

# Case Study for the 10 years of the Mbombela (Nelspruit) Water and Sanitation Concession South Africa

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## Executive Summary

Local government in South Africa is responsible for providing every resident with basic water and sanitation services. In 1999 the Nelspruit Transitional Local Council signed a 30-year concession agreement with the Greater Nelspruit Utility Company (GNUC) to meet this obligation. It expected the concession arrangement to inject the necessary capital and management resources into the water and sanitation operations, so it could more quickly and effectively meet its service delivery obligations.

In 2000, the Mbombela Local Municipality replaced the Nelspruit Transitional Local Council with boundaries that more than doubled the population of the municipality. However, the concession area boundaries did not change – the Municipality still manages the water and sanitation services in the areas outside the concession area.

This case study reviews the Mbombela (Nelspruit) concession after 10 years of operation and assesses whether it has achieved its original objectives and identifies lessons learnt.

### **The concession is a success**

Ten years on, the water and sanitation concession in Mbombela Municipality has been successful in some of the most important areas:

1. A strong water and sanitation operator – Silulumanzi (a name change from the original GNUC) - has good control of the management and operation of the systems.
2. Virtually every household now has access to water – in 1999 it was estimated that 45% of the then 45,000 households in the concession area did not have access to any water supply. Currently, 94% of the 74,000 households have access to the formal water system and 88% receive water on a daily basis, though far too many households still do not have a 24-hour supply as explained under the remaining challenges, below.
3. Water and effluent quality is excellent in the systems operated by the concessionaire. These systems all achieved DWEA's Blue and Green Drop awards – only 22 of the over 400 water systems in South Africa achieved the Blue drop status for water quality.
4. There has been good investment in extending and upgrading existing infrastructure and the concessionaire has a strong maintenance programme. Consequently, infrastructure operated by the concessionaire is in good condition.
5. The concessionaire has spent virtually 100% of the capital grant funding allocated to it by the Municipality, for extending and upgrading infrastructure in formerly underserved areas.
6. The concessionaire has in place very good employee training and development programmes. Staff is well qualified and competent.
7. Tariffs levels in the concession area are similar or lower than for comparable municipalities.

## Remaining challenges

24-hour Supply. 50,000 households, 68%, still do not have access to a 24-hour supply of water – a key contract expectation and a major reason for undertaking this concession. There are two primary reasons for this:

1. Under-capacity of the Kanyamazane Water Treatment Plant to be able to supply the actual demand levels
2. Illegal connections on supply lines that prevent reservoirs from being filled.

The concessionaire has developed several innovative programmes within the last year or so that, if fully implemented in the underserved areas, should yield a 24-hour water supply to virtually all households well before 2014 (except those areas where the Kanyamazane water plant capacity is the reason for the lack of a 24 hour supply).

One of the major urban areas and large parts of the rural and peri-urban areas of the concession as well as many households in other areas of the Municipality receive their water from the Kanyamazane water plant owned by the Municipality and operated under a month-to-month contract by the Bushbuckridge Water Board. Silulumanzi receives bulk treated water and operates the water distribution system in the concession area while the Municipality operates the distribution system for the areas outside the concession using bulk treated water obtained from this plant. There are significant issues in the communities served as a result of not receiving a consistent 24-hour water supply and on-going water quality problems. The Municipality has been attempting to resolve this issue for two years. Ultimately, the Municipality must take back operation of this water plant and transfer it to the concessionaire. Only then will it be possible to hold one entity accountable for addressing the significant issues of upgrading capacity and operating this critical water system facility.

Contract Monitoring. Contract monitoring by the Municipality is a significant issue. In the early years of the concession, a strong contract management function was in place. Unfortunately, that is not currently the case. The Municipality would now like to add four additional Municipal employees to the monitoring function but it appears that a shortage of skills rather than a lack of total resources is the main challenge. Improving contract monitoring and management could be better addressed by using locally available or other outside expertise, on a limited basis, to supplement the Municipality's internal resources.

Risk Allocation. The financial basis and risk allocation as contemplated in the original concession agreement changed substantially after the contract was signed, coincident with the new National policy of 'free basic services' in 2000. This policy mandated 6 kl of water per month and basic sanitation to be provided free of charge to each household. Along with this change many customers in the areas without good water and sanitation services were less willing to pay for any services. As a result, the concessionaire was able to negotiate a contract amendment, Supplementary Agreement No. 1 (SA1), under which it: (i) did not commit further investment of its own funds; (ii) began to receive operating subsidies as partial payment for unpaid billings as well as capital subsidies for infrastructure investment in previously underserved areas; and (iii) eliminated two large annual payments to the Municipality. However, the rate of return and basis for its calculation remained the same.

This has caused an increased dependency on the public funds for subsidies and capital grants to serve the poorer areas of the concession.

## Findings

Concessions do have an important role to play in the provision and operation of infrastructure. The following factors should, however, be considered when considering their use:

- Due to their long term nature, concession contracts are complicated documents that take considerable time and money to compile - they should be kept as simple as possible, particularly remembering the level of knowledge of those who will be required to use them in the future.
- The extent that risk is transferred to the private party can quickly be watered down in negotiations to account for changes in legislation, policy, socio-economic and environmental conditions, etc. The application of a sophisticated 30 year contract in a country that is developing and liable to go through various substantial policy and legislative changes can impact on the ability to preserve the balance of risk and return that was originally intended.
- A longer contract does, however, give time for an operator to develop permanent support infrastructure as well as a being able to attract good quality personnel.
- The expectations and requirements in terms of continued investment over the life of the contract have to be an integral part of the concession agreement and this has to be strictly managed by the controlling authority.
- The rate of return received by the private party has to be controlled to that originally tendered or set.
- Where a change in the level of risk occurs this should also be applied to a suitable adjustment on the rate of return.
- It is appropriate for the concession to receive or be responsible for the utilisation of public money to be applied for the benefit of the intended recipients. In this way, the skills and expertise of the private sector operator can be leveraged for the benefit of service provision to the poorest of the poor. This process must be transparent and carefully controlled by the authority.

When considering the use of any outsourced contract, the authority should (some of these were reflected in the Nelspruit contract):

- Clearly understand the affordability element of the services to be delivered, both for itself and for the user. The requirements or targets to be set in the contract should reflect this affordability. This is particularly important in defining the levels of service.
- The Request for Proposal (RFP) or tender documents should clearly state the requirements and targets that are required together with a definition of the key performance areas and indicators that will be used to measure achievement.
- Longer term contracts (over five years?) should have processes to allow for these indicators and deliverables to be adjusted or re-set over time.
- A draft contract should be included with the RFP or tender (now the usual practice in South Africa) and the bidders should be allowed to propose changes to this contract as part of their submission. By only allowing proposed contract changes submitted with the bids to be considered, it is possible to prevent a wholesale re-negotiation of the contract terms.

Strong and experienced contract management on the part of the authority is absolutely key to ensuring that the target communities benefit from any form of outsourcing contract. Clear goals, standards and targets must be negotiated at every opportunity within the terms of the contract and with an understanding of the responsibilities and capabilities of the operator. Contract management personnel



have to be competent and experienced officials who combine knowledge of the contract, the financial and technical aspects of the service being delivered and general management skills.

Where skills are not available internally, use should be made of external high level skills for short term inputs. Another option to be considered is the establishment of a support unit at national level within a country that could provide specialist inputs to the various authorities.

The results of this case study have clearly shown the benefits of having a competent and committed private sector operator being dedicated to the provision of the water and sanitation services. Well performing public utilities can also be found in South Africa (e.g., Durban) and what is important is a local government committed to good service for the population, and that is willing to put in place a professional provider that operates under a framework of accountability and efficiency.

Whichever form of delivery mechanism is adopted, the key to the success lies in three areas:

- Attracting and retaining quality people who have the skills, expertise and customer focus, as well as the supporting resources, to optimise the service delivery;
- Ensuring that sufficient funds (both capital and operating) are available to pay for the skills and to expand and maintain the required infrastructure;
- A strong contract management control that ensures contract compliance and enforces the requirements of the authority within the terms of the contract.

## Definitions and Acronyms

ABET	- Adult Basic Education and Training – mainly focused at providing basic literacy and numeracy skills
Basic Level of Service	- The basic level of service in respect of the provision of water supply and sanitation services as set by the South African Government – see text box 2
BEE	- Black Economic Empowerment
Concession	- The contract entered into between the then Nelspruit Transitional Local Council and the Greater Nelspruit Utility Company
Concessionaire	- The Greater Nelspruit Utility Company (Pty) Ltd operating as Silulumanzi
COSATU	- Coalition of South African Trade Unions
DBSA	- Development Bank of Southern Africa
DORA	- Division of Revenue Act (Act 5 of 2002)
DWEA	- The South African National Department of Water and Environmental Affairs
ES	- Equitable Share (an operational subsidy allocated to a municipality)
IMATU	- Independent Municipal and Allied Trade Union
Mbombela	- Mbombela Local Municipality, the successor in title to Nelspruit Transitional Local Council
MFMA	- Municipal Finance Management Act (Act 56 of 2003)
MIG	- Municipal Infrastructure Grant (a capital grant allocated to a municipality)
MSA	- Municipal Systems Act (Act 32 of 2000)
Non-revenue water (NRW)	- The difference between the water system input volume and the billed authorised consumption
Peri-Urban	- Areas that contain large numbers of households situated close to each other but which do not form part of an urbanised area
PPP	- Public Private Partnership
Rand (R)	- The South African unit of currency. At time of writing (Aug 2009) the exchange rate was approximately 1 US\$ = R8
RFP	- Request for Proposals

SALGA	- South African Local Government Association
SAMWU	- South African Municipal Workers Union
Silulumanzi	- The concessionaire now serving the Mbombela concession. as the operating name of the Greater Nelspruit Utility Corporation
Solidarity	- An independent trade union with representation in the mining, steel, telecommunications, engineering and chemical industries
VIP	- Ventilated Improved Toilet
WSA	- Water Services Authority as defined in the Water Services Act (Act 108 of 1997) – any municipality responsible for ensuring access to water services
WTW	- Water Treatment Works
WwTW	- Wastewater Treatment Works

# Chapter 1: Background

## 1.1. Case Study Methodology

This case study is based on the results of the following:

1. Interviews and discussions with a wide range of stakeholders, from those involved in the initial establishment of the concession to current councillors, community representatives and officials of the Municipality and the concessionaire.
2. A literature review of the extensive studies and public comments on the two water and sanitation concessions in South Africa over the past ten years, and case studies of other forms of private sector participation for the delivery of these services.
3. An independent analysis of the performance of the concessionaire over the first ten years, based on service delivery, financial and other contractual requirements.

## 1.2. Transformation of Local Government in South Africa

Before 1995, the local government structure in South Africa consisted of Town Councils that ran the affairs of the mainly white, urban areas, with various regional services councils, boards or “independent” homeland governments<sup>1</sup> managing service provision in the rural, mainly black, areas. This created one of the more obvious faces of apartheid with the urban areas enjoying high levels of municipal services while the rural areas were largely ignored and received poor, if any, services. The refusal to pay for the poor quality of services became one of the weapons used to challenge and oppose the apartheid system.

Following South Africa’s dramatic change to an inclusive non-racial government in 1994, local government was initially transformed in 1995 with transitional local and regional councils being established to create a “wall-to-wall” system of local authorities responsible for service delivery. Due to years of neglect and low levels of investment, however, the challenges facing these new authorities to deliver water and sanitation services were immense, while at the same time large numbers of unserved or underserved households were expecting an immediate improvement in their quality of life.

In 2000 the next step in the transformation of local government took place with the establishment of six large metropolitan municipalities, and an overlapping system of 47 district municipalities, and 231 local municipalities. Originally the district municipalities were the responsible authority for the provision of water and sanitation services; however a ministerial authorisation on 7 November 2002 declared that a mixture of district and local municipalities, based on their perceived competence and capability, would be the Water Services Authorities (WSA).

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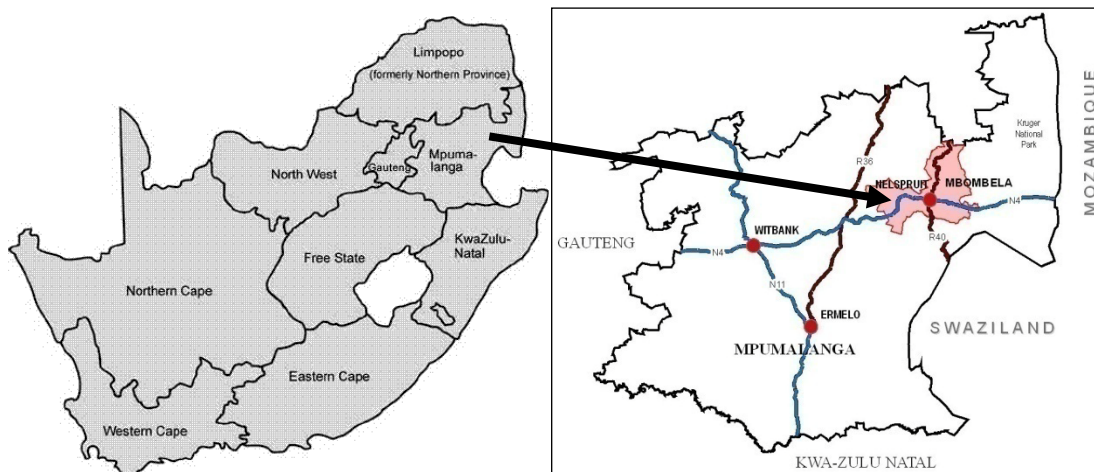
*1 The apartheid system created homelands where black leaders were supported to set up supposedly independent self governing countries.*

### 1.3. Mbombela Local Municipality and Nelspruit

Mbombela Local Municipality is in the north-eastern part of South Africa within the Lowveld sub-region of Mpumalanga Province. The metropolitan areas of Pretoria and Johannesburg are 320 km inland; the Mozambican border post at Komatipoort is 120 km to the east and the Mozambican coastline is 200 km away. Urban areas in Mbombela include Kanyamazane and Matsulu, the economic hub of Nelspruit, Shabalala, Kabokweni, Tekwane, White River, and Hazyview and other peri-urban areas in the eastern parts of the Municipality. Mbombela, the SiSwati word for "a lot of people together in a small space", aptly describes some of the areas within the jurisdiction. The Mbombela Local Municipality was formed by the amalgamation of the previous transitional councils of Nelspruit, White River and Hazyview in December 2000.

Mbombela had a population of 475,000 according to the 2001 census. The current population is estimated to be approximately 600,000 in 165,000 households.

**Figure 1: Location of Mbombela**



Prior to 1995 the Nelspruit Town Council served a population of 25,000. The majority of households were in the mid to upper income bracket and received full water supply and water borne sewerage services. With the change from a Town Council to a Transitional Local Council in 1995, greater Nelspruit's population increased from 25,000 to around 250,000 and the land area under its jurisdiction grew by over eight times. Many of the new areas had never received water and sanitation services and the newly enfranchised groups were expecting an immediate improvement in services.

According to a report of the Development Bank of Southern Africa (DBSA), although the population of the new Municipality was ten times larger than Nelspruit, the total income of the area was only 38% greater. It was estimated in the late 1990's that the total water and sanitation investment required to serve all of greater Nelspruit's citizens was R250 million. With a capital budget of R25 million per year, restrictions on budget growth, and the need to equitably provide for other services and functions, the council faced a situation where none of the usual sources of finance (i.e., budget surpluses, loans, grants, etc.) would offer meaningful and timely assistance to meet its capital investment needs for water and sanitation. In addition, the Council had exhausted its capacity to borrow enough funds to meet the investment needs and significant water and sanitation revenue shortfalls were being experienced

because of low rates of payment in the previously neglected areas. It was therefore decided that an alternative method was required to satisfy the water and sanitation delivery needs and growing expectations of its residents.

## **1.4. Development of the Concession Principles**

Based on the above challenges, municipal officials sought advice from the DBSA, who work-shopped the principles of service levels and affordability with the councillors, many of whom were exposed to such matters for the first time. At the same time the concept of the possible use of a concession contract surfaced. With support from National Government, Nelspruit decided to move forward with a concession arrangement to deliver water and sanitation services. Simultaneously, the Dolphin Coast area of KwaZulu Natal made a similar decision. These two municipalities were, and still are, the only two concession arrangements in South Africa for delivering water and sanitation services.

With the assistance of DBSA, a short list of eight potential bidders was prepared for the Nelspruit Concession and the Request for Proposals (RFP) was issued in December 1996. It included target service levels that had been developed based on the earlier affordability studies. A critical item not included in the RFP was a draft contract – instead, a contract term sheet was included.

The two-envelope system was used for the RFP process. The first envelope contained the proposals of the bidder on matters such as the technical solutions, community involvement and the empowerment of previously disadvantaged communities. The second envelope contained the financial proposal including the proposed tariffs. This second envelope would only be opened for those bidders that complied with the RFP requirements, and the prices were not publicly disclosed.

Five companies submitted proposals; after the technical evaluation the top three were selected for more detailed evaluation.

The Greater Nelspruit Utility Corporation ultimately was evaluated as the highest rated bidder and a contract was signed with them 30 months later in April 1999. Financial closure and various other conditions were eventually resolved and the concessionaire began operations on 1 November 1999.

## **1.5. Requirements for Local Partners**

It was a requirement of the RFP that each bidder should include a locally based Black Economic Empowerment (BEE) partner with at least 10% shareholding in the concession company. Each of the five bidders developed separate BEE partners involving various community and politically based organisations.

This could have been one of the factors that caused delays to the signing of the contract due to the opposition to the preferred bidder by all the groupings that were associated with the various unsuccessful bidders.

## **1.6. Trade Union Involvement**

Initial discussions with the local branches of the two trade unions identified concerns about potential job losses and loss of benefits. These were addressed in the principles that were to be included in the concession contract. However, when these matters were referred to the provincial and national structures of the South African Municipal Workers Union (SAMWU), the debate became more ideological and SAMWU declared their opposition in principle to a concession.

Eventually, after major delays, an agreement was reached between the Confederation of South African Trade Unions (COSATU) and the South African Local Government Association (SALGA) on 11 December 1998 - the Framework Agreement for the Restructuring of Municipal Service Provision. This document acknowledged that Public Private Partnerships (PPPs) were a legitimate option in municipal services provision and committed all parties to seeking optimal social impact if they were to be used. Some of the principles from the framework, such as requiring investigation of internal service delivery options before allowing consideration of external options, were subsequently incorporated into the Municipal Systems Act (MSA).

The Agreement was supplemented by the creation of a Sectoral Forum involving major stakeholders. Due largely to organized labour's influence, this forum challenged various aspects of the Nelspruit contract, arguing that it contradicted the Framework Agreement. Government disagreed with this view and the details of the staff transfers were finally resolved in the Bargaining Council on 5 November 1999.

## **1.7. Contract Design**

### **1.7.1. Concessionaire**

The 30-year concession contract was awarded to the single purpose private company, The Greater Nelspruit Utility Company, with Biwater Capital BV (registered in the Netherlands) having a share holding of 64%, Biwater Operations (Pty) Ltd (South African) with 26% and local empowerment partner Sivukile with 10%. The contract also required a further 41% shareholding out of Biwater Capital's 64% be available on option for Sivukile for the first two years. Five percent of the total shareholding, from the other shareholders, was to be made available for staff as part of an incentive scheme. Biwater Capital now operates under the name of Cascal.

### **1.7.2. Concession Area**

The concession area boundaries were the municipal boundaries of the Nelspruit Transitional Council with services provided in the developed areas. Extensions of services outside the developed areas were to be dealt with on a case-by-case basis. For each of the defined developed areas, targets were established for levels of service to be achieved for the first five years of operation. The concessionaire was to provide water and sanitation services to the developed areas, undertaking and financing all

maintenance, rehabilitation and improvement of all assets and the collection of all water and sanitation revenue.

### **1.7.3. Assets**

The existing fixed assets were leased to the concessionaire for R10 million per year and moveable assets were leased for R582,000 per year for the first 10 years. These amounts approximated the cost to Council of existing borrowings on these assets. In each case the lease fee was set at R50 per year after the 10<sup>th</sup> year of operation. The proceeds from any disposal of movable assets were to be re-invested in the operation. All assets were to be returned to Council on termination of the contract.

### **1.7.4. Fees and Guarantee**

An annual concession fee of R1.25 million, adjusted annually for inflation, was to be paid by the concessionaire until the fifth year. Thereafter the concession fee was to be set at the cost to the Municipality for contract monitoring. A performance guarantee of R7.5 million, to be annually increased for inflation, was to be lodged by the concessionaire.

### **1.7.5. Tariffs and Charges**

As the Water Services Authority (WSA), the Municipality has the sole legislated responsibility for setting water and sanitation tariffs, a function that cannot be delegated. To address this issue, the concession contract allows the concessionaire to annually determine “charges” required to operate the concession and achieve the agreed rate of return. The Municipality can then determine the “tariffs” to be charged by the concessionaire to the consumers. If the Municipality sets tariffs at a lower level than the charges, the difference in revenue must be paid by the Municipality to the concessionaire.

The initial charges were set as part of the bidding process, with annual inflation adjustments allowed based on actual inflation indices. The contract also allows for a re-basing of the charges every five years or when there are significant changes in circumstances outside the control of the concessionaire.

### **1.7.6. Sanctions**

The contract defines a range of sanctions that would be imposed on the concessionaire for non-performance. Penalties range from R10,000 for minor offences such as an unforeseen cut in the water supply exceeding the maximum specified period allowed or the repeat of incorrect invoicing where there had already been two customer complaints, up to R500,000 for not meeting any of the requirements set for any five year period. These penalties were set at 1999 values and were to be adjusted with the same increases as were applicable to the charges.

### **1.7.7. Funding Model**

The original contract between the concessionaire and the municipality references a financial model on which charges, infrastructure investment, service delivery requirements, and targets for internal rate of return for the concessionaire are based. It does not appear that the rate of return is an absolute contractual guarantee that the concessionaire is entitled to, nor is there an obligation for the municipality to approve charges or otherwise guarantee the concessionaire their targeted return as



contained in the model. Rather, it appears the return is a basis for negotiations between the parties for infrastructure investment, service delivery, charges, and rate of return levels.

Because of severe revenue issues that coincided with the introduction of the National policy of ‘free basic water’ in 2001 and 2002,<sup>2</sup> and the lack of progress in improving customer payments, a contract amendment (SA1) was negotiated in August 2003 under which the Municipality agreed to reduce the concession fee and eliminate the lease payments by the concessionaire, and the concessionaire began receiving an allocation of Equitable Share (ES) from the Municipality. The concessionaire also stopped investing its own funds after SA1. It does not appear that the internal rate of return calculation was changed in the contract amendment as a result of these changes in the risk allocation of the project.

The internal rate of return calculation and the financial model are key parts of the concession agreement. The internal rate of return concept is not easily understood, certainly not by any Council member or by most municipal finance professionals, because it is not a concept that is a routine part of municipal financial management. The internal rate of return calculation is based on actual financial performance over the full 30 year contract period and on critical assumptions for: (i) normal inflation in expenditure costs; (ii) operating and capital costs required to meet service delivery targets; (iii) financing; and (iv) growth in customer revenue collections. Therefore it is essential that both parties understand the rate of return concept and the assumptions that drive the model’s return calculations. Additionally in this particular case, the model is complex because of the large number of spreadsheets and detailed calculations.

## 1.8. Operating Subsidies

The contract anticipated the use of national grants and/or subsidies to offset the costs of providing services to indigent households. SA 1 formalised this arrangement by transferring portions of the Equitable Share (ES) subsidy to the concessionaire to cover part of the cost of providing free basic water as well as complying with the terms of the new National policy.

### Text Box 1: Equitable Share (ES)

Equitable Share is an annual subsidy provided to every municipality by National Government in terms of the Division of Revenue Act (DORA) and is intended, amongst other things, to cover the cost of providing free basic services to its communities. This is an unconditional subsidy and there are no restrictions on how it can be used.

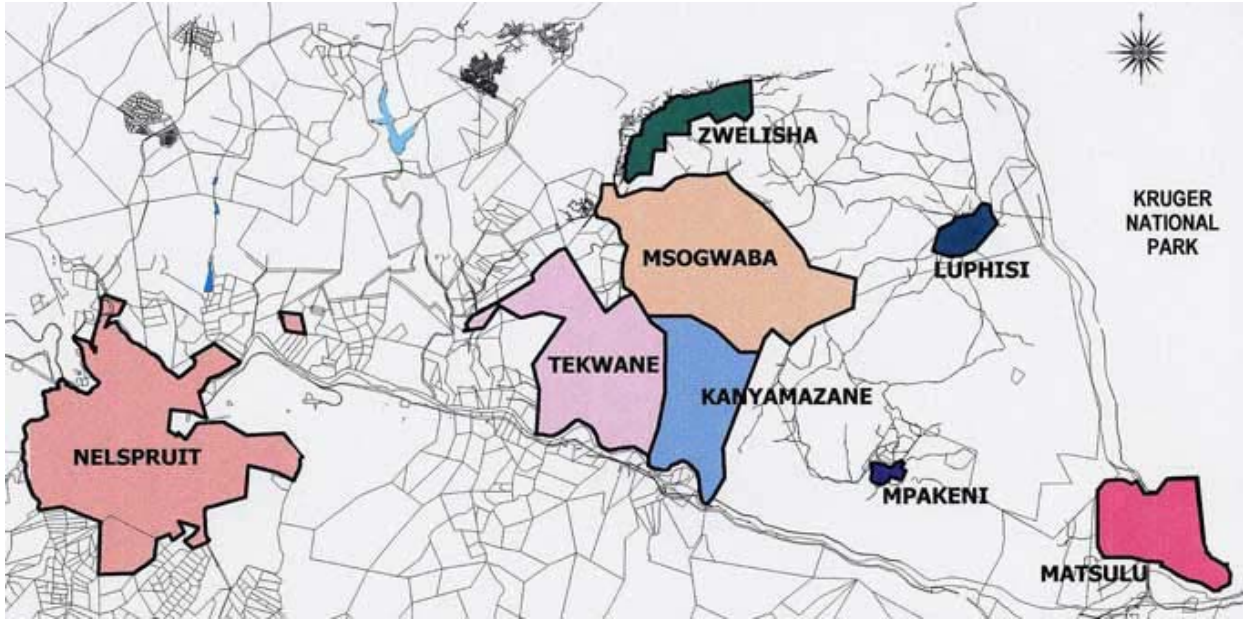
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<sup>2</sup> In 2000, just after the start of the concession, a policy principle was developed in South Africa that all indigent households should receive 6 kilolitres (kl) of water per month free of charge. As there were generally no indigent registers in place this policy was implemented by most WSAs by providing the 6 kl of free basic water to all consumers. As more affluent consumers would generally use more than 6 kl of water, tariffs for higher tiers of usage were adjusted to recoup the loss of revenue from the first 6 kl.

### 1.9. Concession Service Area

At its inception the concession served an estimated 43,000 households. As shown in Figure 2, the concession serves eight areas in the Municipality. The population served by the concession in the eight areas is about 400,000 and represents about 74,000 households. The total number of households in the Municipality is about 165,000 – the concession is currently serving about 45% of the Municipality.

Figure 2: Original Concession Area



Housing in South Africa is known as either ‘formal’ or ‘informal’. Currently there are 28,000 formal houses in the concession area on land that is formally registered to an owner. The 46,000 informal houses in the concession area are located on land that is not formally registered. House types range from brick or concrete block buildings, traditional huts, to shacks built with whatever material is available.

### 1.10. Water and Sanitation Facilities

Following are the major water and sanitation assets operated by the concessionaire (with the exception of the Kanyamazane WTW as noted below):

**Table 1: Major Water Assets**

<b>WATER SYSTEM</b>		Nelspruit	Kanyamazane (incl Rural)	Matsulu	Total
WTW - Design Capacity	MI/day	61	55	12	128
Average Supplied	MI/day	35	26	15	76
Reservoirs & Tanks	No.	20	68	9	97
Storage Capacity	MI	55	47	17	119
Booster Pumps	No.	19	21	2	42
Water Mains	Km	363	494	132	989

*Note: The Kanyamazane plant serves areas within the concession and also other areas of the municipality that are not part of the concession. It is operated under a contract with the Municipality by the Bushbuckridge Water Board. The supply volume in the above table is the quantity supplied to the concession.*

**Table 2: Major Sewerage Assets**

<b>SEWERAGE SYSTEM</b>		Nelspruit	Kanyamazane (incl Rural)	Matsulu	Total
WwTW - Design Capacity	MI/day	26	12	6	44
Pump Stations	No.	22	6	2	30
Sewer Pipes	Km	391	81	110	582

## Chapter 2: Performance of the Concessionaire

### 2.1. Evaluation Criteria

For this evaluation eleven areas of performance measures, considered to be the most critical for evaluating the success of a water and sanitation operation, were identified (nine of the measures are contractual requirements in the agreements between the concessionaire and the municipality, as identified in each section below):

#### ***Service delivery measures***

1. Access to the formal water system
2. 24-hour water supply
3. Sanitation service levels
4. Potable water and effluent quality

#### ***Financial measures***

5. Infrastructure spending – capital and maintenance
6. Non-revenue water, water usage and revenue collections
7. Financial performance of the concessionaire

#### ***Other measures***

8. Customer satisfaction
9. Employee programmes
10. Reporting
11. BEE performance

### 2.2. Service Delivery Measures

Water and sanitation service delivery levels are the most important measures for evaluating the performance of this concession, since the rapid provision of basic water and sanitation services to 100% of the concession area's residents was the primary reason for undertaking the concession. To evaluate the concession's performance in this area, it is critical to understand several key terms and principles:

#### **Basic levels of service**

The South African Government has defined the basic level of water supply that it is aiming to provide to every household as follows:

*25 litres of potable water per person per day supplied within 200 metres of a household and with a minimum flow of 10 litres per minute (in the case of communal water points) or, for house connections, 6,000 litres (6 kl) of potable water supplied per formal connection per month (in the case of yard or house connections).*

For both of the above, basic service requires water to be “available at least 350 days per year and not interrupted for more than 48 consecutive hours per incident.”

The similar requirement for the basic level of sanitation is:

*A “ventilated improved pit” (VIP) toilet, built and installed in accordance with National Standards and the communication of good sanitation, hygiene and related practices.*

When the concession contract was signed in 1999, the above definitions regarding water supply were not yet a National policy. The contract initially defined water service expectations in six levels, from virtually no formal service up to the modern house connection. Broadly the contract requirements were for metered or restricted house or yard connections to be provided to all formal households within the first five years with communal standpipes to serve the informal areas. All of the contract expectations were also for 24-hour supply.

In terms of sanitation, the standards were either the VIP toilet, a septic tank system or full waterborne connected to a treatment works. The requirements for the VIP were that the concessionaire should supply the components provided the house owner constructed the toilet.

### Areas within the Concession

The areas within the concession contain the following mixtures of formal and informal households:

**Table 3: Mixtures of Formal and Informal Households**

	1999		2004		2009	
	Formal	Informal	Formal	Informal	Formal	Informal
Nelspruit	6,000		7,782		10,438	
Tekwane	1,000		2,000		2,645	3
Kanyamazane	5,000	2,000	6,200	2,000	8,138	1,333
Matsulu	7,000	1,000	8,280	1,700	5,745	6,837
Peri-Urban		21,000		24,100		38,461
<b>Total: Formal &amp; Informal</b>	<b>19,000</b>	<b>24,000</b>	<b>24,262</b>	<b>27,800</b>	<b>26,966</b>	<b>46,634</b>
<b>Total: All Houses</b>	<b>43,000</b>		<b>52,062</b>		<b>73,600</b>	

Notes:

1. Nelspruit – 100% formal households; all had full water service and waterborne sewerage service in 1999
2. Kanyamazane, Matsulu and Tekwane – these areas are comprised of both formal and informal households and varying levels of water and sanitation infrastructure (Note – the reduction in number of formal households in Matsulu from 2004 to 2009 is a result of more accurate counting in 2009.)
3. Peri-urban areas – these areas are virtually 100% informal households with very little water and sanitation infrastructure

## 2.3. Access to the Formal Water System

### Contractual requirement – the contractual requirement is for 24-hour water service

The contractual requirements for the different levels of water supply are all 24-hour supply, not just the National policy of 'basic water supply', (which does not specifically prescribe a 24-hour supply). Therefore, since the starting point for improving water services was at such a low level in 1999, this case study evaluated progress in providing access to the formal water system, a major improvement in service which is required to ultimately deliver a 24-hour supply.

In 1999 the information on number of households and access to water services was not as accurate as it is today. It was estimated that about 44% of all households – and almost 80% of informal households - did not have access to a water supply service – this was the single most important service delivery issue and reason for entering into a concession.

**Table 4: Household Access to Water Supply**

	1999		2004		2009	
At least 'basic water supply	24,000	56%	46,162	89%	64,971	88%
Below basic or no supply	19,000	44%	5,900	11%	8,629	12%
Totals	43,000		52,062		73,600	

As shown above in Table 3, the number of households in the concession area has increased by 30,600, or 65%, over the past 10 years. Two-thirds of this growth, more than 20,000 households, is in the number of informal houses in the concession area. In addition to normal population growth this represents a mixture of more accurate counts of households, immigration into the area (including those effectively in transit to other areas) from neighbouring countries and, in line with national trends, attraction to the area because of perceived job opportunities and the availability of services such as water.

The percentage of households without a basic water supply has improved, decreasing from 44% of total households in 1999 to 12% of total households in 2009 (see Table 4). Coping with the high level of growth and demand for the service has been a major accomplishment of the concession. The current breakdown of the type of connection and the numbers per area is shown in the following table.

**Table 5: Access and Connection Type per Area**

	At or Above Basic Level of Service		Below Basic Level of Service	Total
	Connection	Standpipe		
Nelspruit	10,438	0	0	10,438
Kanyamazane	6,511	1,996	964	9,471
Tekwane	2,645	0	3	2,648
Matsulu	2,537	8,924	1,121	12,582
Rural	347	31,573	6,541	38,461
<b>Totals</b>	<b>22,478</b>	<b>42,493</b>	<b>8,629</b>	<b>73,600</b>

Of the households without a basic water supply, about half have some access to water supplies while the other half does not currently have any formal access (see the tables below – ‘Less than Daily Supply’, and ‘No Supply’).

Following is a comparison of the concessionaire’s performance with national averages for providing water services at or above the basic level of service:

**Table 6: Population Served At or Above the Basic Level of Service**

	1999			2009			Growth
	Total	Above basic	%	Total	Above basic	%	
<b>Mbombela Concession</b>							
Urban	95,000	95,000	100%	134,830	134,830	100%	42%
Rural	120,000	25,000	21%	233,170	190,025	81%	660%
<b>Total above Basic LoS</b>		<b>120,000</b>	<b>56%</b>		<b>324,855</b>	<b>88%</b>	<b>171%</b>
<b>Total Population</b>	<b>215,000</b>			<b>368,000</b>			<b>71%</b>
<b>South African National Statistics</b>							
Urban	24,816,564	19,613,168	79%	29,525,791	28,001,254	95%	43%
Rural	17,922,277	8,611,244	48%	19,921,962	15,686,628	79%	82%
<b>Total above Basic LoS</b>		<b>28,224,412</b>	<b>66%</b>		<b>43,687,882</b>	<b>88%</b>	<b>55%</b>
<b>Total Population</b>	<b>42,738,841</b>			<b>49,447,753</b>			<b>16%</b>

The above shows that the concession has managed to increase the service to the rural areas from a very low base to bring it in line with national averages. This has been achieved in an area that has experienced considerable higher growth than the average for the country.

## 2.4. 24-Hour Water Supply

### Formal areas

#### Contractual requirement - 24-hour water supply to all formal households by 2009

By 2009, all formal households were supposed to have a 24-hour water supply, according to the SA2 contract amendment agreed upon in 2004. In 1999 the Municipality was supplying 24-hour water service to Nelspruit and Tekwane. In 2004, after the first five year period, the concessionaire had achieved the target of providing a 24-hour water supply to all the formal houses in Kanyamazane and had made a significant inroad in Matsulu.

As shown in the table below, 5,236 households in Kanyamazane and Matsulu have water each day, but do not have a 24-hour water supply. In these cases a household will typically be able to access water in the morning and evening peaks for a total of 6 to 8 hours each day.

**Table 7: 24-Hour Water Supply in Formal Areas**

Formal Houses	1999		2004		2009	
	24 hr	Not 24 hr	24 hr	Not 24 hr	24 hr	Not 24 hr
Nelspruit	6,000		7,782		10,438	
Tekwane	1,000		2,000		2,645	
Kanyamazane		5,000	6,200		6,510	1,628
Matsulu		7,000	2,270	6,010	2,537	3,208
<b>Sub-Totals</b>	<b>7,000</b>	<b>12,000</b>	<b>18,252</b>	<b>6,010</b>	<b>22,130</b>	<b>4,836</b>
<b>%</b>	<b>37%</b>	<b>63%</b>	<b>75%</b>	<b>25%</b>	<b>82%</b>	<b>18%</b>
<b>Totals</b>	<b>19,000</b>		<b>24,262</b>		<b>26,966</b>	

## Informal areas

### Contractual requirement - Concessionaire to use best efforts to improve the number of households in informal areas with a 24-hour water supply by 2009

The progress in delivering a 24-hour supply in the informal areas appears to have reversed over the past five years. As shown in Table 8 below, only 1,134 informal households have a 24-hour water supply in 2009 – however, 36,871 informal households receive water at least daily but not a 24-hour supply. In these cases households will typically be able to access water during the morning and evening peaks for a total of 3 to 6 hours per day. The large percentage of houses still without a 24-hour water supply is the primary negative issue identified in this case study, and the number one issue cited by customers and councillors.

**Table 8: 24-Hour Water Supply in Informal Areas**

Informal Houses	1999			2004			2009			
	24 hr	Not 24 hr	No Supply	24 hr	Not 24 hr	No Supply	24 hr	Not 24 hr		No Supply
								Daily	Not Daily	
Tekwane										3
Kanyamazane			2,000	1,600		400	369			964
Matsulu		500	500	800		900		5,716		1,121
Other Areas		4,500	16,500	15,000	4,500	4,600	765	31,155	4,356	2,185
<b>Sub-Totals</b>	<b>0</b>	<b>5,000</b>	<b>19,000</b>	<b>17,400</b>	<b>4,500</b>	<b>5,900</b>	<b>1,134</b>	<b>36,871</b>	<b>4,356</b>	<b>4,273</b>
<b>%</b>	<b>0%</b>	<b>21%</b>	<b>79%</b>	<b>63%</b>	<b>16%</b>	<b>21%</b>	<b>2%</b>	<b>79%</b>	<b>9%</b>	<b>9%</b>
<b>Totals</b>	<b>24,000</b>			<b>27,800</b>			<b>46,634</b>			

There are two primary reasons for such high numbers of customers without a 24-hour supply:

1. Lack of water supply capacity, and
2. Illegal connections to the distribution system



### **2.4.1. Water Supply Capacity**

The Kanyamazane water plant, bulk mains and reservoirs in South Nsikazi – owned by the Municipality and operated by Bushbuckridge Water Board - is an important element in the solutions for delivering a 24-hour water supply, not only in the Kanyamazane area itself but also to the large peri-urban and rural areas of South Nsikazi that are served by this plant. Water supplied by this plant goes to the distribution system operated by the concessionaire as well as to other areas which are not part of the concession, but which are operated by the Municipality. Large parts of Kanyamazane and South Nsikazi are without a 24-hour water supply and the water quality produced by this plant is sometimes cited by customers and councillors as of poor quality. It should be noted that this plant was given an 83% rating by DWEA's first such performance rating in 2009 compared to the 95% plus ratings attained by the plants operated by the concessionaire. All three parties – the Municipality, the Water Board, and the concessionaire - agree that expansion of this plant's daily production capacity is essential. While it is currently operating above its design capacity, it is producing at least 12 Ml per day less than the current demand, which is one of the factors in not being able to deliver a consistent 24-hour water supply to many parts of Kanyamazane and South Nsikazi. Because two parties are involved in the water operation in Kanyamazane and South Nsikazi – the Water Board for water production and the concessionaire for distribution services – and because of the water supply and quality issues in respect of the water produced from this plant, there is continuing conflict about the responsibilities of each party.

It appears there is adequate water being produced in all the other areas, outside Kanyamazane, to supply at least the basic level of water service to all other customers.

### **2.4.2. Illegal Connections**

Reservoirs in the water system must be regularly filled, usually every night. Full, or nearly full, reservoirs are required to deliver a 24-hour water supply – if they are not filled regularly; there is not enough water available during peak usage periods to supply all customers, all of the time.

Illegal connections to the transmission mains used to fill reservoirs take water before it reaches the reservoirs. As these connections are not metered or controlled there is no incentive to save water resulting in in-house leaks not being attended to and liberal use being made of the free water for gardening and vegetable crop production, all adding to the demand and the high level of usage of water. Additionally, when the water supply is inconsistent, customers often leave taps open to be able to get water as soon as it is available – this exacerbates the problem when water is available as the water is then wasted instead of going to the reservoirs. In some cases, reservoirs have not been filled for months or longer due to the number of illegal connections.

There does not appear to have been much progress in addressing this chronic issue since 1999. Albeit belatedly, the concessionaire recently implemented two pilot programmes (see Boxes 2 and 3) that, if implemented system-wide along with the additional capacity needed, should resolve the 24-hour supply issue.

### **Text Box 2: Matsulu Pilot Programme**

The Matsulu community has areas where it appears customers can afford to pay for their water services. The community is served by a 14 MGL/day water plant, enough to supply the entire community, but most Matsulu customers do not have a 24-hour water supply.

The concessionaire segregated the community into logical service areas thus creating zones controlled by a bulk meter. Working with the local ward councillors and committees, they hired local unemployed residents to research and disconnect illegal connections one zone at a time, resulting in a noticeable improvement in water service when the illegal connections were disconnected. This effort yielded a 1 Ml/day reduction in water usage in the identified service area, enough to ensure filling of reservoirs each night and supply all customers with a 24-hour supply. Further phases of this project include a roof tank project and piloting of intelligent metering that would allow the daily equivalent 6 kl per month at full flow, but cutting back to a trickle flow once the daily allowance is exceeded.

### **Text Box 3: Luphisi Pilot Programme**

The Luphisi area is an example of a different type of community that will probably never yield significant amounts of revenue. Most residents in this community will never be able to pay for their water services, and consequently will require the free basic, 6 kl per month supply. Illegal connections to the distribution system are the reason for the lack of a 24-hour service, as there is adequate water available for all Luphisi customers to receive 6 kl per month. This community has never had a 24-hour supply primarily because of large amounts of theft. Because customers are not receiving consistent water services, many tie into the system illegally, this further compounds the problem of providing a 24-hour supply.

The solution in this community has been to negotiate directly with the tribal chief about the need and reasons to disconnect the illegal connections. The basic supply will always be free to all customers, meaning very little effort should be expended to try to collect income for water services in this area. Rather, efforts should be spent on installing restrictor meters for customers who cannot afford to pay for services, and on working with the community through the tribal chief to enforce the removal of illegal connections and forestall them in the future. This will result in a 24-hour supply for everyone, but very little revenue for the concessionaire.

Because there is very little revenue potential from these programmes, it appears the concessionaire has had little incentive to focus on them. This appears to be changing. In these cases, it is also critical that the Municipality oversee, through its Contract Monitoring Unit, the concessionaire's efforts to undertake and expand these programmes in every community to ensure a 24-hour supply of water to all customers on a timeframe that is acceptable to the Municipality

## 2.5. Sanitation Service Levels

**Contract requirement – concessionaire to (i) provide technical assistance for homeowners to install VIP toilets at their own expense, and (ii) to install additional VIP's with government funding as it is available**

**Table 9: Levels of Service for Sanitation**

	2004	2009
Connected to treatment works	21,935	24,329
Septic Tanks	500	500
VIP		2,325
Other	30,127	46,446

The basic level of service for sanitation in South Africa is a VIP toilet. The pre-concession modelling and workshops found that the cost of providing a VIP for every house was unaffordable - the contract therefore required the concessionaire to facilitate and assist house owners in providing their own facilities. This has proved to be an impractical way to implement 100% basic sanitation services because VIP toilets are unaffordable, or not seen as a financial priority, for most households.

A national sanitation programme provided funds for a limited number of VIPs and the concessionaire has expended 100% of the government grant funds transferred to it for VIP toilet installations. However, the backlog of households in the concession area without a basic level of sanitation service is still over 60% of total households.

## 2.6. Potable Water and Effluent Quality

**Contractual requirement – comply with National water quality standards**

The concessionaire is performing at a very high level for this measure. According to DWEA's 2009 monitoring results, the water and sanitation plants and linked distribution systems operated by the concessionaire were among only 22, of over 400 water plants nationally, to receive DWEA's highest rating – a Blue Drop award (see Box 4). This award requires a combined performance rating of 95% or more on a range of performance criteria. The Matsulu water plant operated by the concessionaire was rated by DWEA as having the highest rating in South Africa.

By comparison, none of the plants operated by the Municipality, or the Kanyamazane water plant operated by the Bushbuckridge Water Board for the Municipality, achieved the Blue Drop status. A summary of the results are given below.

**Table 10: Water Quality Ratings Comparison**

Authority	No. of Systems	Average Quality
Mbombela	8	82%
Bushbuckridge Water	1	83%
Silulumanzi	3	96%

#### **Text Box 4: Department of Water and Environmental Affairs Blue Drop Award**

The Blue Drop Report Card scoring system was introduced by DWEA in 2008 as a measurement of the management of potable water services from production to the tap. It measures the performance of a water services provider against the criteria of (1) Adequacy of process control, maintenance and management skill, (2) Efficiency of drinking water quality monitoring programme, (3) Credibility of drinking water sample analysis, (4) Regular submission of drinking water quality results to DWEA, (5) Drinking water compliance with SANS 241 (the South African drinking water quality standard), and (6) Drinking water quality failure response management.

A similar programme for sewage treatment and effluent quality, the Green Drop award, has also been undertaken. Although this report had not been officially released by DWEA at the time of writing, the concessionaire has been notified that two of the wastewater treatment works it operates have been awarded Green Drop status. The third plant operated by the concessionaire was omitted from DWEA's programme, apparently due to an administrative error by DWEA - the concessionaire is attempting to have that plant rated.

Based on an audit in February 2009, the concessionaire was certified compliant with three ISO standards:

1. ISO 9001 - Quality Management
2. ISO14000 - Environmental Management
3. ISO 18000 - Occupational Health and Safety

No other municipal supply authority in South Africa has achieved these levels of certification.

## **2.7. Infrastructure Spending**

### **2.7.1. Capital**

**Contractual requirement – efficiently spend the capital funding as follows:**

**1999-2004 – R83.4 million**

**2004-2009 – R105.5 million**

The concessionaire has executed R136 million of the R189 million of projects required by the original contract and subsequent supplementary agreements. The table below shows the capital investment over the past 10 years.

**Table 11: Capital Investment (R millions)**

	1999-2004	2004-2009	Totals
Water distribution system	21	50	<b>71</b>
Water plants		8	<b>8</b>
Sewer collection system	10	26	<b>36</b>
Sewer treatment plants	13	8	<b>21</b>
<b>Totals</b>	<b>44</b>	<b>92</b>	<b>136</b>

R136 million represents 72% of the total capital investment required by the initial contract, which established requirements for the first five years, and SA2, which set the investment for the second five years. As seen above, investment was about half of the expectation for the first five years, and 87% of the expectation for the second five years.

The significant under spending in the first five years, compared to contract requirements, is a direct result of the changes in National policy for free basic services. This policy change in 2000 became the basis for a renegotiation of the concession agreement, as discussed elsewhere in this report. Consequently, the concessionaire focused on stabilising the financial performance of the concession and renegotiating the agreement, and not on infrastructure investment. Performance in the second five years was much closer to contract expectations.

R111 million, or 82%, of the total R136 million of investment has been in previously underserved areas, including a new wastewater treatment plant in Matsulu and over 25km of new water distribution lines in South Nsikazi rural area. Approximately half of the R111 million invested in previously underserved areas has been in the rural areas, for extension of water services and bulk supplies and VIP toilet installation, and half in the urban areas of Kanyamazane, Matsulu and Tekwane.

**Table 12: Capital Investment by Financing Source (R millions)**

	1999-2004	2004-2009	Totals
DBSA loan	44	10	<b>54</b>
MIG, other gov't grants		39	<b>39</b>
Developer contributions		19	<b>19</b>
Retained earnings		24	<b>24</b>
<b>Totals</b>	<b>44</b>	<b>92</b>	<b>136</b>

As shown above, the concessionaire is directly at risk for R54 million (40%) of the financing through the DBSA loan. R24 million of financing is from funds generated by operations, which represents minimal risk for the concessionaire since capital projects are not undertaken if this funding source does not materialise. The rest - Municipal Infrastructure Grant (MIG), other grants and developer contributions - is 43% of the investment and no risk for the concessionaire.<sup>3</sup>

The contract states that the concessionaire is responsible for 100% of the financing of infrastructure. That section of the contract has not been amended, although the concessionaire and Municipality have since agreed to use MIG and other funding to finance infrastructure. It should be noted that the availability of MIG funding to the concessionaire was a feature of the original contract. Additionally, the

<sup>3</sup> It could also be argued that the implementation of the free basic water policy after the start of the concession was the measure that effectively removed investment risk for the concession.

contract does not address whether ‘concessionaire financing’ includes retained earnings, an interpretation held by the concessionaire.

#### **Text Box 5: Municipal Infrastructure Grant (MIG)**

The South African government originally introduced a Consolidated Municipal Infrastructure Programme (CMIP) which later transformed into MIG to address the infrastructure backlogs that exist in the poorer areas of the country. The Division of Revenue Act allows for the allocation of capital grants to each municipality based on size and demographic indicators. The amount of these grants is determined annually with a projection of the amounts to be made available in the next two years. The grants are, however, conditional in that a municipality must submit and receive approval for the specific projects that it wishes to implement with the allocated funds and the projects must conform to the requirements set out in the grant. Use of grant funding is limited to projects that address services backlogs in predominately indigent areas.

While the concessionaire established a sizeable loan facility with DBSA at the start of the contract, only R54 million was utilized for infrastructure financing. At this point, the concessionaire does not plan to take any more DBSA loans or to put any more shareholder investment into the operation. All funding from here on is anticipated to be either government grants, developer contributions for extensions of services into new developments, or from net profits from the concession’s operations, the same mix of financing used for the last five years.

The concessionaire has spent virtually 100% of government grants of CMIP and MIG funds – for upgrading and extending services to the formerly underserved areas of the concession - that have been transferred to it by the Municipality. This is a noteworthy achievement as most municipalities are unable to fully spend the funds allocated to them.

The concessionaire is required to conform to all conditions and processes, including the Municipality’s procurement process, applicable to the grant and effectively operates as an implementing agent on behalf of the Municipality. Each application for funding is reviewed and approved by an official of the Municipality who is responsible for ensuring that the funds will be applied to the agreed project.

### **2.7.2. Maintenance**

#### **Contractual requirement – implement industry ‘best practice’ maintenance systems, processes and procedures and properly maintain utility infrastructure**

It appears that the concessionaire has met this contract provision. The concessionaire has implemented a comprehensive asset register that not only complies with MFMA requirements but will also be a valuable working tool for maintenance and refurbishment of assets. It has also implemented and maintains modern GIS water and sanitation master planning and a fault reporting and repair system that links with the customer billing and service level data. While these systems are being used by a number of WSAs in the country, this is one of the few operations that has obtained wider benefits through the effective use of the different planning, modelling, and maintenance and customer systems.

## **2.8. Non-Revenue Water, Water Usage and Revenue Collections**

Contractual requirement – by 2009 achieve the following:

**‘Unaccounted-for water’**

- 1. Nelspruit – 15% ‘unaccounted for water’**
- 2. All other areas – 35% ‘unaccounted for water’**

**Water usage**

- 3. Kanyamazane – limit of 500 litres/household/day**
- 4. Matsulu – limit of 600 litres/household/day**

**Revenue Collections**

- 5. Nelspruit – 97%**
- 6. Kanyamazane – 80%**
- 7. Matsulu – 72%**
- 8. Tekwane – 70%**
- 9. Other areas – 70%**

Non-revenue water and uncollectible revenues, combined, account for all water that is produced and purchased for customer use and for which the concessionaire does not ultimately receive cash. These two terms are defined as follows:

- Non-revenue water – this is the difference between water a service provider produces and purchases in bulk for customer use, and water billed to customers
- Uncollectible revenues – this is the difference between the revenue based on the water billed to customers, and payments of those billings

Non-revenue water and revenue collections rates are key performance measures because they ultimately influence tariffs and/or increase or decrease the amount of revenue available for investment in infrastructure improvements and service delivery.

### **2.8.1. Unaccounted for Water and Water Usage**

The current international practice, developed after this concession began in 1999, is to measure non-revenue water (NRW). Non-revenue water is comprised of two major components:

- 1. Real losses – this is water lost from the system through leaks from reservoirs and the distribution system, from transmission through to the customer meter**

2. Apparent losses - water which is delivered to water users but which is not measured, whether due to inaccurate or failed customer meters or unauthorised usage, and water legitimately used for which no income is received, including operational use.

The key performance indicators agreed to as part of Supplementary Agreement No. 2 (SA2) in 2004 set targets for NRW (referred to in the contract as ‘unaccounted for water’, UAW) and the reduction of average water use.

As seen in the Table below, UAW has not changed in Nelspruit. UAW and has improved in the areas outside Nelspruit, though the target of 35% was not achieved.

However, water usage per household in the two largest urban areas outside Nelspruit has increased substantially since 2004. This is a direct result of a lack of focus on these critical issues by the concessionaire as well as a lack of contract management on the part of the Municipality in not insisting on the interventions required to address this situation.

**Table 13: Water Use Reduction Targets**

KPI	2004	2009	2009
	Status Quo	Target	Actual
Unaccounted for water in Nelspruit	14%	15%	23%
Unaccounted for water in all areas outside Nelspruit	80%	35%	40%
Average consumption in Kanyamazane (litres/household/day)	700	500	972
Average consumption in Matsulu (litres/household/day)	750	600	956

NRW percentages are now tracked by the concessionaire and will become the focus for the next five-year period. For 2008/09, NRW was 22% in Nelspruit and 78% in the areas outside Nelspruit, tracking the poor UAW performance.

It is clear that large numbers of illegal connections are present in the concession area resulting in high levels of theft and wastage of water. There are also many recorded cases of meters removed from formal connections or of by-pass systems being installed. One of the challenges facing the concessionaire is that action against illegal activities can only be undertaken by law enforcement officers, a governmental responsibility.

### **2.8.2. Revenue Collections**

As shown in the following table, collections of billings in 2009 are about the same in Nelspruit as in 1999 (92% today; 94% in 1999). The concessionaire did achieve a small growth in payment levels in the first year or two of the contract in the areas outside of Nelspruit. The introduction of “free basic water”, however, together with the efforts of opposition political parties to present this as “free water”, led to a reduction in collection levels by 2003. Subsequently, the growth in both billings and collections has started to show an upward trend and collections have more than doubled but are far below the 70% to 80% range as agreed in the 2004 contract amendment (SA2), to be achieved by 2009.



**Table 14: Billings and Collections (Rand)**

		2000/1		2004/5		2008/9	
		Amount	Coll.	Amount	Coll.	Amount	Coll.
Nelspruit	Billed	33,969,478	94%	66,290,586	90%	118,652,312	92%
	Collected	32,010,523		59,967,436		108,578,697	
Kanyamazane & Tekwane	Billed	6,542,525	12%	10,451,486	13%	20,270,439	28%
	Collected	781,284		1,346,043		5,591,331	
Matsulu	Billed	4,787,073	3%	7,725,246	3%	7,511,571	10%
	Collected	138,100		206,288		722,713	
Total	Billed	45,299,076	73%	84,467,319	73%	146,434,322	78%
	Collected	32,929,907		61,519,767		114,892,741	

Under the pre 1994 apartheid structures in South Africa, the bulk of the concession area outside the town of Nelspruit formed part of one of the homeland governments. Where services were provided there was no expectation of payment. In the areas not included in the homeland governments, the refusal to pay for any municipal or government provided services became a significant form of protest against the apartheid government.

There was, therefore, a strong culture of non-payment for water services before the start of the concession. A primary reason for entering into the concession was to ultimately reverse this culture and to generate a revenue base that could support the development and operation of the water and sanitation systems throughout the entire Municipality, including the peri-urban and rural areas.

While the concessionaire has made various attempts to address the non-payment issues, little success has been achieved to date. Lack of payment was often cited as the reason for not being able to invest more in infrastructure to reduce the number of customers without 24-hour water supply. However, the converse is also true with customers refusing to pay as a result of not having a 24-hour supply. It is clear that this issue must be addressed with two distinct programmes – one focusing on low income communities that will probably never pay large amounts for their basic services, and a different programme for communities that can afford to pay for services. The first step in both programmes should be focused on providing the service, not on enforcing payment. Two promising pilot programmes that should fully address this issue, in the Luphisi and Matsulu communities, are explained in Boxes 2 and 3 above.

The use of metering units that have the ability to restrict the supply of water has also proved to be a useful tool to improve revenue collections. Normal meters are installed with the addition of a key operated restrictor valve on the input side of the meter. If the customer opts for a restricted supply, or if the customer has fallen behind with payments without making any payment arrangements, the flow of water through the meter can be restricted to the basic volume of 6 kl per month.

## **2.9. Financial Performance of the Concessionaire**

### **Contractual requirement – adhere to the 1999 financial model return and methodology calculations**

Based on a review of the 1999 financial model’s rate of return methodology, it appears the current methodology for calculating the internal rate of return is the same as used in 1999, and therefore in compliance with the contractual requirement.

The financial performance of the concessionaire is evaluated as part of this case study because the concession contract:

1. Allows the concessionaire to earn a reasonable return on its shareholder investment
2. Entitles the municipality to expect its tariff, investment and service delivery expectations to be achieved within a reasonable level of financial return to the concessionaire. Alternatively, the municipality could expect even more investment and service delivery, or lower tariffs, if the concessionaire's return is more than the contractually allowed expectation.

This section of the case study reviews the evolution of the concessionaire's annual financial performance and the internal rate of return as established by the contract. The internal rate of return is the contractual requirement for specific financial performance.

The first financial year of the concession covered the five months from 1 November 1999 through 31 March 2000, the concessionaire's normal financial year end. This period is not considered in this review because the lack of twelve months of financial results would require estimates of financial performance to compare it to subsequent years, and because good customer statistical information, needed to explain the financial results, is not available.

For the nine year period, 2000/1 through 2008/9, sales revenues increased 155%, from R42.7 million in 2000 to R109.0 million in 2009 primarily for two reasons:

- Tariffs increases averaged 8.4% annually and increased revenues by 106%, accounting for about 55% of the total revenue increase
- Total water billed to customers increased 70%, from 5.3 million kl in 2001 to 9.1 million kl in 2009, accounting for most of the rest of the revenue increase.

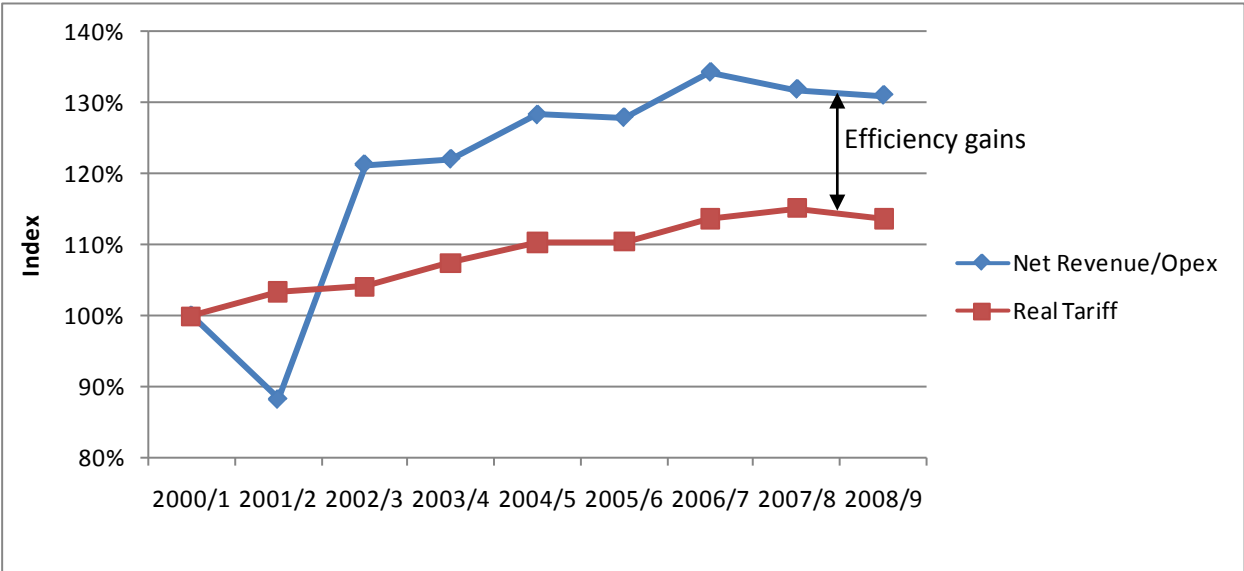
**Table 15: Key Financial Indicators (R millions)**

Item	2000/1	2001/2	2002/3	2003/4	2004/5	2005/6	2006/7	2007/8	2008/9
Sales revenue	42.7	51.3	60.9	68.4	70.5	90.5	85.0	100.7	109.0
Bad debt provision	4.7	10.8	3.1	6.1	9.1	16.8	7.9	5.6	2.8
<b>Collection %</b>	<b>89%</b>	<b>79%</b>	<b>95%</b>	<b>91%</b>	<b>87%</b>	<b>81%</b>	<b>91%</b>	<b>94%</b>	<b>97%</b>
<b>Net revenue</b>	<b>38.0</b>	<b>40.5</b>	<b>57.8</b>	<b>62.3</b>	<b>61.4</b>	<b>73.7</b>	<b>77.1</b>	<b>95.1</b>	<b>106.2</b>
<b>Operating expenses</b>	<b>37.0</b>	<b>44.7</b>	<b>46.4</b>	<b>49.7</b>	<b>46.6</b>	<b>56.1</b>	<b>55.9</b>	<b>70.2</b>	<b>78.9</b>
<b>Net revenue/Opex</b>	<b>103%</b>	<b>91%</b>	<b>125%</b>	<b>125%</b>	<b>132%</b>	<b>131%</b>	<b>138%</b>	<b>135%</b>	<b>135%</b>
Depreciation	0.3	1.1	2.8	3.4	3.7	3.9	3.9	4.1	4.8
Other expenses	5.1	4.7	4.1	4.0	3.1	4.3	2.2	3.0	3.4
Other income	0.0	0.0	0.0	0.2	4.3	6.8	10.7	10.5	14.1
Earnings before interest and taxes (EBIT)	(4.4)	(10.0)	4.5	5.4	12.3	16.2	25.8	28.3	33.2
Interest expense	2.0	6.1	8.0	6.6	5.6	8.3	9.6	8.4	7.8
Taxes	(1.8)	(4.5)	(0.8)	(0.1)	2.6	2.8	4.1	7.3	10.8
<b>Net profit (loss)</b>	<b>(4.6)</b>	<b>(11.6)</b>	<b>(2.7)</b>	<b>(1.1)</b>	<b>4.1</b>	<b>5.1</b>	<b>12.1</b>	<b>12.6</b>	<b>14.6</b>
Net revenue/opex	103%	91%	125%	125%	132%	131%	138%	135%	135%
<b>Index: Net Revenue/Opex</b>	<b>100%</b>	<b>88%</b>	<b>121%</b>	<b>122%</b>	<b>128%</b>	<b>128%</b>	<b>134%</b>	<b>132%</b>	<b>131%</b>
Tariff increase	9.5%	10.0%	10.0%	10.0%	7.0%	4.0%	7.5%	7.8%	10.0%
CPIX, Stats SA	7.8%	6.6%	9.3%	6.8%	4.3%	3.9%	4.6%	6.5%	11.3%
Real tariff increase - Tariff minus CPIX	1.7%	3.4%	0.7%	3.2%	2.7%	0.1%	2.9%	1.3%	-1.3%
<b>Index: Real tariff</b>	<b>100%</b>	<b>103%</b>	<b>104%</b>	<b>107%</b>	<b>110%</b>	<b>110%</b>	<b>114%</b>	<b>115%</b>	<b>114%</b>

Net revenue, after deducting the annual “provision for bad debts”, increased from R38 million in 2000/1 to R106.2 million in 2008/9, a 179% increase. It should be noted that the resulting ‘collection %’ calculation is based on ‘bad debt provision’ (the accounting basis) rather than on the actual cash collections. The ‘accounting basis’ collections percentage increased from 89% in 2000/1 to 97% in 2008/9, representing modest improvement attributable to the concessionaire’s management, and in line with the improvement in the collections ratio, from 73% to 78%. The ‘accounting basis’ collections ratio is higher than the cash collections ratio because the concessionaire projects that many of the overdue customer accounts will ultimately be collected. The cash collections ratio is analysed further in the Revenue Collections section of this report.

To analyse the impact of the concessionaire’s management on the financial results, the change in the operating ratio over time is compared with ‘real tariff’ increases, the amount of tariff increases other than for normal inflationary increases.

**Figure 3: Evolution of Net Revenue/Opex vs. Real Average Tariff**



The operating ratio (net revenue/operating costs) increased 31% over the nine-year period when full-year information is available, from 103% in 2000/1 to 135% in 2008/9. Two-thirds of the improvement in this ratio, or 21% of the total 31% nine-year improvement occurred over the three-year period from 2000/1 through 2002/3, when the ratio increased from 103% to 125%. After 2003, the ratio steadily increased to 132% in 2005, and now appears to have stabilized at 135% for the last two years.

Inflation increased 16% from 2000/1 to 2002/3 – 6.6% in 2001/2 and 9.3% in 2002/3. Therefore, the large gap between the operating ratio and ‘real tariff’ increases, which opened in 2002/3, is attributable to the actions of the concessionaire in the first few years of the concession.

The difference between the operating ratio and ‘real tariff’ increases from 2000/1 to 2002/3 is primarily for two reasons:

- Billed water use increased by 24%, from 5.3 million kl in 2000/1 to 6.6 million kl in 2002/3. This increase is a result of the concessionaire’s actions to extend services to previously unserved areas and to begin billing customers that were already taking water from the system.

- The 'real operating cost', after deducting inflation, per kl of water billed to customers dropped from R7 to R6 from 2000/1 to 2002/3, a 15% efficiency improvement by the concessionaire.

As of 2009, the concessionaire is projecting an internal rate of return of 14.8%, based on their assumptions for revenue, expenditures, infrastructure investment, financing and dividends over the next 20 years – and based on reducing all future net cash flows to 2000 prices. This is below the 18.5% return agreed upon between the parties in 1999 at the origin of the contract; however, the concessionaire intends to ultimately earn the contractually allowed 18.5% return.

The Municipality engaged outside financial expertise to help negotiate the contract, and in the early years of the contract, to help monitor the concessionaire's financial performance and adherence to the contractual terms for return on investment. The Municipality has only recently re-engaged the outside financial expertise as it has no in-house resources who understand how the financial model operates and whether the concessionaire's representations are accurate. Consequently, the concessionaire has been in a very strong position to support their conclusions for operating and capital improvements required to improve service delivery.

An issue that might become problematic is payment of dividends. The concessionaire has not taken any dividends from the operation so far. This makes it much easier for the concessionaire to justify its lack of investment in the operation since 2003 and why resolving the 24-hour service issue and further extensions of services to formerly unserved areas are not financially viable.

To achieve its contractually allowed rate of return on its R24 million investment, the concessionaire expects to start paying increasing levels of dividends from the operation in 2011. The issue of a reasonable return may become much more difficult to explain when the level of dividends becomes much larger. At that point, it will probably be critical that the Executive Mayor, key councillors involved in monitoring the concession, the Municipality's CFO, and Municipal Manager have a good understanding of the rate of return concept, how it is calculated, and be satisfied that it is reasonable, so they can explain and justify it to the Municipality's customers and the many other stakeholders.

## **2.10. Customer Satisfaction**

### **Contractual requirement**

- 1. Annual customer satisfaction survey and follow-up actions to address issues identified**
- 2. Community-oriented training and development programmes**
- 3. Tariffs maintained in accordance with contractual requirements**

### **2.10.1. Customer Satisfaction Survey**

A requirement of the contract amendment covering the period 2004-2009 was an annual customer satisfaction survey. It was expected these surveys would be used to more rationally identify specific areas where customer satisfaction should be improved, and for which programmes would then be developed to address.

These surveys were done in 2005, 2006 and 2007, but none have been performed since. The concessionaire intends to do the next survey in 2010. The prime purpose of these surveys was to try and measure the change of customers' attitudes over time.

Based on the 2007 survey and ad hoc interviews with councillors and customers, customer satisfaction is primarily a function of whether customers receive a 24-hour water supply. Issues with the accuracy of water bills were also consistently cited. In Nelspruit, a relatively high-income area, and where there is a consistent 24-hour water supply, customer satisfaction is good.

Following are some of the findings and conclusions from the 2007 survey's Executive Summary:

*"Expectations with regards to the water services were, to a large extent, a function of respondents' personal level of service and the quality of the service they are receiving. Consumers who encountered problems with access to water were more likely to expect Silulumanzi to provide them with an uninterrupted supply than those with a 24-hour full pressure supply. Consumers with 24-hour access to water in their houses mentioned good and reliable services as their main expectations. All categories of consumers, however, expect clean healthy water.*

*"Intermittent supply continues to be a serious source of dissatisfaction. Areas most seriously affected are Kanyamazane, Matsulu A & C, and Luphisi/Mpakeni/Zwelisha. From the qualitative comments it was evident that customers blamed Silulumanzi for this situation. They were not aware that the water is bought from Bushbuckridge Water. The unpredictability of the water supply is a particular source of dissatisfaction as consumers cannot plan ahead. When the water is supplied, it is furthermore often not sufficient for all the residents, and some have to make do without water.*

*"Time for explanations about the situation have passed. We infer from the qualitative feedback that people are no longer prepared to listen to explanations. It is essential that the water services provider be seen as doing something to address the situation. The most critical concerns and inconveniences for consumers are the following:*

- *Having to get up in the middle of the night to stand in a queue for water*
- *Not being sure if there will still be water available by the time they get to the front of the queue*
- *The unpredictability of water supply*
- *The long distance that they have to walk, or send somebody, to fetch water*
- *Health and safety risks with regard to open buckets of water."* (2007 – Customer Perception Survey, pages 3-4)

*"Problems with water quality have significantly improved from 2006. In 2006 31% of households in Mosgwaba often (once a month) experienced a water quality problem; in 2007 the figure dropped to 10.2%.*

*"The quality of customer care has also improved over the three year period, 2005-2007, particularly with regard to the helpfulness and friendliness of staff.*

*"If consumers' comprehension of accounts could be improved, monthly accounts would be an ideal communication channel to ensure that paying customers understand the concept of Free Basic Water and know that they are getting this benefit.*

*"Paying consumers in LSM group 7-10 [highest socio-economic category] are consistently more positive about the fairness of accounts than in 2006. Paying consumers in the lower LSM group 4-6 [middle socio-economic category] are less positive about the fairness of accounts than in 2006,*

*possibly as a result of water supply problems. The number of consumers who say they pay their accounts regularly has also increased since 2005. .Paying at the office, remains the favoured payment method for the majority of consumers.*

Clearly, delivering a 24-hour water supply is the centrepiece of customer service. Without that in place, other efforts, while important, are probably not going to result in much change in customer satisfaction.

In addition to resolving the 24-hour water supply issue, the concessionaire has other programmes that are yielding good results:

1. A new customised head office and customer care centre was established in Nelspruit
2. A new computerised customer management and billing system was introduced with billing designed to be easier to be understood.
3. Town Managers were appointed in Kanyamazane (which also serves Tekwane, Mosgwaba and Zwelisha) and Matsulu to improve the service provided to these areas. This focuses more attention on each community.
4. In addition to Nelspruit, customer contact centres were established in Kanyamazane, Mosgwaba and Matsulu thus giving an accessible location in each community to resolve problems as well as keeping the concessionaire in closer contact with the community's issues
5. The concessionaire offers a range of training programmes to customers in its employee training centre (see Employee Programmes, below).

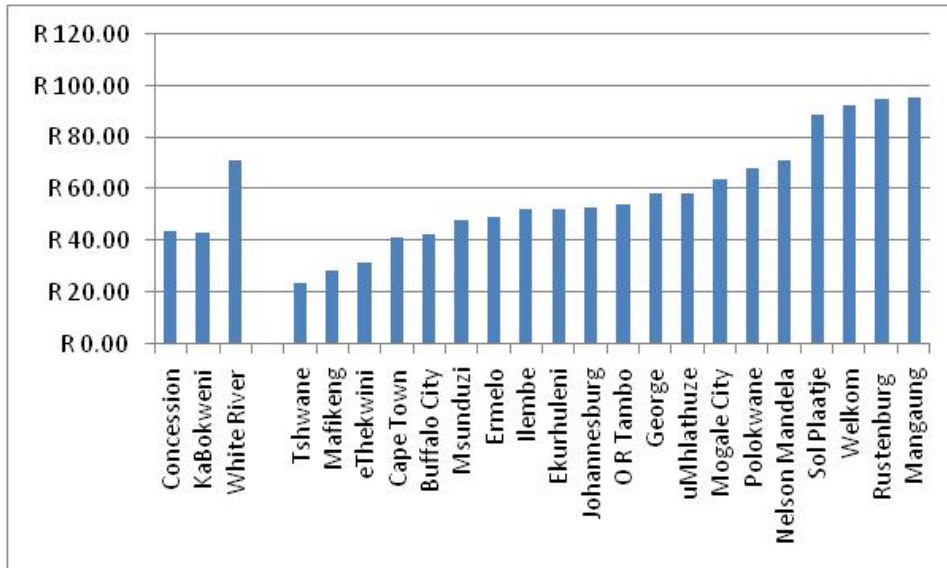
### **2.10.2. Tariff Levels**

A significant factor in customer satisfaction is the tariff level relative to other comparable service areas.

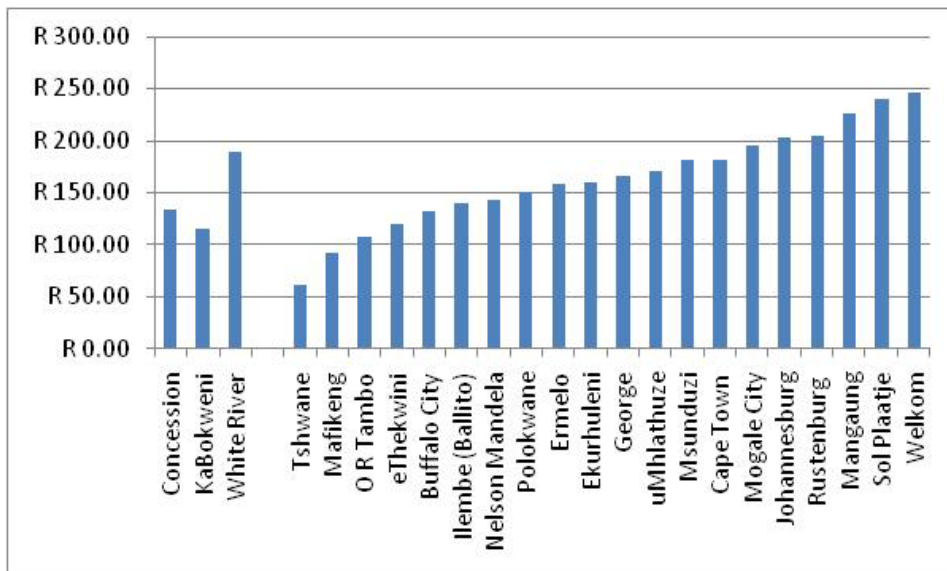
The contract deals with the “charges” that the concessionaire will receive for providing the service while the Municipality, as the WSA, has the responsibility of setting the “tariffs”. To date the Municipality has always set the tariffs at the same level as the agreed charges.

Most domestic customers use between 15 kl and 30 kl of water per month – many use more but they are mostly in the more affluent areas and use more water for watering gardens. The following tables show that tariffs in the concession area are well in line with those charged by other similar municipalities in South Africa.

**Figure 4: Comparison of Cost of 15 kl per month Water Usage**



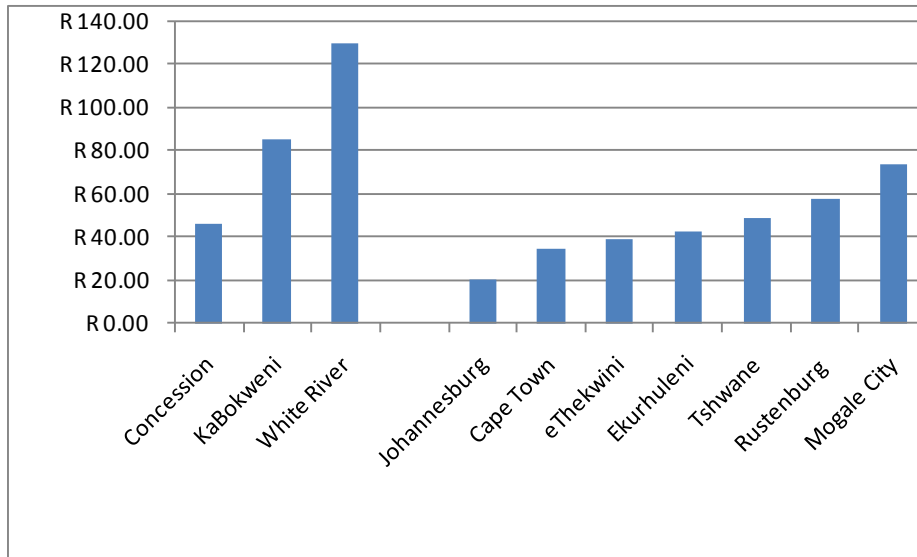
**Figure 5: Comparison of Cost of 30 kl per month Water Usage**



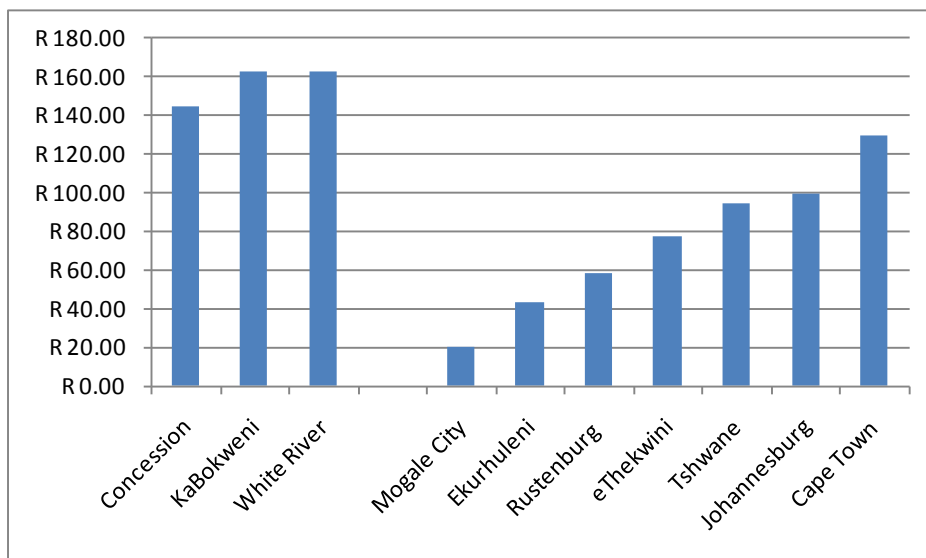
*Note: Kabokweni and White River are areas where Mbombela provides the service and determines the applicable water tariffs.*

A similar comparison of the sewerage tariff shows that the concession costs are lower than in the other areas of Mbombela at the 15 kl and 30 kl of usage per month. The concession’s tariffs are at the national average of the largest urban areas for 15 kl per month, but are the highest of the seven other municipalities surveyed for 30 kl of usage.

**Figure 6: Comparison of Sewerage Cost at 15 kl per month Water Usage**



**Figure 7: Comparison of Sewerage Cost at 30 kl per month Water Usage**



When water and sewerage tariffs are combined (for the seven municipalities for which information was available for both water and sewerage) the concession’s tariffs are the same as at the average for the seven municipalities for 15 kl per month of usage, and above average for 30 kl of usage.

## 2.11. Employee Programmes

**Contractual requirement – comprehensive employee development, training, and compensation programmes**

Employee programmes are strengths of the concessionaire.



There were 137 employees transferred from the municipality to the concessionaire in 1999. At the time, there was concern that the concessionaire might reduce the number of permanent employees or substitute temporary workers for full-time, unionised employees. Of the 137 transferred employees, 69 are still employed by the concessionaire, 35 of these have received promotions and 51 of them have received training in respect Adult Basic Education and Training (ABET) as well as water and sewer care, plumbing, etc. All transferred staff was operational personnel - no senior management or design and planning staff were transferred.

The concessionaire has added 84 permanent employees since 1999. Of the 221 current staff, 181 are union members split between SAMWU (115), Solidarity (61) and IMATU (5). Staff turnover levels have averaged around 7% over the last four years.

The perception obtained during the interviews and discussions in preparing this case study was that staff was generally motivated and positive about the company and the service they were rendering to the community. This was corroborated by union officials from two of the three unions. Officials with one of the unions did not have any positive comments about the concessionaire and stated that water and sanitation operations should always be managed by the responsible municipality as a matter of principle, consistent with their position when the concession was originally proposed.

Compensation levels are in line with national averages, though total compensation is somewhat below what the same employees would earn if they were still employed by the Municipality. Generally, salaries are comparable but certain benefits offered by the Municipality are higher. Housing allowances available to Municipal employees are not offered to the concessionaire's employees.

The concessionaire's training centre serves the community as well its own employees. Some 1,800 community members have been assisted through training, awareness workshops and plant visits. The prime focus of the training over recent years has been on health and safety issues including legal compliance and basics such as fire fighting, first aid, etc. Other major areas covered include basic plumbing, computer literacy and obtaining drivers licenses. Over the last three years the concessionaire has funded 10 annual study bursaries<sup>4</sup> and 27 employees have benefited from a learnership programme to assist them to obtain a formal qualification as process controllers in an area where there is a considerable shortage throughout the country. The workforce of the concessionaire includes six professionally registered engineers and technicians, a chartered accountant, and qualified scientists.

A contractual requirement was a commitment to affirmative action. While some union employees question the concessionaire's commitment to affirmative action, the composition of the workforce would indicate it is working. In 1999, 125, or 91%, of the transferred workforce were non-white compared to 180, or 81%, of the total workforce in 2009. While the total percentage of non-whites is lower, this is because of intense hiring competition nationally for non-white senior technical and management professionals.

The current total staff complement employed by the concessionaire equates to 3.0 employees per 1,000 households served, compared to the 3.2 employees per household of operational staff that were

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<sup>4</sup> A bursary is an arrangement where the employer will pay the agreed costs for a selected person to study for a relevant qualification at an external college or university. The person may be an existing employee or someone who has been selected as a future employee based on previous academic achievements. A person receiving a bursary will have to commit to work for the company after qualification for at least one year for every year that a bursary was received.

transferred at the start of the concession. The concessionaire has not reduced the number of permanent and union employees as was feared by some union members when the contract was signed but has actually grown the personnel numbers and introduced considerable additional skills.

## **2.12. Reporting**

### **Contractual requirement – regular quarterly and annual reporting on key contractual performance criteria and annual audited financial reports**

The concessionaire has reported on all key performance issues each month, as required by the contract. Annual audited financial statements are produced each year. It is, however, clear that this reporting has not been handled effectively by the Municipality as councillors and senior officials complain of not having been kept aware of the information contained in these reports.

## **2.13. Black Economic Empowerment (BEE) Performance**

### **Contractual requirement – 10% BEE investment partner**

The contract contains a requirement for BEE participation. Initially, a BEE firm participated in the ownership of the concession, owning 10% of the shares. However, the minority partner was limited to providing a chairman for the concession company and did not contribute to any of the day to day concession operations. This firm's shares were recently purchased back by the concessionaire, by mutual agreement between the concessionaire and Municipality.

At the time of this report, the concessionaire and Municipality appear to be in agreement with the concessionaire's plans to obtain another locally based BEE partner. These plans are to be included in the next supplementary agreement currently being negotiated.

## Chapter 3: Contract Management

### 3.1. Initial Efforts

Initially a contract monitoring office was established by the municipality comprised of a technical person as the manager of the unit, a customer care officer and the appointment of a major auditing firm to provide financial monitoring. The manager reported to the Deputy Municipal Manager who had been one of the project champions from the outset. A system of reporting was developed that produced monthly reports to a Council sub-committee.

When first the Deputy Municipal Manager and then the Manager of the unit left the employ of Council, there was a period when little monitoring took place and there was no reporting to Council. Given the large turnover of officials and councillors, this left a large gap in the knowledge of the concession and in the understanding of the factors that have to be managed on an on-going basis.

### 3.2. Current Status

The Municipality has a Contract Monitoring Unit (CMU) in place, staffed with a full time, technically qualified Contract Manager, and a community liaison officer who receives community issues that are either not resolved through the concessionaire's normal customer service operations or that he receives directly from customers and councillors.

However, the Municipality's overall contract monitoring is not performing as well as it should. Currently, the Contract Management Unit lacks the necessary operational and financial skills to properly monitor and manage the concessionaire. The Municipality is not regularly and systematically overseeing the concessionaire's progress in meeting its service delivery expectations and requirements. It appears the concessionaire takes the lead to initiate contract monitoring meetings with the Municipality.

The Municipality does not perform any financial monitoring of the concessionaire. The Municipality recently appointed an outside financial and accounting firm to assist it with negotiations for the next five-year supplementary agreement. The role to be played by the firm and whether they are to help with ongoing monitoring is not clear.

Effective monitoring and contract management is critical to the success of any outsourced contract. There are many examples where outsourcing has been deemed a failure due to the lack of control by the authority. While Mbombela has been fortunate to have a concessionaire that is committed to providing a high quality service, there are areas – such as delivering a 24-hour water supply to all customers - where stronger control and management would probably yield greater benefits for the Municipality and its customers.

It is critical that senior municipal officials are involved in contract management, which is the case in Mbombela. However, it is also important that the right skills and knowledge are in place in the Contract Monitoring Unit, to fully understand the concessionaire's operations and finances and to communicate the concessionaire's performance to the Municipality's councillors and senior officials.

It can take years to recruit and develop the level of talent needed for contract management and monitoring. Unless, and until, the Municipality can attract these kinds of individuals as employees, these skills can be obtained quickly and locally from outside consultants, to provide short term inputs on an on-going basis as required. The use of skilled and experienced financial and technical professionals for a few days per month, if properly managed, can be more cost effective than the full time employment of junior, less experienced, staff.

## Chapter 4: Lessons Learned

### 4.1. What worked – potential for replication in other communities

Ten years on, this concession is operating at a high level of operational and financial performance, and has yielded significant benefits for the Municipality and its water and sanitation customers. Based on the authors' experience of working with, and assessing, a number of other South African WSAs and WSPs, it is the conclusion of this study that water and sanitation services in the concession area are in much better condition than if the Municipality had continued to operate them directly out of one of its own departments. This conclusion is derived from the following:

1. The use of the concession contract has focused the attention of substantial additional management talent on the day-to-day water and sanitation operations. This is above and beyond what the Municipality could have provided with all its competing concerns.
2. Backlogs of access to the formal water and sanitation systems have been substantially reduced since 1999. Ninety-four percent of households currently have access to some level of water service - a significant accomplishment, particularly given the high levels of growth in the number of households over the past 10 years.
3. Potable water and effluent quality for the plants operated by the concessionaire are excellent, as recognized by DWEA's Blue and Green Drop awards.
4. If the new, concessionaire designed, pilot programmes are successfully expanded and implemented system-wide, it is reasonable to expect that virtually all current households will have a 24-hour water supply before 2014.
5. Employee training and development programmes are strong and employee retention is good.
6. The water and wastewater revenue generated by the economic hub of the town of Nelspruit has been critical, along with available grants and subsidies, to provide the basis for providing these services to the previously unserved and underserved areas as well as subsidising the provision of services to the poorest of the poor. The availability of such an economic hub is imperative for the financial sustainability of any water services supply authority.
7. Given appropriate checks and balances the private sector can facilitate the provision of services to the poorest of the poor utilising available capital grants and service subsidies.
8. All of the above is being achieved on the basis of water tariffs that are reasonable and comparable with other South African municipalities and national averages

### 4.2. What didn't work/remaining challenges

Despite the successes noted above, there are some critical issues that have not been adequately addressed:

1. Sixty-eight percent of households do not have a 24-hour water supply – this issue was expected to be substantially addressed by now. It appears the concessionaire understands how to resolve this issue and could eliminate most of the issues over the next few years, other than for those customers served by the Kanyamazane plant as noted above.

2. There has been no capital investment by the concessionaire of shareholder funds and only R54 million of borrowed funding for which the concessionaire is responsible for repayment. A primary reason for undertaking the concession in 1999 was to access substantial external financing of the estimated R250 million of infrastructure investment needed to extend water and sanitation services to all concession area households. Substantial capital investment will be required to upgrade the Kanyamazane water plant and other areas of reticulation and storage could also benefit from further investment. While there appears to be reasonable and appropriate reasons for changing the investment expectations of the concession in the past, there is still 20 years of the contract remaining that would allow further scope for borrowing and investment. This could create an opportunity for the Municipality and the concessionaire to pro-actively address some of the areas where the concession has not performed to expectations.

3. Significant changes have occurred in the contractual arrangements since 1999, with the concessionaire substantially reducing its responsibility for all investment in infrastructure, receiving government grants for operating and capital purposes, and eliminating two significant payments to the Municipality. See Table 8 below. Although the contract remains a concession in name, there is little doubt that the concessionaire has reduced and/or limited its risk and responsibilities through the various renegotiations of the contract. The terms of the contract have been adjusted due to changing external circumstances and perhaps the rate of return on investment should also be re-examined.

**Figure 8: Concessionaire Risk Profile**

<b>Risk</b>	<b>1999</b>	<b>2009</b>
Revenue – Collection	Yes	Limited
Revenue – Tariff Levels	No	No
Service Delivery Targets	Yes	Limited
Return on Investment	Yes	Limited
Infrastructure Financing	Yes	No
Infrastructure Construction	Yes	Limited
Political	No	No

4. There has been very little progress with improving the non-revenue water performance and collections of billings are far below the levels anticipated by the contract. This is partly the result of the government policy of ‘free basic services’, which has been used by many customers as a reason to not pay for any services. However, it is also the result of a lack of effort by the concessionaire, until the past few years, to address the issues needed to first provide a 24-hour water service.

5. The Municipality’s contract monitoring function is weak. This issue is entirely under the control of the Municipality. Since regulation only occurs through contract management by the Municipality, and not from an external entity, the importance of a fully capacitated concession monitoring office cannot be overemphasized.

6. Various National government agencies have oversight roles for this concession, but no enforcement authority. Consequently, technical support from the national level appears to ebb and flow, depending on the specific people involved in each of the agencies.

## Chapter 5: Recommendations to Mbombela

### 5.1. 24-hour supply

As explained in the case study, while virtually all households in the concession area now have a basic water supply, a large percentage of households still do not have a 24-hour water supply ten years into the concession's operation. This was the primary reason for entering into a concession arrangement and represents the most critical performance issue with the concession.

The concessionaire and Municipality should jointly develop a plan with specific programmes and timelines by service area, and related financial and operating commitments (i.e., personnel resources, management resources, etc.) to deliver a 24-hour water supply to all current customers by 2014. This plan should then be strictly monitored and enforced by the Municipality.

The plan should focus first on 24-hour supply, not on collections, especially in communities where the ability and willingness to pay is weak. Meters with restrictor devices that can limit delivery of water to 6 Kl/month should be the standard meter installation in these areas.

Lack of collections should not be a reason for not delivering a 24-hour water supply to all customers – i.e., the revenue required for the concessionaire to achieve its required rate of return can come from different sources, such as other customer revenues, equitable share payments by the Municipality, investment in infrastructure by the Municipality through MIG, all of which reduces the concessionaire's investment and return requirements, etc. Areas that cannot afford to pay for services do not have to pay for 100% of the cost of providing services to them if the revenue to cover the cost of those services can come from other sources.

Ensuring a 24-hour water supply will require substantial additional water infrastructure, an aggressive water demand management programme, active community engagement and participation, and law enforcement to enforce Municipal bylaws and building regulations.

### 5.2. Same entity should manage all water facilities

The Kanyamazane area is in the concession area, but the water is provided by a water plant owned by the Municipality and operated by the Bushbuckridge Water Board. Many Kanyamazane water customers do not have a 24-hour water supply due partly to the lack of capacity of the water plant; customers also regularly complain about the quality of the water.

The same entity should manage all water facilities. The Municipality should take the necessary steps to take back the daily operation of this water plant and transfer it to the concessionaire.

### 5.3. Contract monitoring and management

What is very clear from this study and other experiences is that strong contract monitoring and management is necessary for the contracting authority to ensure it is receiving the benefits it expects from any outsourced venture. The contract monitoring function plays a vital role in keeping the



employing authority advised of progress, achievements and problems as well as facilitating communications between the parties.

The Municipality should focus its contract management efforts first on the most critical issues, such as the following:

1. Holding the concessionaire accountable on a monthly basis for executing its obligations to deliver a 24-hour water supply, in accordance with a plan to be developed.
2. Put in place the financial monitoring programme, as described below, and to keep the Municipality informed of the financial performance of the concession, and to ensure the Municipality is receiving the service delivery benefits from the financial resources available to the concessionaire.

To execute these responsibilities, the Municipality should explore the use of two outside consultants on a limited basis each month, one for monitoring the operational, construction and technical compliance issues and one for the financial issues. These two consultants, if properly managed, could provide the Municipality with answers to most of the questions councillors were asking at the time of this report, and on an on-going basis, at a lower cost than putting in place the larger CMU that is currently envisioned. As the Municipality is able to add qualified and experienced resources to its CMU, it could reduce the use of the outside consultants.

In terms of the contract the concession fee has to be set at the cost of contract monitoring. This means that the contract monitoring unit's costs are paid out of the concession income and do not, therefore, constitute a direct cost for the municipality.

### **5.3.1. Financial monitoring**

The original 1999 contract contains a financial model with certain assumptions and methods for calculating the targeted return for the concession's 30-year term. The parties should:

1. Determine if the current model is operating the same way, and using the same principles, as the original model.
2. Determine if any change in return levels is appropriate as a result of no investment of shareholder funds by the concessionaire since 2002.
3. Develop a simplified financial reporting format so the municipality's financial officials and councillors can understand financial performance on a regular (e.g., perhaps quarterly) basis.

## Chapter 6: Findings

### 6.1. Selection of a Concession Contract

The use of a concession contract to provide a water and sanitation service is an option that has benefit under certain circumstances. Due to their long term nature, however, concession contracts are complicated and detailed documents that try, but rarely succeed, to allow for the possible changes that can occur over a 15 to 30 year contract life. The time and costs involved in establishing a concession can be considerable and their complexities can be time consuming for the non-specialist to understand.

A key element in a concession contract is the extent that risk is transferred to the private party. While this can be established up front, the various changes that happen outside the concession agreement such as in legislation, policy, socio-economic and environmental conditions, etc., can quickly create many opportunities for the sophisticated operator to water down the original strict terms of the contract. Experience of this case study shows that the application of a sophisticated 30 year contract in a country that is developing and liable to go through various substantial policy and legislative changes can impact on the ability to preserve the balance of risk and return that is originally intended.

The benefit of the longer contract, however, is that it gives time for the appointed operator to develop permanent support infrastructure as well as a being able to attract a top core of dedicated operational personnel.

While it is easy to understand that the private party can raise capital in the early years of a concession with a view to its interest and redemption costs being more than covered by generated revenue, it becomes more difficult to incentivise the private party to continue investing towards the end of the contract term. The expectations and requirements in terms of continued investment have to be an integral part of the concession agreement that is strictly monitored. Similarly the rate of return received by the private party has to be controlled to that originally tendered to ensure that the beneficiaries of the concession do not have to pay more than is required for the provision of the service. Where a change in the level of risk occurs this should also be applied to a suitable adjustment on the rate of return.

Where a concession contract requires serving households that would normally attract subsidies and grants, then it is appropriate for the concession to receive this public money or be responsible for its utilisation and application for the benefit of the intended recipients. In this way, the skills and expertise of the private sector operator can be leveraged for the benefit of service provision to the poorest of the poor. Obviously such an approach requires a clear understanding and commitment from both parties on what is required as the outcomes of the allocation of these funds. It also requires high levels of contract management and monitoring to ensure the correct and transparent utilisation of public funds.

Concessions do have an important role to play in the provision and operation of infrastructure. Their use should, however, be focussed in areas where the potential for change over the contract term is limited. This factor would also indicate shorter rather than longer contract periods.

## **6.2. Alternative Forms of Contract**

The various outsourcing contract options described in Annexure B all have their values and benefits that would be applicable under specific circumstances. It is important to ensure that the correct option is applied and that the details of the selected option are adjusted and adapted to suit the specific needs and circumstances. Often a specially designed type of contract combining the most appropriate elements of the different options will be the basis for the selected optimum approach. An example of this could be to combine an operation and maintenance contract for the total system with a build, operate transfer agreement for specific facilities and a billing and cost recovery system for the urban area.

## **6.3. Important Elements in an Outsourcing Contract**

When considering the use of an outsourced contract the authority should clearly understand the affordability element of the services both to itself and to the user. The requirements or targets to be set in the contract should reflect this affordability. This is particularly important in defining the levels of service. In Mbombela, it would have been a “nice to have” for every household to be connected to a waterborne sewerage system but the up-front affordability study clearly identified this as not being feasible and went in to considerable detail on the different standards that were appropriate for different areas.

The Request for Proposal (RFP) or tender documents should clearly state the requirements and targets that are required together with a definition of the key performance areas and indicators that will be used to measure achievement. As far as possible clear deliverables should be established with dates or times within which they have to be achieved. Longer term contracts (over five years?) should have processes to allow for these indicators and deliverables to be adjusted, or to be re-set, over time.

A draft contract should be included with the RFP or tender (now the usual practice in South Africa) and the bidders allowed to propose changes to this contract as part of their submission. By only allowing the proposed contract changes submitted with the bids to be considered, is it possible to limit a complete re-negotiation of the contract terms. The contract should be kept as concise and simple as possible.

Experience from this case study clearly shows that, given the legal and political environment at the time of beginning of the contract, the initial focus and priority should be on providing the agreed basic level of service. It is unrealistic to expect communities to pay when they are not even receiving the level of service that is supplied to them (as in those with house connections and water borne sewerage not receiving a 24-hour water supply). In such cases the priority and the investment has to be aimed at resolving this matter and only then starting to bill and implement enforcement of payment.

## **6.4. Contract Management**

Strong and experienced contract management on the part of the authority is absolutely key to ensuring that the served communities benefit from any form of outsourcing contract. On-going monitoring of performance and compliance with requirements is critical for the success of all outsourced contracts and must be given the necessary attention, personnel and funding by the awarding authority. Clear

goals, standards and targets must be negotiated at every opportunity within the terms of the contract and with an understanding of the responsibilities and capabilities of the operator.

Contract management personnel have to be competent and experienced officials who combine knowledge of the contract, the financial and technical aspects of the service being delivered and general management skills. As the operator will often be a company that specialises in such contracts, its abilities in these areas are generally considerably higher than those of the authority that has limited experience with such contracts. In these cases, it can benefit the authority by ensuring that external high level skills are available for short term inputs as and when required. Another option to be considered is the establishment of a support unit at national level that could provide specialist inputs to the various authorities.

## **6.5. Conclusion**

Irrespective of the selected solution, it is critical that any outsourcing contract be carefully designed to suit the required purpose and be carefully managed and monitored once in place.

The results of this case study have certainly shown the benefits of having a competent and committed private sector operator being dedicated to the provision of the water and sanitation services. Whichever of the above delivery mechanisms is adopted, the key to the success lies in three areas:

1. Attracting and retaining quality people who have the skills, expertise and customer focus, as well as the supporting resources, to optimise the service delivery;
2. Ensuring that sufficient funds (both capital and operating) are available to pay for the skills and to expand and maintain the required infrastructure;
3. A strong contract management control that ensures contract compliance and enforces the requirements of the authority within the terms of the contract.

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## Annexure A

### List of People Interviewed

#### Mbombela Municipality

Sipho Siwela	Councillor; Chairman Concession Monitoring
Maseko Benjamidi	Councillor; Member, Concession Monitoring Committee
Jane Mokoena	Councillor; Member, Concession Monitoring Committee
Elvis Dlodlu	Councillor; Chairperson, Council's Infrastructure Committee; Member, Concession Monitoring Committee
N Ndlovu	Councillor; Member, Concession Monitoring Committee
Gerhard de Bruin	Councillor; Member, Concession Monitoring Committee
Norah Mthembu	Chief Financial Officer
Dolphin Malokela	Executive Director, Technical Services
Nhlanhla Khoza	Head, Contract Management Unit
S'khumbuzo Shongwe	Customer Liaison, Contract Management Unit
Leon Hallatt	Technical Services Department
Jeremy Van Niekerk	Director, KPMG - Mbombela Financial Advisor

#### Union Officials

Saul Similane	SAMWU, Branch Deputy Chair (Mbombela)
Portia Nkuna	SAMWU, Local Secretary
Edward Matsane	SAMWU (Silulumanzi)
Doris Thulare	IMATU (Silulumanzi)
Jo-Anne Human	Solidarity (Silulumanzi)
Rodney Haywood	Solidarity (Silulumanzi)

#### Silulumanzi (Concessionaire)

Marius van Aardt	Managing Director
Roy Tombs	Operations Director
Arthur Douglass	Engineering Manager
Hennie Joubert	Finance Director
Riaan Streicher	Financial Manager
Pieter Tobing	Commercial Director
Richmond Jele	Human Resource Manager
Este Brand	Senior Manager, Scientific Services
Riekie Delport	Training Development Manager
Billie van der Schyff	Project Engineer (Originally transferred from Municipality)

### National Government Officials

James Aiello	PPP Unit, National Treasury
Strover Maganedisa	PPP Unit, National Treasury
Bangwalang Chiloane	Deputy Manager: Public Private Partnerships, Municipal Services Partnerships, DPLG
Alfred Legoabe	Manager: Public Private Partnerships, Municipal Services Partnerships, DPLG

### Other Stakeholders

Roelf Kotze	Project Management Mbombela Stadium (former Municipal Manager at concession inception)
Lucy Chege	Manager, DBSA (current monitoring responsibility)
Karen van der Merwe	Director, Amber PSC (legal consultant involved in drawing up the various supplementary agreements)
Karen Breytenbach	National Treasury, PPP Unit (formerly DBSA official for initial contract design)
Laila Horton	Previously with the PPP Unit, National Treasury
Andre Steyn	AIG (formerly DBSA official for initial contract design – especially financial terms)
Jim Leigland	PPIAF (formerly with MIIU, project support with initial contract implementation and SA1)
Laila Smith	Mvula Trust (various NGO and academic involvement with this concession since its inception)



# Annexure B

## **Alternative Water and Sanitation Service Delivery Models**

This annexure is included to offer a concise explanation of other options for water and sanitation service delivery. This survey of options was part of the terms of reference for this case study, to offer ideas for private participation in delivering water and sanitation services for other entities that are facing issues similar to those faced by the Mbombela Local Municipality.

### **Concession**

In a concession a private party is contracted to take over the responsibilities of an authority in the provision of a service including the provision of all the required capital investment as well as being responsible for all operations, maintenance, refurbishment and revenue management. The contract is generally on a long term basis (15 to 30 years). Effectively this creates a financially ring fenced operation where the income collected has to cover the total costs of the service, including interest and redemption of the required capital investment, over the duration of the contract. The private party obtains a return on its risk by generating a surplus on the service provided. The authority has achieved its responsibility by ensuring the provision of the service with only limited financial risk and it may also receive certain fees to cover any additional costs it would incur or to recover any surpluses it may have expected to achieve. The duration of the concession should be sufficient to provide the private party with an opportunity to recover the funds invested. The use of a concession approach is advantageous when an authority wishes to outsource the responsibility for a particular service that generates its own income. It is especially advantageous when large amounts of capital investment are required and when there is a need to incentivise the income collection operation.

### **Build – Operate – Transfer**

One particular form of the concession approach is build-operate-transfer (BOT) together with its various variants. In a BOT the private party undertakes the financing and construction of a given infrastructure facility as well as its operation and maintenance for a specified period. Given the often-substantial capital investment by the private sector under such arrangements, contracts could be for as long as 25 years. The BOT approach generally does not involve the collection of tariffs or charges from the final end users but could involve payment being received by way of fixed time or volume charges.

The BOT approach is an effective way of transferring the responsibility for asset finance to a private party thus creating an “off-balance sheet” financing opportunity for the authority.

In South Africa this has been used effectively for office buildings, water treatment plants, etc.

### **Management Contract**

A management contract can be used when the authority needs external skills and expertise as opposed to capital investment. The form of this contract can be readily structured to suit the specific needs of the service being provided and would typically be for periods of between 3 and 6 years. The shorter term nature of these contracts gives more flexibility in their use and they can be structured as short

term interventions or longer term transfer of management responsibility. Variants of these contracts can include forms of incentives for the private party as well as requirements to train existing or new authority staff to take over the responsibilities at the end of the contract period.

In South Africa this form of contract has been used for the Johannesburg Water municipal entity as well as to provide support to the Maluti-a-Phofung Water municipal entity.

## **Municipal Entity**

In terms of the Municipal Systems Act, a Municipal Entity means:

A private company:

Established by one or more municipalities, or

In which one or more municipalities have acquired or hold an interest

A service utility, or

A multi-jurisdictional service utility

This provides an option of creating an entity that operates at arm's length from, but still under the ownership control of, the municipality or a number of municipalities. This structure establishes a ring fenced service delivery unit or utility that focuses on its defined responsibilities. While the ring fenced cash flow can give some security, funding institutions will still look to the parent municipality to provide securities for any funding. This generally limits the ability of the entity to raise its own funding and therefore restricts the benefits to the operational efficiencies achieved.

The municipal entity option could, however, be linked with a BOT approach to be able to achieve required capital expansion.

Examples of the use of a municipal entity in South Africa include the various agencies created by Johannesburg Metro, i.e., Johannesburg Water and Pickitup (solid waste management) as well as the Rustenburg Water Trust and Maluti-a-Phofung Water.

## **In-House Provision**

Numerous municipalities still use the traditional system of providing their services through in-house departments. In this approach the focus of the responsible department is on the service provision only while the revenue collection is the responsibility of the relevant finance department. This means that one department is responsible for the expenditure while the other is responsible for the income – and rarely is there any linkage between the two. South Africa is also experiencing high levels of skills shortages and this has had a particularly high impact on the municipal arena where salary levels and conditions have failed to keep pace with the competitive business world.

For in-house provision to remain an option all of the above matters would have to be addressed through the creation of single point responsibility departments that can attract and retain suitably qualified and experienced staff.

## **Other Forms of Outsourcing**

Municipalities always have used, and always will use, outsourcing for a certain amount of their responsibilities. Historically this has covered simple matters such as personnel procurement, stationery supplies, credit control actions, etc., as well as larger capital work using design consultants, contractors, builders, etc. Additional opportunities do, however, exist for outsourcing such as revenue management, long term maintenance and service reaction teams (e.g., plumbers, electricians, road repair, etc.).