Gas Transmission
Asset Management Plan Update
Information Disclosure 2014

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1. INTRODUCTION

This Asset Management Plan (AMP) update has been prepared to inform Vector's customers and other stakeholders of material changes and updates to asset management planning since 30 September 2013, when the first full Gas Transmission AMP for the 2013-2023 forecast period (2013 AMP) was published.[1] In particular it contains updated 10-year capital expenditure (capex) and direct operational expenditure (opex) for the gas transmission pipelines. These have been revised to reflect changes to forecast work programmes and efficiency gains identified during the course of the last year and ongoing analysis of the performance and condition of the assets.

In addition, this update fulfils Vector's regulatory disclosure requirements, as set out under Clause 2.6 of the Commerce Commission's Gas Transmission Information Disclosure Determination 2012 (IDD).

As part of Vector's ongoing operation, the 2013 AMP, and this AMP update are important components of our pipeline growth, maintenance and investment planning processes. It also forms a key input into the annual capex and direct opex budget. However, when reading these documents, it is important to note the following:

- While the 2013 AMP and this update present Vector's best view of its asset management and pipeline investment intentions at the time of publication, it does not commit Vector to carrying out any of the individual projects or initiatives described within the document. These may be amended to reflect changes to Vector's regulatory or operating environment, customer energy demand trends and requirements, customer or pipeline technology changes, stakeholder expectations or Vector's commercial priorities.
- Projects and initiatives described in the 2013 AMP or the update are subject to internal governance procedures, including meeting financial approval requirements before they can proceed. Once the future asset or asset requirements are established, options for addressing these needs are evaluated and potential solutions identified. Decision tools and systems used to support the evaluation of options include demand flow analysis, effective capital budgeting techniques, optimised renewal modelling, life-cycle costing, risk assessments and geographic information. At the same time, the feasibility of non-asset or unconventional solutions to address asset requirements is also considered. This may lead to changes in the scope of works or the overall programme.
- Uncertainty associated with the regulatory regime that applies to the gas transmission business remains a significant factor weighing on the ability to and appetite for investing in line with the forecasts reflected in this Update. The potential for unexpected adverse changes to the regulatory regime (such as the narrow scope review of Weighted Average Cost of Capital percentile) may act as a disincentive to invest.

[1] A copy of this AMP is available on the Vector website, at http://vector.co.nz/gas-asset-management

2. UPDATE ON SYSTEM DEVELOPMENT PLANNING AND CAPACITY ASSESSMENT

This section provides an updated system capacity assessment and discusses factors that lead to material changes to the system development plans described in section 5 of Vector's 2013 AMP.

2.1 North System

Delivery Point Analysis

Delivery Point	Actual Max Flow (2013)	Predicted Max Flow (2015)	Predicted Max Flow (2019)	Predicted Max Flow (2024)	Station Max Flow Capacity	Year of breach of design capacity	Comments
Tuakau	1,356	1,531	1,630	1,755	1,730	2023	Heater
Harrisville	3,588	4,714	5,671	6,867	3,200	2013	Heater/meter
Pukekohe	565	404	407	412	1450	-	-
Kingseat	3	22	22	22	50	-	-
Glenbrook	11,856	10,826	10,826	10,826	12,000	-	-
Papakura	18,632	20,247	20,936	21,866	24,600	-	-
Ramarama	253	258	271	287	390	-	-
Drury 1,2	2,053	2,479	2,713	3,037	3,280	-	-
Hunua 1	771	858	858	858	1,170	-	-
Hunua 2	601	611	632	660	920	-	-
Hunua 3	87	1550	1550	1550	3,780	-	-
Alfriston	141	194	194	194	430	-	-
Flat Bush	2,236	2,415	2,415	2,415	6,590	-	-
Otahuhu B	70,345	68,750	68,750	0	119,730	-	-
Westfield	42,982	45,090	46,625	48,698	72,850	-	-
Southdown	40,665	41,250	41,250	41,250	118,100	-	-
Bruce McLaren	2,063	1,987	2,054	2,146	2,378	-	-
Henderson	11,657	11,074	11,451	11,960	13,500	-	-
Waitoki	1,409	1,550	1,768	2,067	4,300	-	-
Warkworth	2,016	2,330	2,677	3,112	2,280	2015	Regulators
Wellsford	0	4	4	4	50		
Maungaturoto	2,629	2,604	2,604	2,604	2,530	2012	Pipework velocity
Marsden Point (CHH)	211	207	207	207	8,500	-	-
Marsden Point (Refining NZ)	11,778	10,000	10,000	10,000	8,500	2012	Heater
Oakleigh	-	-	-	-	-	-	Decommissioned during FY14
Whangarei	954	1,037	1,028	1,028	2,930	-	-
Kauri	3,241	2,995	2,995	2,995	3,810	-	-

- Flows are in standard cubic metres per hour (scmh)

Table 1: North System Delivery Point Capacity Forecasts

Also indicated in Table 1 are the components (if any) that limit gate station capacity and are anticipated to lead to a design breach within the planning period. These are discussed in more detail in Table 2 below.

Delivery Point	Commentary
Tuakau	A new station is currently being built at Tuakau (replacing the current site). An allowance of $500k has been made in FY15 to complete this upgrade. This upgrade will take account of growth assumptions for the next 10 years.

Delivery Point	Commentary
Harrisville	A new station is currently being built in addition to the existing station at Harrisville. The existing station was running close to the design limits of both the water bath heater and the meter. An allowance of $1.0M has been made in FY15 to complete this DP construction.
Pukekohe	The station can meet the maximum predicted flow to FY24 and will not require upgrade.
Kingseat	The station can meet the maximum predicted flow to FY24 and will not require upgrade.
Glenbrook	This station is dedicated to supplying Bluescope Steel. The pipeline pressure regulation has been removed at Pukekohe, which has increased the inlet pressure at Glenbrook. A second heater was installed and commissioned in FY13 to allow the station to manage this higher inlet pressure. The station can meet the maximum predicted flow to FY24 and will not require upgrade.
Papakura	This station was upgraded during FY11/12, including the regulators, meters and coalescer. A new heater was installed in FY09. The station can meet the maximum predicted flow to FY24 and will not require upgrade.
Ramarama	The station can meet the maximum predicted flow to FY24 and will not require upgrade.
Drury 1, 2	The station meter was upgraded in FY11/12 and the heater was upgraded in FY12/13. The station can meet the maximum predicted flow to FY24 and will not require upgrade.
Hunua 1,2 & 3	The stations can meet the maximum predicted flows to FY24 and will not require upgrade.
Alfriston	The station can meet the maximum predicted flow to FY24 and will not require upgrade.
Flat Bush	The station can meet the maximum predicted flow to FY24 and will not require upgrade.
Otahuhu B	This station supplies only the Otahuhu power station. There is no load growth expected at this station. The station can meet the maximum predicted flow to FY24 and will not require upgrade. It is assumed that there will no longer be any demand at Otahuhu following a major overhaul during FY18-19.
Westfield	This station is the dominant supply for industrial, commercial and domestic loads in the centre of Auckland. The station can meet the maximum predicted flow to FY24 and will not require upgrade.
Southdown	This station supplies only the Southdown power station. The station can meet the maximum predicted flow to FY24 and will not require upgrade.
Bruce McLaren	The station can meet the maximum predicted flow to FY24 and will not require upgrade.
Henderson	The station is the dominant supply for residential and commercial customers in the northern part of Auckland and was upgraded in FY12. The station can meet the maximum predicted flow to FY24 and will not require upgrade.
Waitoki	The station can meet the maximum predicted flow to FY24 and will not require upgrade.
Warkworth	This station will need a regulator upgrade in FY16. An allowance of $200k is included for the work in the 10-year capex forecast.
Wellsford	The station can meet the maximum predicted flow to FY24 and will not require upgrade.
Maungaturoto	This station solely supplies a dairy factory where the largest demand is during Oct/Nov each year (outside peak week). Although pipework capacity is theoretically exceeded, actual operating data suggests that pipework velocity is not presenting any problems at current flow rates. Upgrade is not planned. The station can meet the maximum predicted flow to FY24 and will not require upgrade.
Oakleigh	This station was decommissioned during FY14.
Marsden Point (CHH)	This is the load to Carter Holt Harvey board mill. The station can meet the maximum predicted flow to FY24 and will not require upgrade.
Marsden Point (Refining NZ)	This is the interruptible supply to the Refining NZ which typically uses around 7000 scmh, but can nominate to take volumes in excess of 10,000 scmh for small periods of time (less than a few hours each day). Although heater capacity is theoretically exceeded, actual operating data suggests that heater performance is adequate at current flow rates. Upgrade is not scheduled.
Whangarei	The station can meet the maximum predicted flow to FY24 and will not require upgrade.
Kauri	This station supplies a dairy factory, where the largest demand is during Oct/Nov each year (outside peak week). There is no load growth associated with this station. The station can meet the maximum predicted flow to FY24 and will not require upgrade.

Table 2: North System Delivery Point Capacity Commentary

Pipeline Capacity Assessment

Delivery Point	Aggregate Contractual Capacity (GJ/day)	Uncommitted Operational Capacity (GJ/day)		
		FY14	FY19	FY24
Tuakau	1,095	21,051	22,218	21,738
Harrisville	1,866	22,279	21,537	21,521
Ramarama	125	11,902	11,812	13,168
Drury (Total)	1,440	24,360	21,871	51,072
Pukekohe	246	21,665	21,042	20,889
Glenbrook	7,510	10,485	10,180	10,028
Greater Auckland	52,103	13,807	12,909	30,529
Hunua (Total)	2,370	17,215	14,918	41,826
Flat Bush	1,942	19,272	16,915	49,638
Waitoki	657	3,749	2,978	3,304
Whangarei	605	3,071	2,757	3,788
Kauri + Maungaturoto	2,500	1,223	1,164	1,457
Otahuhu B + Southdown	78,000	23,400	20,280	54,120

- The Aggregate Contractual Capacity for Tuakau in FY19 and FY24 is 4,839 GJ/day.
- The Aggregate Contractual Capacity for Harrisville in FY19 and FY24 is 2,202 GJ/day.
- The Aggregate Contractual Capacity for Otahuhu and Southdown Power Stations in FY24 is 33,000 GJ/day.
- The Uncommitted Operational Capacity at Glenbrook is based on full line pressure.
- The peak week identified in FY14 for this system was week commencing 08 July 2013

Table 3: North System Pipeline Capacity Forecast

2.2 Central (North) System

Delivery Point Analysis

Delivery Point Name	Actual Max Flow (2013)	Predicted Max Flow (2015)	Predicted Max Flow (2019)	Predicted Max Flow (2024)	Station Max Flow Capacity	Year of breach of design capacity	Comments
Te Kowhai	5,693	6,015	6,334	6,733	8,128	-	-
Temple View	9,268	10,547	11,107	11,806	10,800	2017	Meter
Te Rapa	23,856	26,563	26,563	26,563	28,000	-	-
Horotiu West	971	1,290	1,367	1,464	2,700	-	-
Matangi	0	4	4	4	50	-	-
Cambridge	3,063	2,951	2,986	3,106	3,400	-	-
Kiwitahi 1	1,102	1,062	1,062	1,062	3,100	-	-
Kiwitahi 2	153	144	144	144	340	-	-
Morrinsville (Dairy)	2,247	2,246	2,246	2,246	4,200	-	-
Morrinsville	477	584	599	619	1,370	-	-
Tatuanui (Dairy)	1,407	1,037	1,037	1,037	1,550	-	-
Waitoa	1,892	2,314	2,567	2,883	3,200	-	-

- Flows are in standard cubic metres per hour (scmh)

Table 4: Central (North) System Delivery Point Analysis

Also indicated in Table 4, are the components (if any) that limit gate station capacity and anticipated to lead to a design breach within the planning period. These are discussed in more detail Table 5 below.

Delivery Point	Commentary
Te Kowhai	The station can meet the maximum predicted flow to FY24 and will not require upgrade.
Temple View	This station was upgraded in FY08, with new heater, regulators and filters and was designed to accommodate a maximum future load of 15,000scmh. An existing consumer is planning to significantly increase their demand during FY14. This would exceed the peak flow limit at the station so the meter upgrade has been brought forward to FY14.
Te Rapa	Te Rapa supplies a Cogen plant and the regulators were replaced due to condition during FY09-11. No load growth is currently forecast at this station and historic peak demand has been well under the contractual maximum capacity. The existing heater and meters are sufficient for future loads. Upgrade is not scheduled.
Horotiu	A large potential new load has been identified that would be supplied from this delivery point. This could require a major upgrade of the delivery point in the next 1 -2 years. An allowance of $0.3m for upgrade has been made.
Matangi	It is anticipated that this station can meet the current and future flows. There is no water bath heater at this station, but given the limited load, no installation is recommended.
Cambridge	The station can meet the maximum predicted flow to FY24 and will not require upgrade.
Kiwitahi 1 (Hydrogen Peroxide Plant)	The station can meet the maximum predicted flow to FY24 and will not require upgrade.
Kiwitahi 2 (Distribution Network)	The station can meet the maximum predicted flow to FY24 and will not require upgrade.
Morrinsville 1 (Dairy)	This dairy load is forecast to remain constant to FY24 and the station will not require upgrade.
Morrinsville 2 (Town)	The station can meet the maximum predicted flow to FY24 and will not require upgrade.
Tatuanui (Dairy)	This load is forecast to increase in the next 12 months due to an expansion at the dairy factory. An allowance of $0.3m for upgrade has been made.
Waitoa	The station can meet the maximum predicted flow to FY24 and will not require upgrade.

Table 5: Central (North) System Delivery Point Commentary

Pipeline Capacity Assessment

Delivery Point	Aggregate Contractual Capacity (GJ/day)	Uncommitted Operational Capacity (GJ/day)		
		FY14	FY19	FY24
Cambridge	2,462	769	486	488
Greater Hamilton	9,036	11,802	7,647	5,712
Horotiu	537	8,546	4,730	3,919
Kiwitahi	1,132	3,046	1,976	1,514
Morrinsville	2,028	2,452	1,563	1,200
Tatuanui	1,004	3,103	1,996	1,565
Te Rapa Cogen	25,500	11,983	8,158	6,628
Waitoa	1,607	1,328	748	476

- The peak week identified in FY14 for this system was week commencing 02 September 2013

Table 6: Central (North) System Pipeline Capacity Forecast

2.3 Central (South) System

Delivery Point Analysis

Delivery Point Name	Actual Max Flow (2013)	Predicted Max Flow (2015)	Predicted Max Flow (2019)	Predicted Max Flow (2024)	Station Max Flow Capacity	Year of breach of design capacity	Comments
Eltham	809	902	902	902	2,310	-	-
Stratford	615	681	681	681	2,610	-	-
Kaponga	26	32	40	50	200	-	-
Inglewood	316	321	321	321	1,010	-	-
Waitara	655	648	648	648	1,700	-	-
New Plymouth	6,166	5,862	5,862	5,862	7,000	-	-

- Flows are in standard cubic metres per hour (scmh)

Table 7: Central (South) System Delivery Point Analysis

Also indicated in Table 7 are the components (if any) that limit gate station capacity and anticipated to lead to a design breach within the planning period. These are discussed in more detail in Table 8 below.

Delivery Point	Commentary
Eltham	The station can meet the maximum predicted flow to FY24 and will not require upgrade.
Stratford	The station can meet the maximum predicted flow to FY24 and will not require upgrade.
Kaponga	The station can meet the maximum predicted flow to FY24 and will not require upgrade.
Inglewood	The station can meet the maximum predicted flow to FY24 and will not require upgrade.
Waitara	The station can meet the maximum predicted flow to FY24 and will not require upgrade.
New Plymouth	The station can meet the maximum predicted flow to FY24 and will not require upgrade.

Table 8: Central (South) System Delivery Point Commentary

Pipeline Capacity Assessment

Delivery Point	Aggregate Contractual Capacity (GJ/day)	Uncommitted Operational Capacity (GJ/day)		
		FY14	FY19	FY24
Eltham	610	8,525	8,525	8,525
Inglewood	169	4,575	4,575	4,575
Kaponga	9	3,290	3,285	3,281
New Plymouth	4,136	1,687	1,687	1,687
Stratford	334	11,754	11,754	11,754
Waitara	355	4,469	4,461	4,453

- The peak week identified in FY14 for this system was week commencing 08 July 2013

Table 9: Central (South) System Pipeline Capacity Assessment

2.4 Bay of Plenty System

Delivery Point Analysis

Delivery Point Name	Actual Max Flow (2013)	Predicted Max Flow (2015)	Predicted Max Flow (2019)	Predicted Max Flow (2024)	Station Max Flow Capacity	Year of breach of design capacity	Comments
Kihikihi	1,009	1,229	1,229	1,229	2,090	-	-
Waikeria	197	282	312	351	790	-	-
Putaruru	504	589	550	531	1,000	-	-
Tirau 1 (Dairy)	2,230	2,122	2,122	2,122	5,800	-	-
Tirau 2 (Town)	48	75	89	107	600	-	-
Okoroire Springs	0	3	3	3	50	-	-
Pyes Pa	537	335	353	375	1,790	-	-
Tauranga	1,740	2,275	2,396	2,547	2,580	-	-
Mt. Maunganui	3,124	2,677	2,677	2,677	4,680	-	-
Papamoa	776	1,298	1,556	1,878	2,730	-	-
Te Puke	416	658	814	1,009	900	2022	Meter
Rangiuru	628	932	932	932	950	-	-
Lichfield (Dairy)	2,717	2,818	2,982	3,188	4,970	-	-
Tokoroa	1,466	812	812	812	2,320	-	-
Kinleith (Paper Mill) No.1	24,503	27,184	27,184	27,184	19,670	2012	Pipework velocity
Kinleith No.2	265	258	264	271	370	-	-
Rotorua	3,417	3,629	3,547	3,547	2,494	2012	Regulator
Reporoa	2,568	2,793	2,715	2,715	2,627	2012	Pipework velocity
Taupo	1,176	1,494	1,674	1,897	2,494	-	-
Broadlands	509	593	593	593	2,730	-	-
Rainbow Mountain	-	-	-	-	-	-	Decommissioned
Kawerau (Town)	137	139	139	139	740	-	-
Kawerau (Caxton)	792	2,282	2,282	2,282	6,920	-	-
Kawerau (Tasman)	2,076	2,014	2,014	2,014	6,930	-	-
Te Teko	0	33	33	33	440	-	-
Edgecumbe (Dairy)	5,743	5,769	5,769	5,769	5,600	2012	Heater
Edgecumbe 2 (Town)	10	10	10	10	230	-	-
Whakatane	3,351	3,061	3,061	3,061	2,730	2012	Filter
Opotiki	150	214	216	218	850	-	-
Gisborne	2,829	3,333	3,435	3,562	6,235	-	-

- Flows are in standard cubic metres per hour (scmh)

Table 10: Bay of Plenty System Delivery Point Analysis

Also indicated in Table 10 are the components (if any) that limit gate station capacity and anticipated to lead to a design breach within the planning period. These are discussed in more detail in Table 11 below.

Delivery Point	Commentary
Kihikihi	The station can meet the maximum predicted flow to FY24 and will not require upgrade.
Waikeria	The station can meet the maximum predicted flow to FY24 and will not require upgrade.
Putaruru	The station can meet the maximum predicted flow to FY24 and will not require upgrade.
Tirau 1 (Dairy)	The station can meet the maximum predicted flow to FY24 and will not require upgrade.
Tirau 2 (Town)	The station can meet the maximum predicted flow to FY24 and will not require upgrade.
Okoroire Springs	The station can meet the maximum predicted flow to FY24 and will not require upgrade. There is no water bath heater at this station, but given the limited load, no installation is recommended.
Pyes Pa	This station was constructed in FY07 and is anticipated to meet the required gas flow to FY24. It is located adjacent to a large residential development and a future industrial development site. This is a high growth area and the station demand should be monitored for increases above the expected trend.
Tauranga	The station can meet the maximum predicted flow to FY24 and will not require upgrade. This is a high growth area and the station demand should be monitored for increases above the anticipated trend.
Mt. Maunganui	The station can meet the maximum predicted flow to FY24 and will not require upgrade.
Papamoa	The station can meet the maximum predicted flow to FY24 and will not require upgrade.
Te Puke	The station meter capacity may be exceeded in FY22 if the forecast demand increase occurs. It is planned to monitor this situation and reassess annually.
Rangiuru	The station can meet the maximum predicted flow to FY24 and will not require upgrade.
Lichfield (Dairy)	The station can meet the maximum predicted flow to FY24 and will not require upgrade.
Tokoroa	The station can meet the maximum predicted flow to FY24 and will not require upgrade.
Kinleith (Paper Mill) No.1	Although pipework capacity is theoretically exceeded, actual operating data suggests that pipework performance is adequate at current flow rates. Upgrade is not scheduled.
Kinleith No.2	The station can meet the maximum predicted flow to FY24 and will not require upgrade.
Rotorua	The regulators at this station are operating above their design flow rate and it is planned to replace these in FY14.
Reporoa	Although pipework capacity is theoretically exceeded, actual operating data suggests that pipework performance is adequate at current flow rates. Upgrade is not scheduled.
Taupo	The station can meet the maximum predicted flow to FY24 and will not require upgrade.
Broadlands	The station can meet the maximum predicted flow to FY24 and will not require upgrade.
Rainbow Mountain	This gate station has now been removed.
Kawerau (Town)	The station can meet the maximum predicted flow to FY24 and will not require upgrade.
Kawerau (Caxton)	The station can meet the maximum predicted flow to FY24 and will not require upgrade.
Kawerau (Tasman)	The station can meet the maximum predicted flow to FY24 and will not require upgrade.
Te Teko	The station can meet the maximum predicted flow to FY24 and will not require upgrade.
Edgecumbe (Dairy)	This dairy load is assumed to be flat although it has reached 6000 scmh in FY09 and may reach this level again. The water bath heater was analysed. Although heater capacity is theoretically exceeded, actual operating data suggests that heater performance is adequate at current flow rates. Upgrade is not scheduled.
Edgecumbe 2 (Town)	The station can meet the maximum predicted flow to FY24 and will not require upgrade.
Whakatane	The filtration capacity of the station is planned for upgrade in FY14. The station can then meet the maximum predicted flow to FY24 and will not require further upgrade.
Opotiki	The station can meet the maximum predicted flow to FY24 and will not require upgrade.
Gisborne	The station can meet the maximum predicted flow to FY24 and will not require upgrade.

Table 11: Bay of Plenty Delivery Point Commentary

Pipeline Capacity Assessment

Delivery Point	Aggregate Contractual Capacity (GJ/day)	Uncommitted Operational Capacity (GJ/day)		
		FY14	FY19	FY24
Broadlands	960	2,628	2,585	2,542
Edgecumbe	5,088	4,668	4,563	4,459
Gisborne	2,691	1,664	1,043	422
Mt Maunganui	2,348	2,439	2,344	2,249
Tauranga	1,264	156	147	137
Kawerau	2,448	15,185	14,487	13,789
Kihikihi	720	11,583	11,039	10,495
Kinleith	11,008	3,355	3,067	2,779
Lichfield	2,052	18,698	18,385	18,072
Opotiki	103	2,618	2,587	2,556
Putaruru	365	18,623	17,836	17,049
Rangiuru	356	2,109	2,068	2,028
Reporoa	2,344	8,652	8,615	8,578
Rotorua	1,778	1,231	1,221	1,211
Taupo	598	4,428	4,359	4,289
Te Puke	332	2,595	2,515	2,435
Tirau	1,671	11,644	11,644	11,644
Tokoroa	472	18,380	17,556	16,731
Waikeria	110	21,742	20,764	19,785
Whakatane	2,596	2,341	2,215	2,090

- The peak week identified in FY14 for this system was week commencing 16 September 2013
- Capacity at Gisborne and Opotiki have been calculated with Kawerau Compressor Station running

Table 12: Bay of Plenty Pipeline Capacity Assessment

2.5 South System

Delivery Point Analysis

Delivery Point Name	Actual Max Flow (2013)	Predicted Max Flow (2015)	Predicted Max Flow (2019)	Predicted Max Flow (2024)	Station Max Flow Capacity	Year of breach of design capacity	Comments
Matapu	0	2	2	2	50	-	-
Okaiawa	2,031	2,153	2,153	2,153	1,030	2012	Pipework velocity
Manaia	172	185	185	185	340	-	-
Hawera (Dairy)	3,757	3,134	3,134	3,134	3,800	-	-
Hawera (Nova)	704	868	868	868	990	-	-
Patea	163	249	271	298	140	2012	Heater
Waverley	166	207	207	207	300		
Waitotara	234	249	262	279	130	2012	Heater
Wanganui	5,678	6,960	7,702	8,629	6,170	2014	Pipework velocity/heater
Kaitoke	163	177	187	199	280	-	-
Lake Alice	244	245	246	247	160	2012	Heater
Kakariki	403	367	367	367	710	-	-
Marton	1,215	1,343	1,343	1,343	3,400	-	-
Flockhouse	0	2	2	2	160	-	To be removed
Foxton	389	352	352	352	1,810	-	-
Levin	2,463	2,462	2,462	2,462	2,340	2014	Meter
Kuku	0	4	4	4	50	-	-
Otaki	276	321	349	385	1,080	-	-
Te Horo	0	3	3	3	50	-	-
Waikanae	603	722	784	865	480	2012	Heater
Paraparaumu	1,551	1,766	1,960	2,206	1,170	2012	Pipework velocity
Paekakariki	0	5	5	5	230	-	-
Pauatahanui No.2	0	5	5	5	50	-	-
Pauatahanui	592	598	598	598	2,000	-	-
Waitangirua (for Tawa A and B)	22,241	22,508	23,053	23,753	33,690	-	-
Waitangirua (Porirua)	3,301	3,341	3,422	3,526	4,233	-	-
Belmont	13,312	13,473	13,799	14,218	18,310	-	-
Tawa B	3,646	3,690	3,779	3,894	11,130	-	-
Oroua Downs	216	242	259	280	290	-	-
Kairanga	12	10	10	10	50	-	-
Palmerston North	8,286	8,303	8,336	8,378	3,400	2012	Filter
Longburn	1,816	1,644	1,644	1,644	3,400	-	-
Fielding	1,635	1,376	1,376	1,376	3,400	-	-
Ashhurst	99	94	94	94	137	-	-
Pahiatua	1,792	1,795	1,802	1,811	1,500	2012	Filter
Mangatainoka	458	518	576	650	1,510	-	-
Dannevirke	368	405	405	405	1,450	-	-
Takapau	751	652	652	652	1,510	-	-
Mangaroa	143	146	146	146	180	-	-
Hastings 1	11,533	11,579	11,672	11,789	10,830	2015	Heater and Meter
Hastings (Nova)	977	981	988	998	10,830	-	-

- Flows are in standard cubic metres per hour (scmh)

Table 13: South System Delivery Point Analysis

Also indicated in Table 13 are the components (if any) that limit gate station capacity, anticipated to lead to a design breach within the planning period. These are discussed in more detail in Table 14 below.

Delivery Point	Commentary
Matapu	The station can meet the maximum predicted flow to FY24 and will not require upgrade.
Okaiawa	This DP supplies a single consumer. Although pipework capacity is theoretically exceeded, actual operating data suggests that pipework performance is adequate at current flow rates. No upgrade is scheduled.
Manaia	The station can meet the maximum predicted flow to FY24 and will not require upgrade.
Hawera (Dairy) & Hawera (Nova)	The major dairy load supplied from this DP does not coincide with the peak of the non-dairy load, so the bath heater does not need to meet a combined peak. The current water bath heater, installed in FY10 is forecast to be sufficient until FY24.
Patea	Although heater capacity is theoretically exceeded, actual operating data suggests that heater performance is adequate at current flow rates. Upgrade has been deferred until FY15. An allowance of $200k is made for the work in the 10-year capex forecast.
Waverley	The station can meet the maximum predicted flow to FY24 and will not require upgrade.
Waitotara	Although heater capacity is theoretically exceeded, actual operating data suggests that heater performance is adequate at current flow rates. Upgrade has been deferred until FY16. An allowance of $200k is made for the work in the 10-year capex forecast.
Wanganui	The pipework velocity at this station already exceeds design levels and the water bath heater will reach its design limit by FY16. It is recommended to replace pipework and heater during FY17. An allowance of $700k is made for replacement in the 10-year capex forecast.
Kaitoke	The station can meet the maximum predicted flow to FY24 and will not require upgrade.
Lake Alice	Although heater capacity is theoretically exceeded, actual operating data determines that an upgrade can be deferred until FY16. An allowance of $200k has been made for the work in the 10-year capex forecast.
Kakariki	Although the station flow exceeded the meter capacity in FY11, the last two years station flows have significantly reduced to a level where the meter is adequate. It is proposed to monitor station demands over the coming years rather than upgrade the meter.
Marton	The station can meet the maximum predicted flow to FY24 and will not require upgrade.
Flockhouse	The station can meet the maximum predicted flow to FY24 and will not require upgrade. It is possible that this station will be decommissioned due to very low demand.
Foxton	The station can meet the maximum predicted flow to FY24 and will not require upgrade.
Levin	The station meter will exceed its design condition by FY13. However, significant growth is not anticipated and the flow rate for the meter is only marginally high. Hence, the station will be monitored over the coming years prior to a decision on meter upgrade.
Kuku	The station can meet the maximum predicted flow to FY24 and will not require upgrade.
Otaki	The station can meet the maximum predicted flow to FY24 and will not require upgrade.
Te Horo	The station can meet the maximum predicted flow to FY24 and will not require upgrade.
Waikanae	Although heater capacity is theoretically exceeded, actual operating data suggests that heater performance is adequate at current flow rates. Upgrade has been deferred until FY16. An allowance of $200k is made for the work in the 10-year capex forecast.
Paraparaumu	Although pipework capacity is theoretically exceeded, actual operating data suggests that pipework performance is adequate at current flow rates. Upgrade has been deferred until FY17. An allowance of $50k is made for the work in the 10-year capex forecast.
Paekakariki	The station can meet the maximum predicted flow to FY24 and will not require upgrade.
Pauatahanui No.2	The station can meet the maximum predicted flow to FY24 and will not require upgrade.
Pauatahanui	This station was upgraded in FY13.
Waitangirua 1 DP (For Tawa A and B)	The station can meet the maximum predicted flow to FY24 and will not require upgrade.
Waitangirua 3 DP (Porirua)	The station can meet the maximum predicted flow to FY24 and will not require upgrade.
Belmont	The station can meet the maximum predicted flow to FY24 and will not require upgrade.
Tawa B	The station can meet the maximum predicted flow to FY24 and will not require upgrade.
Oroua Downs	This station was upgraded with a new heater in FY13 and can now meet the maximum predicted flow to FY24 and will not require further upgrade.

Kairanga	The major gas user at Kairanga has ceased using gas as a process load and the remaining demand comprises only minor residential load. The existing equipment can meet this load. Hence, no investment is planned.
Palmerston North	Although filter capacity is theoretically exceeded, it is planned to investigate the filter performance before consideration of upgrade. Growth at this location is currently flat.
Longburn	The station can meet the maximum predicted flow to FY24 and will not require upgrade.
Fielding	The station can meet the maximum predicted flow to FY24 and will not require upgrade.
Ashhurst	A new electric heater was installed at this site in FY11. The station can now meet the maximum predicted flow to FY24 and will not require further upgrade.
Pahiatua	The station filter capacity has been exceeded and an allowance of $100k is made in FY16 for upgrade. The dairy factory has indicated the potential for a significant load increase at this gate station during FY15 and the filter upgrade is planned to occur at the same time. A dairy upgrade allowance of $1.2M has been made in FY15.
Mangatainoka	The station can meet the maximum predicted flow to FY24 and will not require upgrade.
Dannevirke	The station can meet the maximum predicted flow to FY24 and will not require upgrade.
Takapau	The station can meet the maximum predicted flow to FY24 and will not require upgrade.
Mangaroa	The station can meet the maximum predicted flow to FY24 and will not require upgrade
Hastings 1 and Hastings (Nova)	The water bath heater is at the limit of its design capacity. It is recommended to monitor the outlet temperature over the coming years to assess if an upgrade is necessary. The regulators were replaced in FY12. The meters have exceeded their design capacity and will be replaced in FY15.

Table 14: South System Delivery Point Commentary

Pipeline Capacity Assessment

Delivery Point	Aggregate Contractual Capacity (GJ/day)	Uncommitted Operational Capacity (GJ/day)		
		FY14	FY19	FY24
Ashhurst	134	7,122	6,122	5,123
Belmont	6,778	6,013	4,976	3,938
Dannevirke	341	7,936	6,746	5,557
Feilding	960	3,778	3,591	3,403
Foxton	146	6,120	5,237	4,355
Hastings	10,024	2,009	1,019	30
Hawera	1,495	4,311	3,615	2,918
Kaitoki	100	3,996	3,967	3,939
Kakariki	356	6,145	5,508	4,870
Lake Alice	151	3,396	3,383	3,370
Levin	1,317	5,172	5,038	4,903
Longburn	779	6,312	6,071	5,830
Manaia	98	3,889	3,881	3,873
Mangaroa	104	8,176	6,997	5,818
Mangatainoka	115	885	798	710
Marton	1,051	4,647	3,856	3,065
Okaiawa	1,680	210	206	202
Otaki	118	6,373	5,434	4,496
Pahiatua	430	3,021	928	882
Palmerston North	5,007	2,881	2,604	2,326
Paraparaumu	642	5,872	5,048	4,223
Patea	122	5,615	4,864	4,113
Takapau	600	6,777	5,798	4,818

Tawa	12,545	No Spare Capacity	No Spare Capacity	No Spare Capacity[2]
Waikanae	220	5,785	4,942	4,099
Greater Waitangirua	1,917	5,654	4,770	3,885
Waitotara	135	5,965	5,341	4,716
Whanganui	3,821	4,352	3,595	2,838
Waverley	154	3,301	3,282	3,263

- The peak week identified in FY14 for this system was week commencing 08 July 2013

Table 15: South System Pipeline Capacity Assessment

The issue of lack of spare capacity at Tawa is addressed in section 6.3.4 of the 2013 AMP[2].

The issue of lack of spare capacity at Hastings by FY24 will be further monitored over the next period before making an investment decision.

2.6 Frankley Road to Kapuni System

Delivery Point Analysis

Delivery Point Name	Actual Max Flow (2013)	Predicted Max Flow (2015)	Predicted Max Flow (2019)	Predicted Max Flow (2024)	Station Max Flow Capacity	Year of breach of design capacity	Comments
Stratford Power Station	49,591	52,083	52,083	52,083	62,500	-	-
Stratford Storage	33,188	55,360	55,360	55,360	177,083	-	-
Taranaki Combined Cycle (TCC) Power Station	69,639	69,640	69,640	69,640	110,530	-	-
Ammonia Urea Plant	22,082	23,180	23,180	23,180	20,000	2012	Heater
Kapuni	196	271	271	271	980	-	-

- Flows are in standard cubic metres per hour (scmh)

Table 16: Frankley Road to Kapuni System Delivery Point Analysis

Also indicated in Table 16 are the components (if any) that limit gate station capacity anticipated to lead to a design breach within the planning period. These are discussed in more detail in Table 17 below.

Delivery Point	Commentary
Stratford Power Station	There are no regulators or heaters for this delivery point and the supply is directly from the transmission system. The delivery point was sized for the power station and it is not anticipated it will need upgrading during the planning period to FY24.
Stratford Storage	This station was commissioned as a bi-directional DP in FY14. There are no regulators or heaters and the station is connected directly to the transmission system. The new station's capacity is expected to be sufficient during the planning period to 2024.
Taranaki Combined Cycle (TCC) Power Station	This gate station was sized for the power station demand and is not expected to need upgrading during the planning period to FY24.
Ammonia Urea DP	Although the heater capacity (together with the regulators) are operating near their limits, demand is not forecast to increase. Therefore equipment performance will continue to be monitored before any upgrade is considered.

[2] Coating failure and Cathodic protection performance issue in T1 area. The pipeline is critical for maintaining supply to Wellington and is currently unpiggable. A piggability study is due for completion in FY14 and improvement modifications are planned for FY15 and FY16.

Kapuni (Lactose) DP	The station can meet the maximum predicted flow to FY24 and will not require upgrade.

Table 17: Frankley Road to Kapuni System Delivery Point Commentary

Pipeline Capacity Assessment

Delivery Point	Aggregate Contractual Capacity (GJ/day)	Uncommitted Operational Capacity (GJ/day)		
		FY14	FY19	FY24
Ammonia Urea Plant (AUP)	22,500	13,998	13,998	13,998
Kapuni (Lactose)	173	12,752	12,752	12,752
TCC Power Station + Stratford Power Station + Stratford Storage	170,000	55,228	55,228	55,228

- The peak week identified in FY14 for this system was week commencing 17 February 2014

Table 18: Frankley Road to Kapuni Pipeline Capacity Assessment

2.7 Other Systems

Delivery Point Analysis

Delivery Point Name	Actual Max Flow (2013)	Predicted Max Flow (2015)	Predicted Max Flow (2019)	Predicted Max Flow (2024)	Station Max Flow Capacity	Year of breach of design capacity	Comments
Huntly	491	547	547	547	730	-	-
Ngaruawahia	67	82	91	103	130	-	-
Pirongia	27	32	35	39	50	-	-
Te Awamutu North (Town)	439	631	631	631	860	-	-
Otorohanga	152	174	174	174	220	-	-
Te Kuiti North	317	368	368	368	450	-	-
Te Kuiti South	968	910	910	910	1,050	-	-
Oakura	114	87	87	87	50	2014	No Heater
Okato	54	76	76	76	190	-	-
Pungarehu No.2	1	2	2	2	50	-	-
Pungarehu No.1	0	3	3	3	50	-	-
Opunake	87	101	101	101	650	-	-

- Flows are in standard cubic metres per hour (scmh)

Table 19: Other Systems Delivery Point Analysis

Also indicated in Table 19 are the components (if any) that limit gate station capacity anticipated to lead to a design breach within the planning period. These are discussed in more detail in Table 20 below.

Delivery Point	Commentary

Huntly	The station can meet the maximum predicted flow to FY24 and will not require upgrade.
Ngaruawahia	The station can meet the maximum predicted flow to FY24 and will not require upgrade.
Pirongia	There is no water bath heater at this station. The station can meet the maximum predicted flow to FY24 and will not require upgrade.
Te Awamutu North (Town)	The station can meet the maximum predicted flow to FY24 and will not require upgrade.
Otorohanga	The station can meet the maximum predicted flow to FY24 and will not require upgrade.
Te Kuiti North	The station can meet the maximum predicted flow to FY24 and will not require upgrade.
Te Kuiti South	There is no water bath heater at this station. The station can meet the maximum predicted flow to FY24 and will not require upgrade.
Oakura	An assessment of this station was undertaken and it is recommended to install a new heater in FY16. An allowance of $200k is made for the work in the 10-year Capex forecast.
Okato	The station can meet the maximum predicted flow to FY24 and will not require upgrade.
Pungarehu No.2	The station can meet the maximum predicted flow to FY24 and will not require upgrade.
Pungarehu No.1	The station can meet the maximum predicted flow to FY24 and will not require upgrade. There is no water bath heater at this station, but given the limited load, no installation is recommended.
Opunake	The station can meet the maximum predicted flow to FY24 and will not require upgrade.

Table 20: Other Systems Delivery Point Commentary

2.8 Summary of Significant Changes to Capacity Assessment

The significant change in the capacity assessment from the 2013 AMP 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 is reflected in the North System FY24 predicted delivery point maximum flow in Table 1, delivery point commentary in Table 2 and the pipeline capacity assessment in Table 3.

2.9 Asset Relocations

Waikanae Expressway (also known as M2PP)

NZTA are planning to construct a new highway through Waikanae with a new road bridge. The new alignment affects the existing pipelines and delivery point in Waikanae. It is planned to realign the pipelines and relocate the delivery point. Construction was originally scheduled in FY14 but the project timing has changed and construction is now scheduled to commence during FY15. The cost of this work will be fully recovered from NZTA by way of capital contribution.

Transmission Gully (Wellington New Expressway)

NZTA have requested Vector to evaluate up to 30 separate locations where the proposed new road route will cross existing pipelines. The number of locations where the pipelines will need to be relocated is not yet known. Construction was originally anticipated over FY16 – FY23 but the project timing has changed and construction is now anticipated over FY15 – FY17. The cost of this work will be fully recovered from NZTA by way of capital contribution.

Soldiers Road, Pyes Pa

NZTA have commissioned Vector to undertake concept design for relocation of 700m of pipeline. The NZTA programme for the work has been deferred and construction is anticipated in FY16. The cost of this work will be fully recovered from NZTA by way of capital contribution.

2.10 System Growth

All system growth forecasts including known large new or increased demands to be supplied from existing delivery points for FY15 period are included in sections 2.1 to 2.7 above.

2.11 Consumer Connections

No new consumer connections for FY15 have been identified resulting in FY15 consumer connections expenditure forecast reducing to zero. Due to the potential number of new consumer connections proposed and considered each year, and based on the historical expenditure trend for new connections, a forecast of $1.0m per annum has been made for FY16 - FY24 to support new connections which are outside the normal demand growth trends identified.

In addition to the above information concerning new customer connections, there is the potential for gas producers to request interconnections to the gas transmission system. If an interconnection contract is signed with Vector, then a new welded connection will be constructed, where Vector will own some or all of the assets. The expenditure forecast of $1.0m per annum for FY16 – FY24 for customer connections also makes allowance for any required new welded points.

3. UPDATE ON ASSET MAINTENANCE, RENEWAL AND REPLACEMENT

This section discusses aspects that have led to material changes to Vector's asset maintenance, renewal and replacement practices previously described in section 6 of the 2013 AMP.

3.1 Flexflo Regulator Obsolescence

Since publication of the 2013 AMP, Vector has received notification from the manufacturer that Flexflo Model 80 Regulators sizes 1" – 3" are now obsolete and that replacement parts will only be available to the end of 2014. Vector has 41 delivery points where this type of regulator is in service. Vector is investigating if suitable replacements parts can be sourced from non-OEM manufacturers but this is considered unlikely. A reserve inventory of OEM replacement parts will be procured and the existing regulator replacement programme will be adjusted to accommodate replacement of the obsolete regulators within the exiting expenditure forecast for asset replacement and renewal.

3.2 Bruce McLaren Delivery Point

Section 6.5.1 of the 2013 AMP identified that due to urban encroachment around the Bruce McLaren delivery point, safety margins provided by distance from the station have been reduced sufficiently such that modifications are required for risk reduction. A number of alternative solutions have been considered including to relocate, modify or remove the delivery point completely. The 2013 AMP made provision for a solution involving the installation of a new gas distribution pipeline to allow the complete removal of the delivery point. Further investigation of the issues associated with the hazardous area compliance for the delivery point have confirmed that modification of the existing installation is likely to be feasible and more economical to achieve than the installation of a new gas

distribution pipeline and removal of the delivery point. The cost of the modification work will be accommodated in the capex forecast for asset replacement and renewal.

3.3 Whitecliffs Pipeline Relocation

Expenditure related to the potential Whitecliffs relocation has not been included in this update as, based on the most recent technical assessments, the Whitecliffs relocation is outside the plan period.

4. UPDATE ON LEGISLATIVE REQUIREMENTS

There have been no legislative changes since the publication of the 2013 AMP that have had material impact on the information presented.

Changes to Health and Safety legislation are, however, currently in progress. These are anticipated to become law in FY15 and are likely to have an impact on operational expenditure. There are two key aspects of the law that are changing. Firstly, the Health and Safety in Employment Act 1992 is being replaced and, secondly, new regulations are being developed relating to the management of major hazard facilities (MHF).

Vector has robust health and safety systems in place via the corporate HSE Management System and the Pipeline Management System supporting AS2885.3 – 2012 under the Health and Safety in Employment (Pipelines) Regulations 1999. The impact of the new legislation is not, therefore, expected to be as significant as it could be. Nevertheless, there will be a requirement for amendments to Vector safety systems due to changed recording and reporting regimes under the new Act and the likely requirement for a new Safety Case under the MHF regulations.

A one off increase in compliance costs is therefore likely in order to undertake the changes, but the extent is unknown until the legislation is in force. There may also be a fee for WorkSafe Safety Case review which, based on current regulations may be of the order of $75,000 - $100,000. No change has been made to the expenditure forecast in this AMP update to accommodate these requirements. When more details of the timing and implications of these changes are known future expenditure forecasts will be amended accordingly.

5. UPDATE ON ASSET MANAGEMENT PRACTICE

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. 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.

6. PROJECT PROGRAMME UPDATE

This section presents the updated list of projects and programmes on the Vector gas transmission pipeline capital works programme over the 10-year planning period. These

changes reflect the updated planning as influenced by system development planning (see section 2) and asset maintenance, renewal and replacement (see section 3). The following table shows the target completion dates of these projects and programmes, the previous target completion dates and the reasons for any changes proposed.

2013 AMP Section	2013 AMP Forecast	Project Description	AMP Update Forecast	Reason For Change
5.6	FY14	Harrisville (bath heater, meter)	FY15	Now forecast for FY15 due to project delays and change in scope
5.6	n/a	Tuakau (station upgrade)	FY15	Large increase in consumer demand identified
5.6	FY16	Warkworth No2 (Regulator)	FY16	No change
5.7	FY18	Temple View (meters)	removed	Not now required
5.7	n/a	Horotiu (station upgrade)	FY15	Large increase in consumer demand identified
5.7	n/a	Tatuanui (station upgrade)	FY15	Large increase in consumer demand identified
5.9	FY14	Whakatane (filter)	FY14	completed
5.9	FY14	Rotorua (regulator)	FY14	completed
5.10	FY15	Patea (heater)	FY15	No change
5.10	FY16	Waitotara (heater)	FY16	No change
5.10	FY17	Wanganui (pipework and heater)	FY17	No change
5.10	FY16	Lake Alice (heater)	FY16	No change
5.10	FY16	Pahiatua (filter)	FY16	No change
5.10	n/a	Pahiatua (station upgrade)	FY15	Large increase in consumer demand identified
5.10	FY16	Waikanae (heater)	FY16	No change
5.10	FY17	Paraparaumu (pipework)	FY17	No change
5.10	n/a	Hastings (meters)	FY15	Meters will exceed design capacity
5.11	FY16	Oakura (heater)	FY16	No change
5.12	FY14-FY15	Waikanae Expressway	FY15	Deferred from FY14 due to NZTA project timing change.
5.12	FY14-FY23	Transmission Gully	FY15-FY17	Now forecast FY15 - FY17 due to NZTA project timing change.
5.12	FY14-FY23	Other NZTA	FY14-FY23	No change
5.13	FY14-FY23	Assumed Growth	FY16-FY24	General provision for FY15 removed as specific consumer connection projects have now been identified for FY15. General provision will apply for FY16-FY24.

Table 21: System Development Planning Projects and programmes

2013 AMP Section	2013 AMP Forecast	Project or Programme Description	AMP Update	Reason For Change
6.3.2	FY14-FY23	Pipeline signage upgrades	FY15-FY24	Ongoing programme continues into FY24
6.3.4	FY14-FY23	Pipeline - integrity	FY15-FY24	Ongoing programme continues into FY24

2013 AMP Section	2013 AMP Forecast	Project or Programme Description	AMP Update	Reason For Change
6.3.6	FY14-FY23	Special crossings	FY15-FY24	Ongoing programme continues into FY24
6.3.7	FY14-FY23	Rectifier replacement	FY15-FY24	Ongoing programme continues into FY24
6.3.7	FY14-FY23	New rectifier units	FY15-FY24	Ongoing programme continues into FY24
6.4.2.1	FY14-FY23	Gas turbines	FY15-FY24	Ongoing programme continues into FY24
6.4.2.2	FY14-FY23	Centrifugal compressor	FY15-FY24	Ongoing programme continues into FY24
6.4.2.3	FY14-FY23	Reciprocating engine controls	FY14-FY23	No change – programme complete by FY23
6.4.2.3	FY14-FY23	Reciprocating engine other	FY14-FY23	Ongoing programme continues into FY24
6.4.2.5	FY14-FY23	Gas coolers	FY14-FY23	Ongoing programme continues into FY24
6.4.2.6	FY14-FY23	Compressor fire and gas systems	FY14-FY23	Ongoing programme continues into FY24
6.4.2.7	FY14-FY23	Compressor oil storage	FY14-FY23	Ongoing programme continues into FY24
6.5.1	FY14-FY23	Stations	FY14-FY23	Ongoing programme continues into FY24
6.5.2	FY14-FY23	MLVs	FY14-FY23	Ongoing programme continues into FY24
6.5.3	FY14-FY23	Heating Systems	FY14-FY23	Ongoing programme continues into FY24
6.5.4	FY14-FY23	Odorisation Plants	FY14-FY23	Ongoing programme continues into FY24
6.5.6	FY14-FY23	Metering Systems	FY14-FY23	Ongoing programme continues into FY24
6.5.7	FY14-FY23	SCADA and Communications	FY14-FY23	Ongoing programme continues into FY24
6.5.8	FY14-FY23	Gas Chromatographs	FY14-FY23	Ongoing programme continues into FY24
6.5.9	FY14-FY23	PIG Launchers and Receivers	FY14-FY23	Ongoing programme continues into FY24
6.5.10	FY14-FY23	Pressure Regulators	FY14-FY23	Ongoing programme continues into FY24
6.5.11	FY14-FY23	Pressure Safety Valves	FY14-FY23	Ongoing programme continues into FY24
6.5.13	FY14-FY23	Isolation Valves	FY14-FY23	Ongoing programme continues into FY24
6.5.14	FY14-FY23	Filters	FY14-FY23	Ongoing programme continues into FY24
6.5.16	FY14-FY23	Station Ancillaries	FY14-FY23	Ongoing programme continues into FY24
6.6	FY14-FY23	Critical Spares & Equipment	FY14-FY23	Ongoing programme continues into FY24
6.7	FY14-FY23	Plant and Equipment	FY14-FY23	Ongoing programme continues into FY24
6.7	FY14-FY23	Measurement Laboratory	FY14-FY23	Ongoing programme continues into FY24

Table 22: Asset Maintenance, Renewal and Replacement Projects and Programmes

7. CAPITAL AND OPERATIONAL EXPENDITURE FORECAST UPDATE

This section describes the capex and direct opex forecasts for the gas transmission pipeline assets for the next 10 year period (FY14-FY24), and provides a comparison with the previous 10 year forecast prepared and disclosed in Section 9 of the 2013 AMP (disclosed in September 2013). These forecasts are applicable to the development, maintenance, renewal, replacement and management of gas transmission pipeline assets.

All values are presented in 2015 constant price dollars. For reference and comparison the values in the 2013 AMP have been escalated to 2015 constant price dollars. The year references indicate the end of the Vector financial year and all figures are in $000.

7.1 Capital Expenditure

Capital Expenditure	FY15	FY16	FY17	FY18	FY19	FY20	FY21	FY22	FY23
Consumer connection	1,027	1,027	1,027	1,027	1,027	1,027	1,027	1,027	1,027
System growth	205	1,130	770	411	0	0	0	0	0
Replacement and renewal	8,492	10,797	10,905	7,101	10,854	9,314	7,640	7,948	6,983
Asset relocations	3,183	2,567	2,567	2,567	2,567	2,567	2,567	2,567	2,567
Expenditure on network assets	**12,908**	**15,521**	**15,269**	**11,105**	**14,448**	**12,908**	**11,234**	**11,542**	**10,577**
Non-network assets[3]	3,446	3,205	2,989	2,444	2,844	3,281	2,516	2,356	2,356
Expenditure on assets	**16,353**	**18,726**	**18,258**	**13,550**	**17,292**	**16,189**	**13,750**	**13,898**	**12,933**

Table 23 : 2013 AMP capex forecast

Capital Expenditure	FY15	FY16	FY17	FY18	FY19	FY20	FY21	FY22	FY23	FY24
Consumer connection	0	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000
System growth	3,600	1,150	750	0	0	0	0	0	0	0
Replacement and renewal	8,430	10,515	10,620	6,915	10,570	9,070	7,440	7,740	6,800	6,190
Asset relocations	10,450	8,268	3,500	1,000	1,000	1,000	1,000	1,000	1,000	1,000
Expenditure on network assets	**22,480**	**20,933**	**15,870**	**8,915**	**12,570**	**11,070**	**9,440**	**9,740**	**8,800**	**8,190**
Non-network assets	1,842	2,296	1,240	1,229	1,759	2,560	1,182	1,147	1,328	1,205
Expenditure on assets	**24,322**	**23,229**	**17,110**	**10,144**	**14,329**	**13,630**	**10,622**	**10,887**	**10,128**	**9,395**

Table 24 : AMP update capex forecast

Capital Expenditure	FY15	FY16	FY17	FY18	FY19	FY20	FY21	FY22	FY23	Total
Consumer connection	-1,027	-27	-27	-27	-27	-27	-27	-27	-27	**-1,242**
System growth	3,395	20	-20	-411	0	0	0	0	0	**2,984**
Replacement and renewal	-62	-282	-285	-186	-284	-244	-200	-208	-183	**-1,933**
Asset relocations	7,267	5,701	933	-1,567	-1,567	-1,567	-1,567	-1,567	-1,567	**4,498**
Expenditure on network assets	**9,572**	**5,413**	**601**	**-2,190**	**-1,878**	**-1,838**	**-1,794**	**-1,802**	**-1,777**	**4,308**
Non-network assets	-1,603	-909	-1,749	-1,216	-1,085	-722	-1,335	-1,209	-1,028	**-10,856**
Expenditure on assets	**7,969**	**4,503**	**-1,148**	**-3,406**	**-2,963**	**-2,559**	**-3,128**	**-3,011**	**-2,805**	**-6,548**

Table 25 : Variances between 2013 AMP and AMP update capex forecasts

[3] Figures adjusted to include corporate shared services component

7.2 Operational Expenditure

Opex	FY15	FY16	FY17	FY18	FY19	FY20	FY21	FY22	FY23
Service interruptions and emergencies	946	899	899	899	993	1,040	993	899	923
Routine & corrective maint & inspection	8,967	8,521	8,521	8,521	9,413	9,859	9,413	8,521	8,744
Replace & renewal	-	-	-	-	-	-	-	-	-
Network opex	**9,913**	**9,421**	**9,421**	**9,421**	**10,406**	**10,899**	**10,406**	**9,421**	**9,667**
System operations	1,160	1,125	1,125	1,125	1,194	1,229	1,194	1,125	1,142
Network support	12,565	12,535	12,535	12,535	12,596	12,626	12,596	12,535	12,550
Business support	9,580	9,571	9,571	9,571	9,588	9,596	9,588	9,571	9,576
Compressor fuel	4,098	4,098	4,098	4,098	4,098	4,098	4,098	4,098	4,098
Land management and associated activity	717	680	680	680	752	788	752	680	699
Non network opex	**28,120**	**28,010**	**28,010**	**28,010**	**28,228**	**28,336**	**28,228**	**28,010**	**28,064**
Total opex	**38,033**	**37,431**	**37,431**	**37,431**	**38,634**	**39,236**	**38,634**	**37,431**	**37,731**

Table 26 : 2013 AMP opex forecast

Opex	FY15	FY16	FY17	FY18	FY19	FY20	FY21	FY22	FY23	FY24
Service interruptions and emergencies	679	703	703	703	703	703	703	703	703	703
Routine & corrective maint & inspection	10,880	10,819	10,819	10,819	12,023	12,624	12,023	10,819	11,120	11,624
Replace & renewal	-	-	-	-	-	-	-	-	-	-
Network opex	**11,559**	**11,522**	**11,522**	**11,522**	**12,726**	**13,328**	**12,726**	**11,522**	**11,823**	**12,327**
System operations	757	632	632	632	632	632	632	632	632	632
Network support	6,226	5,951	5,951	5,951	5,951	5,951	5,951	5,951	5,951	5,951
Business support	8,035	8,035	8,035	8,035	8,035	8,035	8,035	8,035	8,035	8,035
Compressor fuel	3,926	4,601	4,601	4,601	4,601	4,601	4,601	4,601	4,601	4,601
Land management and associated activity	91	144	144	144	144	144	144	144	144	144
Non network opex	**19,036**	**19,364**	**19,364**	**19,364**	**19,364**	**19,364**	**19,364**	**19,364**	**19,364**	**19,364**
Total Opex	**30,595**	**30,887**	**30,887**	**30,887**	**32,090**	**32,692**	**32,090**	**30,887**	**31,188**	**31,691**

Table 27 : AMP update opex forecast

Opex	FY15	FY16	FY17	FY18	FY19	FY20	FY21	FY22	FY23	Total
Service interruptions and emergencies	-267	-196	-196	-196	-289	-337	-289	-196	-219	**-2,186**
Routine & corrective maint & inspection	1,913	2,298	2,298	2,298	2,609	2,765	2,609	2,298	2,376	**21,464**
Replace & renewal	0	0	0	0	0	0	0	0	0	**0**
Network opex	**1,646**	**2,102**	**2,102**	**2,102**	**2,320**	**2,428**	**2,320**	**2,102**	**2,156**	**19,278**
System operations	-403	-493	-493	-493	-562	-597	-562	-493	-510	**-4,605**
Network support	-6,339	-6,584	-6,584	-6,584	-6,645	-6,675	-6,645	-6,584	-6,599	**-59,241**
Business support	-1,544	-1,536	-1,536	-1,536	-1,553	-1,560	-1,553	-1,536	-1,540	**-13,894**
Compressor fuel	-172	503	503	503	503	503	503	503	503	**3,855**
Land management & associated activity	-625	-536	-536	-536	-607	-643	-607	-536	-554	**-5,181**
Non network opex	**-9,084**	**-8,646**	**-8,646**	**-8,646**	**-8,864**	**-8,972**	**-8,864**	**-8,646**	**-8,700**	**-79,067**
Total Opex	**-7,438**	**-6,544**	**-6,544**	**-6,544**	**-6,544**	**-6,544**	**-6,544**	**-6,544**	**-6,544**	**-59,789**

Table 28: Variance between 2013 AMP and AMP update opex forecasts

7.3 Explanation of Significant Changes

This section highlights the significant changes between the 2013 disclosed expenditure forecasts and AMP update expenditure forecasts for 9-year period FY15–FY23.

7.3.1 Capital Expenditure

- $1.242m decrease in consumer connection for FY15 as no new consumer connections identified. Forecast of $1.0m for FY16–FY24 based on historical trend for yet unidentified new consumer connections.

- $2.984m increase in the system growth category for FY15 due to specific requirements for large consumer demand growth being identified which will be supplied from existing delivery points.

- $1.993m decrease in the asset replacement and renewal category due to project portfolio contingency reduction.

- $4.498m increase in the asset relocation category due to deferment of FY14 expenditure associated with NZTA roading projects.

- $10.856m decrease in the non-network assets category due to a reduction in the allocation of corporate IT and reduced IT expenditure directly attributable to gas transmission following a review of IT capex requirements.

7.3.2 Operational Expenditure

- The net change in total opex over the 9-year period FY15-FY23 is a reduction of $59.8. This is due to improved recovery of rechargeable activity, reduced share of intercompany allocated costs, an erroneous inclusion of unaccounted for gas in the prior disclosure, reduced insurance premiums and lower consultancy costs.

Gas Transmission

Asset Management Plan Update

Information Disclosure 2014

Appendix 1 – Schedule 11a Report on Forecast Capital Expenditure

												Company Name	Vector
												AMP Planning Period	1 July 2014 – 30 June 2024

SCHEDULE 11a: REPORT ON FORECAST CAPITAL EXPENDITURE

This schedule requires a breakdown of forecast expenditure on assets for the current disclosure year and a 10 year planning period. The forecasts should be consistent with the supporting information set out in the AMP. The forecast is to be expressed in both constant price and nominal dollar terms. Also required is a forecast of the value of commissioned assets (i.e., the value of RAB additions)

GTBs must provide explanatory comment on the difference between constant price and nominal dollar forecasts of expenditure on assets in Schedule 14a (Mandatory Explanatory Notes).

This information is not part of audited disclosure information.

sch ref													
7				Current Year CY	CY+1	CY+2	CY+3	CY+4	CY+5	CY+6	CY+7	CY+8	CY+9	CY+10
8			for year ended	30 Jun 14	30 Jun 15	30 Jun 16	30 Jun 17	30 Jun 18	30 Jun 19	30 Jun 20	30 Jun 21	30 Jun 22	30 Jun 23	30 Jun 24
9	**11a(i): Expenditure on Assets Forecast**			**$000 (nominal dollars)**										
10		Consumer connection		1,519	-	999	1,030	1,056	1,082	1,141	1,170	1,199	1,229	1,259
11		System growth		2,131	3,500	1,149	773	-	-	-	-	-	-	-
12		Asset replacement and renewal		8,070	8,219	10,538	10,970	7,322	11,471	10,349	8,701	9,278	8,355	7,796
13		Asset relocations		2,797	10,103	8,217	3,585	1,050	1,076	1,141	1,170	1,199	1,229	1,259
14		Reliability, safety and environment:												
15		Quality of supply		-	-	-	-	-	-	-	-	-	-	-
16		Legislative and regulatory		-	-	-	-	-	-	-	-	-	-	-
17		Other Reliability, Safety and Environment		-	-	-	-	-	-	-	-	-	-	-
18		**Total reliability, safety and environment**		-	-	-	-	-	-	-	-	-	-	-
19		**Expenditure on network assets**		14,517	21,822	20,903	16,358	9,428	13,629	12,631	11,041	11,676	10,813	10,314
20		Non-network assets		1,447	1,828	2,341	1,304	1,324	1,943	2,921	1,382	1,375	1,632	1,518
21		**Expenditure on assets**		15,964	23,650	23,244	17,662	10,752	15,572	15,552	12,423	13,051	12,445	11,832
22														
23	*plus*	Cost of financing		420	673	634	467	265	378	361	308	325	305	292
24	*less*	Value of capital contributions		2,602	10,125	8,500	3,708	1,086	1,113	1,172	1,201	1,231	1,262	1,293
25	*plus*	Value of vested assets		-	-	-	-	-	-	-	-	-	-	-
26		**Capital expenditure forecast**		13,782	14,198	15,378	14,421	9,931	14,837	14,741	11,530	12,145	11,488	10,831
27														
28		Value of Commissioned assets		10,119	13,331	19,874	14,807	10,197	15,236	14,797	11,555	12,170	11,517	10,857
29														
30				Current Year CY	CY+1	CY+2	CY+3	CY+4	CY+5	CY+6	CY+7	CY+8	CY+9	CY+10
31			for year ended	30 Jun 14	30 Jun 15	30 Jun 16	30 Jun 17	30 Jun 18	30 Jun 19	30 Jun 20	30 Jun 21	30 Jun 22	30 Jun 23	30 Jun 24
32				**$000 (in constant prices)**										
33		Consumer connection		1,519	-	947	947	947	947	974	974	974	974	974
34		System growth		2,131	3,408	1,089	710	-	-	-	-	-	-	-
35		Asset replacement and renewal		8,071	8,006	9,983	10,085	6,566	10,037	8,833	7,245	7,538	6,622	6,028
36		Asset relocations		2,798	9,839	7,784	3,295	941	941	974	974	974	974	974
37		Reliability, safety and environment:												
38		Quality of supply		-	-	-	-	-	-	-	-	-	-	-
39		Legislative and regulatory		-	-	-	-	-	-	-	-	-	-	-
40		Other Reliability, Safety and Environment		-	-	-	-	-	-	-	-	-	-	-
41		**Total reliability, safety and environment**		-	-	-	-	-	-	-	-	-	-	-
42		**Expenditure on network assets**		14,519	21,253	19,803	15,037	8,454	11,925	10,781	9,193	9,486	8,570	7,976
43		Non-network assets		1,446	1,780	2,218	1,199	1,187	1,700	2,493	1,151	1,117	1,293	1,174
44		**Expenditure on assets**		15,965	23,033	22,021	16,236	9,641	13,625	13,274	10,344	10,603	9,863	9,150
45	**Subcomponents of expenditure on assets (where known)**													
46		Research and development		-	-	-	-	-	-	-	-	-	-	-

		Current Year CY	CY+1	CY+2	CY+3	CY+4	CY+5	CY+6	CY+7	CY+8	CY+9	CY+10
for year ended		30 Jun 14	30 Jun 15	30 Jun 16	30 Jun 17	30 Jun 18	30 Jun 19	30 Jun 20	30 Jun 21	30 Jun 22	30 Jun 23	30 Jun 24
Difference between nominal and constant price forecasts		$000										
Consumer connection		-	-	52	83	109	135	167	196	225	255	285
System growth		-	92	60	63	-	-	-	-	-	-	-
Asset replacement and renewal		(1)	213	555	885	756	1,434	1,516	1,456	1,740	1,733	1,768
Asset relocations		(1)	264	433	290	109	135	167	196	225	255	285
Reliability, safety and environment:												
Quality of supply		-	-	-	-	-	-	-	-	-	-	-
Legislative and regulatory		-	-	-	-	-	-	-	-	-	-	-
Other Reliability, Safety and Environment		-	-	-	-	-	-	-	-	-	-	-
Total reliability, safety and environment		-	-	-	-	-	-	-	-	-	-	-
Expenditure on network assets		(2)	569	1,100	1,321	974	1,704	1,850	1,848	2,190	2,243	2,338
Non-network assets		1	48	123	105	137	243	428	231	258	339	344
Expenditure on assets		(1)	617	1,223	1,426	1,111	1,947	2,278	2,079	2,448	2,582	2,682

	Current Year CY	CY+1	CY+2	CY+3	CY+4	CY+5
for year ended	30 Jun 14	30 Jun 15	30 Jun 16	30 Jun 17	30 Jun 18	30 Jun 19
11a(ii): Consumer Connection						
*Consumer types defined by GTB**	$000 (in constant prices)					
New Connections/Load Increase	1,519	-	947	947	947	947
* include additional rows if needed						
Consumer connection expenditure	1,519	-	947	947	947	947
less Capital contributions funding consumer connection	19	-	-	-	-	-
Consumer connection less capital contributions	1,500	-	947	947	947	947
11a(iii): System Growth						
Pipes	-	-	-	-	-	-
Compressor stations	-	-	-	-	-	-
Other stations	2,131	3,408	1,089	710	-	-
SCADA and communications	-	-	-	-	-	-
Special crossings	-	-	-	-	-	-
System growth expenditure	2,131	3,408	1,089	710	-	-
less Capital contributions funding system growth	-	-	-	-	-	-
System growth less capital contributions	2,131	3,408	1,089	710	-	-

		Current Year CY	CY+1	CY+2	CY+3	CY+4	CY+5
	for year ended	30 Jun 14	30 Jun 15	30 Jun 16	30 Jun 17	30 Jun 18	30 Jun 19
11a(iv): Asset Replacement and Renewal							
	$000 (in constant prices)						
Pipes		1,740	1,282	1,092	997	902	997
Compressor stations		2,737	1,415	3,693	3,124	1,244	2,336
Other stations		2,278	3,466	3,181	3,798	2,996	3,133
SCADA and communications		326	190	190	190	190	1,899
Special crossings		2	95	95	285	95	285
Components of stations (where known)							
Main-line valves		83	190	285	190	190	190
Heating system		284	570	570	475	285	285
Odorisation plants		193	-	-	285	-	285
Coalescers		-	-	-	-	-	-
Metering system		294	665	688	589	475	475
Cathodic protection		96	133	104	152	104	152
Chromatographs		38	-	85	-	85	-
Asset replacement and renewal expenditure		8,071	8,006	9,983	10,085	6,566	10,037
less Capital contributions funding asset replacement and renewal		-	-	-	-	-	-
Asset replacement and renewal less capital contributions		8,071	8,006	9,983	10,085	6,566	10,037
11a(v): Asset Relocations							
Project or programme*							
Waikanae Expressway		2,271	5,649	1,194	-	-	-
Transmission Gully		65	3,766	5,649	2,354	-	-
** include additional rows if needed*							
All other asset relocations projects or programmes		462	424	941	941	941	941
Asset relocations expenditure		2,798	9,839	7,784	3,295	941	941
less Capital contributions funding asset relocations		2,582	9,860	8,052	3,408	974	974
Asset Relocations less capital contributions		216	(21)	(268)	(113)	(33)	(33)
11a(vi): Quality of Supply							
Project or programme*							
** include additional rows if needed*							
All other quality of supply projects or programmes							
Quality of supply expenditure		-	-	-	-	-	-
less Capital contributions funding quality of supply							
Quality of supply less capital contributions		-	-	-	-	-	-
11a(vii): Legislative and Regulatory							
Project or programme*							
[Description of material project or programme]							
[Description of material project or programme]							
[Description of material project or programme]							
[Description of material project or programme]							
[Description of material project or programme]							
** include additional rows if needed*							
All other legislative and regulatory projects or programmes							
Legislative and regulatory expenditure		-	-	-	-	-	-
less Capital contributions funding legislative and regulatory							
Legislative and regulatory less capital contributions		-	-	-	-	-	-

		Current Year CY	CY+1	CY+2	CY+3	CY+4	CY+5
	for year ended	30 Jun 14	30 Jun 15	30 Jun 16	30 Jun 17	30 Jun 18	30 Jun 19
11a(viii): Other Reliability, Safety and Environm							
Project or programme*		$000 (in constant prices)					
** include additional rows if needed*							
All other reliability, safety and environment projects or programmes							
Other reliability, safety and environment total		-	-	-	-	-	-
less Capital contributions funding other reliability, safety and environment							
Other reliability, safety and environment less capital contributions		-	-	-	-	-	-
11a(ix): Non-Network Assets							
Routine expenditure							
Project or programme*		$000 (in constant prices)					
** include additional rows if needed*							
All other routine expenditure projects or programmes		1,192	1,482	1,920	901	889	1,076
Routine expenditure		1,192	1,482	1,920	901	889	1,076
Atypical expenditure							
Project or programme*							
** include additional rows if needed*							
All other atypical expenditure projects or programmes		254	298	298	298	298	624
Atypical expenditure		254	298	298	298	298	624
Non-network assets expenditure		1,446	1,780	2,218	1,199	1,187	1,700

Schedule 11a Explanatory Notes

The box below provides commentary specific to the difference between nominal and constant price capital expenditure forecasts. It is provided in the same format as required for Box 1, Schedule 14a of the Gas Transmission Information Disclosures, which will be fully disclosed within 6 months of the end of the disclosure year.

Commentary on difference between nominal and constant price capital expenditure forecasts

Vector has used the NZIER (New Zealand Institute of Economic Research) March 2014 PPI (Producer Price Index-outputs) forecast from 2014 to 2017. Thereafter Vector has assumed a long-term inflation rate of 2.5%. The constant price capital expenditure forecast is then inflated by the above mentioned PPI forecast to nominal price capital expenditure forecasts.

Additional explanatory notes pertaining to Schedule 11a are provided in the box below, in the format required for Schedule 15 of the Gas Transmission Information Disclosures:

Additional explanatory comment on disclosed information

Although a substantial proportion of Vector's annual expenditure is to address safety, reliability, regulatory, legislative, quality and environmental aspects, these aspects are not estimated separately in projects with multiple business drivers. For projects of this nature, this expenditure is therefore rolled-up into other capex categories such as Asset Replacement and Renewal.

Gas Transmission

Asset Management Plan Update

Information Disclosure 2014

Appendix 2 – Schedule 11b Report on Forecast Operational Expenditure

												Company Name	Vector
												AMP Planning Period	1 July 2014 – 30 June 2024

SCHEDULE 11b: REPORT ON FORECAST OPERATIONAL EXPENDITURE

This schedule requires a breakdown of forecast operational expenditure for the disclosure year and a 10 year planning period. The forecasts should be consistent with the supporting information set out in the AMP. The forecast is to be expressed in both constant price and nominal dollar terms.
GTBs must provide explanatory comment on the difference between constant price and nominal dollar operational expenditure forecasts in Schedule 14a (Mandatory Explanatory Notes).
This information is not part of audited disclosure information.

sch ref													
7													
8			*Current Year CY*	*CY+1*	*CY+2*	*CY+3*	*CY+4*	*CY+5*	*CY+6*	*CY+7*	*CY+8*	*CY+9*	*CY+10*
9		for year ended	**30 Jun 14**	**30 Jun 15**	**30 Jun 16**	**30 Jun 17**	**30 Jun 18**	**30 Jun 19**	**30 Jun 20**	**30 Jun 21**	**30 Jun 22**	**30 Jun 23**	**30 Jun 24**
10	**Operational Expenditure Forecast**		**$000 (in nominal dollars)**										
11	Service interruptions, incidents and emergencies		644	679	723	745	764	783	802	822	843	864	886
12	Routine and corrective maintenance and inspection		11,322	10,880	11,122	11,463	11,750	13,383	14,404	14,061	12,969	13,663	14,640
13	Asset replacement and renewal		-	-	-	-	-	-	-	-	-	-	-
14	**Network opex**		11,966	11,559	11,845	12,208	12,514	14,166	15,206	14,883	13,812	14,527	15,526
15	System operations		394	757	650	670	687	704	722	740	758	777	796
16	Network support		7,761	6,226	6,117	6,305	6,463	6,624	6,790	6,960	7,134	7,312	7,495
17	Business support		6,830	8,035	8,260	8,514	8,727	8,945	9,168	9,398	9,632	9,873	10,120
18	Compressor fuel		3,710	3,926	4,730	4,875	4,997	5,122	5,250	5,381	5,516	5,653	5,795
19	Land management and associated activity		136	91	148	153	157	161	165	169	173	177	182
20	**Non-network opex**		18,831	19,035	19,905	20,517	21,031	21,556	22,095	22,648	23,213	23,792	24,388
21	**Operational expenditure**		30,797	30,594	31,750	32,725	33,545	35,722	37,301	37,531	37,025	38,319	39,914
22			*Current Year CY*	*CY+1*	*CY+2*	*CY+3*	*CY+4*	*CY+5*	*CY+6*	*CY+7*	*CY+8*	*CY+9*	*CY+10*
23		for year ended	**30 Jun 14**	**30 Jun 15**	**30 Jun 16**	**30 Jun 17**	**30 Jun 18**	**30 Jun 19**	**30 Jun 20**	**30 Jun 21**	**30 Jun 22**	**30 Jun 23**	**30 Jun 24**
24			**$000 (in constant prices)**										
25	Service interruptions, incidents and emergencies		644	661	685	685	685	685	685	685	685	685	685
26	Routine and corrective maintenance and inspection		11,322	10,596	10,536	10,536	10,536	11,708	12,294	11,708	10,536	10,829	11,320
27	Asset replacement and renewal		-	-	-	-	-	-	-	-	-	-	-
28	**Network opex**		11,966	11,257	11,221	11,221	11,221	12,393	12,979	12,393	11,221	11,514	12,005
29	System operations		394	737	616	616	616	616	616	616	616	616	616
30	Network support		7,761	6,063	5,795	5,795	5,795	5,795	5,795	5,795	5,795	5,795	5,795
31	Business support		6,830	7,825	7,825	7,825	7,825	7,825	7,825	7,825	7,825	7,825	7,825
32	Compressor fuel		3,710	3,823	4,481	4,481	4,481	4,481	4,481	4,481	4,481	4,481	4,481
33	Land management and associated activity		136	89	141	141	141	141	141	141	141	141	141
34	**Non-network opex**		18,831	18,537	18,858	18,858	18,858	18,858	18,858	18,858	18,858	18,858	18,858
35	**Operational expenditure**		30,797	29,794	30,079	30,079	30,079	31,251	31,837	31,251	30,079	30,372	30,863
36	**Subcomponents of operational expenditure (where known)**												
37	Research and Development		-	-	-	-	-	-	-	-	-	-	-
38	Insurance		1,951	1,938	1,938	1,938	1,938	1,938	1,938	1,938	1,938	1,938	1,938
39			*Current Year CY*	*CY+1*	*CY+2*	*CY+3*	*CY+4*	*CY+5*	*CY+6*	*CY+7*	*CY+8*	*CY+9*	*CY+10*
40		for year ended	**30 Jun 14**	**30 Jun 15**	**30 Jun 16**	**30 Jun 17**	**30 Jun 18**	**30 Jun 19**	**30 Jun 20**	**30 Jun 21**	**30 Jun 22**	**30 Jun 23**	**30 Jun 24**
41	**Difference between nominal and real forecasts**		**$000**										
42	Service interruptions, incidents and emergencies		-	18	38	60	79	98	117	137	158	179	201
43	Routine and corrective maintenance and inspection		-	284	586	927	1,214	1,675	2,110	2,353	2,433	2,834	3,320
44	Asset replacement and renewal		-	-	-	-	-	-	-	-	-	-	-
45	**Network opex**		-	302	624	987	1,293	1,773	2,227	2,490	2,591	3,013	3,521
46	System operations		-	20	34	54	71	88	106	124	142	161	180
47	Network support		-	163	322	510	668	829	995	1,165	1,339	1,517	1,700
48	Business support		-	210	435	689	902	1,120	1,343	1,573	1,807	2,048	2,295
49	Compressor fuel		-	103	249	394	516	641	769	900	1,035	1,172	1,314
50	Land management and associated activity		-	2	7	12	16	20	24	28	32	36	41
51	**Non-network opex**		-	498	1,047	1,659	2,173	2,698	3,237	3,790	4,355	4,934	5,530
52	**Operational expenditure**		-	800	1,671	2,646	3,466	4,471	5,464	6,280	6,946	7,947	9,051

Schedule 11b Explanatory Notes

The box below provides commentary specific to the difference between nominal and constant price operational expenditure forecasts. It is provided in the same format as required for Box 2, Schedule 14a of the Gas Transmission Information Disclosures, which will be fully disclosed within 6 months of the end of the disclosure year.

Commentary on difference between nominal and constant price operational expenditure forecasts

Vector has used the NZIER (New Zealand Institute of Economic Research) March 2014 PPI (Producer Price Index-outputs) forecast from 2014 to 2017. Thereafter Vector has assumed a long-term inflation rate of 2.5%. The constant price operational expenditure forecast is then inflated by the above mentioned PPI forecast to nominal price operational expenditure forecasts.

Gas Transmission

Asset Management Plan Update

Information Disclosure 2014

Appendix 3 – Schedule 12a Report on Asset Condition

Company Name	**Vector**
AMP Planning Period	**1 July 2014 – 30 June 2024**

SCHEDULE 12a: REPORT ON ASSET CONDITION

This schedule requires a breakdown of asset condition by asset class as at the start of the forecast year. The data accuracy assessment relates to the percentage values disclosed in the asset condition columns. Also required is a forecast of the percentage of units to be replaced in the next 5 years. All information should be consistent with the information provided in the AMP and the expenditure on assets forecast in Schedule 11a.

sch ref

					Asset condition at start of planning period (percentage of units by grade)						
8	**Asset category**	**Asset class**	**Units**	**Grade 1**	**Grade 2**	**Grade 3**	**Grade 4**	**Grade unknown**	**Data accuracy (1–4)**	**% of asset forecast to be replaced in next 5 years**
9	Pipes	Protected steel pipes	km	-	0.4%	30.1%	69.4%	-	3	0.3%
10	Pipes	Special crossings	km	-	2.1%	30.7%	67.2%	-	3	0.0%
11	Stations	Compressor stations	No.	-	12.5%	87.5%	-	-	3	-
12	Stations	Offtake point	No.	-	41.2%	58.8%	-	-	3	1.8%
13	Stations	Scraper stations	No.	-	-	100.0%	-	-	3	-
14	Stations	Intake points	No.	-	-	100.0%	-	-	3	-
15	Stations	Metering stations	No.	-	-	100.0%	-	-	3	-
16	Compressors	Compressors—turbine driven	No.	-	-	100.0%	-	-	4	-
17	Compressors	Compressors—electric motor driven	No.	-	-	-	-	-	N/A	-
18	Compressors	Compressors—reciprocating engine driven	No.	21.1%	63.2%	15.8%	-	-	4	-
19	Main-line valves	Main line valves manually operated	No.	-	9.9%	90.1%	-	-	4	-
20	Main-line valves	Main line valves remotely operated	No.	-	-	100.0%	-	-	4	-
21	Heating systems	Gas-fired heaters	No.	-	21.4%	68.0%	10.7%	-	4	7.0%
22	Heating systems	Electric heaters	No.	-	-	100.0%	-	-	4	-
23	Odorisation plants	Odorisation plants	No.	-	4.3%	95.7%	-	-	4	-
24	Coalescers	Coalescers	No.	-	-	100.0%	-	-	4	-
25	Metering systems	Meters—ultrasonic	No.	14.3%	28.6%	57.1%	-	-	4	-
26	Metering systems	Meters—rotary	No.	51.7%	13.8%	34.5%	-	-	4	10.0%
27	Metering systems	Meters turbine	No.	63.9%	13.9%	16.7%	5.6%	-	4	30.0%
28	Metering systems	Meters—mass flow	No.	-	-	100.0%	-	-	4	-
29	SCADA and communications	Remote terminal units (RTU)	No.	-	40.3%	40.3%	19.4%	-	4	7.5%
30	SCADA and communications	Communications terminals	No.	-	-	100.0%	-	-	4	-
31	Cathodic protection	Rectifier units	No.	-	12.1%	81.8%	6.1%	-	4	18.0%
32	Chromatographs	Chromatographs	No.	33.3%	33.3%	22.2%	11.1%	-	4	20.0%

Schedule 12a Explanatory Notes

Explanatory notes pertaining to Schedule 12a are provided in the box below, in the format required for Schedule 15 of the Gas Transmission Information Disclosures:

Additional explanatory comment on disclosed information

In some cases the number of asset classes and asset categories included in Schedule 12a do not reflect the actual number of assets included in the AMP. This is due to how the definitions included in the ID Determination have to be interpreted:

a) The ID Determination does not define Scraper Station. Vector has interpreted a Scraper Station to mean a station used for the prime purpose of PIG launching/receiving. Therefore 11 Scraper Stations are included in Schedule 12a. PIG launchers/receivers installed at stations that have another prime purposes e.g. Compressor Stations, have not been counted;

b) The ID Determination definition for Main-line valve is: "*means any valves and ancillary devices in a dedicated station, installed for the purpose of stopping the flow of gas in a pipeline or lateral. This does not include instrumentation valves or valves installed in any other station type."* Therefore Vector has counted 78 Main-line valves in accordance with this definition. Main-line valves installed at stations that have another prime purpose e.g. Compressor stations, have not been counted; and

c) The ID Determination definition for Metering System is: "means devices that measure and record the quantity of gas that has flowed through a point in a period of time and may additionally measure and record the rate of flow". Therefore Vector has counted 137 metering systems in Schedule 12a. Some metering systems comprise of more than one meter and any meters in addition to the first meter at the metering system have not been counted.

Assets assessed as grade 1 condition will generally be replaced first and capex provision has been made in the AMP where replacement is considered appropriate. However some grade 1 condition assets e.g. metering systems have been assessed as grade 1 condition due to the expiry of their recognized design life. Not all grade 1 condition metering systems will be replaced in the next five years as metering system condition will be monitored and where metering systems continue to perform as grade 2 condition assets, replacement will be deferred. The three compressor units at Derby Road compressor station and one compressor unit at Kapuni Gas Treatment Plant, assessed as grade 1 condition, are rarely used for operational purposes. Therefore it is not planned to replace any grade 1 condition compressor units in the next five years.

It is not planned to replace all grade 2 condition assets but to extend the serviceable life of these assets where it is considered safe, prudent and cost effective to do so.

Gas Transmission

Asset Management Plan Update

Information Disclosure 2014

Appendix 4 – Schedule 12b Report on Forecast Demand

Company Name	**Vector**
AMP Planning Period	**1 July 2014 – 30 June 2024**

SCHEDULE 12b: REPORT ON FORECAST DEMAND

This Schedule requires a forecast of new connections (by consumer type) and gas delivered for the current disclosure year and a 5 year planning period. The forecasts should be consistent with the supporting information set out in the AMP and the assumptions used in developing the capital expenditure forecast in Schedule S11a [and 11b]

sch ref

12b(i): Connections

	Current Year CY	*CY+1*	*CY+2*	*CY+3*	*CY+4*	*CY+5*
for year ended	**30 Jun 14**	**30 Jun 15**	**30 Jun 16**	**30 Jun 17**	**30 Jun 18**	**30 Jun 19**
Consumer types defined by GTB						
[GTB consumer type]	(1)	2				
[GTB consumer type]						
[GTB consumer type]						
[GTB consumer type]						
[GTB consumer type]						
** include additional rows if needed*						
Connections total	(1)	2	-	-	-	-

12b(ii): Gas conveyed

	Current Year CY	*CY+1*	*CY+2*	*CY+3*	*CY+4*	*CY+5*
for year ended	**30 Jun 14**	**30 Jun 15**	**30 Jun 16**	**30 Jun 17**	**30 Jun 18**	**30 Jun 19**
Total gas entering the system at injection points	85,146	86,943	86,937	86,935	86,936	86,940
Total gas delivered to consumers	83,909	85,679	85,674	85,672	85,672	85,676
Total gas used in compressor stations	531	542	542	542	542	542
Total gas used in heating systems	122	125	124	124	124	125
Total unaccounted for gas	247	597	597	597	597	597
Total gas conveyed	84,561	86,346	86,340	86,338	86,339	86,343

Schedule 12b Explanatory Notes

Explanatory notes pertaining to Schedule 12b are provided in the box below, in the format required for Schedule 15 of the Gas Transmission Information Disclosures:

Additional explanatory comment on disclosed information

Line Pack

Schedule 12b asks for quantities of gas entering the system and exiting or being used within the system, as well as unaccounted for gas. However, it does not take account of changes to line pack gas. Line pack gas is gas kept in the system to maintain the required system pressure level.

For this reason, in the disclosure for CY total gas entering the system does not equal total gas delivered to consumers plus total gas used in compressor stations plus total gas used in heating systems plus total unaccounted for gas. That is, some gas which has entered the system simply remains there and is not used or delivered as it has been purchased by Vector to increase Line Pack or, in the case where total gas conveyed plus unaccounted for gas is greater than the gas injected into the system, Vector has sold gas to decrease Line Pack.

Where line pack changes equal zero or can be assumed to be zero then this equation will balance.

Changes in Line Pack between two points in time are possible where there are differences in the measured pressure and/or temperature. Vector uses its best endeavours to maintain Line Pack within acceptable operational limits for defined sections of pipeline. Therefore, over time, by maintaining the line pack within these limits the changes to line pack can be assumed to be zero even though between two defined points in time material changes in line pack may be identified.

Vector has therefore forecast line pack changes to be zero over the five year planning period so the gas totals for those disclosure years balance.

Connections

Schedule 12b appears to include a drafting error where the metric “number of connections” has been omitted from the table of Connections in 12b (i). That term has been used in the equivalent schedules for both electricity and (by amendment via the Commission’s Issues Register) gas distribution.

Vector has therefore assumed that disclosure in 12 b (i) should be by “number of connections” which is defined in Schedule 16 as “number of new offtake points”. An offtake point has been interpreted to mean a delivery point.

Consistent with disclosure across electricity and gas distribution, and the Commission’s Issues Register, gross new connections are disclosed.

Schedule 17 Certification for Year-beginning Disclosures

Clause 2.9.1 of section 2.9

We, Alison Paterson and

Michael Stiassny, being directors of Vector Limited certify that, having made all reasonable enquiry, to the best of our knowledge:

a) The following attached information of Vector Limited prepared for the purposes of clause 2.6.1 and sub clauses 2.6.3(2)(b), and 2.6.5(2) of the Gas Transmission Information Disclosure Determination 2012 in all material respects complies with that determination.

b) The prospective financial or non-financial information included in the attached information has been measured on a basis consistent with regulatory requirements or recognised industry standards.

Director

Director

30 May 2014

Date