2020 UPDATE

WEL Networks
Asset Management Plan

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OUR PURPOSE

Enabling our communities to thrive

OUR VISION

Creating an innovative energy future

CONTENTS

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EXECUTIVE SUMMARY

1 EXECUTIVE SUMMARY

The 2020 Asset Management Plan (AMP) Update communicates to our stakeholders the material changes in asset management from the 2019 AMP Update.

Significant growth is being experienced in Hamilton City and the Waikato District. Growth is expected to continue through the 10 year AMP period and beyond. We have updated our investment forecasts to support this growth and to maintain a strong and reliable network. Together with our growing technology capability we are creating a platform that enables us to progress our vision of "Creating an innovative energy future".

Our capital investment will increase by $7.2M annually (in nominal prices i.e. allowing for inflation). This is driven by an average annual nominal increase of $3.5M in Customer Initiated Works (CIW; this includes customer connections/relocations), $3.1M for Asset Renewals and $0.6M in non-network. Our Network Development budget remains consistent with the 2019 AMP update.

Our operational expenditure will increase by $6.3M annually (in nominal price) due to the change in labour rates and an increase in fault expenditure to align with historical (actual) figures.

In previous budgets we predicted that CIW and Network Development would taper towards the end of the planning period. Now with sustained growth outlined in council forecasts we predict an even expenditure across the 10 year planning period.

Our Asset Replacement budget starts to increase at the end of the planning period in order to address the increasing rate of assets reaching their end of life. This is aligned with expected life-cycle forecasts associated with cross-arm, pole and conductor replacements (as a result of intense asset installation in the 1970's and 1980's). We expect that the Asset Replacement budget will continue to increase beyond the planning period.

The above points are further discussed in Section 3 - Material Changes.

Purpose of this Document

The purpose of this AMP Update is to inform and communicate to our stakeholders the material changes in asset management from the 2018 AMP and subsequent update. These changes are provided to support the accelerated growth in Hamilton and the Waikato District with a balanced approach to meet our stakeholder requirements in accordance with our asset management strategy and objectives.

This AMP Update should be read in conjunction with the 2018 AMP and the 2019 AMP Update. The 2018 AMP contains a greater level of detail. For the purpose of this AMP Update we have not attempted to duplicate the detailed explanations as set out in the full 2018 AMP.

Intended Audience

The intended audience for this AMP includes: our stakeholders, community, customers, the Commerce Commission, the Electricity Authority, our staff and contractors, and other interested parties.

Period Covered by the AMP

This plan covers a ten year period from 1 April 2020 to 31 March 2030 (AMP period). As with any long-term plan, the integrity and accuracy of the details tend to be more accurate in the earlier years as it is easier to predict the near-term state of our assets and required actions, plans and expenditure.

Approval Date

This plan was reviewed and approved by the WEL Networks Limited Board of Directors on 3 March 2020.

2

OVERVIEW OF WEL NETWORKS

2 OVERVIEW OF WEL NETWORKS

WEL Networks (WEL) is owned by the WEL Energy Trust. WEL supplies electricity to the northern Waikato and small networks in Cambridge and Auckland. The network area includes Hamilton, Raglan, Gordonton, Horotiu, Ngaruawahia, Huntly, Te Kauwhata and Maramarua (Figure 1).

Our network is supplied by three Grid Exit Points (GXP) owned by Transpower and two large embedded generators at Te Rapa and Te Uku. The GXPs are Hamilton, Te Kowhai and Huntly. Our 33kV subtransmission connects the GXPs with zone substations, which in turn supply our 11kV distribution network. This network then feeds our low voltage network supplying the majority of our customers.

Figure 1: WEL Networks boundary and small embedded networks in Cambridge and Auckland

There are approximately 91,000 connections across WEL's traditional network area and over 1,800 connections within our embedded networks located in Auckland and Cambridge. The breakdown of load by customer group as of 31 March 2019 is set out in table 1 below.

Customer Group	Number of Active ICPs	Electricity Delivered (GWh)	Demand (MW)
Domestic	78,131	552	200 (70%)
General	12,286	225	
Streetlights and Unmetered	346	9	
Small Scale Distributed Generation	1041	13	
Large Commercial	816	516	86 (30%)
Total	**92,620**	**1285**	**286**
Traditional Network	*90,726*	*1,270*	
Embedded Network	*1,894*	*15*	

Table 1: Customer Group and Electricity Delivered

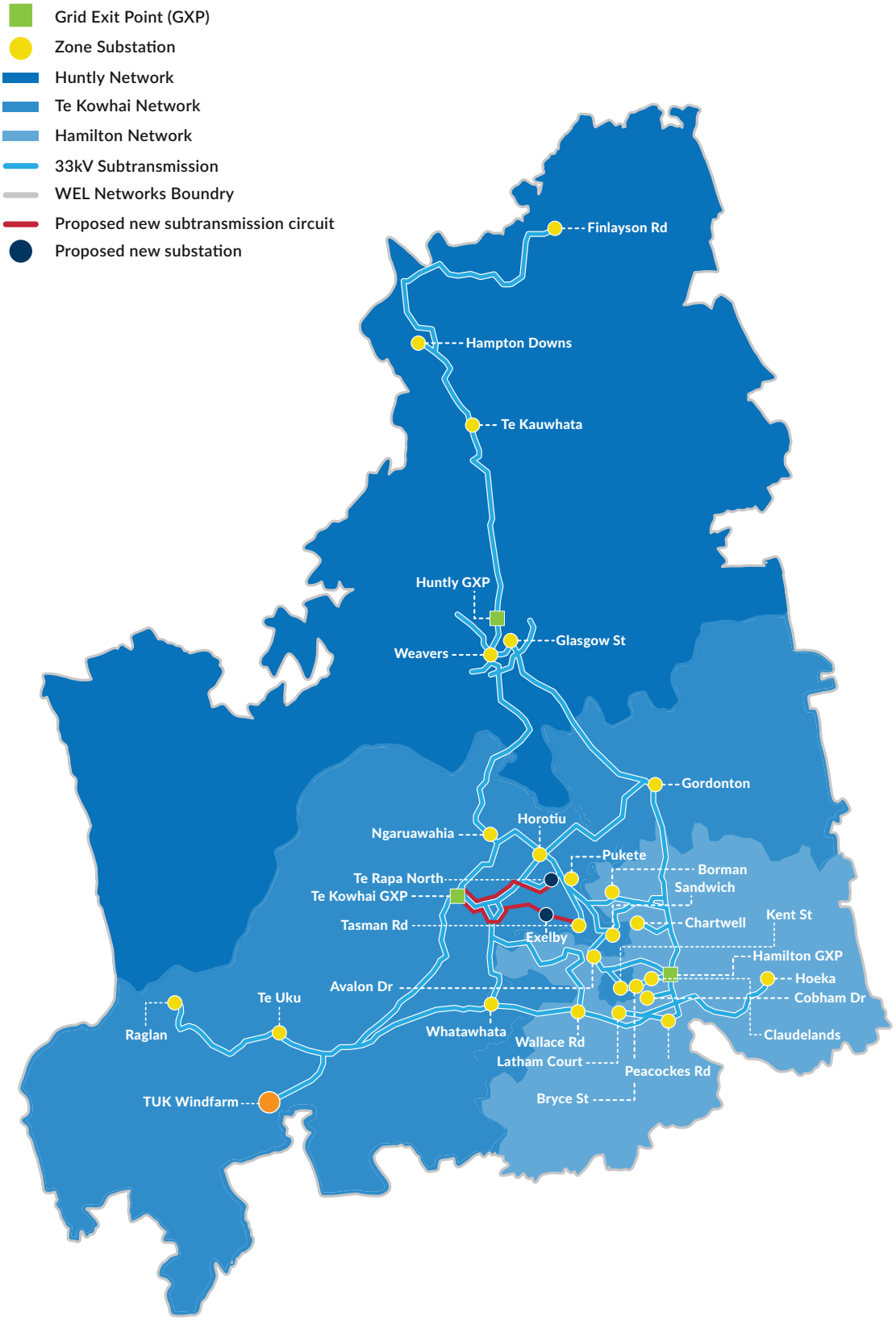

Figure 2: WEL Network Boundary, 33kV Subtransmission, GXP and Zone Substations (existing and proposed)

3

ASSET MANAGEMENT PLAN UPDATE MATERIAL CHANGES

3 ASSET MANAGEMENT PLAN UPDATE MATERIAL CHANGES

This section provides an overview of the material changes to network development plans, asset lifecycle plans and asset management practices.

In general, our forecasts remain consistent with that included in our 2019 AMP Update and subject only to minor refinement. We believe these forecasts continue to provide a realistic view of future investment requirements and network performance.

3.1 Material Changes to the Network Development

The Network Development forecast includes system growth, legislative and regulatory, reliability, safety and environment. Our budget already includes two 33 kV cable installations (Te Kowhai GXP to Tasman Substation and Te Kowhai GXP to Te Rapa North Substation) and two new 33/11 kV substations situated to support the expected growth (Te Rapa North and Exelby Substations).

This year we have maintained our yearly budgets but have moved projects to best meet the timing of development proposed by our customers. Figure 3 shows the 10 year expenditure forecast compared to the indexed 2019 AMP network development forecast.

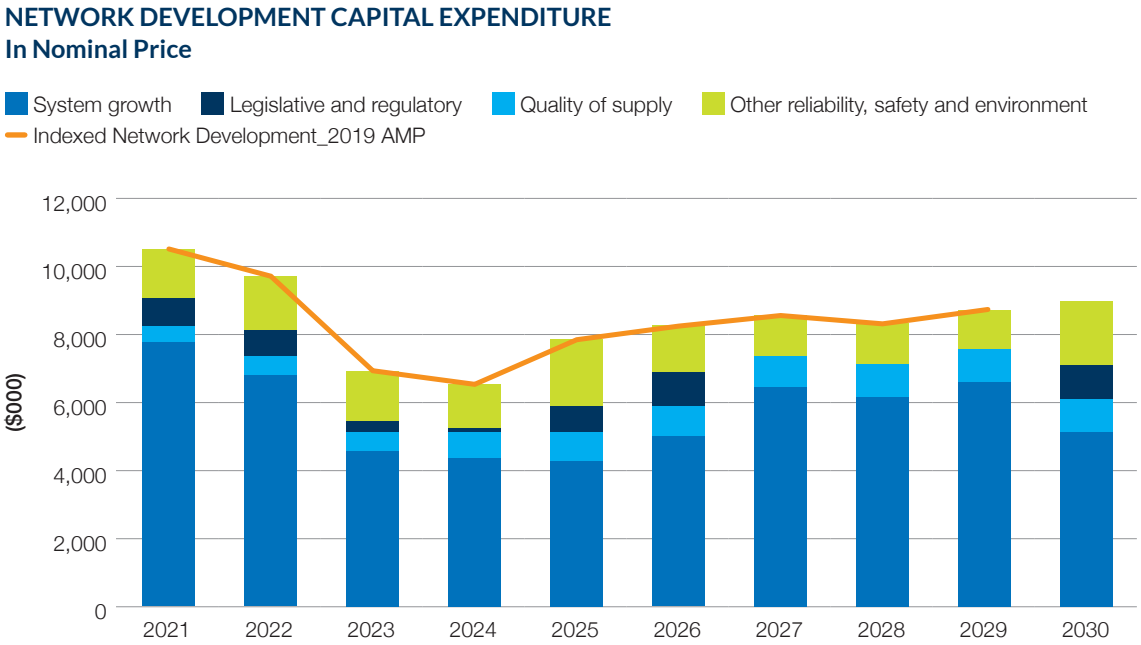

Figure 3: Network Development Forecast Expenditure (nominal $)

Strong growth continues in Hamilton and the Waikato District. Council forecasts and long term budgets indicate that this growth is likely to continue beyond the ten year AMP planning period.

In the Hamilton network, growth areas Rototuna, northern Ruakura and Peacockes are moving forward with residential and commercial developments. Borman, Chartwell and Peacockes substations supply the areas respectively and we are forecasting an average 2MW increase in peak demand annually to year 2028. This continuing growth is driving feeder development out of these three substations. In order to meet capacity requirements and increase reliability we plan to reduce the number of customers supplied from a single feeder through the addition of a new feeder from Borman Road substation. This will allow us to redistribute load and therefore lower our reliability risk for faults. Resources for this have been reallocated from a forecast industrial project that has not gone ahead.

Another significant change to our forecast expenditure results from adjusting our approach to addressing Garden Place Switching Station in the Hamilton CBD. This site was earmarked for complete electrical asset replacement and major works to remedy multiple health, safety and reliability risks. These risks include: being a confined space, a single point of entry/exit, low seismic rating, switchgear at end of life and high arc flash levels.

The original proposal was to replace this with a new switching station at a nearby location due to the multiple issues with the existing site. Following a review we have designed a new option that allows the site to be bypassed through the reconfiguration of existing cables. This creates strong feeder ties between Bryce St Substation and the other existing CBD switching stations. With the additional automation of ring main units the CBD will have improved reliability and resilience. The new design removes the need for underground equipment in Garden Place and therefore eliminates significant health and safety risks.

The new proposal results in a reduction of $300k across FY22-23 freeing up resources for newly identified projects.

Along with the Garden Place changes a customer expansion at Horotiu has not gone ahead. This has allowed the $3.2M that was previously earmarked for a new customer site substation to be allocated to a mix of new projects and bringing forward projects to address network risks. This includes:

- An expansion of our substation seismic and air conditioning programme.
- The uprating of the River Road section of the 11kV feeder out of Sandwich Road Substation. This uprating will remove a long length of 16mm^2 Copper conductor.
- The installation of a new NER at Te Kowhai substation to address a voltage spike issue that is causing assets to be temporarily run above their design voltage ratings during certain fault conditions.

The main changes to Network Development are outlined in Table 2.

Financial Year	Change ($000)	Description
FY21	-	▪ Increase of $173k for Network Reinforcement as detailed scoping indicates a higher budget required ▪ Increase of $176k for Gordonton Substation for costs identified during detailed design ▪ Increase of $64k for Garden Place for FY21. Overall project price reduced ($308k) due to a redesigned Network topology and solution ▪ Increase of $360k for new projects identified: Te Kowhai NER design, Worker fall restraints on transformers, Automated battery monitors ▪ Increase of $200k for the Sleepyhead customer dependant project ▪ Decrease of $631k for Horotiu customer site substation as this was a customer dependant project.
FY22	-	▪ Increase of $800k to address our most populous feeder: BOR CB3 ▪ Increase of $530k for SAN CB3 uprating and removing 16mm² Copper ▪ Increase of $410k to continue seismic upgrades and air-conditioning projects ▪ Increase of $200k to allow back-up ducts across Peacockes Bridge for resilience ▪ Increase of $450k for Te Kowhai NER installation ▪ Decrease of $372k for Garden Place due to a redesigned Network topology and solution ▪ Decrease of $137k for AUFLS as it has been delayed by Transpower ▪ Decrease of $1.88M for Horotiu customer site Substation as this was a customer dependant project that has not progressed.
FY23	-	▪ Increase of $337k to allow for Peacockes growth ▪ Increase of $401k to continue seismic upgrades and air-conditioning projects ▪ Decrease of $738k for Horotiu customer site Substation as this was a customer dependant project.
FY24	-	▪ Increase of $137k for AUFLS as it has been delayed by Transpower from FY22 ▪ Decrease of $137k for Distribution Upgrades to allow for AUFLS (note that SANCB3 has been added to FY22 – effectively bring part of this budget forward)
FY25 onwards	-	▪ No Change

Table 2 Material Changes to the Network Development Forecast Expenditure

3.2 Material Changes to Lifecycle Asset Management

We have maintained our asset renewal philosophy detailed in our 2018 AMP with minor refinements in our 2019 AMP Update. The re-run of the Condition Based Risk Management (CBRM) program supports our existing strategies. While most budget shifts within the 10 year period are limited, there has been some increases, these include:

- allowance for an increase in labour rates.
- accounting of faults to actual cost (increase of $850k p.a.)
- increased crossarm, pole and conductor replacements ($2m increase in Year 10). This was detailed in last year's AMP as our response to the large population of assets installed from 1970-1985. This increase can be broken down as follows:
  i. Crossarm and insulator replacements - $440k p.a.
  ii. Pole replacements - $1.16M p.a.
  iii. Overhead Conductor replacements - $440k p.a.

Detailed scoping of FY21 renewal work has resulted in a higher proportion of crossarm work compared to poles than forecast in the 2019 AMP Update. This corresponds to our age and condition profiles as well as the 40 year CBRM view. Therefore our budget has been adjusted to reflect the new balance.

Figure 4 shows the 10 year expenditure compared to the indexed 2019 AMP asset renewal forecast.

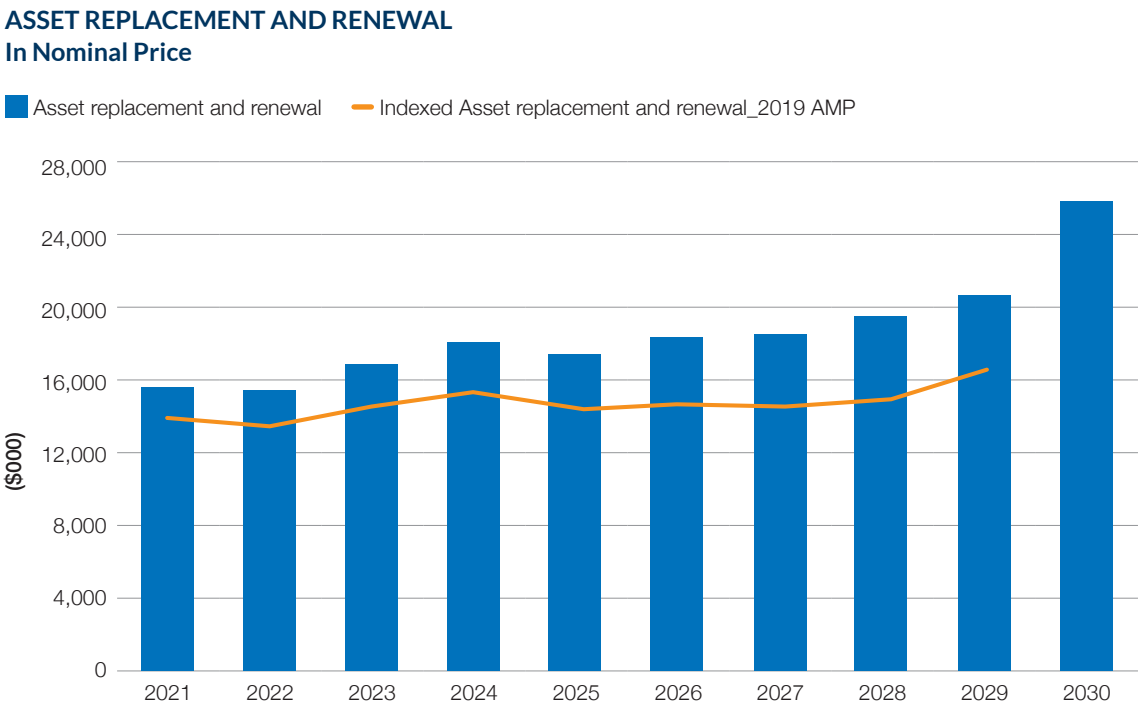

Figure 4: Asset Replacement and Renewal Forecast Expenditure (nominal $)

The changes to the Life Cycle Asset Management are outlined in Table 3 below.

Financial Year	Cost ($000)	Description of changes
FY21 Onwards	1,570	▪ Increase in internal labour rates resulting in an average increase of $720k. ▪ Increase in capitalised faults by $850k due to improved reporting practices

Table 3: Material Changes to the Asset Replacement and Renewal Forecast Expenditure

3.3 Material Changes in Customer Initiated Works

The CIW forecast includes consumer connections and asset relocation. The increase of $31.5M across the ten year period is driven by growth forecast data analysis from Hamilton City Council (HCC) and Waikato District Council (WDC) for new connections, subdivisions and asset relocation expenditure. The Waikato has seen a significant lift in asset relocation expenditure in recent years as subdivisions continue to be developed along the fringe of the city boundaries and large infrastructure projects move into construction phases (roads, rail, water/waste water) thereby requiring WEL assets to be relocated. Figure 5 shows the ten year CIW forecast.

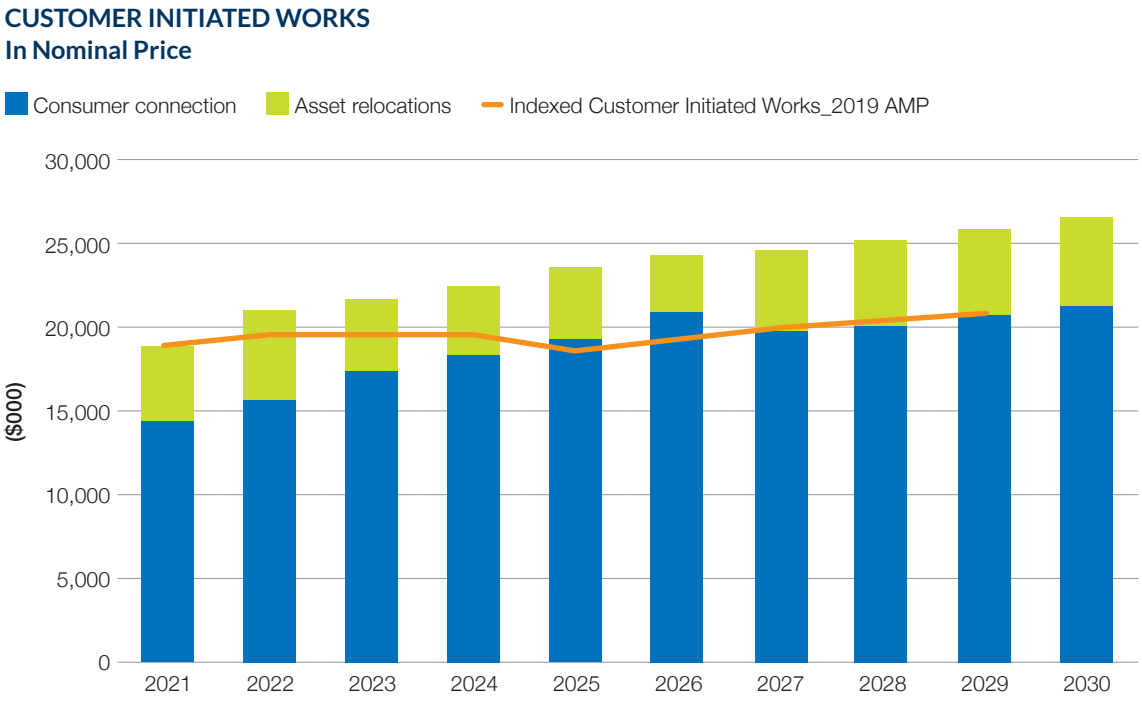

Figure 5: Customer Initiated Works Forecast Expenditure (nominal $)

Financial Year	Cost ($000)	Description of changes
FY22	490	▪ Increase of $0.5M in asset relocation forecasted for Stage 1 of Peacockes Structure Plan, Greenhill Subdivision plus multiple NZTA and HCC infrastructure projects
FY22-FY26	-	▪ A large industrial development has been deferred by 1 year to begin in FY2023 (FY22 -$500k, FY23 $1,500k, FY24 +$500k, FY25 +$1,380k, FY26, +$120k).
FY22 onwards	1,680	▪ Increase of $1.7M average per annum in consumer connections based on analysis of data from HCC and WDC.
FY23 onwards	2,588	▪ Increase of $2.6M average per annum in asset relocation based on analysis of data from NZTA, HCC and WDC.

Table 4 : Material Changes on Customer Initiated Works Forecast Expenditure

3.4 Material Changes in Report on Expenditure

The changes to our capital and operational expenditure is discussed below.

3.4.1 Material Changes in Schedule 11a Capital Expenditure

Hamilton and the Waikato District are experiencing growth in residential, commercial and industrial developments which is expected to continue through the 10 year AMP period. To support this growth, we have increased our capital expenditure (CAPEX) by an annual average of $7.2M (in nominal price) from last year's forecast. This is driven by a nominal price increase of $3.5M in CIW and $3.1M in Asset Renewals and $0.6M in non-network. The increase in non-network CAPEX is primarily driven by the following six project:

1. SAP Functionality Improvements - $382k
2. GIS Artificial Intelligence for analysing Vegetation - $1.0M
3. Strategic GIS Mobility Solution to allow more efficient field work and data capture- $521k
4. LV Visibility to enable our transition to a Distributed System Operator - $410k
5. EV Payment Platform - $591k
6. Microgrid Technology Development - $641k

Figure 6 shows the 10 year expenditure compared to the indexed 2019 AMP CAPEX forecast.

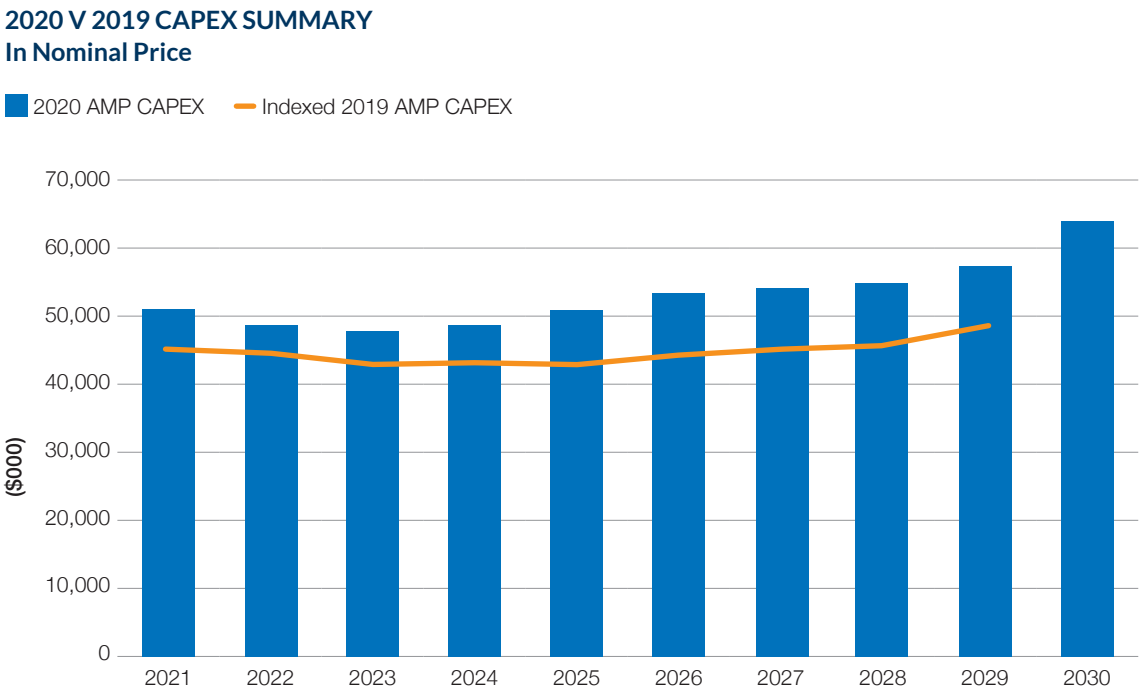

Figure 6: Capital Expenditure Forecast Comparison (nominal $)

3.4.2 Material Changes in Schedule 11b Operational Expenditure

Operational expenditure has been increased in response to increased internal labour rates and the change from lump sum to actual cost for faults. While continued network growth has seen the number of assets to be maintained increase significantly, we are holding the maintenance cost flat in real terms until 2030 as it is believed that the operational excellence project will deliver cost savings that will offset the increased number of assets maintained. Our non-network operational expenditure will rise to facilitate the move to a more data driven business. This results in an annual nominal increase of $6.3M which is primarily comprised of the six initiatives:

1. Labour rate increases – $360k p.a.
2. Fault budget increase – $480k p.a.
3. New cable testing / maintenance - $185k p.a.
4. Business Support - $4M p.a.
5. System operations and network support - $750k p.a.
6. Vegetation management - $240k p.a.

Figure 7 shows the 10 year expenditure compared to the indexed 2019 AMP OPEX forecast.

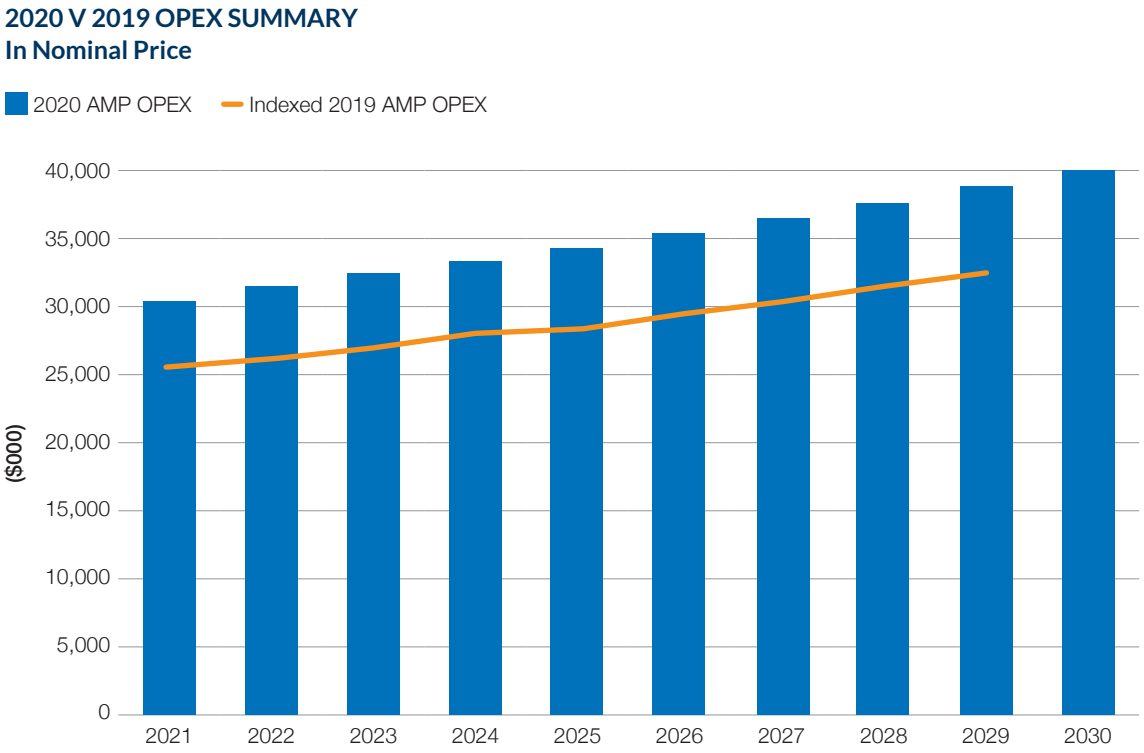

Figure 7: Operational Expenditure Forecast Comparison (nominal $)

3.5 Material Changes in Schedule 12

3.5.1 Schedule 12a – Asset Condition

Overall, asset condition indicated an improvement profile compared to previous years. This is due to the proactive renewal programme targeting high risk and poor condition assets. The replacement programme in the next 5 years will continue to prioritise assets that have been identified through WEL's CBRM process.

3.5.2 Schedule 12b – Forecast Capacity

There are no changes to the projects identified to address Network capacity. The forecast includes two 33 kV cabling projects from Te Kowhai GXP, three new 33/11 kV substations and significant projects to transfer load from Hamilton GXP to Te Kowhai GXP and Huntly GXP.

3.5.3 Schedule 12c - Forecast Network Demand

There have been no changes to forecast network demand. Discussions with and data from Hamilton City Council and Waikato District Council support our predictions that growth will continue through the 10 year AMP planning period and beyond.

3.5.4 Schedule 12d - Forecast Interruptions and Duration

The planned System Average Interruption Duration Index (SAIDI) will remain at the same level as 2019/2020. The SAIDI target is challenging, made even more so by the number and size of our customer connections, but the tough target is achievable and drives strict outage control.

We expect that unplanned SAIDI will improve as a result of network sectionalisation, fewer conductor breaks and improved equipment reliability. However our SAIDI improvements are tempered as our average network asset age is increasing as we extend asset lives towards a large renewal program. We are also experiencing a continuing high rate of car vs pole outages and despite continuing analysis and addressing a small number of high risk areas, there is no clear overarching practicable solution.

Our condition based asset replacements are aligned with addressing the top fault root causes. For example we are replacing 16mm² Copper conductor due to its condition and the conductor and joint breaks that result. The asset condition data and the fault data align and reinforce our strategy to replace the 16mm² Copper with larger, more robust conductor.

We use PowerBI dashboards showing our faults per feeder and faults per 100km of line length. Our focus is the feeders with the highest rate of outages per 100km and the highest SAIDI. The five worst performing feeders with each metric are:

Based on outage / 100km / year			
Feeder	Outages (2015-2020)	TOTAL SAIDI	Outages /100km/ Year
WEACB4	94	5.98	32.74
TEKCB5	132	4.12	31.54
GLACB1	55	1.25	18.58
HPTCB3	10	0.16	18.08
FINCB2	136	4.12	17.31

Based on SAIDI			
Feeder	Outages (2015-2020)	TOTAL SAIDI	Outages /100km/ Year
WEACB6	182	20.51	15.41
TEUCB1	158	16.46	5.13
WEACB2	112	8.92	13.14
GORCB1	66	8.50	9.02
CLACB16	10	8.48	2.24

Table 5: Worst performing feeders

For those feeders the most common fault causes are shown in Figure 8 below. We also show how those failure modes relate to our asset replacement strategies.

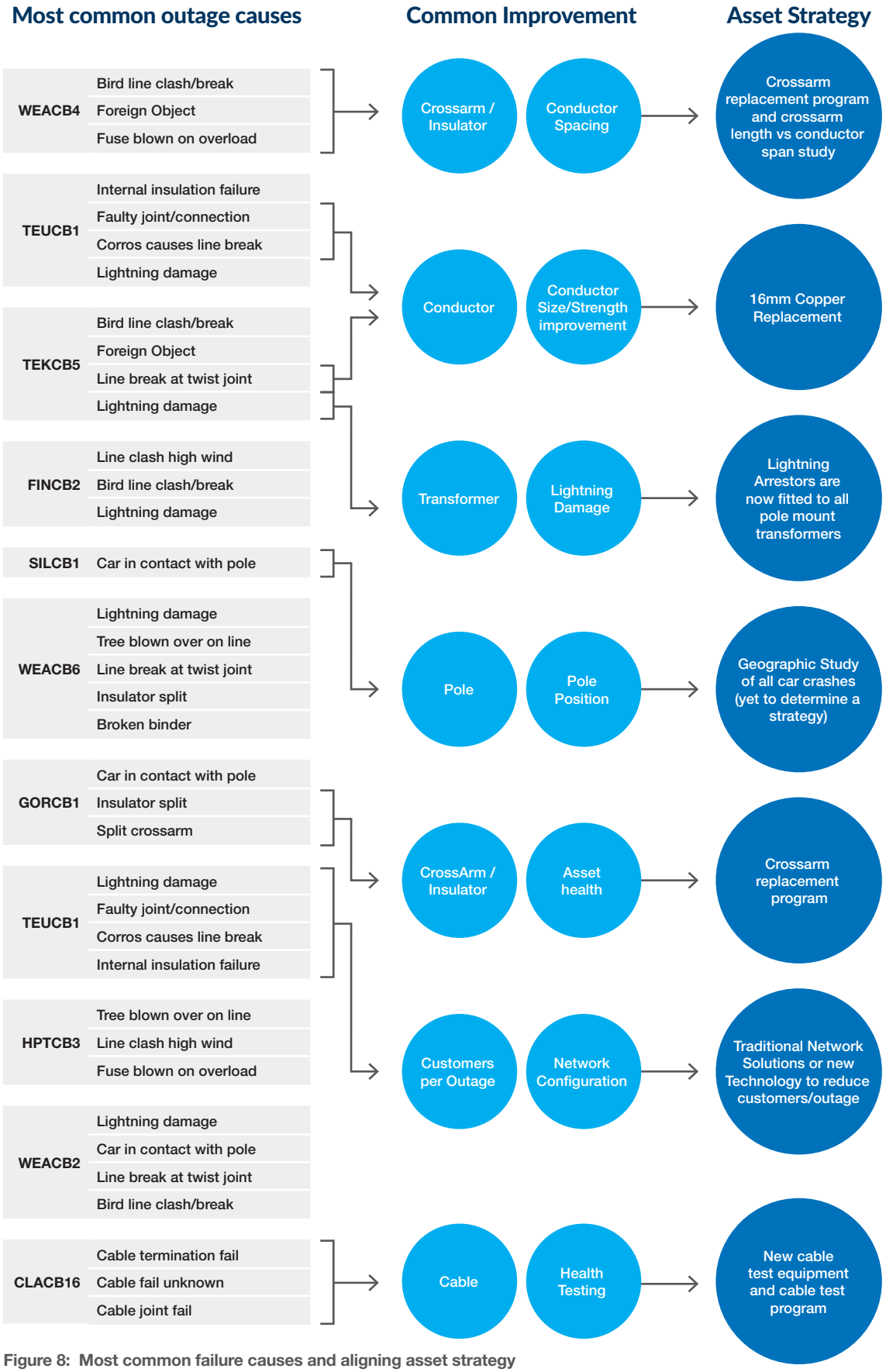

Figure 8: Most common failure causes and aligning asset strategy

Note that feeders that have high SAIDI, but low faults per 100km, indicate that the line equipment is relatively reliable but due to the line length we have a large number of outages. To reduce SAIDI on these lines our best approach is to reduce the number of customers for each outage and/or the duration of each outage. This can be achieved through a range of network configuration upgrades, backfeeds and ties to other networks. We are also investigating the use of new technologies such as distributed generation.

Our refined asset renewal strategy for overhead lines aims to reduce the impact of planned shutdowns by scoping equipment that requires replacement in the next five years in each outage envelope. This is assisted by the new Asset Replacement Works List Tool that is detailed in section 3.8.1. Consideration must be given to how WEL will limit planned SAIDI when delivering an increased volume of crossarm, pole and conductor replacement projects from 2030.

No change is made on the total System Average Interruption Frequency Index (SAIFI).

3.6 Schedule 14a Mandatory Explanatory Notes on Forecast Information

3.6.1 Commentary on difference between nominal and constant price capital expenditure forecasts (Schedule 11a)

WEL has used the cost index 2.87% for both network and non-network to determine the nominal price. The 2.87% cost index for both network and non-network was derived from 50% Labour Costs Index (LCI) and 50% Capital Goods Price Index (CGPI) from the 2019 data of Treasury. We forecast LCI and CGPI for 10 years and the average derived was used as the cost index. The LCI was forecast using Treasury forecasts from FY20-23 and we forecast FY24-30 using the average of the FY18-19 actuals and the Treasury forecast. For CGPI FY21-30 forecast, we used the average of the FY18-19 actuals.

3.6.2 Commentary on difference between nominal and constant price operational expenditure forecasts (Schedule 11b)

WEL has used the cost index 2.96% and 2.98% respectively for network and non-network to determine the nominal price. The 2.96% cost index for network OPEX was derived from 90% LCI and 10% CGPI from the 2018 data from Treasury. The 2.98% cost index for non-network OPEX was derived from 100% LCI from the 2019 data from Treasury.

We forecasted LCI and CGPI for 10 years and the average derived was used as the cost index. The LCI was forecasted using Treasury forecasts from FY20-23 and we forecast FY24-30 using the average of the FY18-19 actuals and the Treasury forecast. For CGPI FY21-30 forecast, we used the average of the FY18-19 actuals.

3.7 Material Changes to Asset Management Practice

In April 2019 WEL Networks commenced a two year programme of work called Operational Excellence. The purpose of the Programme is to unlock greater capability within the business to manage down cost and improve risk management through better alignment of WEL teams to core business requirements and utilisation of WEL systems. The programme aims to ensure that:

- The organisational design is set right to streamline achievement of operational objectives.
- The processes which deliver the overall business strategy are designed and then delivered in a measured and consistent manner by people who are competent in their role.
- The results from operational delivery are measured and then reported in appropriate and tailored communications which enhance individuals' decision-making.
- Standard systems, metrics and dashboards support the team to deliver their processes.
- Innovation and continual improvement are embedded as a standard way of working so that processes are continually refined.

This approach will support an asset management system which is consistent with the recognised ISO Standard, ISO 55001. This includes the alignment of our current AMP to the guidance specified in ISO 55002:2018 Annex C – Strategic Asset Management Plan (SAMP). Figure 9 shows the forecast effect on our asset management maturity of these initiatives at the completion of the programme. While the programme covers all areas of asset management it will result in significant uplift in the assessment area of communication and participation. This is driven by the programmes focus on documentation, streamlined communication and reporting.

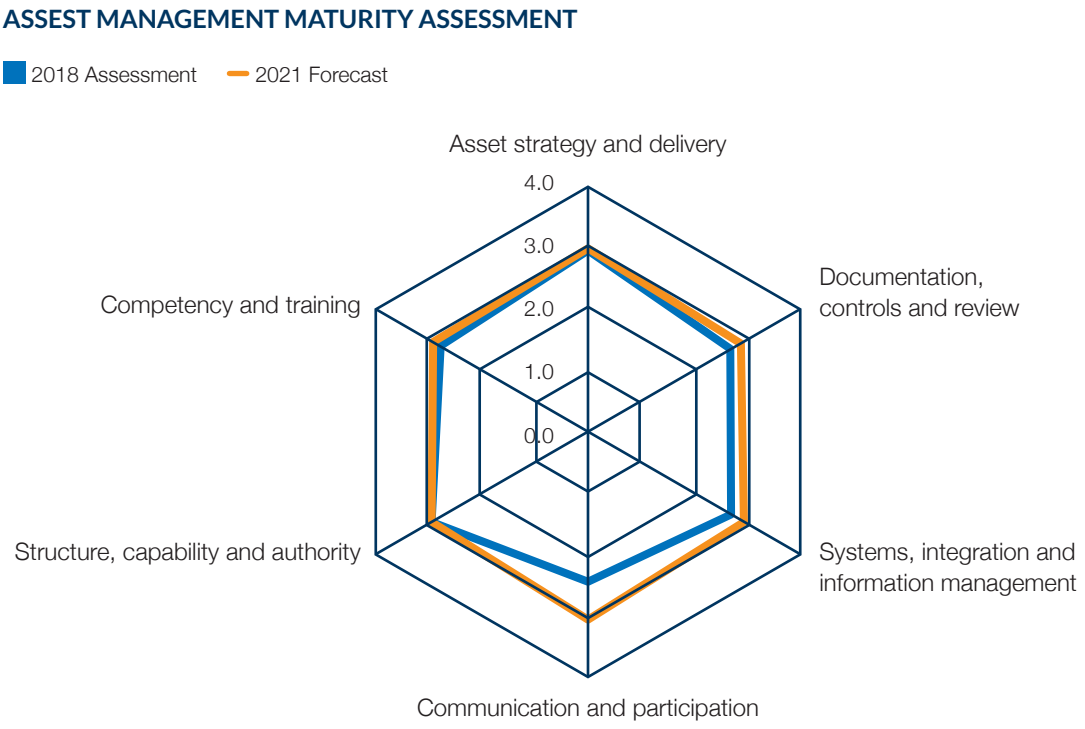

Figure 9: Forecast change in asset management maturity

3.7.1 Changes in Asset Replacement and Renewal Strategy

Our asset renewal strategy remains unchanged but we have made a major improvement in our scoping and selection of work through our new Asset Replacement Works List Tool. This tool uses our CBRM output to create a list of equipment to be reviewed and scoped.

Transformers and ring mains are scoped via a desktop study that considers previous inspections and test results. Line assets such as poles and crossarms are grouped into outage envelopes; smallest outage possible to access that equipment. The whole outage envelope is then scoped by walking the length of the outage and entering defective equipment into a GIS linked phone App. This scoping also picks up constraints and additional considerations such as trees, schools, highway requirements and landowner details.

Grouping allows efficient delivery of asset replacements and outages. The guidelines are that for each section of line we want to replace all assets that will need replacement within the next five years. This grouping will allow efficient delivery of the work with lower per unit costs and SAIDI.

The tool risk ranks the groups so that the year's expenditure can focus on the assets/groups that result in the largest reduction of risk per dollar spent. Ranking considers asset health, network risk, disposal costs, replacement cost and Value of Lost Load.

The work list is provided with all of the scoping information, photos, budget, hours for each work type, estimated outage length and SAIDI. Therefore the new tool provides more accurate budget figures, allow better job planning and a quicker job delivery. We will also be able to track delivery to a finer level and optimise our job size and delivery processes.

3.7.2 Discussion with the Councils

We are working with the Councils on improvements in information sharing and to formalise regular meetings of planners within each organisation. Close engagement with the Councils aims to increase work efficiency, enhance network planning and streamline project schedules in order to enable cost effective projects for the benefit of our stakeholders.

These discussions will provide additional input to our network development and CIW such that we can plan our projects accordingly to meet the growth Hamilton and the Waikato District is presently enjoying.

This year councils have committed to long term projects and a significant capital works budget. This provides more certainty on previously predicted growth. As a result, we are confident that the strong growth we are experiencing will continue through the planning period.

4

INFORMATION DISCLOSURE SCHEDULES

WEL Networks
AMP Planning Period 1 April 2020 – 31 March 2030

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)

EDBs 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.

for year ended	Current Year CY 31 Mar 20	CY+1 31 Mar 21	CY+2 31 Mar 22
11a(i): EXPENDITURE ON ASSETS FORECAST	**$000 (in nominal dollars)**		
Consumer connection	14,361	14,451	16,821
System growth	5,563	7,738	6,815
Asset replacement and renewal	13,333	15,642	15,478
Asset relocations	4,448	4,396	4,207
Reliability, safety and environment:			
Quality of supply	1,170	520	549
Legislative and regulatory	435	832	771
Other reliability, safety and environment	1,152	1,450	1,588
Total reliability, safety and environment	**2,757**	**2,802**	**2,907**
Expenditure on network assets	**40,462**	**45,030**	**46,228**
Expenditure on non-network assets	2,463	6,210	2,307
Expenditure on assets	**42,925**	**51,239**	**48,535**
plus Cost of financing	-	-	-
less Value of capital contributions	6,745	6,951	5,433
plus Value of vested assets	-	-	-
Capital expenditure forecast	**36,180**	**44,288**	**43,102**
Assets commissioned	**36,044**	**43,883**	**43,161**
	$000 (in constant prices)		
Consumer connection	14,361	14,451	16,352
System growth	5,563	7,738	6,625
Asset replacement and renewal	13,333	15,642	15,046
Asset relocations	4,448	4,396	4,089
Reliability, safety and environment:			
Quality of supply	1,170	520	534
Legislative and regulatory	435	832	749
Other reliability, safety and environment	1,152	1,450	1,543
Total reliability, safety and environment	**2,757**	**2,802**	**2,826**
Expenditure on network assets	**40,462**	**45,030**	**44,938**
Expenditure on non-network assets	2,463	6,210	2,243
Expenditure on assets	**42,925**	**51,239**	**47,181**

CY+3 31 Mar 23	CY+4 31 Mar 24	CY+5 31 Mar 25	CY+6 31 Mar 26	CY+7 31 Mar 27	CY+8 31 Mar 28	CY+9 31 Mar 29	CY+10 31 Mar 30
17,237	18,036	19,062	19,585	19,733	20,104	20,681	21,279
4,599	4,395	4,301	4,997	6,455	6,180	6,594	5,173
16,906	18,122	17,497	18,353	18,668	19,555	20,645	25,897
4,328	4,450	4,576	4,707	4,845	4,983	5,127	5,274
565	737	883	908	934	961	989	1,017
318	149	685	940	-	-	-	645
1,487	1,299	1,965	1,434	1,112	1,144	1,177	2,212
2,370	**2,186**	**3,533**	**3,282**	**2,046**	**2,105**	**2,166**	**3,875**
45,439	**47,190**	**48,969**	**50,924**	**51,748**	**52,927**	**55,212**	**61,497**
2,296	1,757	2,041	2,364	2,355	2,057	2,134	2,686
47,736	**48,947**	**51,010**	**53,288**	**54,103**	**54,983**	**57,346**	**64,183**
-	-	-	-	-	-	-	-
5,190	5,185	5,178	5,234	5,266	5,274	5,249	5,205
-	-	-	-	-	-	-	-
42,545	**43,762**	**45,832**	**48,054**	**48,837**	**49,710**	**52,098**	**58,978**
42,573	**43,701**	**45,728**	**47,943**	**48,798**	**49,666**	**51,978**	**58,634**
16,288	16,568	17,023	17,002	16,652	16,491	16,491	16,495
4,346	4,038	3,840	4,338	5,447	5,069	5,258	4,010
15,975	16,648	15,624	15,932	15,753	16,041	16,463	20,074
4,089	4,088	4,086	4,086	4,089	4,088	4,089	4,089
534	677	788	788	789	789	789	789
301	137	612	816	-	-	-	500
1,406	1,193	1,754	1,244	938	938	938	1,715
2,240	**2,008**	**3,155**	**2,849**	**1,727**	**1,727**	**1,727**	**3,004**
42,939	**43,350**	**43,728**	**44,206**	**43,668**	**43,416**	**44,028**	**47,671**
2,170	1,614	1,823	2,052	1,987	1,687	1,702	2,082
45,109	**44,964**	**45,551**	**46,258**	**45,655**	**45,103**	**45,730**	**49,753**

for year ended	Current Year CY 31 Mar 20	CY+1 31 Mar 21	CY+2 31 Mar 22
Subcomponents of expenditure on assets (where known)	**$000 (in constant prices)**		
Energy efficiency and demand side management, reduction of energy losses	-	370	377
Overhead to underground conversion	4,448	4,089	4,089
Research and development	-	-	-

Difference between nominal and constant price forecasts	**$000**		
Consumer connection	-	-	469
System growth	-	-	190
Asset replacement and renewal	-	-	432
Asset relocations	-	-	117
Reliability, safety and environment:			
Quality of supply	-	-	15
Legislative and regulatory	-	-	22
Other reliability, safety and environment	-	-	44
Total reliability, safety and environment	-	**-**	**81**
Expenditure on network assets	-	**-**	**1,290**
Expenditure on non-network assets	-	-	64
Expenditure on assets	-	**-**	**1,354**

CY+3 31 Mar 23	CY+4 31 Mar 24	CY+5 31 Mar 25	CY+6 31 Mar 26	CY+7 31 Mar 27	CY+8 31 Mar 28	CY+9 31 Mar 29	CY+10 31 Mar 30
377	377	377	377	377	510	765	800
4,089	4,089	4,089	4,089	4,089	4,089	4,089	4,089
-	-	-	-	-	-	-	-
948	1,468	2,040	2,584	3,081	3,612	4,189	4,784
253	358	460	659	1,008	1,110	1,336	1,163
930	1,475	1,872	2,421	2,915	3,514	4,182	5,822
238	362	490	621	757	895	1,039	1,186
31	60	94	120	146	173	200	229
18	12	73	124	-	-	-	145
82	106	210	189	174	206	238	497
130	**178**	**378**	**433**	**320**	**378**	**439**	**871**
2,500	**3,841**	**5,240**	**6,718**	**8,080**	**9,510**	**11,185**	**13,826**
126	143	218	312	368	370	432	604
2,626	**3,984**	**5,459**	**7,030**	**8,448**	**9,880**	**11,617**	**14,430**

for year ended	Current Year CY 31 Mar 20	CY+1 31 Mar 21	CY+2 31 Mar 22	CY+3 31 Mar 23	CY+4 31 Mar 24	CY+5 31 Mar 25
11a(ii): CONSUMER CONNECTION	**$000 (in constant prices)**					
Consumer types defined by EDB						
Residential Customers	12,171	12,251	13,847	13,319	12,120	12,997
Business Customers	1,530	1,530	1,734	2,227	3,744	3,271
Large Customers - Low Voltage 400V	660	670	771	742	704	754
Large Customers - Medium Voltage 11kV		-	-	-	-	-
Large Customers - High Voltage 33kV		-	-	-	-	-
Consumer connection expenditure	**14,361**	**14,451**	**16,352**	**16,288**	**16,568**	**17,023**
less Capital contributions funding consumer connection	3,740	3,740	3,810	3,747	3,742	3,735
Consumer connection less capital contributions	**10,621**	**10,711**	**12,542**	**12,541**	**12,826**	**13,287**
11a(iii): SYSTEM GROWTH						
Subtransmission	1,549	2,566	1,578	472	969	714
Zone substations	1,422	4,188	2,660	1,997	988	1,250
Distribution and LV lines		-	-	-	-	510
istribution and LV cables	590	985	2,213	683	887	1,142
Distribution substations and transformers		-	-	-	-	-
Distribution switchgear		-	-	-	-	-
Other network assets	2,002	-	173	1,193	1,193	224
System growth expenditure	**5,563**	**7,738**	**6,625**	**4,346**	**4,038**	**3,840**
less Capital contributions funding system growth						
System growth less capital contributions	**5,563**	**7,738**	**6,625**	**4,346**	**4,038**	**3,840**
11a(iv): ASSET REPLACEMENT AND RENEWAL						
Subtransmission	520	860	569	571	579	636
Zone substations	291	1,015	561	971	1,159	147
Distribution and LV lines	7,771	8,595	8,194	8,463	8,584	9,857
Distribution and LV cables	1,173	1,359	1,338	1,021	1,035	1,195
Distribution substations and transformers	1,283	1,015	1,342	1,179	1,195	1,092
Distribution switchgear	2,224	2,138	2,467	2,477	2,426	2,585
Other network assets	71	660	575	1,292	1,669	112
Asset replacement and renewal expenditure	**13,333**	**15,642**	**15,046**	**15,975**	**16,648**	**15,624**
less Capital contributions funding asset replacement and renewal	449	656	656	656	656	656
Asset replacement and renewal less capital contributions	**12,884**	**14,987**	**14,390**	**15,320**	**15,992**	**14,969**

for year ended	Current Year CY 31 Mar 20	CY+1 31 Mar 21	CY+2 31 Mar 22	CY+3 31 Mar 23	CY+4 31 Mar 24	CY+5 31 Mar 25
11a(v): ASSET RELOCATIONS	**$000 (in constant prices)**					
Project or programme						
Greenhill 33kV relocation at spine rd	1,300	-	1,444	-	-	-
HCC	-	2,396	1,028	1,750	1,750	1,750
NZTA	-	1,500	1,028	1,750	1,750	1,750
Undergrounding	500	500	589	589	588	586
Dixon Rd Round about	600	-	-	-	-	-
Safe Roads Alliance SH2	1,048	-	-	-	-	-
Sage Roads Alliance SH23	1,000	-	-	-	-	-
All other project or programmes - asset relocations						
Asset relocations expenditure	**4,448**	**4,396**	**4,089**	**4,089**	**4,088**	**4,086**
less Capital contributions funding asset relocations	2,556	2,556	968	788	788	788
Asset relocations less capital contributions	**1,892**	**1,840**	**3,122**	**3,302**	**3,301**	**3,299**

11a(vi): QUALITY OF SUPPLY						
Project or programme						
Network Work Ugrade Due To DG applications	20	20	24	24	24	23
Identified vis Smart Meters	1,150	500	510	510	654	765
All other projects or programmes - quality of supply						
Quality of supply expenditure	**1,170**	**520**	**534**	**534**	**677**	**788**
less Capital contributions funding quality of supply						
Quality of supply less capital contributions	**1,170**	**520**	**534**	**534**	**677**	**788**

for year ended	Current Year CY 31 Mar 20	CY+1 31 Mar 21	CY+2 31 Mar 22	CY+3 31 Mar 23	CY+4 31 Mar 24	CY+5 31 Mar 25
11a(vii): LEGISLATIVE AND REGULATORY	**$000 (in constant prices)**					
Project or programme						
AUFLS scheme changes		-	-	-	137	-
Seismic upgrades of substations	435	472	300	301	-	612
NER protection changes through TKH Network		-	449	-	-	-
All other projects or programmes - legislative and regulatory		360	-	-	-	-
Legislative and regulatory expenditure	**435**	**832**	**749**	**301**	**137**	**612**
less Capital contributions funding legislative and regulatory						
Legislative and regulatory less capital contributions	**435**	**832**	**749**	**301**	**137**	**612**
11a(viii): OTHER RELIABILITY, SAFETY AND ENVIRONMENT						
Project or programme						
Airconditioning for substations	100	101	110	100	-	-
Confined spaces	200	201	204	204	204	204
Fibre installation (Discretionary)		50	51	51	51	-
Fibre/Routes	253	270	255	265	255	255
Garden Place Switching Station Bypass		778	750	204	-	-
LV Visibility	40	-	122	173	173	173
Network Reliability Project		-	-	408	510	612
RAG new 11kV feeder		-	-	-	-	510
Substation Door Upgrade	41	51	51	-	-	-
NGA 11kV Switchgear Replacement	327	-	-	-	-	-
RAGCB4 Reliability Improvement	191					
All other projects or programmes - other reliability, safety and environment						
Other reliability, safety and environment expenditure	**1,152**	**1,450**	**1,543**	**1,406**	**1,193**	**1,754**
less Capital contributions funding other reliability, safety and environment						
Other reliability, safety and environment less capital contributions	**1,152**	**1,450**	**1,543**	**1,406**	**1,193**	**1,754**

for year ended	Current Year CY 31 Mar 20	CY+1 31 Mar 21	CY+2 31 Mar 22	CY+3 31 Mar 23	CY+4 31 Mar 24	CY+5 31 Mar 25
11a(ix): NON-NETWORK ASSETS	**$000 (in constant prices)**					
ROUTINE EXPENDITURE						
Project or programme						
Computer Equipment	339	575	407	415	423	432
Computer Software	1,426	1,655	986	1,005	1,026	1,046
Plant and Equipment	523	100	100	100	100	100
Motor Vehicles	175	295	350	250	65	245
All other projects or programmes - routine expenditure						
Routine expenditure	**2,463**	**2,625**	**1,843**	**1,770**	**1,614**	**1,823**
ATYPICAL EXPENDITURE						
EV Payment	-	591	-	-	-	-
Microgrid technology development	-	641	-	-	-	-
GIS Veg and AI	-	1,041	-	-	-	-
SAP funtionality	-	382	-	-	-	-
Mobility	-	521	-	-	-	-
LV Visiability	-	410	400	400	-	-
All other projects or programmes - atypical expenditure						
Atypical expenditure	**-**	**3,585**	**400**	**400**	**-**	**-**
Expenditure on non-network assets	**2,463**	**6,210**	**2,243**	**2,170**	**1,614**	**1,823**

WEL Networks
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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. EDBs 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.

for year ended	Current Year CY 31 Mar 20	CY+1 31 Mar 21	CY+2 31 Mar 22
OPERATIONAL EXPENDITURE FORECAST	**$000 (in nominal dollars)**		
Service interruptions and emergencies	2,550	3,163	3,192
Vegetation management	1,332	1,596	1,643
Routine and corrective maintenance and inspection	3,726	3,660	4,128
Asset replacement and renewal	623	749	681
Network Opex	**8,231**	**9,168**	**9,644**
System operations and network support	9,142	9,741	10,031
Business support	9,504	12,004	12,362
Non-network opex	**18,646**	**21,745**	**22,393**
Operational expenditure	**26,877**	**30,913**	**32,037**
	$000 (in constant prices)		
Service interruptions and emergencies	2,550	3,163	3,100
Vegetation management	1,332	1,596	1,596
Routine and corrective maintenance and inspection	3,726	3,660	4,009
Asset replacement and renewal	623	749	661
Network Opex	**8,231**	**9,168**	**9,367**
System operations and network support	9,142	9,741	9,741
Business support	9,504	12,004	12,004
Non-network opex	**18,646**	**21,745**	**21,745**
Operational expenditure	**26,877**	**30,913**	**31,112**

Subcomponents of expenditure on assets (where known)			
Energy efficiency and demand side management, reduction of energy losses	150	235	235
Direct billing*	N/A	N/A	N/A
Research and Development	-	-	-
Insurance	482	616	656

**Direct billing expenditure by suppliers that direct bill the majority of their consumers*

Difference between nominal and real forecasts	**$000**		
Service interruptions and emergencies	-	-	92
Vegetation management	-	-	47
Routine and corrective maintenance and inspection	-	-	119
Asset replacement and renewal	-	-	20
Network Opex	**-**	**-**	**277**
System operations and network support	-	-	290
Business support	-	-	358
Non-network opex	**-**	**-**	**648**
Operational expenditure	**-**	**-**	**925**

CY+3 31 Mar 23	CY+4 31 Mar 24	CY+5 31 Mar 25	CY+6 31 Mar 26	CY+7 31 Mar 27	CY+8 31 Mar 28	CY+9 31 Mar 29	CY+10 31 Mar 30
3,286	3,384	3,484	3,587	3,693	3,802	3,915	4,031
1,379	1,419	1,461	1,151	1,185	1,220	1,255	1,292
4,526	4,684	5,129	5,406	5,696	5,897	6,258	6,468
838	629	382	622	634	684	584	623
10,028	**10,115**	**10,456**	**10,765**	**11,208**	**11,603**	**12,012**	**12,414**
10,330	10,638	10,955	11,282	11,618	11,964	12,320	12,688
12,730	13,109	13,500	13,902	14,317	14,743	15,183	15,635
23,060	**23,748**	**24,455**	**25,184**	**25,934**	**26,707**	**27,503**	**28,323**
33,089	**33,863**	**34,911**	**35,949**	**37,142**	**38,310**	**39,515**	**40,737**
3,100	3,100	3,100	3,100	3,100	3,100	3,100	3,100
1,301	1,301	1,301	994	994	994	994	994
4,269	4,291	4,564	4,673	4,781	4,808	4,956	4,975
791	576	340	537	532	558	462	479
9,460	**9,268**	**9,304**	**9,304**	**9,408**	**9,460**	**9,512**	**9,548**
9,741	9,741	9,741	9,741	9,741	9,741	9,741	9,741
12,004	12,004	12,004	12,004	12,004	12,004	12,004	12,004
21,745	**21,745**	**21,745**	**21,745**	**21,745**	**21,745**	**21,745**	**21,745**
31,205	**31,013**	**31,049**	**31,049**	**31,153**	**31,205**	**31,257**	**31,293**
235	235	235	235	235	235	235	235
N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
-	-	-	-	-	-	-	-
708	756	794	833	875	919	965	1,013
186	284	384	487	593	702	815	931
78	119	161	156	190	225	261	298
256	392	565	734	915	1,089	1,303	1,493
47	53	42	84	102	126	122	144
568	**848**	**1,152**	**1,461**	**1,800**	**2,143**	**2,500**	**2,866**
589	897	1,214	1,541	1,877	2,223	2,579	2,947
726	1,105	1,496	1,898	2,313	2,739	3,179	3,631
1,315	**2,003**	**2,710**	**3,439**	**4,189**	**4,962**	**5,758**	**6,578**
1,884	**2,850**	**3,862**	**4,900**	**5,989**	**7,105**	**8,258**	**9,444**

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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. All units relating to cable and line assets, that are expressed in km, refer to circuit lengths.

Voltage	Asset category	Asset class
All	Overhead Line	Concrete poles / steel structure
All	Overhead Line	Wood poles
All	Overhead Line	Other pole types
HV	Subtransmission Line	Subtransmission OH up to 66kV conductor
HV	Subtransmission Line	Subtransmission OH 110kV+ conductor
HV	Subtransmission Cable	Subtransmission UG up to 66kV (XLPE)
HV	Subtransmission Cable	Subtransmission UG up to 66kV (Oil pressurised)
HV	Subtransmission Cable	Subtransmission UG up to 66kV (Gas pressurised)
HV	Subtransmission Cable	Subtransmission UG up to 66kV (PILC)
HV	Subtransmission Cable	Subtransmission UG 110kV+ (XLPE)
HV	Subtransmission Cable	Subtransmission UG 110kV+ (Oil pressurised)
HV	Subtransmission Cable	Subtransmission UG 110kV+ (Gas Pressurised)
HV	Subtransmission Cable	Subtransmission UG 110kV+ (PILC)
HV	Subtransmission Cable	Subtransmission submarine cable
HV	Zone substation Buildings	Zone substations up to 66kV
HV	Zone substation Buildings	Zone substations 110kV+
HV	Zone substation switchgear	22/33kV CB (Indoor)
HV	Zone substation switchgear	22/33kV CB (Outdoor)
HV	Zone substation switchgear	33kV Switch (Ground Mounted)
HV	Zone substation switchgear	33kV Switch (Pole Mounted)
HV	Zone substation switchgear	33kV RMU
HV	Zone substation switchgear	50/66/110kV CB (Indoor)
HV	Zone substation switchgear	50/66/110kV CB (Outdoor)
HV	Zone substation switchgear	3.3/6.6/11/22kV CB (ground mounted)
HV	Zone substation switchgear	3.3/6.6/11/22kV CB (pole mounted)

Asset condition at start of planning period (percentage of units by grade)

Units	H1	H2	H3	H4	H5	Grade unknown	Data accuracy (1–4)	% of asset forecast to be replaced in next 5 years
No.	-	0.23%	1.14%	5.17%	93.47%	-	3	4.36%
No.	-	0.68%	4.14%	7.93%	87.25%	-	3	10.37%
No.	-	-	-	-	-	-	N/A	-
km	-	-	-	53.08%	46.92%	-	1	-
km	-	-	-	-	-	-	N/A	-
km	-	-	2.05%	7.54%	90.41%	-	1	4.22%
km	-	-	-	-	-	-	N/A	-
km	-	-	-	-	-	-	N/A	-
km	-	-	-	3.39%	96.61%	-	1	0.27%
km	-	-	-	-	-	-	N/A	-
km	-	-	-	-	-	-	N/A	-
km	-	-	-	-	-	-	N/A	-
km	-	-	-	-	-	-	N/A	-
km	-	-	-	-	-	-	N/A	-
No.	-	0.32%	6.03%	57.78%	35.87%	-	4	-
No.	-	-	-	-	-	-	N/A	-
No.	-	-	-	55.10%	44.90%	-	4	-
No.	-	-	-	55.10%	44.90%	-	4	-
No.	-	-	-	-	-	-	N/A	-
No.	-	-	-	100.00%	-	-	4	-
No.	-	-	-	-	100.00%	-	4	-
No.	-	-	-	-	-	-	N/A	-
No.	-	-	-	-	-	-	N/A	-
No.	-	-	-	-	-	-	N/A	-
No.	-	-	-	-	-	-	N/A	-

Voltage	Asset category	Asset class
HV	Zone Substation Transformer	Zone Substation Transformers
HV	Distribution Line	Distribution OH Open Wire Conductor
HV	Distribution Line	Distribution OH Aerial Cable Conductor
HV	Distribution Line	SWER conductor
HV	Distribution Cable	Distribution UG XLPE or PVC
HV	Distribution Cable	Distribution UG PILC
HV	Distribution Cable	Distribution Submarine Cable
HV	Distribution switchgear	3.3/6.6/11/22kV CB (pole mounted) - reclosers and sectionalisers
HV	Distribution switchgear	3.3/6.6/11/22kV CB (Indoor)
HV	Distribution switchgear	3.3/6.6/11/22kV Switches and fuses (pole mounted)
HV	Distribution switchgear	3.3/6.6/11/22kV Switch (ground mounted) - except RMU
HV	Distribution switchgear	3.3/6.6/11/22kV RMU
HV	Distribution Transformer	Pole Mounted Transformer
HV	Distribution Transformer	Ground Mounted Transformer
HV	Distribution Transformer	Voltage regulators
HV	Distribution Substations	Ground Mounted Substation Housing
LV	LV Line	LV OH Conductor
LV	LV Cable	LV UG Cable
LV	LV Streetlighting	LV OH/UG Streetlight circuit
LV	Connections	OH/UG consumer service connections
All	Protection	Protection relays (electromechanical, solid state and numeric)
All	SCADA and communications	SCADA and communications equipment operating as a single system
All	Capacitor Banks	Capacitors including controls
All	Load Control	Centralised plant
All	Load Control	Relays
All	Civils	Cable Tunnels

Asset condition at start of planning period (percentage of units by grade)

Units	H1	H2	H3	H4	H5	Grade unknown	Data accuracy (1–4)	% of asset forecast to be replaced in next 5 years
No.	-	-	-	10.42%	89.58%	-	3	-
km	-	0.01%	2.52%	19.70%	77.77%	-	3	5.28%
km	-	-	-	-	-	-	N/A	-
km	-	-	-	-	-	-	N/A	-
km	-	-	7.01%	16.28%	76.71%	-	1	-
km	-	-	-	44.01%	55.99%	-	1	-
km	-	-	-	-	-	-	N/A	-
No.	-	-	-	-	100.00%	-	4	16.83%
No.	-	-	-	40.27%	59.73%	-	4	11.22%
No.	-	0.48%	0.48%	1.61%	97.43%	-	4	1.37%
No.	-	-	-	-	-	-	N/A	-
No.	-	-	0.95%	22.86%	76.19%	-	4	12.17%
No.	-	0.40%	3.32%	11.58%	84.70%	-	3	1.80%
No.	-	0.48%	5.56%	18.76%	75.20%	-	3	5.60%
No.	-	-	-	1.00%	99.00%	-	4	-
No.	-	-	-	-	-	-	N/A	-
km	-	0.05%	2.16%	14.98%	82.81%	-	1	0.06%
km	-	0.00%	0.20%	34.55%	65.25%	-	1	0.20%
km	-	-	9.58%	17.85%	72.58%	-	1	0.08%
No.	-	-	-	-	-	-	N/A	-
No.	-	-	4.48%	19.32%	76.20%	-	3	15.17%
Lot	-	-	5.88%	-	84.12%	10.00%	3	3.51%
No.	-	-	-	-	100.00%	-	4	-
Lot	-	-	-	20.00%	80.00%	-	3	-
No.	-	-	-	-	-	-	N/A	-
km	-	-	-	-	-	-	N/A	-

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SCHEDULE 12b: REPORT ON FORECAST CAPACITY

This schedule requires a breakdown of current and forecast capacity and utilisation for each zone substation and current distribution transformer capacity. The data provided should be consistent with the information provided in the AMP. Information provided in this table should relate to the operation of the network in its normal steady state configuration.

12b(i): SYSTEM GROWTH - ZONE SUBSTATIONS

Existing Zone Substations	Current Peak Load (MVA)	Installed Firm Capacity (MVA)	Security of Supply Classification (type)	Transfer Capacity (MVA)	Utilisation of Installed Firm Capacity %
Avalon Dr	18.6	23.8	N-1	12	78%
Borman	15.6	20.6	N-1	16	76%
Bryce St	28.7	22.9	N-1	14	125%
Chartwell	18.6	25.9	N-1	15	72%
Claudelands	20.5	22.9	N-1	20	90%
Cobham	13.3	25.9	N-1	11	51%
Finlayson Rd	4.8	-	N	4	-
Glasgow St	7.5	-	N	8	-
Gordonton	7.5	5.0	N	7	150%
Hampton Downs	1.9	-	N	2	-
Horotiu	12.3	18.0	N-1	11	68%
Kent St	15.8	22.9	N-1	18	69%
Latham Court	18.4	22.9	N-1	13	80%
Hoeka Rd	8.2	-	N	10	-
Ngaruawahia	6.1	7.5	N-1	6	81%
Peacockes Rd	16.0	25.9	N-1	12	62%
Pukete - Anchor	19.3	30.0	N-1	18	64%
Pukete - WEL's 11kV	9.2	12.6	N-1	10	73%
Raglan	5.0	-	N	3	-
HAM 11 kV GXP	28.1	44.0	N-1	21	64%
Sandwich Rd	18.8	28.2	N-1	19	67%
Tasman	26.2	30.0	N-1	20	87%
Te Kauwhata	7.4	10.0	N-1	5	74%
Te Uku	2.8	5.0	N	2	56%
Wallace Rd	10.8	30.0	N-1	12	36%
Weavers	13.9	9.0	N-1	9	154%
Whatawhata	5.3	-	N	4	-

[1] *Extend forecast capacity table as necessary to disclose all capacity by each substation*

Installed Firm Capacity +5 years (MVA)	Utilisation of Installed Firm Capacity + 5yrs %	Installed Firm Capacity Constraint +5 years (cause)	Explanation
23.8	82%	No constraint within +5 years	
20.6	95%	Subtransmission circuit	Limited by the 33kV OH conductor.
22.9	60%	No constraint within +5 years	Bryce St was supplying the full load of Kent St for part of the year while bus maintenace was carried out
25.9	75%	No constraint within +5 years	
22.9	93%	No constraint within +5 years	
25.9	48%	No constraint within +5 years	
-	-	No constraint within +5 years	
-	-	No constraint within +5 years	
5.0	94%	No constraint within +5 years	
-	19%	No constraint within +5 years	
18.0	74%	No constraint within +5 years	
22.9	69%	No constraint within +5 years	
22.9	76%	No constraint within +5 years	
-	-	No constraint within +5 years	
7.5	79%	No constraint within +5 years	
25.9	74%	No constraint within +5 years	
30.0	64%	No constraint within +5 years	3-winding TX - owned Contact Energy.
12.6	77%	No constraint within +5 years	3-winding TX - owned Contact Energy.
-	-	Subtransmission circuit	Limited by the 33kV OH conductor. Transfer capacity is limited due to voltage contraints.
44.0	75%	No constraint within +5 years	
28.2	67%	No constraint within +5 years	
30.0	91%	Transformer	New substation proposed to support Industrial and residential development
10.0	63%	No constraint within +5 years	
5.0	50%	No constraint within +5 years	
30.0	37%	No constraint within +5 years	
9.0	122%	Transformer	Load can be transferred to the adjacent Glasgow St Substation in the event of a transformer outage
-	-	No constraint within +5 years	

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SCHEDULE 12C: REPORT ON FORECAST NETWORK DEMAND

This schedule requires a forecast of new connections (by consumer type), peak demand and energy volumes for the disclosure year and a 5 year planning period. The forecasts should be consistent with the supporting information set out in the AMP as well as the assumptions used in developing the expenditure forecasts in Schedule 11a and Schedule 11b and the capacity and utilisation forecasts in Schedule 12b.

	for year ended	Current Year CY 31 Mar 20	CY+1 31 Mar 21	CY+2 31 Mar 22	CY+3 31 Mar 23	CY+4 31 Mar 24	CY+5 31 Mar 25
		Number of connections					
12c(i): CONSUMER CONNECTIONS							
Number of ICPs connected in year by consumer type							
	Consumer types defined by EDB						
	Residential Customers	1,527	1,313	1,300	1,300	1,300	1,300
	Business Customers	89	122	150	150	150	150
	Large Customers - Low Voltage 400V	51	38	20	20	20	20
	Large Customers - Medium Voltage 11kV	(5)	(2)	(2)	(2)	(2)	(2)
	Large Customers - High Voltage 33kV	-	-	-	-	-	-
	Asset Specific Customers	-	-	-	-	-	-
	Unmetered Customers	1	-	-	-	-	-
	Connections total	**1,663**	**1,471**	**1,468**	**1,468**	**1,468**	**1,468**
	Distributed generation						
	Number of connections	195	250	300	350	400	450
	Capacity of distributed generation installed in year (MVA)	1	1	1	2	2	2

12c(ii): SYSTEM DEMAND							
Maximum coincident system demand (MW)							
	GXP demand	225	227	228	229	231	232
plus	Distributed generation output at HV and above	50	51	51	51	51	51
	Maximum coincident system demand	**275**	**277**	**278**	**280**	**281**	**283**
less	Net transfers to (from) other EDBs at HV and above						
	Demand on system for supply to consumers' connection points	**275**	**277**	**278**	**280**	**281**	**283**
Electricity volumes carried (GWh)							
	Electricity supplied from GXPs	950	955	960	965	970	975
less	Electricity exports to GXPs	90	90	90	90	90	90
plus	Electricity supplied from distributed generation	440	442	444	446	448	450
less	Net electricity supplied to (from) other EDBs	(15)	(15)	(15)	(15)	(15)	(15)
	Electricity entering system for supply to ICPs	**1,315**	**1,322**	**1,329**	**1,336**	**1,343**	**1,350**
less	Total energy delivered to ICPs	1,256	1,263	1,270	1,277	1,283	1,290
	Losses	**59**	**59**	**59**	**60**	**60**	**60**
	Load factor	**55%**	**54%**	**54%**	**55%**	**55%**	**55%**
	Loss ratio	**4.4%**	**4.4%**	**4.4%**	**4.5%**	**4.5%**	**4.5%**

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SCHEDULE 12d: REPORT FORECAST INTERRUPTIONS AND DURATION

This schedule requires a forecast of SAIFI and SAIDI for disclosure and a 5 year planning period. The forecasts should be consistent with the supporting information set out in the AMP as well as the assumed impact of planned and unplanned SAIFI and SAIDI on the expenditures forecast provided in Schedule 11a and Schedule 11b.

for year ended	Current Year CY 31 Mar 20	CY+1 31 Mar 21	CY+2 31 Mar 22	CY+3 31 Mar 23	CY+4 31 Mar 24	CY+5 31 Mar 25
SAIDI						
Class B (planned interruptions on the network)	60.0	62.0	64.0	65.5	67.0	68.0
Class C (unplanned interruptions on the network)	61.2	60.2	59.1	58.2	57.2	56.3
SAIFI						
Class B (planned interruptions on the network)	0.30	0.31	0.32	0.33	0.33	0.34
Class C (unplanned interruptions on the network)	1.00	0.99	0.97	0.96	0.95	0.94

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DIRECTORS' CERTIFICATE

5 DIRECTORS' CERTIFICATE

CERTIFICATE FOR YEAR-BEGINNING DISCLOSURES

Pursuant to clause 2.9.1 of Section 2.9

We, Rob Campbell, and Carolyn Steele being directors of WEL Networks Limited certify that, having made all reasonable enquiry, to the best of our knowledge:

a) The following attached information of WEL Networks Limited prepared for the purposes of clauses 2.4.1, 2.6.1, 2.6.3, 2.6.6 and 2.7.2 of the Electricity Distribution 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.

c) The forecasts in Schedules 11a, 11b, 12a, 12b, 12c and 12d are based on objective and reasonable assumptions which both align with WEL Networks Limited's corporate vision and strategy and are documented in retained records.

Director

Director


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