

### **SECTION 1: INTRODUCTION**

#### **Introduction**

This booklet is written for anyone who needs to understand better how sanitation fits into the Water Services Act. The Act addresses bulk sanitation, reticulated sanitation and on-site sanitation. This guide focuses on sanitation services to end-users, both reticulated and on-site sanitation, and should be read alongside the Act itself.

One of the most important elements of the Water Services Act is that it establishes and clarifies the institutional arrangements for water services provision, with local government at the centre. Water services include sanitation services. The purpose of this booklet is to clarify the objectives and requirements of the Act in relation to sanitation services, and to provide guidance in promoting sustainable improvements.

Many people believe that good sanitation means water borne sanitation. This is not necessarily true. Effective sanitation focuses on people and behavior, not only infrastructure. The emphasis should be on health and hygiene improvements to ensure the long-term maintenance of public health. Good sanitation can be achieved through a range of technical options, but only when coupled with good health, hygiene and sanitation promotion, which provides end-users with the information, they require managing their health and their environment in the most effective way.

Even more important than promoting access to good sanitation facilities is the need to ensure that those facilities are affordable, robust, durable and well within the long-term support, operation and maintenance capabilities of the water services institution.

In South Africa water resources are limited, affordability levels are often low, and local authorities face enormous challenges in redressing the inequities of the past. Our understanding of sanitation has to move beyond a focus on infrastructure provision, which considers only high levels of service. Where a local authority lacks the means to provide a high level of service to all, there are a range of other options which can be pursued to ensure that all South Africans enjoy their constitutional right to an environment which is healthy.

The term Sanitation refers to the principles and practices relating to the collection, removal and disposal of human excreta and wastewater as they impact upon users, operators and the environment.

Following from this, the Water Services Act defines sanitation services as having both an infrastructural component – the “hardware” – and ongoing programmes of health, hygiene and sanitation promotion aimed at end-users – the “software”.

This booklet aims to guide local authorities through the requirements of the Act, to assist them to fulfil their responsibilities in ensuring that everyone has access to at least the basic water supply and sanitation services necessary for human health and well-being.

#### **Why does good sanitation matter?**

Good sanitation is important for a number of reasons, not least of all human dignity. Poor sanitation has a range of impacts:

**on health:** poor sanitation impacts on the health, quality of life, and development potential of communities. For example, diarrhoea is the leading killer of South African children under five, and poor sanitation is a major cause of diarrhoea.

**on the economy:** poor health keeps families in a cycle of poverty and lost income. The national cost of lost productivity, reduced education potential and curative health care is substantial. One estimate puts the cost at R3.5-billion per year.<sup>1</sup>

**on the environment:** inadequate sanitation leads to environmental degradation, and in particular, the pollution of water sources. This in turn increases the cost of downstream water treatment, as well as the risk of disease for people who use untreated water.

### **How can better sanitation be achieved?**

Better sanitation can be achieved through acknowledging the range of factors which promote sound management and improved health and hygiene awareness, and which enable end-users to make informed choices around their options for optimising good household sanitation. Local authorities share responsibility with individual households for achieving better sanitation.

The Water Services Act focuses on the roles and functions of the various water services institutions responsible for providing water and sanitation services. A key aspect of sustainable water and sanitation services is building effective partnerships between these institutions and end-users.

---

<sup>1</sup> Estimating the cost of diarrhoea and epidemic dysentery in KwaZulu-Natal and South Africa” Regram et al. Water SA. Vol. 24, No.1, January 1998.

## **SECTION 2: SANITATION SERVICES AND THE WATER SERVICES ACT**

### **Understanding national policy**

The National Sanitation Policy is the point of departure for interpreting and implementing the Act successfully. Its objective is to ensure that in the provision of sanitation:

- end-users play a central role in all decisions which affect them
- the service is appropriate to the environmental conditions in an area
- the service is sustainable and cost effective to the users, on a long term basis
- the service results in improved hygiene and environmental health conditions

A sanitation service needs to offer a complete, holistic and developmental approach to the community, which includes health and hygiene improvements, environmental health considerations and hardware development.

The aim is to promote good health for all by empowering people to take better control of their environment and their living situations. The method is to build a relationship with end-users to facilitate planning, promoting and implementing sustainable sanitation services.

The current National Sanitation Policy defines a basic level of sanitation service as follows:

*“The term Basic Level of Service for a household means*

- *an ongoing programme of easy to understand information about correct hygiene practices.*
- *a Ventilated Improved Pit (VIP) toilet in its variety of forms, or its equivalent, as long as it meets certain minimum requirements in terms of cost, sturdiness, health benefits and environmental impact.*

This definition reinforces the notion that sanitation is not only about physical infrastructure but that information on health and hygiene are essential.

### **Key principles for local government**

The primary objective of the Act is to ensure that everybody has access to the basic water supply and sanitation services necessary for human health and well being (*Section 2, Chapter 1*). The following key principles seek to guide local authorities in meeting this objective.

#### **1. The Act applies to sanitation in all areas.**

- The Act applies equally in urban, peri-urban and-- rural settlements, and includes on-site sanitation.

#### **2. Sanitation must focus on people**

- Effective sanitation focuses on people, not infrastructure. The emphasis is on health and hygiene improvements to ensure the long-term maintenance of public health.
- The living circumstances, needs, priorities and aspirations of end-users must be fully understood by water services institutions, and should take into account income levels, the cost of living, household size, population density and settlement growth. These factors could vary widely in rural, peri-urban and urban settlements.

- All decisions around improving sanitation should be taken after consulting with community members on the basis of informed choice. Water service authorities must be equipped to provide end-users with information and ongoing support around the full range of technology types.
- While the Water Services Act focuses on sanitation services which are provided, operated or maintained by water services institutions, end-user households share responsibility for good sanitation and effective sanitation practices.

### **3. Technical choices must be suited to local conditions**

- The Act applies equally to water borne sanitation and on-site 'dry' sanitation. Neither consumers nor water services institutions should assume that the Act is only concerned with water-borne sanitation where a municipality is responsible for maintaining sewers and treating the effluent; it also lays down norms and standards for supporting on-site sanitation. Regulations will soon be gazetted under the Act to define minimum standards for on-site sanitation facilities installed, owned and maintained by individual households.
- Before selecting a particular technology type, the full range of costs and operating requirements should be considered. Both up-front costs and ongoing costs need to be weighed against what is affordable, both to the water services institution and to end-users.
- Generally speaking, the VIP latrine is the minimum and cheapest level of acceptable service; full water borne sanitation is the most expensive. Both offer comparable health protection to end-user communities when properly installed and maintained. Many intermediate technical options are available, and the Department of Water Affairs and Forestry's sanitation specialists are able to provide advice and support.
- Water borne sanitation systems require an abundant and reliable supply of water, large capital investment, a high level of technical expertise for operations and maintenance, and incur substantial running costs. Excellent cost recovery mechanisms are needed to support a high level of service.
- On-site technologies are flexible and can be modified to suit different geological and social conditions, even where ground conditions are sensitive and settlements are dense. Water services institutions should refer to the *Protocol to Manage to Potential Contamination from On-site Sanitation*, which is obtainable from the Department of Water Affairs and Forestry.

### **4. Environmental impacts must be considered carefully**

- Dry' on-site sanitation is an integral aspect of water services because of its potential impact on water quality.
- Water quality impacts of both existing and proposed infrastructure must be assessed carefully to safeguard ground and surface water sources. The *Protocol to Manage to Potential Contamination from On-site Sanitation* provides a comprehensive guide for on-site sanitation.
- South Africa is a water scarce country and this scarcity is increasing. The management of water demand requires a far more critical analysis of the use of this scarce resource in the removal and transport of human waste to a place of treatment and final disposal.

## **5. Good financial management is key**

- Grant finance for infrastructure provision only covers installation costs. This has critical implications for addressing the long term institutional, technical and managerial requirements of a given system, in terms of the financial impact of various technical options. End-users must be able to afford the recurrent costs of operating and maintaining the chosen technology type, alongside the cost of other services.
- Local authorities will ease the financial and maintenance burden on themselves if they build awareness of effective waste management as an integral part of health, hygiene and sanitation promotion. This should include information on the limited tolerance of most sanitation systems to waste other than excreta.

## **6. Local government has core sanitation responsibilities**

- The onus is on water services institutions to ensure access to sanitation services. In the absence of funds, subsidies or other resources for capital projects, the water services institution must still meet significant servicing responsibilities such as awareness raising, hygiene education and demand creation for sanitation.
- Where the water services institution is not able to undertake the installation of improved facilities immediately, its core responsibilities are to
  - Promote health, hygiene and sanitation
  - Monitor health impacts and periodic evaluation of the effectiveness of the sanitation programme.
  - Monitor desludging of on-site facilities, and/or relocation of on-site toilets when pits fill to ensure this happens timeously.
  - Create an enabling environment for the construction of household and public facilities, which meet at least the minimum level of service: for example, identifying suitably-trained local builders and ensuring quality controls, possibly providing construction kits, design guidelines or supervision services , and so on.
  - Create an enabling environment for the safe removal, treatment and disposal of human excreta: for example, identifying local waste disposal contractors and ensuring that public health regulations for safe waste disposal are observed. This will include ensuring appropriate mechanisms are in place to collect tariffs or fees for the service.
- These activities must be complemented by comprehensive strategies to address backlogs in sanitation infrastructure, and detailed in a Water Services Development Plan.

### **Support is available from NaSCO**

A variety of supporting documents, resource materials and a *Protocol to Manage the Potential Contamination from On-site Sanitation*, are available from NaSCO. Technical, institutional and social support is available from a range of agencies – in government, NGOs and the private sector -, some of which are listed at the back of this booklet.

## SECTION 3

### DETAILED EXPLANATION OF THE ACT – CHAPTER BY CHAPTER

#### Introduction

Throughout the Water Services Act, water services include water *and* sanitation services. The main objective of this section is to clarify the legislation in relation to sanitation services. A companion booklet, *The Water Services Act: A Guideline for Local Government*, provides an in-depth focus on the *water* aspects of water services, and provides some guidance on sanitation services. To avoid duplication, this booklet addresses only those aspects of the Act which impact directly on sanitation services, or where the sanitation implications of water services might not be clear.

#### CHAPTER 1 – Introductory provisions

**Section 1** defines the meaning the Act attaches to certain key terms and concepts in the legislation. The discussion below clarifies their content in relation to sanitation.

**Basic sanitation** “means the prescribed minimum standard of services necessary for the safe, hygienic and adequate collection, removal, disposal or purification of human excreta, domestic waste-water and sewage from households, including informal households.”

Household sanitation is first and foremost a household responsibility. Water services institutions must create an enabling environment through which all South Africans can access services and support in obtaining these services. This means that an ongoing programme of easy-to-understand information about correct hygiene practices must be the starting point of any sanitation service. Guidelines are available from NaSCO, and will be referred to in the Regulations.

In many settlements, local authorities have the means to provide a high level of service – for example, full water borne sanitation - and thus they assume primary responsibility for operating a treatment works and maintaining reticulated sewerage. This does not remove the need to support households with a wider programme of health, hygiene and sanitation promotion.

In other areas, it may not be feasible to provide a sewer network – whether for reasons of affordability, settlement density or availability of water. Here the primary responsibility of the local authority would be to promote and support basic sanitation, so as to provide households with the information they require to manage their sanitation appropriately.

Note that neither the Act nor the National Sanitation Policy stipulate that VIP latrines are the *only* form of acceptable basic sanitation. Water services institutions are encouraged to explore the full range of technical options which meet the minimum requirements in terms of cost, sturdiness, health benefits and environmental impact. Support is available from NaSCO or the Department of Water Affairs and Forestry.

**Basic water supply** “means the prescribed minimum standard of water supply services necessary for the reliable supply of a sufficient quantity and quality of water to households, including informal households, to support life and personal hygiene.”

Water of sufficient quality refers to water quality at the point of consumption. Where water is collected from yard taps or standpipes, it will be transported, stored and handled before it is consumed for drinking or preparing food. There is ample opportunity for contamination of potable water during these intermediary steps. Water Services

Institutions should provide all consumers with an ongoing programme of easy-to-understand information about correct water management practices within the home.

Basic water supply must also address the design and management of hygienic water collection points, and the removal or drainage of domestic wastewater from individual plots and communal water points.

**Consumer** “means any end user who receives water services from a water services institution, including an end user in an informal settlement.”

An end-user may receive hardware sanitation services on a one-off basis (for example, a capital grant or subsidy), on a periodic basis (for example, the emptying of on-site storage facilities), or continuously (for example, waterborne sewerage). Minimum software services, such as health and hygiene promotion, require an ongoing commitment. The actual services which end-users receive will depend on the needs that they themselves identify, and the capacity of the Water Services Authority to provide these.

**Consumer installation** “means a pipeline, fitting or apparatus installed or used by a consumer to gain access to water services and includes a meter attached to such a pipeline, fitting or apparatus.”

This includes stand-alone on-site sanitation facilities which are not part of a communal network of sewers, and which do not rely on the provision of water (for example, a ventilated improved pit latrine or VIP).

Where public funds are used to pay, in whole or in part, for sanitation consumer installations, the design, construction, operation and maintenance of structures so paid must conform to all pertinent and recognised standards. These include the National Building Regulations, SABS 1200, relevant Codes of Practice and local bylaws. Proprietary sanitation systems must hold a valid Agrément Board certificate appropriate for the settlement type at the time of award of tender.

**Development plan** “means a water services development plan adopted in terms of this Act.”

This is a water and sanitation development plan, and must identify sanitation backlogs and programmes to remedy these.

**Emergency situation** “means any situation declared as such in terms of a law and which is likely to cause injury or loss of life.”

This could include outbreaks of contagious diseases, and will require close liaison with the relevant public health authorities and adherence to the prescribed health legislation.

**Sanitation services** “means the collection, removal, disposal or purification of human excreta, domestic waste-water, sewage and effluent resulting from the use of water for commercial purposes.”

The necessary social, institutional, financial and administrative arrangements must be in place to achieve the principles and practices of adequate sanitation services, even if the Water Services Authority itself does not necessarily provide or undertake these services directly. Responsibility to ensure the provision of services rests with the municipality, which is defined as a Water Services Authority. How they ensure this is their responsibility and within their discretion. They may either provide the service themselves or contract a Water Services Provider.

Note that the Act does not explicitly address solid waste, although this is included in the White Paper on Sanitation and is covered in legislation regulated by the Department of Environment Affairs and Tourism. However, solid waste is closely linked to sanitation through its effects on health and the interface of human waste, wastewater and solid waste disposal. This interface should be managed primarily through end-user education and health, hygiene and sanitation promotion programmes.

**Water services authorities** means any municipality, including a district or rural councils as defined in the Local Government Transition Act, 1993, responsible for ensuring access to water services.

The Water Services Authority has ultimate responsibility for ensuring that end-users have access to water and sanitation services within its area of jurisdiction.

**Water services institution** “means a water services authority, a water services provider, a water board and a water services committee.”

Any water services institution may have responsibilities for sanitation services, in addition to water supply services. These will need to be determined by the Water Services Authority.

**Water services intermediary** “means any person who is obliged to provide water services to another in terms of a contract where the obligation to provide water services is incidental to the main object of that contract.”

Examples of water services intermediaries include commercial farmers or mining companies, depending on the explicit or implied provisions of the employment agreement. Where end-users are housed at their place of employment, their employer may be required by the Act to ensure that they have access to at least basic water and sanitation services.

**Water services provider** “means any person who provides water services to consumers or to another water services institution, but does not include a water services intermediary.”

A water services provider includes water boards, water committees and other agencies who may have responsibilities for sanitation services, in addition to water supply services. These responsibilities will need to be determined by the Water Services Authority.

**Water Services Work** “means a reservoir, dam, well, pumphouse, borehole, pumping installation, purification work, sewage treatment plant, access road, electricity transmission line, pipeline, meter, fitting or apparatus built, installed or used by a water services institution.”

This definition includes -

- the equipment and facilities required for the safe removal, transport, further treatment and final disposal of material (usually sludge) from on-site sanitation amenities, either via wastewater treatment works or solid waste sites by water services providers.
- mobile support infrastructure such as pit de-sludging pumps and vacuum tankers to achieve the above

**Section 2** defines the main objectives of the Water Services Act.

2. The main objects of the Act are to provide for-

(a) The right of access to basic water supply and the right to basic sanitation necessary to secure sufficient water and an environment not harmful to human health or well-being:

Whilst the provision of water pipes and toilets is important, the way in which individuals and households access services is just as important. Incorrect stand pipe placement and design can lead to ponding, poor drainage and provide sites for disease vectors to multiply. Lack of community understanding of the importance of managing water properly once it has been collected can lead to contamination of potable water; and having access to a toilet but not information on environmental sanitation would mean that the objectives of the Act can easily be compromised. This highlights the importance of the information and educational aspects of “basic sanitation”.

**Section 3** sets out the rights of access to basic services, and the obligations of water services authorities to realise these rights.

*3 (1) Everyone has a right of access to basic water supply and sanitation.*

*3 (2) Every water service institution must take reasonable measures to realise these rights.*

“Reasonable measures” will vary widely, according to local interpretation and the ability of the water services institution to offer support. The minimum activities required are:

- Health, hygiene and sanitation promotion
- Monitoring health impacts and periodic evaluation of the effectiveness of the sanitation programme.
- Monitoring of desludging of on-site facilities, and/or relocation of on-site toilets when pits fill to ensure this happens timeously.
- Creating an enabling environment for the construction of household and public facilities which meet at least the minimum level of service. (For example, identifying suitably-trained local builders and ensuring quality controls, possibly providing construction kits, design guidelines or supervision services , and so on.)
- Creating an enabling environment for the safe removal, treatment and disposal of human excreta. (For example, identifying local waste disposal contractors and ensuring that public health regulations for safe waste disposal are observed.) This will include ensuring appropriate mechanisms are in place to collect tariffs or fees for the service.

*3 (3) Every water services authority must, in its water services development plan, provide for measures to realise these rights.*

Guidance on how to address sanitation requirements of water services development plans is provided in the discussion under Section 13 of the Act.

**Section 5** stipulates that providing for the basic needs of people has highest priority.

*5. Provision of basic water supply and basic sanitation to have preference. If the water services provided by a water services institution are unable to meet the requirements of all its existing consumers, it must give preference to the provision of basic water supply and basic sanitation to them.*

This clause of the Act places the responsibility on the water service authority to ensure that services are provided equitably to all, so that all end-users enjoy at least a basic level of service before some are provided with a higher level of service. Of course, existing high levels of services should be maintained wherever possible.

Where a Water Services Authority does not have the financial means to ensure access to a high level of service for all within its jurisdiction, it is obliged to ensure that provision of at least the basic minimum ‘software’ and hardware’ takes preference.

## CHAPTER 2 - Standards and tariffs

### Section 9

- (3) *In prescribing standards under subsection (1), the Minister must consider -*  
(a) *The need for everyone to have a reasonable quality of life.*

This implies that the standards that the Minister may prescribe standards not only relating to physical infrastructure but also to institutional and social aspects. The standards must take note of and support legislation regulated by other departments, notably the Department of Health.

- (g) *any impact which the water services might have on the environment; and,*  
(h) *the obligations of the National Government as custodian of water resources.*

Where on-site sanitation is concerned cognisance must be taken of the *Protocol to Manage the Potential Contamination from On-site Sanitation*, developed jointly by the NaSCO and the DWAF Directorate: Geohydrology.

The protocol balances the imperatives of protecting the groundwater resource, and making appropriate sanitation available to all. This is achieved by evaluating the risk of contamination and then mitigating the risk as necessary.

Service providers should note the potentially serious environmental consequences of wastewater treatment works, which fail due to poor design, operation or maintenance, often because of inadequate funding. The potential for this is high where consumers are provided with a level of service, which neither they nor the water service provider can afford to operate and maintain.

Environmental Impact Assessments are not normally warranted for on-site sanitation, except where indicated by the *Protocol to Manage the Potential Contamination from On-site Sanitation*. Installation or expansion of wastewater treatment plants may well warrant Environmental Impact Assessments and appropriate remedial action as stipulated under the EIA Regulations gazetted September 1997, under the Environmental Conservation Act of 1989.

## CHAPTER 3 - Water services Authorities

This chapter sets out the duties and functions of water services authorities, defined as local government. Although local government may contract an outside body or a local structure to do the actual work of providing water and sanitation services, it remains responsible to end-users for the service.

### Section 11 (1)

*Every water services authority has a duty to all consumers or potential consumers in its area of jurisdiction to progressively ensure efficient, affordable, economical and sustainable access to water services.*

Read in conjunction with **Section 11 (2)**, this section acknowledges that some water service authorities may not be able to meet all the duties specified in the Act immediately. Where this is the case, it requires water service authorities to adopt a *progressive* or phased approach to improving services. For example, its water services development plan may target priority programmes in the first two years of a five year plan, such as health, hygiene and sanitation promotion, and reinforce these with a programme of infrastructure support from the third year.

Alongside *efficient, affordable* and *economical* services, this section requires the local authority to ensure that the services are sustainable over the long term. Grant finance for new capital projects is often easier to secure than cost recovery for long-term operation and maintenance. Local authorities should guard against committing themselves to ambitious infrastructure programmes whose recurrent costs could become a burden on their resource base.

### **Section 12: Duty to prepare a draft water services development plan**

One aspect of this requirement is to ensure that the planning and provision of water and sanitation services are addressed in an integrated way which acknowledges their linkages with other services and infrastructure programmes in the area. For example, sewer networks impact on roads, and effective waste management is often closely linked to good sanitation. Equally, the cost implications to consumers of the full range of basic services must be considered carefully.

### **Section 13 Contents of a draft water services development plan**

The purpose of a Water Services Development Plan is to ensure that feasible plans are in place to ensure that everyone within the jurisdiction of a water services authority has access to at least basic water and sanitation services. The plan should reflect -

- ⇒ existing backlogs where users do not enjoy even basic services
- ⇒ any negative health and environmental impacts of the status quo
- ⇒ consultative mechanisms to develop appropriate strategies and mechanisms to remedy current backlogs
- ⇒ priorities and targets within defined timeframes
- ⇒ a clear phased strategy to ensure access to at least a basic level of services for all within five years
- ⇒ a financial management strategy, including funding sources, to ensure that the proposed programmes are feasible and affordable

Section 13 specifies the required content of water services development plans in more detail. Guidelines are available from the Department of Water Affairs and Forestry to assist local authorities prepare comprehensive development plans for water and sanitation services.

Where a local authority or its agents are not able to provide material support for infrastructure provision to all, the plan should specify what sanitation services it will provide, particularly in relation to health, hygiene and sanitation awareness programmes and information on basic and intermediate technologies

13 (h) requires details of *'the estimated capital and operating costs of those water services and the financial arrangements for funding those water services, including the tariff structure.*

Cost recovery on water-borne sanitation systems is usually well provided for in existing tariff collection measures. The costs of operating and maintaining on-site sanitation systems may be devolved to individual households, without reference to a water services institution. One exception to this is where the water services institution provides a desludging service to empty on-site sanitation facilities. Provision should be made for recovering the cost of this, either through general funds, a nominal monthly desludging tariff added to consumers' water tariffs, or through direct payments by the end-user to the sludge removal agency.

(viii) requires information on *'the operation, maintenance, repair and replacement of existing and future infrastructure.*

This should include data on the full range of existing sanitation facilities, including on-site facilities, even where these facilities do not meet the minimum requirements for basic sanitation.

13 (j): Where sanitation systems in a given area are primarily on-site, environmental protection measures should specify steps to ensure the safe secondary treatment and disposal of sludge.

### **Section 19: Contracts and joint ventures with water service providers**

The wide range of sanitation technologies available provides opportunities for an equally wide range of contractual arrangements with water services providers and other agencies. The key principle is to ensure that all agencies involved in sanitation servicing understand and can fulfil their functions, regardless of their specific designation.

For example, a water services authority responsible for sanitation services in a rural area may contract an NGO to undertake a health, hygiene and sanitation promotion programme, and a private contractor for desludging services.

Alternatively, a Water Services Authority may have a sewer system, but make use of a neighbouring authority's wastewater treatment works. In this case, responsibility sewer maintenance, billing and collection of user payments should be specified clearly.

### **CHAPTER 4 - Water services providers**

Water services providers are responsible for delivering water and sanitation services, acting on behalf of the water services authority whose responsibility it is to ensure that consumers have access to these services.

Typical responsibilities of water services providers include:

- promoting and facilitating the construction of at least basic sanitation facilities
- health and hygiene promotion
- ensuring that on-site latrines are desludged as necessary
- management of sewerage systems
- safe treatment and disposal of waste
- monitoring and evaluation of service provision

Some of these functions can be sub-contracted to other agencies with the approval of the water services authority. As stated above, the key principle is to ensure that all agencies involved in sanitation servicing understand and can fulfil their functions, regardless of their specific designation.

### **CHAPTER 5 - Water services intermediaries**

**25 (l)** *'The quality, quantity and sustainability of water services provided by a water services intermediary must meet any minimum standards prescribed by the Minister and any additional minimum standards prescribed by the relevant water services authority.'*

Examples of water services intermediaries include commercial farmers and mining companies, depending on the explicit or implied provisions of the employment agreement. Where end-users are housed at their place of employment, their employer may be required by the Act to ensure that they have access to at least basic water and sanitation services.

## **CHAPTER 6 – Water Boards**

Water boards may play a significant role as Water Services Provider and undertake certain sanitation functions by arrangement with the Water Services Authority

## **CHAPTER 7 - Water services committees**

The Minister, acting *in conjunction* with the water services authority, may assign certain sanitation services to a water services committee.

## **CHAPTER 8 - Monitoring and intervention**

The purpose of this chapter is to ensure that the Minister and the relevant Provinces have the information they require to ensure that water and sanitation services are being addressed adequately by water services institutions.

The Minister may require water services authorities to provide information on the following aspects of sanitation servicing:

- Implementation of health, hygiene and sanitation promotion plans, including training end-users in the proper operation and maintenance of sanitation facilities
- Adequate monitoring of hygiene behavioural practice, health and hygiene awareness and health impacts.
- Improvements in sanitation facilities, whether implemented by a water services provider or by households and institutions themselves.
- Safe disposal of waste, particularly where households undertake this themselves.
- Creation of an enabling environment for the provision of sanitation services, including (where appropriate):
  - training of builders in the construction of latrines suited to the social, economic and environmental circumstances of a settlement
  - training of health workers, community development officers and other agencies involved in advising communities on health, hygiene and sanitation. This would include understanding of the alternative technologies available to assist end-users to choose the technology which best suits their needs and means.
  - ensuring that facilities for safe removal and disposal of waste are adequate.
- Ensuring the economical viability and sustainability of sanitation services.
- Ensuring equitable allocation of resources to all consumers.

## **CHAPTER 9 – Financial assistance to institutions**

(No new information)

## **CHAPTER 10 – National information system (NIS)**

This is a database that will be accessible to the public (subject to limitations given in the Constitution) and will provide information on progress being made in addressing water and sanitation services nationally.

Information relevant to sanitation will include:

1. Information that could be collected as part of ongoing monitoring, or surveillance, of sanitation:
  - Hygiene behavioral practices
  - Maintenance and operation of toilets
  - Maintenance of waste water drainage systems.
  - Health and hygiene awareness, this could be monitored using questionnaires relevant to local health and hygiene promotional campaigns.
2. Financial viability of sanitation facilities, and payment levels for services, where relevant.
3. Health monitoring, and the prevalence of water- and sanitation-related diseases.
4. Sanitation facilities, number and percentage of end-users with different levels of sanitation services.

#### **CHAPTER 11 – General powers and duties of the Minister**

(No new info)

#### **CHAPTER 12 – General provisions**

(No new info)

## Appendix 1: Useful contacts

<b>NaSCO</b>	Marie Brisley C/o Department of Water Affairs and Forestry, Private Bag X313 Pretoria 0001 Tel: (012) 336- 6519/20 Fax: (012) 336- 6515 e-mail: <a href="mailto:marie@dwaf.pwv.gov.za">marie@dwaf.pwv.gov.za</a>
<b>DWAF</b>	Cyprian Mazubane Private Bag X313 Pretoria 0001 Tel: (012) 336-6522 Fax: (012) 336-6515 e-mail: <a href="mailto:ven@dwaf.pwv.gov.za">ven@dwaf.pwv.gov.za</a>
<b>Mvula Trust</b>	Richard Holden Tel: (011) 403-3425 Fax: (011) 403-1260 e-mail: <a href="mailto:richard@mvula.co.za">richard@mvula.co.za</a>
<b>WRC</b>	Tel: (012) 330-0340 Fax: (012) 331-2565

## Appendix 2: Useful publications

[Taken mostly from Hilary Syme's "Annotated guide to key documents in community water supply and sanitation in South Africa, March 1998. How long a list do we want? Five key docs, or twenty?]

CSIR WaterTek, *Sanitation for rural communities: A handbook for community leaders*. 1997.

CSIR, *Building VIPs. Guidelines for the design and construction of domestic Ventilated Improved Pit toilets*. 1997.

CSIR, *Guidelines for Engineering Services in Residential Developments*. (The CSIR 'Red Book'). Chapter 9 of the most recent addition addresses Sanitation.

DWAF / Department of Health, *Water and Sanitation: Towards a healthy family*. 1996.

DWAF / NaSCO - *National Sanitation Policy: White Paper. Draft*. 1996.

DWAF / Wits Rural Facility, *The VIP Latrine for family health: A community learning manual*.

DWAF, *A protocol to manage the potential of groundwater contamination from on-site sanitation*. 1977.

DWAF, Framework for Establishing Water Service Providers in Rural Areas \*\*\*\*+

DWAF, *Managing the Water Quality Effects of Settlements. Vol. 1: The national strategy*. [Is there a final version, or is this still in draft form?]

Health Education and Awareness Team (HEATT), *Water and Sanitation-related Health and Hygiene Education Resource List*. 1997.

NaSCO / DWAF, *Design of Water Delivery To reduce Health Risks*. 1997.

Water Research Commission, *Management Guidelines for Water Services Providers*. PDG.

Water Research Commission, *Water and sanitation handbook for Community leaders (urban and peri-urban areas)*. 1994.

WRC, *The role of health education in water supply and sanitation improvement programmes: a handbook for water supply, sanitation and primary health development agencies*. 1997.

## **Appendix 3**

### **Dealing with Fecal Waste from On-site Sanitation Systems**

#### **1. Removal and transport of fecal waste from system**

##### **1.1 Single Pit VIP**

There are two options for dealing with a full single VIP.

- Build a new VIP. The original pit will need to be backfilled and materials from the original structure removed as possible. The occupier will do this.
- Empty the pit by machine<sup>2</sup>. Caution will need to be exercised where pits are unlined and soils unstable as mechanical emptying can lead to collapse. The appropriate sludge pump and size of tanker for a particular settlement will depend on housing density, slopes and the density of pit contents. High-density sludges ideally require liquid ring pumps with high air flows (1200-1800m<sup>3</sup>/hr) and high power (26-37Kw). Water will need to be added to denser sludges prior to pumping. The contents of a number of pits may be transferred to a support tanker for onward transport.

The decision between the two options will depend on plot size, cost the availability of a desludging service and whether the materials built into the structure can be moved.

##### **1.2 Double VIP or composting toilet**

There are two options for dealing with a full double VIP or composting toilet:

- Empty manually with a spade. Seal the first filled pit/chamber and leave for at least six months while the other chamber is used. Remove contents of first chamber by hand and bury or use/sell as garden fertiliser. The occupier would do this.
- Empty by machine (see above). Unnecessary and not recommended.

##### **1.3 Septic tank/digester/conservancy tank**

The only option is to empty the sludge on a periodic basis using a vacuum tanker. Due to the generally low density of sludges low to medium powered pumps only, are required (airflow of 170-

---

<sup>2</sup> It is possible to empty single pits and even digesters or septic tanks by hand but this is not recommended as fresh excreta poses a severe health risk both to the excavator and to those in the vicinity

1200m<sup>3</sup>/hr and pump power of 6-26Kw). Many water service authorities are familiar with this service.

## **2. Treatment and final disposal**

The appropriate method of treatment and disposal will depend on the type of sludge being treated, comparative costs, availability of land and existing treatment facilities. Options include:

- Natural drying in 200-300mm layers on under-drained gravel beds; material removed when dry and used as soil conditioner or landfill
- Place in meter deep trenches and cover with 300mm soil; leave for one year; material used as soil conditioner or landfill
- Mix manually or mechanically with 3 x volume of vegetable or wood waste; compost keeping aerobic through turning; mature in windrows; material used as soil conditioner or landfill
- Drop at specially constructed discharge stations either on existing sewer network or at the wastewater treatment works; conventional treatment and discharge to water course
- Treat in specifically designed plants for sludge which may or may not be part of an existing wastewater treatment works

## **3. Management of Emptying Service**

### **3.1 Efficient methods of work**

- The emptying of tanks or pits should be conducted on a programme basis so as to achieve economies of scale and efficient working practices.
- Efficient VIP latrine emptying is dependent on trained crews and careful supervision. Poorly motivated crews can critically undermine a service.
- Regular preventative maintenance of emptying equipment is essential.

### **3.2 Implementation**

- Costs should be recovered by incorporation into monthly rates so as to spread the burden on households and facilitate the collection of fees. Collection at the time of emptying is not recommended. Occupiers are often out and securing cash is difficult.
- There needs to be a transparent means through which households can complain of poor service and obtain redress.
- Contracting out emptying services has been shown to achieve improved service and cost savings to municipalities.
- Where households perform their own pit moving/emptying, the WSA is still responsible for seeing to it that a monitoring system to ensure safe practice is in place.

### **3.3 Health and safety of sludge handlers**

Sludge handling can place the health of staff at risk, unless managed carefully. The health and safety of staff working on the removal, transport and disposal of pit or tank sludges is subject to the provisions of the Constitution, the Occupational Health and Safety Act and regulations promulgated under the Health Act.