <li>development, maintenance and renewal policies that cover them;</li> </ul>	Section 7			2	It is clear that Vector has a development, maintenance and renewal process for their core data systems as described in Section 7.1. It appears the Corporate Data Catalogue and the Data Source Verification methodologies define information needs and standards. Reference is made to an asset information policy and business process maps but it is not clear how these affect maintenance and renewal of the systems and process architecture itself.  A meeting with Vector staff on 14 September to review this evaluation determined that further detail would be beneficial.
16.3	<ul style="list-style-type: none"> <li>a description of material capital expenditure projects (where known) planned for the next 5 years;</li> </ul>	Section 7			3	
16.4	<ul style="list-style-type: none"> <li>a description of material maintenance and renewal projects (where known) planned for the next 5 years.</li> </ul>	Section 7			3	
<b>A Risk Management</b>					<b>3</b>	
17	AMPs must provide details of risk policies, assessment, and mitigation, including—				3	
17.1	<ul style="list-style-type: none"> <li>methods, details and conclusions of risk analysis;</li> </ul>	Section 8			3	Evidence of the process and its resultant identification of risks has been provided in Section 7. The reviewer wonders however if the risk identification process was as holistic as it might be. For example, is there any risk of loss of institutional knowledge from an aging workforce, or associated with a lack of access to Vector assets on the properties of others?
17.2	<ul style="list-style-type: none"> <li>strategies used to identify areas of the network that are vulnerable to high impact low probability events and a description of the resilience of the network and asset management systems to such events;</li> </ul>	Section 8			3	
17.3	<ul style="list-style-type: none"> <li>a description of the policies to mitigate or manage the risks of events identified in sub clause 17.1 of this attachment;</li> </ul>	Section 8			3	
18	Details of emergency response and contingency plans.	Section 8			3	Well described



Disclosure Requirement		COMMERCE COMMISSION DISCLOSURE REQUIREMENTS FOR GTBs				
		Vector				
		Relevant AMP sections	Overall Rating	Rating		2014 Update
1 = non-compliant, 2= partially compliant, 3=fully compliant						
<p>Asset risk management forms a component of a GTB's overall risk management plan or policy, focusing on the risks to assets and maintaining service levels. AMPs should demonstrate how the GTB identifies and assesses asset related risks and describe the main risks within the network. The focus should be on credible low-probability, high-impact risks. Risk evaluation may highlight the need for specific development projects or maintenance programmes. Where this is the case, the resulting projects or actions should be discussed, linking back to the development plan or maintenance programme.</p>						
<b>A Evaluation of performance</b>				<b>3</b>		
19	AMPs must provide details of performance measurement, evaluation, and improvement, including—			3		
19.1	A review of progress against plan, both physical and financial;	N/A - Future AMP		3		This requirement cannot be addressed. As this is the first version of the AMP, no such comparison can be made.
19.1	3. Referring to the most recent disclosures made under section 2.6 of this determination, discussing any significant differences and highlighting reasons for substantial variances;			3		
19.1	4. Commenting on the progress of development projects against that planned in the previous AMP and provide reasons for substantial variances along with any significant construction or other problems experienced;			3		
19.1	5. Commenting on progress against maintenance initiatives and programmes and discuss the effectiveness of these programmes noted;			3		
19.2	An evaluation and comparison of actual service level performance against targeted performance.	N/A - Future AMP		3		
19.2	In particular, comparing the actual and target service level performance for all the targets discussed under the 'service levels' section of the AMP over the previous 5 years and explain any significant variances;			3		This requirement cannot be addressed. As this is the first version of the AMP, no such comparison can be made.
19.3	An evaluation and comparison of the results of the asset management maturity assessment disclosed in the Report on Asset Management Maturity set out in Schedule 13 against relevant objectives of the GTB's asset management and planning processes;	2.14.1		3		
19.4	An analysis of gaps identified in sub clauses 19.2 and 19.3 above. Where significant gaps exist (not caused by one-off factors), the AMP must describe any planned initiatives to address the situation.	2.14.1		3		
<b>A Capability to deliver</b>				<b>3</b>		
20	AMPs must describe the processes used by the GTB to ensure that			3		
20.1	The AMP is realistic and the objectives set out in the plan can be achieved;	Section 2		3		This requirement cannot be addressed. As this is the first version of the AMP, no such comparison can be made.
20.2	The organisation structure and the processes for authorisation and business capabilities will support the implementation of the AMP plans.	Section 2		3		
<b>A Schedules as per Section 2.6.1 of disclosure determination</b>				<b>3</b>		
11a	Forecast Capital Expenditure and Explanatory Notes	Appdx 1		3		This requirement cannot be addressed. As this is the first version of the AMP, no such comparison can be made.
11b	Forecast Operational Expenditure and Explanatory Notes	Appdx 2		3		
12a	Report on Asset Condition and Explanatory Notes	Appdx 3		3		
12b	Report on Forecast Demand and Explanatory Notes	Appdx 4		3		
13	Report on Asset Management Maturity	Appdx 5		3		



## A.5 Vector Limited – Gas Distribution Compliance Rating = 2.9/3.0

### ADVISORY

Comments made in this review are provided with the intention of supporting continuous improvement of the process of asset management and subsequent AMPs to the benefit of the consumer and the company providing the service. Consequently while the review has been performed from a compliance perspective, it has also been completed and comments made with this objective in mind. Comments are provided for the purpose of clarification, consideration and discussion, not as instruction.

### A.5.1 Compliance with Relevant Determinations

#### 2013 AMP

This AMP is a GDB AMP under the relevant determination. Using a purely arithmetic average approach to summing compliance scores, the AMP was rated at 2.9/3.0. The key to this scoring methodology is creation of a hierarchical structure for the compliance criteria, averaging subfactor scores to create a disclosure requirement score, and then averaging those to create the total score. The hierarchy is colour coded and stair-stepped for ease of review.

These findings were reviewed with the GPB during the week of 14 September 2015. Each area of non- and partial compliance was discussed and either clarified by the GPB or accepted. Based on the discussion a final evaluation was then made. The meeting was concluded with an understanding between the reviewer and the GPB that the evaluation was reasonable. GPB responses or clarifications were added to the evaluation comments for each respective requirement along with the effect that clarification had on the evaluation score.

Overall the 2013 document and 2014 update were comprehensive and substantially met the information disclosure requirements. The details of the full evaluation are presented in Table A.5.

#### 2013 AMP

Areas of specific concern identified relevant to the determination requirements are:

- Clause 3.3.3 requires that the AMP identifies the documented plans produced as outputs of the annual business planning process adopted by the GDB. The compliance table on Page 38 of Section 2 refers to 2.1 and 2.13 for this requirement. Neither actually list the documents produced as a result of the annual planning process. However Section 2.8 through 12 explain the various steps Vector uses to manage the AMP process, the outcome of which are the Development Programmes in Section 5 and Maintenance and Renewals Planning described in Section 6. A meeting with Vector staff on 14 September to review this evaluation clarified that Vector has a process for AMP investment planning but that it is an ongoing process. The AMP itself is used to manage the day to day business and annual updates merely result in updated content within the AMP. Vector clarified that there are control steps that monitor performance of the annual process of output generation from risk reviews, fault data, defect data, and incident reports. Also Vector has a suite of technical standards which govern this process and are internally and externally audited for compliance. Vector's explanation that the AMP was the output was therefore deemed to partially meet this requirement.
- Clause 3.6.2 requires a discussion of how legislative requirements impact on asset management. This was not addressed. A meeting with Vector staff on 14 September to review this evaluation clarified that based on each legislation Vector performs a risk assessment of each obligation and determines the mitigation action to be implemented. These are monitored in a central register. The reviewer suggests that if the details of this process were added to future AMPs compliance would probably be achieved.
- Clause 3.9 requires all significant assumptions to be quantified where possible and the sources of uncertainty and the potential effect of the uncertainty on the prospective information described. In general, assumptions were not quantified in terms of expected variability or

discussed in terms of the potential impact on the cost or quality of service. Ability to quantify each assumption was not evaluated by the reviewer however none of the assumptions other than historic economic growth were quantified in the AMP. A meeting with Vector staff on 14 September to review this evaluation determined that further detail would be beneficial.

- Clause 3.14 requires a description of the processes used within the GDB for planning and implementing network development projects. The Sections cited for compliance with this disclosure requirement address planning systems in some detail but limits discussion on the Project Implementation to a statement that *"An effective delivery of capital works programme, based on end-to-end delivery process has been established between Vector's Asset Investment (AI) and Service Delivery (SD) groups. The process tracks each project from conceptual design through to site construction and commissioning."* This appears inconsistent in detail compared to other process descriptions such as those for expenditure forecasting, budget alignment, and AMP approval in Section 2. Section 2.7.3 refers to the Service Delivery Groups having the responsibility for project delivery, defines areas where such responsibilities interact with Asset Management. These responsibilities imply process that could be added to the discussion in Section 5.1.2. Similarly the discussion in Section 4.7.1. describes implementation process steps in some detail. A meeting with Vector staff on 14 September to review this evaluation determined that further detail would be beneficial.
- Clause 12.5 requires a description of the process and criteria used to prioritise network development projects and how these processes and criteria align with the overall corporate goals and vision. The prioritisation process is well described and easy to understand. What is unclear, based on the section cited for compliance, is how projects are integrated into affordable investment programme, the year of execution is determined, and how interim risks will be managed and mitigated if the work cannot be afforded in the desired year. It is therefore unclear how the projects identified in Section 5.16 - Network Development Programme, 5.17 - Asset relocation, 5.18 Customer Connections etc. and summarised in Section 5.20 were mapped to their respective year of execution. Similarly several tables refer to "carryover" requirements - the reasons for and risks associated with this expenditure are not discussed. Their execution is programmed for FY14 year only. A meeting with Vector staff on 14 September to review this evaluation determined that an explanation for how carry over projects are managed and risks mitigated in the meantime would be beneficial. Vector does do a risk and deferral assessment if projects initially planned for the current execution year cannot be afforded and if funds are available and future work can be brought forward. Deferred work is included in the outyear projections - and reprioritised based on updated risk and business affordability. Risks are reassessed on an ongoing basis, not just at the time of initial project prioritisation.
- Clause 14.2 requires a description of development, maintenance and renewal policies that cover non-network assets. Policies governing non-network assets are not cited but Table 7-2 provides a list of guiding Objectives specific to Asset Information Management. It is not clear how these effect maintenance and renewal of the systems and process architecture itself.
- Clause 15.2 requires a description of strategies used to identify areas of the network that are vulnerable to high impact low probability events and a description of the resilience of the network and asset management systems to such events. While Vectors risk processes are comprehensively outlined in of the AMP, there is little information on specific high risk assets and the plans for risk mitigation. Section 8.4 describes the various high level plans in place for low probability event response but does not elaborate on strategies used to identify where such risks might occur on the network. For example - a fault trace and network overlay to show network segments that are at earthquake risk, or in locations subject to land movement (subsidence or liquefaction). Section 3.3.3.1 8.3.2 describes risk mitigations but not where the vulnerability is. This section also refers to the fact that risk registers are developed and managed and Vectors intent to develop an overall risk performance measurement structure

with the full system anticipated to be in place by 2014. A meeting with Vector staff on 14 September to review this evaluation determined that Vector manages high impact low probability events within its standard "bow - tie" risk identification and mitigation process. For example, for a risk event such as "gas release", the causative threat might be a tsunami, an earthquake and a volcanic event, all low probability and high potential impact. Consequences for each are then developed such as explosion causing loss of life, explosion causing damage, loss of gas supply, etc. The hazard causing an earthquake to be a threat is created by the distribution system being in a zone where such events are possible. For each threat there are potential mitigations to the consequences, such as development and practice of business continuity plans, or preventative actions, such as avoiding the zone. Vectors risk process seems to imply that it is aware of where such risks are on its network but has not discussed the process for doing so in the AMP. For this reason the assessment remains as a partial compliance.

### **2014 Update**

Nothing in the update resulted in a modification of a requirement score for from the 2013 AMP evaluation.

The update states that "Based on the latest connections growth information, the total demand forecast of the Vector gas distribution network at gate station level for the 10 year planning period to 2024 is not anticipated to materially change."

Two significant changes to the Lifecycle Asset Management strategy relate to pre-1985 Polyethylene pipe replacement and restoration of cathodic protection on the Hamilton MP4 steel service lines. Both issues have resulted in Vector allowing more time and expenditure to address recent findings.

The Update also states "Although a number of initiatives to improve overall Asset Management maturity were initiated over the course of the last year, the majority of these initiatives are longer term programmes that will not immediately result in a material change to the overall AMMAT score provided in the previously published AMP. These initiatives will continue to be progressed and tracked over the next reporting period, with the AMP being updated as required during the next review cycle."

Significant changes to the 2013 disclosed capital expenditure forecasts over the 9-year period for which the AMP and the AMP Update overlap, reflect:

- \$35 million increase in consumer connection expenditure forecast due to the expected increase in population, new dwelling construction and a large customer connection in Pokeno, South Auckland.
- \$15 million increase in asset replacement expenditure associated with the proposed pipeline replacement of parts of Vector's pre 1985 polyethylene network.
- \$12 million increase in asset relocation expenditure reflecting the latest estimate of relocation activity including the cost of the civil component within relocation projects.
- \$2 million decrease from the cancellation of an FY14 project to link the proposed Waikumete and Bruce McLaren gate stations as modification of the existing installation is likely to be feasible and more economical.

The major changes in operational expenditure include:

- \$12 million reduction in shared cost business support activities and lower professional fees and customer related expenditure.
- \$3 million reduction in service interruptions, incidents and emergencies costs following a review of historical incidents risk profile and associated risk management strategy.
- \$2 million reduction associated with a change in Vector's approach towards site mark-out and stand-overs process, and additional recoveries associated with third party activities.

## A.5.2 Overall AMP Quality and Improvements Required

While the AMP is comprehensive, at approximately 400 pages, the sheer volume of information provided goes well beyond what is expected or required by the IDD. Recommended improvements relative to the Disclosure requirements have been included in the Comment section of Table A.5. We would encourage a review of AMP content to determine what might be moved to a reference document and generate focus on trends in performance metrics, risk exposure versus risk tolerance, planned versus executed work, the reasons for and lessons learned from these things, and the actions to be taken to address them.

## A.5.3 High Level Review of Expenditure Variability

The figures reported in Schedule 11b are quite different from those reported in the body of the AMP. The comparison is as follows:

	<b>Body of AMP</b>	<b>Sch 11b 2013 AMP</b>	<b>Sch 11b 2014 ID</b>
Service interruptions, incidents and emergencies	\$4,149	\$ 4,149	\$ 3,789
Routine and Corrective Maintenance	\$4,704	\$ 4,704	\$ 4,328
System Operations and Network Support	\$ 20	\$ 4,146	\$ 3,455
Business support	\$ 0	\$ 8,210	\$ 6,605
<b>TOTAL (\$,000)</b>	<b>\$8,873</b>	<b>\$21,209</b>	<b>\$18,177</b>

Similarly with the capital assets (for 2014 it is \$32,083,000 in the body of the AMP, \$33,320,000 in Schedule 11a in the AMP and \$32,216,000 in the 2014 Information Disclosure. While the differences in these three totals are not very great the variances in the line items are as follows:

	<b>Body of AMP</b>	<b>Sch 11a 2013 AMP</b>	<b>Sch 11a 2014 AMP</b>
Customer connections	\$10,470	\$10,446	\$15,121
System growth	\$ 3,729	\$ 3,689	\$ 1,653
Asset replacement and renewal	\$12,908	\$12,858	\$11,452
Asset relocations	\$ 4,068	\$ 4,006	\$ 2,173
Quality of supply	\$ 617	\$ 613	\$ 405
Other reliability, safety and environment			\$ 213
Non-system fixed assets	\$ 290	\$ 1,708	\$ 1,199
<b>TOTAL (\$,000)</b>	<b>\$32,083</b>	<b>\$33,320</b>	<b>\$32,216</b>

Again, the Information disclosure tables don't contain any historical information and only start at 2015.

Vector says in the 2014 A that operating expenditure is now forecasted to be \$17.186m (an average of about \$1.9m per year) less over the next nine years than was estimated in the 2013 AMP due to a reduction in shared cost business support activities and lower professional fees and customer related expenditure; a reduction in service interruptions, incidents and emergencies costs; and a reduction associated with a change in Vector's approach towards site mark-out and stand-overs process and additional recoveries associated with third party activities.

Capital expenditure is forecasted to also be \$57.5m more (in total) over the next nine years - at between \$5.6 and \$7.2m more per year. The main reasons for this increase are said to be:

- (a) \$35m for consumer connection due to increase in population and new dwelling construction and to provide a large customer connection at Pokeno;
- (b) \$15m to replace parts of the pre 1985 polyethylene network; (and)
- (c) \$12m for relocation projects;

This is offset by a forecasted \$2m saving relating to the Waikumete and Bruce McLaren gate stations.

TABLE A.5 – Compliance Review –Vector Limited – Gas Distribution

Attachment A Clause	Disclosure Requirement	COMMERCE COMMISSION DISCLOSURE REQUIREMENTS FOR GDBs				
		Relevant AMP sections	Overall Rating	Rating	2014 Update	Comments
				1 = non-compliant, 2= partially compliant, 3=fully compliant		
<b>2.9</b>						
<b>A</b>	<b>Contents of the AMP</b>	<b>2.9</b>				
<b>3</b>	The AMP must include the following-		2.9			
3.1	A summary that provides a brief overview of the contents and highlights information that the GDB considers significant	1.3		3		
3.2	Details of the background and objectives of the GDB's asset management and planning processes	1.8, 2.1, 2.3		3		
3.3	A purpose statement which-			2.6		
3.3.1	<ul style="list-style-type: none"> <li>Makes clear the purpose and status of the AMP in the GDB's asset management practices. The purpose statement must also include a statement of the objective of the asset management and planning processes</li> </ul>	2.1, 2.3 and particularly 2.3.3		3		
3.3.2	<ul style="list-style-type: none"> <li>States the corporate mission or vision as it relates to asset management</li> </ul>	2.1, 2.3		3		
3.3.3	<ul style="list-style-type: none"> <li>Identifies the documented plans produced as outputs of the annual business planning process adopted by the GDB</li> </ul>	2.3 and 2.13		2	<p>The compliance table on Page 38 of Section 2 refers to 2.1 and 2.13 for this requirement. Neither actually list the documents produced as a result of the annual planning process. However Section 2.8 through 12 explain the various steps Vector uses to manage the AMP process, the outcome of which are the Development Programmes in Section 5 and Maintenance and Renewals Planning described in Section 6. A meeting with Vector staff on 14 September to review this evaluation clarified that Vector has a process for AMP investment planning but that it is an ongoing process. The AMP itself is used to manage the day to day business and annual updates merely result in updated content within the AMP. Vector clarified that there are control steps that monitor performance of the annual process of output generation from risk reviews, fault data, defect data, and incident reports. Also Vector has a suite of technical standards which govern this process and are internally and externally audited for compliance. Vector's explanation that the AMP was the output was therefore deemed to partially meet (2) this requirement and, upgraded from the initial (1) non-compliant finding.</p> <p>The reviewer still believes there are likely to be other process outputs such as recommended changes to prioritisation factors and weightings, strategies, KPI targets and the like that would be documented in support of this process. Those outputs should also be listed. The reviewer suggests that if a process workflow diagram with output steps defining planning deliverables were available, this could be used to complete the necessary list.</p>	
3.3.4	<ul style="list-style-type: none"> <li>States how the different documented plans relate to one another, with particular reference to any plans specifically dealing with asset management</li> </ul>	2.1, 2.3, 2.8 and 2.13		2	See above	
3.3.5	<ul style="list-style-type: none"> <li>Includes a description of the interaction between the objectives of the AMP and other corporate goals, business planning processes and plans.</li> <li>The purpose statement should be consistent with the GDB's vision and mission statements, and show a clear recognition of stakeholder interest.</li> </ul>	2.1, 2.3, 2.8, 2.9, 2.10, 2.11, 2.12 and 2.13		3		
3.4	Details of the AMP planning period, which must cover at least a projected period of 10 years commencing with the disclosure year following the date on which the AMP is disclosed. <i>Good asset management practice recognises the greater accuracy of short-to-medium term planning, and will allow for this in the AMP. The asset management information planning information for the second 5 years of the AMP planning period need not be presented in the same detail as the first 5 years.</i>	2.2		3		
3.5	The date that it was approved by the directors	2.2		3		



Attachment A Clause	Disclosure Requirement	COMMERCE COMMISSION DISCLOSURE REQUIREMENTS FOR GDBs					
		Relevant AMP sections	Overall Rating	Rating		2014 Update	Comments
				1 = non-compliant, 2= partially compliant, 3=fully compliant			
3.6	A description of each of the legislative requirements directly affecting management of the assets, and details of:	1.3.5		2		List or legislation is not exhaustive but does address principle Gas industry related regulations.	
3.6.1	<ul style="list-style-type: none"> <li>How the GDB meets the requirements; and</li> </ul>			3		Not discussed.	
3.6.2	<ul style="list-style-type: none"> <li>The impact on asset management</li> </ul>			1		A meeting with Vector staff on 14 September to review this evaluation clarified that based on each legislation Vector performs a risk assessment of each obligation and determines the mitigation action to be implemented. These are monitored in a central register.  The reviewer suggests that if the details of this process were added to future AMPs compliance would probably be achieved.	
3.7	A description of stakeholder interests (owners, consumers, etc.) Which identifies important stakeholders and indicates:	2.5, 2.6		3			
3.7.1	<ul style="list-style-type: none"> <li>How the interests of stakeholders are identified</li> </ul>	2.5, 2.6		3			
3.7.2	<ul style="list-style-type: none"> <li>What these interests are</li> </ul>	2.5, 2.6		3			
3.7.3	<ul style="list-style-type: none"> <li>How these interests are accommodated in asset management practices</li> </ul>	2.5, 2.6		3			
3.7.4	<ul style="list-style-type: none"> <li>How conflicting interests are managed</li> </ul>	2.5, 2.6		3			
3.8	A description of the accountabilities and responsibilities for asset management on at least 3 levels, including:			3			
3.8.1	<ul style="list-style-type: none"> <li>Governance—a description of the extent of director approval required for key asset management decisions and the extent to which asset management outcomes are regularly reported to directors</li> </ul>	2.1, 2.7, 2.8, 2.9, 2.10		3		Section 2.9 refers to the fact that each level of management has defined financial commitment limits. Board discretion is referred to and governance of critical unbudgeted items specifically cited. Section 2.10 describes reporting to the board on outcomes.	
3.8.2	<ul style="list-style-type: none"> <li>Executive—an indication of how the in-house asset management and planning organisation is structured</li> </ul>	2.1 and 2.7		3			
3.8.3	<ul style="list-style-type: none"> <li>Field operations—an overview of how field operations are managed, including a description of the extent to which field work is undertaken in-house and the areas where outsourced contractors are used.</li> </ul>	2.1, 2.7, 2.9 and 1.12		3			
3.9	All significant assumptions			2.6			
3.9.1	Quantified where possible	2.3, 5.2, 5.4 and 9.3		2		Assumptions are described but not quantified with respect to variability, ability to manage or influence, and relative significance regarding potential impact to the business.  A meeting with Vector staff on 14 September to review this evaluation determined that further detail would be beneficial.	
3.9.2	Clearly identified in a manner that makes their significance understandable to interested persons, including	2.3, 5.2, 5.4 and 9.3		2		The significance of each is well explained but not the impact or relative magnitude of impact compared to other assumptions or risks  A meeting with Vector staff on 14 September to review this evaluation determined that further detail would be beneficial.	
3.9.3	A description of changes proposed where the information is not based on the GDB's existing business	N/A		3		None	
3.9.4	The sources of uncertainty and the potential effect of the uncertainty on the prospective information	2.3, 5.2, 5.4 and 9.3		3			
3.9.5	The price inflator assumptions used to prepare the financial information disclosed in nominal New Zealand dollars in the Report on Forecast Capital Expenditure set out in Schedule 11a and the Report on Forecast Operational Expenditure set out in Schedule 11b.	9.5		3			
3.10	A description of the factors that may lead to a material difference between the prospective information disclosed and the corresponding actual information recorded in future disclosures	2.4, 5.2, 5.4 and 9.3		3		The cited sections address compliance with this requirement	

Attachment A Clause	Disclosure Requirement	COMMERCE COMMISSION DISCLOSURE REQUIREMENTS FOR GDBs				
		Relevant AMP sections	Overall Rating	Rating	2014 Update	Comments
				1 = non-compliant, 2= partially compliant, 3=fully compliant		
3.11	An overview of asset management strategy and delivery <i>To support the AMMAT disclosure and assist interested persons to assess the maturity of asset management strategy and delivery, the AMP should identify:</i>	2.1, 2.3, 2.8, 2.9, 2.10, 2.11		3		
3.11.1	<ul style="list-style-type: none"> <li>How the asset management strategy is consistent with the GDB's other strategy and policies;</li> </ul>			3		Summarised in Figure 2.2
3.11.2	<ul style="list-style-type: none"> <li>How the asset strategy takes into account the life cycle of the asset;</li> </ul>	Section 6 added for compliance by reviewer		3		Asset management processes are well described in the sections cited, but not how the lifecycle of specific assets will be managed and the strategy for each assets sustainment determined and monitored. Examples would be deciding when predictive, proactive, preventative maintenance or run to failure scenarios and risks would be used and how that decision making is built into the asset management strategy. Such a strategy would describe of how the results of condition assessments and maintenance records would be compared against planned life asset condition and used to optimise attainment of the originally intended asset lifecycle and cost benefits. A reference here to the contents of Section 6 would actually improve compliance with this requirement as that section explains the relationship between asset age, condition, and Vectors maintenance and renewal strategy and practices in some detail, especially commenting on the fact that age is not a reliable indicator of condition or risk and that maintenance plan performance and results are monitored to inform future investment decisions. Based on this additional reference, this requirement has been scored as compliant
3.11.3	<ul style="list-style-type: none"> <li>The link between the asset management strategy and the AMP;</li> </ul>			3		Primarily addressed in Section 2.1 and Figure 2.3
3.11.4	<ul style="list-style-type: none"> <li>Processes that ensure costs, risks and system performance will be effectively controlled when the AMP is implemented.</li> </ul>			3		It is apparent that structure roles and responsibilities exist for managing this requirement - however the processes for doing so are less clear. It appears this requirement is met by preparation of business cases for projects (Section 2.9) followed by the prioritisation process. Asset performance and Prioritisation processes are described in summary form in Section 2.11as is a reference to the detailed risk management discussion in Section 8
3.12	An overview of systems and information management data <i>To support the AMMAT disclosure and assist interested persons to assess the maturity of systems and information management, the AMP should describe:</i>	2.11, 7.1, 7.2 and 7.3		3		
3.12.1	<ul style="list-style-type: none"> <li>The processes used to identify asset management data requirements that cover the whole of life cycle of the assets;</li> </ul>			3		Section 7.1 and 7.2 address this requirement
3.12.2	<ul style="list-style-type: none"> <li>The systems used to manage asset data and where the data is used, including an overview of the systems to record asset conditions and operation capacity and to monitor the performance of assets;</li> </ul>			3		Figure7-5 would appear to define where asset condition and potentially operating capacity information would be stored over time in the future. Section 7.3 implies this information is being managed by specialised Business Intelligence tools and there is an effort to reduce reliance on "human data warehouses" in this regard. This criteria has been scored based on this understanding.
3.12.3	<ul style="list-style-type: none"> <li>The systems and controls to ensure the quality and accuracy of asset management information; and</li> </ul>			3		
3.12.4	<ul style="list-style-type: none"> <li>The extent to which the systems, processes and controls are integrated.</li> </ul>			3		
3.13	A statement covering any limitations in the availability or completeness of asset management data and disclose any initiatives intended to improve the quality of this data <i>Discussion of the limitations of asset management data is intended to enhance the transparency of the AMP and identify gaps in the asset management system.</i>	7.2, 7.3 and 7.4		3		
3.14	<ul style="list-style-type: none"> <li>A description of the processes used within the GDB for:</li> </ul>			2.7		
3.14.1	<ul style="list-style-type: none"> <li>Managing routine asset inspections and network maintenance</li> </ul>	6.2		3		

Attachment A Clause	Disclosure Requirement	COMMERCE COMMISSION DISCLOSURE REQUIREMENTS FOR GDBs					
		Relevant AMP sections	Overall Rating	Rating		2014 Update	Comments
				1 = non-compliant, 2= partially compliant, 3=fully compliant			
3.14.2	<ul style="list-style-type: none"> <li>Planning and implementing network development projects</li> </ul>	5.1, 5.2 and 5.3			2		<p>The Sections cited for compliance with this disclosure requirement address planning systems in some detail but limits discussion on the Project Implementation to a statement that "An effective delivery of capital works programme, based on end-to-end delivery process has been established between Vector's Asset Investment (AI) and Service Delivery (SD) groups. The process tracks each project from conceptual design through to site construction and commissioning." This appears inconsistent in detail compared to other process descriptions such as those for expenditure forecasting, budget alignment, and AMP approval in Section 2. Section 2.7.3 refers to the Service Delivery Groups having the responsibility for project delivery, defines areas where such responsibilities interact with Asset Management. These responsibilities imply process that could be added to the discussion in Section 5.1.2. Similarly the discussion in Section 4.7.1 describes implementation process steps in some detail.</p> <p>A meeting with Vector staff on 14 September to review this evaluation determined that further detail would be beneficial.</p> <p>Section 7 is cited for compliance with this requirement. Rather than identifying documentation that describes the components of the asset management system, Section 7 actually provides the documentation in an overview format along with description of the links between them in various figures, shortcomings of the current state, and a description of improvements.</p> <p>Compliance with this requirement was scored against the description in Section 7.1 and 7.2</p> <p>All processes are managed in-house except for external audits and expert consultation.</p> <p>All processes are managed in-house except for external audits and expert consultation.</p> <p>The People, Safety, and Risk group undertakes internal audits (Section 2..7.1). Third party reviews of organisation management of CMS events is also externally audited (Section 4.8).Section 2.14.2 states that external asset management system audits are performed. The reviewer suggests that the citation for compliance with this requirement be augmented to better indicate the level of compliance Vector is achieving.</p> <p>Demonstrated in Step 10 of Table 2-4</p> <p>The AMP did not provide a compliance reference for this requirement.</p> <p>From a holistic review perspective the reviewer believes that the AMP is structured to address 2.6.2. However, while the cross reference matrix facilitated compliance review, some information was presented in multiple sections, in different formats and overall understanding compromised as a result. A good example of this is discussions on assumptions, uncertainties and risks, which should all ultimately be treated in the same way: what risk is involved, what are the consequences, what is the likelihood of the event coming to pass, and what can and will be done to monitor, manage and mitigate that?</p>
3.14.3	<ul style="list-style-type: none"> <li>Measuring network performance.</li> </ul>	4.7			3		
3.15	<p>An overview of asset management documentation, controls and review processes</p> <p><i>To support the AMMAT disclosure and assist interested persons to assess the maturity of asset management documentation, controls and review processes, the AMP should:</i></p>	7			3		
3.15.1	<ul style="list-style-type: none"> <li>Identify the documentation that describes the key components of the asset management system and the links between the key components;</li> </ul>				3		
3.15.2	<ul style="list-style-type: none"> <li>Describe the processes developed around documentation, control and review of key components of the asset management system;</li> </ul>				3		
3.15.3	<ul style="list-style-type: none"> <li>Where the GDB outsources components of the asset management system, the processes and controls that the GDB uses to ensure efficient and cost effective delivery of its asset management strategy;</li> </ul>				3		
3.15.4	<ul style="list-style-type: none"> <li>Where the GDB outsources components of the asset management system, the systems it uses to retain core asset knowledge in-house; and</li> </ul>				3		
3.15.5	<ul style="list-style-type: none"> <li>Audit or review procedures undertaken in respect of the asset management system.</li> </ul>				3		
3.16	<p>An overview of communication and participation processes</p> <p><i>To support the AMMAT disclosure and assist interested persons to assess the maturity of asset management documentation, controls and review processes, the AMP should:</i></p>	2.5 and 2.6			3		
3.16.1	<ul style="list-style-type: none"> <li>Communicate asset management strategies, objectives, policies and plans to stakeholders involved in the delivery of the asset management requirements, including contractors and consultants;</li> </ul>				3		
3.16.2	<ul style="list-style-type: none"> <li>Demonstrate staff engagement in the efficient and cost effective delivery of the asset management requirements.</li> </ul>				3		
3.17	<p>The AMP must present all financial values in constant price New Zealand dollars except where specified otherwise;</p>	9			3		
3.18	<p>The AMP must be structured and presented in a way that the GDB considers will support the purposes of AMP disclosure set out in clause 2.6.2 of the determination.</p>				3		

Attachment A Clause	Disclosure Requirement	COMMERCE COMMISSION DISCLOSURE REQUIREMENTS FOR GDBs					
		Relevant AMP sections	Overall Rating	Rating		2014 Update	Comments
				Vector			
				1 = non-compliant, 2= partially compliant, 3=fully compliant			
<b>A</b>	<b>Assets covered</b>		<b>3</b>				
4	The AMP must provide details of the assets covered, including:		3				
4.1	A map and high-level description of the areas covered by the GDB, including the region(s) covered	3.1		3			
4.2	A description of the network configuration, including: <i>If sub-networks exist, the network configuration information should be disclosed for each sub-network.</i>	3.6 and 5.19		3			
4.2.1	A map or maps, with any cross-referenced information contained in an accompanying schedule, showing the physical location of:			3			
	(i) All main pipes, distinguished by operating pressure			3			
	(ii) All icps that have a significant impact on network operations or asset management priorities, and a description of that impact			3		Referred to as >20TJ Offtake Point	
	lii) All gate stations			3			
	(iv) All pressure regulation stations			3			
4.2.2	If applicable, the locations where a significant change has occurred since the previous disclosure of the information referred to in subclause 4.2(a) above, including-	n/a		3			
	(i) description of the parts of the network that are affected by the change			3		Not applicable	
	(ii) a description of the nature of the change			3		Not applicable	
<b>A</b>	<b>Network assets by category</b>		<b>3</b>				
5	The AMP must describe the network assets by providing the following information for each asset category:			3			
5.1	Pressure	6.3		3			
5.2	Description and quantity of assets	6.3		3			
5.3	Age profiles	6.3		3			
5.4	A discussion of the results of formal risk assessments of the assets, further broken down by subcategory as appropriate. Systemic issues leading to the premature replacement of assets or parts of assets should be discussed.	6.3		3			
6	The asset categories discussed in clause 5 above should include at least the following:			3			
6.1	• Main pipe	6.3		3			
6.2	• Service pipe	6.3		3			
6.3	• Stations	6.3		3			
6.4	• Line valve	6.3		3			
6.5	• Special crossings	6.3		3			
6.6	• Monitoring and control systems	6.3		3			
6.7	• Cathodic protection systems	6.3		3			
6.8	• Assets owned by the GDB but installed at gate stations owned by others.	6.3		3			

Attachment A Clause	Disclosure Requirement	COMMERCE COMMISSION DISCLOSURE REQUIREMENTS FOR GDBs				
		Relevant AMP sections	Overall Rating	Rating	2014 Update	Comments
				1 = non-compliant, 2= partially compliant, 3=fully compliant		
<b>A</b>	<b>Service levels</b>		<b>3</b>			
7	The AMP must clearly identify or define a set of performance indicators for which annual performance targets have been defined. The annual performance targets must be consistent with business strategies and asset management objectives and be provided for each year of the AMP planning period. The targets should reflect what is practically achievable given the current network configuration, condition and planned expenditure levels. The targets should be disclosed for each year of the AMP planning period.	4.1		3		
8	Performance indicators for which targets are defined in clause 7 above must include-			3		
8.1	<ul style="list-style-type: none"> <li>The DPP requirements required under the price quality path determination applying to the regulatory assessment period in which the next disclosure year falls.</li> </ul>	4.1		3		Customer type differentiation is only apparent on customer satisfaction surveys.
8.2	<ul style="list-style-type: none"> <li>Consumer oriented indicators that preferably differentiate between different consumer types</li> </ul>	4.1		3		A meeting with Vector staff on 14 September to review this evaluation clarified that Vector does not vary performance KPIs by customer type except for those already noted in the AMP. Based on this response, the reviewer has modified the score for this requirement from partially (2) to fully compliant (3). However it is suggested that this be explained in the AMP to better explain Vector's approach.
8.3	<ul style="list-style-type: none"> <li>Indicators of asset performance, asset efficiency and effectiveness, and service efficiency, such as technical and financial performance indicators related to the efficiency of asset utilisation and operation</li> </ul>	4.4, 4.5 and 4.6		3		The reviewer included Section 4.7 due to the use of field performance indicators as a means of driving operational efficiency and effectiveness
8.4	<ul style="list-style-type: none"> <li>The performance indicators disclosed in Schedule 10b of the determination.</li> </ul>	4.1 and 4.4		3		
9	The AMP must describe the basis on which the target level for each performance indicator was determined. Justification for target levels of service includes consumer expectations or demands, legislative, regulatory, and other stakeholders' requirements or considerations. The AMP should demonstrate how stakeholder needs were ascertained and translated into service level targets.	4.1, 4.2 and 4.3		3		
10	Targets should be compared to historic values where available to provide context and scale to the reader.	4.1, 4.2 and 4.3		3		
11	Where forecast expenditure is expected to materially affect performance against a target defined in clause 7 above, the target should be consistent with the expected change in the level of performance.  <i>Performance against target must be monitored for disclosure in the Evaluation of Performance section of each subsequent AMP.</i>	n/a		3		Not Applicable
<b>A</b>	<b>Network development planning</b>		<b>2.8</b>			
12	Amps must provide a detailed description of network development plans, including—			2.8		
12.1	A description of the planning criteria and assumptions for network development;	5.2, 5.3, 5.4 and 5.6		3		
12.2	Planning criteria for network developments should be described logically and succinctly. Where probabilistic or scenario-based planning techniques are used, this should be indicated and the methodology briefly described;	5.2 and 5.4		3		
12.3	The use of standardised designs may lead to improved cost efficiencies. This section should discuss:	3.8		2.5		
12.3.1	<ul style="list-style-type: none"> <li>The categories of assets and designs that are standardised;</li> </ul>			2		Use of design standards is acknowledged but categories of assets and associated design standards are not discussed.
12.3.2	<ul style="list-style-type: none"> <li>The approach used to identify standard designs.</li> </ul>			3		A meeting with Vector staff on 14 September to review this evaluation determined that further detail would be beneficial.  The approach used to standardise design is not discussed - for example - selection of standardised components to reduce inventory, increase resiliency, and reduce maintenance and operator staff training requirements.



Attachment A Clause	Disclosure Requirement	COMMERCE COMMISSION DISCLOSURE REQUIREMENTS FOR GDBs					
		Relevant AMP sections	Overall Rating	Rating		2014 Update	Comments
				1 = non-compliant, 2= partially compliant, 3=fully compliant			
12.4	A description of the criteria used to determine the capacity of equipment for different types of assets or different parts of the network. <i>The criteria described should relate to the GDB's philosophy in managing planning risks.</i>	5.3		3			
12.5	A description of the process and criteria used to prioritise network development projects and how these processes and criteria align with the overall corporate goals and vision	9.4		2		The prioritisation process is well described and easy to understand. What is unclear, based on the section cited for compliance, is how projects are integrated into affordable investment programme, the year of execution is determined, and how interim risks will be managed and mitigated if the work cannot be afforded in the desired year. It therefore unclear how the projects identified in Section 5.16 - Network Development Programme, 5.17 - Asset relocation, 5.18 Customer Connections etc. and summarised in Section 5.20 were mapped to their respective year of execution. Similarly several tables refer to "carryover" requirements - the reasons for, and risk associated with, this expenditure are not discussed. Their execution is programmed for FY14 year only. An explanation for how carry over projects are managed and risks mitigated in the meantime would be beneficial.  A meeting with Vector staff on 14 September to review this evaluation determined that further detail would be beneficial. Vector does do a risk and deferral assessment if projects initially planned for the current execution year cannot be afforded and if funds are available and future work can be brought forward. Deferred work is included in the outyear projections - and reprioritised based on updated risk and business affordability. Risks are reassessed on an ongoing basis, not just at the time of initial project prioritisation.	
12.6	Details of demand forecasts, the basis on which they are derived, and the specific network locations where constraints are expected due to forecast increases in demand:			3			
12.6.1	<ul style="list-style-type: none"> <li>Explain the load forecasting methodology and indicate all the factors used in preparing the load estimates;</li> </ul>	5.4		3			
12.6.2	<ul style="list-style-type: none"> <li>Provide separate forecasts to at least system level covering at least a minimum five year forecast period. Discuss how uncertain but substantial individual projects/developments that affect load are taken into account in the forecasts, making clear the extent to which these uncertain increases in demand are reflected in the forecasts;</li> </ul>	5.4, 5.8, 5.9, 5.10, 5.11, 5.12, 5.13, 5.14, 5.15		3			
12.6.3	<ul style="list-style-type: none"> <li>Identify any network or equipment constraints that may arise due to the anticipated growth in demand during the AMP planning period.</li> </ul> <p><i>The AMP should include a description of the methodology and assumptions used to produce the utilisation and capacity forecasts and a discussion of the limitations of the forecasts, methodology and assumptions. The AMP should also discuss any capacity limitations identified or resolved in years during which an AMP was not disclosed.</i></p>	5.4, 5.8, 5.9, 5.10, 5.11, 5.12, 5.13, 5.14, 5.15		3			
12.7	Analysis of the significant network level development options identified and details of the decisions made to satisfy and meet target levels of service, including:	5.8, 5.9, 5.10, 5.11, 5.12, 5.13, 5.14, 5.15, 5.16		3			
12.7.1	<ul style="list-style-type: none"> <li>The reasons for choosing a selected option for projects where decisions have been made;</li> </ul>			3			
12.7.2	<ul style="list-style-type: none"> <li>Alternative options considered for projects that are planned to start in the next five years;</li> </ul>			3			
12.7.3	<ul style="list-style-type: none"> <li>Consideration of planned innovations that improve efficiencies within the network, such as improved utilisation, extended asset lives, and deferred investment.</li> </ul>			3			
12.8	A description and identification of the network development programme and actions to be taken, including associated expenditure projections. The network development plan must include:	5.16		3			
12.8.1	<ul style="list-style-type: none"> <li>A detailed description of the material projects and a summary description of the non-material projects currently underway or planned to start within the next 12 months;</li> </ul>	5.8, 5.9, 5.10, 5.11, 5.12, 5.13, 5.14, 5.15, 5.16		3			
12.8.2	<ul style="list-style-type: none"> <li>A summary description of the programmes and projects planned for the following four years (where known); and</li> </ul>	5.16, 5.17 and 5.18		3			



Attachment A Clause	Disclosure Requirement	COMMERCE COMMISSION DISCLOSURE REQUIREMENTS FOR GDBs					
		Relevant AMP sections	Overall Rating	Rating		2014 Update	Comments
				1 = non-compliant, 2= partially compliant, 3=fully compliant			
12.8.3	<ul style="list-style-type: none"> <li>An overview of the material projects being considered for the remainder of the AMP planning period.</li> </ul> <p><i>For projects included in the AMP where decisions have been made, the reasons for choosing the selected option should be stated which should include how target levels of service will be impacted. For other projects planned to start in the next five years, alternative options should be discussed.</i></p>	5.16 and 5.20			3		
<b>A</b>	<b>Lifecycle Asset Management Planning (Maintenance and Renewal)</b>		<b>3</b>				
<b>13</b>	The AMP must provide a detailed description of the lifecycle asset management processes, including—				<b>3</b>		
<b>13.1</b>	<ul style="list-style-type: none"> <li>The key drivers for maintenance planning and assumptions;</li> </ul>	6.1 and 6.2			3		
<b>13.2</b>	<ul style="list-style-type: none"> <li>Identification of routine and corrective maintenance and inspection policies and programmes and actions to be taken for each asset category, including associated expenditure projections. This must include:</li> </ul>				3		
<b>13.2.1</b>	<ul style="list-style-type: none"> <li>The approach to inspecting and maintaining each category of assets, including a description of the types of inspections, tests and condition monitoring carried out and the intervals at which this is done;</li> </ul>	6.3			3		
<b>13.2.2</b>	<ul style="list-style-type: none"> <li>Any systemic problems identified with any particular asset types and the proposed actions to address these problems; and</li> </ul>	6.3			3		
<b>13.2.3</b>	<ul style="list-style-type: none"> <li>Budgets for maintenance activities broken down by asset category for the AMP planning period.</li> </ul>	6.3			3		
<b>13.3</b>	Identification of asset replacement and renewal policies and programmes and actions to be taken for each asset category, including associated expenditure projections. This must include:	6.2, 6.3 and 6.4			3		
<b>13.3.1</b>	<ul style="list-style-type: none"> <li>The processes used to decide when and whether an asset is replaced or refurbished, including a description of the factors on which decisions are based, and consideration of future demands on the network and the optimum use of existing network assets;</li> </ul>				3		
<b>13.3.2</b>	<ul style="list-style-type: none"> <li>A description of innovations that have deferred asset replacements;</li> </ul>	4.7			3		
<b>13.3.3</b>	<ul style="list-style-type: none"> <li>A description of the projects currently underway or planned for the next 12 months</li> </ul>				3		
<b>13.3.4</b>	<ul style="list-style-type: none"> <li>A summary of the projects planned for the following four years (where known); and</li> </ul>				3		
<b>13.3.5</b>	<ul style="list-style-type: none"> <li>An overview of other work being considered for the remainder of the AMP planning period.</li> </ul>				3		
<b>13.4</b>	The asset categories discussed in subclauses 13.2 and 13.3 above should include at least the categories in subclause 6 above.				3		
<b>A</b>	<b>Non-Network Development, Maintenance and Renewal</b>		<b>2.8</b>				
<b>14</b>	Amps must provide a summary description of material non-network development, maintenance and renewal plans, including—	7.1 and 7.2			<b>2.8</b>		
<b>14.1</b>	<ul style="list-style-type: none"> <li>A description of non-network assets;</li> </ul>	7.2			3		
<b>14.2</b>	<ul style="list-style-type: none"> <li>Development, maintenance and renewal policies that cover them;</li> </ul>	7.4			2	Policies governing non-network assets are not cited but Table 7-2 provides a list of guiding Objectives specific to Asset Information Management	
<b>14.3</b>	<ul style="list-style-type: none"> <li>A description of material capital expenditure projects (where known) planned for the next five years;</li> </ul>	7.4			3		
<b>14.4</b>	<ul style="list-style-type: none"> <li>A description of material maintenance and renewal projects planned (where known) for the next five years.</li> </ul>	n/a			3	Not Applicable	
<b>A</b>	<b>Risk management</b>		<b>2.8</b>				
<b>15</b>	Amps must provide details of risk policies, assessment, and mitigation, including—	8			<b>2.8</b>		
<b>15.1</b>	<ul style="list-style-type: none"> <li>Methods, details and conclusions of risk analysis;</li> </ul>	8.1 and 8.3			3		

Attachment A Clause	Disclosure Requirement	COMMERCE COMMISSION DISCLOSURE REQUIREMENTS FOR GDBs					
		Relevant AMP sections	Overall Rating	Rating		2014 Update	Vector Comments
				1 = non-compliant, 2= partially compliant, 3=fully compliant			
15.2	<ul style="list-style-type: none"> <li>Strategies used to identify areas of the network that are vulnerable to high impact low probability events and a description of the resilience of the network and asset management systems to such events;</li> </ul>	8.4			2		Section 8.4 describes the various high level plans in place for low probability event response but does not elaborate on strategies used to identify where such risks might occur on the network. For example - a fault trace and network overlay to show network segments that are at earthquake risk, or in locations subject to land movement (subsidence or liquefaction). Section <del>8.3.2</del> 8.3.2 describes risk mitigations but not where the vulnerability is. This section also refers to the fact that risk registers are developed and managed and Vectors intent to develop an overall risk performance measurement structure with the full system anticipated to be in place by 2014.  A meeting with Vector staff on 14 September to review this evaluation determined that Vector manages high impact low probability events within its standard "bow - tie" risk identification and mitigation process. For example, for a risk event such as "gas release", the causative threat might be a tsunami, an earthquake and a volcanic event, all low probability and high potential impact. Consequences for each are then developed such as explosion causing loss of life, explosion causing damage, loss of gas supply, etc. The hazard causing an earthquake to be a threat is created by the distribution system being in a zone where such events are possible. For each threat there are potential mitigations to the consequences, such as development and practice of business continuity plans, or preventative actions, such as avoiding the zone. Vectors risk process seems to imply that it is aware of where such risks are on its network but has not discussed the process for doing so in the AMP. For this reason the assessment remains as a partial compliance.
15.3	<ul style="list-style-type: none"> <li>A description of the policies to mitigate or manage the risks of events identified in subclause 15.2 above;</li> <li>Details of emergency response and contingency plans.</li> </ul>	8.3			3		
15.4	<p><i>Asset risk management forms a component of a GDB's overall risk management plan or policy, focusing on the risks to assets and maintaining service levels. Amps should demonstrate how the GDB identifies and assesses asset related risks and describe the main risks within the network. The focus should be on credible low-probability, high-impact risks. Risk evaluation may highlight the need for specific development projects or maintenance programmes. Where this is the case, the resulting projects or actions should be discussed, linking back to the development plan or maintenance programme.</i></p>	8.4			3		
<b>A</b>	<b>Evaluation of performance</b>		<b>3</b>				
16	Amps must provide details of performance measurement, evaluation, and improvement, including—				3		
16.1	A review of progress against plan, both physical and financial;	n/a			3		
16.1.1	<ul style="list-style-type: none"> <li>Referring to the most recent disclosures made under subclause 2.5.1 of the determination, discussing any significant differences and highlighting reasons for substantial variances</li> </ul>				3	Not Applicable	
16.1.2	<ul style="list-style-type: none"> <li>Commenting on the progress of development projects against that planned in the previous AMP and provide reasons for substantial variances along with any significant construction or other problems experienced</li> </ul>				3	Not Applicable	
16.1.3	<ul style="list-style-type: none"> <li>Commenting on progress against maintenance initiatives and programmes and discuss the effectiveness of these programmes noted.</li> </ul>				3	Not Applicable	
16.2	An evaluation and comparison of actual service level performance against targeted performance	4			3		
16.2.1	<ul style="list-style-type: none"> <li>In particular, comparing the actual and target service level performance for all the targets discussed in the previous AMP under clause 7 above and explain any significant variances.</li> </ul>				3		
16.3	An evaluation and comparison of the results of the asset management maturity assessment disclosed in the Report on Asset Management Maturity set out in Schedule 13 against relevant objectives of the GDB's asset management and planning processes.	2.14			3		
16.4	An analysis of gaps identified in subclauses 16.2 and 16.3 above. Where significant gaps exist (not caused by one-off factors), the AMP must describe any planned initiatives to address the situation.	2.14 and 4			3		

Attachment A Clause	Disclosure Requirement	COMMERCE COMMISSION DISCLOSURE REQUIREMENTS FOR GDBs				
		Relevant AMP sections	Overall Rating	Rating	2014 Update	Comments
				1 = non-compliant, 2= partially compliant, 3=fully compliant		
<b>A</b>	<b>Capability to deliver</b>		<b>3</b>			
17	AMPs must describe the processes used by the GDB to ensure that:			3		
17.1	<ul style="list-style-type: none"> <li>The AMP is realistic and the objectives set out in the plan can be achieved</li> </ul>	2.8		3		
17.2	<ul style="list-style-type: none"> <li>The organisation structure and the processes for authorisation and business capabilities will support the implementation of the AMP plans.</li> </ul>	2.7, 2.8, 2.9 and 2.12		3		
<b>A</b>	<b>Commerce Commission Information Disclosure Schedules</b>		<b>3</b>			
2.6.1	Schedule 11a Report on Forecast Capital Expenditure	Appdx 1		3		
2.6.1	Schedule 11b Report on Forecast Operational Expenditure	Appdx 2		3		
2.6.1	Schedule 12a Report on Asset Condition	Appdx 3		3		
2.6.1	Schedule 12b Report on Forecast Utilisation	Appdx 4		3		
2.6.1	Schedule 12c Report on Forecast Demand	Appdx 5		3		
2.6.1	Schedule 13 Report on Asset Management Maturity Assessment	Appdx 6		3		