



# **Te Mana Tühono: Programme Service Guide**

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#### Introduction

This service guide has been created to provide an overview of the Te Mana Tūhono programme, who delivers the programme and how it is delivered.

Section One	Explains some of the background to Te Mana Tūhono, including the SNUP
	programme, and introduces the programme's phases and features.
<b>Section Two</b>	Clarifies the scope of the programme and how it is governed, before
	introducing the programme's main stakeholders and their roles and
	responsibilities in delivering the programme.
<b>Section Three</b>	Breaks down each of the phases of the Te Mana Tūhono programme into
	steps and notes which stakeholders are involved.
Section Four	Provides an appendix of links to other Ministry documentation and useful
	information and diagrams.

# 1.1 Background — The SNUP Programme

The Ministry has been involved in upgrading school networks for two decades. The journey began with the School Network Upgrade Project (SNUP) in 2004 which ran in several stages until 2017.

SNUP originally consisted of the physical installation of ICT (Information and Communications Technology) networks in schools, specifically backbone cabling and switching equipment. From 2013 a wireless component was also included. The earlier stages of SNUP prioritised schools with little or no network connectivity, but the programme went on to upgrade the cabling and network equipment in all state and state integrated schools which opted in.

#### 1.2 Post-SNUP Findings

After SNUP upgrades were completed, the ongoing management of networks was handed over to schools. Between 2016 and 2019, an enquiry was undertaken to determine the experiences a selection of schools had following the SNUP programme, and how they were dealing with the ongoing management and upkeep of their network service.

It was found that many schools did not have the expertise for the continued management and service of their ICT infrastructure. While some schools did have access to dedicated ICT staff, many did not and lacked the resources to acquire this expertise. The disparity between the performance of ICT networks in different schools was clearly influencing quality and equitability of learning outcomes.

The Te Mana Tūhono programme was created to address these issues by removing the burden from schools of managing, monitoring and maintaining their networks, aiming to enable a "walk in and work" environment for school staff.

#### 1.3 The Te Mana Tuhono Programme

Te Mana Tūhono, which can be translated as 'The Power of Connectivity', is the joint vision of the Ministry of Education (MoE) and Network for Learning (N4L). It is a long-term ongoing programme of ICT network support, and all state and state-integrated schools are eligible to opt in. Each school needs to pay a fee (calculated on a per student per annum basis) to receive this support. The programme will ensure that a school's network remains fit-for-purpose, reliable and resilient with increased safety and security.

#### 1.3.1 The Three Phases of Te Mana Tuhono

**Phase One – Equipment Support (ES)** ensures a school's existing SNUP network equipment is supported with licence extensions and replacement if equipment fails. This support enables schools' networks to stay operational until equipment replacement can be scheduled.

Phase Two – Equipment Replacement (ER) will replace a school's old SNUP (in some cases non-SNUP) network equipment with newer hardware. This replaces aging equipment and makes sure each school is prepared for Phase Three (Secure Access). Schools which still have their own Wi-Fi controller will be migrated to N4L's centralised cloud controller to allow N4L to manage network issues remotely.

Phase Three – Secure Access (SA) provides schools with protection measures that give students and staff a more secure online environment to learn in. Staff, student and guest traffic is separated to allow users to share one network while limiting their access to the areas needed for their role. Additionally, an identity-aware network will be created to allow staff and students to log in with their own unique logins to a variety of systems - such as NCEA online. This will enable users to be recognised with a single unique identity throughout their length of stay at SA-enabled schools.

#### 1.3.2 Help and Support Service

With Te Mana Tūhono, N4L will provide an overarching Help and Support Service for school networks. N4L will be the first point of contact, but N4L will only be able to provide complete support for network issues that can be resolved remotely. For issues requiring on site work, the school involved will need to have their ICT provider work with N4L to provide support. If the school does not have access to an ICT provider, then N4L will recommend one or more of their ICT Panel Suppliers for the school to utilise. The cost of remediating issues that cannot be resolved remotely will not be covered by N4L and will be the responsibility of the school.

More details of the programme's origins and what it includes for schools can be found on the Te Mana Tūhono page of the Ministry of Education website.

# 2 Te Mana Tühono: Scope & Stakeholder Roles

#### 2.1 Scope of Programme

The Te Mana Tūhono programme focuses on upgrading and maintaining network equipment and ongoing technical support for schools' internal networks. The programme currently does not include funding for network cabling — this was the main component of SNUP upgrades and SNUP-installed cabling is still under warranty.

#### 2.2 Governance

The Te Mana Tühono programme is governed by the Te Mana Tühono Board, comprised of members from the Ministry of Education, N4L and independent advisors from other areas of the education sector. The Board provides input on the programme's delivery strategy, makes decisions about major changes to the programme and oversees the expenditure of its allocated funding.

#### 2.3 Network Design & Installation Standards

The design of networks and installation of network equipment in schools are covered by several Ministry of Education standards. Ministry standards include documentation, design, installation, network security and health and safety criteria. Links to standards documentation relevant to the Te Mana Tūhono programme can be found in the <a href="appendix">appendix</a>. Any work carried out as part of the Te Mana Tūhono programme is subject to audit at any time by the Ministry. Network designs for the Equipment Replacement stage of the programme will be checked by the Ministry to ensure that they both comply with Ministry standards and allocate the right amount of equipment for a school (number of switches, access points and other equipment a school is entitled to is calculated based on roll count).

#### 2.4 Programme Stakeholders

The main stakeholders involved in the Te Mana Tūhono programme are:

- a) **The Ministry of Education (MoE).** Responsible for the governance and strategy of the Te Mana Tühono programme, ensuring programme delivery meets the strategic goals and complies with Ministry policy.
- b) **Network for Learning (N4L).** Delivery partner of the Ministry. Project manages the design, installation, upgrade and continued support of school network infrastructure.
- c) **N4L Panel Suppliers.** Ministry approved ICT contractors who have been selected for N4L's panel for network onsite installation, deployment and support work.
  - a. **N4L Panel Members.** The employees and sub-contractors of N4L Panel Suppliers. Carry out the physical onsite deployment and installation of network equipment in schools.
- d) **Schools.** State and state-integrated schools opt into the programme and work with N4L to schedule upgrade and support work
  - a. **School ICT Providers.** Provide their school clients with technical support to deliver their role in the programme in some instances. Schools without ICT support contracts and who require IT provider expertise can access these services through the <a href="N4L ICT Panel">N4L ICT Panel</a>

## 2.5 Project Delivery

### 2.5.1 Ministry of Education Role

Action	Expected Outcome
Oversees/advises on the Te Mana Tūhono programme and its stakeholders	Delivery of the Te Mana Tūhono programme aligns with programme objectives and meets set performance targets
Creates initiatives that improve the function of Te Mana Tūhono	Features and delivery of the Te Mana Tūhono programme continue to improve throughout its delivery

#### 2.5.2 Network for Learning (N4L) Role

Action	Expected Outcome
Manage Agreement to Proceed and Order Form	Schools that accept will be inducted into the Te
process for schools that opt into the Te Mana	Mana Tūhono programme, allowing further
Tūhono programme	stages to proceed
Oversees the delivery of all three main phases	A coordinated and well-resourced delivery of
of the Te Mana Tūhono programme	the Te Mana Tūhono programme on an
	operational level
Designs the proposed network equipment	Each school design follows a standardised
installation plans for Te Mana Tūhono schools	formula that ensures equitable use of funding,
	whilst enabling ease of management
Commission and project manage installation of	Installations are performed to Ministry
ICT network equipment in Te Mana Tūhono	standards and to a schedule mutually agreed by
schools	N4L and the school
Monitors, manages and maintains Te Mana	Schools continue to receive ongoing support
Tūhono school network functionality and	for their network after all Te Mana Tūhono
proactively identifies network issues.	upgrades are complete

Acts as first point of contact for help and	Schools have an easily locatable and well-
support services aimed at Te Mana Tūhono	resourced point of contact for their network
schools	support needs

# 2.5.3 N4L Panel Supplier Role

Action	Expected Outcome
Examines required school network	ICT contractors will provide feedback in
infrastructure to determine	detailed audits that identify any network
installation/remediation requirements	features that do not abide by MoE ICT
	standards and propose solutions to remedy
Installs required cabling and equipment as per	ICT cabling and network equipment are
network design and MoE ICT standards, and in	installed to MoE standards and in the manner
alignment with N4L processes and procedures	agreed with N4L to optimise delivery
Maintains a reputable standing as an approved	All ICT contractors can be relied upon to
MoE ICT contractor and N4L Panel Supplier	complete work to MoE and N4L standards

#### 2.5.4 School Role

Action	Expected Outcome
Accepts Te Mana Tūhono processes and	Schools know what to expect from Te Mana
procedures as per their contractual agreement	Tūhono and are ready to proceed with the
	programme
Ensure school network meets any prerequisite	Each programme phase is carried out
standards for each programme phase	successfully and within scope
Accepts or declines network design plans	Schools understand their new network's design
provided by N4L	and this design meets their needs as much as
	possible
Provides relevant information to the MoE and	Other parties have access to any school-specific
N4L	information they need to proceed with the Te
	Mana Tūhono programme
Inform and work with N4L and N4L Panel	N4L are made aware of any network issues and
Members to help identify and resolve network-	able to provide help & support remotely
related issues	
Signs off the completion of each programme	Schools confirm that each programme phase
phase	has been completed to the agreed standard

# 2.6 Project Administration

## 2.6.1 General Description

Project administration enables the delivery of the Te Mana Tūhono programme through a range of business support tasks, including the maintenance of detailed project records for quality assurance and an audit trail, including financials, documentation covering decisions for work plans, sub-contractors, costs and timings.

# 2.6.2 Ministry of Education Role

Action	Expected Outcome
Creation of relevant documentation that	Stakeholders are informed about the Te Mana
details/describes Te Mana Tūhono processes	Tūhono programme and how it functions

Organisation of travel and accommodation required for Te Mana Tūhono project work (MoE internal)	Travel arranged in advance and following MoE guidelines to minimise cost to MoE
Retains, and modifies as needed, MoE ICT suite of standards documentation	All ICT contractors and integrators will have access to the most up to date version of the MoE ICT standards to provide schools with modern and uniform networking infrastructure design
Provide N4L with access to SNUP and WSNUP (Wireless School Network Upgrade Project) documentation, or relevant building information where these are not available	N4L has access to historical school network and other building information to assist with planning each stage of Te Mana Tühono
Retention and storage of Te Mana Tūhono project documentation	Relevant project information is easily accessible when needed during the programme and after completion

# 2.6.3 Network for Learning (N4L) Role

Action	Expected Outcome
Present/organise weekly Te Mana Tūhono	The Ministry is kept up to date on the
status updates	operational progress of the programme
Organisation of N4L staff travel and	N4L staff can travel to meet project demands
accommodation required for Te Mana Tūhono	where needed and this is arranged at a
project work	reasonable cost
Retain and store all programme documentation	Information about a school's network and its
for schools	participation in the Te Mana Tūhono
	programme is readily available to MoE
Carries out police vetting of all N4L Panel	All N4L Panel Members with access to schools
Members	are police vetted as per legal requirements for
	contractors in schools

# 2.6.4 N4L Panel Supplier Role

Action	Expected Outcome
Provide audit and as-built documentation that	MoE is supplied with ICT contractor
abides by MoE ICT standards as needed	documentation that represents current as-built
	statuses of school ICT networking infrastructure
Supply both installation and product warranties	Network equipment replacement is covered by
	the installer or manufacturer in cases of
	substandard installation and product
	malfunction
Organise all travel and accommodation related	ICT Contractors can be contracted to work
to undertaking the project work	anywhere in New Zealand without N4L or the
	Ministry needing to organise the coordination
	of this

# 2.6.5 School Role

Action	Expected Outcome
Make any classroom scheduling or school	N4L and ICT contractors have no school access
property arrangements to allow N4L and ICT	issues during agreed installation and
	maintenance times

contractors to carry out network audit,	
installation or maintenance work	

#### 2.7 Contract Administration

## 2.7.1 General Description

The key focus of contract administration is to ensure all parties meet contractual obligations and actively manage the submission and approval of any variations to scope of work. This ensures shared understanding of the agreed changes between all stakeholders.

# 2.7.2 Ministry of Education Role

Action	Expected Outcome	
Comply with obligations described in	MoE performs agreed role in programme	
Statements of Work	delivery	
Recommend and seek agreement from N4L for	Statements of Work have flexibility to adjust to	
variations to Statements of Work or	changing programme needs	
programme processes		
Pay N4L invoices for contracted work	Follows due process to ensure timely payment	
	of N4L	

# 2.7.3 Network for Learning (N4L) Role

Action	Expected Outcome	
Comply with obligations and meet deliverables	N4L performs agreed role in programme	
described in Statements of Work	delivery, and agreed standards and timelines	
	are met	
Recommend and seek agreement from MOE for	Statements of Work have flexibility to adjust to	
variations to Statements of Work or	changing programme needs	
programme processes		
Pay contractor invoices	Follows due process to ensure timely payment	
	of contractors	
Invoice MoE for work completed as per	Follows due process to ensure timely payment	
Statements of Work	of N4L	

# 2.7.4 N4L Panel Supplier Role

Action	Expected Outcome	
Adhere to panel operations manual and	Delivery of work meets contracted	
reporting requirements	requirements	
Submit any variations to invoiced work to N4L	Changes to invoices are approved and	
	documented before the work is completed	
Invoice N4L as per contracts	Follows due process to ensure timely payment	
	of ICT contractors	

# 2.7.5 School Role

Action	Expected Outcome	
Pay the annual Te Mana Tūhono fee when	Follows due process to ensure timely payment	
invoiced	of MoE	

Pay N4L for any work completed outside of Te Mana Tūhono funding scope, as agreed by Order Form	ICT work needed to supplement Te Mana Tühono programme delivery is paid for
Inform N4L of any existing contracts the school has with other parties for its ICT Networking	N4L manages any contractual conflicts from the outset
during programme onboarding	outset

# 2.8 Quality Assurance

## 2.8.1 General Description

The key focus of quality assurance is to ensure project deliverables meet the defined quality requirements outlined in the Scope of Works. A remote network audit takes place for every school upgrade, to identify and report variations from the required industry and MoE standards. Ensuring that all services and processes performed by the N4L Panel Supplier are in accordance with Ministry standards, regulations, policies and practices.

# 2.8.2 Ministry of Education Role

Action	Expected Outcome
Provide feedback on a random selection of	Adherence to MoE ICT standards is incentivised
school installations/designs	for all installations/designs
Inspect all new installation documentation	MoE ICT standards are met in new installations
Approves and initiates school ICT infrastructure	Any schools which may have non-standard ICT
audits	installations (such as schools that have not
	been through SNUP) will have issues identified
	and remediated where necessary. Schools that
	are a part of the Te Mana Tūhono programme
	will have ICT networking infrastructure that
	abides by MoE ICT standards

## 2.8.3 Network for Learning (N4L) Role

Action	Expected Outcome
Provide schools with operational handover	Schools are proactively informed how to keep
collateral after upgrades	networks operating securely and effectively
Provide survey and other communication	Schools can communicate whether the Te
channels for schools to deliver feedback	Mana Tūhono programme is meeting their
	expectations

## 2.8.4 N4L Panel Supplier Role

Action Expected Outcome	
Remedy any issues raised by MoE/N4L quality	Installations are consistently performed to MoE
assurance inquiries	ICT standards

### 2.8.5 School Role

Action	Expected Outcome
Provide feedback on Te Mana Tūhono projects	Quality assurance issues can be identified,
the school has undergone to N4L and/or MoE	individual school issues addressed and
	processes improved where needed

# 3 Programme Delivery – Detailed Pathway

# 3.1 ICT Infrastructure Project Steps

Each of the 3 phases of the Te Mana Tūhono programme (Equipment Support, Equipment Replacement, Secure Access) is broken down into four broad steps.

Initiation	School is contacted and work is scheduled		
Planning	Information from school and existing		
	documentation is used to determine school's		
	specific requirements. Designs created (if		
	applicable) and approved		
Delivery	The physical (or other) upgrade work is carried		
	out as per the Network Design Plan and		
	specifications		
Closure	Post-upgrade checks are performed, and		
	surveys are sent out to schools for quality		
	assurance purposes.		
	Feedback obtained is fed into process		
	improvements		

# 3.2 Phase 1: Equipment Support:

#### 3.2.1 Initiation:

Activity	Organisation	Who	Action	Outcome
Contact school	N4L	info@n4l.co.nz	Sends school an	
with expiring			agreement to	School agrees to
network			proceed form	participate in the
equipment			(ATP)	Te Mana Tūhono
	School	Principal (or	Completes ATP	programme and
		representative)	form and creates	N4L authorised
			an N4L account	to gather school
			via Support Hub	network
				information

# 3.2.2 Planning:

Activity	Organisation	Who	Action	Outcome
Network	N4L	Network	Accesses school network to	N4L builds a
Discovery		Engineer	compare current	picture of
			equipment/configuration	school's
			against SNUP/WSNUP	network
			documentation	support
				requirements

Order Form	N4L	provision@n4l.	Emails school an Order	School
		co.nz	Form	formally
	School	Principal (or	Completes and signs Order	accepts Te
		representative)	Form	Mana Tūhono
				programme
				services and
				the annual
				contribution

# 3.2.3 Delivery:

Activity	Organisation	Who	Action	Outcome
Network	N4L	Network	Remotely	Replacements for
Configuration		Engineer	accesses and	any equipment
Backup			backs up school	that fails can
			network	easily be
			configuration	configured by
				N4L to a school's current setup
Equipment	N4L	Network	Extends	School network's
Licensing		Engineer	equipment	full functionality
Extension			licenses (this is	is extended
			also done	
			remotely) and	
			informs school	
			once complete	
Wi-Fi Controller	N4L	Network	Migrates wireless	N4L can
Migration		Engineer	controller from	troubleshoot and
(schools with			on premise	support school
Ruckus			devices to cloud	internal network
equipment only)			hosted devices	issues remotely
	School	Staff Member /	Disconnects old	Old/surplus
		School ICT	Wi-Fi controller	controllers are
		Provider	from server	redeployed
			cabinet and posts	elsewhere or e-
			it to N4L	wasted

# 3.2.4 Closure:

Activity	Organisation	Who	Action	Outcome
Follow up checks	N4L	Provisioning coordinator	Sends out survey to confirm that network is functioning without any issues	Any immediate issues with the upgrade are detected and resolved

	School	Principal (or representative)	Completes and returns survey	
Invoicing	МоЕ	TiS (Tech in Schools) Team	Sends school invoice for annual contribution	School portion of programme's funding is received
	School	Principal (or representative)	Pays MoE invoice for annual contribution	

# 3.3 Phase 2: Equipment Replacement:

# 3.3.1 Initiation:

Activity	Organisation	Who	Action	Outcome
Notification of	N4L	Relationship	Emails school to	
school		Manager	inform them they	School visit is
			are included in	scheduled
			the next round of	
			Equipment	
			Replacement and	
			to schedule a	
			school visit	
	School	Principal (or	Agrees a school	
		representative)	visit date	

# 3.3.2 Planning:

Activity	Organisation	Who	Action	Outcome
School Visit	N4L	Relationship	Provides school with an	
		Manager	agreement to proceed	School agrees
			form (ATP) and talks	to proceed with
			them through the	Equipment
			Equipment Replacement	Replacement
			process	
	School	Principal (or	Completes ATP form.	
		representative)	School also creates an	
			N4L account via Support	
			Hub (only if this has not	
			been done already)	

	N4L	Relationship Manager	Completes an on-site audit of the school's current network and takes pictures of network equipment	N4L have access to current network information to design network upgrade appropriately
Network Design	N4L	Network Engineer	Creates a Network Design for the upgraded network, including a baseline for Secure Access. Consults with school on suitability of design	Network Design meets school needs for teaching & learning as much as
	School	Principal (or representative)	Provides feedback to N4L on suitability of Network Design	possible
	МоЕ	Technical Advisor	Reviews and approves Network Design	Network Design meets Ministry ICT standards and meets school's equipment entitlement
Installation Scheduling	N4L	Provisioning coordinator	Schedules date(s) for installation in consultation with school	
	School	Principal (or representative)	Accepts installation dates	Installation schedule is finalised
	N4L Panel Supplier	Installer Panel Member	Contacts school to confirm schedule and details of planned installation	

N4L	Provisioning coordinator	Sends replacement network equipment to school ahead of scheduled installation	Network equipment is ready onsite for installation day
School	Principal (or representative)	Stores network equipment securely until installation	

# 3.3.3 Delivery:

Activity	Organisation	Who	Action	Outcome
Installation	N4L	Network	Works remotely	Any issues that
		Engineer	with N4L Panel	could disrupt
			Member and	the upgrade are
			school contact	identified
			to test network	before
			prior to	installation
			installation	begins
	School	Principal (or	Assists with pre-	
		representative	installation	
		<ul><li>may require</li></ul>	testing	
		school IT		
		provider)		
	N4L Panel Supplier	Installer Panel	Carries out the	New equipment
		Member	installation of	is installed as
			network	per network
			equipment on	design plan
			the scheduled	
			date(s)	
	N4L	Network	Works remotely	Network is
		Engineer	with N4L Panel	functioning
			Member to	correctly once
			configure	installation is
			network and	complete and
			test function at	this is
			each installation	confirmed by
	Cabaal	Dringing! (or	stage	the school
	School	Principal (or	Assists with	
		representative	post-installation	
		— may require school IT	testing and signs off installation	
		provider)	as complete	

# 3.3.4 Closure:

Activity	Organisation	Who	Action	Outcome
Documentation	N4L Panel	Installer Panel	Provides N4L	N4L has a
	Supplier	Member	with warranty,	complete record
			and other	of the installation
			installation	for auditing and
			documentation	compliance
				purposes
Network	N4L	Network	Update school	N4L's remote
Management		Engineer	network details	view of the
			on SmartZone	school's network
				is up to date post
				Equipment
				Replacement
Survey	N4L	Provisioning	Sends out survey	Any need for
		coordinator	to schools about	further work in
			their satisfaction	the school and
			with the new	process
			network and the	improvements
			upgrade service	for the
	School	Principal (or	Complete and	programme are
		representative)	return survey	identified

# 3.4 Phase 3: Secure Access:

# 3.4.1 Initiation:

Activity	Organisation	Who	Action	Outcome
Technical Survey	N4L	Automated	Sends out	Current technical
			technical survey	information is
			to school at the	collected,
			completion of	including
			Equipment	numbers and
			Replacement	types of devices
	School	Principal (or	Completes	to be migrated
		representative —	technical survey	
		may require	of school	
		school IT	network	
		provider)		

# 3.4.2 Planning:

Activity	Organisation	Who	Action	Outcome
Migration Plan	N4L Panel Supplier	IT Panel Member	Visits school to agree scope of the Migration	Scheduling of Secure Access
			Plan and schedule an appointment for Secure Access	migration and training, filtering and security

	School	Principal (or	Finalises scope	system policies
		representative —	and schedules	are agreed
		may require	appointment for	
		school IT	Migration Plan	
		provider)	with N4L Panel	
			Member	
Migration	N4L	Network	Test network	
Preparation		Engineer	segregation using	Network is pre-
			student & staff	configured to
			test users	allow Secure
	N4L	Network	Configuration of	Access migration
		Engineer	network and	to take place
			relevant user	smoothly
			applications	

# 3.4.3 Delivery:

Activity	Organisation	Who	Action	Outcome
Pre/Post	N4L Panel	IT Panel Member	Tests all regular	Any barriers to
Migration Testing	Supplier		school network	Secure Access
			functions before	migration are
			and after	identified and
			migration to	correct function
			ensure they are	of network is
			working as	confirmed after
			normal	migration
	N4L	Engineer	Turns on Secure	Secure Access
Migration			Access SSID	network is active
	N4L Panel	IT Panel Member	Migrates all	
	Supplier		wireless onsite	All school
			devices to the	wireless devices
			Secure Access	are onboarded to
			network	the new network
	N4L Panel	IT Panel Member	Provides training	or can be
	Supplier		to school staff on	onboarded by
			connecting	school staff later
			devices/users to	
			the network	

# 3.4.4 Closure:

Activity	Organisation	Who	Action	Outcome
Network admin access handover	N4L Panel Supplier	IT Panel Member	Sets up network admin password for school staff member/s and removes own access	Control over network access given to school

Documentation	N4L Panel Supplier	IT Panel Member	Sends N4L copy of Migration Plan and other relevant network documentation	Confirms completion of Secure Access and provides a complete record of work completed and network condition
School device connection	School	Staff & students	Connect devices to network using training and guides provided	Secure Access network is established, and all eligible devices are connected

# 4 Appendix

#### 4.1 Links to Standards Documentation

Te Mana Tūhono programme ICT contractors are contracted to N4L but are required to abide by the standards of Ministry of Education ICT contractors. N4L will communicate information to ICT contractors on required standards relevant to Te Mana Tūhono, but it is important for ICT contractors to be familiar with wider ICT standards. Links to Ministry standards for all aspects of ICT installations along with other contractor responsibilities can be found on the Ministry of Education website's Responsibilities of an ICT Contractor page. Links to the main standards documents are also listed below:

- ICT Cabling Infrastructure policy and standards for schools
- Switching Policy and Standards
- Wireless LAN (Local Area Network) Policy and Standards

#### 4.2 ICT Standards Main Areas

Ministry ICT standards have been designed to cover five fundamental areas:

#### 4.2.1 Documentation

These depend on the project but will normally involve providing network design plans, as built documents, invoices and project management records. The documentation required for Te Mana Tūhono will vary depending on the upgrade phase and will be communicated to N4L Panel Suppliers by N4L.

#### 4.2.2 Design

Network designs need to follow design rules for switching, cabling and other network features covered in the standards.

#### 4.2.3 Network Security

Network security standards include clearly defined access control lists (ACLs), not having non-managed or web-smart switches within the network, and by having appropriate segmentation (by function — e.g., staff, student, guest).

#### 4.2.4 Physical Installation

Physical installation standards apply to the installation of cabling, cabling ducting and other network equipment. This includes installing approved products and installing them correctly to prevent performance or management issues.

#### 4.2.5 Health & Safety

Health & safety is a consideration for any standards that could cause physical harm if not correctly followed. Common examples of risk areas include laser warning labelling for fibre optic cables and earthing of communications cabinets.

#### 4.3 Further Support

Detailed programme guidance and technical support can be found on N4L's <u>Support Hub</u>, and N4L processes and procedures for Panel Members can be found on the <u>Panel Member</u> page. A current list of N4L Panel Suppliers (ICT providers and Installers) can be found in the 'Our Partners' section of N4L's <u>School Network</u> page.

For further Ministry guidance or queries about the Te Mana Tūhono programme, please contact the Technology in Schools team at <a href="mailto:Hardware.Replacements@education.govt.nz">Hardware.Replacements@education.govt.nz</a>.





We **shape** an **education** system that delivers **equitable** and **excellent outcomes** 

He mea **tārai** e mātou te **mātauranga** kia **rangatira** ai, kia **mana taurite** ai ōna **huanga**