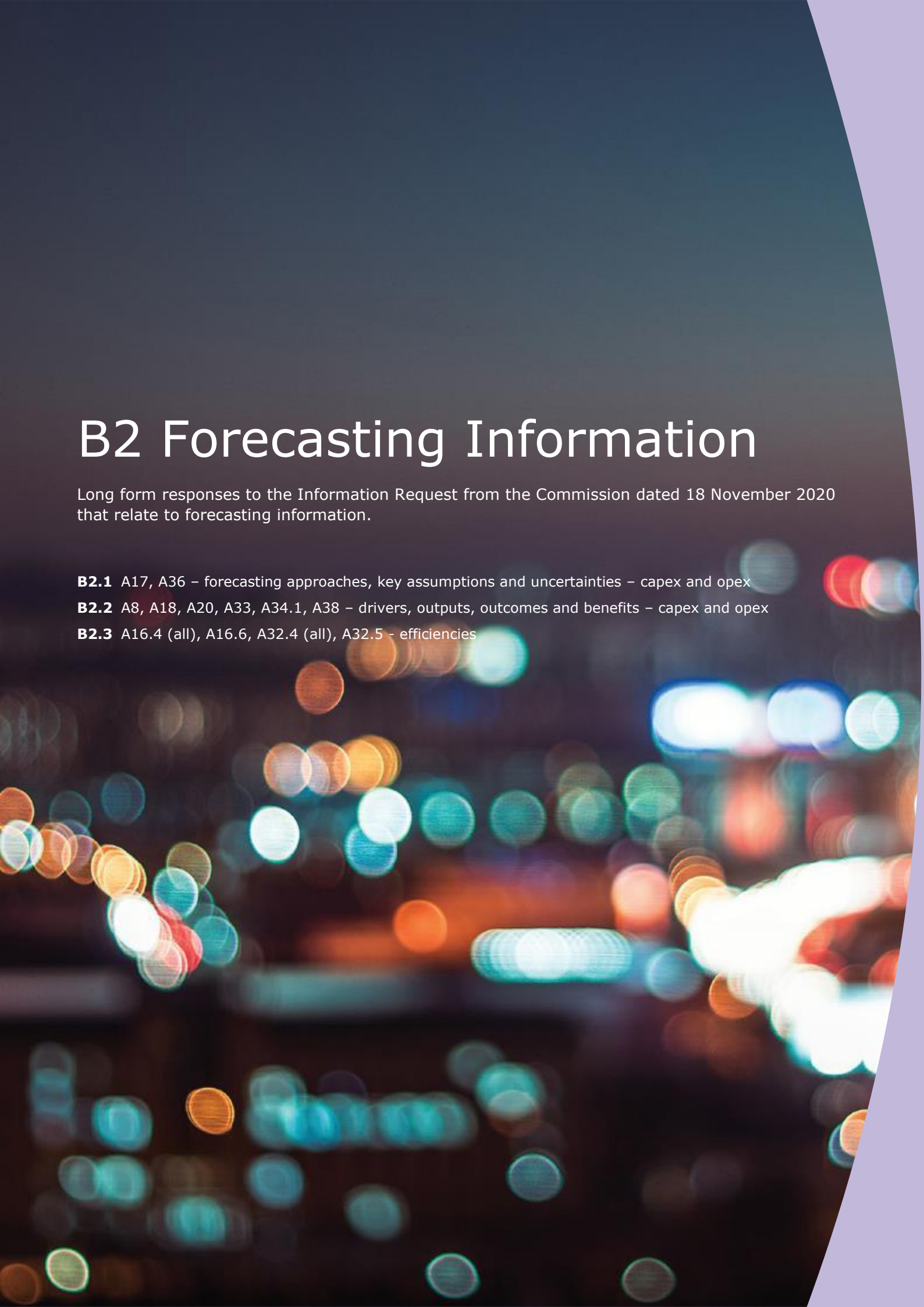
B2 Forecasting Information

Long form responses to the Information Request from the Commission dated 18 November 2020 that relate to forecasting information.

B2.1 A17, A36 – forecasting approaches, key assumptions and uncertainties – capex and opex

B2.2 A8, A18, A20, A33, A34.1, A38 – drivers, outputs, outcomes and benefits – capex and opex

B2.3 A16.4 (all), A16.6, A32.4 (all), A32.5 - efficiencies



Forecasting approaches, key assumptions and uncertainties

A17, A36 – Responses to questions requesting information on forecasting approaches, key assumptions and uncertainties.

Expenditure area	Sub-category	Forecasting method and why appropriate	Assumptions and how we apply them	Uncertainties
Installations	Standard	PxQ because it is demand driven	Fibre uptake % from PSM Connection volumes from PSM are used as the Q in the models	Demand is inherently uncertain. This is managed through the connection capex mechanism Changes in FSP costs due to fall in activity volumes
	Complex	Run rate based on historical PxQ as this is a low volume area	Past costs are a fair indication of future costs FSA contract prices are in line with contract and forecast changes	Demand is inherently uncertain. This is managed through the connection capex mechanism Changes in FSP costs due to fall in activity volumes
Extending the network	UFB communal	Based on fixed price contracts with FSPs. This is the best source of forecast info available	Certain level of change requests from contracts is built into the forecast Rates of materials is based on historical run rates Rates of internal labour is based on historical run rates	Change requests arising from FSPs Low uncertainty
	New property developments	PxQ based on market assessments Appropriate as we have a view of existing contracted developers, and assessment of market as to what share of future	Market share of available new work is based on historical win rates	State of new property development market in NZ is uncertain NZ trend of population growth

Expenditure area	Sub-category	Forecasting method and why appropriate	Assumptions and how we apply them	Uncertainties
		contracts we are likely to win P is agreed contract rates		Changes in FSP costs due to fall in activity volumes
	Augmentation	Based on historical run rates – no better information	The cost per metre of rolling out fibre to a rural area is based on historical run rates	Don't know if government will do another UFB contract; or which communities will self-fund connections Changes in FSP costs due to fall in activity volumes
Sustain and enhance	Field sustain	PxQ based on historical spend	Unit costs are assumed based on copper maintenance	Maintenance volumes are uncertain The exact population of some assets is unknown Changes in FSP costs due to fall in activity volumes
	Site sustain	PxQ based on quoted supplier costs and data gathered from the CAR	Actual job costs are assumed to be equivalent to supplier costs	Utilisation of buildings as we transition away from copper Changes in FSP costs due to fall in activity volumes
	Relocations	Historic run rate	Costs will remain stable	Volumes as they are demand driven Changes in FSP costs due to fall in activity volumes
	Resilience	PxQ based on historical costs and volume of planned work	We have assumed the volume of reactive projects	Demand for reactive projects Changes in FSP costs due to fall in activity volumes
Network capacity	Access	PxQ based on unit cost and expected demand	Network traffic will grow at historic rates [**Chorus CI**] New products have a similar lifespan	Exchange rates – we use derivative financial instruments to reduce our exposure to this Inherent uncertainty in uptake of new products, e.g. Hyperfibre
	Aggregation	PxQ based on unit cost and expected demand	Network traffic will grow at historic rates	Exchange rates – we use derivative financial

Expenditure area	Sub-category	Forecasting method and why appropriate	Assumptions and how we apply them	Uncertainties
			[**Chorus CI**] New products have a similar lifespan	instruments to reduce our exposure to this Inherent uncertainty in uptake of new products, e.g. Hyperfibre
	Transport	PxQ based on unit cost and expected demand	Network traffic will grow at historic rates [**Chorus CI**] New products have a similar lifespan	Exchange rates – we use derivative financial instruments to reduce our exposure to this Inherent uncertainty in uptake of new products, e.g. Hyperfibre
IT and support	Customer and network IT	Substantially PxQ with each project priced either by known contracts or using a cost estimation tool based on previous projects Based on historic projects costs	Increases in internal and external labour costs are absorbed by improvements in productivity and efficiency improvements We maintain historical ratios of delivery versus required capital spend Labour will stay at same % of product development costs	Speed of technology evolution over medium to long term
	Business IT	Substantially PxQ with each project priced either by known contracts or using a cost estimation tool based on previous projects	Increases in internal and external labour costs are absorbed by improvements in productivity and efficiency We maintain historical ratios of delivery versus required capital spend	Speed of technology evolution over medium to long term Potential Microsoft datacentre – may require our plans to be revised [more detail in Investment Report]
	Corporate	Based on historical spending	Assumed relatively stable costs [**Chorus CI**]	Low uncertainty

Expenditure area	Sub-category	Forecasting method and why appropriate	Assumptions and how we apply them	Uncertainties
			Assumed innovation spend is a % of capex, based on global R&D benchmarks	
Customer opex	Product Sales and Marketing	Labour is based on review of organisation structure adjusted for known change, as this is the best available information Operating costs are based on historical run rates, adjusted for known changes	Labour increases at CPI CPI is applied on a consistent basis	FX rates CPI rates Interest rates Supply of offshore materials
	Customer and Network Operations	Volumes are falling based on PSM forecasts Labour is based on review of organisation structure adjusted for known change, as this is the best available information Operating costs are based on historical run rates, adjusted for known changes	Labour increases at CPI CPI is applied on a consistent basis	FX rates CPI rates Interest rates Supply of offshore materials
Network opex	Maintenance	Predominately PxQ models Appropriate as allows us to build a granular bottom up forecast. Likewise, for manholes and pits as we know the number of manholes and pits we have so easier to forecast on this basis and stage the work	Key assumptions: Historical fault rate is representative of future fault rates. This historical fault rate is applied against our connections forecast to come up with the Q component of the forecast Steady state fault rate will not change significantly in RP1. Applied in model by using the same fault rate throughout the forecast period	It is uncertain what the fault rate will be. Could be impacted by severe weather events etc. [**Chorus CI**] CPI rates

Expenditure area	Sub-category	Forecasting method and why appropriate	Assumptions and how we apply them	Uncertainties
			Average price per truckroll is based on historical information and contracts with our FSP prices. Applied in model by using this information and adjusting for inflation. However, in 2022 [**Chorus CI**] our FSP contract comes up for renewal Service level targets to remain the same and will continue to be met. Applied to model by not including an adjustment for these items in model	
	Network operations	Labour is based on review of organisation structure adjusted for known change, as this is the best available information NOC PxQ as allows for detailed forecasting System, software/hardware maintenance forecasted based off fixed contract prices with suppliers. Most accurate approach as based on contracts Service company incentives based on historical performance	Labour increases at CPI CPI is applied on a consistent basis NOC: Price applied to model based on existing contract structure. Quantity is headcount. We have used forecasted fault volumes and consideration of any intro of new tech to determine the required headcount [**Chorus CI**] System, software/hardware maintenance based on existing contractual agreements	CPI rates NOC contract up for renewal in RP1 [**Chorus CI**] Future fault rates are uncertain System, software/hardware maintenance contracts are up for renewal in RP1 – [**Chorus CI**] [**Chorus CI**]

Expenditure area	Sub-category	Forecasting method and why appropriate	Assumptions and how we apply them	Uncertainties
			[**Chorus CI**]	
	Operating costs	Lease costs are forecasted on a bottom up basis. Appropriate as allows us to forecast on a lease by lease basis and identify areas for potential cost savings Electricity costs forecasted on a PxQ basis. Bottom up forecast that allows us to factor in adjustments for fibre efficiency and hedges. Rates based off RV of current buildings and infrastructure assets, includes an increase for builds that are near completion Other minor costs run rate based as recurring in nature and do not change with activity levels	Based on contractual commitments and anticipated renewals of contracts Electricity key assumptions - Price informed by key grid exit point spot prices that are traded on the market. - Assumed price is then adjusted for the historical difference between the actual price we incurred and the price at key grid exit points. Quantity is based on monthly electricity consumption from the previous year. Applied to model but adjusted for any anticipated changes in consumption e.g. more efficient fibre connections	Significant changes in plans or circumstances could result in changes to our space needs Uncertainty contained in our electricity forecasting because only two grid exit points are traded on the futures market. We mitigate this risk by adjusting our forecast based on the historic difference between actual and traded prices. Uncertain as to how much the uplift in rates will be each year
Support opex	Corporate	Labour is based on review of organisation structure adjusted for known change, as this is the best available information Operating costs are based on historical	Labour increases at CPI CPI is applied on a consistent basis	FX rates CPI rates Interest rates Supply of offshore materials

Expenditure area	Sub-category	Forecasting method and why appropriate	Assumptions and how we apply them	Uncertainties
		run rates, adjusted for known changes Levies are linked to contractual or legislative terms Insurance is linked to market info of increases in premiums		
	Asset management	Labour is based on review of org structure adjusted for known change, as this is the best available info NOC PxQ as allows for detailed forecasting System, software/hardware maintenance forecasted based off fixed contract prices with suppliers. Most accurate approach since based on contracts Service company incentives based on historical performance	Labour increases at CPI CPI is applied on a consistent basis NOC: Price applied to model based on existing contract structure. Quantity is headcount. We have used forecasted fault volumes and consideration of any intro of new tech to determine the required headcount [**Chorus CI**] System, software/hardware maintenance based on existing contractual agreements [**Chorus CI**]	CPI rates NOC contract up for renewal in RP1 [**Chorus CI**] Future fault rates are uncertain System, software/hardware maintenance contracts are up for renewal in RP1 [**Chorus CI**] [**Chorus CI**]
	Technology	Fixed costs are based on contract pricing	[	Potential Microsoft datacentre – may

Expenditure area	Sub-category	Forecasting method and why appropriate	Assumptions and how we apply them	Uncertainties
		Variable costs are forecast using PxQ, where volumes are related to headcount, service desk tickets and the number of servers in use and price is the unit costs as determined in supplier agreements	**Chorus CI**]	require our plans to be revised

Drivers, outputs, outcomes and benefits

A8, A18, A20, A33, A34.1, A38 – Responses to questions requesting information on drivers, outputs, outcomes and benefits for base capex and opex subcategories.

The table below provides further information to draw out drivers, outputs, outcomes and benefits of capex and opex subcategories of expenditure. We have considered these concepts as follows:

- Driver: A resource, process or condition that is vital for the continued success and growth of a business.
- Output: The products in the project. Example: A new help desk system.
- Outcome: The result of the change derived from using the outputs. Example: First line support can answer more of the requests without escalation.
- Benefit: The measurable improvement resulting from an outcome. Example: Escalation of cases drops from 30% to 20%.

Expenditure area	Sub-category	Drivers	Outputs	Outcomes	Benefits
Installations	Standard	Demand for fibre connections Demand for better fibre products	New assets are created More customers are connected to the fibre network	End-users can connect to the network Delivery of government strategy	Customers receive high quality network services People can connect NZ business can operate on a global scale Innovation of new technologies, products and services NZ is kept at the forefront of technology "Keeping NZ New"
	Complex	Demand for fibre connections with added diversity	New assets are created More customers are connected to the fibre network	End-users can connect to the network Business can guarantee service performance levels Businesses/ schools/etc can continue to	Customers receive high quality network services Businesses can operate on a global scale Continuation of service

Expenditure area	Sub-category	Drivers	Outputs	Outcomes	Benefits
				operate if fibre lines are cut	
Extending the network	UFB communal	Contractual obligation	New assets are created Fibre is laid out to 87% of the country according to contract	Fibre broadband is available to more end-users	Customers receive high quality network services NZ is kept at the forefront of technology People can connect. Businesses can operate globally. Distance learning for schools. Innovation of new products
	New property developments	Grow the network and increase the pool of potential customers	New assets are created Customers are more easily connected to the fibre network. Extends the fibre footprint outside of the UFB areas	Customers can easily connect to the fibre network Increase in customer satisfaction scores	Grows the footprint of fibre services
	Augmentation	Grow the network and increase the pool of potential customers	New assets are created More customers connected to the network Diversity and resilience of fibre routes	Customers can connect to the fibre network	Grows the footprint of fibre services
Sustain and enhance	Field sustain	Keep the network running	Assets are replaced	Service levels are maintained	Customers receive high quality network services
	Site sustain	Keep the network running	Assets are replaced	Service levels are maintained	Customers receive high quality network services
	Relocations	Demand driven by third parties	Network infrastructure is moved	Service levels are maintained	Customers receive high quality network services
	Resilience	To reduce the chance of network outages	Dual routes are instigated	Service can be maintained if a fibre is damaged.	Customers receive high quality network services
Network capacity	Access	Enables customer connections	New network electronic devices are deployed	Faster and more reliable services	Customers receive high quality network services
	Aggregation	Contractual obligation to provide network capacity	New network electronic devices are deployed	Faster and more reliable services	Customers receive high quality network services

Expenditure area	Sub-category	Drivers	Outputs	Outcomes	Benefits
	Transport	Contractual obligation to provide network capacity	New network electronic devices are deployed	Faster and more reliable services	Customers receive high quality network services
IT and support	Customer and network IT	To engage with customers and run the network	Improved systems	Better management of customer and supplier interactions	Improved customer satisfaction
	Business IT	For day to day business activities	Improved systems	Staff can run the network	Improved efficiency
	Corporate	To refit office buildings	Office buildings are maintained Meet contractual obligations	Legislative requirements are met	Employees are safe and happy in a work environment
Customer opex	PSM	Contractual obligation to promote fibre broadband New products to keep up with technology advances	More connections to the network Improve products and services New products are generated	People can connect locally and internationally Businesses can operate on a global scale Generates new revenue opportunities to Chorus	Innovation of new technologies Generates GDP for NZ Puts NZ on global scale
	CNO	Connecting customers to the network Managing customers on the network	Number of orders processed	More customers are connected to the fibre network Offnet customers are connected back to the fibre network	Customer satisfaction scores
Network opex	Maintenance	Keep the network running at current service levels	Maintained assets, fix problems prior to when they arise (preventative maintenance)	Any identified faults are repaired quickly with the intent to minimise any downtime	Maintain or improve customer satisfaction
	Network operations	Keep the network running at current service levels	Provides for systems and resources to monitor network operations	Allows Chorus to keep the network running, minimise downtime and service interruption where possible	Maintain customer satisfaction
	Operating costs	Unavoidable costs that need to be incurred to provide our service to end customers	Powered network electronics, location for housing our network electronics, secure and compliant buildings	Allows Chorus to keep the network running	Maintain customer satisfaction
Support opex	Corporate	Business strategy, legal	Annual Reports	Compliant company	Investor confidence

Expenditure area	Sub-category	Drivers	Outputs	Outcomes	Benefits
		advice, compliance Governance structures To stay competitive	Company listing requirements Meeting of legislative obligations Reporting to the external market New products offered to the market	Improved network services	Brand and reputation Remain competitive in the market
	Asset management	Improving asset management capabilities	Staff to develop practices and improve systems	More efficient business practices	The primary focus is on streamlining end-to-end processes, enhancing the quality of our data and improving customer experience
	Technology	Keep IT systems running	Access to, and support of IT systems	Ability to run the network and day to day business activities	RSPs, end-users and suppliers can connect and interact with us easily and efficiently

Efficiencies

A16.4, A16.6 and A32.4 and A32.5 – evidence of efficiencies and summary of efficiency assumptions

A16.4 (A16.4.1/A16.4.2/A16.4.3/A16.4.4) and A32.4(A32.4.1/A32.4.2/A32.4.3/A32.4.4) ask for evidence of efficiencies in base capex, connection capex and opex.

The table below sets out examples (as evidence) of where Chorus is seeking the following types of efficiency for both capex and opex:

- process improvements that led or will lead to cost efficiencies (A16.4.1 and A32.4.1)
- appropriate whole of life cost and efficiency improvements (A16.4.2 and A32.4.2)
- cost reduction strategies for project and programmes (A16.4.3 and A32.4.3)
- suppliers (internal and external) of goods and services to have incentives to perform well and identify cost savings; (A16.4.4 and A32.4.4)

We note that information relevant to A16.4.4 and A32.4.4 is also included in the 'IFP Delivery' report, in terms of service level agreements with key service company relationships.

A16.6 and A32.5 request a summary of efficiency assumptions that Chorus has applied in proposed base capex, connection capex and opex (respectively). This is included in the table below.

Note that examples for Installations and some network capacity spend will be connections capex related. Also, expenditure areas relate to the relevant investment report chapter.

Expenditure area	Example of efficiency	Type of efficiency	Comment on evidence	Assumptions
Installations	Fibre in a Day	Process improvement	The steps required to connect a customer of Agree, Build and Connect are completed within the same visit	These are for simple orders only. More complex orders will not follow the Fibre in a Day process
	MDU network extension	Whole of life and cost efficiency	When the first order of a MDU comes in, the network is extended to all MDU connections in the building	When subsequent orders come in, they are connected as a SDU – cheaper and more efficient
	Order processing	Whole of life and cost efficiency	Over time, simple connections have become more automated to process, requiring less manual interventions	We invest in automation to make our processes more efficient
Extending the network	UFB Communal build	Whole of life cost and efficiency Suppliers incentives	Over the life of the UFB 1 contract, CPPP has reduced significantly	Improved architecture designed, fixed price contracts with suppliers, innovation in delivery
	New Property Development	Cost reduction strategy	The developer deploys our duct/cable during the development	Trenches are open in the development for other services, so it makes sense for fibre

Expenditure area	Example of efficiency	Type of efficiency	Comment on evidence	Assumptions
				to be laid using open trenches
	Augmentation	Whole of life cost and efficiency	If we lay fibre to increase network resilience near to a community, it can change the economics of building a network extension and provide the infrastructure required for end-users near to the new fibre routes to connect to the network	
Sustain and enhance	Poles tag and test programme	Whole of life cost and efficiency	To develop asset health and criticality measures to support systematic and well-informed risk management	Initial phase of the programme assumed to be completed by 2021 The number of tests will peak prior to RP1, in the period when both the initial and retest programmes are underway Testing is assumed to reduce to a steady state level of retests per year Future retest regimes will be based on degradation rate of poles identified after the current planned rounds of retesting
	Manhole condition assessment programme	Whole of life cost and efficiency	To use a proactive maintenance approach to faults we identify	Each manhole is inspected every 10 years During RP1 we will develop our internal capability to manage this programme
	Minimise the whole lifecycle cost of manholes at an appropriate level of risk	Whole of life cost and efficiency	Identifying potential cost reductions through engineering investigation and by improving our procurement to optimise long term supply contracts Focusing on using existing duct capacity by changing cable and equipment configurations and clearing duct of	

Expenditure area	Example of efficiency	Type of efficiency	Comment on evidence	Assumptions
			redundant copper cables	
	Fibre Route Survey	Whole of life cost and efficiency	Preventative work in the fibre asset portfolio To manage trench ageing and identify potential faults on Core fibre routes	Done annually Faulty fibre is replaced as refurbishment is not cost effective
	Introduced Site Development Plans (SDPs)	Whole of life cost and efficiency	Enables us to develop advanced asset management plans for our core and mesh sites with an aim to improve utilisation	
	Chorus Alternative Sites Programme	Whole of life cost and efficiency	To improve the building fabric, add additional IT suitable footprint and update the power and cooling infrastructure To reduce dependency on sites we currently lease from Spark	The programme is expected to peak in 2021 and tail off towards the end of RP1
	Courtenay Place refurbishment	Whole of life cost and efficiency	Includes upgrades to air conditioning, electrical services, and engine alternators, seismic improvement works, window remediation and a lift upgrade	Expected to complete this project in 2024
	Deliver high quality network services at an efficient cost		Developing programmes of work based on performance objectives and asset health analysis to optimise spend Improving cost estimates and systems that evaluate options and manage delivery costs	
	Transport robustness – dual routes proposed	Whole of life cost and efficiency	To reduce the chance of network outages requiring costly repairs under urgency	Resilience work peaking in 2021 and 2022 due to the work on the Fox Glacier to Haast to Lake Hawea fibre feeder and Te Anau to Milford Sound fibre feeder Resilience work includes our planned resilience programmes and reactive resilience projects which are based on demand modelling

B2.3 A16.4 (all), A16.6, A32.4 (All), A32.5 efficiencies

Expenditure area	Example of efficiency	Type of efficiency	Comment on evidence	Assumptions
Network capacity	Invest in new technology	Whole of life cost and efficiency	New technology provides cost efficient capability to cope with continued traffic growth. Also, as vendors reduce support for technologies, replacement and maintenance costs increase and we switch to alternative technology. This ensures that capacity is added ahead of growth to sustain congestion-free performance and that technologies are optimised to retain support, add features and enable cost-effective growth	Asset lives, traffic growth, likely timelines for replacements
IT and support	Improved systems and network services	Process improvements	Better management of customer and supplier interactions	
	Automation of business processes	Cost reduction strategy	Investments aim to automate or correct business processes to reduce full time employee headcount and external costs in the company. During RP1 we are planning to upgrade, consolidate or replace platforms to minimise or reduce licensing and other variable cost inputs (e.g. SMS, telephone, transaction fees)	
	Improve data integration	Process improvements	Will support improved information workflow and to avoid data duplication. We are planning on exploiting cloud-delivered applications, infrastructure and systems to optimise and improve the functionality, efficiency and usability of our business IT systems	
	Investment in asset management capabilities	Process improvements	The AMCL capability improvement roadmap entails development and integration of asset information and asset management systems to improve asset management	

Expenditure area	Example of efficiency	Type of efficiency	Comment on evidence	Assumptions
			performance (cost, risk, service quality). These plans involve a mixture of costs on people and systems	
Customer opex	Provision of financial incentives	Cost reduction strategy	Provide financial incentives to RSPs to encourage them to drive fibre adoption through their activities – both to their existing copper broadband customers and the broader market– as well as encouraging faster speed fibre adoption	More customers on the fibre network will drive down the per user cost of both the fibre and copper network
	Late fibre adopters	Cost reduction strategy	Work with late adopters directly to migrate them from the copper network onto the fibre network, including door-knocking and other direct campaigns to encourage fibre adoption	More customers on the fibre network will drive down the per user cost of both the fibre and copper network
	Copper withdrawal	Cost reduction strategy	Where fibre adoption is very high, this will allow us to undertake copper withdrawal to move the last adopters to fibre and realise cost efficiencies	More customers on the fibre network will drive down the per user cost of both the fibre and copper network
	Decrease in headcount	Cost reduction strategy	We have assumed a decrease in headcount reflecting anticipated decline in installation and connect volumes	Lower volumes will result in fewer staff required to process orders
Network opex	Preventative maintenance	Whole of life cost and efficiency	Minimise the chance of unforeseen disruption to network services Preventative maintenance capacity is currently under development. Example is the introduction of the manholes and pits programme – shifting from a purely reactive approach to a proactive maintenance programme in RP1	Identification of preventative maintenance need and timing enables maintenance to occur.
	Opex to keep the network running at current service levels including systems to monitor	Whole of life cost and efficiency	Allows Chorus to keep the network running, minimise downtime and service interruption where possible	

Expenditure area	Example of efficiency	Type of efficiency	Comment on evidence	Assumptions
	network operations			
	Building engineering services opex to house electronics in buildings that have good conditions for equipment	Whole of life cost and efficiency	Allows Chorus to protect equipment in buildings so they are operating in optimal conditions	
	Network operations – FSA incentive payments	Supplier incentives	Provide financial incentives to our FSPs. The incentive scheme is designed to ensure FSPs maintain high performance levels. There is also an "at-risk" amount which will be a penalty to retention costs if the FSP under performs	
	Network operations – reorganising internal resources	Process improvements	Having a reduced workload presents the opportunity for consolidation of work effort and supporting systems	
	Operating costs – leases	Cost reduction strategy	Planning to reduce the extent of shared space with Spark and RP1 forecast incorporates reduction in space we take in Spark exchanges. There is an ongoing programme of work to optimise our network property-related costs which includes our network leases (shared costs)	
	Operating costs – electricity	Cost reduction strategy	As we migrate customers from copper to fibre, we expect this to have a favourable impact on our total electricity expenditure as fibre connections are more efficient than copper connections	
Support opex	Improving asset management capabilities – develop processes and systems	Process improvements	More efficient business practices and management of assets	Business change processes proceed smoothly
	Move to agile delivery	Process improvements	We will look to make smaller changes more frequently. This allows for efficiency benefits to	

Expenditure area	Example of efficiency	Type of efficiency	Comment on evidence	Assumptions
			be realised earlier and reduces the risk of system faults when new capability is deployed	
	Holding suppliers to account	Suppliers incentives	Our suppliers remain responsible for the quality and performance of the systems they have delivered via contractual terms we build into supplier agreements	
	Operations and insights	Process improvements	Design, deliver and manage optimisation activities. This covers a wide range of activities from building and running robotic automations, to re-designing business processes, delivering reporting and insights services, managing change into our FSPs and our offshore partners, and providing learning support for technical change through face to face and online delivery	
	Property operations	Cost reduction strategies	Undertake programmes of site optimisation and deliver ongoing asset maintenance and upgrade programmes through to major site upgrade investment projects	
	Programme control and logistics	Whole of life cost and efficiency	Key projects and programmes are delivered on time and budget by enabling the co-ordination of key foundational project management compliance activities, workflow processes and ensuring an efficient and effective materials supply chain to support our business operations	
	Network scoping	Whole of life cost and efficiency	Highlighting areas where capacity of the network is being optimised to its full capacity and relief planning is required	