



# **Blackall-Tambo**

## Regional Council

# **Disaster Recovery & Business Continuity Plan for ICT Services**

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Policy Compiled by: Information Technology Officer	
Policy Approved by: Chief Executive Officer	

## **INTRODUCTION**

A Business Continuity Plan for ICT Services was first introduced in 2021 following an audit recommendation. It is reviewed annually or following any major change to hardware or systems covered by the plan, to ensure it is always relevant and up to date.

Disasters are, fortunately, rare but when they do occur, they can have devastating consequences. Many services will quickly be brought to a standstill in the event of prolonged IT (Network, Device, or Etc.) failure. The vulnerability of the Council's services to the effects of an IT failure have increased markedly in recent years as more and more reliance has been placed on computerised systems to manage services. This is likely to continue in the coming years as IT systems are increasingly used as a means of generating efficiencies.

## **DEFINITIONS**

For the purposes of this plan a Disaster is defined as loss or damage of part or all of the Council's IT Infrastructure, which would have a high or very high, business impact on the Council.

Disaster, as outlined in the above definition, includes:

- Total loss of one site, (i.e., due to fire damage)
- Loss or technical failure of one or more network\cloud servers
- Loss or technical failure of network infrastructure (i.e., router, switch, Telstra or JustISP-FSG comms connectivity)
- Extended loss of electrical power
- Failure of key software or cloud service

Key software or cloud services which are specifically referred to in this plan include:

- PCS+ - Financial System
- Assetic Cloud – Asset Management System
- Microsoft 365 – Office Apps, Email and Cloud Storage
- Azure – Microsoft's Cloud platform
- MAGIQ Documents

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**HOW THE PLAN IS ACTIVATED**

In the event that a disaster is identified by the IT Officer, the IT Department will be responsible for activating the plan and monitoring the progress of disaster recovery procedures, reporting to the Disaster Management Committee and undertaking any further action as necessary.

**OVERVIEW OF IT INFRASTRUCTURE**

The Blackall-Tambo Regional Council currently has eight sites that are connected to its corporate network (All sites except Blackall Office and Depot, use Layer-3 connectivity to connect corporate network). These sites are the Blackall Office, Blackall Depot, Blackall CNC, Tambo Office/Depot, Tambo Library, Tambo Childcare Centre, Tambo MPC, and Tambo Grasslands.

The corporate network at the Council comprises:

**Blackall Admin Office/Depot (Telstra Network)**

- 4 physical servers (3 Hyper-V Hosts, storage server)
- 8 virtual on-premises servers
- 5 Azure virtual machines
- 1 Cisco Router to Telstra via 50Mbps
- 2 Cisco Catalyst 3650 Switch
- 2 Cisco Catalyst 3850 48 UPOE – Managed Switch - Telstra Switch (Blackall Office & Depot)
- 1 Juniper Router
- 2 Mikrotik Switch (Blackall Office & Depot)
- 3 Cisco Meraki
- 2 Wi-Fi hotspots
- 36 Desktops/Notebooks/Tablets
- 25 TIPT Phones

**Blackall CNC (JustISP/FSG Network)**

- 1 Juniper Router
- 1 Mikrotik Switch
- 4 VoIP Desk phones
- 4 Desktops/Notebooks

**Tambo Admin Office/Depot (JustISP/FSG Network)**

- 1 Juniper Router
- 2 Mikrotik Switch
- 1 RODC Server
- 1 Cisco router
- 1 Cisco switch
- 2 Cisco Meraki
- 2 Wi-Fi hotspots
- 16 Desktops/Notebooks/Tablets

**Tambo Library (JustISP/FSG Network)**

- 1 Juniper Router
- 1 Mikrotik Switch
- 1 VoIP Desk phones



- 1 Desktop connected to L3 JustISP-FSG
- 3 Desktops for Library Patrons on Guest Network

Tambo Childcare Centre (JustISP/FSG Network)

- 1 Juniper Router
- 1 Mikrotik Switch
- 1 VoIP Desk phones
- 1 Desktop connected to L3 JustISP-FSG

Tambo MPC (JustISP/FSG Network)

- 1 Juniper Router
- 1 Mikrotik Switch
- 5 VoIP Desk phones
- 5 Desktop connected to L3 JustISP-FSG
- 1 Notebook connected to L3 JustISP-FSG

Tambo Grasslands (JustISP/FSG Network)

- 1 Juniper Router
- 1 Mikrotik Switch
- 3 VoIP Desk phones
- 3 Desktops connected to L3 JustISP-FSG

A detailed network topology diagram shown in appendix A.

Server rooms at both the Blackall Admin Office and Depot are located on the ground floor, behind electronic locked doors, away from the entrances to the buildings from outside to minimise the risk of theft and flood. The rooms are also air conditioned to maintain temperatures suitable for the equipment located in them.

The other sites have locked wall mounted server cabinets, that are appropriately ventilated.

The Councils financial system, Practical Plus, is hosted on a Windows Server 2019 in Microsoft Azure. Access to the financial system is provided via Telstra Intranet using Azure Gateway Link. All Layer-3 connected sites have access to Practical Plus also.

Microsoft 365 E3 is used to provide email and hosted data services to all sites.

**RISK ASSESSMENT AND BUSINESS IMPACT REVIEW**

Likelihood	Severity	Negligible (1)	Minor (2)	Moderate (3)	Major (4)	Extreme (5)
Rare (1)		Low	Low	Low	Low	Medium
Unlikely (2)		Low	Low	Medium	Medium	High
Possible (3)		Low	Medium	Medium	High	High
Likely (4)		Low	Medium	High	High	Very High
Almost Certain (5)		Medium	High	High	Very High	Very High

PHYSICAL EQUIPMENT

Location	Network Element	Type of loss / damage	Likelihood	Severity	Business Impact	Precautions in place
Blackall Admin Office	Hyper-V Host and Hyper-V Virtual Machines (Hive01, Hive02)	Fire Theft Water Damage Vandalism Wind Accidental	1	1	Loss of a single Hyper-V, would result in downtime, till Veeam in Azure creates the affected virtual machines in Azure instead of on the Lost Host.	Hyper-V Host on-premises is back-up to Azure Cloud Services, if there is a loss, the affected hosts virtual machines are then created in Azure till Host is repaired or replaced.
		Hard Disk failure	3	1	No impact from loss of a single or two hard disk(s).  The impact of the loss of more than two disks would be as described under Fire/Theft/etc above	Each Hyper-V Host is configured RAID 6, which has dual parity and can survive two concurrent disk failures.  Equipment protected by Dell Pro Plus Warranty – next day delivery of replacement of failed disks
		Other Failure	3	1	Depending on the type of failure, worse case would be as described under Fire/Theft/etc above.	Equipment protected by Dell Pro Plus Warranty. In case of a software corruption, this is covered by Veeam-to-Veeam Azure restore.
		Data Breach	2	4	Ransomware attack, loss of Data or personal information	See Data Breach Response Plan Appendix B
		Power Failure (short term)	3	2	Environmental Power Failure would affect all Hyper-V hosts, in these situations, the back-up generator kicks in within 2 minutes. The UPS and battery back-ups keep power going till generator kicks in.	UPS installed – approximately 1:10 minutes of back-up. Only need 2 minutes for back-up generator to start. The back-up generator is diesel, with a long run time, between need refuels.



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Azure Virtual Machines	Fire Theft Water Damage Vandalism Wind Accidental	1	1	Due to Azure using Data Centres in three Australian locations and Disaster Recovery in a chosen recovery location out of country, this is really a negligible risk	Azure Data Centres have copies of Data in all three locations in Australia and a cross-region disaster recovery site.
	Hard Disk failure	3	1	See above	See above
	Other Failure	3	1		
	Data Breach	2	4	Ransomware attack, loss of Data or personal information	See Data Breach Response Plan Appendix B
	Power Failure (short term)	2	1	see Power Failure (if local) from Hyper-V Hosts Network Element. For Power Failure (Azure) see above as described in Fire/Theft/etc.	see Power Failure (if local) from Hyper-V Hosts Network Element. For Power Failure (Azure) see above as described in Fire/Theft/etc.
Storage Server	Fire Theft Water Damage Vandalism Wind Accidental	1	1	Unable to store data onsite	All Data stored on server is already backed up in Azure.  Equipment protected by Dell Pro Plus Warranty.
	Hard Disk Failure	3	1	No impact from loss of a single or two hard disk(s).  The impact of the loss of more than two disks would be as described under Fire/Theft/etc above	The Storage Server is configured RAID 6, which has dual parity and can survive two concurrent disk failures.  Equipment protected by Dell Pro Plus Warranty – next day delivery of replacement of failed disks
	Other Failure	3	1		
	Data Breach	2	4	Ransomware attack, loss of Data or personal information	See Data Breach Response Plan Appendix B



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		Power Failure (short term)	3	2	Environmental Power Failure would affect the Storage Server, in these situations, the back-up generator kicks in within 2 minutes. The UPS and battery back-ups keep power going till generator kicks in.	UPS installed – approximately 1:10 minutes of back-up. Only need 2 minutes for back-up generator to start. The back-up generator is diesel, with a long run time, between need refuels.
Cisco Router		Fire Theft Water Damage Vandalism Wind Accidental	1	1	Loss of access to internet via Telstra and all networked devices and other infrastructure connected via the affected Router.	Equipment protected by maintenance agreement with Telstra.  Telstra have all configuration settings backed up. Telstra will replace router with new device as soon as possible.
		Technological Failure	2	2	As Above	The router has the ability to switch to LTE mode if we have power, but no wired network connection due to some other fault. It can run this way until failure has been remedied.
		Power Failure (short term)	3	2	Environmental Power Failure would affect the Telstra Managed Router, in these situations, the back-up generator kicks in within 2 minutes. The UPS and battery back-ups keep power going till generator kicks in.	UPS installed – approximately 45 minutes of back-up. Only need 2 minutes for back-up generator to start. The back-up generator is diesel, with a long run time, between need refuels.
		Cisco Catalyst 3850 48 UPOE – Managed Switch - Telstra	Fire Theft Water Damage Vandalism Wind	1	1	Loss of access to all networked devices and other infrastructure connected via the affected switch



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						<p>Telstra have all configuration settings backed up. Telstra will replace switch with new device as soon as possible.</p> <p>The other 2 Cisco switches can be repurposed to become the main managed switch within an hour.</p>
		Technological Failure	2	2	As Above	As Above
		Power Failure (short term)	3	2	Environmental Power Failure would affect the Managed Switch, in these situations, the back-up generator kicks in within 2 minutes. The UPS and battery back-ups keep power going till generator kicks in.	UPS installed – approximately 45 minutes of back-up. Only need 2 minutes for back-up generator to start. The back-up generator is diesel, with a long run time, between need refuels.
	Cisco Catalyst	Fire Theft Water Damage Vandalism Wind	1	1	Loss of access to all networked devices and other infrastructure connected via the affected switch	Sufficient spare capacity is maintained so that in the event of failure equipment can be connected via alternate switch.
		Technological Failure	2	2	As Above	As Above
		Power Failure (short term)	3	2	Environmental Power Failure would affect the Switch, in these situations, the back-up generator kicks in within 2 minutes. The UPS and battery back-ups keep power going till generator kicks in.	UPS installed – approximately 45 minutes of back-up. Only need 2 minutes for back-up generator to start. The back-up generator is diesel, with a long run time, between need refuels.



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	Cisco Catalyst	Fire Theft Water Damage Vandalism Wind	1	1	Loss of access to all networked devices and other infrastructure connected via the affected switch.	Sufficient spare capacity is maintained so that in the event of failure equipment can be connected via alternate switch.
		Technological Failure	2	2	As Above	As Above
		Power Failure (short term)	3	2	Environmental Power Failure would affect the Switch, in these situations, the back-up generator kicks in within 2 minutes. The UPS and battery back-ups keep power going till generator kicks in.	UPS installed – approximately 45 minutes of back-up. Only need 2 minutes for back-up generator to start. The back-up generator is diesel, with a long run time, between need refuels.
	Juniper (Guest Network)	Fire Theft Water Damage Vandalism Wind	1	1	Loss of access to internet via JustISP/FSG and all networked devices and other infrastructure connected via the affected Router.	Equipment protected by maintenance agreement with JustISP/FSG.  JustISP/FSG have all configuration settings backed up. JustISP/FSG will replace router with new device as soon as possible.
		Technological Failure	2	2	As Above	As Above
		Power Failure (short term)	3	2	Environmental Power Failure would affect the Switch, in these situations, the back-up generator kicks in within 2 minutes. The UPS and battery back-ups keep power going till generator kicks in.	UPS installed – approximately 45 minutes of back-up. Only need 2 minutes for back-up generator to start. The back-up generator is diesel, with a long run time, between need refuels.





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	Switch	Fire Theft Water Damage Vandalism Wind	1	1	Loss of access to all networked devices and other infrastructure connected via the affected switch.	Equipment protected by maintenance agreement with JustISP/FSG.  JustISP/FSG have all configuration settings backed up. JustISP/FSG will replace router with new device as soon as possible.
		Technological Failure	2	2	As Above	As Above
		Power Failure (short term)	3	2	Environmental Power Failure would affect the Switch, in these situations, the back-up generator kicks in within 2 minutes. The UPS and battery back-ups keep power going till generator kicks in.	UPS installed – approximately 45 minutes of back-up. Only need 2 minutes for back-up generator to start. The back-up generator is diesel, with a long run time, between need refuels.
	Meraki Wi-Fi	Fire Theft Water Damage Vandalism Wind	1	1	Loss of Wi-Fi connectivity	Contact Telstra to purchase a replacement.
		Technological Failure	2	2	As Above	As Above
		Power Failure (short term)	3	2	Environmental Power Failure would affect the hot spot, in these situations, the back-up generator kicks in within 2 minutes. The UPS and battery back-ups keep power going till generator kicks in.	UPS installed – approximately 45 minutes of back-up. Only need 2 minutes for back-up generator to start. The back-up generator is diesel, with a long run time, between need refuels.



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	Cambium Networks cnPilot e410 Wi-Fi Access Point	Fire Theft Water Damage Vandalism Wind	1	1	Loss of Wi-Fi connectivity	
		Technological Failure	2	2	As above	
		Power Failure (short term)	3	2	Environmental Power Failure would affect the hot spot, in these situations, the back-up generator kicks in within 2 minutes. The UPS and battery back-ups keep power going till generator kicks in.	UPS installed – approximately 45 minutes of back-up. Only need 2 minutes for back-up generator to start. The back-up generator is diesel, with a long run time, between need refuels.
	APC UPS & Battery Back-up	Fire Theft Water Damage Vandalism Wind	1	1	Connected equipment would no longer receive power and would shut down. Equipment could then be connected directly to the mains supply to restart equipment so downtime in office hours would be limited to 10-15 minutes	Two UPSs independently supply power to separate redundant PSUs within each Hyper-V hosts. In the event of failure of either UPS there is no interruption to service.  Comms equipment (switches, routers etc) are only supplied by a single UPS and daisy chained to the battery back-up, then would need to be connected to the mains in the event of a UPS failure.
		Hardware Failure	2	2	As above	As above
		Power Failure (short term)	3	2	Environmental Power Failure would affect all UPSs, in these situations, the back-up	Only need 2 minutes for back-up generator to start. The back-up generator is diesel,



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			1	1	generator kicks in within 2 minutes. The UPS and battery back-ups keep power going till generator kicks in.	with a long run time, between need refuels.
Tambo Admin & Depot Office	RODC Server	Fire Theft Water Damage Vandalism Wind Accidental	1	1		
		Hard Disk Failure	3	1	No impact from loss of a single or two hard disk(s).  The impact of the loss of more than two disks would be as described under Fire/Theft/etc above	The RODC Server is configured RAID 6, which has dual parity and can survive two concurrent disk failures.  Equipment protected by Dell Pro Plus Warranty – next day delivery of replacement of failed disks
		Other Failure	3	1		
		Power Failure (short term)	3	2	Environmental Power Failure would affect the RODC Server, in these situations, the back-up generator kicks in within 2 minutes. The UPS and battery back-ups keep power going till generator kicks in.	UPS installed – approximately 30 minutes of back-up. Only need 2 minutes for back-up generator to start. The back-up generator is diesel, with a long run time, between need refuels.
	Juniper Router	Fire Theft Water Damage Vandalism Wind	1	1	Loss of access to Internet via JustISP/FSG, L3 connectivity to Blackall and all networked devices and other infrastructure connected via the affected Router.	Equipment protected by maintenance agreement with JustISP/FSG.  JustISP/FSG have all configuration settings backed up. JustISP/FSG will replace



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					router with new device as soon as possible.	
		Technological Failure	2	2	As Above	As Above
		Power Failure (short term)	3	2	Environmental Power Failure would affect the Router, in these situations, the back-up generator kicks in within 2 minutes. The UPS and battery back-ups keep power going till generator kicks in.	UPS installed – approximately 45 minutes of back-up. Only need 2 minutes for back-up generator to start. The back-up generator is diesel, with a long run time, between need refuels.
Switch		Fire Theft Water Damage Vandalism Wind	1	1	Loss of access to L3 connectivity and all networked devices and other infrastructure connected via the affected switch.	Equipment protected by maintenance agreement with JustISP/FSG.  JustISP/FSG have all configuration settings backed up. JustISP/FSG will replace router with new device as soon as possible.
		Technological Failure	2	2	As Above	As Above
		Power Failure (short term)	3	2	Environmental Power Failure would affect the Switch, in these situations, the back-up generator kicks in within 2 minutes. The UPS and battery back-ups keep power going till generator kicks in.	UPS installed – approximately 45 minutes of back-up. Only need 2 minutes for back-up generator to start. The back-up generator is diesel, with a long run time, between need refuels.
Cisco Router		Fire Theft Water Damage Vandalism	1	1	This Telstra managed router is for the TIPT phone system, it allows Tambo to use same phone exchange, if this is lost,	



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		Wind			Tambo will have no TIPT phone systems	
		Technological Failure	2	2	As Above	As Above
		Power Failure (short term)	3	2	Environmental Power Failure would affect the Router, in these situations, the back-up generator kicks in within 2 minutes. The UPS and battery back-ups keep power going till generator kicks in.	UPS installed – approximately 45 minutes of back-up. Only need 2 minutes for back-up generator to start. The back-up generator is diesel, with a long run time, between need refuels.
	Cisco switch	Fire Theft Water Damage Vandalism Wind	1	1	This Telstra managed router is for the TIPT phone system, it allows Tambo to use same phone exchange, if this is lost, Tambo will have no TIPT phone systems	
		Technological Failure	2	2	As Above	As Above
		Power Failure (short term)	3	2	Environmental Power Failure would affect the Switch, in these situations, the back-up generator kicks in within 2 minutes. The UPS and battery back-ups keep power going till generator kicks in.	UPS installed – approximately 45 minutes of back-up. Only need 2 minutes for back-up generator to start. The back-up generator is diesel, with a long run time, between need refuels.
	Meraki	Fire Theft Water Damage Vandalism Wind	1	1	Loss of Wi-Fi connectivity	



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		Technological Failure	2	2	As above	
		Power Failure (short term)	3	2	Environmental Power Failure would affect the hot spot, in these situations, the back-up generator kicks in within 2 minutes. The UPS and battery back-ups keep power going till generator kicks in.	UPS installed – approximately 45 minutes of back-up. Only need 2 minutes for back-up generator to start. The back-up generator is diesel, with a long run time, between need refuels.
	Cambium Networks cnPilot e410 Wi-Fi Access Point	Fire Theft Water Damage Vandalism Wind	1	1	Loss of Wi-Fi connectivity	
		Technological Failure	2	2	As above	
		Power Failure (short term)	3	2	Environmental Power Failure would affect the hot spot, in these situations, the back-up generator kicks in within 2 minutes. The UPS and battery back-ups keep power going till generator kicks in.	UPS installed – approximately 45 minutes of back-up. Only need 2 minutes for back-up generator to start. The back-up generator is diesel, with a long run time, between need refuels.
	APC UPS & Battery Back-up	Fire Theft Water Damage Vandalism Wind	1	1	Connected equipment would no longer receive power and would shut down. Equipment could then be connected directly to the mains supply to restart equipment so downtime in office hours would be limited to 10-15 minutes	Two UPSs independently supply power to separate redundant PSUs within each Hyper-V hosts. In the event of failure of either UPS there is no interruption to service.  Comms equipment (switches, routers etc) are only supplied by a single UPS and daisy chained to the battery back-up,



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			2	2		then would need to be connected to the mains in the event of a UPS failure.
		Hardware Failure	2	2	As above	As above
		Power Failure (short term)	3	2	Environmental Power Failure would affect all UPSs, in these situations, the back-up generator kicks in within 2 minutes. The UPS and battery back-ups keep power going till generator kicks in.	Only need 2 minutes for back-up generator to start. The back-up generator is diesel, with a long run time, between need refuels.
All Layer 3 offsite locations	Router	Fire Theft Water Damage Vandalism Wind	1	1	Loss of access to Internet via JustISP/FSG, L3 connectivity to Blackall and all networked devices and other infrastructure connected via the affected Router.	Equipment protected by maintenance agreement with JustISP/FSG.  JustISP/FSG have all configuration settings backed up. JustISP/FSG will replace router with new device as soon as possible.
		Technological Failure	2	2	As Above	As Above
		Power Failure (short term)	3	4	As Above	UPS installed – approximately 20 minutes of back-up power.
	Switch	Fire Theft Water Damage Vandalism Wind	1	1	Loss of access to L3 connectivity and all networked devices and other infrastructure connected via the affected switch.	Equipment protected by maintenance agreement with JustISP/FSG.  JustISP/FSG have all configuration settings backed up. JustISP/FSG will replace router with new device as soon as possible.



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	Technological Failure	2	2	As Above	As Above
	Power Failure (short term)	3	4	As Above	UPS installed – approximately 20 minutes of back-up power.

### DISASTER RECOVERY PLAN

There are two distinct elements to this Plan. Disaster could consist of failure of a particular element of the IT infrastructure, for example, a server or switch. It may also be a Cyber-attack or additionally, a major disaster such as Fire or Flood could knock out an entire site, large part of a site which contains key systems.

The first table below details steps to be taken in the event of loss any individual key system. The second table then outlines procedures to be followed in the event of loss of an entire site or large part of a site which contains key systems.

Table showing procedures for recovery of individual network elements

Location	Network Element	Type of Loss / Damage	Recovery Procedures
Blackall Admin Office / Depot	Hyper-V Host and Hyper-V Virtual Machines (Hive01, Hive02)	Total Loss of a single Hyper-V Host	Purchase replacement server from Dell The affected Virtual Machines will be spun up on Azure, until Host is replaced.
		Hard Disk Failure	Identify failed hard drive – indicator on RAID controller Contact Dell to arrange shipment of replacement drive () IT staff to hot swap hard drive on arrival
		Other hardware failure	Troubleshoot hardware failure and Identify fault Contact Dell to arrange shipment of replacement part
		Software failure	Use Veeam to restore most recent image to disk Restart system
		Power failure	Ensure UPS is operating correctly. If generator does not cut over in 2 minutes shutdown server and wait for power restore. When power is restored, (or generator cuts over) restart server.
	Storage Server	Total Loss	Purchase replacement server from Dell The data stored on this server is just an on-site backup of what is stored in Veeam in Azure
		Hard Disk Failure	Identify failed hard drive – indicator on RAID controller Contact Dell to arrange shipment of replacement drive () IT staff to hot swap hard drive on arrival





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		Other hardware failure	Troubleshoot hardware failure and Identify fault Contact Dell to arrange shipment of replacement part
		Software failure	Use Veeam to restore most recent image to disk Restart system
		Power failure	Ensure UPS is operating correctly. If generator does not cut over in 2 minutes shutdown server and wait for power restore. When power is restored, (or generator cuts over) restart server.
	Cisco Router	Total Loss	Contact Telstra for Replacement Telstra Technician will install replacement router
		Hardware failure	As Above
		Power failure	Ensure UPS is operating correctly. If generator does not cut over in 2 minutes shutdown system and wait for power restore. When power is restored, (or generator cuts over) restart system.
	Cisco Catalyst 3850 48 UPOE – Managed Switch - Telstra	Total Loss	Re-connect devices from affected switch to alternative switches and restart. Order replacement switch and install. Re-distribute devices across available switches
		Hardware failure	As above
		Power failure	Ensure UPS is operating correctly. If generator does not cut over in 2 minutes shutdown system and wait for power restore. When power is restored, (or generator cuts over) restart system.
	Cisco Catalyst 3650	Total Loss	Re-connect devices from affected switch to alternative switches and restart. Order replacement switch and install. Re-distribute devices across available switches
		Hardware failure	As above
		Power failure	Ensure UPS is operating correctly. If generator does not cut over in 2 minutes shutdown system and wait for power restore. When power is restored, (or generator cuts over) restart system.
	Juniper Router (Guest Network)	Total Loss	Contact JustISP/FSG for replacement Jamie Black or Harry Noble will install replacement router
		Hardware failure	As above
		Power failure	Ensure UPS is operating correctly.



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			<p>If generator does not cut over in 2 minutes shutdown system and wait for power restore.</p> <p>When power is restored, (or generator cuts over) restart system.</p>
Switch (Guest Network)	Total Loss	<p>Contact JustISP/FSG for replacement</p> <p>Jamie Black or Harry Noble will install replacement switch</p>	
	Hardware failure	As above	
	Power failure	<p>Ensure UPS is operating correctly.</p> <p>If generator does not cut over in 2 minutes shutdown system and wait for power restore.</p> <p>When power is restored, (or generator cuts over) restart system.</p>	
Meraki MR18 Wi-Fi Access Point	Total Loss	<p>Contact Telstra for Replacement</p> <p>Install, load configurations and test</p>	
	Hardware failure	As above	
	Power failure	<p>Ensure UPS is operating correctly.</p> <p>If generator does not cut over in 2 minutes shutdown system and wait for power restore.</p> <p>When power is restored, (or generator cuts over) restart system.</p>	
Cambium Networks cnPilot e410 Wi-Fi Access Point	Total Loss	<p>Contact JustISP/FSG for replacement</p> <p>Jamie Black or Harry Noble will install replacement Wi-Fi Hotspot</p>	
	Hardware failure	As above	
	Power failure	<p>Ensure UPS is operating correctly.</p> <p>If generator does not cut over in 2 minutes shutdown system and wait for power restore.</p> <p>When power is restored, (or generator cuts over) restart system.</p>	
APC UPS & Battery Back-up	Total Loss	<p>Bypass UPS or Battery back-up to mains power,</p> <p>Will have no back-up, but generator.</p> <p>Contact Insight, Truis or Dell for replacement</p> <p>When replacement arrives have electrician install and turn off IT equipment and plug into new UPS or Battery Back-up, power up UPS, then restart IT equipment.</p>	
	Hardware failure	As Above	
	Power failure	<p>Ensure UPS is operating correctly.</p> <p>If generator does not cut over in 2 minutes. Call Electrician.</p> <p>When power is restored, (or generator cuts over) restart system.</p>	
RODC Server	Total Loss	Purchase replacement server from Dell	



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Tambo Admin Office & Depot			This is a Read-Only Domain Controller; Network will run adequately without. It is for faster logins for Tambo.
		Hard Disk Failure	Identify failed hard drive – indicator on RAID controller. Contact Dell to arrange shipment of replacement drive () IT staff to hot swap hard drive on arrival
		Other hardware failure	Troubleshoot hardware failure and Identify fault. Contact Dell to arrange shipment of replacement part
		Software failure	Use Veeam to restore most recent image to disk. Restart system
		Power failure	Ensure UPS is operating correctly. If generator does not cut over in 2 minutes shutdown server and wait for power restore. When power is restored, (or generator cuts over) restart server.
	Juniper Router	Total Loss	Contact JustISP/FSG for replacement Jamie Black or Harry Noble will install replacement router
		Hardware failure	As above
		Power failure	Ensure UPS is operating correctly. If generator does not cut over in 2 minutes shutdown system and wait for power restore. When power is restored, (or generator cuts over) restart system.
	Switch	Total Loss	Contact JustISP/FSG for replacement Jamie Black or Harry Noble will install replacement switch
		Hardware failure	As above
		Power failure	Ensure UPS is operating correctly. If generator does not cut over in 2 minutes shutdown system and wait for power restore. When power is restored, (or generator cuts over) restart system.
	Meraki MR18 Wi-Fi Access Point	Total Loss	Contact Telstra for Replacement Install, load configurations and test
		Hardware failure	As above
		Power failure	Ensure UPS is operating correctly. If generator does not cut over in 2 minutes shutdown system and wait for power restore. When power is restored, (or generator cuts over) restart system.
		Total Loss	Contact Telstra for Replacement



## Disaster Recovery & Business Continuity Plan for ICT Services

	Cisco Router (TIPT VoIP)		Telstra Technician will install replacement router
		Hardware failure	As Above
		Power failure	Ensure UPS is operating correctly. If generator does not cut over in 2 minutes shutdown system and wait for power restore. When power is restored, (or generator cuts over) restart system.
	Cisco Catalyst 3650 (TIPT VoIP)	Total Loss	Re-connect devices from affected switch to alternative switches and restart. Order replacement switch and install. Re-distribute devices across available switches
		Hardware failure	As above
		Power failure	Ensure UPS is operating correctly. If generator does not cut over in 2 minutes shutdown system and wait for power restore. When power is restored, (or generator cuts over) restart system.
	APC UPS & Battery Back-up	Total Loss	Bypass UPS or Battery back-up to mains power, Will have no back-up, but generator. Contact Insight, Truis or Dell for replacement When replacement arrives have electrician install and turn off IT equipment and plug into new UPS or Battery Back-up, power up UPS, then restart IT equipment.
		Hardware failure	As Above
		Power failure	Ensure UPS is operating correctly. If generator does not cut over in 2 minutes. Call Electrician. When power is restored, (or generator cuts over) restart system.
All Layer 3 offsite locations	Juniper Router	Total Loss	Contact JustISP/FSG for replacement Jamie Black or Harry Noble will install replacement router
		Hardware failure	As above
		Power failure	Ensure UPS is operating correctly. If generator does not cut over in 2 minutes shutdown system and wait for power restore. When power is restored, (or generator cuts over) restart system.
	Switch	Total Loss	Contact JustISP/FSG for replacement Jamie Black or Harry Noble will install replacement switch
		Hardware failure	As above
		Power failure	Ensure UPS is operating correctly.



## Disaster Recovery & Business Continuity Plan for ICT Services

			<p>If generator does not cut over in 2 minutes shutdown system and wait for power restore.</p> <p>When power is restored, (or generator cuts over) restart system.</p>
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Table showing procedures for recovery in case of loss of entire site or large part of a site which contains key systems.

Location	Type and extent of loss/damage	Recovery procedure	Persons responsible
Blackall Admin Office	Flood / Fire (Entire site)	<p>Key software systems Practical Plus, Assetic, Microsoft 365 E3 are cloud based. MAGIQ is an on-premises VM, it would be spun up in Azure with last back-up.</p> <p>Telstra to re-route TIPT to mobiles.</p> <p>Replacement equipment, as per inventory, to be ordered at the first opportunity for installation as soon as suitable alternative accommodation becomes available.</p>	<p>IT Team / PinnacleIT</p> <p>IT Team / Telstra</p> <p>IT Team</p>
	Flood / Fire (Localised to part of building containing server room)	Replacement equipment, as per inventory, to be ordered at the first opportunity for installation at alternative cabling position.	IT Team
Tambo Admin Office / Depot	Flood / Fire (Entire site)	Replacement equipment, as per inventory, to be ordered at the first opportunity for installation as soon as suitable alternative accommodation becomes available.	IT Team / Telstra (TIPT) or JustISP-FSG
	Flood / Fire (Localised to part of building containing server room)	Replacement equipment, as per inventory, to be ordered at the first opportunity for installation at alternative cabling position.	IT Team / Telstra (TIPT) or JustISP-FSG
All Layer 3 Offsite locations	Flood / Fire (Entire site)	Replacement equipment, as per inventory, to be ordered at the first opportunity for installation as soon as suitable alternative accommodation becomes available.	IT Team / JustISP-FSG
	Flood / Fire (Localised to part of building)	Replacement equipment, as per inventory, to be ordered at the first opportunity for installation at alternative cabling position.	IT Team / JustISP-FSG



	containing server cabinet)		
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## TESTING THE PLAN

It is essential that each of the various elements of this plan are tested to ensure that in the event of an actual disaster, systems can be recovered in line with this plan with a minimal interruption to users.

It will not be necessary to fully test the plan for all the virtual servers which currently make-up the BTRC network, because the recovery procedure is the same for each. However, it is considered important that each system which has a different procedure for recovery is tested. Therefore, following tests should be carried out:

- Recovery of one or more on-premises virtual servers from backup
- Recovery of one or more Azure virtual servers from backup
- Recovery of TIPT phone system
- Recovery of one of the physical hosts from
- Full Test of all the UPS and backup generators to ensure correct operation, and sufficient battery life of the UPS.

## APPENDICES

Appendix A: Network topology diagram

## POLICY REVIEW

This policy will be reviewed when any of the following occur:

- a) As required by legislation
- b) shortly after the installation of any new key IT infrastructure by the IT Officer. When installing any new infrastructure due regard must be given beforehand to any impact that the installation will have on this plan.
- c) Other circumstances as determined by the Chief Executive Officer

Notwithstanding the above, this policy is to be reviewed annually.

## VERSION CONTROL

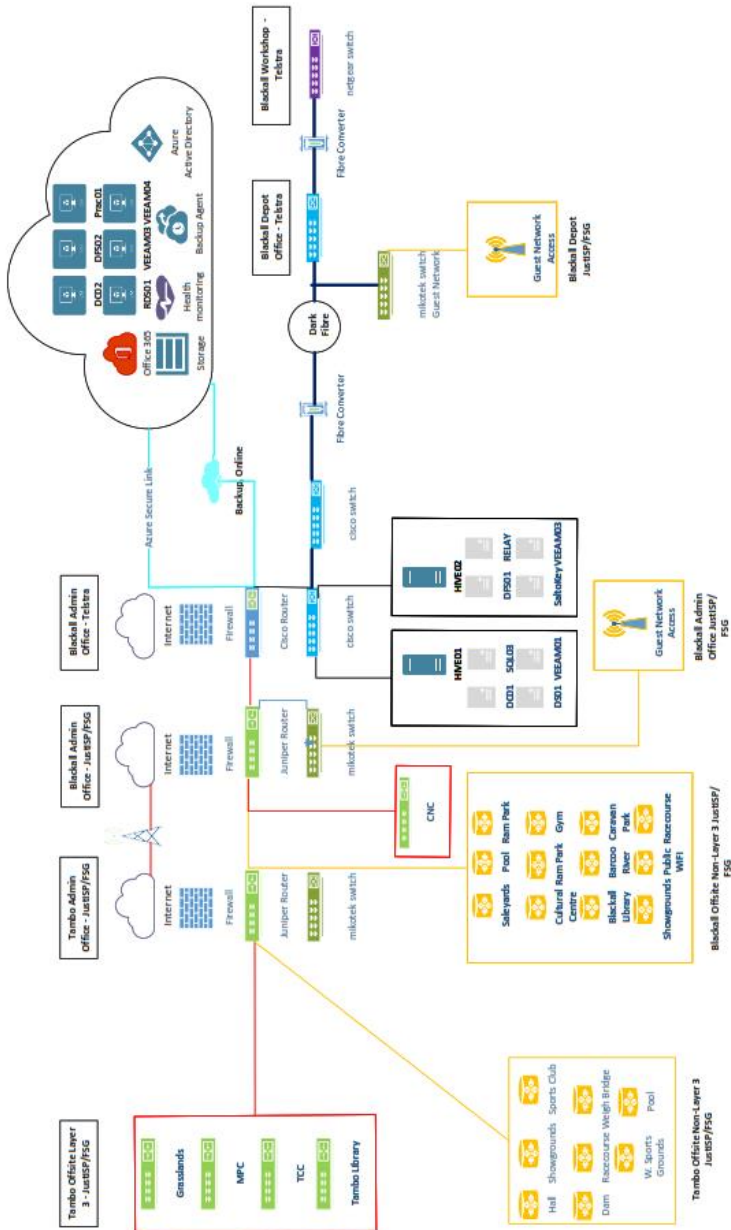
Version 1	New Document 21-04-21

## RECORDS

When completed and approved, the original signed hard copy of the policy is filed in the Master File.

Electronic copies are saved in the appropriately labelled folder in Magiq.

Document #:	Date Effective: 21.04.2021	Version: One	Page 23 of 24
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**Title**  
BTRC Corporate Network

**Description -**  
High-Level Overview Diagram

**DATE**  
04/07/2021

**DRAWN BY**  
Lance W. By

**Blackall - Tambo Regional Council \\\ITIL-**  
**Documents\Diagrams**

**Connections**



**Diagram Key**

