



**TSWELOPELE**  
LOCAL MUNICIPALITY  
A MUNICIPALITY IN PROGRESS

# **INFORMATION TECHNOLOGY STRATEGIC PLAN**

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## **INFORMATION TECHNOLOGY POLICY**

### **1. Introduction**

This is the first Information Technology (IT) strategy formulation document for the Municipality. This document is envisaged to be user friendly and deals with key IT requirements that will support the municipality to function better, effectively and competent. This IT strategic document will emphasize the importance of moving from the traditional approach of treating IT as separate tools that are not linked to the municipality's goals. It will also focus on ensuring that business processes of the municipality are supported by the Information Technology.

As this is the first of its kind for the municipality, it will endeavour to outline the principles of using the information processes to ensure accurate decision making in the municipality. Also it is vital for the municipality to first assess its existing IT solution to establish whether business vision can be achieved with existing IT infrastructure. Secondly the new or additional IT infrastructure and solutions will be determined so that the municipality achieves its vision.

### **2. Objective of the IT Strategy**

The purpose of Tswelopele Local Municipality IT strategic plan is to:

Ensure that the municipality will allocate sufficient resources and establish priorities using the municipality's broader vision to enhance the business processes.

### **3. Information Technology Vision**

Promote the efficient and cost effective use of information technology to provide speedy service delivery to the municipality's consumers, sharing of information within and with other stakeholders in promotion of co-operative and responsive government.

### **4. Goals**

To achieve this vision the municipality will:

- Make information easily and broadly available
- Use reliable and secure system
- Improve provision and accessibility of municipal services to its communities through information technology.
- Play a leadership role in utilizing technology to enable service delivery.
- Promote intergovernmental relations within the three spheres of government.
- Bring services to the customer's doorsteps or to their vicinity.
- Promote community participation and active involvement.
- Leverage investments to improve quality of service.

## **5. Information Technology Strategic Values**

The municipality's IT strategic values focus on municipal staff and stakeholders:

### **Customer services**

- Listening and delivering what is needed by the stakeholders (community, business partners, sector departments, etc.) and staff.

### **Quality Deliverables**

- Providing technology solutions that offer stakeholders and staff the ability to be more efficient, effective and responsive.

### **Communication**

- Exchanging information openly, respectfully to our stakeholders and staff.

### **Integrity**

- Treating stakeholders and staff honestly, fairly and equitable at all times.

### **Needs Focused**

- Prioritizing projects based on the need of our stakeholders and staff.

## **6. Challenges**

Although the municipality has such a big vision and goals, this will require the municipality to perform beyond its limiting challenges. For the municipality to succeed in its goals and mission a variety of challenges must be addressed in the next few years:

- Lack of ICT infrastructure within the municipality.
- Allocation of funding is not sufficient enough.
- Illiteracy of its community regarding the use of information technology.
- Shortage of computer skills within the municipal area of operation.
- Keeping pace with the changes in technology is always critical to maintain a secure and stable computing environment
- Maintaining a balance between the privacy and security is an ongoing process.
- Ongoing and improved remote support to municipal employees from service providers or IT consultants.

## 7. Municipality's IT Strategies

The municipality has to ensure that it has viable IT strategies to meet both goals and challenges faced by the municipality to conduct its business effectively, efficient and quickly. These strategies may be classified as short-term, medium-term and long-term to ensure continuity of the municipality and can also be done in phases. This simply means the municipality has to list possible projects that will support the day-to-day activities of the municipality for the betterment of the municipal service delivery. It is essential that the IT strategies are directly linked to the Integrated Development Plan of the municipality and are reviewed after two years or annually if needed.

The municipality to gain a competitive advantage in the use of Information Technology has to ensure that the following are implemented as short-term, medium-term or long-term projects:

### Strategy 1: Network Connectivity

| Outcome statement  | Activity / Methods  |
|--|---|
| 1.1 Upgraded and constant network connectivity.          | 1.1.1 Review the existing network support contract and establish failures in the network.<br>1.1.2 Enquire from users of the problems of the network connections.<br>1.1.3 Read the network connections contract.<br>1.1.4 Assess the existing IT infrastructure which is used to connect to the network.<br>1.1.5 Meet with the service provider to establish the contract terms.<br>1.1.6 Seek alternative solution to network connectivity or establish if the service provider can upgrade the systems<br>1.1.7 Appoint the service provider that will do network support |
| 1.2 Remote network connections for Heads of Departments. | 1.1.1 Assess the existing infrastructure (laptops) compatibility.<br>1.2.2 Identify the Heads of Department that needs remote access.<br>1.2.3 If computers are not compatible, draw specifications for new laptops.<br>1.2.4 Procure 3G cards to allow for the remote accessibility.<br>1.2.5 Link all laptops to municipal networks.  |

## Strategy 2: Review the Financial Management Systems

| <b>Outcome statement</b>  | <b>Activity / Methods</b>   |
|---|---|
| <p>2.1 Financial Management Systems that complies with the Municipal Finance Management Act (MFMA) and MSCOA.</p> | <p>2.1.1 Assess the current financial management systems in comparison to the new requirements of the MFMA.</p> <p>2.1.2 Assess whether the system is fully integrated or other system can be integrated to it.</p> <p>2.1.3 Assess whether the system can produce National Treasury Reports easily or NT reports can be extracted.</p> <p>2.1.4 Assess if the billing system can be integrated to the Geographical Information Systems.</p> <p>2.1.5 Assess whether the Annual Financial Statements can be produced or extracted from the Financial Management Systems.</p> <p>2.1.6 If these reports cannot be produced, enquire if the service providers can upgrade the system.</p> <p>2.1.7 Draw specification of the new systems and ensure that a competitive financial management system is procured.</p> <p>2.1.8 Procure more user licenses for the municipal employees.</p> <p>2.1.9 Ensure training is conducted for all users of the system, especially Heads of Departments for budget control purposes</p> |
|   |   |

### Strategy 3: Website Functionality & Web focus

| Outcome statement                                    | Activity / Methods  |
|--|---|
| 3.1 Updated and fully operational municipal website. | 3.1.1 Assess whether the website is updated regularly.<br>3.1.2 If not, assess training requirements for the website to be updated regularly.<br>3.1.3 Or outsource the updating of the website to an external service provider.<br>3.1.4 Ensure that consumers or the residents are able to download relevant forms to apply for the services.<br>3.1.5 Ensure that residents are able to log complaints on the website and are adequately addressed.<br>3.1.6 Ensure that the website is linked to the relevant website that will promote local economic development and tourism. |
|  |   |

### Strategy 4: Hardware and Software

| Outcome statement   | Activity / Methods  |
|---|---|
| 4.1 Standardised licensed hardware and software for the municipality. | 4.1.1 Establish the existing hardware and software within the municipality.<br>4.1.2 Establish if all software and hardware are licensed.<br>4.1.3 License those that are not licensed.<br>4.1.4 Evaluate the benefit of having standardised hardware and software within the municipality.<br>4.1.5 Establish user requirements to perform their duties.<br>4.1.6 Procure relevant hardware and software for the users within the municipality |

### Strategy 5: Implementation of Document Management Systems

| <b>Outcome statement</b>                           | <b>Activity / Methods</b>   |
|--|---|
| 5.1 Fully operational document management systems. | 5.1.1 Establish if the municipal has an operational document management system.<br>5.1.2 Draft the specifications of the document management system.<br>5.1.3 Establish the training requirements of the municipality's staff to implement the document management systems.<br>5.1.4 Establish support requirements in implementation of the document management systems.<br>5.1.5 Procure the document management systems. |



As stated above, these strategies may be classified as short-term, medium-term and long-term to ensure continuity of the municipality and can also be done in phases.

**PHASES– IT BASIC INFRASTRUCTURE SETUP, LOCAL NETWORK, ANTIVIRUS, NETWORK (WIDE AREA-RADIO LINKS), SERVER ROOM, LICENCING-MS OFFICE BUSINESS, FIREWALL, BACKUP SERVER**

PHASE 1 will involve 3 phases in order of priority from phase 1A to 1B; this phase involves laying the basic IT infrastructure which should serve as a cradle of efficient IT equipment as well as making necessary upgrades to the current infrastructure as elaborated here below. The following is sub-phases under phase 1:

**PHASE 1 A – ICT NETWORK INFRASTRUCTURE (LAN)**

This sub-phase involves building and upgrading the HQ's IT central nervous system, this involves laying of CAT 5 cabling that will connect every part of the building including access to the internet connection for all designated users, CAT 5 is the new generation cabling which allows seamless flow of data, voice and media at greater speed, thereby improving internet data speed as well as seamless VOIP connection using switches.

The sub-phase also involves installation of intelligent switches which allow better management and control over user administration as well as remote maintenance and support by the designated IT Manager in running network access and protecting against abuse of the IT systems by users.

6 U specification wall cabinets also form part of this sub-phase, these cabinets should be strategically installed at each department within the building for ease of maintenance as this leads to easily isolating and conducting maintenance on the specific problematic area. Each 6 U wall cabinets come with a patch panel, brush panel, power connection.

**PHASE 1 B – PROTECTION ANTIVIRUS**

The aim is to provide a Central Server specifically dedicated to ESSET antivirus protection for all users in a controlled and seamless system. This server is a central repository that will allow regular update downloads into the repository and automatically deploy to users, this allows minimal internet traffic for user updates and offers maximum protection against the latest malware and spyware.

**The table below is the estimated cost implications:**

For Basic network infrastructure and Anti-Virus

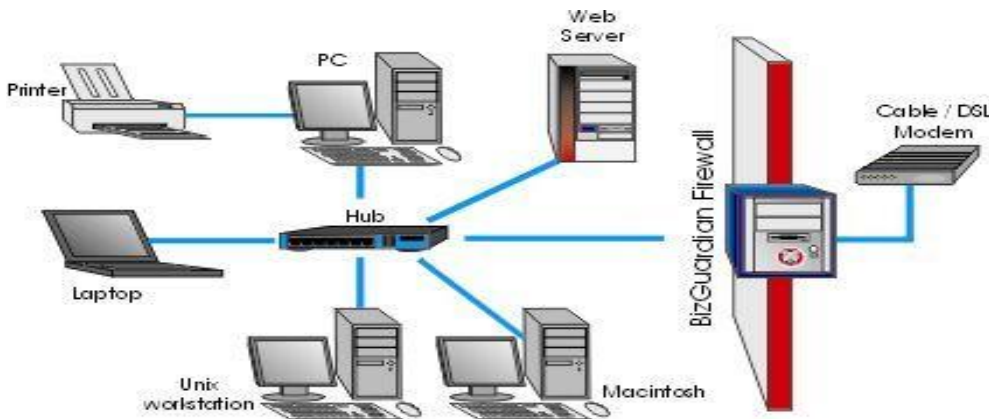
| Quantity                                   | Description   | Cost Estimate    |
|--|---|------------------|
| <b>PHASE 1</b>                             |   |                  |
| IT BASIC INFRASTRUCTURE SETUP              |   |                  |
| <b>NETWORK INFRASTRUCTURE (PHASE 1 - )</b> |   |                  |
| 80   | High Speed Cat6 Network Cable, RJ-45 Male / RJ-45 Male, RJ-45 boots, RJ-45 wall connector, RJ-45 fly lead ( 1.5metre) | 54 740.00        |
| 8  | 24 port, Intelligent switch; with CAT6 generation compat.   | 134 000.00       |
| 8  | 24 port patch panel, CAT 6 generation   | 24 800.00        |
| 8  | Brush panel for 24 port patch   | 10 060.00        |
| 5  | 6 U specification wall cabinet  | 42350.00         |
| 10   | Trunking 200 X 75 1.6 1.4 EBT/IB/083 EWT/WHI/083  | 4 025.00         |
|  | <b>Sub-value</b>  | <b>269975.00</b> |

| Quantity | Description                   | Cost Estimate |
|----------|-------------------------------|---------------|
| 1        | Anti-virus license protection | 80.000.00     |

**PHASE 2**

**PHASE 2 A - Firewall**

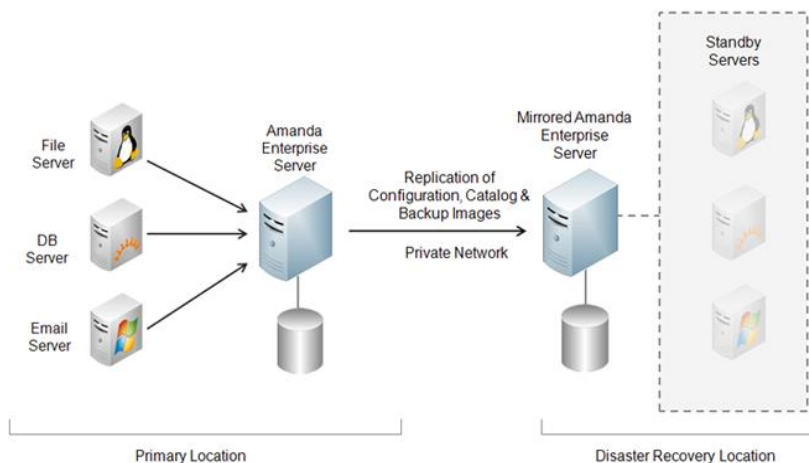
A firewall server will help protect the system from external sources as it becomes an interface between the main internet server and the outside world.



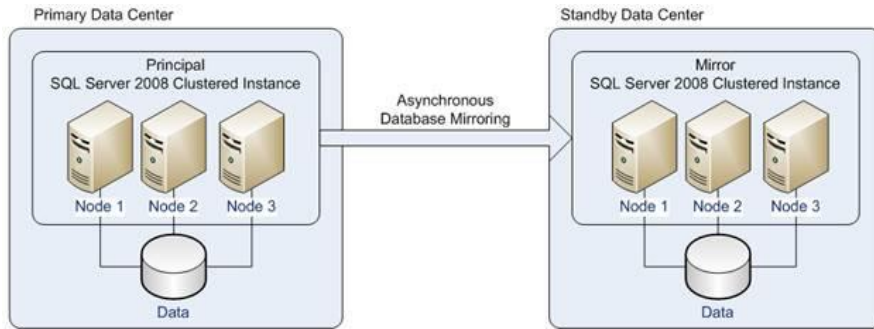
## PHASE 2 B - DISASTER RECOVERY PLAN MACHINERY (OFF-SITE BACKUP SERVERS)

This is a disaster recovery plan on what should happen in a case of major systems failure at the headquarters and involves switching ALL services, essential and non-essential to another location so that ALL users can obviously switch ALL operations to another location without losing a single byte of data.

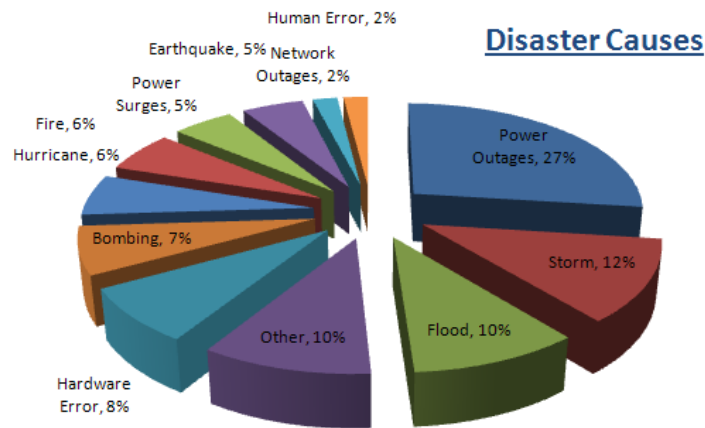
This should be the exact replica of the server room at HQ, for it is and should always be a clone of server room, if not, it cannot be regarded as a Disaster Recovery Plan (DRP). As shown below the standby servers at the disaster recovery location are the exact replica of the active servers at the primary location.



As indicated below the diagram shows the mirroring of the services at the Standby Data Centre asynchronously from the Primary Data Centre (Primary location), this happens in real time in anticipation of any eventuality



There are various eventualities that can lead to disasters in your ICT infrastructure and services which would need a Data Recovery Plan in place and below is an illustration



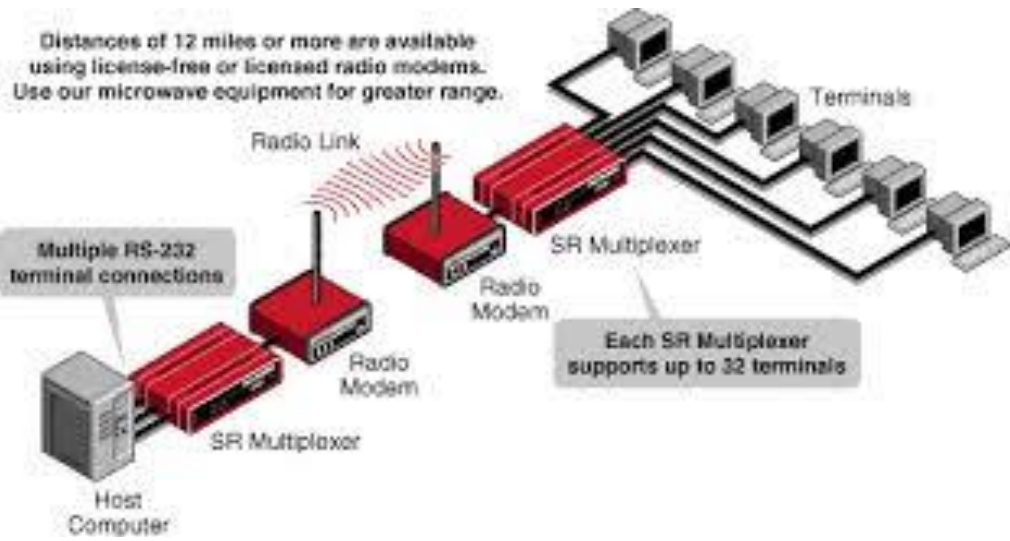
The table below is the estimated cost implications:

| Quantity | Description                                   | Cost Estimate |
|----------|---|---------------|
| 1        | Firewall                                      | 125 000.00    |
| 1        | Backup Server (Synology Rack Station Device ) | 250 000.00    |

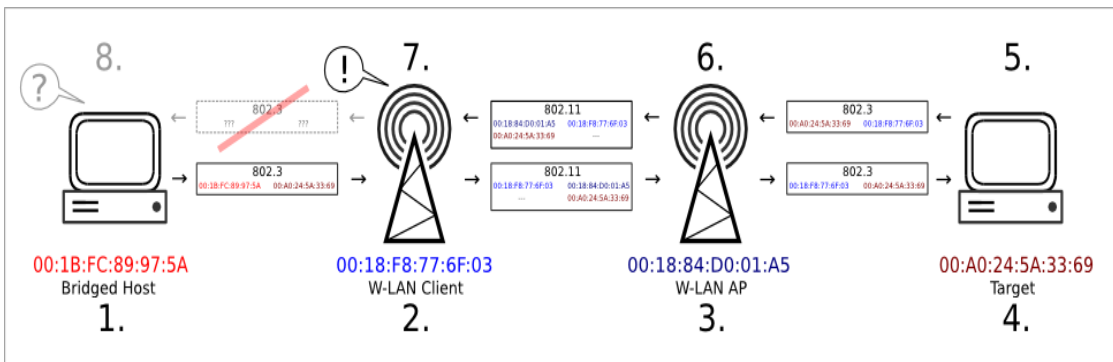
**PHASE 3**

**PHASE 3 – WAN (WIDE AREA NETWORK) - RADIO LINKS BETWEEN HQ AND SAT**

This forms part of external infrastructure that allows satellite offices (Phahameng, Hoopstad, Technical services etc.) to link easily and seamlessly to the head office on a reliable and permanent connection running at high speed to ensure the best data integrity at considerable distances



Wide Area Network repeaters will also be installed in terrains where there is no proper line of sight between HQ and the satellite offices, particularly the Hoopstad office as it is not in close proximity to HQ. Connection between HQ and the district office forms part of the recommendation, though not critical it provides a channel for data transfer and communication especially in cases where you would use the district as your DRP host. This might be ideal as they might already have the infrastructure ready to host you as their municipality.



| Quantity | Description             | Cost Estimate |
|----------|-------------------------|---------------|
| 1        | Wan (wide area network) | 300 000.00    |

## PHASE 4

### PHASE 4 A – MS OFFICE BUSINESS

This sub-phase is for the installation and configuration of Microsoft Office Business edition open license agreement, under this agreement a one-time license fee is applicable, this comes with software assurance. With this assurance you are entitled to all the software updates released during the two year open license agreement period and benefits, such as technical support and training.

| Quantity | Description   | Cost Estimate |
|----------|---|---------------|
| 1        | 65 X 64 bit Office Professional Plus 2016 OVL 1 Year Enterprise (Volume Licence)With software assurance 1 Year Enterprise | 250 000.00    |

### PHASE 4 B – SERVER ROOM WITH FIRE PROTECTION

Building and equipping SERVER ROOM with proper access control to ensure that only authorised personnel are allowed in. This is done in two ways; by keeping a server room register that is to be populated by entrants and by installing a biometric sever that will electronically control access by finger print. The room and all the openings in the room such as ceiling and doorway that allows any bit of air will be vacuum sealed for two reasons; to allow the air conditioning system to operated efficiently and to allow the fire protection gas to operate optimally in case of fire disaster. The installation of a raised floor in case of floods and related disasters. Installation of suspended ceiling for fire protection. Air conditioning system with the correct BTUs for the room, protective door to protect equipment against theft. Install SMS alert system for intrusion warning and optimal protection and create conditions for servers to operate optimally so as to keep the warranty intact.

Alternatively the municipality can procure EnviroRac

| Quantity | Description  | Cost Estimate |
|----------|--|---------------|
|          | <b>SERVER ROOM - WITH BIOMETRIC ACCESS - WITH FIRE PROTECTION</b>                          |               |
| 1        | 3 Zone Fire/Extinguishant combination panel with manual release call point excl. batteries | 8 280.00      |
| 2        | 12V 7Ahr battery   | 839.50        |
| 4        | Optical detector incl. Base  | 1 748.00      |
| 1        | 24V Red sounder / beacon   | 1 130.45      |
| 2        | 24V Bell   | 1 242.00      |
| 1        | Illuminated warning sign   | 1 155.75      |

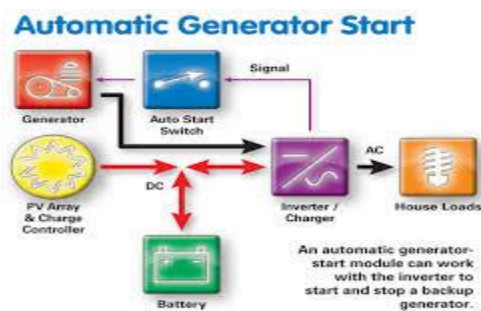
|   |   |                   |
|---|---|-------------------|
| 1 | Extinguishant release test & interface with manual reset and LED indication | 644.00            |
| 1 | AC shutdown unit (incl. onboard test button 5 Amp/220VAC)                   | 609.50            |
| 1 | 2C PH30 fire alarm cable 50m  | 1 265.00          |
| 1 | PVC conduits + accessories  | 506.00            |
| 1 | 25L HFC modular cylinder complete   | 35 912.20         |
| 1 | HFC-227 Gas   | 20 700.00         |
| 1 | Door warning sign   | 333.50            |
| 1 | sms alert   | 3 450.00          |
| 1 | Supply & Install biometric system , door magnetic                           | 33 350.00         |
| 1 | 6 kVA Long Run  | 33 925.00         |
| 1 | Supply & Install raised floor   | 103 500.00        |
| 1 | Supply & Install Aircon   | 6 900.00          |
|   | Contingencies @ 10%   |                   |
|   | <b>Sub - value</b>  | <b>255 490.90</b> |

Below are the pictures of the server room and EnviroRac:



## **PHASE 5 – COMMISSIONING OF HIGH CAPACITY THREE PHASE POWER GENERATOR WITH A COMPATIBLE UNINTERRUPTIBLE POWER SUPPLY WITH HIGH VOLTAGE POWER LINE FOR ENTIRE BUILDING**

During this period of electricity crisis and load shedding, administrative work can grind to a halt during load shedding periods leaving staff and employees with nothing to do for the period; downtime can also prove to be costly for the revenue stream as clients cannot make payments on their services owed due to offline systems.



This solution involves the installation of a 60 kVA three phase power generator that will supply the entire building with electricity; this includes lighting, ICT systems, power plugs, etc.



The second stage of backup supply is a mega battery bank (40 kVA On-Line (3/1) UPS (uninterruptible power supply) that will act as a first stage of backup during a power outage for the duration of 2 to 4 hours until the power is back.





| Quantity | Description                               | Cost Estimate |
|----------|---|---------------|
| 1        | High capacity three phase power generator | 450 000.00    |

## 8. Revision of the IT Strategy

| PHASES    | PROJECTS  | FINANCIAL YEAR |
|-----------|---|----------------|
| Phase 1 A | ICT network infrastructure (LAN)  | 2015/2016      |
| Phase 1 B | Procurement of an antivirus protection  | 2015/2016      |
| Phase 2 A | Procurement of a firewall   | 2016/2017      |
| Phase 2 B | Disaster recovery machinery (off-site backup server) NAS                          | 2016/2017      |
| Phase 1 B | Renewal of Antivirus License  | 2016/2017      |
| Phase 3   | WAN (wide area network) -links between Head Office and satellite Offices          | 2017/2018      |
| Phase 1 B | Renewal of Antivirus License  | 2017/2018      |
| Phase 2 A | Renewal of Firewall License   | 2017/2018      |
| Phase 4 A | Installation Office Professional Plus 2016 OVL 1 Year Enterprise (Volume Licence) | 2018/2019      |
| Phase 4 B | Building of a server room   | 2018/2019      |

|         |  |            |
|---------|--|------------|
|         | Antivirus and Firewall License Renewal                     | 2018/2019  |
| Phase 5 | commissioning of high capacity three phase power generator | 2019/2020. |

The IT strategy must be revised annually taking into account any changes in the municipal strategic plan and the Service Delivery Implementation Plan (SDBIP).

## **9. Time Frames**

The identified IT projects are seen as short- to medium-term projects that should be Implemented in 2015/2016, 2016/2017, 2017 / 2018 and 2018 / 2019 financial years.

## **10. Conclusion**

The municipality should ensure that these projects are implemented within the above timeframes and where funding is required should approach the local government department for assistance or any other possible funders.

## **11. COUNCIL APPROVAL AND EFFECTIVE DATE**