



NZOIA WATER SERVICES COMPANY LIMITED

**Information & Communication Technology Policy and procedures
manual**

September 2016

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1 Introduction

1.1 Background information on NZOWASCO

1.1.1 Vision

To be world class service provider.

1.1.2 Mission

To provide adequate portable water and sanitation services efficiently, economically and in a sustainable manner to all consumers in the Nzoia cluster region

1.1.3 Motto

Maji safi maisha poa.

1.1.4 Core businesses of the NZOWASCO

The core business of NZOWASCO that is in line with its mandate is:

To provide cost effective and affordable quality water and sanitation services to the residents of the cluster towns of Webuye, Bungoma, Kimilili, Malaba and Kitale.

1.1.5 Core values

- Professionalism
- Teamwork
- Accountability
- Creativity & Innovation
- Competence & performance

1.2 ICT Section's vision and mission

Vision

To be world-class ICT support services provider.

Mission

To provide timely, effective and efficient ICT support services for the NZOWASCO's operations.

1.3 Aims of the policy and procedures manual

This policy intends to outlines broad objectives that would drive Information communication technology (ICT) at NZOWASCO. It aims at empowering the users with a view of ensuring efficiency when using ICT and seeking support for the same. ICT involves a wide range of computing and electronic data communications facilities and services that are used to create access, examine, store, and distribute material in multiple media and formats. ICT is an enabler in any sphere of life and has far reaching changes. Towards this end this document shall also be available on the NZOWASCO's intranet for ease of access by intended users.

The broad objectives of the ICT policy include:

- a) To provide a framework for the development and implementation of ICT infrastructure and software applications;
- b) To provide reliable adequate and sustainable ICT infrastructure in NZOWASCO;
- c) To direct standards and guidelines that promote the accuracy, currency and relevance of the NZOWASCO's websites; and
- d) To sustain ICT as a key empowerment tool for the NZOWASCO's staff, stakeholders and customers.

1.4 Scope of the policy and procedures manual

This policy and procedures manual applies to authorised users accessing, developing, implementing and, or using ICT-based systems and resources owned, managed, supported or operated by, or on behalf of, NZOWASCO. The policy broadly addresses support, maintenance development and procurement of ICT.

2 Support for ICT

NZOWASCO shall adopt strategies that promote the use of ICT in service delivery to achieve its mandate and vision.

2.1 ICT infrastructure issues

The ICT infrastructure shall support access diverse information resources. This shall be achieved through intranet, NZOWASCO's website and related technologies.

NZOWASCO shall only acquire ICT hardware and promote the use of environmentally friendly ICT products.

2.2 Software licensing and related issues

2.2.1 Software Licensing

NZOWASCO shall only procure original software systems. The procuring officers shall ascertain the originality by confirming the serial numbers and related registration information. NZOWASCO shall also abide by End User License agreements in terms of rights to usage.

2.2.2 Software copyright

NZOWASCO shall encourage use of different software models, including proprietary, open-source and free software in order to diversify access and choice of solutions.

The international standards of software copyright and security issues will be observed in case NZOWASCO is involved in software development either as a corporate or such persons assigned to that task.

2.2.3 Privacy issues

- i. **Security-** The data stored in a computer should be secured both from unwanted intruders and natural disorders. All users of ICT facilities are required to ensure computers' safety and that of the contained data. The data backup to secure the data is available in the procedures section of this document.

ii. **Personal information** – Staff and authorised users are encouraged to exercise caution when dealing with personal information stored in NZOWASCO’s computers. Employees and employers are legally obliged to protect other people’s privacy. This is important to prevent embarrassment, distress and possible financial loss. The users shall be prompted to key in username and password for authentication as authorised user. On completing working with a computer, the user shall sign-off (log-off) to ensure that the data contain therein is safe. This process will depend on the computers’ operating system.

iii. **Data Protection**

NZOWASCO will operate under data protection mechanism, which guarantees the information security. However, if that protection is breached by accident or by deliberate unauthorised access, then the person in control of the data may have to be held liable.

2.3 Anti-viruses management

NZOWASCO will at all times have up-to-date anti-virus and related software applications to minimise incidences of virus and malware attacks.

2.4 Clean power supply for computer environment

NZOWASCO shall support efforts towards clean power supply for ICT infrastructure to guard against power fluctuations and surges.

3 The ICT network

NZOWASCO's ICT networks should ensure adequacy, reliability and resilience to support continuous high levels of activity. The network should be supported by sustainable development and maintenance.

3.1 The local area network (LAN)/ Wide area network (WAN)

NZOWASCO shall support a LAN/WAN to facilitate sharing electronic information and resources by its authorised users. The ICT Supervisor shall only allow LAN/WAN connection rights to computing facilities as per NZOWASCO's specifications.

NZOWASCO shall promote the use of network printers that are strategically placed in the LAN depending on end-users' needs. Users are only advised to print when it is necessary.

3.2 Expansion of LAN/WAN

NZOWASCO's LAN/WAN expansion shall be guided by usage and demand patterns; technological change; security; management cost implications and Government specifications that are published from time-to-time.

3.3 Access to LAN/WAN

Adequate security shall be provided for all mission critical areas for the LAN/WAN as provided for in relevant procedures. The following shall form core of access to the LAN/WAN:

- a) A person must be authorised user to the LAN/WAN.
- b) The authorised user shall be expected to use the authentication rights to access the LAN/WAN.
- c) Upon completing, the user shall be expected to log-out as required.

The levels of LAN/WAN access rights for authorised users shall be guided by the individual nature and responsibilities of required access. This shall be done (by ICT section) in conjunction with the relevant sections for the concerned user.

3.4 Appeals on suspension of LAN/WAN usage

Failure to comply with the policy shall result in immediate withdrawal of services. Violation of this policy shall be addressed through appropriate NZOWASCO's and Government's legal mechanisms. NZOWASCO reserves the right to periodically examine any system usage and authorisation history to protect its ICT infrastructure.

Any user whose access has been suspended has the right to appeal in writing to the MD. The appeals shall be acted on based on case at hand and related ICT procedures. The appeal procedure shall be as follows:

- a) The user shall submit a written appeal to the MD clearly stating the ground for the appeal.
- b) The MD shall deliberate on the appeal upon concluding necessary consultation on the matter. This will be with two weeks.
- c) The MD shall communicate the way forward on the matter to the user.

3.5 Inventory control on the LAN/WAN

As part of their audit responsibilities, the ICT Supervisor in consultation with the Finance Manager shall be required to record in their local equipment inventory records the address assigned to each item of equipment, together with the location of such equipment.

The ICT Supervisor shall be notified in advance and at the earliest opportunity, of any plan to add, replace or relocate computing equipment to NZOWASCO's LAN/WAN. The ICT Supervisor shall assess the likely impact on the LAN/WAN of the proposed change. The Finance Manager shall effect an inventory update for the relocation and/or replacement.

4 Internet and ICT security

NZOWASCO shall establish a culture of openness, trust and integrity. This calls for protecting ICT facilities from injurious actions, software intrusion, data loss, unauthorised access, network and system failures.

4.1 Securing confidential information

NZOWASCO data contained in ICT systems shall be classified as either confidential or non-confidential. All confidential systems shall be protected using passwords among other measures. There shall be regulations to govern the use and administration of passwords to ensure reliability from time to time. In this regard, NZOWASCO prohibits the use of its ICT environment to violate rights of any person or company protected by Kenya's copyright, trade mark, patent, or other intellectual property (IP) laws. Users are advised to abide by provisions of 2.2.3 (ii) to secure confidential data.

Sending unsolicited email messages (email spam), chat sessions or other advertising material to individuals who did not specifically request for such material prohibited.

4.2 Password security

The ICT Supervisor shall regulate the passwords for mission-critical ICT installations and systems. Measures shall be put in place to monitor access, usage, regular changing, transmission and storage of these passwords. Provisions of 2.2.3 (ii) guide on how to secure confidential data.

4.3 Server security

The ICT Supervisor shall maintain records that have vital information for the servers. This information should ease the maintenance of the equipment. These servers shall be configured as per approved ICT guidelines. This is necessary to ensure that they are fit for purpose.

4.4 Internal computer security

Computing facilities shall not circumvent screening firewalls. Computers shall be prohibited from engaging in malicious espionage related activities.

4.5 Physical security

All locations that house ICT equipment shall be secured and adequately supported to ensure that there is no theft of data or equipment and that there is no disruption of service as a result of exposure to intrusion. The server room shall be installed with fire-fighting/extinguishing equipment.

4.6 Systems backup

The ICT Supervisor shall be responsible for backup and restoration of all data that goes through NZOWASCO's ICT system. The measures shall also include safe-keeping of backup data and facilities at appropriate locations as guided by relevant procedures for the same.

4.7 Internet and intranet usage

NZOWASCO is committed to a well-established internet and intranet that are fully utilised and functional at all times.

4.7.1 Internet and e-mail

NZOWASCO shall promote equitable access to internet for its staff. The offices with computing facilities shall where possible have internet and e-mail services.

Accessing, relaying, downloading, dealing or handling in any manner articles which are offensive and demeaning in any way e.g. offensive, pornography and sarcastic languages is prohibited

4.7.2 Web security

The ICT Supervisor shall be responsible for the implementation of appropriate scanning of web-based and non-web based Internet traffic in line with this Policy and relevant ICT

guidelines. This is necessary for delivery of efficient and high quality web access to authorised users.

4.7.3 Intranet

The policy recognises the necessity of linking together the computers particularly for the administrative purposes and thus the need for intranet. This will enable NZOWASCO employees take advantage of the common resources and facilities to share work, efforts and utilise the wider inter-communication.

5 Software development, support and use

NZOWASCO shall enhance its current system modules into an Enterprise Resource Planning (ERP) system to computerise its core functions.

5.1 Software Development

Prior to the computerisation or acquisition of any NZOWASCO information system (IS) or ERP, the ICT Supervisor in consultation with the relevant authority shall constitute an IS project team comprising relevant stakeholders.

The roles and responsibilities of the different persons involved in a project development and implementation shall be clearly defined in the project description document. The ICT Supervisor shall facilitate the drafting of this document.

5.2 Information system support and use

The ICT section shall empower user sections to utilise the Information systems (IS). The user sections shall take ownership of systems and be responsible for the daily operation of the IS. This will form core of the technical support and any relevant systems' updates.

5.2.1 User requests

All requests for data or service by the users and stakeholders of any IS shall be channelled through the ICT section and the MD respectively. The responses shall be as per the ICT service charter.

5.2.2 Technical support

The ICT Supervisor shall ensure that every project has alternatives for staff that provide essential support service to guarantee continuity of systems and avoid over-dependence on one staff member.

5.2.3 Data collection and updates

All users shall be responsible for collecting, updating, validating and verifying all data required by all systems in their custody except in cases of emergency or data migration where the ICT staff may be called upon to offer support.

5.3 Software license/maintenance contracts

The ICT section shall ensure that all software and equipment critical to NZOWASCO operations are put on maintenance contract that includes any recurring licensing costs.

6 User support

NZOWASCO shall acquire, develop and produce a variety of technologies, products and services in response to its business and related requirements. Upon production, the requirements shall be availed to users. Continuous and tailor-made support shall be provided to the users.

6.1 ICT projects and services

There shall be ICT support services to assist ICT users during the implementation and operationalisation of ICT projects, products; and services.

6.2 Technical representation and support

The ICT section shall provide technical representation in all ICT related meetings and committees. It shall communicate relevant user support information to users. Additionally, ICT user support function shall include surveys, design, requirements, specifications, and preparation of bills of quantities, material acquisition and supervision of implementation of NZOWASCO's ICT infrastructure.

6.3 Hardware and software support services

The users shall be responsible for daily care and basic routine maintenance (which includes basic and cleaning and simple troubleshooting) of ICT facilities under their care. The ICT section shall support the hardware and software categories that are commonly required by users in their offices to perform their job responsibilities.

6.4 Support resources and logistics

NZOWASCO shall stock of basic support tools for routine maintenance. This shall include protective and safety clothing and gear suitable for the support tasks.

The ICT section in conjunction with relevant sections shall ensure availability of logistical resources to ensure rapid movement between support sites and communications to ensure contact between support personnel.

7 ICT equipment maintenance

The maintenance of ICT facilities is important for optimal use of such resources. This policy will guide on the maintenance of NZOWASCO's ICT facilities.

7.1 Preventive maintenance

Maintenance schedule shall be in place for the ICT facilities. Preventive maintenance shall be carried out according to the recommendations of the manufacturer of the hardware, in terms of frequency and method of maintenance. However, service may be provided on the basis of a request as long as it is justified. The ICT Section shall maintain a maintenance schedule.

7.2 Outsourced maintenance services

Equipment not supportable by ICT section shall as far as possible be placed on maintenance contracts.

7.3 Obsolescence of hardware

ICT hardware shall be declared obsolete according to the recommendations of the manufacturer and Government (and its agencies) guidelines from time to time. The ICT Supervisor shall ensure timely identification of hardware categorised as at "end-of-life" and recommend necessary replacement. These shall also guide in appropriate disposal of electronic waste.

7.4 Warranty guidelines

NZOWASCO shall facilitate the repair and maintenance of equipment under warranty. The ICT section shall keep accurate records of the warranty of the individual items of equipment and use such information when needed to operationalise the warranty and/or guarantee for the equipment.

8 Database administration

An appropriate channel of communication that allows the ICT Supervisor and/or delegated personnel to receive and respond to requests for database services shall be available e.g. e-mail and memo.

8.1 Authorisation and access control

Access to the production databases shall be restricted to production applications and through authorised reporting tools.

Access to the development and integration shall be given to developers, members of staff working on current systems development projects or for developing their database skills. The developers shall have a special role for functional development and integration databases that they support.

8.2 Development and operational support

NZOWASCO shall provide support to the development teams. Support activities shall include, but shall not be limited to the following areas: database design or re-design; application design; application performance analysis; disk space analysis; data recovery analysis; and data and process modelling.

Operational support shall include production application analysis; data monitoring and reorganisation; recovery management; space management; performance monitoring. These are necessary activities for development life cycle process and efficient performance in the production environment.

9 Procurement of ICT products and services

The Public Procurement and Disposal Act 2005 and Public Procurement and Disposal Regulations 2006 which are applied by NZOWASCO shall form the basis of procurement of ICT goods and services. The ICT section shall assist the user sections with preparation of technical specifications for the purpose of procuring ICT products and services.

The life cycle of the ICT goods and services is dependent on the type of the goods and services procured by NZOWASCO. On average, hardware shall be replaced after every four years subject to availability of replacement funds. For software, the life cycle shall depend on the release of new versions as per the software maintenance agreement.

10 Staff ICT training

Continuous and tailor-made training support is necessary for the users to fully exploit NZOWASCO's ICT infrastructure and services. It shall be mandatory for all NZOWASCO staff to be competent users of ICT services.

External ICT training shall be recommended by the ICT section in response to need as may be assessed from time to time. Internal ICT user training targeting NZOWASCO's staff shall be scheduled on a continuous basis and shall be conducted with NZOWASCO's facilities.

11 Implementation framework

This policy shall be implemented as per the framework laid down the sections that follow.

11.1 The role of NZOWASCO's Directors

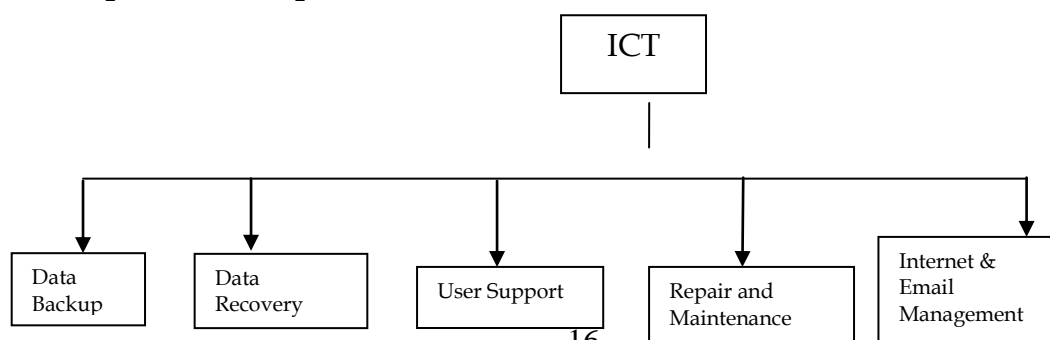
This policy document shall be discussed and approved for use by NZOWASCO's Board of Directors (BoD). The BoD shall oversee its implementation and provide any necessary resources.

11.2 The role of the Managing Director

The Managing Director (MD) in liaison with the Heads of department shall be responsible for implementing the policy and where necessary shall take appropriate remedial measures.

11.3 ICT Procedures

11.3.1 Description of ICT processes



11.3.2 Procedure for Data Backup process

1. User Department shall make available data on computers for backup.
2. ICT Section shall sort data appropriately in readiness for backup.
3. ICT Section shall then backup data using incremental, differential or full backup methods on the Server and on external media for off-site safe keeping.
4. ICT Section shall fill and sign the Backup log book for the undertaken backup exercise.

11.3.3 Procedure for data recovery process

1. User Department shall report data loss to the ICT Section.
2. The ICT Section shall confirm data loss.
3. The ICT Section shall then carry out data recovery.
4. User shall confirm data recovery. ICT Section shall thereafter update User Support Register.

11.3.4 Procedure for user support process

1. User Department shall report need for ICT support.
2. ICT Section shall Assess nature of support required at user point
3. ICT Section shall Attend to ICT Issues identified
4. If successful, the ICT Section shall update the User Support Register. If unsuccessful, the user department shall be notified on the next course of action.

11.3.5 Procedure for repair and maintenance process

1. User Department shall provide equipment for repair and maintenance exercise.
2. ICT Section shall make reference to the Repair and Maintenance Plan and seek approval from the HOD for repair and maintenance exercise.
3. On approval, the procurement Section shall undertake the procurement of Repair and Maintenance services.
4. ICT Section shall oversee the Repair and Maintenance exercise and sign the Repair and Maintenance form on completion of the exercise.

5. The HOD shall also sign the Repair and Maintenance form after which the ICT Section shall file it together with the Repair and Maintenance Plan for archiving.

11.3 REGISTERS AND FORMS

11.4.1 Backup Register (F-NZOWASCO/ICT/BF/05A)

DATE	TIME	DATA DESCRIPTION	BACKUP TYPE	CONFIRMATION	ICT OFFICER'S SIGNATURE/INITIALS

11.4.2 User Support Register (F-NZOWASCO/ICT/USF/05b)

S/N	DATE	NATURE OF SUPPORT (INSERT CODE)	DATE RESOLVED	REMARKS	SIGNATURE (ICT)

11.4.3 Computer Repair & Maintenance Form (F-NZOWASCO/ICT/CRM/05e)

DATE	EQUIPMENT REPAIRED	COMMENTS

ICT Officer: Signature: Date:

11.4.4 Repair & Maintenance Plan (F-NZOWASCO/ICT/Cmp/05g)

EQUIPMENT CATEGORY	REPAIR/MAINTENANCE SCHEDULE	REPAIR ACTIVITY	COMMENTS

ICT Officer: Signature: Date:

Head of Department:Signature: Date:

11.5 Amendments to the Policy manual

The policy shall be reviewed every two years to ensure that it remains fit for purpose. The Managing Director shall recommend the amendments to the BoD for approval.

This Policy comes into effect this day of the year as per the BoD's approval.

Signed by:.....

Managing Director.

.....

Chairman Board of Directors