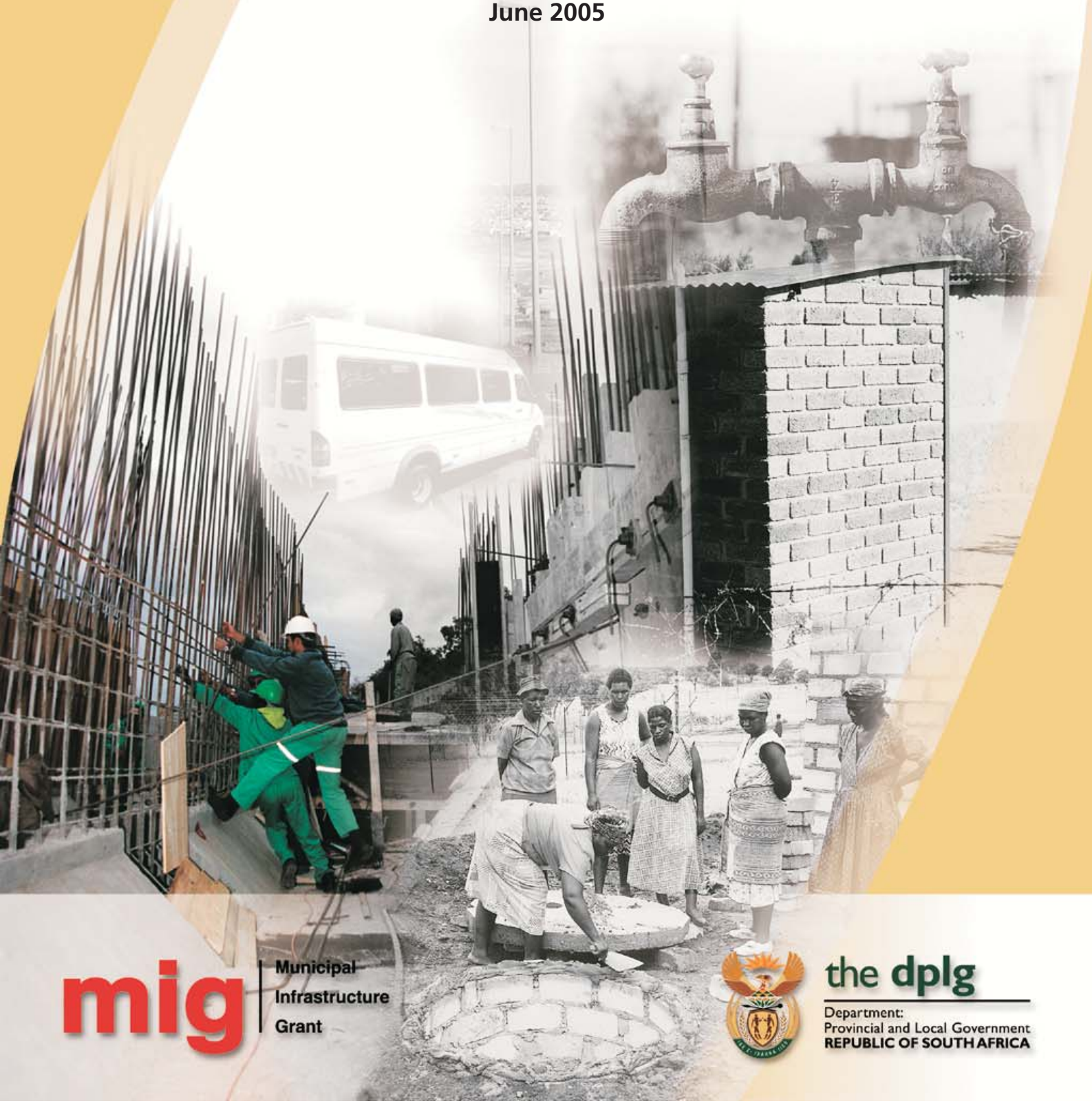
WORKING DOCUMENT

The Municipal Infrastructure Grant

Basic Level of Services and Unit Costs: A guide for municipalities

June 2005



mig Municipal Infrastructure Grant

the dplg
Department:
Provincial and Local Government
REPUBLIC OF SOUTH AFRICA

CONTENTS

1. INTRODUCTION

Municipalities are responsible for ensuring that the people in their localities receive at least the **basic level of services**. There are numerous services and levels of service that can be provided, but the most important are:

- water supply
- sanitation
- health centres
- electricity and other energy sources
- roads and storm-water drainage
- solid waste disposal

In order to assist municipalities (including metropolitan areas and district councils) to apply for Municipal Infrastructure Grant (MIG) funds, service options and related unit costs estimates are provided in this document.

With the introduction of the MIG, the use of labour intensive methods for certain types of infrastructure has been made mandatory. This is in line with the Expanded Public Works Programme (EPWP), which aims to maximise job creation through government expenditure. The use of labour intensive methods does not affect the level of service choices of services delivered. The Department of Public Works has issued "Guidelines on the implementation of labour intensive infrastructure projects under the EPWP" and municipalities are required to adhere to these guidelines for projects funded through the MIG.

When providing services that require infrastructure, municipalities may choose one of several options to meet the service needs of communities in their areas as quickly and effectively as possible. However, there are a number of factors to be considered before this can be done. The overall aim is improved quality of life for all communities in South Africa, particularly the poorest, without compromising the ability to operate and maintain existing services.

Probably the most important factor is the level at which the service is provided. The term **"service level"** relates to the way in which the user experiences the service. The choice of service level is dictated by affordability and by community needs. Convenience may be as important to a particular community as health, environmental and economic factors.

However, municipalities are responsible for making the final decision about the level of service to be provided. Such decisions have a critical impact on the long-term viability of the particular service and the municipality as a whole.

It should be noted that the MIG is only funding up to a basic level of service. If a municipality opt to provide a higher level of service the community or municipality must provide counter funding for the difference in cost between a basic level of service and the higher level of service opted for.

Viability relates largely to the affordability of the service. Municipalities depend largely on the income received from customers and this must be sufficient to cover the cost of providing the service. Higher levels of service are generally associated with higher costs, for which customers must pay more. If higher levels of service are not affordable, the ability of a municipality to recover its costs is negatively affected, threatening the viability of the municipality.

This document provides guidance for municipalities regarding the selection of service levels for basic services. It provides only an outline of the issues concerned, while municipalities still have to consider the best decisions for its local circumstances.

2. GENERAL POINTS TO BE CONSIDERED

2.1 Rural versus urban

These service option guidelines apply to both urban and rural conditions. Nevertheless, urban and rural situations differ. It is therefore not generally possible to provide the same level of service in all areas, primarily because the cost of services increases in rural areas, while incomes are usually lower. Basic and intermediate service levels therefore tend to be more appropriate in rural areas.

The Municipal Infrastructure Investment Framework (MIIF), which is part of this publication series, covers service backlogs, the assessment of capital costs to address the backlogs, recurrent costs for operating and maintaining services, the financing framework, methods of enhancing the institutional ability of municipalities to ensure delivery of services, and suggestions concerning investments, and the management of municipal services to promote the development objectives specified in the RDP across the urban and rural spectrum.

2.2 The meaning of a “basic” level of service

When describing levels of service, the term "basic level" refers to the level considered adequate to ensure the health and safety of its household users. It therefore provides cost-effective economic benefits in terms of the improved health of workers and families. A lower level often brings unacceptable health risks.

Levels higher than the basic level represent increased convenience for service users. Health and safety benefits to the users may also increase, but this is not necessarily the case.

2.3 Making up a services “package”

Each of the services is dealt with separately in this document. However, the internal residential infrastructure associated with these services is generally delivered as part of a "package", including housing. The services therefore need to be matched and the total cost tailored to suit the requirements of the households that will receive the services, taking into consideration their ability to afford the "package".

Municipalities generally strive to select a range of service packages which are suited to their local conditions and which suit the customers they serve. Over time, arrangements may be made for upgrading as the area develops and residents can afford to pay higher user charges.

2.4 Selecting a “package” that suits the customer and the community

The selection of a service package takes place through a process of negotiation between the customer who will receive the services and the municipality that will provide them. The emphasis is on giving the customer a choice.

Negotiations should reflect the specifics of an area, as particular conditions and associated costs vary from area to area. Furthermore, each group of customers has different requirements.

The broader needs of the community also have to be taken into account, for example, the economicand public health benefits to the broader community in the municipal area.

When negotiating the selection of an appropriate service package, it is important for the municipality to have information about the capital costs of the service packages under consideration and the operating costs of these services. For water supply and sanitation projects, the Department of Water Affairs and Forestry (DWAF) has developed a costing model. For more information DWAF can be contacted. In addition, the municipality needs to be clear about available subsidies, both local and from other spheres of government. Costs to be paid by customers, both capital and ongoing monthly payments, need to be made clear to them. These costs should also be suited to customers' household incomes to ensure affordability.

Finally, municipalities need to consider natural resource constraints. Services have a substantial impact on the environment and this needs to be taken into consideration in selecting appropriate service packages.

2.5 Service delivery: the implementation arrangements

Service delivery will differ for new infrastructure, upgrading of service levels, and bulk and connector infrastructure.

2.6 New infrastructure in urban areas: relationship to housing

With regard to new infrastructure in urban areas, internal services in the neighbourhood are generally provided together with housing. Funding arrangements for such internal infrastructure are also associated with the provision of housing, with capital costs typically included in the selling price of a housing package.

Individual households generally face only the capital cost of the internal services, whether they pay this themselves or use part of the housing subsidy for finance. However, each level of service may have different requirements for bulk and connector services supplied by the municipality (see 2.9).

2.7 New infrastructure in rural areas

In rural areas less emphasis is placed on housing and new infrastructure is often provided independently for each service rather than as a "package". Arrangements for each service are often established by national departments and non-governmental organisations (e.g. water supply) or parastatal bodies (e.g. Eskom).

2.8 Upgrading

Particular services may be upgraded separately or together with a number of services for a particular area.

2.9 Bulk and connector infrastructure

Although internal infrastructure is emphasised here, the major impact of service level decisions on bulk and connector infrastructure requirements needs to be recognised. For example, lack of spare capacity in a water or sewage treatment works, or a main electrical substation could be a major cost factor. The impact of such capital expenditure requirements is not dealt with here, but the need to raise finance through a mix of grants and loans could be a serious constraint for some municipalities.

For more information on the overall implications of infrastructure financing, the Municipal Infrastructure Investment Framework (MIIF) should be consulted.

2.10 Community service infrastructure

It is also important for municipalities to provide ancillary facilities and services, such as solid waste disposal, cemeteries and community and sports facilities. These ancillary facilities and services ensure the necessary supporting infrastructure, which is essential to community life and contributes substantially to ensuring a well-balanced, stable society and an enhanced quality of life.

2.11 Understanding operation and maintenance factors

The selection of service levels and packages involves not only the initial provision of these services, but also operation and maintenance for many decades after their installation. In selecting service levels the ongoing management implications and costs must therefore be carefully considered.

It is important that the operating and maintenance requirements should suit the capacity of the municipality responsible for the necessary work. If services are provided that are difficult to operate the ongoing viability of the service will be at risk owing to down time, leaving people without a service or causing damage to the environment.

2.12 Financial arrangements for infrastructure

a) Costs

The starting point in dealing with financial arrangements is cost, both capital and ongoing operating costs. As mentioned, these costs need to be calculated for particular circumstances and may differ from area to area within a municipality. (See DWAF's costing model for WS).

Some typical cost-related information is provided in this document, using averages from a number of projects in several municipalities. Capital costs relate here to internal services only. Monthly payments typify customer charges.

In the case of both capital costs and monthly charges, the great variation in amounts between different municipalities, and even within municipal boundaries, needs to be recognised. Figures provided in this document are intended only to give a indication of current costs and charges and would include Preliminary and General (P&Gs), fees and VAT.

b) Grants and subsidies

To assist households and municipalities in covering the capital cost of providing services, grants are made available by national and provincial government, the most important being the housing subsidy and the Municipal Infrastructure Grant (MIG). The emphasis of these grants is on assisting poorer households to gain access to at least a basic level of service.

In addition, some municipalities receive intergovernmental grants that subsidise operating costs for certain services. These need to be taken into account. Subsidies also need to be built into the system at local level through tariffs, with wealthier residents paying more for certain services. There is a limit to how much local cross-subsidies can be applied before wealthier residents and businesses move out of an area.

c) Loans

For those capital costs not covered by grants, municipalities generally need to take out loans from private financial institutions, which have to be repaid over a specified period of time with interest and loan redemption costs covered by the income raised by the municipality.

d) Raising income

The ongoing viability of the municipality mentioned previously means that sufficient income must be raised every month to cover the cost of operating the services and repaying the loans. This, in turn, means that customers must be charged appropriate tariffs for the services and that these tariffs should be paid timeously.

2.13 Labour Intensive Construction Methods and the EPWP

It is possible to use labour intensive methods in the construction of all the categories of infrastructure included in this document.

The potential for the inclusion of labour intensive methods is greatest in the construction of:

- roads,
- stormwater drains,
- sidewalks,
- trenching activities involved in the provision of water and sanitation services.

It is therefore mandatory that these types of infrastructure and activities are executed labour intensively in accordance with the EPWP Guidelines issued by the Department of Public Works when funded through the MIG.

3. BASIC RESIDENTIAL INFRASTRUCTURE (B)

3.1 Water Supply

3.1.1 Basic level of service

The Strategic Framework for Water Services of the Department of Water Affairs and Forestry, September 2003, defines a basic water supply facility as "the infrastructure necessary to supply 25 litres of potable water per person per day within 200 metres of a household and with a minimum flow of 10 litres per minute (in case of communal water points) or 6000 litres of potable water supplied per formal connection per month (in case of yard or house connections)."

A basic water supply service is defined as "the provision of a basic water supply facility, the sustainable operation of the facility (available for at least 350 days per year and not interrupted for more than 48 consecutive hours per incident) and the communication of good water-use, hygiene and related practices."

The definitions of basic water supply facility and service are quite flexible, for example in the case of a water supply facility to provide for both a communal standpipe in the street within 200m or other innovations such as yard tank. Flexibility is there to promote development and use of alternative solutions to cost effective water and sanitation solutions

In the case of dense urban settlements where waterborne sanitation is provided the above-mentioned policy will not be appropriate. The implication is that at lease a yard connection, but in most cases a house connection must be provided.

3.1.2 Level of service options

There is a range of water supply service options that generally fall below the minimum "RDP level". This includes unimproved traditional sources, tanker systems, and some forms of private water cartage and vending.

These options are not discussed here. Only those levels that are at, or above the minimum level are described, including:

- communal standpipes
- yard taps
- yard tanks

} Basic level of service

- roof tanks - Intermediate level of service
- house connections - Full level of service

a) Communal standpipes

With this option a single standpipe, often with a single tap, is shared by a number of households. The number of households per standpipe will depend on the density of dwellings in the settlement. A ratio of 25 households per tap is typical. Where the ratio is higher, the possibility of customers having to queue must be considered and several taps per standpipe may be better.

Payment for access to water from public standpipes is critical and is associated with the level of service. The options for payment are:

- Water provided free of charge (where the municipality can afford this).
- Fixed monthly charges per household using the public standpipes.
- A "concession" system whereby the standpipe is located in the yard of a selected individual, who then sells the water to others at an agreed rate, generating an income for the service provided by operating the system.
- A coupon system whereby customer buy coupons for a fixed volume of water. These are purchased and handed to a person appointed to supervise the public standpipe.
- Electronic prepayment meters allowing water to be dispensed from public standpipes using an electronically encoded token.

Advantages

- Public standpipes can be the least expensive water supply option under certain conditions for a reticulated water supply system, in terms of both capital and operating costs.
- Consumption is comparatively low and pipe sizes are influenced by the delivery of 10 litres per minute.

Disadvantages

- Customers must carry water to their houses in containers, which is inconvenient.
- Water is stored in the house, often in open buckets, where it could be contaminated unless proper care is taken.
- Poorly designed standpipes can create messy surroundings.
- Payment arrangements are difficult, leading to a reduced cost-recovery for the service.

- Free or fixed-charge arrangements frequently lead to higher consumption and wastage.

With regard to payment arrangements, systems where people pay for the quantity of water used (the last three options described above) are considered to be better.

b) Yard taps

For this option, a single tap is provided on each plot, either as part of a private standpipe or mounted on the wall of a toilet, if a water-borne sanitation system is used. Although this has not always been done in the past, it is essential that a meter be provided.
Yard taps can be used with dry sanitation systems, LOFLOS or water-borne systems (see sanitation section). If a water-borne system is not used, drainage of waste water at the yard tap needs to be considered. This could be a connection to the roadside drain, or the installation of a soakaway. If customers are paying for water, this becomes less of a problem as there is less waste.

Advantages

- Water is available "on site".
- Accurate meter reading and billing system is possible.

c) Yard tank

For this option a tank is installed in the household yard. This can be filled every day from a central point by a tanker truck or by a trickle feed arrangement controlled, for example, by an orifice (restriction in the pipe to reduce the flow rate). In most cases the volume of the yard tank is limited to 200 liters.

It is possible for more than one tank to be provided per customer. It may also be feasible for tanks to be mounted above ground to allow water to be piped into the house.

Advantages

- The free basic water policy of Government can easily be implemented if the flow is restricted to 6000 litres per month.
- An up-front payment arrangement ensures that people pay for the service.
- Customers know how much water they are using.
- The fact that storage is provided "on site" reduces the required capacity of the connector and internal reticulation pipelines and the distribution reservoirs.
- Low capital cost, particularly if customers themselves pay the capital cost of the tanks.
- A good upgrade option, minimising requirements for new connector infrastructure.

Disadvantages

- Consumption is constrained and tanks can run dry during the course of the day.
- Tanks need to be cleaned on a regular basis, which is fairly labour-intensive (often also an advantage).

d) Roof tanks

This is an upgrade option for yard tanks and taps. The tank is provided in the roof of the house and is supplied via a "trickle feed" arrangement controlled, for example, by an orifice. Payment can be made on a flat rate basis or the supply can be metered. The key advantage is to the service provider, who saves on reticulation and distribution storage costs compared with a normal house connection system. The consumer can control consumption and monthly bills and variations in water pressure and periods during the day when water is not available can be compensated for (as in some developing areas).

e) House connections

This option provides a metered supply to the plot, with a connection to the house and several taps in the house. It requires a waste water system, such as a septic tank or sewerage.

Advantages

- Highest level of convenience.

Disadvantages

- High cost to the municipality.
- High levels of water use.
- Difficulty in controlling amount of water used.
- Needs a complementary waste water system.

3.1.3 Unit cost for water supply

The national average unit cost for water supply including both connector and bulk is R6 000,00 per household. Anything outside this range will require a strong motivation from the municipalities concerned.

3.1.4 Metering of all services in terms of the Water Services Act

Regulations in terms of the Water Services Act require, inter alia, that:

(1) the quantity of water supplied to every water user connection must be metered

(2) a water meter must be supplied to every user connection, including:
- every individual dwelling in a new sectional title development or apartment building
- every individual building, having a maximum designed flow rate exceeding 60 (sixty) litres per minute, in any domestic, commercial or public utility complex
- every irrigation system with a maximum designed flow rate exceeding 30 (thirty) litres per minute using water supplied by a water services authority

(3) water meter sizes should comply with the Trade Metrology Act (Act 77 of 1973)

(4) a meter greater in size than that specified by the Trade Metrology Act shall be deemed to be defective if it is found to have a percentage error in over-registration or under-registration greater than 5 % at any one of the rates of flow when tested at the following percentages of its design maximum rate of flow:
- 75 % or more of the design maximum flow

- between 50 and 55% of the design maximum flow
- between 15 and 20% of the design maximum flow

Typical capital cost: R350/meter
Typical pre-paid meters: R1 300/meter

Capital and monthly cost for the municipality is the same as for yard taps plus the cost of the water meter. (These costs are considered to be part of the house costs and not included in internal distribution capital).

3.2 Sanitation

3.2.1 Basic level of service

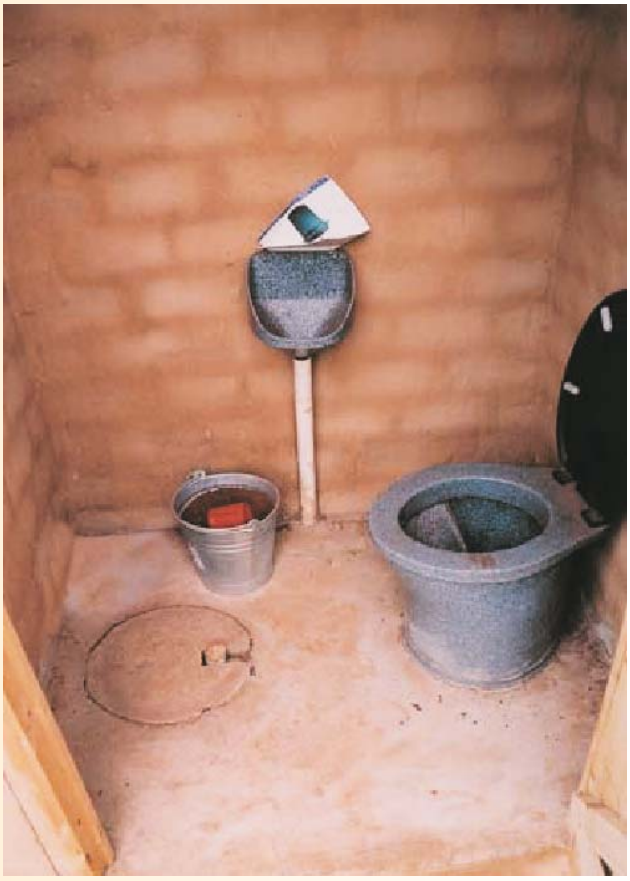
The Strategic Framework for Water Services of the Department of Water Affairs and Forestry, September 2003 defines basic sanitation facilities as follows:

The infrastructure necessary to provide a sanitation service which is safe, reliable, private, protected from the weather, ventilated, keeps smells to the minimum, is easy to keep clean, minimises the risk of the spread of sanitation- related diseases by facilitating the appropriate control of disease carrying flies and pests, and enables safe and appropriate treatment and/or removal of human waste and wastewater in an environmentally sound manner.

Basic sanitation service is defined as follows:
The provision of a basic sanitation facility which is easily accessible to a household, the sustainable operation of the facility, including the safe removal of human waste and wastewater from the premises where this is appropriate and necessary, and the communication of good sanitation, hygiene and related practices.

In Rural or urban areas with low density, VIP or equivalent toilets are recommended as basic levels of service. However, in case of dense urban settlements waterborne or equivalent sanitation services such as low flush systems are recommended as appropriate basic sanitation.

The final choice of the type of service rests with the Water Services Authority, (WSA). In order for them to take such a decision they must ensure that it is practical as well as financially viable and sustainable according to considerations stated below.



3.2.1.1 Considerations for deciding on systems other than VIPs

Before deciding on a system other than a VIP, WSAs must consider the following:

- The WSA must be able to fund from their own budget, (including grants such as the MIG for capital and the equitable share for operations and maintenance), both the capital investment needed for the type of service chosen, and the ongoing operations and management of the sanitation system.

- The target of 2010 for the eradication of the total national sanitation backlogs still stands. A WSA must choose the most effective way to use the funding available through the MIG, to provide basic sanitation to everyone in their area of jurisdiction by the latest 2010. A strategy in this regard must be developed and applied in the WSA's Water Services Development Plan (WSDP)

- Their capacity, (financial and institutional) to operate and maintain complex sewage systems if opting for higher service levels and in particular waterborne sanitation.
- The environmental impact and associated implications, in line with the Environment Conservation Act 73 of 1989 as well as the National Water Act.

- Water supply implications, (availability, affordability and management of water required).

3.2.1.2 MIG funding for basic level of service

Based on the existing availability of MIG funds it is not possible to fund higher levels of sanitation for all areas from the MIG. The following is thus recommended.

- In rural or low density areas as well as unmotivated dense areas, funding from MIG is restricted to the basic allocation.

- A ceiling of R3 000 per sanitation facility, (household), is recommended. This figure includes consultant's fees as well as health and hygiene awareness, user education, project management, community arrangements, monitoring and reporting. This ceiling should be revised annually. (This figure is based on information regarding backlog figures received from Water Services Authorities, (most of their cost estimates for basic sanitation varies between R2100 and R2400 per household), as well as actual cost studies (varying from R2400 to R3300)).

- Where WSAs implement waterborne sanitation in dense urban settlements as a basic level of service, this may be fully funded by the MIG if, the considerations given under 1.1.3 have been met and the municipality can prove in its IDP, WSDP and capital plan that the total backlogs in its bigger area are being addressed.

- A ceiling of R9000 is proposed subject to appropriate feasibility study and acceptance motivation. This should be regarded as an upper limit and WSA's must be encouraged to be cost efficient in order to achieve maximum benefit.

- Buckets are replaced with waterborne, low flush, septic tank systems or VIPs if water is not available. This is to be funded from the MIG bucket eradication fund. The allocation from MIG will range from R4000 to R9000, taking into consideration the need for a sewage treatment plant to be constructed or refurbished.

3.2.2 Level of service options

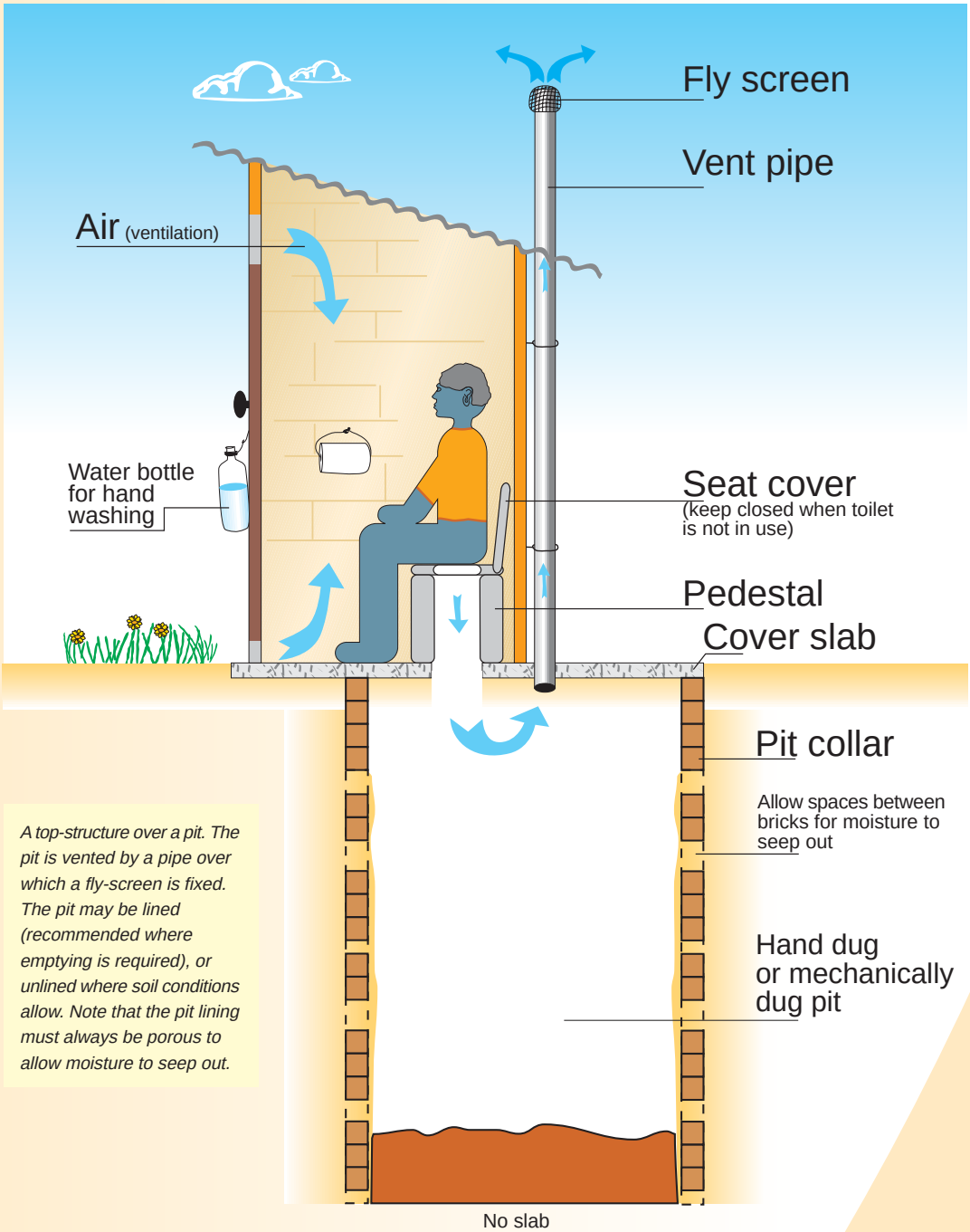
Several sanitation systems are widely applied in South Africa, but do not meet the basic level of service requirements. Bucket latrines and unimproved pit latrines are the most obvious, but problems have also been experienced with the operation and maintenance of other systems. Chemical toilets are prohibitively expensive for continuous use. Adequate service level options for sanitation include:

- VIP latrines and approved Eco-San dry, on-site sanitation systems.
- Low flow on site (LOFLOS) systems (seldom used owing to bad experiences with certain manufacturers proprietary models, but has potential for more extensive use).
- Septic tanks (usually used in areas not serviced with sewers but where full flush systems are installed, may also be an upgradeable option or as an option where the household takes some of the treatment responsibility from the municipal authority). Suitable for less densely populated areas with soil conditions that have good drainage potential.
- LOFLOS or septic tanks with solids-free sewers also referred to as septic tank effluent drainage (STED) systems (appropriate for areas where the soils are poorly drained or areas that have become densely populated where the potential of pollution from the effluent exists. The household also takes on some of the responsibility for sewage treatment and disposal.
- Full water-borne sanitation (the household takes minimal responsibility for treatment and disposal).

Sanitation service levels need to be planned in conjunction with the water supply. Where flush systems are required, there must be sufficient water available and the viability of the system must take the cost of supplying water into account.

a) VIP latrines or equivalent (basic level of service)

A VIP latrine comprises a partly or fully lined pit covered by a concrete slab. A sound and comfortable pedestal is positioned on the slab and a privy is built around it, preferably using locally available materials. The pit is fitted with a vent pipe to allow odours to escape above the privy. The top of the vent pipe is fitted with a fly screen to prevent flies and other insects



A top-structure over a pit. The pit is vented by a pipe over which a fly-screen is fixed. The pit may be lined (recommended where emptying is required), or unlined where soil conditions allow. Note that the pit lining must always be porous to allow moisture to seep out.

escaping from the pit. The pit needs to be cleared when it is full, using a vacuum tanker. Generally, it is best for pit emptying to take place on a regular basis. Alternatively, the VIP can be relocated and rebuilt over a new pit. The minimum volume of the pit should at least be 2,5 cubic meters. With this size of pit it would not be necessary to clean the pit on a regular basis.

Advantages

- Low capital and operating costs.
- System is robust with little day-to-day attention required other than cleaning.
- Easy to build locally with commonly available materials.

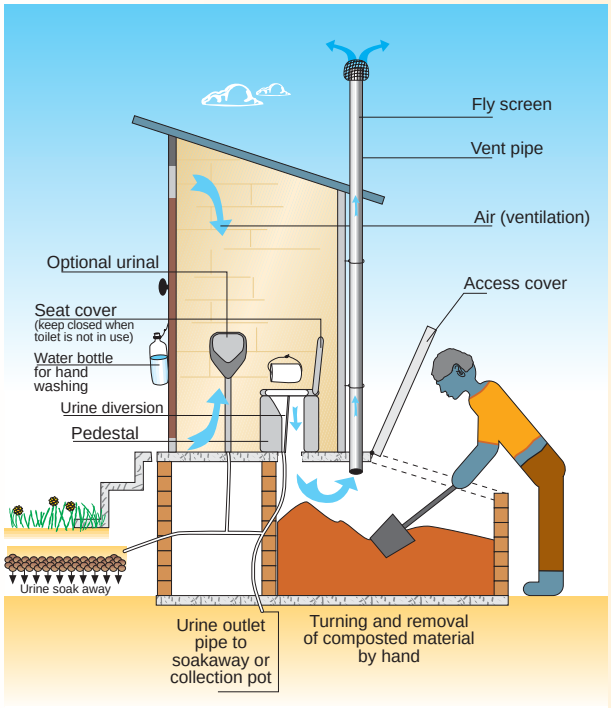
Disadvantages

- The toilet must be outside.
- There can be problems where there is rocky ground or a high water table.
- A desludging system is required.
- Not suitable for higher density developments due to technical requirements.

Other types of dry "on-site" sanitation systems may be used, e.g. composting systems. There are new developments in this area and composting systems offer the advantages of (a) not requiring deep excavations and (b) producing a usable product. However, they are typically more expensive than pit-type systems and are more sensitive to operational problems.

b) Eco-San latrines (basic level of service)

Eco-San latrines comprise a variety of designs including a number of proprietary models. The basic concept is that wastes are immediately treated either through composting or through drying out (desiccation) to render wastes harmless. The residuals can then be used on-site as a soil conditioner without the need for further removal or treatment. The dry mass is



Sanitation: Urine diversion type Eco-San latrine

usually removed from the latrine manually by the home owner. These latrines are ecologically friendly and require minimum maintenance support from the municipality. Some designs can be incorporated into the existing home without fear of odours.

Advantages

- Low capital and minimal operating costs.
- No impact on the environment (ecologically friendly).
- System is robust and can be maintained by the household.
- Can be incorporated into a home.
- Shallow or no pit means it can be installed in all ground conditions.

Disadvantages

- May be some initial resistance to handling dry wastes from latrine.
- Proprietary models do not promote use of local labour and hence job creation.

c) Low-flow on-site systems (intermediate level of service)

The term LOFLOS incorporates a number of sanitation options, including:

- The aqua-privy.
- Proprietary, factory-manufactured systems produced in South Africa, some of which are also referred to as aqua-privies.
- The pour flush system as used in India.

Proprietary systems have been used mostly in South Africa and are therefore discussed here. These systems have a pedestal, a digester (like a septic tank) and a soakaway. Several have a small tank for flushing water, the flush volume being generally less than 1 litre. The digester, like a septic tank, requires emptying on a regular basis, usually between 6 months and 2 years depending on size, model and usage.

Advantages

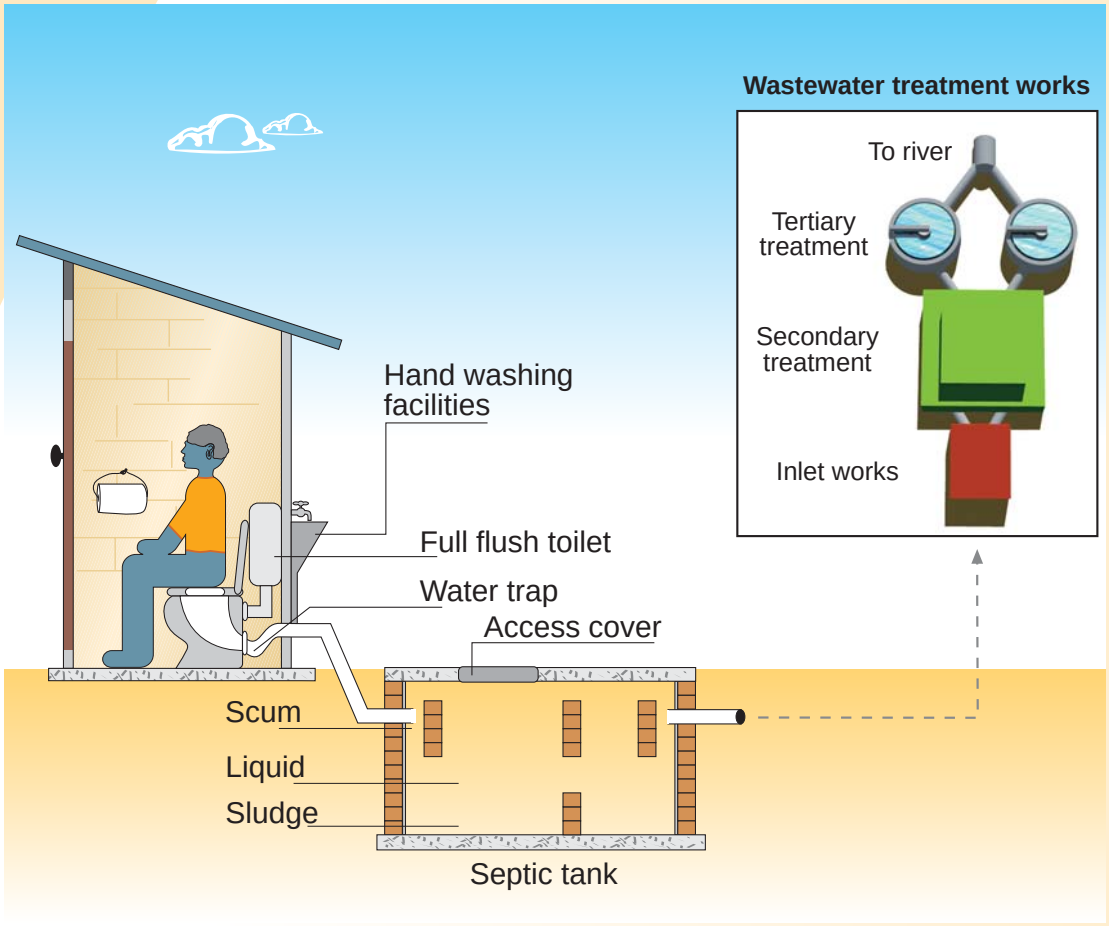
- Fairly low capital and operating costs.
- Easy to install.

Disadvantages

- Water has to be carried to the flushing tank.
- Where small digesters are used, they need to be emptied often.
- There has been a problem with some brands in the past, with mechanical failure of the flushing mechanisms.
- Soakaways need to be carefully installed or effluent seeps at ground level.
- An additional burden is placed on the local authority in respect of operation and maintenance of the system.

d) Septic tanks (full level of service)

A septic tank uses a conventional pedestal or flush toilet located in a privy or in the house. The flow from the toilet goes into the septic tank (digester). The effluent from the septic tank flows into a soakaway, which is a porous underground chamber from which the water seeps into the surrounding soil. Flush volumes range from 6 to 15 litres. Other household wastewater drains can be connected to the soakaway after passing through an adequate grease trap, provided that the soakaway is big enough to deal with all the waste water.



Advantages

- Can be installed where there are no sewers.
- A possible upgrading option for individual households.
- A convenient system from the user's viewpoint.
- Household responsible for all operation and maintenance except periodic (approximately once in three to five years) desludging of septic tank.

Disadvantages

- Requires large plots.
- Most expensive on-site sanitation system.
- Uses more water compared with other sanitation options.
- Tanks require desludging once every three to five years.
- Failure to desludge at the right time can lead to a blocked soakaway, requiring total replacement.

e) Septic tank effluent drainage systems

Both LOFLOS and septic tank systems can be used with a sewer, which carries effluent from the digester away from the plot, precluding the need for a soakaway. The sewers need not provide for large solids in the flow and can therefore have smaller diameters and be less expensive. However, in addition to sewers, an arrangement for desludging the tanks is required for septic tanks and LOFLOS options.

Advantages

- No soakaway required on the plot.
- Sometimes suits sloped or very flat areas, as sewer gradients are not critical. Suitable where poor drainage soils exist for on-site sanitation schemes, or where risk of contamination of an underground aquifer in unacceptable.
- A possible upgrading option for a neighbourhood previously served by LOFLOS or septic tanks.
- Less risk of failure where desludging of tanks is not done regularly.

Disadvantages

- Requires both sewers and digesters.
- Fairly expensive.
- Tanks require desludging.
- Municipality responsible for managing wastewater treatment facility and sludge treatment facility.

f) Full water-borne sanitation (full level of service)

A full water-borne sanitation system uses a conventional flush toilet in a privy or in the house. The flow from the toilet goes direct to sewers laid in the road reserve (or at the back of the plot in the case of "mid-block sewers"). Flushing volumes range from 6 to 15 litres, with newer designs requiring lower flushing volumes.

Advantages

- The most convenient sanitation system from a user's point of view.
- Minimal risk of pollution on-site from poor maintenance by household.
- Other wastewater from the household can be transported in the same system.
- Provides the municipality with a source of water for watering parks and gardens.

Disadvantages

- The most expensive system in terms of capital and operating costs.
- Uses the most water.
- Everyone in the neighbourhood needs to be connected, even those who may not be able to afford the service.
- Municipality responsible for managing wastewater treatment facility and sludge treatment facility.
- Leaks or blockages in the distribution system may cause serious contamination of the environment including ground and surface water.
- The Free Basic Services policy of 25 liters per household does not allow for this option.

There are ways of reducing the cost of the sewers by using "mid-block" sewers or shallow sewers, each with their own advantages and disadvantages.

3.2.3 Unit Cost for Onsite Sanitation

The national average unit cost for onsite sanitation is R3 650 (inclusive of consultation fees and R300 for health training) per household. Anything outside this range will require a strong motivation from the municipalities concerned.

3.3 Roads

3.3.1 Basic level of service

Currently, there is no national policy that defines a basic level of service for roads serving households in residential areas. However, the Municipal Infrastructure Investment Framework refers to "all-weather access to within 500 m of the dwelling". This could be taken as the basic level of service. In urban areas, it is generally possible to improve upon this and to provide for access by a vehicle to each erf. In some rural areas, where there are very small, scattered settlements, it may not be feasible to provide all-weather access to within 500 m of every dwelling.

3.3.2 Level of service options

Starting at a basic level, the level of service options include:

- All-weather access to within 500 m of the dwelling.
- Paved width (intermediate or full level of service).
- Access to each erf with graded or gravel-paved road (basic).
- Access to each erf with a narrow paved road or a wider road with a narrow paved width (intermediate or full level of service).
- Paved streets with kerbs (full level of service).

Gravel roads are not recommended in areas where there is high rainfall and high volumes of traffic. Paved roads would be preferable as they can create many jobs by employing labour intensive construction methods.

Only the last three options are dealt with below as there is insufficient information available at present regarding the first one.

Maintenance costs given below are for regular maintenance to keep the road in good condition. Lack of regular maintenance can lead to the need for expensive rehabilitation or even complete rebuilding.

3.3.3 Access to each plot with a graded or gravel-paved road

In areas where car ownership is low, it may be appropriate to have simple earth or gravel roads. Where local soils are of good quality, it may be possible to grade the existing material into a road formation. In other circumstances, a gravelled layer may be needed. An earth/graded road is not acceptable as a minimum level of service.

Advantages

- Low cost.

Disadvantages

- Dusty.
- Can be impassable during very rainy periods.
- Not suited to heavy traffic.
- Requires frequent maintenance (this maintenance can be labour-intensive and locally managed).

3.3.4 Narrow paved road or road with narrow paving

For this option the road would be sealed, but would be built with a narrow width or have only a narrow width paved (about three metres) to save costs. The paving could be single-layer bituminous "chip and spray", precast blocks or other types. Paved roads require several layers of material below the paving for support and to give the road sufficient strength.

Advantages

- All-weather driving surface.
- Reasonably low maintenance intervals.

Disadvantages

- Passing vehicles need to pull on to gravel shoulder.
- Fairly expensive.

3.3.5 Paved streets with kerbs

For this option the road would be of sufficient width for two lanes and would have the full width paved. Paving durability would typically be greater than for the previous option. The road would typically be provided with kerbs or edging of some sort. While maintenance intervals are longer than with other options, the cost of maintenance, when it is needed, is high and specialists are generally needed to do the maintenance work.

Advantages

- All-weather driving surface.
- Low maintenance intervals.

Disadvantages

- High cost.

The estimates of unit costs for provision of different types of roads are provided in the table below.

Without stormwater	National Average Cost price per kilometer of road
• Gravel roads (width 4,5 – 6 meters)	R300 000 – Basic Level of Service
• Chip and Spray (width 4,5 – 6 meters)	R900 000 – Intermediate Level of Service
• Paved/Sealed/Paving blocks (6 meters wide)	R100 000 000 – Full Level of Service

3.4 Stormwater

3.4.1 Basic level of service

The basic level of service for stormwater is open channels along the road. These channels may be lined (with concrete or other materials) or unlined. Alternatively, stormwater can be channeled to underground pipes by kerbs and catch-pits.

A combination of the above may be used depending on the geographic area.

Typical costs for stormwater systems are given in the table below (R per kilometer of road).

Type	Cost per kilometer of road
• Earth V	R130 000 – Basic Level of Service
• Concrete	R380 000
• Sub-soil (pipes)	R510 000 – Full level of Service

Poor maintenance of open drains leads to soil erosion, or erosion of the road, thus requiring expensive repairs. A piped system without maintenance can lead to blockages, demanding complete reconstruction.

3.5 Solid waste disposal

3.5.1 Basic level of service

Government requires that "a refuse removal service" be provided at least once a week. This can be interpreted as some arrangement to remove the solid waste from an area at least once a week.

3.5.2 Level of service options (collection)

The range of options includes:

- Household transfer to communal skips; waste in skips transported to proper landfill sites (basic).
- Organised transfer to communal skips; waste in skips transported to proper landfill sites (intermediate).
- Kerbside collection; to landfill sites (full).

a) Household transfer to communal skips (basic level of service)

For this option, individual households must carry their own solid waste to a communal point in their neighborhood, where skips are provided. The skips are then removed and emptied at a landfill site by the municipality or a contractor appointed by the municipality.

Typical cost: R7 /household /month

Advantages

- Simple system.
- Low operating cost.

Disadvantages

- If the distances are too great, people dump their rubbish in the street.
- The collection point may become untidy and unhygienic.

b) Organised transfer to communal skips (basic level of service)

For this option local contractors are appointed to collect the waste door-to-door. They transport it to a local collection point, perhaps using hand or bicycle-carts. The municipality, or another contractor, then transports the waste in skips to landfill sites.

Typical cost: R12 / household / month

Advantages

- Convenient for households.
- Creates jobs.
- Contractor can also clean streets.

Disadvantages

- Contractor may be inexperienced or unreliable, requiring extra supervision.
- The collection point may become untidy and unhygienic.

c) Kerbside collection (full level of service)

Households put their rubbish out for collection once or twice a week. The municipality or appointed contractors collect the waste in trucks, or with tractors and trailers, and transport it to the landfill.

Typical cost: R15 / household / month

Advantages

- Convenient for households.
- No storage of waste at collection points.

Disadvantages

- Fairly expensive option.
- Requires substantial investment in specialised vehicles/equipment.

3.6 Street/community lighting

a) Streetlights

Streetlights are provided for in areas that have previously been reticulated. The choice between Midblock and streetlights is for the preference of the municipality and community.

One streetlight shall be provided per four (4) stands at a cost of R650 per household.

b) High Mast Lights

High mast lights can be provided in dense settlements. One high mast light, 30 metres high covers the radius of 150 m^2 and diameter of 300 m^2 serves approximately 30 households at the national average inclusive cost of R125 000 00. Anything outside this range will require a strong motivation from the municipalities concerned.

4. PUBLIC MUNICIPAL SERVICE INFRASTRUCTURE (P)

MIG is aimed at assisting the poor to gain access to infrastructure. MIG funds can only be used for infrastructure for basic levels of service. Basic public municipal service infrastructure including public transport, emergency services and community services may be newly constructed or existing infrastructure may be rehabilitaed with MIG funds.

4.1 Public

4.1.1 Bus shelters

Bus shelters can be combined with taxi ranks where practical and where conflict between the different operators is not likely to occur. In such instances it will normally be located close to an area where large gatherings of commuters occur such as at train stations or shopping complexes. Smaller shelters can be built along streets in towns on bus routes. Two types of bus shelters shall therefore be discussed to serve in the various applications for bus shelters. The cost estimates exclude VAT and is based on basic structures and services. The provision of toilets and water points at bus or taxi ranks are not considered in the proposals below. All civil work should be done in accordance with SABS 1200: Standardized Specification for Civil Engineering Construction. All other structures should be designed and constructed in accordance with the requirements of the National Building Regulations and all applicable SABS standards.

a) Bus shelters for bus ranks

Such shelters shall be of sufficient height to allow a bus to travel freely under the roof and of sufficient size to cover both the bus and waiting passengers. Normal practice allows for busses to line up in single file with a minimum of one bus that will park under the shelter itself during the loading of passengers. Several of these lanes can be provided alongside each other with each lane serving a different destination. The bus lanes will typically be 3,5m wide and the length to be covered by the shelter shall be 15m long. The island between the different bus lanes shall be 3m wide where waiting passengers can queue before embarking on busses. The length of the lanes shall be a minimum of 30m to allow for one bus under the shelter and one bus waiting in the queue to load passengers. Sufficient maneuvering space shall be provided at the entrance and exit sides of the lanes to allow busses to enter and exit the lanes. The suggested width/length of the maneuvering areas is 15m before and after the bus lanes. The above geometry results in a total length of 60m for the bus rank. The width will depend on the number of lanes that are provided and shall preferably have a minimum width of approximately 30m.

The bus rank surface shall be paved with either interlocking concrete blocks or a bituminous layer. The islands between the bus lanes shall be created with figure 3 concrete vertical kerbs and the raised surfaces shall be interlocking concrete blocks. The total bus rank shall also have figure 3 concrete kerbs around the outside circumference to act as barrier for the surfacing. The estimated unit cost for the layer works and interlocking block paving including the kerbs is approximately R225-00 per m^2. Stormwater drainage shall be on surface as far as possible with kerbs inlets or grid inlets at the low portions of the area with pipes leading to nearby municipal stormwater lines or channels.

The bus shelter shall be manufactured from cold formed lipped channel (CFLC) profiles with metal sheeting as roof cover. Square or round hollow sections shall be used for columns. Column footings shall be reinforced concrete and will be placed in the islands. The estimated unit cost for the steel structure including the roof sheeting and concrete footings is R175-00 per m^2.

b) Bus shelters for streets

These bus shelters will typically be erected along bus routes in ordinary streets and shall cater for 10 to 15 passengers. The structure shall be manufactured from CFLC profiles with metal sheeting for the roof cover and side cladding. The seating can also be manufactured from CFLC profiles as part of the shelter structure. The estimated unit cost for a street bus shelters is R160-00 per m^2.

4.1.2 Taxi ranks

The size of the taxi rank will depend on the number of taxis that will serve a particular town or municipality. The taxi rank can be combined with a bus rank as mentioned before but will depend on the particular needs of a specific town or municipality. The following will have to be provided for: Paving/interlocking blocks must be used, ablution blocks, hawker stalls, shelter for commuters, administration office, high mast lights, waste disposal, washing bay and a workshop.

Layout of taxi rank

The taxi rank shall have 2,5m wide lanes where the taxis will line up to pick up passengers. Islands shall be provided between the lanes and the typical width shall be 1,5m. The length of a lane shall typically be 25m to allow for 4 taxis to queue per lane. A covered shelter shall be provided over the last 11m to provide cover for waiting passengers. Several of these lanes can be provided alongside to allow for the different destinations that shall be served by the taxis. An open parking area for waiting taxis can also be constructed in the same taxi rank to cater for waiting taxis during off-peak periods. Sufficient maneuvering space shall be allowed at the entrance and exit sections of the lanes and shall typically be 10,0m at both ends. The open parking area shall allow the normal 2,5m wide by 5m long parking bays and shall be arranged to one side of the taxi rank to prevent interference with taxis moving into the passenger lanes. This geometry will results in the minimum length of the taxi rank being 45m and the width dependant on the number of lanes provided. It is suggested that a minimum number of 4 lanes are provided with an open parking area along the one long side of the taxi rank and a 7,5 m wide "road lane" between the parking area and the passenger lanes. This will result in a total width of the taxi rank being approximately 30m.

The taxi rank surface shall be paved with either interlocking concrete blocks or a bituminous layer. The islands between the taxi lanes shall be created with figure 3 concrete vertical kerbs and the raised surfaces shall be interlocking concrete blocks. The total taxi rank shall also have figure 3 concrete kerbs around the outside circumference to act as barrier for the surfacing. The estimated unit cost for the layer works and interlocking block paving including the kerbs is approximately R225-00 per m^2. Stormwater drainage shall be on surface as far as possible with kerb inlets or grid inlets at the low portions of the area with pipes leading to nearby municipal stormwater lines or channels.

The taxi shelter shall be manufactured from cold formed lipped channel (CFLC) profiles with metal sheeting as roof cover. Square or round hollow sections shall be used for columns.

Column footings shall be reinforced concrete and will be placed in the islands. The estimated unit cost for the steel structure including the roof sheeting and concrete footings is R160-00 per m^2.

4.1.3 Sidewalks

Sidewalks are normally provided alongside roads in densely populated areas for the safety of pedestrians.

Sidewalks shall either be finished with a gravel wearing course or with concrete paving blocks depending on the location of the sidewalks. Sidewalks shall typically be 1,5m wide and shall start on the road edge or behind the kerb.

a) Gravel sidewalk

The sidewalk route shall be leveled and all plant material and other debris shall be removed. The top of the re-worked surface shall be 150mm lower than the top of the kerb or the road level. The in-situ material shall be compacted to provide an even surface before the imported gravel is placed. The imported gravel shall be at least of G7 quality and shall be compacted to 93% modified AASHTO density. The surface shall be graded 1:100 towards the road in the case where no side channels are present in the streets. Where side channels are provided the surface shall be graded at 1:100 towards the side channels. The estimated unit cost for sidewalks with a gravel wearing course is R40-00 per m^2 and include for the removal of topsoil and other unsuitable material.

b) Paved sidewalk

The sidewalk route shall be leveled and all plant material and other debris shall be removed. The top of the reworked surface shall be approximately 180mm lower than the top of the kerb or the road surface. The in-situ material shall be compacted to provide an even surface before a 100mm thick layer of imported gravel is placed. The imported gravel shall be at least G5 quality and shall be compacted to 93% modified AASHTO density. The bedding sand layer of approximately 25 to 30mm shall be placed and 50mm thick paving blocks shall then be packed in a suitable pattern to form the sidewalk. The outer edge (away from the road) shall be restrained with either concrete garden kerbs (75mm wide by 225mm deep) or a concrete edge strip. The surface shall be graded at 1:100 towards the road in the case where no side drains are present. Where side drains are present the surface shall be graded at 1:100 towards the side drain. The estimated unit cost for sidewalks with concrete pavers is R105-00 per m^2 and include for the removal of unsuitable material and topsoil.

4.2 Emergency Services

4.2.1 Basic fire fighting services

Basic Fire Fighting Services consist of different components and is determined by the risk where the services are to be rendered. This could be part of Disaster Management Centres (DMCs), which are discussed below.

Any "urban" services consist of an operational section responsible for physical fire fighting, rescue and in-house training services and a fire safety section responsible for law enforcement and structural fire safety as well as legislation on dangerous and hazardous goods.

Remote and rural areas are serviced adequately by an operational service only. Basic services in remote and rural areas could consist of only an all terrain water tanker truck and/or veldt fire units on l.d.v.'s available to respond on short notice stationed at central points as rapid response holds the key to all operational activity where life and property are at stake.
Such a service should be well equipped with means of communication suitable for the area and be manned 24 hours by at least one preferably two persons to coordinate activities. A shed for the vehicle(s) and equipment and an office/communication room as well as an ablution, kitchen and sleeping facility should be provided.

Moderate risks call for more permanent personnel including a chief officer/station commander, more specialized equipment and vehicles and a building that can accommodate a full-time fire safety officer, recreation lectures and basic equipment repair facility (fire hoses and breathing apparatus). Fixed installations should make provision for an emergency generator and water tank in the event of power failures and where constant water supplies are not available.
High and extra high risks (large urban areas including the industrial areas) require professional full time fire and rescue services incorporating an advanced communication system and center, offices, training facility, maintenance facility, engine room, emergency generator, large capacity, breathing apparatus compressor, specialized equipment and vehicles and highly trained and skilled personnel.

4.2.2 Disaster management facilities

4.2.2.1 What is a disaster management centre?

Sections 29, and 43 of the Disaster Management Act, Act 57 of 2002, require that the three spheres of government (National (NDMC), Provincial and Metropolitan / District Municipalities) establish Disaster Management Centres (DMC's). It is envisaged that the DMC's will provide the physical environment where various emergency and disaster management role players can meet and co-ordinate an integrated and coordinated disaster management approach that focuses on:

- Preventing or reducing the risk of disasters, mitigating the severity of disasters, emergency preparedness, rapid and effective response to disasters and post-disaster recovery;
- The establishment of a disaster management repository of, and conduit for, information concerning disasters, impending disasters and disaster management in the Province or District (Section 30(1)(c)).

4.2.2.2 Basic level of service

The basic level of service for a district DMC is discussed in the following paragraphs.

The layout of the DMC should accommodate the following activities to be performed by the staff:

- **Risk reduction activities:** For the day-to-day activities undertaken by the disaster management staff, the following office accommodation is required:
  - Offices for staff.
  - Small conference room(s).
  - Ablution facilities, as per the Building Regulations.
  - Small kitchen.
  - Relaxation/lounge area.
  - Dining area (optional).
  - Sleeping quarters (optional).

- **Incident, event and disaster response activities:** For incident, event and disaster response management, a joint operational centre is required.

- **Operational incident management area:** A variety of line functionaries should be accommodated in the Operational Incident Management Area of the DMC, such as, fire services, ambulance services, engineering services, etc. In this area the line functionaries will conduct their day-to-day operational and incident management activities, typically on a uni-disciplinary basis. An Incident Management System, capable of linking with / utilising the NationalDMC's web-based incident reporting facility should also be put in place.

- **Tactical disaster management area:** The line functionaries that are involved in responding to a major incident will occupy the Tactical Disaster Management Area, should a major incident occur. A multi-disciplinary response to the major incident can be co-ordinated in the Tactical Disaster Management Area, as the area will be equipped for that specific purpose. The use of an Incident Management System is also applicable in this environment.

- **Organisational disaster management area:** The line functionary managers that are involved in the response to a disaster will occupy the Organisational Disaster Management Area, in the event of a disaster. A multi-disciplinary response to the disaster can be co-ordinated in the Organisational Disaster Management Area, as the area will be equipped for that specific purpose. This environment is often termed the "*war-room*". Inside the "*war room*", multi-media facilities should be supplied to present information from a range of information sources for the use of the decision makers present in the "*war room*". A Disaster Management Information System (DMIS) should be put in place to facilitate these activities and to assist with disaster management reporting. These systems should be compatible with each other in the district and province, with the NDMC's DMIS and with other emergency management systems.

- **Media room:** An area where officials can communicate with the media and press is required. This area should be out of the way of the other activities.

- **Disaster relief activities:** In some instances, storage space for disaster relief equipment and materials should be catered for.

- **Electronic equipment room:** Provision must be made for IT and communications equipment in a secure room, equiped with the following:
  - Fire-retardant, anti-static floor covering.
  - Fire-retardant wall covering.
  - Fire-retardant door.
  - Fire-retardant ceiling.
  - Smoke detector with alarm system, connected to:
  - Gas (CO2, or similar) fire extinguisher, to be automatically activated by the fire alarm.
  - Wall mounted air conditioner with auto-shut down and vent closure ~ air conditioner to be automatically shut down and the vent to the outside closed by the fire alarm.
  - Fire proof safe for storage of on-site back-ups.
  - Cabinets for rack mounted severs, NTU's, switches, etc.
  - Filtered power supply i.e. UPS with upstream backup power supply

The facility as a whole should be equipped with the following:

- **Physical security:**
  - General access control to the site.
  - Security fencing along the perimeter of the site.
  - Fire proof safe for document storage.
  - Smoke detectors, with alarm.
  - Fire hydrants and fire extinguishers.

- **Business continuity measures:**
  The following business continuity measures are required:

  - UPS to accommodate all the computers on the site for 1/2 hour
  - Back-up generator, with auto-start feature, as well as sufficient diesel.
  - Central air conditioning plant to maintain a comfortable environment in the centre ~ Server Room to be excluded from central air conditioning plant.
  - Potable water storage tank.
  - Sewerage storage tank.
  - Waste storage facility.
  - Food storage facility.

4.2.2.3 Estimated budgetary and size requirements

A ballpark budget estimate for the establishment of a DMC only (excluding linking / using the building for a fire station, etc.), is given in the table below:

Budgetary and Size Requirements (R million)					Typical size
Description	**Building Requirements**	**Furniture Requirements**	**I&CT Requirements**	**Total Requirements**	**/m2**
Provincial DMC	R1.5M to R2.5M	R2.5M	R3.5M	R7.5M to R8.5M	750-1000
Metropolitan DMC	R2.0M to R2.5M	R1.5M	R2.5M	R6.0M to R6.5M	350-700
Large District	R1.85M to R3.0M	R0.15M	R0.5M	R2.5M to R3.65M	350-700
Municipality* Small District Municipality / Local Satellite DMC on local Municipal level*	R1.25M to R1.5M	R0.1M	R0.15M	R1.5M to R1.75M	250-350

*Building cost includes additional cost for connection to existing infrastructure.

The above budget estimates assumes that there is no existing building that can be renovated to become a DMC. One could possibly achieve a 25% to 30% saving on the above budget estimates if one were to choose the renovation option.

4.2.2.4 Operation and maintenance

To ensure that the DMC remains effective, continuous operation and maintenance of the centre will be required. As part of the above detail planning process, the organisational and financial elements relating to the operation and maintenance of the centre should also be assessed and reported on.

4.3 Community Services

4.3.1 Health services

Health centres include:

- Maternity
- Ophthalmic
- Child guidance
- Speech therapy
- Physio
- Community nursing services
- Health Education
- Accommodation of General Practitioners (GPs)
- Flexible use of spaces
- Adaptability

4.3.1.1 Location

It should be sited with due regard to that section of the population most "at risk" – determined by the number of general medical practitioners who can be attracted to work in a building.

4.3.1.2 Size

At present the average health centre accommodates 6 GP's and serving a population of 15 000 (ratio of 1 GP to 2500). This average conceals wide variations between 1 GP and 30 GP's, although no general rule can be applied.

4.3.1.3 Relationship to hospital

In some circumstances, a health centre can be conveniently sited with a hospital - such an arrangement may encourage the joint use of facilities by GP's and hospital staff.

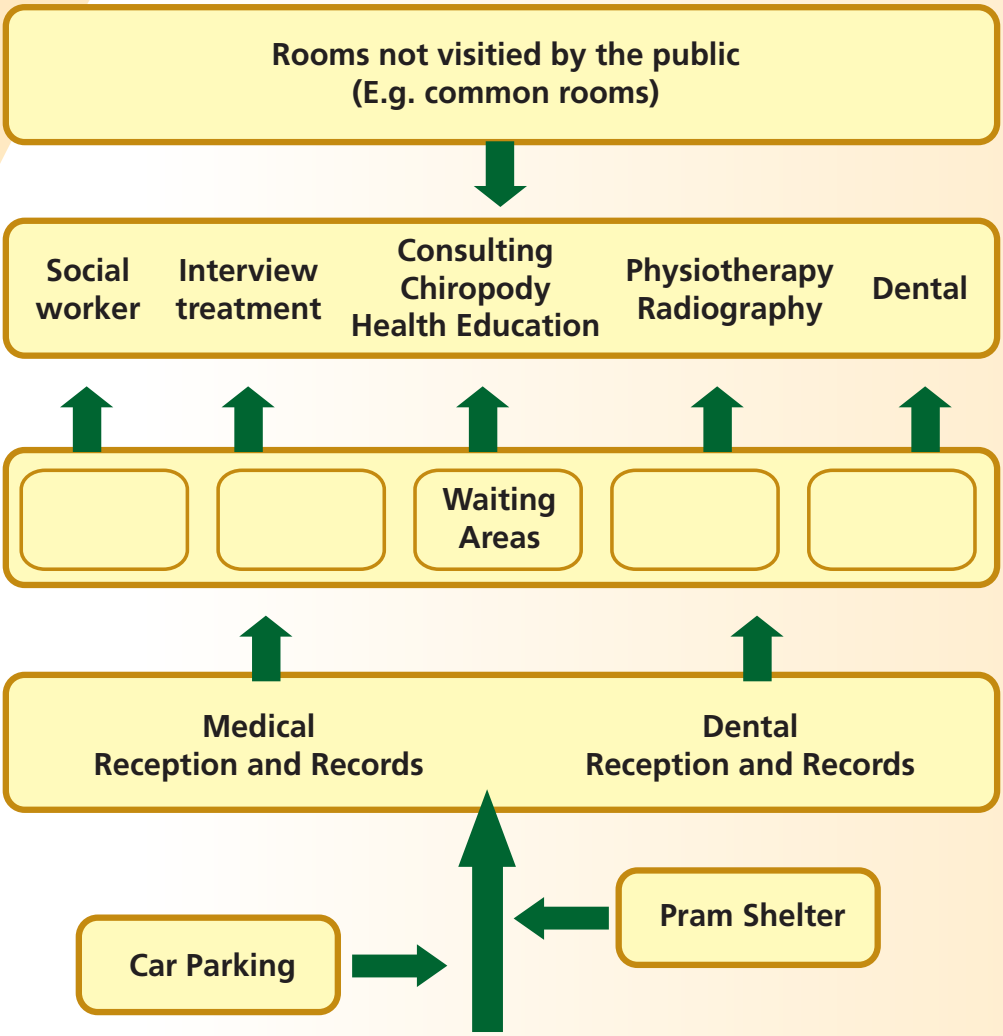
4.3.1.4 Structure of healthcare

Plan is to be consolidated with the different groups or teams, (e.g. GP's, nurses, etc.) which have an identity of their own, but which can share central services such as reception, records, etc.

4.3.1.5 Description of spaces

a) Car parking

On-site car parking (25m^2 per car) should be allowed for staff in the amount of 1.5 spaces



Sugested layout of cummunity health centres.

per consulting room, and for patient's 2.5 spaces per consulting room. Space for maneuvering ambulances should be allowed.

b) Main entrance

A main entrance should be clearly visible, identifiable and easily accessible to all patients and staff.

c) Reception

The reception staff has to cope with the direction of patients to waiting areas, the making of appointments etc. allow 5.5m^2 per receptionist on duty at peak hours.

d) Record storage

Usually associated with reception, but ideally not part of it, is record storage. Assuming that all records (of A4 size) are centralised, allow 1.4m^2 per 1000 patients. It is important that the area is out of sight of waiting patients and that it can be extended.

e) Administration

Associated with the record storage are the clerical/administrative area, and the telephone switchboard. In total, 5.5m² should be allowed for each typist/secretary. In small centres, the switchboard may be manned by the receptionist, but if separate, allow 7.5m² per telephonist.

f) Waiting areas

Waiting areas are usually located with the reception desk. In larger centres, waiting areas can be decentralised, but only when the policy for reception and control of patients is closely identified. It is vital that waiting areas are not part of the circulation pattern. In total 6 seats should be allowed for each consulting room and treatment room wich should be 1,4m² each. Location of ablution facilities and pram parks should be carefully considered in relation to waiting and reception rooms.

g) Consulting rooms

Consulting rooms are usually provided for each doctor on a personal basis. Where this results in under-use, there might be advantages in scheduling the use of rooms for other purposes, e.g. hospital consultants, social workers etc. As a general rule allow 17m² per combined consulting/examination rooms.

h) Treatment rooms

The treatment rooms are used primarily by nurses performing simple therapeutic techniques. For a room where one nurse treats patients, 17m² should be allowed . If more than one nurse is to be employed at the same time, treatments may be performed on two patients in one room of 25m².

4.3.2 Mortuary

A mortuary shall be of sufficient size to serve the community where it is located for at least one week. The mortuary freezers that are used are manufactured in units that can accommodate three bodies per unit. The population and the mortality rate will determine the number of freezers, but it is suggested that a mortuary shall have storage capacity for at least 12 bodies. The mortuary shall not serve as a post mortem facility and such services shall be performed at a specialised facility.

The freezer units are arranged along the outer walls of the building with the doors facing to the inside of the building. The area between the freezers that are on opposite sides of the building shall be at least 4m wide to allow for the maneuvering of trolleys with bodies into or out of the freezers. A 1m wide service corridor shall be provided at the back of each row of freezers to allow access to the mechanical units for service and maintenance. Special provision shall be made from the freezers for drainage in the event of fluids draining from the freezers. All freezers and mechanical equipment shall be accommodated inside the building and the building shall be sufficiently secured to prevent the theft of bodies or body parts. The typical size for a 12-body mortuary shall be approximately 12m by 8m.

The building cost for the building is estimated to be R2 500-00 per m². The estimated cost per three-body freezer unit is approximately R65 000-00.

4.3.3 Multi-purpose centre/facility (SRSA version)

Multi-purpose centre or facility includes multi club house, or community hall, multi purpose sports courts all weather surface tennis, netball, basketball, volleyball, standard soccer and rugby field with an athletic track. This could be an indoor or outdoor facility. Depending on the needs of the community and the appropriateness it could also include ticket office and parking area.

Municipalities and community structures use the term community centre for a wide variety of buildings and facilities. There is usually great diversity between communities regarding the need for various facilities, the available money to provide these facilities, and prioritising the needs.

Opinions often differ regarding the number of persons that justify the establishment of a new community centre.

4.3.3.1 Basic level of service

The RDP states that "sporting and recreational facilities are available to all South African communities." and they "should be accessible and affordable for all South Africans, including those in rural areas, the young and the elderly". This also applies to communities having access to municipal administration, a library, local information, pensioner payment points and a hall for community gatherings.

To stretch limited resources further, municipalities should consider combining facilities in centralised community centres, thus avoiding unnecessary duplication. Such facilities include:

- Multi-purpose halls – to serve as a community hall, sports hall, theatre, exposition centre and arts and crafts center.
- Secondary halls – to serve as a rates hall, pensions payment hall, activity rooms and clinic.
- Library and other facilities.
- Shared facilities, including parking, entrance and security, ablution facilities, reception, manager's office, area lighting and fencing, landscaping and plants.

4.3.3.2 Justifying the provision of a community center

As far as it is fiscally possible, each community should have some facility where the local authority can provide for the needs of that community. The need for a facility should be governed, inter alia, by:

- Availability of facilities in adjacent communities.
- Accessibility of adjacent facilities.
- Availability of transport to more remote communities.
- Problems in reaching facilities in adjacent or remote communities.

4.3.3.3 Determining the size of the community center

The size of the community centre should concider:

- Size of the community, which determines the largest gathering at the facility.

- The minimum size, irrespective of numbers, determined according to the activities likely to take place at the facility.
- Availability of facilities in adjacent communities for major events.

It is recommended that the minimum size of the multi-purpose area be determined by the largest size required for the most popular recreational activities generally taking place indoors, probably basketball or volleyball. This would require a hall of 40 m x 20 m, plus an area for spectators, bags and clothing.

A hall of 40 m x 20 m would seat approximately 1 000 to 1 500 spectators and would accommodate a wide variety of sporting, recreational, commercial and entertainment activities.

Type of facility (400 – 600 m^2) Seating 1 200 – 2 500 people)	Cost per m^2	Total limit
Outdoor	R2 500	R2,3 million
Hall	R4 000	R4,5 million
Sports and recreational hall	R6 000	R6,5 million

4.3.4 Multi-Purpose Community Centre (MPCC) (GCIS version)

An MPCC is a one-stop, integrated community development centre, where there is community development and community needs are addressed by providing relevant services and information. An MPCC aims to empower communities through the provision of access to information, services and resources from various structures, which amongst others includes government, NGOs, private sector and other initiatives.
The following **six block operational model** defines services that should be accommodated at an MPCC.

1. Public services (national, provincial and local government services – e.g. sports complex, clinic, home affairs services, municipal services, etc.)
2. Economic development services (financial and non-financial services)
3. Private sector and community activities (spaza shops, commercial activities, arts and crafts, food gardens, etc.)
4. Information and communication activities (content creation, community media, community radio stations, distribution services, etc.)
5. Office services (telecentre type services – fax, copiers, telephone, Internet, postal services, etc.)
6. Education and skills development services (adult basic education and training, computer training, business development skills, etc).

It is however important to indicate that an MPCC will also make provision for a multi-purpose community hall, depending on the availability of a community hall within the community.

a. The costing of an MPCC

MPCCs are unique and differ from each other depending on the size of the community

(the population) and their needs. The following are some of the features that are recommended in an MPCC structure

- Offices for all service providers as described above in the 6 block operational model.
- A community hall / sports complex.
- Reception area with general service counter.
- A furnished sheltered waiting room for clients.
- Centre managers office.
- Furnished telecommunication/computer center.
- Boardroom for MPCC stakeholders meetings.
- Parking area.

The recommended area per MPCC should not be less than 600m^2. The construction of an MPCC will costs approximately R 3 800 per m^2, while costs for infrastructure rehabilitation will vary.

b. General service counter

It is a requirement that each MPCC should have a General Service Counter (GSC) at the reception area. The General Service Counter notion creates a one stop counter for citizens to access government and stakeholder's information and services rendering service in MPCC through a Gateway portal. The use of GSC will assist to enhance the general functioning of MPCC and further provide citizens with access to government service including self service facilities though e-government portal and delivering services in an integrated manner. The implementation of GSC will require infrastructure modification when constructing MPCC or rehabilitating an existing structure. The following physical layout is proposed:

1. Counter

- Front view: 3 to 4 m
- Height view: 1.5 m
- Side view: 1.8 m
- Counter desk: 1 m

2. Cabinets

- Cabinets inside the counter at the back.

3. Power points

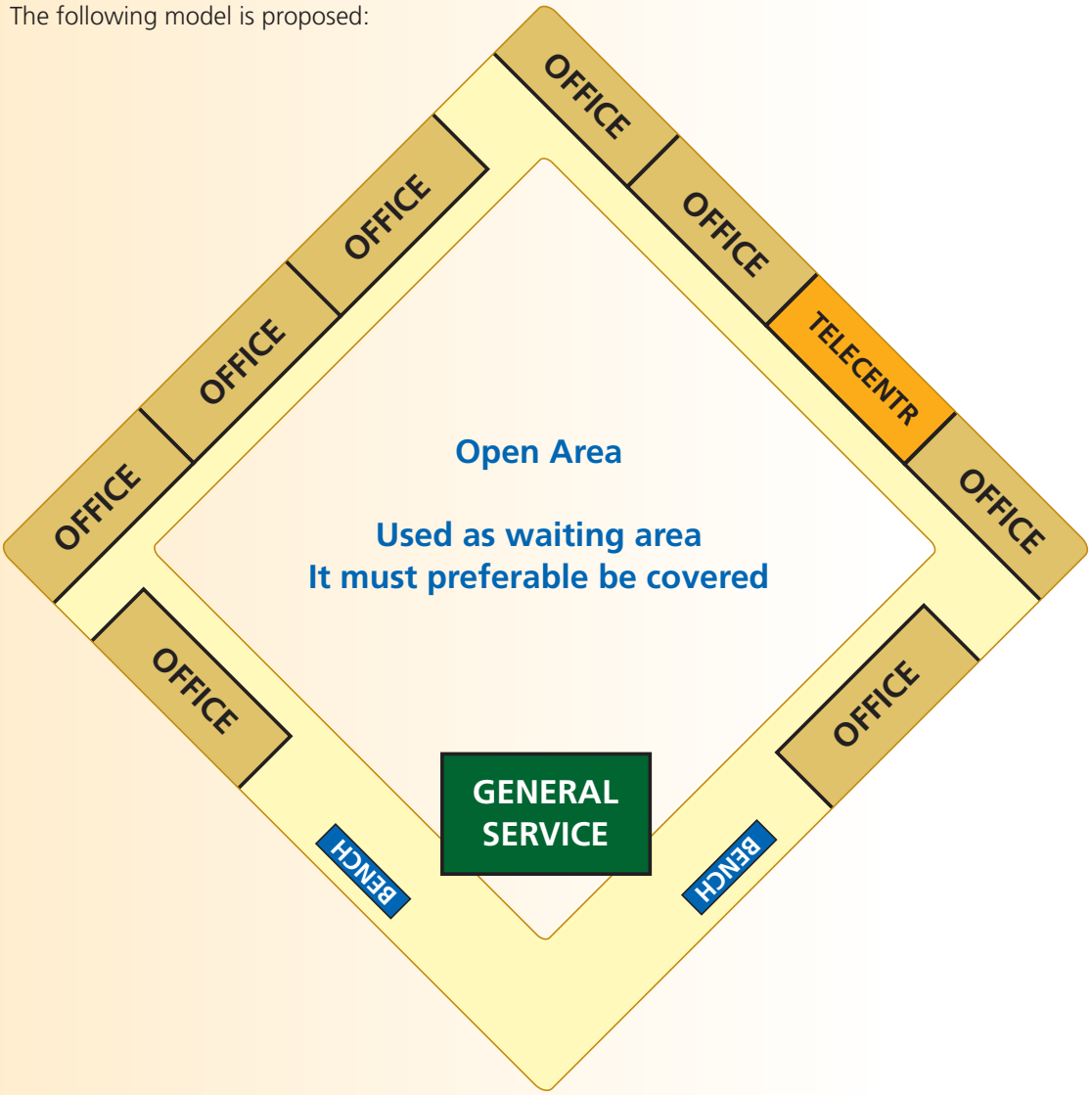
- Four power points, two in the front (underneath the counter) and two at the back of the counter.

4. Network points

- Five network points (two for computers, one for a fax machine and another for a telephone)

It is important to note that there is a need to have sufficient space between the counter and entrance door to allow for a waiting area for users to be served by the counter-GSC

The following model is proposed:



c. MPCC management model

In order to ensure that MPCCs are sustainable, it is recommended that municipalities take full ownership and management of MPCCs, while simultaneously ensuring that there is community participation. It is equally important for municipalities to budget sufficiently for implementation / infrastructure, rehabilitation / innovation as well as operational and maintenance of the centre. The following are some of the issues to be considered to ensure sustainability:

- MPCCs should be prioritised in the IDP's and budgeted for.
- To ensure there is a security in all MPCCs, including alarm, burglar doors and windows, fence, etc.
- There should be a centre manager who will coordinate and facilitate the day-to-day operations and monitor services rendered and facilitated value addition at MPCCs.
- ICT infrastructure should be taken into consideration during the construction phase.
- Clustering of services as part of costs sharing mechanism.
- Coordination and sharing resources.

d. Criteria for the identification of the MPCC site

The identification of an MPCC site should take into consideration the following:

- Availability of facilities in the area – in which case services should be clustered around these facilities.
- Accessibility and centrality of the MPCC / facilities in the area, as well as meeting the needs of the physically challenged people.
- Availability of transport to the area as well as road infrastructure.
- How clustered or scattered are the communities or households in the area.
- Problems in reaching facilities in the area, and adjacent or remote communities.

4.3.5 Parks and open spaces

A park is any piece of land controlled and maintained by a municipal council for public use. The two broad definitions of parks are:

a) Any land, square, camping site, swimming, bath, beach, bathing area, sports fields, public resorts, public open space, recreation site, river, nature reserve, hiking trail, including any portion hereof any facility or apparatus therein or thereon but excluding any public road or street.

b) Any building, structure, hall, room or office including any part thereof and any facility or apparatus therein which is the property of or is possessed, controlled or leased by a municipal council and to which the general public has access, whether on payment of admission fees or not.

Ablution facilities may be provided at a cost that will be determined by the size of the facility.

4.3.6 Beaches and amusement facilities

Beaches are defined in section 1 of the Sea Shore Act of 1935 (Act 21 of 1935) and include an area adjoining the high-water mark. Where a beach and amusement facilities are in a poor area, access to basic water, sanitation and refuse removal must be provided. The cost will be determined by the type and size of the facility.

4.3.7 Cemeteries

Cemeteries are an emotional issue and are subject to many cultural preferences within communities that should be fully understood before such facilities are designed.

A comprehensive investigation is essential to ensure that the preferences and attitudes of the beneficiary community are addressed and that a cemetery of the correct size will be established before land is acquired or developed.

There are a number of general principles to be followed when a cemetery is sited. Some municipalities might have their own by-laws controlling the site allocation for cemeteries and all other applicable regulations shall also be followed in this regard. In general the location of cemeteries shall be dictated by topography, soil and geo-technical conditions, religious

beliefs, social attitudes, aesthetic considerations and sanitary considerations. A number of these considerations will depend on the specific community that is served by the cemetery and the most important engineering aspects are discussed below.

Cemeteries should be located in areas that do not fall below the 1:100 year flood line and shall as far as possible not be subject to the possibility of flooding. The soil should be of such nature that it is excavatable by hand or a backactor without undue difficulty. The soil should be stable to prevent for sidewall collapse after excavation.

The soil must also have sufficient workability to allow for the easy backfilling of the grave. The cemetery should be arranged such that a maximum of two rows of graves are placed between vehicle lanes to allow for easy access to any grave. The suggested size per grave plot is 2,50m length by 1,50m width. The cemetery should not be located in an area with a high or perched water table and water table shall preferably be more than 5m below the bottom of the grave. It is also preferable that the soil has a low permeability to prevent the leaching of water from the grave into the groundwater.

The cemetery must also be fenced to prevent illegal access for vandals to the graves. A 1,2m high stock fence is suggested as a minimum requirement but a palisade fence will be preferable. The estimated cost for a stock fence is R150-00 per running meter and the estimated cost for a 2,4m high palisade fence is R750-00 per running meter. Other costs associated with the establishment of a cemetery are the cost of purchasing the land as well as the provision of services such as water and possibly electricity to the cemetery. It is however difficult to estimate these cost since it is a function of the location of the cemetery.

4.3.7.1 Recovered costs

The cost of provision is usually recovered from users by selling graves at a fixed tariff to residents and at a much higher tariff to non-residents. This is because it is often a subsidised service.

Below basic level of service : Places of burial

These "cemeteries" have no facilities and basically consist of open pieces of land earmarked for burial purposes, with no fencing and no buildings. Road infrastructure, if any, is limited.

Cemeteries of this type are operated below the basic level of service. Graves are often not numbered and sometimes there is no formal burial register.

Local cemetery

A local cemetery provides burial capacity for a suburb, township or town at a basic, medium or high level of service, as required by the community and developed by the municipality concerned.

(a) Basic level of service

At a basic level of service, these cemeteries should have access roads and internal distributor roads, parking areas, public toilets, showers for workers (where applicable), security fencing and a security gate. Operation of local cemeteries should entail the formulation of and adherence to cemetery by-laws, formulating tariffs, staking out grave plots, providing graves on time, as required, maintaining a map of graves and keeping a burial register.

(b) Higher level of service

At higher service levels, facilities such as administrative buildings, drinking fountains, paved roads, shelters, a wall of remembrance, landscaping, a caretaker's house/shelter, various different sections (e.g. a lawn section, a berm section and a monumental section) should be added.

Maintenance and operation of the cemetery increases and becomes more specialised since more effort is required and service provision is also at a higher level, with staff manning the site during working hours and over the weekends.

Intermediate level of service: Regional cemetery

A regional cemetery can be similar to a local cemetery, as described above, except that it serves more than one community and therefore may need to meet diverse needs of the various communities. Regional cemeteries could be justified by economies of scale, with savings on buildings, access roads, and other facilities and on planning, design, development and operation and maintenance costs.

The provision of a crematorium may even be justified. Agreement should be reached between participating municipalities concerning the development, ownership, management, operation and maintenance of the cemetery.

Highest level of service: Memorial parks

Memorial parks are highly specialised cemeteries that cater for every need and desire of the communities they serve. Memorial parks should have a park-like atmosphere, providing a tranquil ambience. Memorial parks are provided mostly on a public-private partnership basis, or they may be fully privatised.

4.3.7.2 Justifying the provision of cemetery facilities

Cemetery capacity should be available (at a maximum distance of 30 km for urban and 50 km for rural communities) to all communities of sufficient size to warrant such a facility The need for a facility should be governed, inter alia, by:

- Mortality rate of beneficiary and adjacent communities.
- Population growth of beneficiary and adjacent communities.
- Age distribution of beneficiary and adjacent communities.
- Availability of existing cemetery capacity to beneficiary and adjacent communities.
- Accessibility of adjacent facilities.
- Availability of transport or more remote facilities.
- Problems in reaching facilities in adjacent or more remote communities.

4.3.7.3 Determining the minimum required size of cemetery sites

A plot of 0,15 ha should be provided per 1 000 head of the average population for the life of the cemetery, which should be calculated for a 30-year period and for development in three 10-year phases.

4.3.7.4 Facilities needed for the full 30-year period at a basic level of service

The following facilities are recommended for the full 30-year period, at a basic level of service:

- A 6 m wide paved access road, to a maximum of 100 m in length.
- A 4 m gravelled internal distributor.
- An administration block.
- Flush toilets for the public if services are available to the site selected (If services are not available, VIPs should be provided).
- Ablution facilities for workers, including showers, wash-basins and toilets.
- Water for ablution facilities and toilets (Other water connections, e.g. for watering lawns, should be provided in the buildings, for supervision and control).
- Storage space for equipment.
- A parking area.
- Shelter.
- Security fencing (Determined by outer boundaries, based on the required size plus a percentage for unusable area).

The basic level of cost for a cemetery with a 10 year life cycle would be approximately R900 000.

4.3.8 Crematoriums

There are a number of general principles to be followed when a crematorium is sited. Some municipalities might have their own by-laws controlling the site allocation for crematoriums and all other applicable regulations shall also be followed in this regard. In general the location of crematoriums shall be dictated by topography, soil and geo-technical conditions, religious beliefs, social attitudes, aesthetic and sanitary considerations.

The national average cost for the construction of the crematorium is R3 000 /m2. Anything outside this range will require a strong motivation from the municipalities concerned. See page 40 for detailed specifications on crematoriums.

4.3.9 Fencing

Fencing can be utilised for the following:

i) **Security** – Fencing can be erected for security purposes at municipal buildings / infrastructure.

ii) **Public** – Fencing can be erected next to open storm water channels / drains to prevent the public (children) from falling into these dangerous hazards.

iii) **Motorists/pedestrians** – It is very important to fence off all roadways (especially rural areas) to prevent strayed animals / cattle from entering the road reserve that could create life threatening situations to motorists/pedestrians.

Typical fencing that could be used for the various items listed above:

a) Security fencing: 2 750mm high diamond mesh fencing with flat wrap – R80/m
b) Public protection: 1 900mm high diamond mesh fencing – R50/m
c) Stock fencing: 1 200mm high fencing with barbed wire strands (6 No) – R20/m

4.3.8 Crematoriums

ROOM FUNCTION	ROOM SIZE	m²	OCCUPANCY CLASS	DESIGN POPULATION	NO	FIRE POPULATION REQ.	LIGHTING	VENTILATION #	ACOUSTICS	USERS
Memorial Service	20mx25m	500	Worship - A4	1 person/ 1m²	50	30 min	Natural	3.5 ltr/ person	Yes	Public
Memorial Service	10mx15m	150	Worship - A4	1 person/ 1m²	20	30 min	Natural	3.5 ltr/ person	Yes	Public
Memorial Service	10mx15m	150	Worship - A4	1 person/ 1m²	20	30 min	Natural	3.5 ltr/ person	Yes	Public
Family Room	5mx5m	25	Exhibition Hall - C1	1 person/ 10m²	5	60 min	Natural	5 ltr/ person	Yes	Public
Clerical	5mx3m	15	Offices- G1	1 person/15m²	5	30 min	Natural	5 ltr/ person	Yes	Staff
Sacristy	3mx3m	9	Offices- G1	1 person/15m²	2	30 min	Natural	5 ltr/ person	Yes	Staff
Sacristy	3mx3m	9	Offices- G1	1 person/ 15m²	2	30 min	Natural	5 ltr/ person	Yes	Staff
Clerical	3mx3m	9	Offices- G1	1 person/ 15m²	2	30 min	Natural	5 ltr/ person	Yes	Staff
Circulation	10mx5m	50	Worship - A4	1 person/ 1m²	20	30 min	Natural	3.5 ltr/ person	Yes	Public
Circulation	10mx10m	100	Worship - A4	1 person/ 1m²	50 Per table 6	30 min	Artificial	3.5 ltr/ person	Yes	Public
Ablutions	5mx5m	25	Worship - A4	Per table 6 #	# Per table 6	30 min	Artificial	25 ltr/ person	No	Public
Ablutions	5mx5m	25	Worship - A4	Per table 6	#	30 min	Artificial	25 ltr/ person	No	Public
Disposal Room	10mx10m	100	Moderate Risk Industrial- D2	1 person/ 15m²	4	30 min	Natural	7.5 ltr/ person	No	Staff
Circulation	10mx5m	50	Moderate Risk Industrial- D2	1 person/ 15m²	2	30 min	Natural	7.5 ltr/ person	No	Staff
Clerical	3mx3m	9	Offices- G1	1 person/ 15m²	2	30 min	Natural	7.5 ltr/ person	Yes	Staff
Storage	6mx2m	12	Moderate Risk Industrial- D2	1 person/ 50m²	1	60 min	Artificial	7.5 ltr/ person	No	Staff
Medical Doctor	3mx3m	9	Offices- G1	1 person/ 15m²	2	30 min	Artificial	5 ltr/ person	Yes	Staff
Refinement of Ashes	2mx2m	4	Low Risk Storage- J3	1 person/ 50m²	2	60 min	Artificial	5 ltr/ person	Yes	Staff
Storage	2mx2m	4	Low Risk Storage- J3	1 person/ 50m²	1	60 min	Artificial	1 ltr/ person	No	Staff
Storage	2mx2m	4	Low Risk Storage- J3	1 person/ 50m²	1 Per table 6	60 min	Artificial	1 ltr/ person	No	Staff
Ablutions	5mx5m	25	Moderate Risk Industrial- D2	Per table 6 #	# Per table 6	30 min	Artificial	25 ltr/ person	No	Staff
Ablutions	5mx5m	25	Moderate Risk Industrial- D2	Per table 6 #	#	30 min	Artificial	25 ltr/ person	No	Staff
Internment of Ashes	30mx30m	900	Low Risk Storage- J3	1 person/ 50m²	20	60 min	Natural	5 ltr/ person	Yes	Staff
Staff Relaxation	10mx5m	50	Entertain & Public Assembly-A1	1 person/ 1m²	10	30 min	Natural	17.5 ltr/ person	Yes	Staff
Services	5mx3m	15	Plant Room- D4	1 person/ 50m²		30 min	Artificial	1 ltr/ person	Yes	Staff
Services	5mx3m	15	Plant Room- D4	1 person/ 50m²	2	30 min	Artificial	1 ltr/ person	No	Staff
Services	3mx3m	9	Plant Room- D4	1 person/ 50m²	2	30 min	Artificial	1 ltr/ person	No	Staff
Services	5mx5m	25	Plant Room- D4	1 person/ 50m²	2	30 min	Artificial	1 ltr/ person	Yes	Staff
Storage	100 Vehicles		Open Parking	None	None	None	None	None	None	Staff & Public
		2,323								

**National Building Regulations SABS 0400-Design Population Requirements*

#National Building Regulations SABS 0400-Design Ratio of Sanitary Fittings to Population

The national average cost for the construction of the crematorium is R3 000 /m². Anything outside this range will require a strong motivation from the municipalities concerned.

Mesh fencing is however in a number of locations not desirable because of the constant removal thereof by local communities. Municipalities therefore prefer wall fencing or palisade (concrete) fencing because of its durability and low maintenance.

The cost is as follows:

d) 1 200mm high brick wall (single) - R261 per running metre
e) 1 900mm high brick wall (double) - R711 per running metre
f) 1 900mm palisade fencing (concrete) - R750 per running metre

All figures above include VAT.

4.3.10 Municipal abattoirs

Private owners mostly run municipal abattoirs, as it is not the core business of municipalities even though they provide a service to the community. This might be a job creation venture and an excellent opportunity for public-private partnerships.

4.3.11 Libraries

MIG funds may only be used for the provision of a library building and ablution facilities. The building costs will be based on R2 500 per m^2.

Other library requirements such as shelves, furniture and books must be provided for from other funding sources.

4.3.12 Solid waste disposal site

All waste disposal sites in South Africa must have a permit to operate in terms of the law (Environmental Conservation Act No. 73 of 1989) and all phases of site development, e.g. selection, investigation, development and operation, must conform to the "Minimum requirements" for waste disposal sites (Department of Water Affairs and Forestry, 1998).

The municipality should select an appropriate-sized site, based on the minimum requirements set by the Department of Water Affairs and Forestry (DWAF) for the classification of waste disposal sites.

Using the classification system, landfills are grouped according to:

- Type of waste involved.
- Size of the waste stream.
- Potential for significant leachate generation.

Note that the landfill classification system cannot address factors specific to a particular site, such as the sensitivity of the receiving environment. Such factors are addressed during site selection, investigation and environmental impact assessment, where any critical factor would be identified. Minimum requirements for these applications are:

Landfill Size/class	Maximum Rate of Deposition (MRD) (Tonnes per day)	Socio-economic situation	Cost
Communal	<25	Poor areas	R1 341 918
Small	>25<150	Developing	R2 137 530
Medium	>150<500	Developed	R11 761 015
Large	>500	Affluent areas	R20 150 086

Cost per household ranges between R350 and R1 300. The national average unit cost is R825 per household. Anything outside this range will require a strong motivation from the municipalities concerned.

The various requirements for communal to large sites are detailed in a document published by the DWAF. The DWAF also has a table that distinguishes between the works required for the various waste disposal site classifications. However, the table cannot replace a study of the requirements as set out in the full document published by the DWAF.

The DWAF also classifies sites according to areas where leach may be produced, i.e. according to climatic water balance.

As mentioned above, the DWAF sets guidelines and standards for the selection, design, commissioning, operation, maintenance, closure and rehabilitation of waste disposal sites.

It generally requires:

- Site selection
- Site investigation
- Permission
- Assessment and mitigation of environmental impacts

- Design, liner and capping components
- Site preparation and commissioning
- Landfill operation
- Rehabilitation, closure and end-use
- Water quality monitoring

Advantages

- Economies of scale, owing to bigger, better equipped waste disposal sites.
- Social integration with respect to the provision of joint services.
- Higher levels of service at a lower cost.

Disadvantages

- Local authorities will have to counter-fund, in ratio to the waste generated by higher-income communities.

4.3.13 Facilities for animals

Provision must be made for the following facilities for animals:

- Accommodation facilities
- Crematoriums
- Burial facilities
- Dipping tanks

Public-Private Partnerships (PPPs) should be encouraged in addressing the above facilities.

The basic building cost of R2 500 per m^2 serves as a guideline.

5. SOCIAL INSTITUTIONS AND MICRO-ENTERPRISES INFRASTRUCTURE (E)

MIG has made provision for the following to be provided with the plot package at a cost that will be determined by the size of the facility:

Local Economic Development (LED) type projects:

- Street trading
- Markets
- Local tourism

Social Institutions:

- Old-age homes
- Orphanages
- Churches
- Créches

CONTACT DETAILS: PROVINCIAL DEPARTMENTS

National	Department of Provincial and Local Government	Tel: (012) 334 4942 Fax: (012) 334 4872
Eastern Cape	Department of Housing and Local Government	Tel: (040) 609 5565 Fax: (040) 636 4285
Free State	Department of Local Government and Housing	Tel: (051) 405 5717 Fax: (051) 405 5008
Gauteng	Department of Development Planning and Local Government	Tel: (011) 355 5412 Fax: (011) 355 5403
KwaZulu-Natal	Department of Traditional and Local Goverment	Tel: (033) 355 6172 Fax: (033) 355 6547
Limpopo	Department of Local Goverment and Housing	Tel: (015) 295 6851 Fax: (015) 295 4700
Mpumalanga	Deparment of Local Government	Tel: (013) 766 6605 Fax: (013) 766 8449
Nothern Cape	Department of Housing and Local Government	Tel: (053) 830 9462 Fax: (053) 830 9562
North West	Depatment of Developmental Local Goverment and Housing	Tel: (018) 387 3747 Fax: (018) 387 3745
Western Cape	Department of Local Goverment	Tel: (021) 483 4191 Fax: (021) 483 3244