



water affairs

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**Sanitation Services –
Quality of Sanitation in South Africa**

**Report on the Status of sanitation
services in South Africa**

March 2012



**THE PRESIDENCY
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human settlements

Department:
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Executive Summary

In the run up to the 2011 Local Government Elections, the lack of dignified sanitation services in the form of un-enclosed toilets in the Western Cape (Khayelitsha located within the City of Cape Town Metropolitan Municipality), and the Free State (Rammulotsi located within the Moqhaka Local Municipality) made media headlines when political parties lodged complaints on these failures in service delivery.

The Khayelitsha case was heard by the Cape High Court and the South African Human Rights Commission (SAHRC) was requested to investigate the allegations concerning Rammulotsi. The Cape High Court and the South African Human Rights Commission (SAHRC) found that the sanitation services (or inadequacy thereof) in both cases violated the right to human dignity, privacy and the right to a clean environment, and in both cases, the relevant municipalities were ordered that the existing toilets be enclosed as a matter of urgency.

Among the recommendations made by the SAHRC was that the Ministry: Performance Monitoring and Evaluation in the Presidency prepare a report for the SAHRC within 3 months on the quality of sanitation services delivered by local government across the country. (The timeframe was however reviewed in light of the scope and magnitude of the study required and consequently extended to allow for the report to be submitted by the end of February 2012.)

To this end, the Department of Performance Monitoring and Evaluation in The Presidency (DPME), in collaboration with the Department of Human Settlements (DHS), the Department of Water Affairs (DWA), the Department of Cooperative Governance (DCoG) and National Treasury (NT), undertook the task to establish ***“The quality of sanitation in South Africa”***.

In terms of the institutional roles and responsibilities for sanitation service provision, the constitution places the direct responsibility at local government level (this was then translated to authorised local government institutions (Water Services Authorities, which are either at district municipality level or at local municipality level, while all metros are also authorised). From a national and provincial perspective, the responsibility was initially within the Department of Water Affairs and Forestry from 1994 to 2001, the funding and monitoring function then moved to the Department of Provincial and Local Government in 2001 via the MIG funding instrument. In 2009 the National Sanitation Programme Unit (NSPU) was moved from DWA to the Department of Human Settlements, but with DWA retaining certain responsibilities in the sector including regulation, information management, high level planning and management of the Bulk Infrastructure Grant. At provincial level responsibility for sanitation now rests with the Department of Human Settlements, but with certain links to the Departments of Health, Water Affairs, Education and Public Works. This fragmentation and the lack of a single national body taking the lead in the sector, has resulted in particular challenges in terms of the coordination and upholding of norms and standards.

The sanitation need in South Africa may be defined as a combination of:

- service delivery backlogs (people who have never been served);
- refurbishment backlogs (sanitation infrastructure that has deteriorated beyond regular maintenance requirements);
- extension backlogs (existing infrastructure that needs to be extended to provide the service to new households in the communities)
- upgrade needs (infrastructure that does not meet the minimum standards)
- Operation and maintenance (O&M) backlogs (infrastructure that has not been properly operated and maintained, but can be adequate if funds are allocated to ensure proper operation and maintenance)

The overall conclusion of the study is that approximately 11% of households (Formal – no services and Informal – no services) still have to be provided with sanitation services (these households have never had a government supported sanitation intervention). Additionally at least 26% (rounded) of households within formal areas disturbingly have sanitation services which do not meet the

standards due to the deterioration of infrastructure caused by a lack of technical capacity to ensure effective operation, timely maintenance, refurbishment and/or upgrading, pit emptying services and/or insufficient water resources.

The startling finding is that while access to sanitation is increasing (albeit at less than an optimal pace) from a functionality and adequacy point of view, as many as 26% (or about 3.2 million households) are at risk of service failure and/or are experiencing service delivery breakdowns. Add to this the 9% (or 1.4 million households) in formal settlements that have no services and the 584 378 households or 64% of households in informal settlements making use of interim services and we get a picture of service delivery failure on a massive scale.

Based on the 2011 pricing structure it is estimated that a total of **R50.306 billion** is required to address the above challenging situation. Of this R13.66bn is required to extend basic services to those households that have no service and the remainder R36.64bn to address all the infrastructure, operations and maintenance related backlogs. The total amount of direct conditional grants to municipalities amounted to **R26.7 billion** for the 2011/12 financial year. Of this the allocation for sanitation amount to approximately **R3.1bn** through the Municipal Infrastructure Grant (MIG) for non-metropolitan municipalities as well as a portion of the Urban Settlements Development Grant for metropolitan municipalities. This however excludes funding required to provide bulk infrastructure needs for the provision of new services, provided for through the Regional Bulk Infrastructure grant, worth R1.7 billion in 2011/12. Based on the proportion going towards sanitation services, the use of conditional grants are thus woefully inadequate to address the extent of sanitation needs.

The total direct conditional grant funding to municipalities over the three year 2011/12, 2012/13 and 2013/14 MTEF period amounts to about **R90.8 billion**. Given the tough fiscal climate bold and creative decisions may be needed regarding how this money gets allocated. If a substantial proportion of this funding envelope were to be directed to water and sanitation over the next 3 years, it is conceivable that with the right institutional mechanism to drive planning and implementation, the water and sanitation backlog could potentially be wiped out over this period.

This is particularly worth thinking about given that the problem of inadequate sanitation is both a human rights and development issue and that government has set itself the target of 100% access by 2014. Failure to provide an adequate and functional sanitation can lead to disastrous impacts on the health and social wellbeing of communities, the environment and the economy of the country.

Poor planning across government from a national strategic level through to the site level as well as inadequate resources for both the capital costs as well as on-going maintenance costs are some of the root causes of failure in regards to sanitation service delivery.

It is therefore recommended that the sanitation function again be consolidated under a single national department with the requisite knowledge and skills to understand and address the complexities of sanitation service delivery beyond the scope of simply providing a facility but rather in the context of the interrelationship between water and sanitation. Under the consolidated function it is then recommended that the following issues be addressed and resolved as a matter of urgency:

- Legislative amendments are effected to provide for improved oversight, planning, financial allocations and accountability. Moreover, coordination of support programmes to municipalities be improved.
- Upgrading of municipal staff skills, facilitated through the Municipal Infrastructure Support Agency (MISA).
- Support for basic services delivery in municipalities where backlogs are most acute and capacity is weak be provided through a service delivery management structure constituted

by departments responsible for water and sanitation and supported by the Municipal Infrastructure Support Agency within DCoG. This structure should prepare a pipeline of projects to address the capital and maintenance backlogs per municipality within a clear timeframe and coordinate the necessary funding to implement the projects.

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It should never be forgotten that “Sanitation is Dignity” and dignity is a basic human right.

Department of Water Affairs; ***Free Basic Sanitation Implementation Strategy***,
2009

PART 1: Introduction and background

Part one of this report describes the background to the study; providing an overview of the historic context of the problem and an overview of the approach taken to conduct the study on the quality of sanitation in South Africa as it currently stands.

Background to the study

“When I was appointed Minister of Water Affairs and Forestry in May 1994 I already had an appreciation for the immensity of the task ahead to provide even the minimum basic water and sanitation services to all our people, but the vastness of the task becomes more apparent day by day. I am inundated with appeals. I understand the growing impatience that I encounter but if we do not all gain an understanding of the task and how long it will take, we will land in a quagmire of panic-driven decisions.

...An equally hard reality is that not everyone’s needs can be met at once. There are limits to our resources, both now and in the future.”

Prof. Kader Asmal, MP: Minister of Water Affairs and Forestry (1994-1999); **Water Supply and Sanitation Policy White Paper**; November 1994, Cape Town.

At the dawn of our democracy, of a population slightly over 40 million, approximately 15.2 million people had no access to basic water supply (at least 25 litres of safe water within 200m of the home), and an estimated 20.5 million lacked basic sanitation (a household toilet of at least a VIP standard) in South Africa.

Historically, the delivery of sufficient water through reticulated house connections and water borne sanitation services were provided predominantly to the middle and upper class (then white) sections of the municipalities and towns, while in the black townships, authorities only provided water borne sanitation to a very limited extent. Therefore alternative sanitation systems such as the bucket system were applied in many urban towns, while little attention was paid to providing any sanitation in rural areas. Given this history, the post-apartheid government faced a massive challenge to reverse the health and environmental consequences, and more particularly the lack of dignity that the apartheid legacy bequeathed on the majority of South Africans.

In 1994, the new government acknowledged the lack of basic services such as water supply and sanitation as key indicators of the underdevelopment of certain sectors of the community and as critical elements in the experiential manifestation of poverty. The bucket sanitation system was immediately considered an unacceptable level of sanitation. The new government was especially aware that the way in which services are provided must ensure that they do not simply satisfy peoples' basic needs but also enhance the dignity associated with the use of a toilet, and thereby provide all South Africans with opportunities for a better life. By the end of that year, the Water Supply and Sanitation White Paper was adopted, making provision for everyone to be served with at least a basic level of water supply and sanitation as per prescribed norms and standards.

This policy approach to basic services entailed government funding the capital costs of new services infrastructure while the users covered operation and maintenance costs. Towards the end of the 1990s however, government realised that poverty, unemployment and the high operational costs of particularly bulk water supply schemes, meant that the poor could not afford services charges. Thus the shared responsibility between government and citizens, as envisaged in the policy would not be implementable.

Free Basic Services and change in implementation responsibilities

The adoption of the free basic services policy in 2001, linked to an indigent policy which targets the poorest sections of communities, was aimed at addressing the issue of affordability of services. The basket of services in the free basic service policy includes solid waste collection, water supply, sanitation and electricity. Initially the emphasis of policy implementation was in respect of the

provision of a basic amount of free water and electricity, work on sanitation and solid waste only gained momentum from about 2005/6.

The targets set in 1994 to provide all citizens with at least a basic level of water supply and sanitation service within 7 years was realised to have been over-ambitious as it became obvious that it would take a considerably longer time to ensure access to these services to all. In September 2003 Cabinet approved the Strategic Framework for Water Services which set out new targets in respect of access to water and sanitation. The revised targets under the Strategic Framework for Water Services, aspired to ensuring that “all South Africans have access to a functional basic water supply facility by 2008” and “all South Africans have access to a functional basic sanitation facility by 2010”. The framework also assigned the responsibility for ensuring access of water and sanitation service provision to local government as envisaged in the Constitution of the Republic of South Africa (Act 108 of 1996). Funding that had been channelled through the Department of Water Affairs and Forestry (DWAF) for the capital infrastructure programme under the Community Water Supply and Sanitation (CWSS) programme was amalgamated into a new consolidated infrastructure funding programme (MIG Municipal Infrastructure Grant) established under the then Department of Provincial and Local Government (dplg) and transferred to municipalities designated as Water Services Authorities for implementing a range of basic infrastructure projects. In part due to the shift in responsibilities, the construction rate of new water supply and sanitation infrastructure actually dropped during the period 2004 to 2005. DWAF had completely wound down its sanitation delivery function by the end of 2005/06. Also, the then Department of Housing’s (now the Department of Human Settlements) delivery rate on housing started slowing down at this time.

Further shifts in responsibility came into effect from 2009 when the sanitation function was moved from the Department of Water Affairs (DWA) to the Department of Human Settlements (DHS).

Currently, municipalities designated as Water Services Authorities (other than metropolitan municipalities) are directly responsible for extending and ensuring basic water and sanitation service provision through the use of own revenue, the Municipal Infrastructure Grant (MIG) for capital costs and the Equitable Share Allocation for operation and maintenance costs. For Metropolitan municipalities the MIG was changed from 2010/11 to the Urban Settlement Development Grant (USDG) for extending and ensuring basic water and sanitation service provision.

Realisation of specific short-comings and programme needs

Apart from the impact felt due to the shift in functions as described above, other major factors that impacted on the delivery of waterborne sewage systems were inadequate water resources in some areas, a lack of bulk and internal water and sewerage reticulation infrastructure, shortcomings in the design and construction of the infrastructure, as well as shortages of skills to operate, manage and maintain the water and sewerage infrastructure.

Due to the complexity of sanitation service delivery the sector required specialist management and design support, particularly with regard to technical decision-making and problem solving associated with different service levels and settlement types. The challenges faced by municipalities ranged between how to service informal settlements, farm dwellers, dealing with difficult ground conditions, planned new housing developments where existing bulk infrastructure is already overstretched, how to deal with full VIPs (Ventilated Improved Pit Latrines), water supply inadequacies, bucket eradication, maintenance of sewers, sub-standard wastewater effluent discharges, to name but a few.

Service provision in rural settlements was frequently found to be more costly than in the more densely populated urban settlements, because of the different economies of scale and the sheer logistics of managing projects in scattered or dispersed settlements far from a municipality’s administrative hub.

In the Free State, the bucket system was for the most part replaced with a waterborne sanitation service which demanded additional infrastructure such as water supply schemes, increased wastewater treatment capacity, new internal reticulation networks, etc. In many instances,

waterborne systems had to be installed in relatively isolated and marginalised areas that had no or limited existing bulk sewer networks or wastewater treatment works. This resulted in the provision of sanitation infrastructure that, in some cases, was not the optimal technical solution resulting in negative consequences in respect of long-term service affordability, functionality and sustainability.

In instances where bulk infrastructure was lacking, communities were encouraged to adopt dry sanitation systems. Where the communities were unwilling to do so (particularly in the Free State), the replacement of the bucket toilet has taken much longer than initially envisaged due to inadequacies in the existing infrastructure. The speed with which the bucket eradication programme was implemented also did not allow municipalities sufficient time for proper feasibility assessments and project life cycle planning, which actually caused further delays due to tender prices being higher than approved project budgets, as well as budget revisions having to be undertaken in order to take into account unforeseen and unplanned challenges such as problematic geotechnical conditions.

By 2008 it again became apparent that the 2010 target for sanitation would not be achieved and the Department of Water Affairs and Forestry was forced to revise the target for universal access to water supply and sanitation. The target for ensuring safe and healthy water supply and sanitation services to all of its citizens (including the eradication of all bucket toilets) was consequently aligned with the then Department of Housing's target to eradicate informal settlements by 2014.

What should be acknowledged is the emergence of an unintended consequence of the continuous chasing of targets (however noble this might seem). While the implementation of new "capital" projects is correct, this has come at a price of a lack of focus on the far more challenging requirements of the on-going sustainable operation and maintenance of services. Increasingly, maintenance, refurbishment and extension of the capacity of existing sanitation infrastructure have, and are being neglected.

Previous sanitation audit findings

In 2004/2005 DWAF commissioned a nation-wide sanitation sustainability audit to assess the quality and sustainability of sanitation infrastructure implemented under the CWSS, CMIP and Housing programmes. The findings of the audit is summarised as follows:

- 28% of toilets were already dysfunctional or had a high sustainability risk indicating a high probability of failure within the short to medium term.
- Inadequate attention to social issues and health education resulting in lack of ownership and low levels of awareness of hygiene and user responsibilities.
- Significant negative environmental impacts due to sewage spills, pits dug to below the water table, and as a result of lack of household refuse removal services, refuse was discarded into pits in areas where refuse is not collected.
- Inadequate governance of programmes resulting in poor quality of construction in many cases, long delays in implementation, inadequate control of contractor performance.
- Institutional fragmentation of roles where different programme methodologies were used for different programmes and poor coordination between role players.
- Inappropriate technology choice particularly related to installing waterborne sanitation where there were insufficient water resources or VIPs with corrugated iron top structures that were not stable in high wind areas.
- Poor attention to effective operation & maintenance with early pits having filled up with no plans to empty, households not maintaining their facilities (especially toilet doors), and regular blockage of sewers.
- Inadequate financial and human resources to manage and institute complete projects (in many cases only a percentage of households were served within a community).

(Department of Water Affairs and Forestry: Nation-wide sustainability Audit of Sanitation Facilities implemented by sector departments from 1994 to 2003, January 2005)

During 2007 DWAF commissioned the CSIR, to conduct an audit of water and sanitation projects. The "spot-check" as it was called, drew on 2 410 projects in the MIG (Municipal Infrastructure Grant) database which were then listed as having moved past the planning phase. Findings showed that of

the 2 410, only 41% had actually been completed. Further to this, the audit also made the following findings:

- Up to 25% of on-site toilets were inadequately designed for ventilation.
- Up to 68% of on-site top structures were constructed in a way which meant it cannot be moved when the pits are full.
- A number of facilities were found to have problems with the toilet doors (10% do not close, and 18% have no latch on the inside).
- 28% had poorly designed or built toilet vent pipes.
- Some flush toilets were found without cisterns (23%) or pedestals (18%).
- 61% had no hand-washing facility near toilet.
- On 60% of the facilities municipalities were only doing reactive maintenance.
- 40% of municipalities were seen as not having adequate maintenance capacity.

(SALGA; *Strategic sanitation review on operations, maintenance and sustainability of improved ventilated pit latrines including aspects of sustainability related to the eradication of buckets within the Free State Province*; June 2009.)

Although some of the issues found from the audits have been addressed in later programmes, the challenges with respect to the delivery of sanitation have persisted over the years and reports on failing sanitation systems and inadequate services are regularly featured in the media.

Local Government Elections of 2011

A spotlight was once again thrown on the subject when in the run up to the 2011 Local Government Elections, the lack of dignified sanitation services in the form of un-enclosed toilets in the Western Cape (Khayelitsha located within the City of Cape Town Metropolitan Municipality), and the Free State (Rammulotsi located within the Moqhaka Local Municipality) made media headlines when political parties lodged complaints on these failures in service delivery.

The Khayelitsha case was heard by the Cape High Court and the South African Human Rights Commission (SAHRC) was requested to investigate the allegations concerning Rammulotsi. The Cape High Court and the South African Human Rights Commission (SAHRC) found in both cases that the sanitation services (or inadequacy thereof) violated the right to human dignity, privacy and the right to a clean environment, and in both cases, the relevant municipalities were ordered to enclose the existing toilets as a matter of urgency.

Among the recommendations made following the SAHRC investigation in 2011 was that the Ministry: Performance Monitoring Evaluation and Administration in the Presidency, within 3 months, prepare a report for the SAHRC on the quality of sanitation services delivered by local government across the country. (The timeframe was however reviewed in light of the scope and magnitude of the study required and consequently extended to allow for the report to be submitted by the end of February 2012.)

To this end, the Department of Performance Monitoring and Evaluation in The Presidency (DPME), in collaboration with the Department of Human Settlements (DHS), the Department of Water Affairs (DWA), the Department of Cooperative Governance (DCoG) and National Treasury (NT), undertook the task to establish ***“The quality of sanitation in South Africa”***.

Focus Areas of the Study

The terms of reference developed by the Department of Performance Monitoring and Evaluation and its sector partners and as approved by the SAHRC set out the following aspects as the focus on of sanitation services in South Africa:

- The extent to which quality and functional sanitation services are available.
- Requirements to ensure an adequate level of service.
- The municipal technical and financial capacity to plan, implement, operate and maintain infrastructure.

- The technical support currently provided by national and provincial government.
- The quality and condition of existing infrastructure.
- The efficacy and adequacy of current grant allocations and municipal own budget allocations for basic service delivery.
- The current level of community participation, consultation and communication practices in the decision making processes.
- How the principle to pay in relevant policies, legislation, and programmes align to recent rulings
- Whether the conditions for a national performance monitoring framework for sanitation service provision are in place.

The sections that follow attempt to address these aspects to the extent possible from a national perspective, and to put these issues into the perspective of the overall sanitation service delivery programme.

The national findings in this report were informed by in-depth analysis of the state of sanitation within each of the 159 Water Services Authority (WSA); booklets detailing the state of sanitation in each of the 159 WSAs were compiled and rolled up into provincial and national perspectives. Provincial perspectives are provided within the annexures of this report. The WSA perspectives can be made available by the DWA upon request, as this entails a vast amount of detail that cannot be captured within this single report. Satellite spot imaging was used to map 68 000 settlements and calculate population and household information. The settlements were then evaluated and updated according to their current sanitation service needs. Field work at the municipal level (not household) was done to profile the settlements according to the classification developed for the study.

Framing the Scope of Work

Current legislation, policies and strategies for provision of sanitation services

While the right to access to adequate sanitation is not specifically provided for in the Constitution of the Republic of South Africa, 1996 (Constitution), there are a number of clauses which directly or indirectly imply the right to basic sanitation. The 2001 White Paper on Basic Household Sanitation explicitly acknowledges that “government has a constitutional responsibility to ensure that all South Africans have access to adequate sanitation.” The Water Services Act 108 of 1997 (Water Services Act) - the primary legislation relating to water and sanitation in South Africa – also refers to a “right to basic sanitation.”

The Regulations Relating to Compulsory National Standards and Measures to Conserve Water (2001) (Compulsory National Standards) published to give effect to section 9 of the Water Services Act, provides minimum standards, albeit vague, for basic sanitation. The Local Government: Municipal Systems Act 32 of 2000 (Municipal Systems Act) outlines the responsibilities of municipalities and it is clear that basic sanitation forms part of the “right to basic municipal services” outlined in section 73 of the Act. There is however confusion at municipal level regarding the interpretation of “access” to basic sanitation services, and current sanitation policy does not provide sufficient guidance on the interpretation of “access” to basic sanitation.

Definitions, norms and minimum standards

The Strategic Framework for Water Services (2003) defines sanitation as follows:

Basic sanitation facility:

The infrastructure necessary to provide a **sanitation facility which is safe, reliable, private, protected from the weather and 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.

Minimum basic facility: On-site sanitation (e.g. VIP) for rural areas

A basic sanitation service entails:

The provision of a sanitation facility (that is appropriate to the settlement conditions) which is **easily accessible** to a household, the **sustainable operation and maintenance** of the facility, including the **safe removal of human waste and waste water from the premises** where this is appropriate and necessary, and the **communication of good sanitation, hygiene and related practices** (to users).

Regulation 2 of the Compulsory National Standards states that the minimum standard for basic sanitation services is:-

- the provision of appropriate education; and
- a toilet which is safe, reliable, environmentally sound, easy to keep clean, provides privacy and protection against the weather, well ventilated, keeps smells to a minimum and prevents the entry and exit of flies and other disease carrying pests.

Key to all these standards is the requirement for privacy, safety, health (barriers to disease transmission) and structural soundness. From a norms and standards point of view, South Africa therefore compares positively with international practice and underscores the point that the country views access to acceptable sanitation services as fundamentally a human rights issue.

The World Health Organisation (10 Facts on Sanitation) has reported on the significant benefits (social, environmental and economic) of improved sanitation.

- Improved sanitation reduces diarrhoea death rates by a third.
- Improved school sanitation encourages children, particularly girls, to stay in school.
- Improved sanitation has significant economic benefits – every \$1 invested in improved sanitation translates into a return of \$9.
- In Africa, 115 people die every hour from diseases linked to poor sanitation, poor hygiene and contaminated water.
- Hygiene education and promotion of hand washing are simple, cost-effective measures that can reduce diarrhoea cases by up to 45%.

The implications of these findings are that investments in sanitation that provide a comprehensive service (infrastructure, effective operation and maintenance (O&M) and appropriate health education) has significant benefits in terms of community well-being, reduced health care costs and improved household productivity. The return on investment is considerable in terms of government budgeting, and actually impact positively on many of the other development priorities of government. From the point of view of this study, the definitions above were used to assess quality and adequacy and functionality of sanitation services across the country.

South African experience and challenges

The South African government has advanced in addressing both sanitation and water supply backlogs since 1994 (the backlog in terms of sanitation has been reduced from 52% in 1994 to 21% at the end of 2010) and achieved the 2015 Millennium Development Goal for halving the proportion of population without sustainable access to basic sanitation in 2008. Not content with having achieved the MDG target seven years before the globally set target, South Africa set itself the target of achieving universal access to sanitation by 2014. However, as this study reveals the advances made in the provision of adequate sanitation services, addressing outstanding backlogs and sustaining access faces many risks including ensuring the quality of structures built, maintenance of infrastructure, revenue collection to fund the on-going provision of the service, community liaison and participation to ensure acceptability and responsibility for the services and effective management of the sanitation programme at all levels of government. The issue of access is also affected by the on-going growth of informal settlements, particularly in urban areas, due to the rural-urban migration as well as from population growth and the influx of foreign nationals.

Understanding the sanitation needs

Definition of sanitation need

As stated above a comprehensive sanitation service that ensures community wellbeing, reduced health care costs and improved household productivity entails a focus on infrastructure, effective O&M and appropriate health education. Given this perspective the study assessed the sanitation need in South Africa in terms of the following 6 aspects:

- service delivery backlogs (people who have never been served);
- refurbishment backlogs (sanitation infrastructure that has deteriorated beyond regular maintenance requirements);
- extension backlogs (existing infrastructure that needs to be extended to provide the service to new households in the communities);
- upgrade needs (infrastructure that does not meet the minimum standards);
- O&M backlogs (infrastructure that has not been properly operated and maintained, but can be adequate if funds are allocated to ensure proper operation and maintenance); and
- water resource requirements to be able to effectively operate the sanitation system.

Information sources

Various sources of backlog type information are available, including:

- Water Services National Information System (WSNIS) based on STATS SA census data with annual adjustments for calculated service delivery and population growth (this data does not estimate the refurbishment, upgrade or O&M backlogs).
- STATS SA data based on census and the General Household Survey data from 2002 to 2010 (useful as it also records household perceptions and problems encountered with services at household level, but being based on a sample does not give sufficient data for planning purposes).
- DWA Water Services Reference Framework Planning data set (updated Dec 2011) determined through first principles from satellite data linked to reported water service infrastructure status gleaned through on the ground surveys. Note that the need is based on dwelling numbers which is useful for planning purposes as it enumerates the delivery needs and priorities.
- Other planned and ad-hoc audits and surveys (e.g. the National Sanitation Sustainability Audit of 2005, the 2007 DWA/CSIR Spot Checks).

For the purposes of the report to the SAHRC and the description of the six areas of need, the DWA Water Services Reference Framework data has been used as a basis for the analysis of the current situation. The sanitation need classification system in the table below, details the classification and categorisation used in the study in terms of formal and informal settlements¹.

Definition	Classification	Description	Categorisation		
FORMAL					
- BELOW	- No Service	Whole community never had any formal (municipal) sanitation system	10		
	- Infrastructure Upgrade	Existing infra not on RDP standard (functioning VIP minimum)	7	8	9
	- Infrastructure Extension	Communities have grown - there are households that do not have sanitation			
	- Infrastructure Refurbishment	Deterioration of existing infrastructure - can be restored to RDP by repair or replacement			
	- O&M Need	Can be restored to RDP by enough staff & sufficient funds for O&M	6		
	- Water Supply Needs	Includes source development	5		
Conserving & Demand Management					

¹ Satellite spot imaging was used to map 68 000 settlements and calculate population and household information. The settlements were then evaluated and updated according to their current sanitation service needs. Field work at the municipal level (not household) was done to profile the settlements according to the classification used in the table.

- ADEQUATE	- Waterborne	Adequate Infrastructure	1 (A)		
	- Waterborne Low Flush	Adequate Infrastructure	1 (B)		
	- Septic Tanks / Conservancy	Adequate Infrastructure	1 (C)		
	- Non Waterborne (VIP)	Adequate Infrastructure	1 (D)		
INFORMAL					
- BELOW	- No Services	Upgrade or relocate settlement	4		
- ADEQUATE	- Informal	Upgrade and formalise housing	2		

Categorisation	Description
1	Adequate
2	Adequate: Informal
3	Adequate: Formal shared services
4	Below: No service informal settlement
5	Below: Water resource related
6	Below: O&M Needs
7	Below: Infrastructure needs
8	Below: Infrastructure & O&M needs
9	Below: Infrastructure, O&M and Resource needs
10	Below: No services

The categorisation of settlements (from 1 to 10 where 1 denotes adequate services and 10 denotes no services and thus top priority) allows for households to be categorised according to a single or combination of needs thus allowing for double counting e.g. if a section of a settlement has an infrastructure upgrade need and the same section also an infrastructure refurbishment need the totals are listed under both fields.

PART 2: Findings of the study on the quality of Sanitation in South Africa

This part of the report aggregates the findings of the study to provide a national perspective. As mentioned before, the provincial perspectives are attached as annexures to this report while the detailed reports per WSA are available on the DWA website.

Demographic Profile of South Africa

The current population of 50.5 million (2011) was geo-spatially grouped into more than 68 000 rural and urban settlements, of which:

- 21.2 million people (or 42% of the population) live in large metropolitan areas.
- 9.1 million people (or 18% of the population) live in medium-sized cities and towns.
- 4.5 million people (or 9% of the population) live in small towns in rural areas.
- 15.5 million people (or 31% of population) live in small rural villages and scattered settlements.

The demographics as described above places the following particular requirements on the sanitation sector:

- Provision of adequate services to dwellings in (transient) informal settlements requires a strategy that takes into consideration permanency and land use objectives together with other considerations of topography, geo-hydrology, proximity to bulk services, etc.
- Rural-urban migration dynamics.
- Maintaining norms and standards in areas lacking institutional (especially technical and financial) capacity.
- Providing affordable sanitation to rural areas that require low maintenance.

National perspective of the sanitation needs

Household level sanitation services

From a national perspective the sanitation needs as at December 2011 are indicated in the following diagrams:

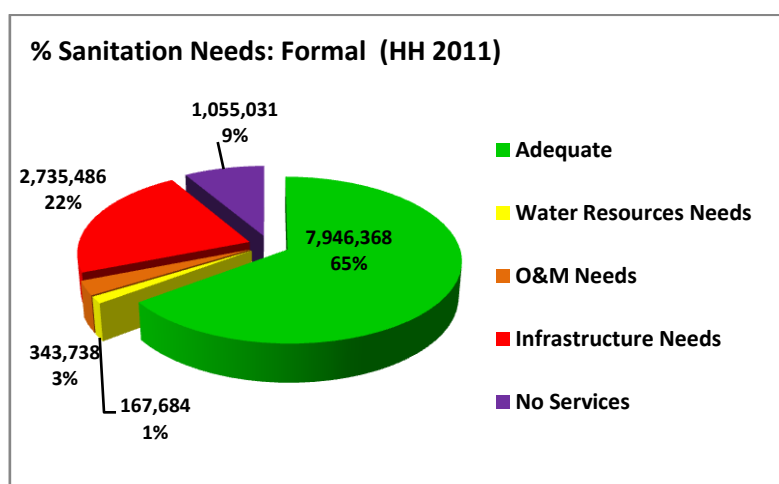


Figure 1: National Sanitation Needs: Formal (HH 2011)

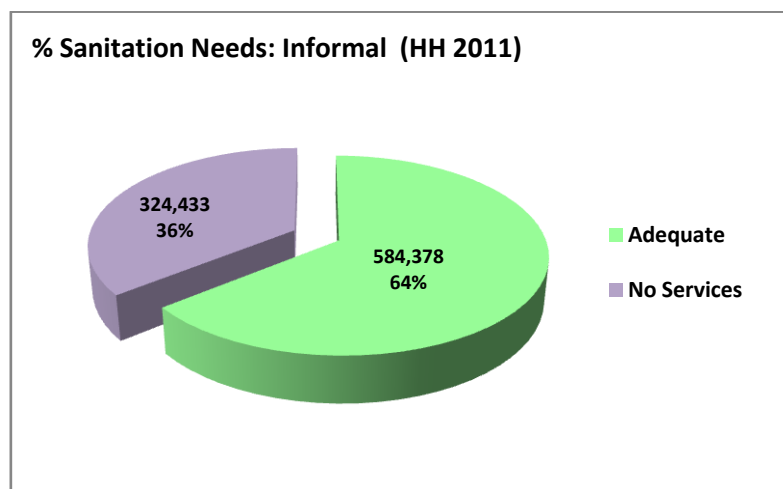


Figure 2: National Sanitation Needs: Informal (HH 2011)

Note that the provision of a service in informal settlements and to households with additional back yard dwellers may imply shared services as the level of service. As these settlements are upgraded additional facilities will need to be provided for individual households. The estimated number of households with shared services is 275 078 (2.0%) at present.

Province	Formal					Informal	
	Adequate	Water Resources Needs	O&M Needs	Infrastructure Needs	No Services	Adequate	No Services
Eastern Cape	829 274	0	0	503 789	165 919	11 243	113 223
Free State	674 502	101 469	12 650	386 432	1 505	8 770	1 161
Gauteng	2 334 964	0	0	0	1 570	205 892	143 917
KwaZulu-Natal	779 027	19 030	99 849	244 269	554 460	121 069	12 937
Limpopo	591 687	44 561	213 546	796 552	0	2 965	6 550
Mpumalanga	583 210	0	0	439 943	975	5 539	28 701
North West	478 338	2 624	39	340 389	294 747	39	3 088
Northern Cape	196 661	0	17 654	24 022	22 072	18 940	5 922
Western Cape	1 478 705	0	0	90	13 783	209 921	8 934
South Africa	7 946 368	167 684	343 738	2 735 486	1 055 031	584 378	324 433

Table 1: Summary of National Sanitation Needs²

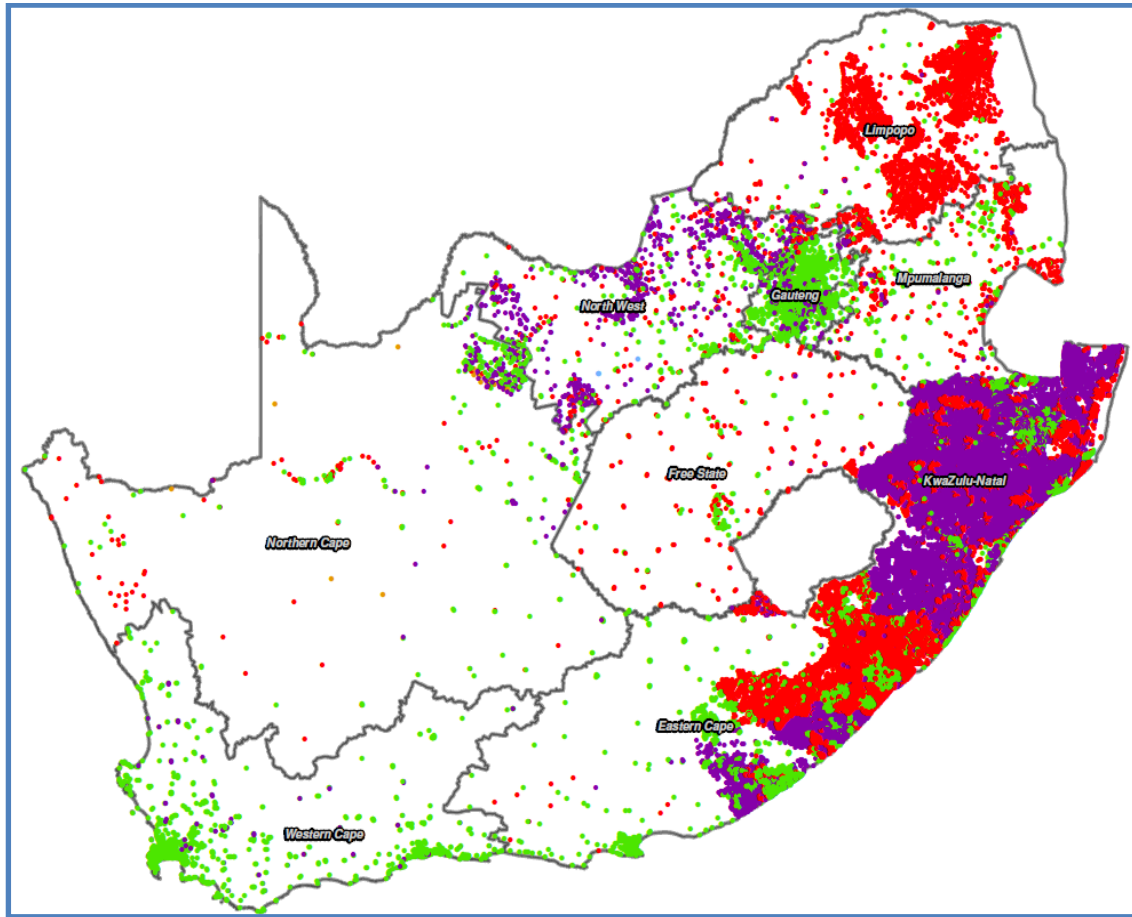
From the above pie charts and table the following challenges are evident:

- Approximately 11% of households (Formal – no services and Informal – no services) still have to be provided with sanitation services (these households have never had a government supported sanitation intervention);
- Additionally at least 26% (rounded) of households within formal areas disturbingly have sanitation services which do not meet the standards due to the deterioration of infrastructure caused by a lack of technical capacity to ensure effective operation, timely maintenance, refurbishment and/or upgrading, pit emptying services and/or insufficient water resources.

The startling finding is that while access to sanitation is increasing (albeit at less than an optimal pace) from a functionality and adequacy point of view, as many as 26% (or about 3.2 million households), apart from the 9% (or 1.4 million households in formal areas) that have no services and 64% of households making use of interim services in informal areas (584 378 households), are at risk of service failure and/or are experiencing service delivery breakdowns.

² The household figures in Table 1: Summary of National Sanitation Needs as well as similar tables for provinces will show a slight divergence from the figures presented in the pie charts as households who has needs falling within more than one of the categories are reflected in all categories. This allows for a more realistic cost estimate to be done in respect of the existing needs.

The distribution of these sanitation needs at a community level is indicated on the following map, noting that the predominance of small rural settlements in certain regions diminishes the visibility of the other need classifications:



Although the un-served population is 11% of the national total, their predominance (purple) is in the widely dispersed rural settlements of KwaZulu-Natal, North West and the Eastern Cape. The areas with high levels of infrastructure maintenance needs are located within Limpopo, KwaZulu-Natal, Free State, Mpumalanga, Northern Cape and the Eastern Cape. Gauteng and Western Cape are the provinces with the highest percentage of communities with adequate services (green), however these provinces do have large numbers of informal settlements that poses its own particular set of challenges.

Status of bulk infrastructure

Of grave concern is the status of bulk sanitation infrastructure in the country. This mainly relates to the communities served with waterborne sewerage systems, where the maintenance, refurbishment and/or upgrading of collection and treatment infrastructure has been neglected over the years. The full audit assessment of the status of wastewater treatment works (WWTWs) carried out every two years by the Department of Water Affairs (the Green Drop Report) indicates a low rate of achievement of standards with only 40 out of 826 works assessed achieving Green Drop status. The results of the 2011 survey indicate:

- 317 WWTWs require urgent attention.
- 143 WWTWs have a high risk of failure.
- 20% of WWTWs are running over their design capacity.
- 90% of WWTWs are non-compliant on more than 3 effluent determinants.

The average green drop status per province as per the 2011 report is indicated in the following map:

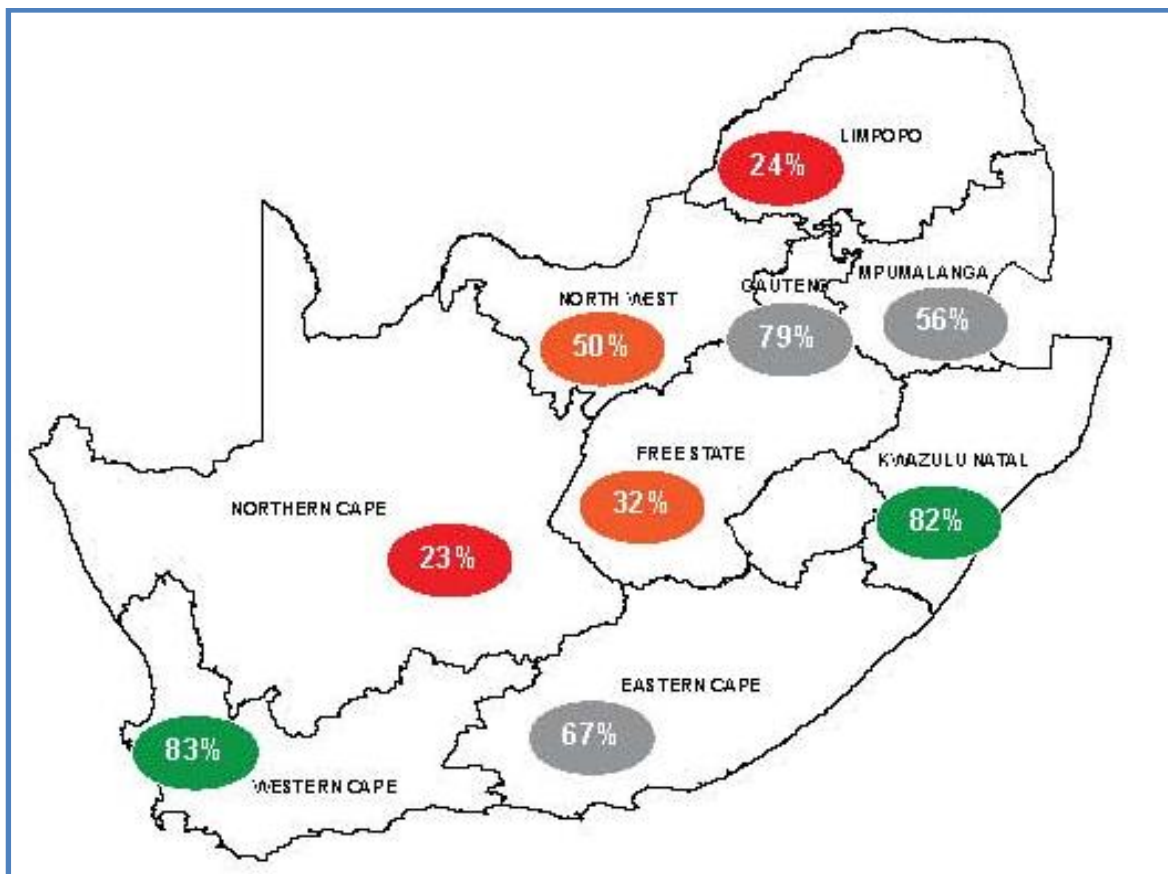


Figure 3: National average Green Drop scores per province

The 2011 Green Drop Report notes the concern that wastewater treatment plants continue (on average) to move into higher risk scores. Specific provinces where non-compliance challenges are greatest are Eastern Cape, North West, Mpumalanga, Free State, Northern Cape and Limpopo. The extremely poor state of WWTWs has dire implications for health, the environment and economy.

Status of Water Services Institutions

One of the key contributors to the status of the existing infrastructure is the under-capacity of water service authorities to be able to plan, implement and manage the infrastructure effectively. The vulnerability of water services authorities was assessed through a self-assessment process undertaken by the Department of Water Affairs. In the majority of WSAs the level of vulnerability (based on an assessment of 16 indices) is high to very high. The criteria applied for the assessment of vulnerability are as follows:

- Municipal strategic self-assessments of water services measures:
 - Water services development planning
 - Management skills level
 - Staff skills level
 - Technical staff capacity
 - Water resource management
 - Water conservation and demand management
 - Drinking water quality
 - Wastewater environmental safety
 - Infrastructure asset management
 - Operations and maintenance of assets
 - Financial management
 - Revenue collection
 - Information management

- Organisational performance
- Water service quality
- Customer care

The following example of the “spider diagram” indicates how the vulnerability is determined (*Municipal Services Strategic Assessment (MuSSA): National Overview*):

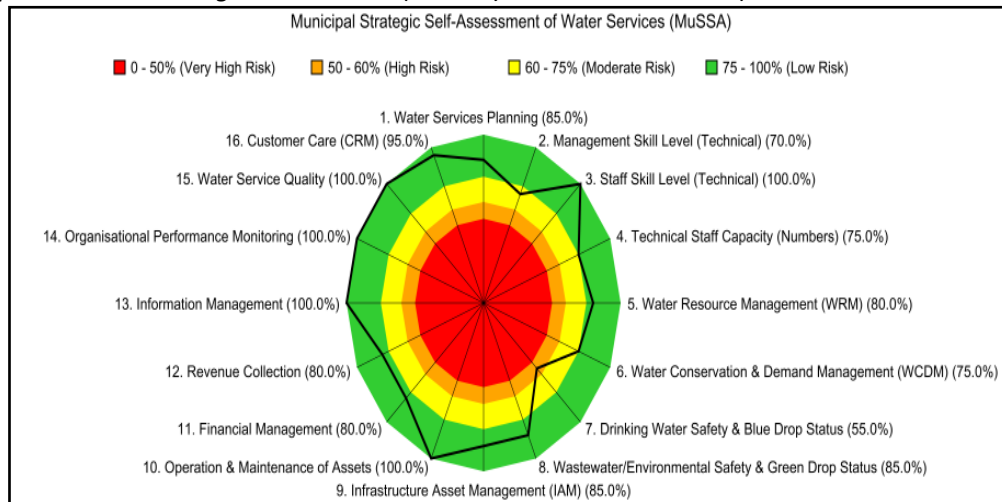


Figure 4: Municipal Services Strategic Assessment (MuSSA): National Overview

As per the below vulnerability map, focussing on the criteria for assessing the technical and financial capacity for water and sanitation service delivery, the number of Water Services Authorities (WSAs) falling into the “very high vulnerability” classification increases to approximately 80% of all WSAs. This is of significant concern, and although programmes have been instituted to boost the capacity of WSAs, these have generally taken the form of short-term interventions that did little to transfer skills and build and retain capacity within the WSAs over the medium to long term.

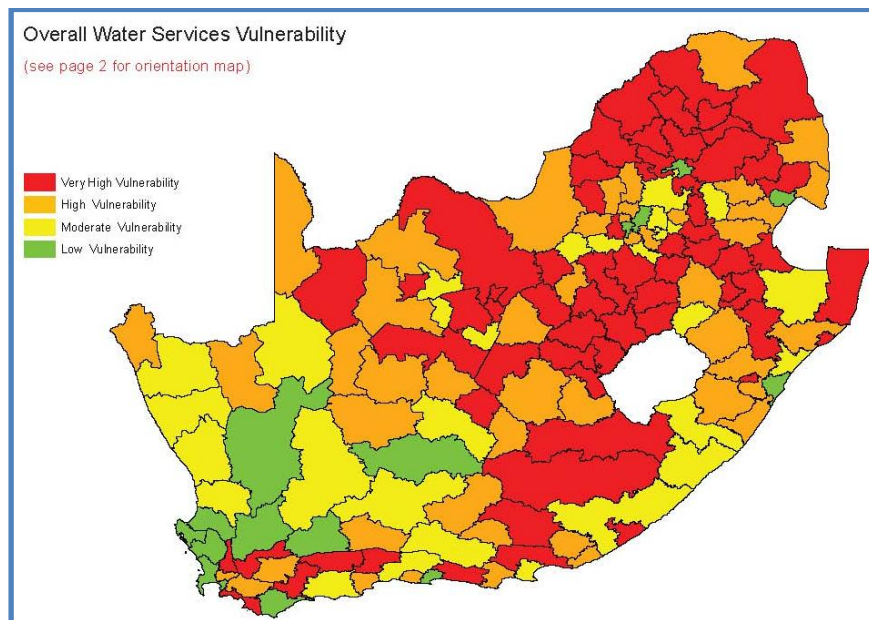


Figure 5: Overall Water Services Vulnerability

Funding mechanisms to address the sanitation needs

Sources of funding for sanitation improvement that are available to local government include the Municipal Infrastructure Grant (MIG) and Equitable Share funding transfers from national to local

government, the revenue collected by the local authority, Special Grants, and funds obtained from other donors. Below is a summary of the various grants provided by various spheres of government.

The Municipal Infrastructure Grant (MIG)

This is a funding arrangement for municipalities which combines all existing capital grants for municipal infrastructure into one consolidated grant. The various capital grants have been consolidated so that municipalities have control of infrastructure projects in their jurisdiction, as well as have cost effective planning and integrated service delivery. The Grant operates on the following key principles:

- Funding the provision of basic infrastructure i.e. a basic level of service.
- Service provision to the poor.
- Employment creation in the provision of infrastructure.

In order to receive MIG funding Municipalities have to meet certain conditions. Key amongst these is that the grant be used for capital investment for the provision of basic services, that the municipality must achieve specified basic level targets and that a portion may be spent on rehabilitating infrastructure. The implementation and utilisation of the MIG has not been optimal with under spending a major concern. Municipalities have not in general adhered to the conditions of the grant and there are a number of instances where the grant has been used for operational expenses rather than capital investment. There is a need for a thorough evaluation of the MIG.

There are also sector specific conditions whereby each sector department may establish further conditions specific to their sectors. The Department of Water Affairs as an example requires that the funding only be used to fund basic water provision and sanitation services and that operating and maintenance arrangements must be in place and funds committed for this. Again there is strong evidence that provision for operations and maintenance is neglected or inadequate. This in part accounts for the parlous state of existing infrastructure.

Equitable Share

This is the unconditional allocation of revenue to the national, provincial and local spheres of government as stipulated by Section 214 of the South African Constitution providing for:

- The equitable division of revenue nationally among the national, provincial and local spheres of government;
- The determination of each province's equitable share of the provincial share of that revenue; and
- Any other allocations to provinces, local government or municipalities from the national government's share of that revenue, and any conditions on which those allocations may be made.

Section 277 of the Constitution entitles local government to an "equitable share" of revenue raised nationally, so that it may "provide basic services and perform the functions allocated to it".

The equitable share has been designed to ensure that municipalities have the resources to render basic services to low income or poor households and to enable them to build an administrative infrastructure. It is intended to provide municipalities with sufficient funds for the operational costs of providing free basic services to their poor households. However municipalities with a low revenue base rely on the Equitable Share as their primary revenue source to finance the operations of the municipality as a whole thus the share actually going to poor households is reduced.

Municipal Budgets

These include funds from the municipality's tax base or revenue e.g. funds collected for Municipal services; property taxes, subsidies and various consumer tariffs levied, etc. These internal fund sources tend however to be limited especially for the rural municipalities with a weak rates base. Thus the capacity of many municipalities to raise sufficient revenue to cover both their operating costs as well as their infrastructural needs is limited. Hence funding of basic services for poor household is mostly addressed through other capital grants and equitable share transfers.

Conditional Grants

National Treasury also allocates Conditional Grants to local governments as well as provincial sector departments to be used in infrastructure provision. There are three conditional grants through which funds are transferred to provinces and municipalities to fund the provision of the infrastructure required for sanitation, namely, the Human Settlements Development Grant (HSDG), the Urban Settlements Development Grant (USDG) and the MIG (described above).

The **HSDG** is a grant to provinces to fund the construction of sustainable human settlements through various programmes including the Upgrading of Informal Settlements Programme. The Grant can be used for the construction of housing top-structures, basic services (including sanitation), and basic social and economic amenities. In 2011/12 this grant was worth R14.9 billion. Provinces are responsible for the housing function, but contract municipalities to carry out housing construction projects on their behalf. This means that although national government transfers funds to provinces, provinces often transfer these funds on to municipalities who build the actual houses and provide the associated basic services.

The **USDG** was created in the 2011 Budget. This grant goes to the country's 8 metropolitan municipalities and was formed by combining the MIG Cities grant with some of funds from the HSDG (part of which would have been spent on providing basic service infrastructure, including sanitation, in these cities).

In addition to these three grants, the **Rural Household Infrastructure Grant** is an indirect conditional grant through which national government builds on-site water and sanitation infrastructure for rural households where connector-services would be inappropriate. This is an indirect grant, therefore all funds are spent by the national department or its agents, and no funds are transferred to municipalities (unless a municipality is acting as an implementation agent).

Regional Bulk Infrastructure Grant (RBIG) is a specific purpose capital grant managed by the DWA with the objective to supplement the financing of the social component of regional bulk water supply and sanitation infrastructure. It is aimed at supporting the augmentation and expansion of infrastructure required to connect the water resources, on a macro or sub regional scale (over vast distances), with internal bulk and reticulation systems. The fund excludes funding for macro water resource developments which requires special funding mechanisms. It must however be noted that there has to be strong linkages between the planning of the bulk water resource projects and regional bulk water services schemes wherever there exists an inter-dependency. Due to the complexity and extent of regional bulk infrastructure projects and the need for implementation readiness a specific component of the fund is pro-actively made available for planning and feasibility studies. This includes macro planning and policy development to deal with the longer-term needs and funding mechanisms for bulk infrastructure development, refurbishment as well as operation and maintenance.

These grants are allocated with specific conditions by NT and the relevant sector Departments are required to adhere to these conditions and further report on compliance to these set conditions.

Donor Funding

There are various other sources of funds for infrastructural services for municipalities such as donor funding, loans etc. but these tend to be comparatively small.

The net effect of the above in terms of infrastructure funding flows to municipalities is that direct conditional grants to municipalities (excluding equitable share allocations) amounts to R83.5 billion for the periods 2011/12 to 2013/14 an average of just over R27.8bn.

Funding requirements to address the sanitation needs

Based on the 2011 pricing structure, it is estimated that a total of **R50.306 billion** is required to the range of challenges affecting the delivery of basic sanitation services. This is broken down as follows:

- R13.66bn is needed to extend services to the 1.2 million households without sanitation services and
- To address the infrastructure expansion and upgrade as well as operations and maintenance requirements will require funding to the tune of R36.64bn.

The breakdown of funding requirements for capital infrastructure is indicated in the following table:

NATIONAL				
Priorities	Description	Households December 2011	Cost to Eradicate	Bulk Dependant
			(RM)	Y/N
0	Adequate: Formal	7,946,368	0	N
	Adequate: Informal Settlements	584,378	4,198	N
	Adequate: Shared Services	275,078	1,372	N
1	No Services	1,055,031	8,798	N
	No Services: Informal	324,433	4,866	N
2	Infrastructure Needs	2,735,486	14,584	N
	Infrastructure & O&M	3,079,224	10,269	Y
	Infrastructure, O&M & Resource Needs	3,246,908	5,736	Y
3	O&M Needs	343,738	392	N
4	Water Resource Needs	167,684	91	Y

Neglect of operation and maintenance is highlighted as a major challenge and unless adequately addressed, will continue to result in rapid deterioration of infrastructure and poor quality of services. The key financial instruments for funding operation and maintenance are the equitable share (which being an unconditional grant is often not allocated for the purposes proposed in the formula), municipal revenue from rates and tariffs (which in most category B and C municipalities is a very small proportion of the revenue), and from conditional and other grants.

The funding requirements are not a figment and nor are they miniscule. However there is a way out provided we approach the issue with imagination and courage. The total direct grant funding flows to local government amount to R90.8bn over the three year 2011/12 to 2013/14 MTEF period. This suggests that it is within the range of government to wipe out the water and sanitation backlogs over a three-year period. Of course there is trade off as this would imply that the other basic services (refuse removal and electricity) take a back seat or the infrastructure spend in these areas occurs at a reduced rate.

In the opening to Part 1 of this report we quoted the late Professor Kader Asmal, the then Minister of Water Affairs and Forestry saying in 1994:

...An equally hard reality is that not everyone's needs can be met at once. There are limits to our resources, both now and in the future."

While resource limits is a valid proposition, it is our contention that given the existing funding envelope it is within the means of the state to meet everyone's needs with respect to water and sanitation.

However, this funding prioritisation will have to go hand in hand with a nation-wide effort to put in place appropriate organisational infrastructure to manage the implementation of the programme. The rough outline of such an intervention could be as follows:

- Setting up of a water and sanitation service delivery management structure comprising DCoG, National Treasury, DWA, Presidency and Human Settlements supported by the Municipal Infrastructure Support Agency within DCoG

- The above structure to work with provinces and municipalities to undertake the following:
 - Establish norms and standards for basic water and sanitation services;
 - Determine and quantify the backlogs per municipality;
 - Map the location and condition of existing infrastructure;
 - Develop a portfolio of projects (investment plan) for new infrastructure and upgrading, refurbishment or extension of existing infrastructure as well as a maintenance and operation plan for existing and new infrastructure;
 - Prepare a financial plan for funding the projects and an implementation plan;
 - Sequence and schedule implementation and commission projects
 - Build the capacity of the municipality to plan, operate and maintain infrastructure;
 - Monitor progress and address blockages

Performance monitoring and evaluation

Monitoring and evaluation takes place in a number of different ways. All pieces of government legislation starting from the Public Finance Management Act, to the Municipal Finance Management Act (MFMA) and the Division of Revenue Act (DORA), all prescribe mandatory monitoring and evaluation. In respect of sanitation service delivery specifically, monitoring and evaluation requirements is detailed in the following policies, regulations and legislation:

- White Paper on Sanitation 2001;
- 2004 Final Draft Sanitation Paper;
- Water Services Act;
- Municipal Finance Management Act;
- The Division of Revenue Act; and
- Human Settlements programmes

Some pieces of legislation only require the monitoring of financial information while the Division of Revenue Act specifies reporting on non-financial information as well.

A monitoring system can however only report on the information needs specified to be gathered or tracked, thus the “what needs to be monitored?” poses a very important question. Historically government has tended to predominantly only monitor financial spending and other quantitative outputs, which generally disregard the qualitative, outcome measures. Questions have never been asked to ascertain simultaneously what services have been completed and to what service standard (quality). This does not necessarily point to a monitoring failure, but rather points to gaps in the monitoring system.

A significant number of studies have found that the delivery of sanitation services in South Africa leaves much to be desired, and in many cases the quality of the infrastructure has deteriorated significantly within a short period after delivery. As indicated earlier in this report, the 2005 nation-wide sanitation sustainability audit found that 28% of toilets constructed as per government’s service delivery programme could fail in the short to medium term. Cursory reports from the current national sanitation audit indicate that this figure could be higher in the 2011/2012 audit.

The 2007 DWA commissioned “spot-check” conducted by the CSIR, also showed that of the 2 410 projects assessed, only 41% had actually been completed.

Furthermore, it can be concluded that the inability of the current monitoring systems to flag the issues which prompted the SAHRC sanitation investigation, is indicative of inadequate in-project quality assurance and monitoring.

The lack of any acceptable and well defined set of minimum standards for sanitation services is a contributing factor that needs to be addressed. In some policy guidelines (Emergency Housing Programme and Upgrading of Informal Settlement Programme), communal toilet/ablution facilities are acceptable and in other (2002 National sanitation policy) it is not recommended. Some consistency is needed. There is also a need for the determination of a minimum standard for a “toilet facility”.

Roles and responsibilities of national government

The generic roles and responsibilities of national government are to establish legislation, policies, norms and standards; to co-ordinate and monitor national programmes; to provide support to other spheres of government; to regulate service provision; to intervene where there is a lack of capacity; and to provide advocacy and guidance.

Institutional roles, responsibilities and challenges

In terms of the institutional roles and responsibilities for sanitation service provision, the constitution places the direct responsibility at local government level. This was then transferred to authorised local government institutions (Water Services Authorities), which are either at district municipality level or at local municipality level, while all metros are also authorised.

From a national and provincial perspective, the responsibility for capital projects for the poor rested initially within the Department of Water Affairs and Forestry (from 1994 to 2001). However in 2001 the funding and M&E function for capital projects was moved to the Department of Provincial and Local Government (now DCoG) via the MIG funding instrument. The DWA still maintained a policy and regulatory function, and also established a local government support programme aimed at identifying constraints and providing support where feasible. In addition the DWAF implemented a clinic and schools sanitation programme to provide sanitation facilities at these institutions where none have been constructed in the past.

In 2009 the National Sanitation Programme Unit (NSPU) was moved from DWA to the Department of Human Settlements, but with DWA retaining certain responsibilities in the sector including regulation, information management, high level planning and management of the Bulk Infrastructure Grant. At provincial level responsibility for sanitation rests with the Department of Human Settlements, but with certain links to the Departments of Health, Water Affairs, Education and Public Works.

This fragmentation and the lack of a single national body taking the lead in the sector places particular challenges on the coordination, effective regulation, maintenance of norms and standards, and on monitoring the performance of sanitation service delivery.

PART 3: Overall findings and recommendations

This section of the report gives a summary of the conclusions drawn from the findings of the study and sets out the recommendations emanating from the study.

The SAHRC investigations into the Makhaza and Moqhaka cases found that:

- there is a lack of integrated and coordinated planning across the three spheres of government;
- there is a lack of uniform norms regarding service delivery standards;
- there is a lack of capacity to plan for a holistic basket of integrated services at municipal and provincial level;
- there is a lack of community participation in the provision of integrated services;
- there is inappropriate and inadequate funding for service provision and for O&M of the services (including inadequate financial management and governance); and
- there is a need to significantly expand and improve the monitoring and evaluation of KPIs for service delivery.

These findings have been verified by the study on the quality of sanitation services in South Africa. Both this study and the SAHRC investigation also confirm some of the challenges and issues negatively impacting on sustainability identified through the National Sanitation Audit of 2005, - these include:

Governance

- The need for consolidated norms and standards.
- Need for sanitation strategies to give better guidance on implementation of higher levels of service.

Institutional

- Inadequate technical capacity at municipal level.
- Inadequate O&M capacity at local level.
- Lack of M&E systems.
- Lack of O&M guidelines for on-site sanitation.

Social

- Low community acceptance of toilet quality.
- Inadequate involvement of communities in the planning and implementation.
- Low affordability of households to pay for maintenance.
- Inadequate health awareness and user education.

Health

- Health and hygiene education not provided in many cases.

Technical

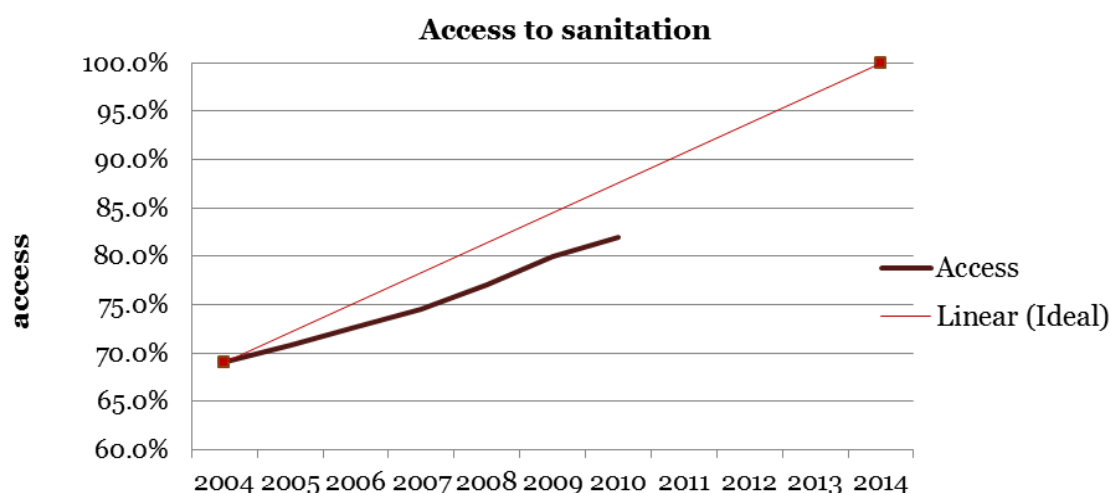
- Quality of facilities is not standardised.
- Quality of some facilities does not comply with the definition of an acceptable basic sanitation facility.
- Inadequate and un-coordinated M&E and regulation functions with sector departments.
- Effective service level choice and affordability is lacking.

O&M

- Inadequate maintenance of infrastructure (need of proper O&M plan).
- Few municipalities have a maintenance programme for on-site dry sanitation systems.
- Small municipalities do not effectively operate and maintain their waterborne sanitation schemes.

As a result of these and other challenges this study concludes as follows:

- As can be seen in the graph below the goal of universal access to sanitation by 2014 is unlikely to be achieved given the size of the backlog and current rate of delivery (currently delivering to < 300,000 households per annum).



- The status of bulk sanitation infrastructure is deteriorating due to a lack of adequate maintenance, refurbishment and upgrading (Green Drop scores average 45% nationally and only 40 of the 826 achieved Green Drop Status).
- Municipalities are not able to spend their budget allocations (they had spent approximately 30% of their 2011/2012 capital budget from National Treasury as at 31 December 2011).
- There has been an on-going growth of informal settlements which, despite the construction of housing units for the poor, continue to grow.
- About 1.4 million households don't have access to a sanitation service
- More than 3.4 million have a service, but due to a lack of operations and maintenance this is either not functional or has collapsed.

Although sanitation infrastructure has been provided to many communities, these are not necessarily still in working order and households may in some cases revert back to using systems in place prior to the provision of the municipal sanitation facilities (i.e. the bucket system).

Typical issues affecting the efficient provision of sanitation services at the project level include:

- Contractors not following designs and implementation plans (e.g. building unimproved pit toilets or building VIP toilets with shallow pits).
- Municipalities providing flush toilets where there are inadequate water supplies for flushing.
- Waterborne sanitation schemes where pump stations and the WWTW are not properly maintained resulting in severe pollution of the environment.
- Bulk infrastructure under capacity and unable to cope with the effluent load.
- Lack of water demand management resulting in very high effluent flows far beyond design criteria for particular settlements (and hence hydraulic overloading of bulk infrastructure).
- Pit toilets that have filled up but are not emptied or the top structure is/or can not be moved to a new pit.

- Lack of health and user education resulting in facilities not being properly cared for, and with minimum health benefits (e.g. absence of proper linked hygiene (such as hand washing) facilities).

Key factors affecting the poor progress in the provision of sanitation services

In summary, the key factors affecting inadequate sanitation service provision include:

- Fragmentation of responsibilities for sanitation at national, provincial and local levels.
- No single national authority taking responsibility for performance monitoring of municipal service provision, including monitoring of construction of infrastructure.
- Lack of institutional coordination and alignment.
- Lack of coordinated oversight.
- Lack of regulatory compliance monitoring.
- Unclear performance standards.
- Lack of technical capacity at local government level.
- Poor planning (e.g. new sewer networks connected without increasing capacity of bulk infrastructure).
- High turn-over of staff (lack of focus on training and retention of staff).
- Ineffective support programmes to municipalities (e.g. from provincial and national government)
- Lack of adequate financial planning.
- Inadequate budget allocations for maintenance by municipalities (e.g. from equitable share).
- Inappropriate use of allocated funds (e.g. funds channelled to roads at end of financial year to facilitate quick expenditure).
- Low levels of revenue collection.

To address these constraints effectively will require a well-coordinated national programme that is closely coordinated and interlinked with other programmes aimed at supporting municipalities to provide effective municipal services.

Recommendations

The study found that:

- There is a need for improved service delivery planning at national, provincial and local levels, including the development of sanitation master plans, capital and finance plans as part of the IDP process and aligned to municipal Comprehensive Infrastructure Plans (CIP).
- There is a need to boost capacity at local government level in particular, especially in the fields of technical and financial management, through an interim intervention and through longer term capacity building initiatives.
- There is a need to improve the effective utilisation and management of funding allocated for sanitation service delivery and to ensure adequate funding of O&M.
- The challenge of institutional fragmentation needs to be addressed as a matter of urgency, including clarification of roles and responsibilities; regulatory & M&E activities.
- Performance monitoring and reporting needs to be significantly improved through a well-coordinated M&E framework with KPIs relevant to ensuring better assessment and control of service delivery.
- Greater accountability needs to be introduced for bureaucratic miscalculations and neglect particularly with respect to the lack of operations and maintenance of water supply and treatment works.

It is therefore recommended that the sanitation again be consolidated under a single national department with the requisite knowledge and skills to understand and address the complexities of sanitation service delivery beyond the scope of simply providing a facility but rather in the context of

the interrelationship between water and sanitation. Considering that the current planning and technical capacity and knowledge base still resides within DWA, it is recommended that the unit be returned to DWA with DHS returning to its core competency of facilitating human settlement development (which includes the delivery of housing equipped with sanitation facilities).

Under the consolidated function it is then recommended that the following issues be addressed and resolved as a matter of urgency:

- Legislative amendments are effected to provide for improved oversight, planning, financial allocations and accountability.
- Coordination of support programmes to municipalities is improved.
- Upgrading of municipal staff skills, facilitated through the Municipal Infrastructure Support Agency (MISA).

Support with basic services delivery in municipalities where backlogs are most acute and capacity is weak is provided through a service delivery management structure led by DWA and consisting of departments/entities responsible for water and sanitation service delivery and supported by MISA. This structure should prepare a pipeline of projects to address the capital and maintenance backlogs per municipality within a clear timeframe and coordinate the necessary funding to implement the projects.

In this regard the process of generating sanitation master plans that was undertaken with a limited number of municipalities within the “Operation Gijima” programme of DWA during 2008-2011 provides useful evidence of the benefits of this approach. The master plans have been well received where they were compiled; however no follow-up has occurred in terms of assessing their full adoption and implementation in the planning of sanitation service provision. However it may be stated that Vhembe made significant changes in the sanitation delivery programme and improved the rate of service delivery to the extent that they changed from being the DM with the largest backlog in the country, to one of the municipalities with the highest rate of delivery. Although it faces a number of infrastructure challenges, Vhembe has virtually wiped out the number of households that were without a sanitation service.

Given this potential it is further recommended that the proposed service delivery management structure under the leadership of DWA also undertake the following:

- Current norms and standards be evaluated and consistency across government legislation, policies, projects and programmes ensured.
- An action plan to ensure on-going community participation be developed and participation (through a series of guidelines and minute templates) be formalised
- Government monitoring mechanisms allowing for the development of both quantitative and qualitative KPIs that address financial, non-financial, quantitative and qualitative aspects of service delivery be improved.
- Accountability be strengthened through the establishment of an *Inspectorate* to audit and test the validity of spending reported, as well as the quality of services provided by departments/metros/municipalities is also recommended.

Conclusion

The problem of inadequate sanitation is both a human rights and development issue. Failure to provide an adequate and functional sanitation has dire negative impacts on the health and social wellbeing of communities, the environment and the economy of the country.

Poor planning across government from a strategic level right down to the micro level as well as inadequate resources for both the capital costs as well as on-going maintenance costs are some of the root causes of failure in regards to sanitation service delivery. The critical finding of this report can be summarised as follows:

- 1.4 million households have no access to a sanitation service
- 3.8 million households who have been given access the access is not adequate in terms of being at risk of service failure and/or are experiencing service delivery breakdowns

From this perspective one can conclude that access to sanitation is actually regressing and the claims that 82% of households have access to sanitation does not provide a true picture of reality. Among the key factors for this state of affairs, issues of institutional fragmentation and neglect of effective operation and maintenance are paramount. Other factors include:

- Financial and human resource constraints
- Inadequate attention to social & health issues
- Negative environmental impacts
- Inadequate governance and oversight of delivery programmes
- Absence of accountability
- Inappropriate technology choice

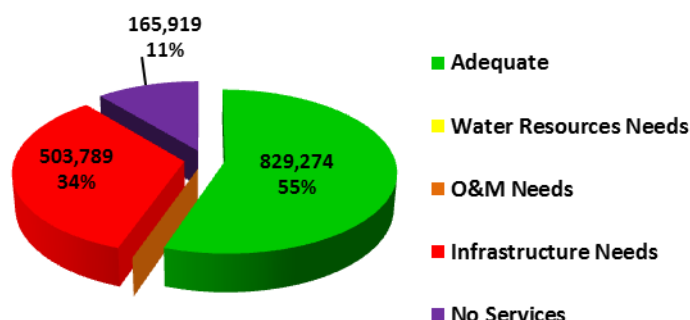
The re-incorporation of the sanitation function and the National Sanitation Programme Unit into DWA is viewed as a vital first step to put the sanitation sector on track to respond to the service delivery challenges outlined.

Regarding the financial constraints bold and creative decisions may be needed particularly in the context of a tough fiscal climate. The report estimates that a total of **R50.306 billion** is required to provide sanitation services to those who currently have no services (R13.66bn) and to refurbish and upgrade existing infrastructure (R36.64bn) for those who have a service but face service failure. The total amount of direct conditional grants to municipalities amounted to **R26.7 billion** for the 2011/12 financial year. Of this the allocation for sanitation amount to approximately **R3.1bn** through the Municipal Infrastructure Grant (MIG) for non-metropolitan municipalities as well as a portion of the Urban Settlements Development Grant for metropolitan municipalities. This however excludes funding required to provide bulk infrastructure needs for the provision of new services, provided for through the Regional Bulk Infrastructure grant, worth R1.7 billion in 2011/12. Taking a 3 year view, the total direct conditional grants to municipalities is in the order of R90.8 billion. If government were to direct a substantial component of this to water and sanitation for the next three years, it is conceivable that with the right institutional mechanisms (the proposed service delivery management structure proposed in this document) to drive implementation the eradication of the water and sanitation backlog by 2014 could be within our grasp. We do however need to consider the potential consequences of such a decision and weigh it against the urgency of addressing backlogs in respect of access to, electricity, roads and refuse.

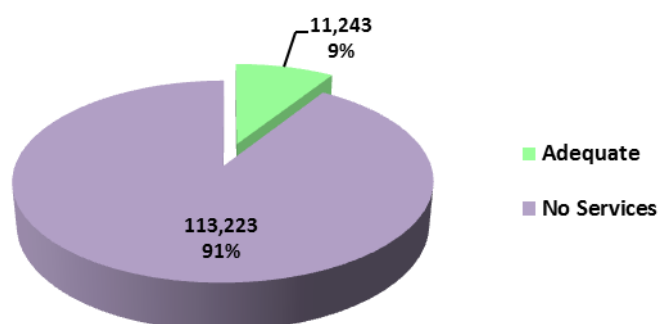
ANNEXURES: Provincial perspectives

Eastern Cape Province: Summary of sanitation needs

% Sanitation Needs: Formal (HH 2011)

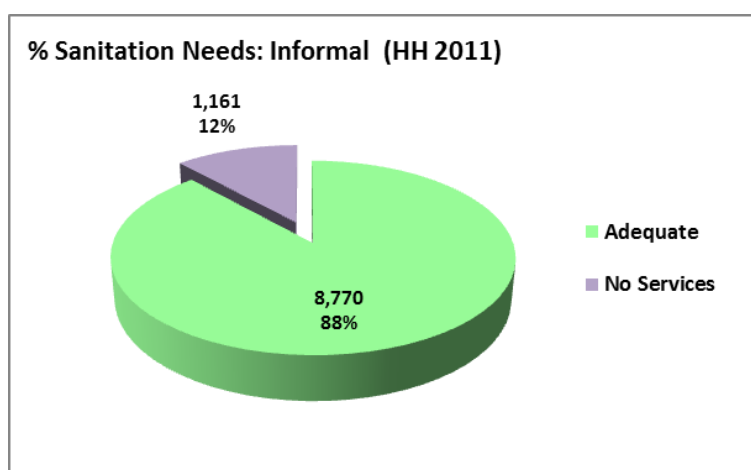
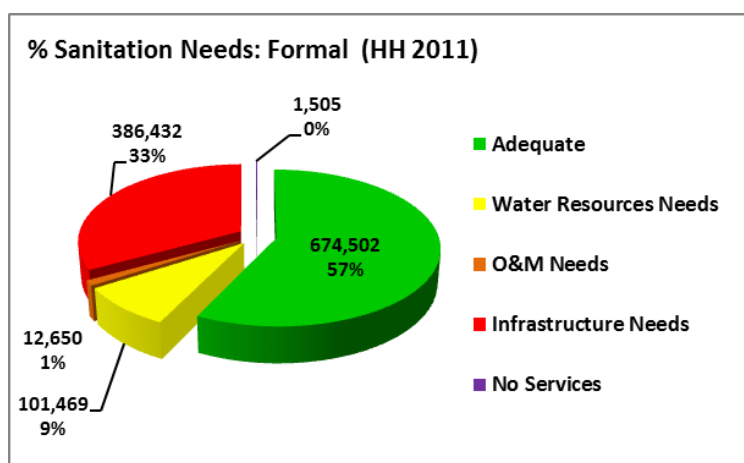


% Sanitation Needs: Informal (HH 2011)



WSA	FORMAL					INFORMAL	
	Adequate	Water Resources Needs	O&M Needs	Infrastructure Needs	No Services	Adequate	No Services
Alfred Nzo	65 437	0	0	104 951	131	3	4 000
Amathole	70 405	0	0	7 618	138 307	1 580	3 834
Baviaans	3 055	0	0	1 565	0	0	0
Blue Crane Route	7 349	0	0	1 851	0	0	0
Buffalo City	62 968	0	0	58 846	23 333	1 072	84 757
Camdeboo	12 833	0	0	67	0	0	0
Chris Hani	67 338	0	0	124 864	22	0	0
Ikwezi	1 155	0	0	1 153	0	0	0
Joe Gqabi	41 424	0	0	43 340	3 895	0	2 681
Kouga	22 111	0	0	37	0	0	0
Kou-Kamma	10 532	0	0	750	0	0	0
Makana	31 795	0	0	3 235	0	0	0
Ndlambe	14 832	0	0	0	0	0	0
Nelson Mandela Bay Metropolitan	287 183	0	0	0	0	7 371	0
O R Tambo	116 980	0	0	154 101	231	1 217	17 951
Sunday's River Valley	13 877	0	0	1 411	0	0	0
	829 274	0	0	503 789	165 919	11 243	113 223

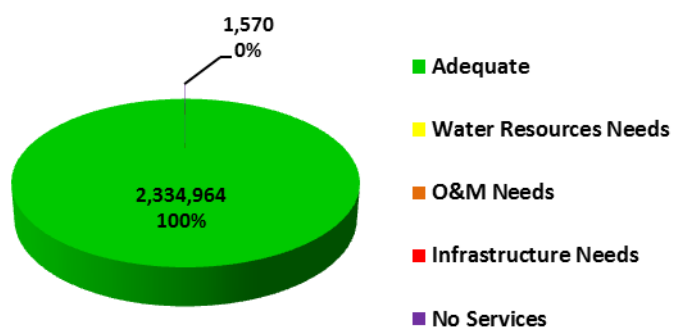
Free State Province: Summary of sanitation needs



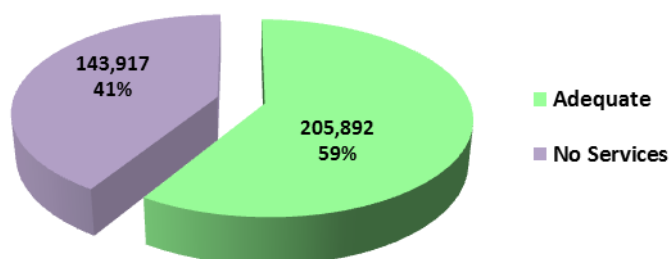
WSA	FORMAL					INFORMAL	
	Adequate	Water Resources Needs	O&M Needs	Infrastructure Needs	No Services	Adequate	No Services
Dihlabeng Local Municipality	24 658	6 253	0	26 646	0	0	689
Kopanong Local Municipality	14 309	0	0	14 158	0	0	0
Letsemeng Local Municipality	12 151	3 673	0	6 625	0	0	0
Mafube Local Municipality	14 669	9 066	0	17 573	0	0	0
Maluti a Phofung Local Municipality	82 172	14 348	9 890	60 653	1 505	0	0
Mangaung Metropolitan Municipality	190 089	0	0	55 372	0	7 678	0
Mantsopa Local Municipality	13 332	0	0	8 265	0	0	0
Masilonyana Local Municipality	13 883	6 995	0	16 702	0	0	308
Matjhabeng Local Municipality	97 012	0	0	49 112	0	0	0
Metsimaholo Local Municipality	36 722	8 625	0	15 508	0	0	0
Mohokare Local Municipality	10 020	6 150	0	5 343	0	0	0
Moqhaka Local Municipality	36 392	2 112	2 760	14 939	0	0	0
Nala Local Municipality	25 194	0	0	17 627	0	0	0
Naledi Local Municipality	7 326	607	0	6 333	0	0	0
Ngwathe Local Municipality	27 275	11 947	0	23 019	0	421	164
Nketoana Local Municipality	14 701	0	0	5 946	0	0	0
Phumelela Local Municipality	8 496	0	0	8 022	0	408	0
Setsotho Local Municipality	27 063	18 701	0	21 362	0	0	0
Tokologo Local Municipality	5 604	6 943	0	7 986	0	229	0
Tswelopele Local Municipality	13 434	6 049	0	5 241	0	34	0
	674 502	101 469	12 650	386 432	1 505	8 770	1 161

Gauteng Province: Summary of sanitation needs

% Sanitation Needs: Formal (HH 2011)

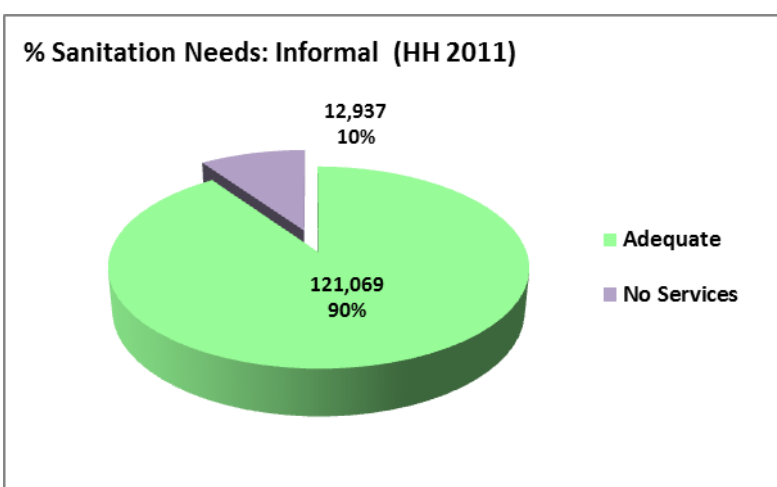
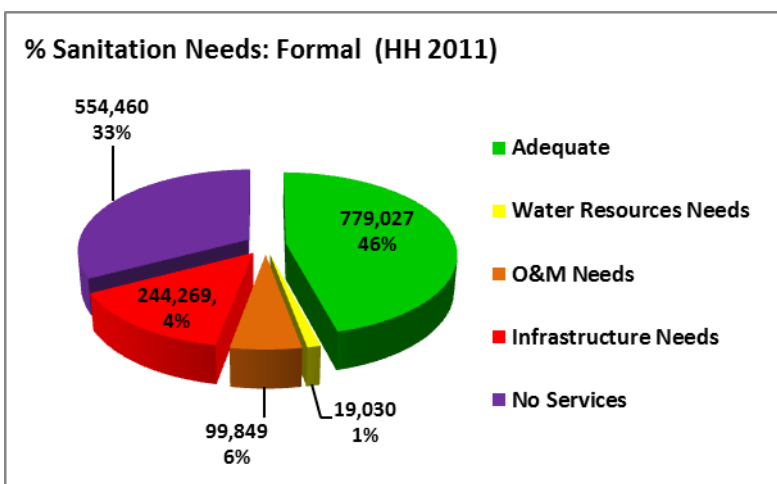


% Sanitation Needs: Informal (HH 2011)



WSA	FORMAL					INFORMAL	
	Adequate	Water Resources Needs	O&M Needs	Infrastructure Needs	No Services	Adequate	No Services
City of Johannesburg	641 062	0	0	0	0	111 874	58 306
City of Tshwane	710 518	0	0	0	0	905	5 099
Ekurhuleni	563 604	0	0	0	0	90 797	61 638
Emfuleni	220 200	0	0	0	1 232	0	1 037
Lesedi	29 382	0	0	0	0	0	163
Merafong City	42 910	0	0	0	0	38	151
Midvaal	22 807	0	0	0	338	68	5 274
Mogale City	56 101	0	0	0	0	2 166	7 874
Randfontein	24 928	0	0	0	0	37	3 375
Westonaria	23 452	0	0	0	0	7	1 000
	2 334 964	0	0	0	1 570	205 892	143 917

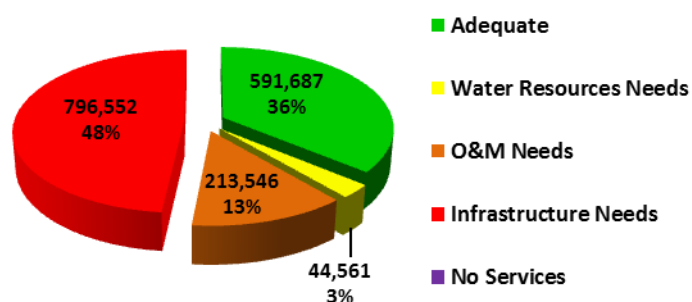
Kwa-Zulu Natal Province: Summary of sanitation needs



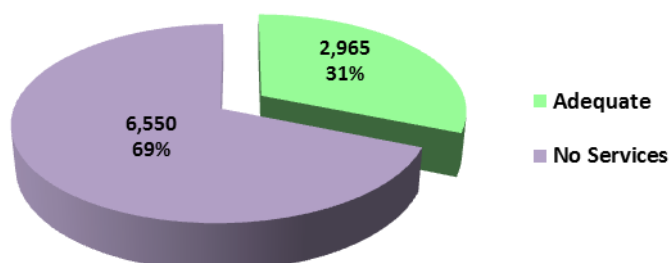
WSA	FORMAL					INFORMAL	
	Adequate	Water Resources Needs	O&M Needs	Infrastructure Needs	No Services	Adequate	No Services
Amajuba	3 421	0	2 666	6 954	9 126	754	50
eThekwini	457 903	0	21 086	54 814	11 044	5 222	11 931
iLembe	29 236	2 133	1 610	2 569	64 472	12 331	0
Newcastle	16 052	0	13 551	35 006	6 057	519	734
Sisonke	14 667	635	4 324	10 717	78 919	0	0
The Msunduzi	66 969	0	1 841	4 785	28 559	3 529	0
Ugu	64 397	4 741	20 901	50 246	30 571	289	0
UMgungundlovu	16 036	1 107	4 267	10 197	38 408	3 765	194
uMhlathuze	23 652	0	50	130	400	20 804	0
Umkhanyakude	5 259	5 188	9 777	20 970	53 902	8 929	0
Umkhanyathi	17 304	0	4 670	12 038	56 767	415	28
Uthukela	46 480	0	7 525	19 179	68 693	3 040	0
Uthungulu	4 730	5 096	3 416	5 880	72 407	175	0
Zululand	12 921	130	4 165	10 784	35 135	61 297	0
	779 027	19 030	99 849	244 269	554 460	121 069	12 937

Limpopo Province: Summary of sanitation needs

% Sanitation Needs: Formal (HH 2011)



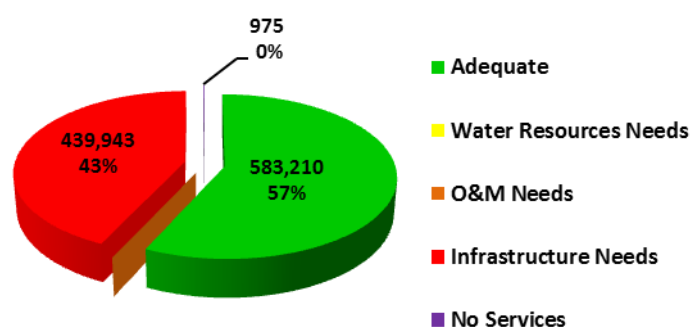
% Sanitation Needs: Informal (HH 2011)



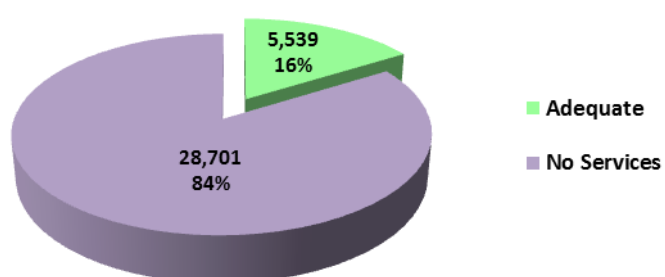
WSA	FORMAL					INFORMAL	
	Adequate	Water Resources Needs	O&M Needs	Infrastructure Needs	No Services	Adequate	No Services
Bela-Bela	12 919	0	1 121	378	0	0	0
Capricorn	68 467	4 853	27 254	95 387	0	0	0
Greater Sekhukhune	110 661	32 500	38 180	182 370	0	137	549
Lephalale	17 312	0	2 521	10 150	0	147	147
Modimolle	11 926	0	1 467	5 918	0	360	929
Mogalakwena	30 012	0	8 090	50 324	0	0	0
Mookgopong	6 764	0	987	2 122	0	251	587
Mopani	165 478	3 162	55 221	136 177	0	0	0
Polokwane	58 647	4 025	43 942	89 970	0	486	1 948
Thabazimbi	15 111	0	1 306	2 292	0	1 579	2 369
Vhembe	94 390	21	33 457	221 464	0	5	21
	591 687	44 561	213 546	796 552	0	2 965	6 550

Mpumalanga Province: Summary of sanitation needs

% Sanitation Needs: Formal (HH 2011)

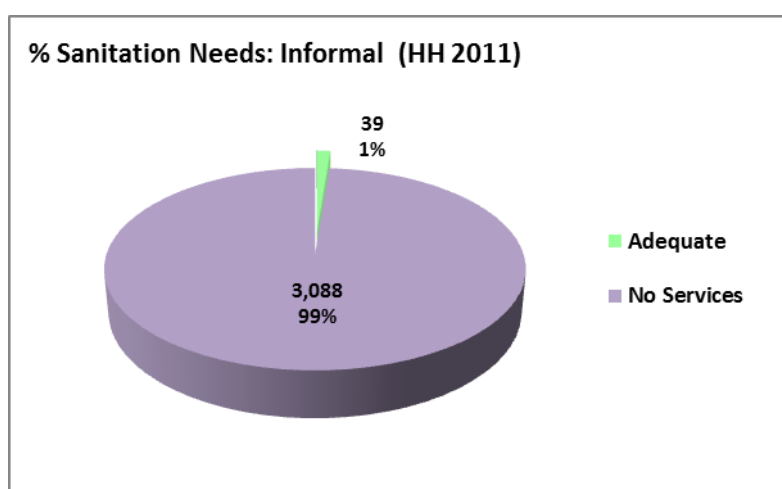
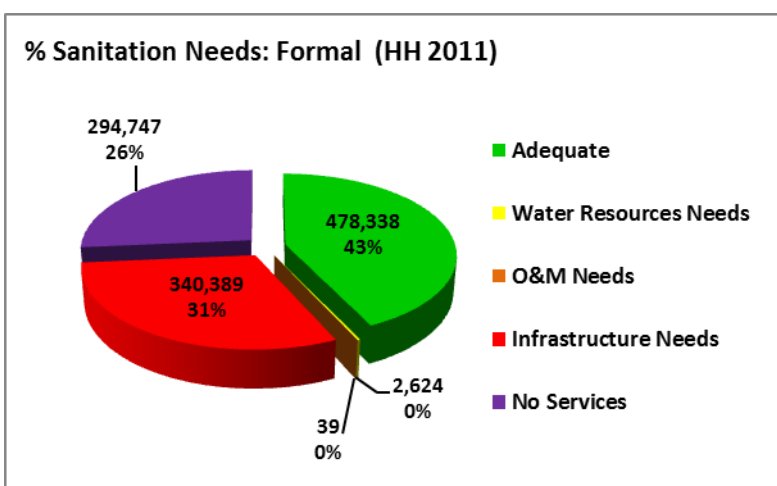


% Sanitation Needs: Informal (HH 2011)



WSA	FORMAL					INFORMAL	
	Adequate	Water Resources Needs	O&M Needs	Infrastructure Needs	No Services	Adequate	No Services
Bushbuckridge	23 867	0	0	117 366	0	2 606	0
Chief Albert Luthuli	35 560	0	0	15 147	938	0	300
Dipaleseng	9 747	0	0	855	0	0	1 080
Dr JS Moroka	20 779	0	0	38 009	37	0	0
Emakhazeni	12 839	0	0	1 029	0	0	0
Emalahleni	53 459	0	0	17 993	0	0	18 900
Govan Mbeki	88 534	0	0	3 499	0	0	0
Lekwa	29 718	0	0	2 523	0	0	0
Mbombela	74 617	0	0	99 855	0	402	952
Mkhondo	21 834	0	0	9 234	0	0	2 704
Msukaligwa	37 390	0	0	2 224	0	0	0
Nkomazi	45 744	0	0	55 192	0	50	0
Pixley ka Seme	20 394	0	0	2 500	0	0	0
Steve Tshwete	35 176	0	0	5 157	0	600	0
Thaba Chweu	28 658	0	0	3 061	0	681	0
Thembisile Hani	12 124	0	0	61 776	0	0	4 765
Umjindi	19 277	0	0	4 478	0	0	0
Victor Khanye	13 493	0	0	45	0	1 200	0
	583 210	0	0	439 943	975	5 539	28 701

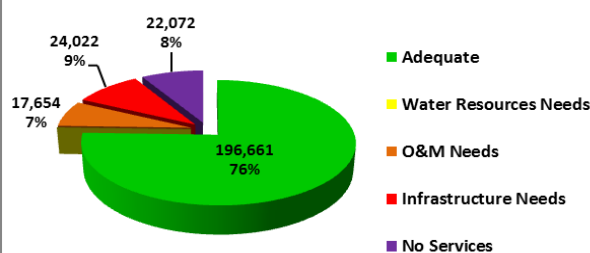
North West Province: Summary of sanitation needs



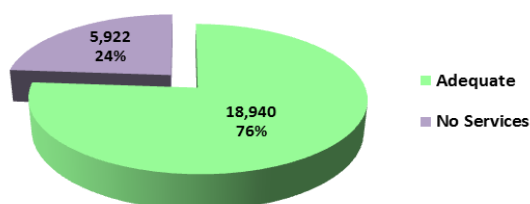
WSA	FORMAL					INFORMAL	
	Adequate	Water Resources Needs	O&M Needs	Infrastructure Needs	No Services	Adequate	No Services
City of Matlosana	87 147	0	0	14 886	77	0	0
Dr Ruth Segomotsi Mompati	54 029	2 037	0	57 442	41 862	0	0
Kgetlengrivier	8 026	0	0	14 324	1 326	0	0
Madibeng	54 278	0	0	50 692	37 319	0	827
Maquassi Hills	17 265	0	0	13 391	268	0	0
Moretele	46 360	587	39	19 363	10 077	39	0
Moses Kotane	11 943	0	0	13 732	48 987	0	0
Ngaka Modiri Molema	75 256	0	0	96 463	114 432	0	0
Rustenburg	82 156	0	0	2 274	38 947	0	2 261
Tlokwe City Council	33 693	0	0	42 071	370	0	0
Ventersdorp	8 185	0	0	15 751	1 082	0	0
	478 338	2 624	39	340 389	294 747	39	3 088

Northern Cape Province: Summary of sanitation needs

% Sanitation Needs: Formal (HH 2011)

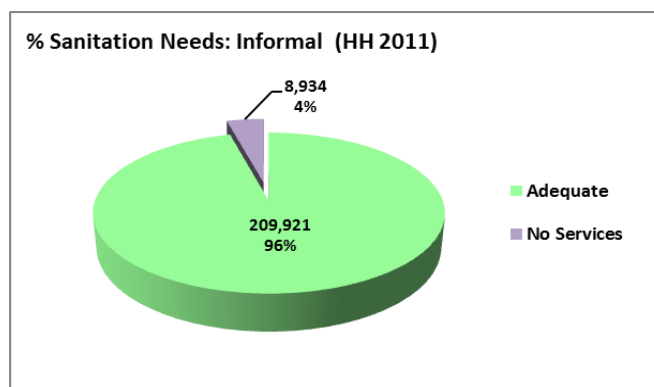
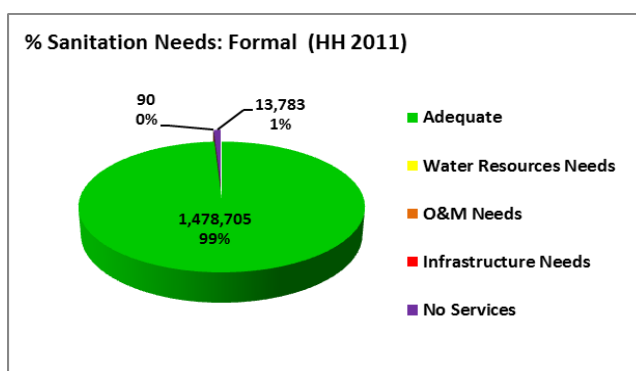


% Sanitation Needs: Informal (HH 2011)



WSA	FORMAL					INFORMAL	
	Adequate	Water Resources Needs	O&M Needs	Infrastructure Needs	No Services	Adequate	No Services
!Kheis	1 721	0	28	619	0	524	349
//Khara Hais	15 334	0	686	3 180	0	0	0
Dikgatlong	7 332	0	107	145	0	3 427	1 697
Emthanjeni	6 980	0	0	667	0	123	0
Gamagara	10 756	0	0	415	0	0	0
Ga-Segonyana	10 796	0	3 917	2 470	9 874	100	870
Hantam	4 242	0	618	89	0	40	0
Joe Morolong	11 759	0	5 775	4 884	12 196	0	0
Kai !Garib	6 779	0	397	2 266	0	1 759	306
Kamiesberg	2 787	0	290	1 354	0	1	0
Kareeberg	2 040	0	298	0	0	59	67
Karoo Hoogland	2 185	0	0	979	0	89	0
Kgatelopele	3 240	0	0	21	0	2 126	0
Khfi-Ma	2 679	0	436	196	0	20	14
Magareng	5 393	0	0	5	0	54	960
Mier	1 279	0	391	245	0	67	0
Nama Khoi	11 101	0	1 559	2 276	0	1 934	0
Phokwane	13 770	0	222	345	0	1 800	674
Renosterberg	2 440	0	0	63	0	638	0
Richtersveld	2 702	0	300	246	0	415	0
Siyancuma	5 345	0	0	473	0	986	635
Siyathemba	3 821	0	660	397	0	129	0
Sol Plaatje	46 114	0	620	2 101	0	3 470	35
Thembelihle	2 287	0	217	0	0	117	10
Tsantsabane	5 330	0	394	200	0	220	275
Ubuntu	2 774	0	0	380	0	441	0
Umsobomvu	5 675	0	739	6	2	401	30
	196 661	0	17 654	24 022	22 072	18 940	5 922

Western Cape Province: Summary of sanitation needs



WSA	FORMAL					INFORMAL	
	Adequate	Water Resources Needs	O&M Needs	Infrastructure Needs	No Services	Adequate	No Services
Beaufort West	18 208	0	0	0	0	0	6
Bergrivier	18 022	0	0	0	1 077	0	85
Bitou	16 528	0	0	0	55	2 157	0
Breedee Valley	33 408	0	0	0	1 226	56	3 449
Cape Agulhas	10 459	0	0	0	275	598	476
Cederberg	20 849	0	0	0	1 501	0	49
City of Cape Town	914 087	0	0	0	0	185 228	0
Drakenstein	66 022	0	0	0	890	3 839	0
George	39 720	0	0	0	74	669	2 643
Hessequa	18 535	0	0	0	377	165	0
Kannaland	7 593	0	0	0	219	120	0
Knysna	20 174	0	0	0	130	3 115	0
Laingsburg	1 877	0	0	0	200	0	0
Langeberg	27 654	0	0	0	1 293	0	0
Matzikama	19 236	0	0	0	2 193	647	0
Mossel Bay	32 372	0	0	90	166	0	2 119
Oudtshoorn	21 883	0	0	0	154	1 830	20
Overstrand	28 966	0	0	0	351	4 505	0
Prince Albert	3 685	0	0	0	219	0	0
Saldanha Bay	28 100	0	0	0	0	0	0
Stellenbosch	35 973	0	0	0	400	172	75
Swartland	31 656	0	0	0	540	0	0
Swellendam	9 375	0	0	0	601	505	12
Theewaterskloof	25 563	0	0	0	806	4 689	0
Witzenberg	28 760	0	0	0	1 036	1 626	0
	1 478 705	0	0	90	13 783	209 921	8 934

List of acronyms

CMIP	Consolidated Municipal Infrastructure Programme
CIP	Comprehensive Infrastructure Plans
CSIR	Council for Scientific and Industrial Research
CWSS	Community Water Supply and Sanitation
DCoG	Department of Cooperative Governance
DHS	Department of Human Settlements
DPLG	Department of Provincial and Local Government
DPME	Department of Performance Monitoring and Evaluation
DWAF	Department of Water Affairs and Forestry
ES	Equitable Share
FBS	Free Basic Sanitation
FBW	Free Basic Water
IDP	Integrated Development Plan
MDG	Millennium Development Goal
M&E	Monitoring and Evaluation
MIG	Municipal Infrastructure Grant
MISA	Municipal Infrastructure Support Agency
NSPU	National Sanitation Programme Unit
NT	National Treasury
O&M	Operation and Maintenance
RDP	Reconstruction and Development Programme
RBIG	Regional Bulk Infrastructure Grant
SAHRC	South African Human Rights Commission
SFWS	Strategic Framework for Water Services (2003)
STATS SA	Statistics South Africa
USDG	Urban Settlements Development Grant
VIP	Ventilated Improved Pit Latrine
WHO	World Health Organisation
WSA	Water Service Authorities
WSDP	Water Services Development Plan
WSNIS	Water Services National Information system
WWTW	Waste Water Treatment Works

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