UMGENI WATER · AMANZI

Umgeni Water Corporate Plan

2016/17 to 2020/21

Improving Quality of Life and Enhancing Sustainable Economic Development

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Strategic Highlights by the Chairperson of the Board

Umgeni Water's strategy is informed by pertinent changes in the operating environment. Cognisant of the expectations of the Minister of Water and Sanitation – who is the water board Executive Authority - the operating environment dictates that have informed Umgeni Water's strategy include:

- The State of the Nation Address and the National Budget Address of February 2016,
- The Fourteen Strategic Outcomes of Government and pertinent Outputs cascading to the Executive Authority,
- The National Development Plan for South Africa for 2030 and the Medium-Term Expenditure Framework (MTSF) 2014-2019,
- The key focus areas highlighted by the Minister of Water and Sanitation, January 2016, the National Water Resources Strategy (NWRS2), and the Department of Water and Sanitation's Strategy Plan,
- The KwaZulu-Natal Provincial Growth and Development Strategy and Plan 2030, and
- The Presidential Review Committee Report, 2013, on reshaping state-owned-entities.

The key focus area for this Corporate Plan period are enabling for Umgeni Water to continue to contribute value as an entity of state, in order to realise the objectives of the National Development Plan (NDP) for South Africa. This is to be achieved through formulating and implementing strategy that responds to the needs and priorities of the target KwaZulu-Natal market. The Board of Umgeni Water is mindful that water is a cross-cutting resource, crucial for building a non-racial, democratic South Africa through redistribution and access.

The themes for Umgeni Water are aligned to national government themes and include the 'Year of advancing people's power' and the year that 'Development is in the hands of local government'. The face of Youth and Women will be put forward in the coming period through planning and implementing water and sanitation programmes, projects and initiatives that respond both to the plight of women in rural communities and that empower and create opportunities for youth.

As municipalities strive to respond to the next phase of the "back to basics" programme that puts people first, delivers basic services, demonstrates good governance and ensures sound financial management, Umgeni Water will assist by increasing its support and partnership efforts. In general, water sector partnerships and collaborations will be leveraged in this period to respond to the challenges facing the country, region and local area. These include water availability, redistribution, demand management and drought and impact of climate change.

Avenues to embrace technological changes that continue to amaze the world - the most recent hailed as the 4th revolution at Davos - will be sought. In the first year of this Corporate Plan, Umgeni Water will 'Go-Live' with its SAP Enterprise Resource Planning System. The employee commitment and effort leading up to this point has sown the seed for employees to reposition themselves to work in a different way and deliver value more effectively.

Crucially over the past few years Umgeni Water has demonstrated its ability to effectively deliver on its capital infrastructure programme - delivering 95% of projects on budget and in time whilst meeting quality and environmental standards. Umgeni Water will maintain this success through coherent planning and development, retention of skills and capacity and improving and leveraging research, technology and innovation. Furthermore the manner in which resources - water, energy, transport and people are utilised – will be optimised to deliver more to communities with less.

Momentum towards regional preparedness will increase during this period. The Executive Authority has initiated a process that will culminate in the establishment of a single water board for KwaZulu-Natal,

anticipated to be in place by the mid-term of this five-year Corporate Plan period. The proposed new KwaZulu-Natal (KZN) Regional Water entity will amalgamate the areas served by both Umgeni Water and Mhlathuze Water. Geographically, this will straddle 94 361 km^2 and serve as home to 2.5 million households and 10.2 million people.

The primary function of the KZN Water Utility will be to plan, construct, operate and maintain Regional Bulk Infrastructure. The entity will take on more responsibility for regional water resources infrastructure to achieve greater integration with bulk systems, as well as provide support functions to municipalities as a secondary activity. Municipalities that cover the entire province of KwaZulu-Natal will be served and comprise one (1) Metropolitan Municipality, ten (10) District Municipalities and fifty (50) Local Municipalities. Fourteen (14) of these municipalities are Water Services Authorities – i.e. direct retail customers of the regional bulk entity.

Against this backdrop the twelve (12) strategic thrust areas for Umgeni Water are:

1. Develop infrastructure to increase growth and improve access in service area and KwaZulu-Natal province, through leveraging the opportunities presented by the National Development Plan (NDP), Medium-Term Strategic Framework (MTSF) and outcomes of regionalisation initiative.
2. Continue to invest in refurbishment and maintenance of developed water infrastructure through implementing a sound asset management strategy.
3. Develop and implement targeted programmes to serve rural municipalities faced with capacity constraints and vulnerability challenges.
4. Improve marketing, branding and communication skills and capacity to successfully enhance relationships with the range of customers, bulk water providers and stakeholders in KwaZulu-Natal.
5. Reconcile supply and demand and use integrated planning to ensure long-term water resources adequacy / supply sustainability.
6. Develop and implement programmes to help address the high water loss / non-revenue water (NRW) that is impacting water value-chain sustainability.
7. Continue to strengthen and drive a transformation agenda that supports inclusivity and reduces inequality and unemployment, with specific emphasis on youth and women.
8. Use the strength of the income statement, balance sheet and cash flows in a sustainable manner to provide services to a broader base, whilst mitigating lower growth and higher interest rate scenarios.
9. Embrace innovation and the digital revolution to improve resiliency of processes and infrastructure whilst increasing community awareness and participation in water management.
10. Specifically harness the process efficiency and effectiveness, including improving governance, risk and compliance systems, through completing and taking advantage of the SAP Enterprise Resource Planning System implementation.
11. Increase leadership, management and staff skills and capacity, particularly through providing opportunities and development of youth.
12. Implement change management initiatives to drive social cohesion within the entity as well as KZN partners, towards ensuring a non-racial, non-sexist and inclusive society.

As the Board of Umgeni Water we are committed to providing support and strategic guidance to the Executive Management during this period to progressively expand customers and services to municipalities in KwaZulu-Natal.

Mr Andile Mahlalutye
Chairman of the Board

31 May 2016

Foreword by the Chief Executive

Umgeni Water's strategy as articulated by the Board remains closely aligned to the agenda of government, including the National and Provincial Development Plans, Medium-Term Strategic Framework and the Department of Water and Sanitation's Strategy and Plan. In light of this, this Corporate Plan demonstrates unwavering support to an agenda of socio-economic transformation and water infrastructure investment, while at the same time enables the entity to maintain sound financials that will ensure water services can be sustained into the future. Overall the success of this plan and firm implementation of the strategy will be achieved through targeting plans, projects, programmes and initiatives that respond to the needs and priorities of government and in particular the people of KwaZulu-Natal (KZN).

The infrastructure programme for this Corporate Plan period includes multiple developments in various phases of planning and implementation for which a total of R5.4 billion will be spent over the capex period 2016 to 2021. A total of R2.16 billion of this specifically targets rural water infrastructure development. In particular the following nine (9) key rural development infrastructure projects are planned or implemented during this period:

1. Construction of the **Lower Thukela Bulk Water Supply Scheme Phase 1,** serving iLembe DM and eThekwini MM, which will be completed in 2016,
2. Construction of the **Wartburg to Bryns Hill Pipeline,** serving uMgungundlovu DM, planned for completion in 2017,
3. Design and construction of the **Trust Feeds WWTW,** serving uMgungundlovu DM, to be completed in 2018,
4. Construction of the **uMshwathi Bulk Water Supply Scheme,** serving uMgungundlovu DM and iLembe DM, planned for completion in 2018,
5. Design and construction of the **Mpophomeni WWTW,** serving uMgungundlovu DM, planned for completion in 2018,
6. Design of the **Vulindlela upgrade,** serving Msunduzi LM, with design completed by 2018,
7. Construction of the **Greater Mpofana Regional Scheme Phase 1,** serving uMgungundlovu DM, planned for completion in 2020,
8. Design and construction of the **Impendle Bulk Water Supply System,** serving uMgungundlovu DM, planned for completion in 2021, and
9. Feasibility study for construction of the **Maphumulo Bulk Water Supply Scheme Phase 3,** serving iLembe DM planned for completion in 2021.

The funding and financing plan remains core to sustainable development of infrastructure targeting the largely indigent population in municipalities that have large rural bases. This is crucial to ensure affordable and sustainable bulk service and access.

The infrastructure development programme includes a further six (6) key projects that target augmentation, upgrade and rehabilitation during the Corporate Plan period:

1. Construction of the **Midmar Raw Water Pipeline Augmentation and Midmar WTW upgrade,** serving uMgungundlovu DM, Msunduzi LM and eThekwini MM, to be completed in 2016 and 2017 respectively,
2. Construction of the **Darvill WWTW upgrade,** serving Msunduzi LM, to be completed in 2017,
3. Design and construction of the **South Coast Phase 2b (Kelso to Umdoni) pipeline,** serving eThekwini MM and Ugu DM, planned for completion in 2018,
4. Repair and refurbishment to the **Nagle Aqueduct,** planned for completion in 2018,
5. Design and construction of the **Lower uMkhomazi Bulk Water Supply Scheme**, serving eThekwini MM and Ugu DM, with construction to commence in 2022, and
6. Design and construction of the **uMkhomazi Water Project Phase 1**, serving eThekwini MM, uMgungundlovu DM, Msunduzi LM, Ugu DM, iLembe DM, planned for completion in 2030.

In support of these bulk schemes, current and projected water demand trends show that certain water resources developments are behind schedule, thereby posing a threat to supply assurance. Notably, the uMkhomazi Water Project Phase 1 urgently needs to be brought to a stage of implementation. Without this resource, Umgeni Water will be unable to ensure that future water demands can be met at the appropriate level of assurance. The Department of Water and Sanitation has completed the detailed feasibility level investigation for this development and Umgeni Water has recently completed a detailed feasibility level investigation for the bulk potable water component. The environmental impact assessment of the entire project is currently underway and the Environmental Authorisation (EA) is expected to be issued in 2016'2017. In other areas, the threats to supply security, exacerbated by the El Niño phenomenon will continue to be managed by drought management initiatives and emergency schemes during this period until the drier conditions dissipate.

Umgeni Water will continue to take advantage of the capital expansion programme to increase its contribution to Broad-Based Black Economic Empowerment (B-BBEE), job creation and community sustainability. Contract Participation Goals (CPGs) remain a core initiative, targeting a minimum contribution of 35% of which at least 5% is to be allocated to women-owned companies. The economic empowerment programme is supported by monitoring and evaluation to ensure participation is meaningful and builds real capacity. Initiatives will ensure access to procurement activities is facilitated, there is meaningful participation of previously disadvantaged individuals, new, sustainable business with black entrepreneurs can be created and work straddles the different levels of responsibility (B-BBEE Levels), for both construction and professional consulting services.

The sustainable treatment and provision of potable water to customers as well as wastewater treatment remain the primary priorities of Umgeni Water. Water will now be treated at eighteen (18) potable water treatment works (compared to fourteen (14) in the prior period) and nine (9) wastewater treatment works (compared to four (4) in the prior period). The water quality of newly acquired schemes does not meet required standards and capacity is insufficient to meet the demands of the population. Over this corporate plan period therefore, Umgeni Water will invest in refurbishments, upgrades and construction and through a process of consolidation and expansion will ensure sustainable water services provision to these areas.

Umgeni Water will continue to invest timely and appropriately in infrastructure asset repairs and maintenance to ensure no assets pose significant risk to supply and there are no service disruptions arising from lack of maintenance. The planned annual spend for this period is 2.3% of Property, Plant and Equipment (PPE) and 7% of revenue, based on assessments conducted in the prior period. This equates to over R1 billion in repairs and maintenance over the 2016'2017 to 2020'2021 Corporate Plan period. Asset management is core to sustainable water provision and comprises planned maintenance, inclusive of preventative maintenance, repairs, redesign and modifications, complemented by on-going unplanned, reactive and corrective maintenance.

Water sector partnerships and collaborations will be leveraged to respond to the challenges facing the region including water availability, redistribution, demand management and drought and impact of climate change. Support and partnership efforts with municipalities will be increased. Customers are at various stages of implementing water conservation and demand management measures within municipal systems, however, significant quantities of treated water are being lost in the reticulation system and seriously threaten the sustainability of the water value-chain. Water loss management has therefore been identified as a strategic initiative in this Corporate Plan period for which, focused programmes will be developed and implemented to collaboratively address reticulation water losses. Umgeni Water will further continue with water education and awareness, focusing on water use and conservation targeting schools and communities.

Specifically regarding the KZN Water Board formation, in the coming period, Umgeni Water is highly committed to working closely with the Minister, Department of Water and Sanitation, Mhlathuze Water and other key partners to deliver a sound entity in KZN as per the department's programme. This is intended to ensure there is water access coverage of all communities in the KwaZulu-Natal province. The financial robustness of Umgeni Water is a significant strength in this regard.

During this Corporate Plan period the balance sheet will indeed be stretched to deliver the target goals, objectives and outputs. Dampened by global and national growth outlooks, regional growth is not expected

to increase significantly over this period. The 2016'2017 revenue target is R2.8 billion, which after costs needs to yield a surplus of 20% to fund the planned infrastructure developments, whilst ensuring the cost of borrowing and the tariff passed onto customers remains affordable. Cost savings and opportunities for greater efficiency will be sought as a matter of course.

Umgeni Water will continue to leverage opportunities presented by technology, research and development to improve Integration and resiliency of all its business systems. During this Corporate Plan period Umgeni Water will 'Go-Live' with its SAP ERP system that promises enterprise-wide integration of business processes. The entity has already had a glimpse of the potential benefits that will manifest in better corporate culture and smarter ways of working that will overall streamline and increase service delivery turnaround time. However, a huge effort is still needed before this can be fully realised. In this regard, leadership, management and functional competencies as well as employee and entity performance will be taken to the next level during this Corporate Plan period.

Through optimally targeting resources, plans, programmes and initiatives over this period, Umgeni Water will ensure success and an entity that is in a position of strength to give rise to the regional water utility planned for KwaZulu-Natal by the mid-term of this Corporate Plan period.

Mr Cyril Vuyani Gamede
Chief Executive

31 May 2016

UMGENI WATER · AMANZI

Chapter 1: Introduction

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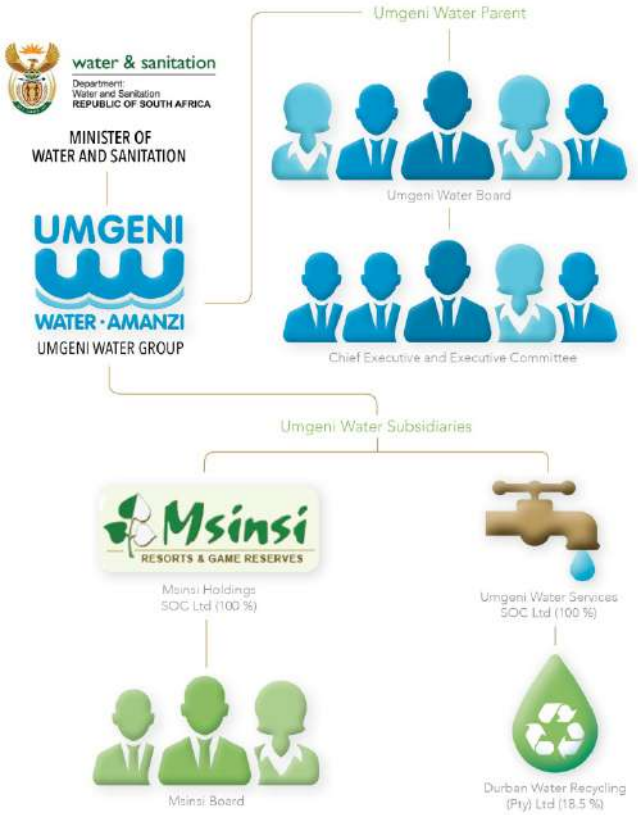
1.1 Legislative mandate

Umgeni Water is a state-owned entity established in 1974 to provide water services - water supply and sanitation services - to other water services institutions in its service area. The organisation operates in accordance with the Water Services Act (Act 108 of 1997) and the Public Finance Management Act (Act 1 of 1999), amongst others, and is categorised as a National Government Business Enterprise. Umgeni Water reports directly to the Department of Water and Sanitation (DWS), through the Chairman of the Board and the Chief Executive and its Executive Authority is the Minister of Water and Sanitation.



1.2 Activities of Umgeni Water

The primary activities of Umgeni Water, as pronounced in section 29 of the Water Services Act, is to provide water services (water supply and sanitation services) to other water services institutions in its service area.

In addition, section 30 of the Water Services Act, enables Umgeni Water to undertake other activities, provided these do not impact negatively on the organisation's ability to perform its primary activity. These include:

- Providing management services, training and other support services to other water services institutions, in order to promote co-operation in the provision of water services,
- Supplying untreated or non-potable water to end-users who do not use the water for household purposes,
- Providing catchment management services to or on behalf of the responsible authority,
- With the approval of the water services authority having jurisdiction in the area, supplying water directly for industrial use, accepting industrial effluent and acting as a water services provider to consumers,
- Providing water services in joint venture with water services authorities, and
- Performing water conservation functions.

Umgeni Water has 100% investment in two subsidiaries; Msinsi Holdings and Umgeni Water Services. Refer to chapter on Participation in Companies for further details regarding these companies.

1.3 Supply Area and Customers

The Executive Authority has initiated a process that will culminate in the establishment of a single water board for KwaZulu-Natal anticipated to be in place by mid-term of this five-year Corporate Plan period. The proposed new entity which will have a Regional Water Utility (RWU) status, will amalgamate the areas served by both Umgeni Water and Mhlathuze Water, will straddle a total geographical area of 94 361 km^2 and is home to 10.2 million people and 2.5 million households.

The primary function of the Regional Water Utility (RWU) would be to plan, construct, operate and maintain Regional Bulk Infrastructure. The RWU will take on more responsibility for regional water resources infrastructure to achieve greater integration with bulk systems. In addition, the RWU will provide support functions to municipalities as a secondary activity.

Municipalities in the area, covering the entire province of KwaZulu-Natal, will comprise: one (1) Metropolitan Municipality, ten (10) District Municipalities and fifty (50) Local Municipalities. Fourteen (14) of these municipalities are Water Services Authorities (direct retail customers) as defined in the Water Services Act. Traditionally, Umgeni Water has focused service delivery to six customers, as indicated below. Over this Corporate Plan period, Umgeni Water will progressively expand its customers and services to municipalities in KwaZulu-Natal.

At the moment Umgeni Water predominantly derives its revenue from the sale of bulk potable water to six customers:

- eThekwini Metropolitan Municipality
- iLembe District Municipality
- Ugu District Municipality
- Harry Gwala District Municipality
- uMgungundlovu District Municipality
- Msunduzi Local Municipality.

These customers, located in an area spanning 21 155 square kilometres and a population of 6 million people (1.64 million households), are provided with a total of 470 million cubic metres of potable water per annum (1 224 Ml/d).

Umgeni Water's infrastructure assets in support of its potable water business comprise:

- Approximately 746 kilometres of pipelines and sixty-six (66) kilometres of tunnels,
- Fourteen (14) impoundments, of which six (6) are managed on behalf of the Department of Water and Sanitation and two (2) on behalf of the Ugu District Municipality,
- Fourteen (14) water treatment works, of which two (2) are managed on behalf of the Ugu District Municipality, and
- An additional four (4) water treatment works are managed on behalf of the Umgungundlovu District Municipality.

The organisation also treats bulk wastewater totalling 28 million cubic metres per annum (77 Ml/d) and in support of this operates four (4) major wastewater treatment works. In addition, a further five (5) wastewater treatment works were recently acquired from Umgungundlovu District Municipality.

Figure 1: Umgeni Water Operational Area

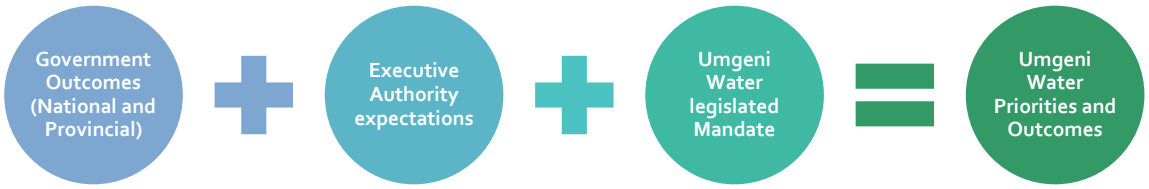
Chapter 2: Operating Environment and Strategy

Contents

2.1 Operating Environment and Alignment to Government Mandate

This strategy is informed by the operating environment, cognisant of the minister's expectations as implicitly and explicitly pronounced in the following statements and publications:

- State of the Nation Address and National Budget Address, February 2016.
- The Fourteen Strategic Outcomes of Government and pertinent Outputs cascading to the Executive Authority.
- The National Development Plan (NDP) for South Africa for 2030, the MTSF 2014-2019 and the NWRS2.
- The key focus areas highlighted by the Minister of Water and Sanitation, January 2016 and the Department of Water and Sanitation's Strategy Plan.
- KwaZulu-Natal Provincial Growth and Development Strategy and Plan 2030.
- Presidential Review Committee Report, 2013, on reshaping state-owned-entities.



The combined efforts of government and state-owned entities during this period are aimed at addressing the compounded challenge of poverty, unemployment and inequality in the country and operational regions, all of which are aligned to the NDP 2030 and the MTSF 2014-2019.

In this regard Umgeni Water will improve alignment to government outcome goals, the key focus areas outlined by the Minister of Water and Sanitation and the mandate requirements communicated by the Department of Water and Sanitation (DWS).

Details of national, provincial DWS priorities are summarised below.

2.1.1 14 priority outcomes of government

National government targets fourteen (14) priority outcomes. These outcomes are:

- ***Outcome 1 (Education)*** *"Quality of our basic education"*
- ***Outcome 2 (Health)*** *"A long and healthy life for all South Africans"*
- ***Outcome 3 (Security)*** *"All people in South Africa are, and feel safe"*
- ***Outcome 4 (Employment)*** *"Decent employment through inclusive economic growth"*
- ***Outcome 5 (Skills)*** *"Skilled and capable workforce to support an inclusive growth plan"*
- ***Outcome 6 (Infrastructure)*** *"An efficient, competitive and responsive infrastructure network"*
- ***Outcome 7 (Rural Development)*** *"Vibrant, equitable, sustainable rural communities, contributing towards food security for all"*
- ***Outcome 8 (Human Settlement)*** *"Sustainable human settlements and improved quality of household life"*
- ***Outcome 9 (Local Government)*** *"Responsive, accountable, effective and efficient local government system"*
- ***Outcome 10 (Environment)*** "Protect and enhance our environmental assets and natural resources"
- ***Outcome 11 (International)*** "Create a better South Africa, a better Africa and a better world"

- *Outcome 12 (Public Service)* "An efficient, effective and development oriented public service and an empowered, fair and inclusive citizenship"
- *Outcome 13 (Social Protection)* "An inclusive and responsive social protection system"
- *Outcome 14 (Social Cohesion)* "Nation Building and Social Cohesion"

2.1.2 NDP and MTSF focus areas for water and mandate of DWS

The following key actions are targeted by national government and DWS in the MTSF period (2014 and 2019) to achieve the 2030 NDP goals:

Implement the National Water Resources Strategy (NWRS2)

The NWRS2 is aligned to the National Development Plan (NDP) through ensuring, amongst other aspects:

- Water supports development and the elimination of poverty and inequality,
- Water contributes to the economy and job creation, and
- Water is protected, used, developed, conserved, managed and controlled sustainably and equitably.

Reconciliation Strategies developed (NWRS2) to assess water balance against projected future needs and guide future water resource planning, management and investment requirements have identified the following key issues: (1) A greater focus on WC/WDM; (2) Increased value and utilisation of groundwater; (3) Reuse of wastewater at both coastal and inland systems; (4) Opportunity for more dams and transfer schemes; (5) Desalination; (6) Catchment rehabilitation; and (7) Rainwater harvesting.

Define future institutional arrangements for water resources management

These include:

- A national water-resource infrastructure agency that will develop and manage large economic infrastructure systems (national significance).
- Catchment management agencies to undertake resource management on a decentralised basis, with the involvement of local stakeholders.
- National capacity to support research, development and operation of water reuse and desalination facilities.
- A dedicated national water-conservation and demand-management programme and sub-programmes focused on municipalities, industry and agriculture.

Strengthening water management and establishing Regional Water Utilities (RWU)

This includes expanding the mandates of existing water boards to better support municipalities.

- The primary function of the Regional Water Utility (RWU) will be to plan, construct, operate and maintain Regional Bulk Infrastructure.
- The Regional Water Utility will take on more responsibility for regional water resources infrastructure to achieve greater integration with regional systems.
- In addition, the RWU will provide support functions to municipalities.

Ensuring licensing procedures for water: Ensuring licensing procedures for water avoid unnecessary delays and blockages to projects that can support employment creation, productive investment and export growth.

Finalise the comprehensive investment programme for Water Resources Development, bulk-water supply and wastewater management for major centres: This programme includes major infrastructure investment projects.

2.1.3 Key focus areas by the Minister of Water and Sanitation

The Minister of Water and Sanitation at the DWS strategy review session, 28 January 2016, Avianto, outlined the key focus areas for 2016 as:

Socio-Economic Development - Alignment and National Government Themes

- Realise objectives of National Development Plan (NDP) as unpacked in the Medium-Term Strategic Framework (MTSF), develop and implement plans to respond to radical socio-economic transformation and demonstrate progress with existing plans.
- Take into cognisance the elements of the Freedom Charter in line with water mandate, including nation building and social cohesion and contribute to the Freedom Charter in implementing plans. Water is a cross-cutting issue and contributes to building a non-racial South Africa through redistribution and access. Demonstrate the contribution to social cohesion and demonstrate the social impact of initiatives.
- 2016 has been proclaimed as the **'Year of advancing people's power'** and the year that **'Development is in the hands of local government'**. The face of **Youth and Women** are to be put forward in 2016. (40 years since Soweto uprising: 2016 is the year for empowering young people, creating opportunities for the youth; 50 years since 9 August 1956 Women: in 2016 demonstrate how we have responded to the plight of women in rural communities and women of all races – through implementing water and sanitation programmes).

State-owned Entities

- The mandate for strengthening state-owned entities rests with the Minister of Water and Sanitation and the Department of Water and Sanitation.
- KwaZulu-Natal water boards need to be responsive to the establishment of the KwaZulu-Natal Regional Water Board.
    - In KwaZulu-Natal, water boards need to respond to the needs of vulnerable municipalities, notably, uMkhanyakude DM.

Municipalities – 'Back to Basics'

- Water sector programmes need to respond to the 'Back to Basics' Programme - local government and communities.
- Programme includes putting people first, delivering basis services, good governance and sound financial management.

Water

- The Department of Water and Sanitation and therefore its entities to show sector leadership in responding to the water challenges including: water availability, redistribution, demand management and drought, climate change impacts and responses.
- South Africa is a water scarce country and drought has caught up with us. Planning for these events need to improve so these events are not unexpected. Need to demonstrate response programmes and projects.

The Department of Water and Sanitation (DWS)

- Will use Water Use licencing as a game changer.
- Will pursue a collaborative approach and integrated planning to turn the tide (this has shown commendable results e.g. in Rand Water's service area and in KZN there is emergence of a collective).
- Will harness the capacity that exists in entities to ensure the future.
- Will reflect on its own capacity and initiatives to make DWS more effective.
- Will pursue strategic communication and partnerships that are people centred, will show respect and caring for ordinary people and keep people informed at all times.

Technology and Innovation – embrace 4th revolution

- Commit to DAVOS agenda and embrace the 4th revolution: The First Industrial Revolution used water and steam power to improve production; The Second used electric power to create mass

production; The Third used electronics and information technology to automate production; Now a Fourth Industrial Revolution is building on the Third, the **digital revolution.** (The digital revolution has been occurring since the middle of the last century. It is characterised by a fusion of technologies that is blurring the lines between the physical, digital, and biological spheres).

- Business as usual planning will not work and there is a need to reposition, think differently and e.g. create infrastructure differently from how we have, in order to respond to the realities of today.
- There is ineffectiveness in project management, insufficient coordination across departments and no demonstration of cost effectiveness. Only 35-40% of projects are delivered on time and on budget.
- Planning and development are not working in a coherent manner to deal with social impacts, community projects and promises. Need to adopt sustainable development goals
- Capacity is a concern. Need to embrace smart technology and innovation to 'do more with less'.
- Use research to inform planning to leverage new technology and innovations in water, energy and transport.
- Embrace international solutions on how to work smartly: e.g. Technology for creating storage capacity; Pipeline technology - leveraging technical solutions.
- Uses CSIR to build new industries and identify new solutions to deal with drought.
- South Africa, The Department of Water and Sanitation water boards - all need to show how we are adapting.

Communication

- Communication is key: be mindful of the impact of our communications, who we use in communication roles and our target audience.
- Understand the evolution of our nation and society and craft messages accordingly.
- Develop partnerships: partner with companies that are implementing water saving initiatives. Promote such initiatives. The idea of partnerships includes embracing and complimenting the good initiatives of others.
- Promote entrepreneurship and include community in water saving initiatives.
- Apologise to communities where we have delayed with service delivery and do not ignore complaints from paying customers. 2016 is the year of advancing people and demonstrating humanity.

Cost-cutting

- Minister of Finance most recently again emphasised cost cutting.
- Need to do more with less better.

2.1.4 The main KZN Province priority outcomes that focus on water

Strategic plans of the province are aligned to the 14 outcomes of the presidency in accordance with the provincial mandate and focus areas. The KwaZulu-Natal Provincial Growth and Development Plan (PGDP) includes a specific strategic objective for water, namely ' Improve water resource management and supply' and requires sufficient water available for the growth and development needs of KZN. Specifically, a balanced and sustainable supply of water in the KZN Province is to be ensured to enable access to water to all residents as well as ensure that sufficient water is available to be a catalyst for economic growth of the region.

The following key interventions are proposed to achieve the 2030 goals:

- Review and Implement the Provincial Water Strategy.
- Rationalise and extend Water Board Jurisdiction.
- Research and promote skills development for more localised water harvesting.
- Programme for building of dams.
- Programme for development of water sources (desalination, rainwater, recycling, groundwater).
- Develop a financial model for the implementation of operations and maintenance.

- Water Conservation and Demand Management Programme in all the WSAs.
- Establish policy and design standards for the provision of 75 litres of water per person per day.

Indicators identified in the PDGP include:

- Per capita water availability.
- Water service systems in balance (supply versus demand).
- Non-revenue water.
- Development/rezoning applications not approved due to bulk water and wastewater constraints.
- Percentage of KwaZulu-Natal households with access to water to Municipal Infrastructure Grant (MIG) standards (75 litres per person per day).
- Percentage of households with yard water connections.
- Percentage of households with access to sanitation to MIG standards.

2.2 Umgeni Water Strategy

2.2.1 Umgeni Water Vision, Mission and Values

Vision

Leading water utility ***that enhances*** *value* ***in the provision of bulk water and sanitation services***

We strive to be an effectively run, public-oriented and socially accountable water utility, which has its heart and mind, focused on the provision of bulk water services. We will achieve leadership based on our performance and the sustainable value we co-create with our customers and stakeholders and continue to leave a positive legacy in our communities, region and country.

Mission

Provide *innovative, sustainable, effective and affordable* ***bulk water and sanitation services***

Our business is the provision of bulk water services – both potable and wastewater - to support government service delivery to the people of South Africa and providing water for life. This includes providing all bulk water services to our customers, facilitating integrated planning in the region, supporting municipalities and contributing to water knowledge that will lead to sustainability from source-tap-source.

Strategic Intent

Key Partner ***that enables government to deliver*** *effective and efficient* ***bulk water and sanitation services***

Umgeni Water intends to be recognised as a strategic and sustainable partner of government, co-creating value through providing bulk water and sanitation services as a catalyst for local economic development and government's developmental agenda.

Benevolent Intent

Provide bulk water and sanitation services to *improve quality of life* ***and*** *enhance sustainable economic development.*

Umgeni Water intends to be recognised as an organisation that has legitimate leadership and cultivates accountability. Through this people-centred approach Umgeni Water will achieve water services delivery. Bulk water services will be provided for both health and economic benefits, which contribute to addressing poverty, under-development and inequality.

Values

Customer focus

We will partner with municipalities and other stakeholders to provide sustainable solutions.

Integrity

We commit ourselves to the highest ethical conduct.

Developmental approach

We deliver solutions consistent with the development agenda of the country.

People-centred

We value and respect all people equally, cultivate accountability and engage the will of all our people.

Environmentally sustainable

We are committed to protecting our diminishing natural resources.

Innovation, Knowledge Management and Excellence

We value the use of innovation and knowledge management in order to achieve excellence.

2.2.2 Umgeni Water SWOT (March 2016)

Table 2.1: Summary of operating environment opportunities and constraints, together with Umgeni Water's strengths and constraints

Opportunities / Enablers	Strengths / Enablers
1. National Development Plan *Reduce poverty, unemployment and inequity Improve social cohesion through water services.* 2. KZN Service Area *Plan, construct, operate and maintain regional infrastructure, increase customer base and access. Facilitate planning and design with full water value-chain view (source-tap-source)* 3. Support to Municipalities *Reduce non-revenue water. Projects to support asset management and maintenance*	1. Bulk Water and Wastewater Treatment Competencies *Distinctive competencies in bulk water and wastewater treatment* 2. Brand Value *Strong Umgeni Water brand* 3. Financial Strength and Integrity *Strong balance-sheet, strong governance systems and risk management* 4. Bulk Infrastructure *Well maintained bulk infrastructure, good asset management strategy and infrastructure development plans* 5. Resource Mobilisation *Experienced and committed people*
Threats / Constraints	**Weaknesses / Constraints**
1. Customers capacity and indigent consumer base *Customer vulnerability and sustainability. Customer areas with insufficient economy of scale / densities* 2. Water loss / non-revenue water *Significant water loss in retail systems threatening sustainability of service delivery. Poorly maintained municipal water systems.* 3. Climate change *Droughts and floods and long-term water resources sustainability* 4. Water resources development *Delay in regional water resources developments.* 5. Social cohesion, poverty, unemployment and inequity *Vandalism and theft, security of infrastructure, encroachment, divided, racially polarised and unequal society*	1. Communications, Marketing and Branding *Insufficient capacity and capability to meet needs* 2. Internal Processes *Integration of business systems, responsiveness to meet customer requirements, successful SAP implementation* 3. Management and staff competencies *Capacity and skills to support expansion strategy, social cohesion, mentoring and succession planning* 4. Water resources *Sustainability of water resources developments to meet demands.*

2.2.3 Umgeni Water Strategic Thrusts

1. Develop infrastructure to increase growth and improve access in service area and KwaZulu-Natal province, through leveraging the opportunities presented by the National Development Plan (NDP), Medium-Term Strategic Framework (MTSF) and outcomes of regionalisation initiative.
2. Continue to invest in refurbishment and maintenance of developed water infrastructure through implementing a sound asset management strategy.
3. Develop and implement targeted programmes to serve rural municipalities faced with capacity constraints and vulnerability challenges.
4. Improve marketing, branding and communication skills and capacity to successfully enhance relationships with the range of customers, bulk water providers and stakeholders in KZN.
5. Reconcile supply and demand and use integrated planning to ensure long-term water resources adequacy / supply sustainability.
6. Develop and implement programmes to help address the high water loss / non-revenue water (NRW) that is impacting on the water value-chain sustainability.
7. Continue to strengthen and drive a transformation agenda that supports inclusivity and reduces inequality and unemployment, with specific emphasis on youth and women.
8. Use the strength of the income statement, balance sheet and cash flows in a sustainable manner to provide services to a broader base, whilst mitigating lower growth and higher interest rate scenarios.
9. Specifically harness the process efficiency and effectiveness, including improving governance, risk and compliance systems, through completing and taking advantage of the SAP ERP implementation.
10. Embrace innovation and the digital revolution to improve resiliency of processes and infrastructure whilst increasing community awareness and participation in water management.
11. Increase leadership, management and staff skills and capacity, particularly through providing opportunities and development of youth.
12. Implement change management initiatives to drive social cohesion within the entity as well as KZN partners, towards ensuring a non-racial, non-sexist and inclusive society.

2.2.4 Umgeni Water Strategic Goals

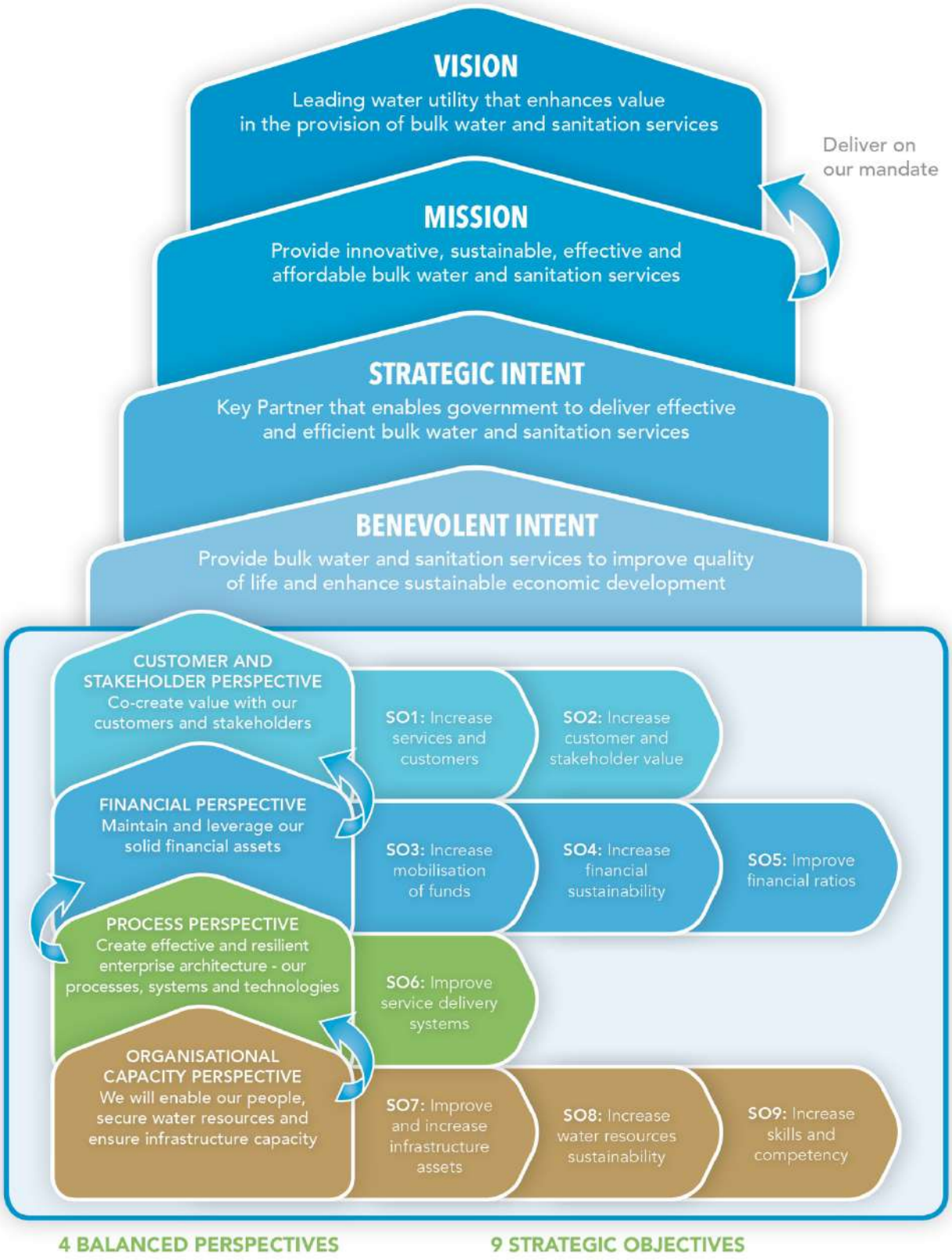
Strategic Goal 1: Develop strategic partnerships, increase support to customers, improve visibility and be a regional leader in the provision of bulk water and sanitation services.

Strategic Goal 2: Expand and improve funding collaborations whilst managing key cost drivers.

Strategic Goal 3: Remove system constraints and blockages through innovative thinking and improve efficiency of all inputs.

Strategic Goal 4: Strengthen and develop quality human resources, infrastructure capacity and water resources sustainability to support growth.

2.2.5 Strategy Map



2.2.6 Umgeni Water Strategy Outcomes

1. PRODUCT QUALITY (WATER AND WASTEWATER)

achieved when Umgeni Water produces potable water and wastewater in full compliance with statutory and reliability requirements, consistent with customer and environmental needs

2. CUSTOMER SATISFACTION

achieved when Umgeni Water provides reliable, responsive, and affordable services in line with explicit, customer-agreed service levels and receives timely customer feedback to maintain responsiveness to customer needs and emergencies.

3. STAKEHOLDER UNDERSTANDING AND SUPPORT

is attained when Umgeni Water engenders understanding and support from statutory, contracted and non-contracted bodies for service levels, tariff structures, operating budgets, capital improvement programmes, risk management decisions, and water resources adequacy.

4. COMMUNITY AND ENVIRONMENTAL SUSTAINABILITY

achieved when Umgeni Water is explicitly cognisant of and attentive to the impacts it has on current and future community sustainability, supports socio-economic development, and manages its operations, infrastructure, and investments to protect, restore, and enhance the natural environment, whilst using energy and other natural resources efficiently.

5. FINANCIAL VIABILITY

achieved when Umgeni Water understands the organisational life-cycle costs and maintains a balance between debt and assets while managing operating expenditures and increasing revenues. In addition, the organisation aims at a sustainable tariff that is consistent with customer expectations, recovers costs and provides for future expansion.

Umgeni Water Strategy Outcomes, continued

6. OPERATIONAL OPTIMISATION

achieved when Umgeni Water has on-going, timely, cost-effective, reliable, and sustainable performance improvements in all facets of its operations, minimises resource use, loss, and impacts from day-to-day operations and maintains awareness of information and operational technology developments to anticipate and support timely adoption of improvements.

7. OPERATIONAL RESILIENCY

achieved when Umgeni Water's leadership and staff work together to anticipate and avoid problems and proactively identify, assess, and establish tolerance levels for, and proactively and effectively manages a full range of business risks, consistent with industry trends and system reliability goals.

8. INFRASTRUCTURE STABILITY

achieved when Umgeni Water's understands the condition and costs associated with critical infrastructure assets and maintains and enhances the condition of all assets over the long-term. This is done at the lowest possible life-cycle cost and acceptable risk levels, is consistent with customer service and statutory-supported service levels, and consistent with anticipated growth and system reliability goals. The organisation further assures that asset repair, rehabilitation, and replacement efforts are coordinated to minimise disruptions and other negative consequences.

9. WATER RESOURCES ADEQUACY

is achieved when Umgeni Water assesses the scarcity of freshwater resources, investigates sustainable alternatives, manages water abstractions assiduously and has access to stable raw water resources to meet current and future customer needs.

10. LEADERSHIP AND EMPLOYEE DEVELOPMENT

is achieved when Umgeni Water is a participatory, collaborative organisation dedicated to continual learning and improvement, recruits and retains a workforce that is competent, motivated, and adaptive and works safely, ensures institutional knowledge is retained and improved; provides opportunities for professional and leadership development, and creates an integrated and well-coordinated senior leadership team.

UMGENI WATER · AMANZI

Chapter 3: Balanced Scorecard

2016/17 to 2020/21

Improving Quality of Life and Enhancing Sustainable Economic Development

Contents

Strategic Goal 1: Develop strategic partnerships, increase support to customers, improve visibility and be a regional leader in the provision of bulk water and sanitation services.

Co-create value with our customers and stakeholders

Customer and Stakeholder Perspective

SO 1: Increase services and customers

SO 2: Increase customer and stakeholder value

Key outcomes: *Stakeholder Understanding and Support, Customer Satisfaction, Product Quality, Community and Environmental Sustainability.*

UW	KPI	Initiatives / Plans	#	Result Indicator	Actual 2014/2015	Estimated 2015/2016	Projected 2016/2017	Projected 2017/2018	Projected 2018/2019	Projected 2019/2020	Projected 2020/2021	SHC Annex 1
SO1	**KPI 1**: The extent to which UW has grown its services and customers.	Progressively develop regional scheme plans and grow water services.	1.1	KZN regional bulk water universal access detailed reconnaissance level plan developed.	Concept plan 45% complete.	Detailed reconnaissance plan > 95% complete.	Detailed reconnaissance plan 100% complete and refined.	-	-	-	-	N/A
			1.2	Number of signed contracts for implementing new schemes.	2 new schemes.	10 new schemes.	≥ 2 new schemes.	≥ 2 new schemes.	≥ 2 new schemes.	≥ 2 new schemes.	≥ 2 new schemes.	N/A
SO2	**KPI 2**: The extent to which customer and stakeholder needs have been met	Implement Ministerial Directives	2.1	Directives implemented in accordance with plan. ★	NM	Four (4) Directives. 100% planned milestones	One (1) Directive ≥ 80% planned milestones	≥ 80% planned milestones	≥ 80% planned milestones	≥ 80% planned milestones	≥ 80% planned milestones	**SHC PO6**
		Engage **Statutory** Stakeholders and create stakeholder value.	2.2	Number of engagements with **statutory** stakeholders: Minister, DWS, PC and NT.	≥ 4 engagements	≥ 4 engagements	≥ 4 engagements	≥ 4 engagements	≥ 4 engagements	≥ 4 engagements	≥ 4 engagements	N/A
		Engage **Contractual** Stakeholders and create customer and stakeholder value.	2.3	Number of engagements with **contractual** stakeholders: Customers, Employees and Union; Suppliers	≥ 3 Customer 3 staff-union 2 Supplier	≥ 3 Customer ≥ 3 Staff – Union 2 Supplier	≥ 3 Customer ≥ 3 Staff – Union 2 Supplier	≥ 3 Customer ≥ 3 Staff – Union 2 Supplier	≥ 3 Customer ≥ 3 Staff – Union 2 Supplier	≥ 3 Customer ≥ 3 Staff – Union 2 Supplier	≥ 3 Customer ≥ 3 Staff – Union 2 Supplier	N/A

UW	KPI	Initiatives / Plans	#	Result Indicator	Actual 2014/2015	Estimated 2015/2016	Projected 2016/2017	Projected 2017/2018	Projected 2018/2019	Projected 2019/2020	Projected 2020/2021	SHC Annex 1
		Collaborate with **Strategic** stakeholders and create stakeholder value.	2.4	Number of engagements with strategic stakeholders: Provincial Planning Commission, CoGTA and other Provincial Departments, Mhlathuze Water, uThukela Water Company, SALGA, SAAWU and SAHRC.	≥ 4 engagements	≥ 4 engagements	≥ 7 engagements	≥ 7 engagements	≥ 7 engagements	≥ 7 engagements	≥ 7 engagements	N/A
	KPI 2 continued: The extent to which customer and stakeholder needs have been met.	Collaborate with **Non-Contractual** stakeholders and create stakeholder value.	2.5	Number of Engagements with non-contractual stakeholders: Community, Chambers of Business and Industry, Media and general public, water sector related institutions and academia in South Africa and Africa	≥ 1 community ≥ 4 media ≥ 1 Business ≥ 1 National ≥ 1 International	≥ 1 community ≥ 4 media ≥ 1 Business ≥ 1 National ≥ 1 International	≥ 1 Community ≥ 4 Media ≥ 1 Business ≥ 1 National ≥ 1 International	≥ 1 Community ≥ 4 Media ≥ 1 Business ≥ 1 National ≥ 1 International	≥ 1 Community ≥ 4 Media ≥ 1 Business ≥ 1 National ≥ 1 International	≥ 1 Community ≥ 4 Media ≥ 1 Business ≥ 1 National ≥ 1 International	≥ 1 Community ≥ 4 Media ≥ 1 Business ≥ 1 National ≥ 1 International	N/A
		Conclude supply agreements with all customers.	2.6	Total number of signed contracts (bulk supply agreements) in place as a % of total customers. ★	6 customers, 100% signed agreements.	6 customers, 100% signed agreements.	6 customers, 100% signed agreements.	6 customers, 100% signed agreements.	6 customers, 100% signed agreements.	> 6 customers, 100% signed agreements.	> 6 customers, 100% signed agreements.	**SHC PO5**
		Implement projects that support vulnerable municipalities.	2.7	Number of signed contracts/MOUs with rural Municipalities for provision of support. ★	6 projects implemented	Contracts/MOUs for ≥ 5 projects implemented	Contracts/MOUs for ≥ 3 projects implemented	Contracts/MOUs for ≥ 3 projects implemented	Contracts/MOUs for ≥ 3 projects implemented	Contracts/MOUs for ≥ 3 projects implemented	Contracts/MOUs for ≥ 3 projects implemented	**SHC PO7**
		Develop and submit all statutory accountability documents.	2.8	Number of submissions in respect of Monthly Reports, Quarterly Reports, Annual Report, Tariff, Corporate Plan, SHC and Policy Statement. ★	8 reports on time: 4 Quarterly Reports. Annual Report. Tariff. Corporate Plan. SHC.	13 reports on time: 4 Quarterly Reports. Annual Report. Tariff. Corporate Plan. SHC 5 Monthly Reports	20 reports on time: 4 Quarterly Reports. Annual Report. Tariff. Corporate Plan. SHC 12 Monthly Reports	20 reports on time	20 reports on time	20 reports on time	20 reports on time	**SHC PO8**
		Improve water quality compliance.	2.9	Per cent compliance of WTW systems with SANS 241 water quality standard per risk	14 WTW systems 100% compliant. iLembe schemes	14 WTW systems 100% compliant. Four (4) UMDM	14 WTW systems 100% compliant. Four (4) UMDM	18 WTW systems 100% compliant.	> 18 WTW systems 100% compliant.	> 18 WTW systems 100% compliant.	> 18 WTW systems 100% compliant.	**SHC PO1**

UW	KPI	Initiatives / Plans	#	Result Indicator	Actual 2014/2015	Estimated 2015/2016	Projected 2016/2017	Projected 2017/2018	Projected 2018/2019	Projected 2019/2020	Projected 2020/2021	SHC Annex 1
				category ★	≥ 85% compliant	schemes ≥ 90% compliant	schemes ≥ 90% compliant.					
		Improve wastewater quality compliance.	2.10	Per cent compliance of WWTW systems with discharge licence or General Authorisation requirements. ★	3 of 4 WWTW ≥ 85% compliant	3 of 4 WWTW ≥ 85% compliant	6 WWTW ≥ 85% compliant	6 WWTW ≥ 85% compliant	9 WWTW ≥ 85% compliant	> 9 WWTW ≥ 85% compliant	> 9 WWTW ≥ 85% compliant	**SHC PO19**
SO2	KPI 2 continued: The extent to which customer and stakeholder needs have been met.	Plan and implement collaborative water education initiatives	2.11	Number of schools / community initiatives undertaken.	3 implemented	3 implemented	3 implemented	3 implemented	3 implemented	3 implemented	3 implemented	N/A
		Plan and implement CSI initiatives	2.12	Number of CSI initiatives undertaken. ★	1 implemented 4 in progress	3 initiatives	≥ 3 initiatives	≥ 4 initiatives	≥ 4 initiatives	≥ 4 initiatives	≥ 4 initiatives	**SHC PO18**
		Increase participation, B-BBEE spend and new entrants.	2.13	Per cent PSP and contractor order values (CPGs) awarded to B-BBEE suppliers, including ≥ 5% for women. ★	36% PSPs; 35% contractors	≥ 35%	≥ 35%	≥ 35%	≥ 35%	≥ 35%	≥ 35%	**SHC PO11**
				Per cent PSP and contractor order values (CPGs) awarded to B-BBEE suppliers that are women. ★	-	≥ 5%	≥ 5%	≥ 5%	≥ 5%	≥ 5%	≥ 5%	**SHC PO11**
			2.14	Actual B-BBEE spend as a % of total discretionary expenditure. ★	93%	80%	80%	80%	80%	80%	80%	**SHC PO11**
				Number of new B-BBEE entrants awarded work. ★	≥ 2 suppliers sustainably developed and work awarded.	≥ 2 suppliers sustainably developed and work awarded.	≥ 2 suppliers sustainably developed and work awarded.	≥ 2 suppliers sustainably developed and work awarded.	≥ 2 suppliers sustainably developed and work awarded.	≥ 2 suppliers sustainably developed and work awarded.	≥ 2 suppliers sustainably developed and work awarded.	

★ 9 of 14 UW customer and stakeholder related indicators correspond to the following SHC Performance Objectives for WBs: PO2, PO5, PO6, PO7, PO8, PO11, PO18 and PO19

Strategic Goal 2: Expand and improve funding collaborations whilst managing key cost drivers.

Financial Perspective

SO 3 : Increase mobilisation of funds

SO 4 : Increase financial sustainability

SO 5 : Improve financial ratios

Maintain and leverage our solid financial assets

Key outcomes: *Financial Viability, Stakeholder Understanding and Support, Customer Satisfaction, Community and Environmental Sustainability.*

UW	KPI	Initiatives / Plans	#	Result Indicator	Actual 2014/2015	Estimated 2015/2016	Projected 2016/2017	Projected 2017/2018	Projected 2018/2019	Projected 2019/2020	Projected 2020/2021	SHC Annex 1
SO3	**KPI 3:** Increased funding collaboration and funds mobilised for sustainable growth, expansion and access.	Identify and implement co-funding initiatives to sustain rural schemes.	3.1	Total funding for rural schemes received, Rm.	R171m RBIG	R214m RBIG	R357m RBIG	R661m RBIG	-	-	-	N/A
SO4	**KPI 4:** The extent to which there are sustainable financial returns for each system, area, region and the organisation.	Ensure sustainable operations.	4.1	Total revenue, Rm and per cent variance.	R2.21bn	R2.39bn±10%	R2.79bn±10%	R3.27bn±10%	R3.32bn±10%	R3.66bn±10%	R4.0421bn±10%	N/A
			4.2	Total expenditure, Rm and per cent variance.★	R1.44bn, below 10%	R1.73bn±10%	R2.20bn±10%	R2.62bn±10%	R2.43bn±10%	R2.59bn±10%	R2.71bn±10%	SHC PO12
			4.3	Total surplus (loss) Rm and per cent variance	R801m	R675m±10%	R598m±10%	R657±10%	R890m±10%	R1.079bn±10%	R1.342bn±10%	N/A
		Manage debtor days.	4.4	Number of debtor days.★	39	40	≤ 40	≤ 40	≤ 40	≤ 41	≤ 41	SHC PO10
		Manage s30 revenue.	4.5	Total s30 revenue, Rm and per cent of turnover.★	R118m of R2.21bn, 5%	R134m of R2.39bn, 6%	R342m of R2.79bn, ≥ 12%	R346m of R3.27bn, ≥ 11%	R37m of R3.32bn, ≥ 1%	R39m of R3.66bn, ≥ 1%	R41m of R4.04bn, ≥ 1%	SHC PO14
		Increase return on investment.	4.6	Per cent return on assets.★	11%	≥ 7%	≥ 5%	≥ 7%	≥ 9%	≥ 11%	≥ 13%	SHC PO10
		Improve controls and risk mitigation	4.7	Number of breaches in materiality and significance framework.★	Nil	Nil	Nil	Nil	Nil	Nil	Nil	SHC PO20
SO5	**KPI 5:** Ratios for financial viability and sustainability	Manage solvency	5.1	Debt to Equity ratio.★	0.23	≤ 0.4	≤ 0.4	≤ 0.4	≤ 0.3	≤ 0.3	≤ 0.3	SHC PO10
			5.2	Interest cover ratio.	5.76	≥ 4.0	≥ 2.5	≥ 2.5	≥ 3.0	≥ 4.5	≥ 3.5	N/A
		Manage liquidity	5.3	Current Ratio★	2.5	1.97	1.4 to 2.1	1.5 to 2.1	1.5 to 2.1	1.5 to 2.1	1.5 to 2.1	SHC PO10
			5.4	Operating cash flows, Rm	R1122m	≥ R800m	≥ R800m	≥ R1000m	≥ R1200m	≥ R1350m	≥ R1570m	N/A

UW	KPI	Initiatives / Plans	#	Result Indicator	Actual 2014/2015	Estimated 2015/2016	Projected 2016/2017	Projected 2017/2018	Projected 2018/2019	Projected 2019/2020	Projected 2020/2021	SHC Annex 1
	met	Manage primary business performance	5.5	Gross profit Rm over Revenue Rm for primary activity★	R1258m of R2104m (60%)	R1308m of R2261m (≥ 50%)	R1320m of R2448m (≥ 50%)	R1651m of R2920m (≥ 50%)	R1888m of R3280m (≥ 50%)	R2098m of R3622m (≥ 50%)	R2333m of R4001m (≥ 50%)	SHC PO10
			5.6	Net profit margin for % primary activity ★	R801m of R2104m (38%)	R666m of R2261m (≥ 20%)	R582m of R2448m (≥ 20%)	R656m of R2920m (≥ 20%)	R889m of R3280m (≥ 20%)	R1078m of R3622m (≥ 20%)	R1341m of R4001m (≥ 20%)	SHC PO10
		Manage secondary business performance	5.7	Gross profit margin % for secondary activity★	R9.835m of R103.482m (10%)	R10.59m of R133.6m (≥ 8%)	R17.9m of R341.6m (≥5%)	R2.85m of R345.9m (≥ 0.8%)	R1.176m of R36.8m (≥ 3%)	R1.9m of R38.7m (≥ 4%)	R1.2m of R41.3m (≥ 2.5%)	SHC PO10
			5.8	Net profit margin % for secondary activity. ★	R9.387m of R103.482m (9%)	R9.48m of R133.6m (≥ 7%)	R16.2m of R341.6m (≥ 4%)	R1m of R345.9m (≥ 0.3%)	R1m of R48.591m (≥ 2%)	R1m of R38.7m (≥ 2.5%)	R1m of R41.3m (≥ 2%)	SHC PO10

★ 11 of 16 UW financial indicators correspond to the following SHC Performance Objectives for WBs: PO10, PO12, PO14 and PO20

Strategic Goal 3: Remove system constraints and blockages through innovative thinking and improve efficiency of all inputs.

Process Perspective

SO 6: Improve service delivery systems

Create effective and resilient enterprise architecture - *our processes, systems and technologies*

Key outcomes: *Operational Resiliency, Operational Optimisation, Community and Environmental Sustainability.*

UW	KPI	Initiatives / Plans	#	Result Indicator	Actual 2014/2015	Estimated 2015/2016	Projected 2016/2017	Projected 2017/2018	Projected 2018/2019	Projected 2019/2020	Projected 2020/2021	SHC Annex 1
SO6	**KPI 6**: The extent to which business processes, policies and systems are enabling strategy implementation	Benchmark procurement system for engineering and construction and improve turnaround time.	6.1	Number of working days for awarding of capex programme tenders, contract negotiations and for issuing of signed contract.	79 days for award; 72 days for signed contract	≤ 90 days for award; > 45 days for CPG negotiations > 15 days for signed contract	≤ 90 days for award; ≤ 45 days for CPG negotiations ≤ 15 days for signed contract	≤ 90 days for award; ≤ 45 days for CPG negotiations ≤ 15 days for signed contract	≤ 90 days for award; ≤ 45 days for CPG negotiations ≤ 15 days for signed contract	≤ 90 days for award; ≤ 45 days for CPG negotiations ≤ 15 days for signed contract	≤ 90 days for award; ≤ 45 days for CPG negotiations ≤ 15 days for signed contract	N/A
		Review and implement effective ERP system.	6.2	ERP system reviewed and implemented.	40% implemented	> 50% Go-Live Phase implemented:	100% Go-Live Phase implemented	Review and optimise	Review and optimise for KZN entity.	Review and optimise	-	N/A
		Develop and implement environmental sustainability plans.	6.3	Number of environmental sustainability initiatives implemented. ★	3 initiatives	3 initiatives	≥ 3 initiatives	≥ 3 initiatives	≥ 3 initiatives	≥ 3 initiatives	≥ 3 initiatives	SHC
		Develop and implement research and innovation plans.	6.4	Number of research and development / innovation initiatives implemented.	4 initiatives	5 initiatives	≥ 3 initiatives	≥ 3 initiatives	≥ 3 initiatives	≥ 3 initiatives	≥ 3 initiatives	N/A
		Monitor and review systems for performance and financial controls.	6.5	Unqualified report with no matters of emphasis (Clean Audit) ★	Unqualified report.	Unqualified report with no matters of emphasis.	Unqualified report with no matters of emphasis.	Unqualified report with no matters of emphasis.	Unqualified report with no matters of emphasis.	Unqualified report with no matters of emphasis.	Unqualified report with no matters of emphasis.	**SHC PO9**
		Monitor and review internal controls and risk system.	6.6	Number of repeat and number of unresolved findings. ★	0 repeat; 7 unresolved.	0 repeat; 18 unresolved.	0 repeat; ≤ 10 unresolved.	0 repeat; ≤ 10 unresolved.	0 repeat; ≤ 7 unresolved.	0 repeat; ≤ 7 unresolved.	0 repeat; ≤ 5 unresolved.	**SHC PO16**

UW	KPI	Initiatives / Plans	#	Result Indicator	Actual 2014/2015	Estimated 2015/2016	Projected 2016/2017	Projected 2017/2018	Projected 2018/2019	Projected 2019/2020	Projected 2020/2021	SHC Annex 1
		Monitor and improve fiduciary duties and governance.	6.7	Board / Committee meetings attended as a % of planned meetings. ★	Board: 89% Audit: 80% Capex: 82% REMCO: 80% Governance: 100%	Board: 90% Audit: 90% Capex: 90% REMCO: 70% Governance: 100%	≥ 80%	≥ 80%	≥ 80%	≥ 80%	≥ 80%	**SHC PO15**
				Resolutions taken by the board as a % of resolutions required. ★	-	≥ 90%	≥ 80%	≥ 80%	≥ 80%	≥ 80%	≥ 80%	
		Monitor and improve ethics and governance.	6.8	All ethical issues addressed as assessed against key ethics areas. ★	Ethics and Fraud Management Systems improved.	Seven (7) key ethics areas assessed and issues dealt with.	Seven (7) key ethics areas assessed and issues dealt with.	Seven (7) key ethics areas assessed and issues dealt with.	Seven (7) key ethics areas assessed and issues dealt with.	Seven (7) key ethics areas assessed and issues dealt with.	Seven (7) key ethics areas assessed and issues dealt with.	**SHC PO16**
		Improve B-BBEE Contributor Status	6.9	Compliant B-BBEE Contributor rating achieved. ★	Non-compliant Contributor	Score: 32.95 Non-compliant Contributor	≥ 40 Level Eight Contributor	≥ 40 Level Eight Contributor	≥ 50 Level Eight Contributor	≥ 50 Level Eight Contributor	≥ 55 Level Seven Contributor	N/A
		Monitor and improve health and safety.	6.10	Disabling Injury Frequency Ratio (DIFR).	0.11	≤ 1	≤ 1	≤ 1	≤ 1	≤ 1	≤ 1	N/A
		Develop compliance registers and monitor and improve legal compliance.	6.11	Per cent compliance against legal Compliance Register. ★	95 % compliance.	100% compliance.	100% compliance.	100% compliance.	100% compliance.	100% compliance.	100% compliance.	**SHC PO16**

★ 7 of 11 UW internal process related indicators correspond to the following SHC Performance Objectives for WBs: PO9, PO15 and PO16

Strategic Goal 4: Strengthen and develop quality human resources, infrastructure capacity and water resources sustainability to support growth.

Key outcomes: *Infrastructure Stability, Water Resources Adequacy, Leadership and Employee Development.*

UW	KPI	Initiatives / Plans	#	Result Indicator	Actual 2014/2015	Estimated 2015/2016	Projected 2016/2017	Projected 2017/2018	Projected 2018/2019	Projected 2019/2020	Projected 2020/2021	SHC Annex 1
SO7	**KPI 7**: Infrastructure expenditure within target cash flows and completion dates.	Implement capital infrastructure to meet demands and for growth.	7.1	Actual CAPEX Rm against budget and % variance. ★	R1278m of R1365m, 6% variance	R1814m of R2268m, 20% variance	R1451m of R1814m, 20% variance	R740m of R925m, ≤ 20% variance	R422m of R527m, ≤ 20% variance	R123m of R154m, ≤ 20% variance	R134m of R168m, ≤ 20% variance	SHC PO13
			7.2	Number of CAPEX projects within target completion dates against planned number and % variance. ★	3%	≤ 15%	≤ 15%	≤ 15%	≤ 15%	≤ 15%	≤ 15%	SHC PO13
		Implement infrastructure to meet national objectives of increasing access.	7.3	Actual spend on rural expansion related projects as % of CAPEX budget. ★	R799m of R1365m, (59%)	R999m of R2268m (±44%)	R566m of R1814m (±31%)	R275m of R925m (±30%)	R226m of R527m (±43%)	R13m of R154m (±8%)	R79m of R168m (±47%)	SHC PO4
		Invest timely and appropriately in infrastructure asset repairs and maintenance.	7.4	Repairs and maintenance Rm over PPE Rm. ★	R188m of R5503m (3.4%)	R178m of R7409m (≥ 2%)	R206m of R8726m (≥ 2%)	R220m of R8804m (≥ 2%)	R234m of R9153m (≥ 2.5%)	R250m of R9039m (≥ 2.5%)	R267m of R8928m (≥ 3%)	SHC PO10

UW	KPI	Initiatives / Plans	#	Result Indicator	Actual 2014/2015	Estimated 2015/2016	Projected 2016/2017	Projected 2017/2018	Projected 2018/2019	Projected 2019/2020	Projected 2020/2021	SHC Annex 1
SO8	**KPI 8**: Sustainable water resource options identified for all systems.	Develop integrated water resources plans for each supply system and region for long term sustainability.	8.1	Supply and demand status and projections demonstrating long-term water resources adequacy per system and region.	Quarterly status reports and operating rules.	Report of supply and demand status and projections demonstrating sustainable water resources plans for long term.	Report of supply and demand status and projections demonstrating sustainable water resources plans for long term.	Update and refine.	Update and refine.	Update and refine.	Update and refine.	N/A
		Improve supply reliability and asset management to eliminate unplanned supply disruptions.	8.2	Number of days (> 24 hours) supply disrupted over total supply days (365 days per year). ★	0 days	0 days	0 days	0 days	0 days	0 days	0 days	**SHC PO3**
		Reduce water loss / unaccounted for water per system.	8.3	Avoidable water lost (mil m^3) over total water produced (mil m^3). ★	13.9 of 447 mil m^3 3.11%	16.2 of 438 mil m^3 3.71%	≤ 21.5 of 429 mil m^3 ≤ 5%	≤ 23.6 of 471 mil m^3 ≤ 5%	≤ 24.3 of 486 mil m^3 ≤ 5%	≤ 24.7 of 493 mil m^3 ≤ 5%	≤ 25.1 of 501 mil m^3 ≤ 5%	**SHC PO2**
SO9	**KPI 9**: Effectiveness and efficiency of employee training and development programmes.	Build leadership, management and functional competence.	9.1	Number of employees enrolled and developed through Management Development Programmes.	103 employees completed the management development programme (MDP)	Senior Management Development Programme (SMDP) identified.	20 enrolled and developed in Senior Management Development Programme (SMDP)	Review and monitor	Review and monitor	Review and monitor	-	N/A
		Develop technical skills through Learnerships	9.2	Number of Artisans and Apprentices (Learnerships). ★	37 Artisans 12 Apprentices	57 Artisans 12 Apprentices	≥ 50	≥ 50	≥ 50	≥ 50	≥ 50	**SHC PO21**
		Implement bursary programme	9.3	Number of Bursar degree plans met. ★	14	14	≥ 10	≥ 10	≥ 10	≥ 10	≥ 10	**SHC PO21**
		Develop Graduates and Interns	9.4	Number of Graduate Trainees development plans met. ★	19 Graduates 11 Interns 22 In-service trainees	25 Graduates 10 Interns 17 In-service trainees 10 Process Control trainees	≥ 25 Graduate Trainees	≥ 25 Graduate Trainees	≥ 25 Graduate Trainees	≥ 25 Graduate Trainees	≥ 25 Graduate Trainees	**SHC PO21**
		Develop technical skills to capacitate municipalities	9.5	Numbers of candidate engineers developed (NT) and professional registration submissions.	44 developed; 3 certifications at year end.	40 developed; 11 certifications at year end.	29 developed. 11 certifications at year end	18 developed. 18 certifications at year end	-	-	-	N/A
		Create jobs	9.6	Number of permanent	-	75 permanent jobs.	19 permanent jobs	-	-	-	-	**SHC**

UW	KPI	Initiatives / Plans	#	Result Indicator	Actual 2014/2015	Estimated 2015/2016	Projected 2016/2017	Projected 2017/2018	Projected 2018/2019	Projected 2019/2020	Projected 2020/2021	SHC Annex 1
				and temporary jobs created.★	8 fixed-term contracts	-	-	-	-	-	-	**PO22**
					1073 capex jobs.	≥ 670 capex jobs.	≥ 600 capex jobs.	≥ 600 capex jobs.	≥ 600 capex jobs.	≥ 600 capex jobs.	≥ 600 capex jobs.	
		Manage staff / skills retention.	9.7	Number of staff terminations, excluding normal retirements, as a % of the total staff complement. ★	84 of 1050 (≤ 8%)	86 of 1069 (≤ 8%)	86 of 1071 (≤ 8%)	86 of 1071 (≤ 8%)	86 of 1071 (≤ 8%)	86 of 1071 (≤ 8%)	86 of 1071 (≤ 8%)	**SHC PO20**
		Increase staff efficiency and productivity.	9.8	Staff remuneration as a % of total operating expenditure ★	26%	28%	≤ 35%	≤ 35%	≤ 35%	≤ 35%	≤ 35%	**SHC PO10**

★ 12 of 15 UW organisational capacity related indicators correspond to the following SHC Performance Objectives for WBs: PO2, PO3, PO4, PO10, PO13, and PO20. PO21 and PO22

UMGENI WATER · AMANZI

Chapter 4: Marketing, Branding and Communication

Contents

4.1. Marketing and Branding Plan

4.1.1 Approach to Marketing and Branding

Umgeni Water's marketing approach responds to its operating environment requirements and mandates. The overall value proposition is premised on securing mutually beneficial relationships. Building its brand identity involves Umgeni Water positioning itself relative to its customers and stakeholders in such a way that they choose to purchase or acquire services and associated products from Umgeni Water in preference to others.

The water board consolidation strategy led by the Minister of Water and Sanitation has provided an enabling environment for expansion of services into the KwaZulu-Natal province. Mindful of the expanded mandate and target market Umgeni Water will strive to ensure that:

- There is coherent linkage between the reputation of the entity and its services and products,
- All brand activity has a common aim and is supported by clear and relevant communication,
- All activity is guided, directed and delivered by the brand's benefits/reasons to buy, and
- All activity focuses on all points of contact with the customer.

The Branding of Umgeni Water provides the foundation for the delivery of the strategy of Umgeni Water, the provision of water services, stakeholder interaction and communication, all business systems and processes and new business development.

A key element of Branding activities and initiatives is the need Umgeni Water to demonstrate that it has a holistic and fully integrated approach to effective, efficient and reliable service delivery, a positive reputation for building of strong and enduring relationships with all customers and stakeholders and is recognised as a strategically relevant entity that adds value to its customers and ultimately communities through its services and products.

4.1.2 Umgeni Water Brand Building

Umgeni Water will build its brand by the entity and its staff "walking the talk" and demonstrating, in the context of the customers and stakeholders, that the entity is indeed a reliable, capable, competent, efficient and effective service provider. This will be underpinned by a clear and deliverable Value Proposition for all Market Development and Market Penetration activities, services and products.

Umgeni Water will build its brand by incorporating the following key elements:

- Delivering on mandate. Building on and reinforcing the track record / reputation and capability of Umgeni Water will be seen as irrelevant if the customer does not believe that the entity can deliver what it says it can.
- Matching the strengths of the entity to the products and services offered – through leveraging the technical, managerial and financial capability and public status of an entity of state.
- Identifying and understanding key customer needs, expectations, priorities and passions. This requires knowledge and information regarding the status of water and wastewater in the KZN region, the target areas and target customers. Umgeni Water will succeed by progressive implementation - focusing on high priorities in the first instance.
- Designing and offering services and products that will give the customer the optimal result and experience. Umgeni Water needs to ensure that there is a clear and mutual Value Proposition for the service provided.
- Ensuring there is enterprise-wide alignment of the entity to consistently deliver on the strategy and provide an optimal customer experience.

A key requirement in this regard is the realisation that every service or product brought to market will yield a customer experience that Umgeni Water intended and an experience that fulfils and/or exceeds the promise made to the marketplace/customer (the Value Proposition).

By identifying the people, processes and tools that drive the customer experience, Umgeni Water will actively design and control a unique, optimised experience. The Brand promise made to the marketplace will be kept and consistently maintained, thus building a strong brand and securing customer loyalty.

Notwithstanding the range and diversity of customers in the market place, a consistent and coherent Brand will be projected into the market place. This is critical to ensure that there is clear understanding of who and what Umgeni Water is, thereby eliminating the possibility of confused positioning.

Customers at times have a confused opinion of the brand identity of Umgeni Water and what it means. In order to achieve consistency, it is necessary for Umgeni Water to strengthen its Core Brand. The Core Brand must be aligned to the Vision, Mission, Values and Strategic Intent of Umgeni Water. This is critical to ensure a consistent and coherent message that informs customers' views and expectations of Umgeni Water. The Core Brand, as a minimum, will clearly reinforce or create an awareness of the following:

- The profile and history of Umgeni Water as a world-class Water Services Provider,
- Over 40 years of success and experience,
- The Vision, Mission, Strategic Intent and Values of Umgeni Water, together with its Benevolent Intent,
- The core and distinctive competencies and capabilities of Umgeni Water,
- The reliability and quality of Umgeni Water's services and people, and
- Umgeni Water's focus on research, innovation and capacity building.

4.1.3 Products and Services

Umgeni Water, as an entity of state operates within prescribed legislation and national government frameworks and mandates. Within this framework, the basket of water products and related services vary in response to local and regional needs. The core products Umgeni Water will continue to focus on are:

- Bulk potable water supply
- Bulk wastewater treatment

Umgeni Water will, based on need and demand, provide other water related services and products including:

- Water treatment process and related training
- Water sampling and laboratory analyses
- WC/DM and NRW management support
- Other support services to municipalities
- Integrated water resources planning and integrated catchment management
- Waste management, water reclamation and desalination

4.1.4 Geographical Markets and Customers

Umgeni Water has identified the following markets for growth of water services (water and wastewater) and water related services:

1. KwaZulu-Natal: for water services and other related activities.
2. South Africa: water services and other related activities on demand.
3. Rest of Africa: knowledge management, networking and responding to bi-lateral agreements between South Africa and other countries.

Within KwaZulu-Natal bulk water and wastewater services and/or water related services will progressively be increased in customer areas as follows:

1.	eThekwini Metropolitan Municipality:	**Retain and grow**
2.	Msunduzi Local Municipality:	**Retain and grow**
3.	iLembe District Municipality:	**Consolidate and grow**
4.	uMgungundlovu District Municipality:	**Consolidate and grow**
5.	Harry Gwala District Municipality:	**Market penetration**
6.	Ugu District Municipality:	**Market penetration**
7.	uMkhanyakude District Municipality:	**Market Development**
8.	Newcastle Local Municipality:	**Market Development**
9.	Amajuba District Municipality:	**Market Development**
10.	uMzinyathi District Municipality:	**Market Development**
11.	uThukela District Municipality:	**Market Development**
12.	Other KZN Municipalities:	**Market Development**

4.1.5 Market Development: Customer Engagement Approach

Umgeni Water's customer engagement model entails meaningful contact at various levels for different purposes.

4.1.6 Market Development: Engagement Approach during Development Phase

Umgeni Water will foster trust and form relationships with customers in KwaZulu-Natal through open and honest interactions.

Umgeni Water will continue with its planning to create the optimal service delivery model for KwaZulu-Natal. Stakeholder testing has been undertaken in some areas through interactions during site assessments and prior due diligence exercises. In the coming period, Umgeni Water, together will Mhlathuze Water, will contribute to the due diligence exercise led by the Minister and Department of Water and Sanitation to cover all of KwaZulu-Natal.

Validation of WSAs interests in target areas will continue through presentation of the service delivery model, its costs and tariffs and gaining deeper understanding of the WSAs' needs. This will further validate the information previously gleamed and notably:

i. Confirm that there is complete understanding of the WSAs' problems, priorities, needs and passions, ,
ii. Confirm that the value proposition solves the bulk problem with a vision that addresses future needs,
iii. Confirm that there is a sizeable market or the size of scheme contemplated is sufficient to deliver a sustainable business for each customer and for the region as a whole,
iv. Confirm that the WSAs are willing to pay for the services, confirm how the WSAs are planning to pay for the services, solicit information/confirmation of the available funding and financing options that exist in addition to the proposed tariff and agree / develop mechanisms for sourcing these to ensure there is sustainable service provision.

The feedback gained will continue to be used to review assumptions, refine the service delivery plans and mitigate any additional risks identified.

Once successful, development of a long-term bulk supply agreement (SALGA approved) with customers, preferable 20 years, will be undertaken to ensure sustainable capital investments can be made.

4.1.7 Market Development: Engagement Approach during Operational phase

Umgeni Water will copy and improve on existing successful customer experience models. Experience has shown that sustainable-positive outcomes arise when:

i. Honest responses and answers to questions are provided, notably when these relate to supply disruptions and quality problems,
ii. The easy problems are solved quickly,
iii. There is timely follow up and feedback on progress toward solutions for the harder problems,
iv. There is collaboration, support and assistance provided to address the WSAs' needs in time of water crises.

4.1.8 Market Development: Engagement Approach during future planning phase.

Umgeni Water will continue to assess that the service delivery model is adding the intended value and is the best cost and most sustainable option for the WSAs, end-users and region as a whole. The tariff and pricing of the bulk water service will be linked to changes in cost components, changes in resource allocation, and increases in investments relating to changes in demand, whilst continuing to provide a service and tariff that reflects the WSA's preference for price stability, efficiency and security of supply.

For the longer-term, Umgeni Water will work collaboratively with the Department of Water and Sanitation and Mhlathuze Water to contribute to the due diligence report for the proposed new KZN Water Utility and thereby progressively enable provision of sustainable water services to all customers in KwaZulu-Natal. As part of the contribution, the regional schemes concept will be further refined over this period in terms of the phased approach to water access:

- Alleviating the immediate need through implementing stand-alone regional schemes;
- Integrating existing stand-alone schemes into sub-regional schemes; and
- Integrating all of the latter into sustainable regional schemes.

4.2. Communication Plan

The objectives of Umgeni Water's Communication Plan are to:

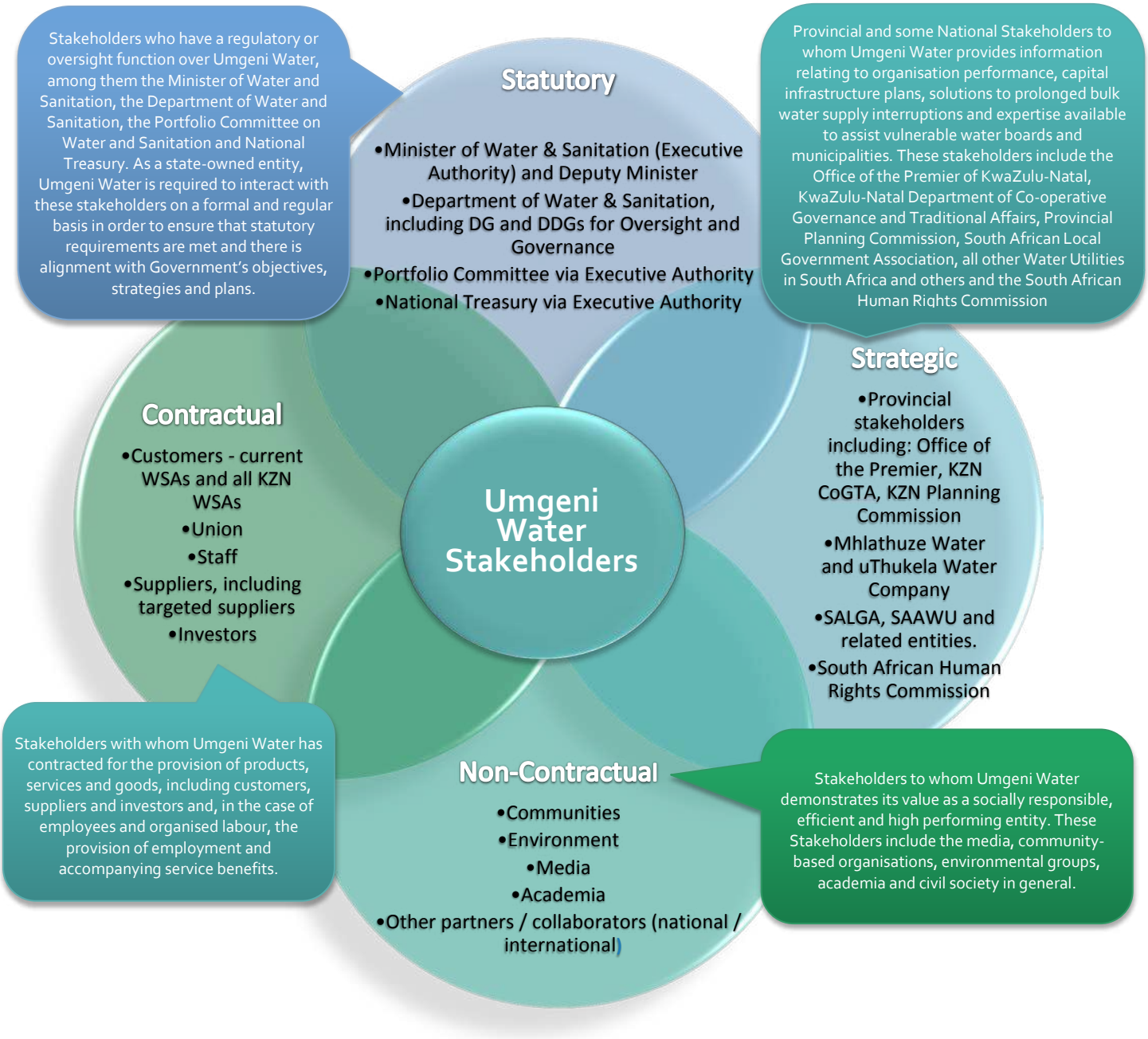
- Ensure that relevant and appropriate approaches are adopted for interaction with each distinct group of Stakeholders,
- Enhance internal policies, projects and services provided through Stakeholder engagement,
- Facilitate effective collaboration and knowledge sharing between Umgeni Water and its Stakeholders, and
- Ensure that the entity is aware of Stakeholder needs and priorities through the receipt and provision of relevant information.

4.3. Water Sector Stakeholders

As a regional bulk water service provider, Umgeni Water plays a significant strategic role in underpinning and supporting social and economic development within its service area. In the execution of its mandate for undertaking primary and secondary activities, the entity is required to interact with a number of stakeholders who are impacted on by Umgeni Water, either directly or indirectly.

Umgeni Water stakeholders are categorised and clustered as Statutory Stakeholders, Strategic Stakeholders, Contracted Stakeholders and Non-Contracted Stakeholders as shown in Figure 4.1.

Figure 4.1: Umgeni Water Stakeholders, clustered into four groups - Statutory Stakeholders, Strategic Stakeholders, Contracted Stakeholders and Non-Contracted Stakeholders



4.4. Stakeholder Value Proposition and Engagement Plans

Umgeni Water has embarked on a growth and expansion plan which is being accompanied by increased engagements with municipalities that have been identified as potential customers. Since the submission of the previous Corporate Plan, the service area of Umgeni Water, and that of Mhlathuze Water, was declared by the Minister of Water and Sanitation to include the entire Province of KwaZulu-Natal. In view of this change, the frequency of engagements will increase, and in relation to new WSA customers (or potential customers) of Umgeni Water, deliberations will initially be focused on an introduction of Umgeni Water to them and later the marketing and positioning of the new regional water utility.

4.5. Statutory Stakeholders Value Proposition and Planned Engagements

4.5.1. Minister of Water and Sanitation (Executive Authority)
4.5.2. Deputy Minister of Water and Sanitation
4.5.3. Department of Water and Sanitation
4.5.4. Portfolio Committee on Water and Sanitation
4.5.5. National Treasury

- Delivery on mandate,
- Responsive to Water Services Act, Public Finance Management Act and other pertinent legislation and regulations,
- Delivering Strategy and Plans aligned to Government outcomes and Executive Authority expectations, including NDP, MTSF and NWRS2,
- Demonstrating adequate resource planning mobilisation,
- Investing in infrastructure,
- Ensuring efficient water usage and conservation and water quality management,
- Demonstrating a well-governed and efficiently run entity,
- Ensuring performance with financial and predetermined objectives for long-term sustainability,
- A partner that shows alignment with water sector communication strategy and plans, and
- A leader that contributes to establishing synergies in the value change and water sector.

4.5.6. Planned Engagements for 2016/17 to 2020/21

- Regular communication with oversight departments and inputs into water sector policy and strategy at quarterly or other scheduled Ministerial and Director-General forums,
- Quarterly engagement with DWS at Governance and Risk Forum,
- Quarterly engagement with DWS at Communication Forum,
- Provision of all key reports aligned to National Government's accountability cycle, including Annual Report during October-November, Quarterly Performance Reports, Strategy, Corporate Plan and Shareholder Compact in April,
- Engagement at DG Appraisal session in March on Annual Performance Plans,
- Engagement during appraisal of Corporate Plan, including the Strategy KPIs and signing of Shareholder Compact by the Department of Water and Sanitation scheduled by June .

- Relevant Portfolio Committee communication and appraisal of annual performance and tariff scheduled between February and May, and
- Timely exchange in response to any other statutory / mandate issues that arise in the course of the year.

4.6. Strategic Stakeholders Value Proposition and Planned Engagements

4.6.1. Provincial Planning Commission,
4.6.2. CoGTA and other Provincial Departments,
4.6.3. Mhlathuze Water,
4.6.4. uThukela Water Company,
4.6.5. SALGA,
4.6.6. SAAWU,
4.6.7. SAHRC.

- Structured implementation plan to enhance assurance of supply and extend water services to previously un-served communities,
- Affordable tariff,
- Assurance of water supply as a catalyst for economic expansion,
- Delivery on mandate and alignment to policy and National and Provincial Development Plans,
- Partner in service delivery,
- Accelerated service delivery,
- Corporate governance,
- Benchmarking and strategic information exchanges,
- Collaboration for major event and celebrations, and
- Proactive measures to mitigate the effects of long periods of water shortages and supply interruptions.

4.6.8. Planned Engagements for 2016/17 to 2020/21

- Provision of all key inputs, presentations and reports aligned to Provincial Government's cycle, including inputs into the Provincial Lekgotla and key addresses,
- Focused Provincial communication,
- Alignment of Strategy and Corporate Plan, including Infrastructure Master Plan and Five-Year Capital Investment Programme to the Provincial Growth and Development Strategy and Plan,
- Affordable and equitable distribution of water to communities and for rural development,
- Projects contributing to elimination of water backlogs and achievement of goals,
- Impact of the bulk tariff, and water assurance plans for the Province, plans to meet future water demands and sharing Umgeni Water's growth and expansion plans,
- Benchmarking and strategic information exchange with SALGA and SAAWU and related stakeholders,
- Collaboration for major events and celebrations, including WISA exhibition and conference and National Water Week,

- Collaboration through Water Sector Communicators' Forum,
- Collaboration with Mhlathuze Water and uThukela Water Company for Input into due diligence commissioned by DWS as a precursor to the formation of the KZN Water Utility.

4.7. Contracted Stakeholders Value Proposition and Planned Engagements

4.7.1. Customers

- Service Level Agreements,
- Assurance of supply, both quality and quantity,
- Tariff consultation,
- Responsive to needs,
- New products and services
- Care and support,
- Partnerships in other socio-development initiatives,
- Partnerships in CSI initiatives.

4.7.2. *Planned Engagements for 2016/17 to 2020/21*

- Engagements for service delivery plans, progress, performance, challenges, enhancements and new requirements and needs and service delivery agreements,
- Soliciting customer demand projections, engagement for infrastructure plans, funding and financing engagements and tariff consultations,
- Response and collaboration for restoring water supply failures, support services, including water quality and process and support for customer water programmes,
- Collaboration for water education and awareness, Corporate Social Investment projects and partnerships in community-focused job-creation programmes, among them Working-for-Water, Adopt-a-River and War-on-Leaks Programmes,
- Collaboration and partnerships for launch of construction projects and commissioning of projects,
- Joint communications and media releases,
- Input to customer satisfaction surveys, and
- Annual performance presentations during road shows.

4.7.3. National Education, Health and Allied Workers' Union, unionised Staff and non-unionised Staff

- Compliance with Collective Agreement,
- Demonstrating relevance as an entity that adds value to the sector,
- Regular feedback and communication regarding sector issues and entity performance,
- Regular information sharing and feedback on entity events planned and held,
- Regular feedback regarding progress towards the dis-establishment of Umgeni Water and Mhlathuze

Water and establishment of one regional entity,
- Equitable jobs, fair labour practice, good working conditions / enabling work environment and communication, fair market-related compensation and service conditions,
- Sound performance management and recognition systems,
- Engaged employees, productivity, delivery and return on investment.

4.7.4. Planned Engagements for 2016/17 to 2020/21

- Engagement relating to internal climate surveys,
- Focused communication of major changes including: impact of Umgeni Water disestablishment and KZN entity establishment, and changes to key business processes with SAP ERP implementation,
- Quarterly Staff Information Sessions,
- Site Visits,
- Internal electronic and hard-copy communiqués,
- Bi-annual Wellness Days and other corporate special days, and
- Annual Staff Awards.

4.7.5. Suppliers

- Compliance with legislation for fair and equitable procurement,
- Supplier development,
- Business opportunities,
- Transparency, integrity, fair treatment, fair pricing, fair payment terms,
- Capacity building towards more inclusive economic participation,
- Implementation of B-BBEE and CPG partnerships,
- Support to co-operatives, CSI, environmental management, and
- Supplier footprint reduction – water, energy and materials.

4.7.6. Planned Engagements for 2016/17 to 2020/21

- Annual engagements at Umgeni Water Supplier Forum,
- Advertising features on Umgeni Water's Five-Year Capex and implementation programme , and
- Identification of business opportunities through engagements and support for SMMEs and co-operatives

4.8. Non-Contracted Stakeholders Value Proposition and Planned Engagements

4.8.1. Community and Civil Society Institutions

- Umgeni Water demonstrates conservation and responsible use of resources,
- Provision of a clean and safe environment,
- Exercising responsible citizenship,

- Demonstrating transparency in corporate governance,
- Creating jobs,
- Providing information and opportunities,
- Social licence to operate,
- Recognition for creating value,
- Respect for property and
- Collaboration in protecting remotely situated water assets.

4.8.2. Planned Engagements for 2016/17 to 2020/21

- Implementation of the entity's water education and awareness programmes with schools and wider community,
- Providing vital information and assistance to safeguard public health in the event of water supply failures, notably due to adverse climate conditions,
- Engagement and soliciting input during construction planning,
- Communicating opportunities for jobs and local participation,
- Sharing of information on water supply projects to provide or improve access to safe water services,
- Special advertising and communication features covering: Risks/dangers associated with construction close to dwellings, need for collaborative management of servitudes, protection and safe-guarding water treatment assets, and
- Celebration of completion of major infrastructure projects, at which communities will be provided information about projects' importance and why vandalism should not be allowed.

4.8.3. Chambers of Business and Industry

- Assurance of supply, both quality and quantity,
- Information on tariff,
- Responsible citizenship,
- Recognition for creating value,
- Pollution prevention, and
- Safe-guarding of water supply resources.

4.8.4. Planned Engagements for 2016/17 to 2020/21

- Participation in Chamber of Business forums to identify and align to business water needs, discuss business role in curbing pollution of water supplies,
- Sharing of information and water treatment expertise,
- Communication of supply interruptions and provision of water quality information,
- Sharing of information on Five-Year Capital Expenditure Programme as it relates to provision of infrastructure to enhance future water supply and eliminate backlogs, and
- Partnerships on strategic ventures, such Business of the Year competitions.

4.8.5. Media and general public

- Access to information,
- Accountability, transparency and good governance, and
- Responsible reporting and media integrity.

4.8.6. Planned Engagements for 2016/17 to 2020/21

- Using media as an opportunity to increase visibility of the entity and as a positioning, marketing and branding platform,
- Providing information on entity performance in meeting service delivery objectives and financial performance,
- Transparently providing vital information regarding water supply interruptions and water quality,
- Dissemination of information in emergency and disaster situations relating to support and measures to safeguard public health, and
- Providing information on project status and engagement during public events.

4.8.7. Water sector, related institutions and academia in South Africa and Africa

- Exchange and expansion of water sector knowledge,
- Benchmarking on best practices,
- Partnerships and collaborative water and wastewater research, and
- Entity learning and growth.

4.8.8. Planned Engagements for 2016/17 to 2020/21

- Information exchange and knowledge management,
- Collaboration in water research and development,
- Support to water centres of excellence.
- Student internships and experiential training and exposure,
- Study tours and site visits,
- Collaboration in major events, such as National Water Week and participation in international exhibitions, and
- Specifically in Africa: knowledge management, networking and responding to bi-lateral agreements between South Africa and other African countries and Water Utilities in partnership with national and provincial government.

5 Policy Statement

5.1 Policy Statement

There have been no significant changes in Umgeni Water's policy statement from the previous year. The policy statement is due to be updated during this corporate plan period in 2017.

Chapter 6: Corporate Governance

Contents

6.1 Composition and Functioning of the Board

Umgeni Water has a unitary Board comprised of twelve (12) non-executive Board members and one (1) Executive Board member, the Chief Executive. The roles of the Chairman and that of the Chief Executive are separate as recommended in the King III Report on Corporate Governance (hereinafter referred to as "King III") to ensure the independence of the two positions and the clear definition of roles and responsibilities. The Chairperson of the Board and all other Board members (with the exclusion of the Chief Executive), are independent non-executive directors in the manner described in King III. All Board members execute their legal duties in a professional manner, with integrity and enterprise. In terms of the Water Services Act (Act 108 of 1997), Board members (save for the Chief Executive who is appointed by the Board) are appointed by the Minister of Water and Sanitation (as of May 2014) ("the Minister").

The Board has established four (4) standing committees to assist it in discharging its responsibilities, namely:

- Audit Committee
- Capital Projects, Fixed Assets and Procurement Committee
- Human Resources and Remuneration Committee
- Governance Committee

The list of Board and Committee members is shown in **Table 6.1**. The Board is accountable for the leadership and control of Umgeni Water. Its responsibilities include the development, review and monitoring of strategic objectives, the approval of major capital expenditure, risk management and monitoring of operational and financial performance. The government of the Republic of South Africa, represented by the Minister, and the Department of Water and Sanitation, is the sole shareholder of Umgeni Water.

The Board contracts with the Executive Authority, the Minister, through an annually approved shareholder compact. The Board will continue to actively engage with the shareholder through various forums during the year.

A Board Charter (reviewed in 2012) provides a framework for fiduciary duties, responsibilities and overall functioning of the Board. The Board Charter is read in conjunction with:

- The Public Finance Management Act (Act 1 of 1999), as amended by the Public Finance Management Amendment Act (Act 29 of 1999), hereinafter referred to as the PFMA,
- Treasury Regulations (GG 27338) as amended from time to time,
- The Water Services Act (Act 108 of 1997), as amended, and
- The King Code of Governance Principles, 2009 (King III).

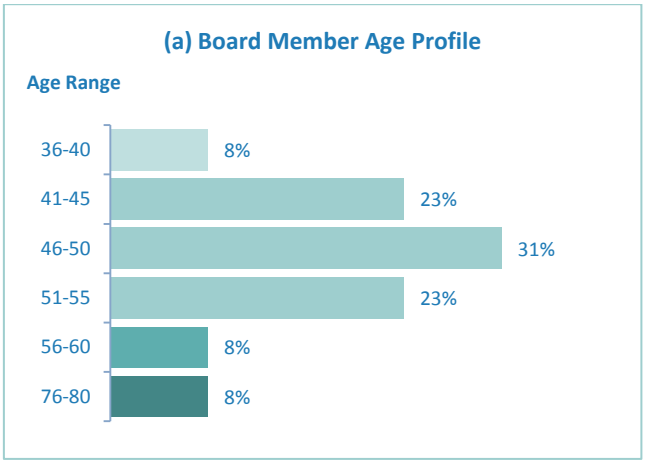
Non-executive board members receive remunerative benefits and fees as determined by the Minister on an annual basis and in line with their terms of appointment. Therefore no Board member is involved in determining his/her own remuneration. Board Members' remuneration is fully disclosed in Umgeni Water's Annual Report.

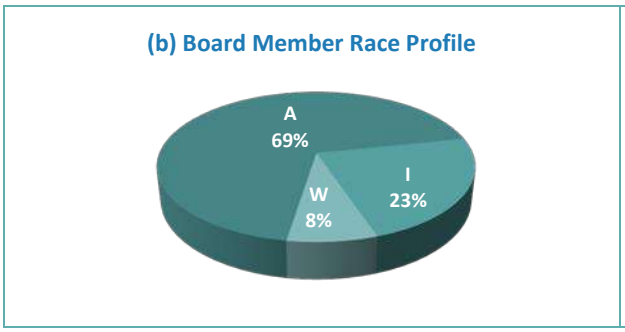
Table 6.1: Current Board and Committee Memberships

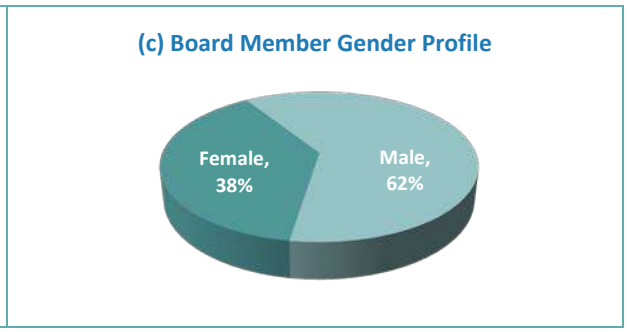
	Board Member	Gender	Audit	REMCO	Capex
1.	Mr A Mahlalutye[1]	M			
2.	Prof I Vally[2]	M	✓		
3.	Mr V Gounden	M		✓	
4.	Ms T Shezi	F		✓	✓
5.	Ms N Afolayan[3]	F	✓		✓
6.	Ms Z Mathenjwa	F	✓	✓	
7.	Dr T Dube	F	✓		✓
8.	Ms N Chamane[4]	F		✓	✓
9.	Mr V Reddy	M		✓	✓
10.	Mr G Atkinson	M		✓	✓
11.	Mr T Nkhahle	M	✓		✓
12.	Mr Thabani Zulu	M	✓		✓
13.	Mr C Gamede[5]	M		✓	✓

✓ Denotes Committee Member
[1] Chairman
[2] Audit Committee Chairman
[3] Capex, Fixed Assets and Procurement Committee Chairperson
[4] Human Resources and Remuneration Committee Chairperson
[5] Chief Executive

Figure 6.1: Board (a) Age, (b) Race and (c) Gender Profiles







6.1.1 Meetings and Attendance

Table 6.2: Scheduled meetings of the Board and Committees 2016/2017

Normal Board / Committee Meetings	2016 Jul	Aug	Sep	Oct	Nov	Dec	2017 Jan	Feb	Mar	Apr	May	Jun
Board Meetings	1		2		3				4	5		
Board Strategy Review							1					
HR and Remuneration		1		2				3	4			5
Capex, Fixed Assets, SCM		1		2				3	4			5
Audit			1		2			3	4		5	6

Summary of Meetings and Attendance

The attendance at Board and Committee meeting is:

- 90% for Board: Three normal meetings.
- 100% for Audit Committee: Two normal meetings.
- 71% for HR and Remuneration Committee: Two normal meetings.
- 89% for Procurement, Fixed Assets and Capital Projects Committee: Two normal meetings.
- 100% for Governance Committee. One meeting.

Table 6.3: Board Meeting Attendance

Board Member	Gender	22-Jul-15	17-Sep-15	25-Nov-15
1. Mr A Mahlalutye[1]	M	✓	✓	✓
2. Prof I Vally[2]	M	✓	✓	✓
3. Mr V Gounden	M	✓	✓	≠
4. Ms T Shezi	F	✓	✓	✓
5. Ms N Afolayan[3]	F	✓	✓	✓
6. Ms Z Mathenjwa	F	✓	✓	✓
7. Dr T Dube	F	✓	✓	≠
8. Ms N Chamane[4]	F	✓	✓	✓
9. Mr V Reddy	M	✓	✓	✓
10. Mr G Atkinson	M	✓	✓	✓
11. Mr T Nkhahle	M	✓	✓	≠
12. Mr T Zulu	M	✓	✓	≠
13. Mr C Gamede[5]	M	✓	✓	✓

✓	Attendance
-	Not a member
≠	Absence with apology
1	Chairman
2	AUDIT Chairman
3	CAPEX Chairperson
4	REMCO Chairperson
5	Chief Executive

Performance Management

The critical issues dealt with are the formulation of organisational strategy, oversight of organisational performance and the expectations of the Executive Authority, among others. As recommended by King III the Board evaluates the performance of all divisions including the finance division. This is planned for twice in the reporting year. The Members of the Board have skills that are put to good use in providing leadership, guidance and directing strategy during the period. Overall the Board functions at a strategic level and delivers outputs in line with its mandate.

Board Committees

The Board Committees are formally constituted and are chaired by non-executive Board members. The Board Committees assist the Board in the performance of duties and enables effective decision-making through providing more detailed attention to matters within the terms of reference. The committees report to the Board on activities at every meeting. In terms of the Water Services Act, the Board is authorised to delegate powers to the Committees established by the Board. The functions and powers delegated to Committees are set out in the written Terms of Reference which are formally approved by the Board.

6.1.2 Audit Committee

The Committee consists of six (6) non-executive Board members and its chairman is Professor Imtiaz Vally.

The Committee is mandated to achieve the highest level of financial management, accounting and reporting to the shareholder and to meet the requirements prescribed in section 51(1)(a)(ii) and 76(4)(d) of the Public Finance Management Act (Act 29 of 1999), as well as Treasury Regulations, 2005 (Chapter 27.1). The Audit Committee further performs a critical function of risk management by ensuring the effectiveness, quality, integrity and reliability of Umgeni Water's risk management processes.

The terms of reference of the Audit Committee takes into account the recommendations in King III, the Companies Act (Act 71 of 2008), the Public Finance Management Act (Act 29 of 1999) as amended and Treasury Regulations, 2005, to ensure alignment to best practice and legislation.

The Ethics Committee and Corporate Risk Committee also report through the Audit Committee.

6.1.3 Ethics Committee

King III and the Companies Act No. 71 of 2008, read in conjunction with regulation 43, oblige all state-owned enterprises to establish a Social and Ethics Committee. Umgeni Water established an Ethics Committee in 2012 with a mandate to promote ethical behaviour, which includes preventing incidences of fraud, bribery and other corrupt activities and to monitor the organisation's compliance with relevant social, ethical and legal requirements and best practice codes. The establishment of the committee shows a deepened commitment by Umgeni Water as a responsible corporate citizen to all it stakeholders.

The Ethics Committee has an Independent Chairman - who is neither a member of management nor a member of the Board. The Chairman, Mr S Shabalala, is a qualified Chartered Accountant and has extensive public and private sectors experience in Financial Management and Corporate Governance matters. He is currently a Managing Director of Ukukhanya Advisory Services, an Accounting and Auditing company based in Durban. The Ethics Committee reports matters within its scope of mandate to the Board through the Audit Committee which include, environmental, financial as well as social ethics.

A code of ethics provides guidelines for ethical decision-making by all employees, board members and stakeholders. The code formally acknowledges the organisation's intent to undertake business in an ethical manner and is communicated to all employees through various awareness and communication forums and programmes.

The Committee's roles and responsibilities are as prescribed by the Companies Act and include monitoring the organisations activities, against legal or best practice requirements relating to:

- Social and economic development, including, EE and B-BBEE,
- Good corporate citizenship, including promotion of equality, prevention of unfair discrimination, Corporate Social investment and reduction of corruption; sponsorship, media and advertising,
- Environment, health and public safety, including, impact of the organisation's activities, products and services, biodiversity management, waste management, energy efficiency and carbon footprint reduction,
- Consumer relationships, including, advertising, public relations and consumer protection,
- Labour and employment, including, the organisation's standing in terms of the International Labour Organisation Protocol on decent work and working conditions, employment relationships and contribution toward education and development of its employees and disciplinary handling,
- Financial ethics, including, irregular and wasteful and fruitless expenditure, and
- Fraud and hotline management.

Umgeni Water continues to provide an external whistle-blowing hotline service managed by an external service provider. This 24 hour- 365 days a year facility provides an anonymous and confidential communication channel for all stakeholders to report suspicions of fraud or otherwise unethical conduct.

All hotline calls are investigated and appropriately followed up using a hotline protocol which ensures these are dealt with in a transparent and consistent manner. Trends and information of the hotline calls are further used to improve internal controls. Umgeni Water creates and maintains awareness of this facility and ensures that it is advertised by means deemed the most effective and appropriate.

6.1.4 Corporate Risk Committee

The Corporate Risk Committee, which comprises a member of the Audit Committee, the Chief Executive, the Executive Management, the Company Secretary and the Risk Manager, assists the Audit Committee in discharging its duties relating to implementation of the integrated risk management framework.

6.1.5 Combined Assurance

Internal Control

The Board is accountable for the systems of internal control. Umgeni Water policies, procedures, structures and delegation of authority framework clearly define and provide appropriate levels of responsibility.

The internal control systems are designed to provide reasonable assurance that assets are safeguarded and that liabilities and working capital are efficiently managed. Principal features of the organisation's internal finance controls are:

- A system of financial planning, budgeting and reporting which allows continuous monitoring of performance;
- A materiality and significance framework;
- Clearly-defined delegations of authority;
- The establishment of a short, medium and long-term funding strategy;
- The tariff model which determines the financial impact of capital expenditure and the bulk water tariff on Umgeni Water's debt curve; and
- Established policies and procedures.

To assist the Board in the discharge of its responsibilities, Internal Audit undertakes an independent assessment of the internal control systems and business risks and reports to the Board through the Audit Committee. The audit plan covers major financial and commercial risks and responds to any changes emanating from Umgeni Water's integrated risk management process.

Internal Audit

Internal Audit is an independent co-sourced assurance function, the purpose, authority and responsibility of which is formally defined in a charter approved by the Board in line with stipulations of the Institute of Internal Auditors. In line with the requirements of the Public Finance Management Act (PFMA) and Good Governance, the internal auditors give the Audit Committee and management assurance on the appropriateness and effectiveness of internal controls.

The internal auditors report regularly to the Audit Committee and have unrestricted access to the Committee chairman. An internal audit charter has been approved by the Committee.

External Audit

The external auditors are responsible for undertaking procedures to obtain audit evidence about the amounts and disclosures in the consolidated financial statements, the report on predetermined objectives and compliance with laws and regulations applicable to the entity. This is based on, amongst other:

- Assessment of the risks of material misstatement of the consolidated financial statements, the report on predetermined objectives and material non-compliance with laws and regulations;
- Considering internal controls relevant to Umgeni Water's preparation and fair presentation of the financial statements, the report on predetermined objectives and compliance with laws and regulations;
- Evaluating the appropriateness of accounting policies used and the reasonableness of accounting estimates made by Management; and
- Evaluating the appropriateness of systems and processes that ensure the accuracy and completeness of the financial statements, the report on predetermined objectives and compliance with laws and regulations.

The external auditors express an opinion on the consolidated financial statements and report on findings relating to their audit of the report on predetermined objectives and compliance with material matters in laws and regulations applicable to the entity.

Compliance Management

In the previous period Umgeni Water developed a Compliance Framework and determined its Compliance Universe. In addition a formal organisation-wide compliance register has been developed together with individual divisional compliance registers. These registers will be consistently used as the basis for reporting compliance in a structured manner for this Corporate Plan period.

Delegation of Authority

A comprehensive Delegation of Authority Framework governs the authority levels for the Board and management. These are exercised through various board and management committees. This framework assists the Board to discharge its duties with Board members' accountability and responsibility. The Board reviews the framework regularly.

6.1.6 Remuneration and Human Resources Committee

This Committee comprises of six (6) non-executive directors and the Chief Executive and its chairperson is Ms Nompumelelo Chamane.

The Committee reviews and recommends to the Board all matters relating to:

- Human Resources policies, organisational structure and compliance with the Employment Equity Act, (Act 55 of 1998) and other labour legislation,
- Conditions of employment of executive management,
- Appointment of the Chief Executive and members of executive management,
- Remuneration packages for the Chief Executive, members of executive management and staff,
- Succession planning for executive management,
- Policies and practices for Performance Management
- Strategic Human Resource related matters, and
- Special rewards recommended by the Chief Executive.

6.1.7 Capital Projects, Fixed Assets and Procurement Committee

This Committee is chaired by Ms Nombuso Afolayan and comprises eight (8) non-executive Board members and the Chief Executive.

The Committee assists the Board with capital expenditure related/programme related decisions, and recommends Procurement Policies to the Board for approval and approves the release of capital expenditure above executive management's delegated authority but within the Committee's delegated authority. It ensures that the organisation's supply chain policy and procedures are equitable, transparent, competitive and cost effective. It reviews the organisation's infrastructure asset maintenance programme/performance. Contracts which exceed the Committee's Delegation of Authority are referred to the Board for approval. The Committee reviews and recommends amendments to the limits in the delegation of authority, relating to budget approvals for capital projects and procurement, to enable management to expedite the implementation of projects.

6.1.8 Governance Committee

The Governance Committee meets on an ad-hoc basis. The Committee is chaired by Mr Andile Mahlalutye and comprises four (4) non-executive Committee Chairs.

The Committee assists the Board in monitoring and assessing the performance of executive management to ensure that performance objectives and targets are met. Performance results are considered by the Remuneration and Human Resources Committee in determining the remuneration of the Chief Executive and other executives to be recommended to the Board for approval.

6.1.9 Board Member Appointment Dates and Details

Mr Andile Mahlalutye

MA Financial Management (London); MBL (UNISA); Graduate Diploma in Company Direction (GIMT); BSc Quantity Surveying (UCT); Certificate in NGO Development and Management (Israel); A Project Management Professional (PMP) & Professional Quantity Surveyor (PrQS). Programme Certificate on Economic Regulation from the London School of Economics and Political Science.

Appointed for 1st Board term in June 2009.

Non-Executive Chairman of Umgeni Water Board since 2009; Non-Executive Board member of the Ports Regulator of South Africa since 2012; Non-Executive Director of the Richards Bay Industrial Development Zone Company since 2012; member of the Free State Cluster Audit Committee since 2011; MD Ubudlelwane Capital Investments since 2010; Mvula Trust CEO from 2007 to 2010; Coega Development Corporation Executive from 2003 to 2007; General Manager/Project Leader with Blue IQ from 2000 to 2003; A former Non-Executive Board member of the Gauteng Gambling Board from2011 to 2013; A former member of North West Provincial Audit Committee from2009 to 2012.

Dr Takalani Dube

MBChB, Medical (UKZN); Diploma in Anaesthesia (DASA); Diploma in Health Services Management (UKZN); Certificate in Business Development and Management (eThekwini Business Development); Postgraduate Diploma in HIV Management in the Workplace (Stellenbosch University).

Appointed for 1st Board term in June 2009.

Director of eThekwini Community Church since 2005; Founder and President of Centre of HOPE (HIV and Community Development Organisation) since 2000; President of Women of Virtue (Women Empowerment and Investment Organisation) since 2002.

Ms Ziphozethu (Gabsie) Mathenjwa

MSc in International Business Management (University of London); MBA (UKZN); BSc (UZ); Post-Graduate Diploma in Business Management (UKZN); Post-Graduate Diploma in Strategic Management and Corporate Governance (UNISA/ICSA); Certificate in Financial Management and Investment (UNISA).

Appointed for 1st Board term in June 2009.

Chairperson of Insika Foundation and the Sinafuthi Group: Board Member Denel SOC (Ltd); Board Member Safran Turbomeca Africa, Board Member of Mitsui African Rail Solutions, Mpumalanga Provincial Department of Economic Development, Environment and Tourism Audit Committee Chairperson.

Mr Graham Atkinson

BSc Civil Engineering (UKZN); Post-Graduate Diploma in Town and Regional Planning (UKZN).

Appointed for 1st Board term in June 2009.

Member of KZN Planning and Development Commission from 1998 to 2004; City Engineer of Pietermaritzburg from 1977 to 1986; Chief Executive of Umgeni Water from 1987 to 1994; Board Member of Umgeni Water from 1978 to 1986; Honorary Member of the Water Institute of Southern Africa (WISA) since 2002; Honorary member of the former Union of African Water Suppliers (UADE).

Mr Teboho Nkhahle

Registered Professional Scientist; MPhil Stellenbosch University; Environmental Auditor (IRCA).

Appointed for 1st Board term in June 2009.

Owner and MD of Environmental Impact Management Services (EIMS); Non-Executive Chairman of Lesotho Highlands Development Authority (LHDA) from 2007 to 2011; Board member of US-based Global Decisions Inc. (Development of global environment, health and safety regulations and standards database) since 2008; Member of Institute of Directors-SA since 2007; Vice Chair IoD Sustainable Development Forum from 2008 to 2009; Environmental Auditor with Eskom from 1998 to 2004.

Ms Nombuso Afolayan

MBA (Finance) Luton University; Executive Leadership Development (UCT); Organisational Development Practitioner.

Appointed for 2nd Board term in June 2009.

Chairperson of Umgeni Water CAPEX Committee since 2009. Founder and Executive Chairperson of FS Capital Investments; Chairperson of KwaZulu-Natal Sharks Board; Non-Executive Director at Ithala Development Finance Corporation; Executive at multinational shipping, maritime and petroleum companies in African markets.

Ms Thokozile Shezi

BSc in Social Psychology/Education (USA); MSc in Measurement and Evaluation(USA); Management Development Diploma(Wits); Project Management Diploma (UP)

Appointed for the 2nd Board term in June 2009

Senior Manager & Head of Secretariat; KwaZulu Natal Climate Change and Sustainable Development Council in the office of the Premier. Non-executive Director of KZN Playhouse Company.

Mr Visvin Reddy

Educator (Mathematics & Computer Science) by profession. Various Diplomas and Certificates in Management and Communications.

Appointed for 1st Board term in June 2009.

Seventeen years local government experience. Served on the Executive Committee of eThekwini Metropolitan Municipality as well as Chairman of the Infrastructure Committee. A member of various community bodies.

Ms Nompumelelo Chamane

Appointed for 1st Board term in June 2009.

Chairperson of Umgeni Water Board HR and Remuneration Committee since 2009. Councillor with eThekwini Municipality. Experienced liaison officer with provincial structures of COSATU. Member of Albert Luthuli Hospital Committee. Board member of EU-funded Cato Manor Development Association (CMDA); Chairperson of Finance Committee of St Benedict Catholic Church.

Prof Imtiaz Vally

Master of Accountancy; Chartered Accountant (SA); Chartered Management Accountant (ACMA).

Appointed for 1st Board term in June 2009.

Chairman of Umgeni Water Board Audit Committee since 2009; Professor of Management Accounting and Finance at UKZN.

Dr Vasu Gounden

MA Law (LLM) (Georgetown University); Graduate of Harvard / Wits Business School Senior Executive Programme; Honorary Doctorate of Social Sciences (UKZN).

Appointed for 3rd Board term in June 2009.

Founder and Executive Director of the African Centre for the Constructive Resolution of Disputes (ACCORD) since 1992; Member of the Editorial Board of the Peace and Conflict Studies Journal since 1996; Elected by the World Economic Forum as a Global Leader for Tomorrow (GLT) in 2000. Board Member of the Gandhi Development Trust since 2003; Board member of Finland-based Crisis Management Initiative since 2007; Board member of the Old Mutual Science Education Foundation since 2007 (served as Chairman of the Board between 2009 – 2011); Board member of the Dutch based Inter-Church Organisation for Development Cooperation since 2009; Member of the Advisory Board of the Insight on Africa Journal since 2010.

Mr Thabani Zulu

Chartered Accountant; B.Comm degree and Post Graduate Diploma in Accounting from UKZN.

Appointed for 1st Board term in December 2011.

Director of Ngubane & Company (Auditing firm); General Manager / Head of Internal Audit for Provincial Treasury; Member of SAFCOL Audit Committee; Member of UDW Audit Committee; Member of Ndwedwe Audit Committee; CEO of the KZN Gambling Board. Management Accountant of Unilever SA; Financial Accountant at Mercedes Benz of SA (now Daimler Chrysler SA).

6.2 Company Secretariat

The Company Secretary oversees the portfolio of secretariat, governance advisory services and plays a critical role in legal and governance advisory to the board, risk and compliance management, and attends all Board and Committee meetings as secretary.

The Board as a whole and individual Non-Executive Directors and members of the Executive have access to the Company Secretary who is enjoined to provide guidance on how members should discharge their duties and responsibilities in the best interests of the Company. The Company Secretary continues to oversee the preparation and coordination of the induction and on-going training of Board members and assists the Board and its Committees in formulating annual plans, agendas, minutes, and terms of reference as warranted.

The Company Secretary is not a Director of the Company or any of its subsidiaries and accordingly maintains an independent and arm's length relationship with the Board and the Executives.

Mr Sbusiso Madonsela

Admitted Attorney of the High Court of South Africa.
LLB (UZ); Postgraduate Diploma in Compliance (UJ).

Appointed as Company Secretary on 1 January 2014.

Umgeni Water Legal Services Manager until December 2013. Prior to that he was the Competition Commission's Legal Counsel. Has extensive experience in private legal practice.

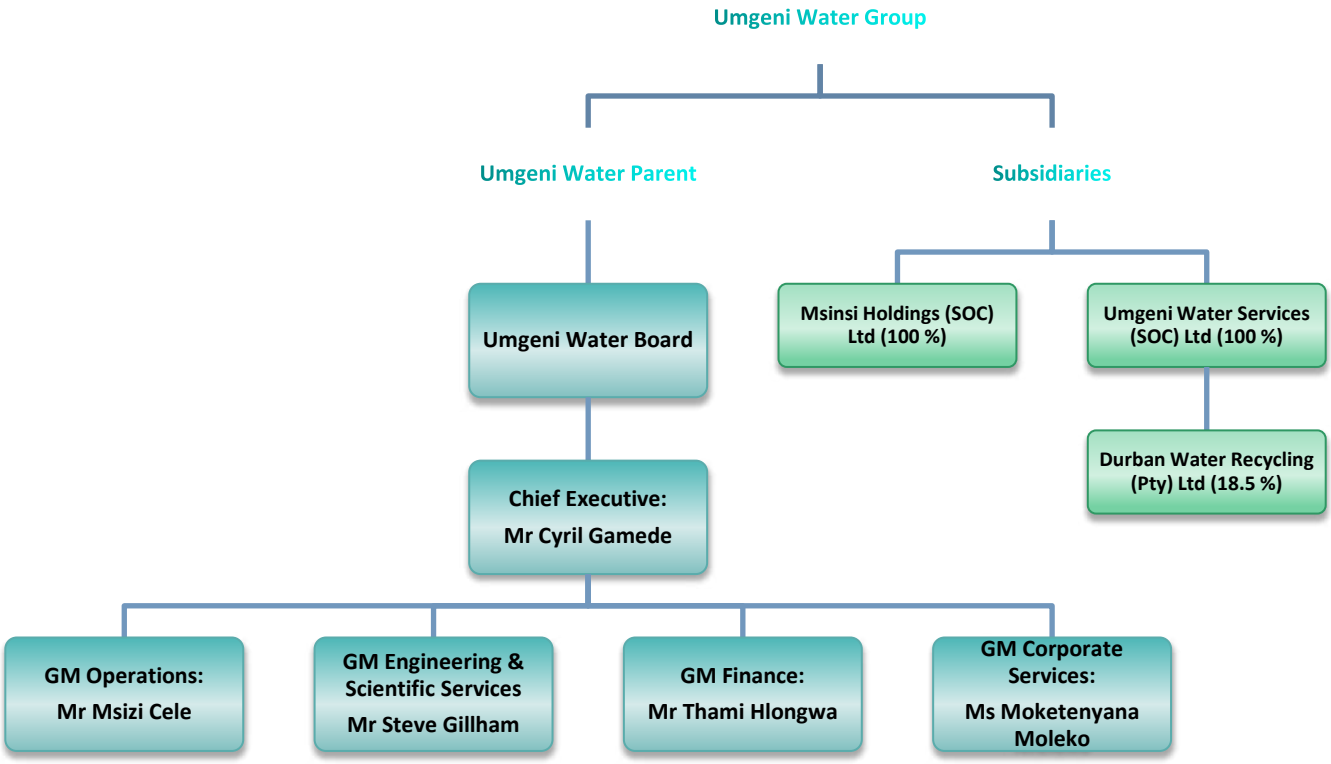
6.3 Executive Committee

The Board has delegated the day-to-day running of the Company to the Chief Executive who works with Executives, each heading up a Division, to assist him in this task. The Executive Committee is the highest executive decision-making structure in the organisation and central to its role is the formulation and implementation of the Board's strategy and policy direction, and ensuring that all business activities are aligned in this respect.

6.3.1 Functions and Management Structure

Each Division works towards the achievement of set strategic objectives for a predetermined period. The organisation's wholly owned operating subsidiary also works, independently, towards enabling Umgeni Water to fulfil its mandate and contracted obligations.

Umgeni Water (Group) has the following structure that responds to its strategy. The core functions pertaining to each is articulated in the strategic statements that follow. Umgeni Water will continue to ensure a structure that is aligned to functions and mandate of a regional water utility.



Umgeni Water strategic statement

"We will lead the process of providing solutions via an innovative, vigorous growth path,
To increase sustainable water supply in order to satisfy the developmental water services requirements in our region,
Which contribute to government objectives"

Board Strategic Statement

"We will consider internal and external factors, consult with stakeholders, develop a strategy, authorise implementation, manage resources, manage risks and oversee implementation,
To produce a valid and approved strategic plan, deliver on strategic objectives and provide sound corporate governance,
To achieve our vision and mission in order to contribute towards Government Objectives"

Chief Executive Office

"We will position and lead the organisation, plan activities and allocate resources, implement strategy, champion corporate governance, partner with stakeholders,
To deliver organisational objectives,
To achieve a well governed, vibrant, committed, sector-relevant and engaged organisation that delivers on its mandate"

Operations

"We will position ourselves, plan, structure, mobilise resources, source, specify, operate and maintain our infrastructure, abstract, treat, sell, distribute, monitor, conserve and re-use water,
To deliver quality, effective, affordable water services to our stakeholders,
Which will deliver on organisational objectives"

Engineering and Scientific Services

"We understand water demand, resources and technology
to implement infrastructure and manage water quality, optimise treatment processes and drive social and environmental initiatives
to provide innovative and optimal engineering and scientific solutions,
to achieve sustainability and public health, in order to meet organisational objectives"

Finance

"We will plan; mobilise; account for and report on resources; manage risk; proactively implement procurement strategies; and maintain internal control and systems,
Which result in funding, control, efficient, effective and economical supply of requisites, support and monitoring of the business,
To deliver sound financial management and corporate governance,
To contribute towards organisational objectives"

Corporate Services

We will provide a specialised, diverse and essential enabling service through the provision of:
holistic Human Capital management;
property and security management;
management of ICT systems and computing infrastructure and Legal services
to enhance organisational service delivery capacity.

6.3.2 EXCO Member Appointment Dates and Details

Mr Cyril Gamede

BSc (Eng) Mechanical; MSc (Eng) Industrial; MBA; Advanced Diploma in Labour Law; Certificate in Corporate Governance. Registered Professional Engineer (ECSA).

Appointed as Chief Executive Umgeni Water in August 2012.

Chairperson and Director of Msinsi Holdings SOC Ltd since 2014. President of ECSA 2012. Managing Director of K2S Consulting from 2010 to 2012 Director AEL Mining Services from 2002 to 2010. Director of Operations, Umgeni Water, from 1996 to 2002.

Mr Steve Gillham

Registered Professional Engineer (ECSA); BSc Engineering (Civil); BCom

Appointed as General Manager Engineering and Scientific Services in 2012.

Director of Msinsi Holdings SOC Ltd since 2014. Director of Msinsi Holdings (Pty) Ltd from 2012 to 2014. Planning Manager from 1999 to 2012. Engineer Umgeni Water from 1997 to 1999. Engineer with the Department of Water and Sanitation from 1984 to 1997.

Ms Moketenyana Moleko

BCom; Management Development Certificate; International Management and Marketing Programme Certificate

Appointed as General Manager Corporate Services in January 2014.

Leadership positions held at various organisations, including the Eskom Leadership Institute, Eskom Transmission, MERSETA and South African Airways

Mr Thamsanqa Hlongwa

Chartered Accountant (SA); BCom Honours.

Appointed as General Manager Finance in July 2013.

Director of Msinsi Holdings SOC Ltd since 2014. Chief Financial Officer KZN CoGTA from March 2007 to June 2013. Completed articles with Deloitte from 2002 to 2004. Audit Senior in Deloitte New York Office from 2004 to 2005. Senior Manager at Siyaya Management Services from 2005 to 2007. Served in sub-committees of SAICA and ABASA.

Mr Msizi Cele

BSc (Eng) Mechanical; Registered Professional Engineer (ECSA); Government Certificate of Competency – Machinery.

Appointed as General Manager Operations in November 2014

Managing Director of uThukela Water since 2007. Executive Director – Engineering at uThukela Water since 2005. Member of the Institute of Municipal Engineers of South Africa. Member of the Water Institute of South Africa

UMGENI WATER · AMANZI

Chapter 7: Ministerial Directives

Contents

Umgeni Water has one (1) ministerial directive relevant to this Corporate Plan. This relates to drought recovery. Progress with implementation is as indicated below.

7.1 Drought Recovery Intervention: Directive received in 2014/2015

In October 2014, The Minister of Water and Sanitation issued a directive to Umgeni Water in terms of Section 41 (1) (ii) of the Water Services Act, 1997) Act No. 108 of 1997) to provide water through supply and installation of water tanks in various municipalities in KwaZulu-Natal, for a period up to six (6) months. The Department of Water and sanitation in KwaZulu-Natal has approved a budget for procurement of water tankers and supply of water tanks.

Umgeni Water supplied and installed water tanks for the following municipalities:

- iLembe District Municipality – 700 tanks
- Ugu District Municipality – 300 tanks
- uMgungundlovu District Municipality – 400 tanks

All schemes under DWS directive have been constructed, commissioned and completed. However two of the schemes continue to be operated due to the drought conditions at a significant running cost. Notably, generators are still being used whist the electrical installation for the pumps is awaited.

Chapter 8: Self-Appraisal

Contents

8 Self-Appraisal

8.1 Umgeni Water Full Scorecard

Umgeni Water implements its strategy through a balanced scorecard. The 2015/2016 scorecard comprised four (4) *Balanced Perspectives* and four (4) *Strategic Goals*, nine (9) *Strategic Objectives* and nine (9) *Key Performance Indicators* (KPIs).

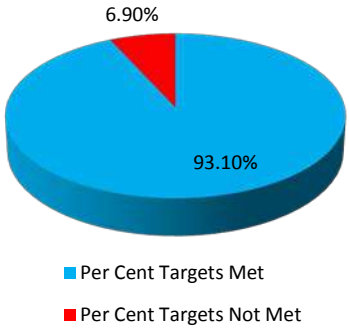
8.1.1 2015/2016 Projected Performance (Full UW Scorecard)

Figures 8.1 (a), (b) and (c), respectively show Overall Performance, Performance by Strategic Goal and Performance by Strategic Objective.

- Overall, Umgeni Water performance is **93.10%** and variance is **6.9%.**
- 3 of 4 goals are not completely met and are associated with 4 of 9 strategic objectives not being completely met.
- The analysis of variance and turnaround plans follow.

Figures 8.1 (a), (b) and (c), respectively show Overall Compliance, Compliance by Strategic Goal and Compliance by Strategic Objective.

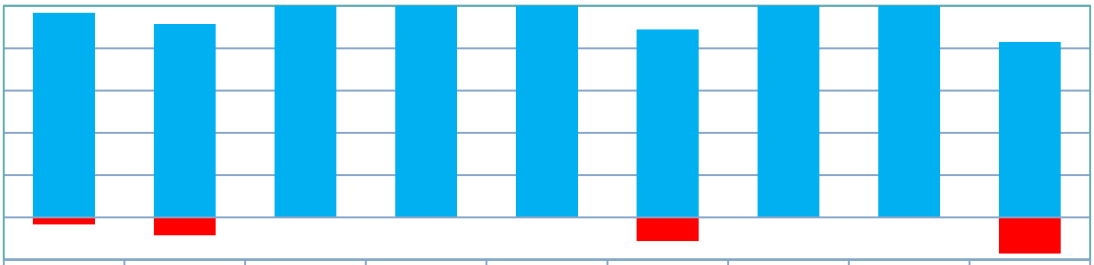
(a) Overall Performance



(b) Umgeni Water Performance by Strategic Goal

	GOAL 1; PERSPECTIVE 1: Customer and Stakeholder	GOAL 2; PERSPECTIVE 2: Financial	GOAL 3; PERSPECTIVE 3: Process	GOAL 4; PERSPECTIVE 4: Organisational Capacity
Per Cent Targets Not Met	-8%	0%	-11%	-9%
Per Cent Targets Met	92%	100%	89%	91%

(c) Umgeni Water Performance by Strategic Objective



	SO 1 Increase services and customers	SO 2 Increase customer and stakeholder value	SO 3 Increase mobilisation of funds	SO 4 Increase financial sustainability	SO 5 Improve financial ratios	SO 6 Improve service delivery systems	SO 7 Improve and increase infrastructure assets	SO 8 Increase water resources sustainability	SO 9 Increase skills and competency
Per Cent Targets Not Met	-3%	-9%	0%	0%	0%	-11%	0%	0%	-17%
Per Cent Targets Met	97%	92%	100%	100%	100%	89%	100%	100%	83%

8.1.2 Variance Report per Indicator (Full UW Scorecard)

Strategic Goal 1: Develop strategic partnerships, increase support to customers, improve visibility and be a regional leader in the provision of bulk water and sanitation services.

Customer and Stakeholder Perspective

SO1 and SO2

Outcomes: Stakeholder Understanding and Support. Customer Satisfaction. Community Sustainability.

	Indicator	Reason for Variance and Recovery Plan
SO 1:	KZN regional bulk water universal access detailed reconnaissance level plan developed.	10% behind schedule due to contract award and service provider delays. Draft reports have been received and project is to be completed by June 2016.
SO 2:	Redesigned and fully functional corporate communications function.	Function proposal not approved and structure / organogram for Corporate Communications function not yet developed. Benchmarking exercise will be first undertaken and functions and structure developed in 2016/17.
SO 2:	Per cent compliance of WTW systems with SANS 241 water quality standard per risk category	Non-compliance with one of the five water quality risk categories of four (4) small WTW schemes, newly acquired from Umgungundlovu DM. Operational non-compliances due to ineffective process units (filtration, dosing) and high turbidity from low flows. These schemes are being assessed during 2015/2016 period and action plans developed. Chemical trials, process optimisation and review of operating procedures underway.
SO 2:	Per cent compliance of four (4) WWTW systems with Discharge Licence or General Authorisation requirements	Wastewater treatment process problems experienced at mainly Darvill WWTW. To be addressed by a combination of improvement in detection and response and planned upgrades: Darvill upgrade, scheduled to be completed by June 2016.
SO 2:	Number of CSI initiatives implemented.	Behind schedule with three CSI Initiatives due to delays in planning and implementation. Initiatives will continue for completion in 2016/2017.

Strategic Goal 3: Remove system constraints and blockages through innovative thinking and improve efficiency of all inputs.

Process Perspective

SO6

Outcomes: Operational Resiliency. Operational Optimisation. Community and Environmental Sustainability

	Indicator	Reason for Variance and Recovery Plan
SO 6:	Tender turnaround time: Working days from tender advert to issuing intention of award. Working days for CPG negotiations, measured from expiry of appeals period. Working days for issuing of signed contracts, measured from conclusion of CPG negotiations.	3 of 10 tenders > 90 days: Delays incurred between Tender Advert to Intention to Award 1 of 7 tenders > 45 days: Delay with concluding CPG negotiations. 2 of 4 tenders > 15 days: Delays with issuing signed contracts. All Tender Committees and SCM continue to manage timeframes for each tender that is processed. Reduction is turnaround time is being progressively realised.

Strategic Goal 3: Remove system constraints and blockages through innovative thinking and improve efficiency of all inputs.		
Process Perspective		
SO6		
Outcomes: Operational Resiliency. Operational Optimisation. Community and Environmental Sustainability		
SO 6:	Per cent Enterprise Resource Planning (ERP) system reviewed and implemented.	Scope Validation sign-off was concluded late and Realisation Phase is behind schedule. Action plans are in place to expedite progress to meet target of Go Live by July 2016
SO 6:	Number of research and development / innovation initiatives implemented.	2 of 5 projects behind schedule due to contract negotiation and project delays.
SO 6:	Number of unresolved internal audit findings.	18 unresolved findings: One (1) is categorised as a High finding. Umgeni Water is currently upgrading the Darvill WWTW with completion scheduled for June 2016. Ten (10) findings have been categorised as medium risk (significant) in nature. All of these have been allocated to a manager with an action plan and action date for resolution. Seven (7) findings which are outstanding are categorised as low risk (housekeeping) in nature.
SO 6:	Board / Committee meetings attended as a % of planned meetings.	Attendance at REMCO is 76% and below target of ≥ 80% attendance. Attendance has improved from 71% in prior quarter and addressed by on-going monitoring and evaluation by Board.
SO 6:	Per cent compliance against legal Compliance Register.	Non-compliance with legislation in some areas of the business. For these, closure will be monitored and addressed by June 2016.

Strategic Goal 4: Strengthen and develop quality human resources, infrastructure capacity and water resources sustainability to support growth		
Organisational Capacity Perspective		
SO9		
Outcomes: Operational Resiliency. Operational Optimisation. Community and Environmental Sustainability		
	Indicator	**Reason for Variance and Recovery Plan**
SO 9	Number of employees enrolled and developed through Senior Management Development Programme (SMDP).	The SMDP is behind schedule. This programme is being finalised by UKZN. Programme is to be pushed out to 2016/2017 as Targeted employees are actively involved in ERP project
SO 9	Number of Graduate Trainees development plans met.	23 of ≥ 28 Graduate Trainees (GT). 1 GT appointed to permanent position. 1 GT on maternity leave and programme will resume on return.
SO 9:	Formulate scope for involvement in War-on-Leaks programme (Rand Water) skills development partnership.	Programme delays. Rand Water is to advise on new programme start dates by June 2016.

8.2 Shareholder Compact (SHC) Indicators

8.2.1 2015/2016 Projected Performance (SHC)

Figures 8.2 (a) and (b) respectively show Overall Performance and Performance by Strategic Perspective.

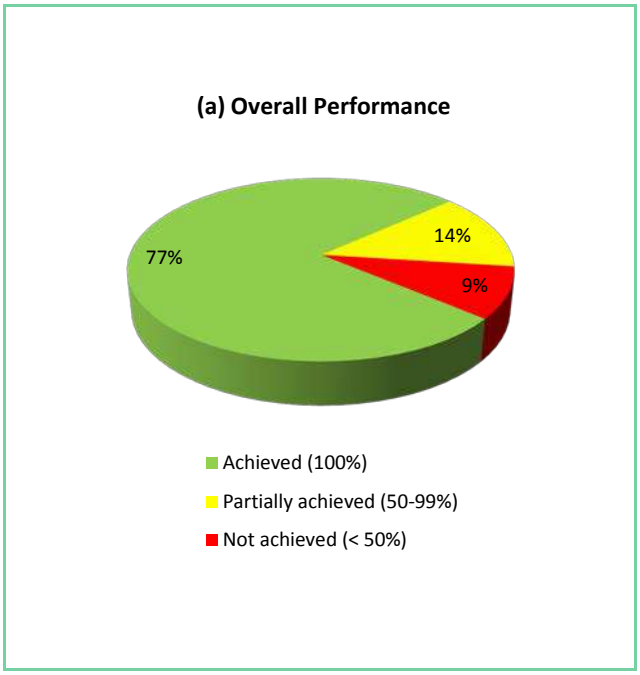
Overall, Umgeni Water is projected to achieve the following performance against with SHC indicators:

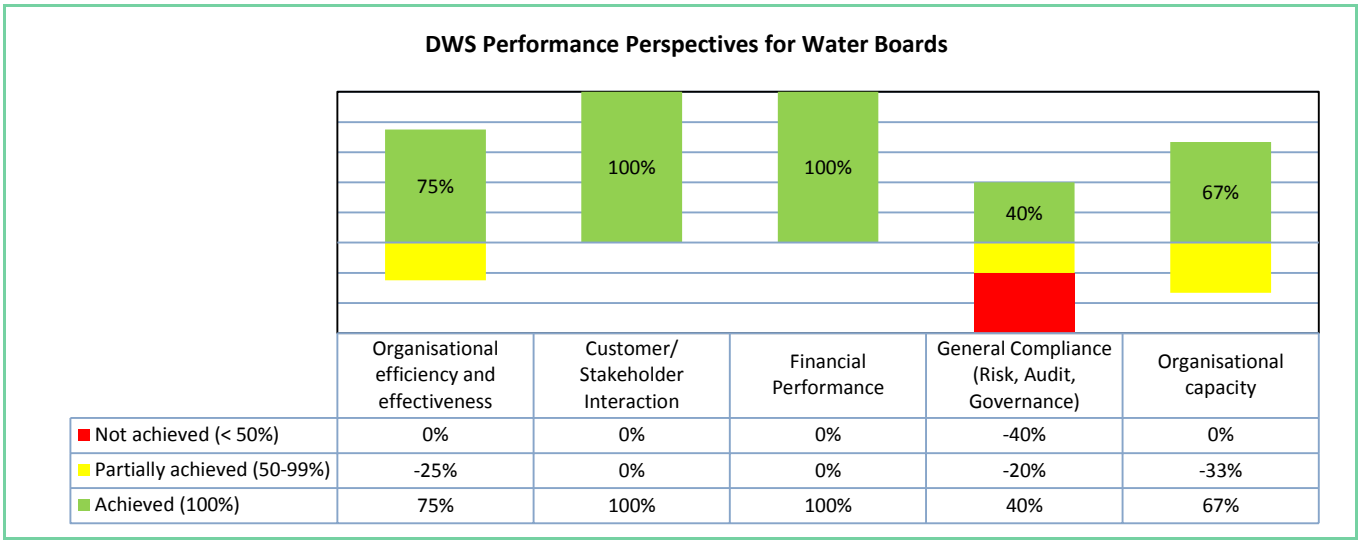
- 77% achieved (100%)
- 14% partially achieved (50-99%)
- 9% not achieved (<50%)

Of five (5) performance perspectives:

- Two are projected to be fully achieved,
- Organisational efficiency and effectiveness is 75% achieved and 25% partially achieved,
- General Compliance is 56% achieved, 33% partially achieved and 11% not achieved, and
- Organisational Capacity is 67% achieved and 33% partially achieved.

The analysis of variance and turnaround plans follow.





	Organisational efficiency and effectiveness	Customer/ Stakeholder Interaction	Financial Performance	General Compliance (Risk, Audit, Governance)	Organisational capacity
Not achieved (< 50%)	0%	0%	0%	-40%	0%
Partially achieved (50-99%)	-25%	0%	0%	-20%	-33%
Achieved (100%)	75%	100%	100%	40%	67%

Strategic Goal 1: Develop strategic partnerships, increase support to customers, improve visibility and be a regional leader in the provision of bulk water and sanitation services.

Customer and Stakeholder Perspective

SO2

Outcomes: Stakeholder Understanding and Support. Customer Satisfaction. Community Sustainability.

	Indicator	Reason for Variance and Recovery Plan
SO 2:	Per cent compliance of WTW systems with SANS 241 water quality standard per risk category	Non-compliance with one of the five water quality risk categories of four (4) small WTW schemes, newly acquired from Umgungundlovu DM. Operational non-compliances due to ineffective process units (filtration, dosing) and high turbidity from low flows. These schemes are being assessed during 2015/2016 period and action plans developed. Chemical trials, process optimisation and review of operating procedures underway.
SO 2:	Per cent compliance of four (4) WWTW systems with Discharge Licence or General Authorisation requirements	Wastewater treatment process problems experienced at mainly Darvill WWTW. To be addressed by a combination of improvement in detection and response and planned upgrades: Darvill upgrade, scheduled to be completed by June 2016.
SO 2:	Number of CSI initiatives implemented.	Behind schedule with three CSI Initiatives due to delays in planning and implementation. Initiatives will continue for completion in 2016/2017.

Strategic Goal 3: Remove system constraints and blockages through innovative thinking and improve efficiency of all inputs.

Process Perspective

SO6

Outcomes: Operational Resiliency. Operational Optimisation. Community and Environmental Sustainability

	Indicator	Reason for Variance and Recovery Plan
SO 6:	Number of unresolved internal audit findings.	18 unresolved findings: One (1) is categorised as a High finding. Umgeni Water is currently upgrading the Darvill WWTW with completion scheduled for June 2016. Ten (10) findings have been categorised as medium risk (significant) in nature. All of these have been allocated to a manager with an action plan and action date for resolution. Seven (7) findings which are outstanding are categorised as low risk (housekeeping) in nature.
SO 6:	Board / Committee meetings attended as a % of planned meetings.	Attendance at REMCO is 76% and below target of ≥ 80% attendance. Attendance has improved from 71% in prior quarter and addressed by on-going monitoring and evaluation by Board.
SO 6:	Per cent compliance against legal Compliance Register.	Non-compliance with legislation in some areas of the business. For these, closure will be monitored and addressed by June 2016.

Strategic Goal 4: Strengthen and develop quality human resources, infrastructure capacity and water resources sustainability to support growth

Organisational Capacity Perspective

SO9

Outcomes: Operational Resiliency. Operational Optimisation. Community and Environmental Sustainability

	Indicator	Reason for Variance and Recovery Plan
SO 9	Number of Graduate Trainees development plans met.	23 of ≥ 28 Graduate Trainees (GT). 1 GT appointed to permanent position. 1 GT on maternity leave and programme will resume on return.

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Chapter 9: Participation in Companies

Contents

9.1 Msinsi Holdings (SOC) Ltd

Umgeni Water has a 100% shareholding in Msinsi Holdings (SOC) Ltd ("Msinsi").

Umgeni Water continues to provide support to Msinsi as its going concern status is dependent upon Umgeni Water's continued support in terms of contracting/engaging Msinsi to undertake the resource management function for dams. A shareholder compact, memorandum of incorporation and service level agreement have been developed and approved by the relevant structures for implementation during the contract period.

The financial status of the operations of Msinsi is contained in the financial statements in the financial plan of this Corporate Plan.

Umgeni Water has signed a 10 year renewable agreement for the operation, administration and maintenance of dams with DWS in 2013 encompassing Midmar Dam, Albert Falls Dam, Inanda Dam, Hazelmere Dam, Spring Grove Dam and the Mearns Diversion Weir, Mearns Pumping Station, Transfer Pipeline and Receiving Streams. Several of these dams are to be managed by Msinsi in terms of the shareholder compact and service level agreement.

A governance framework clarifying roles between Umgeni Water and Msinsi confirms Umgeni Water's commitment to improve the relationship, which will thus continue for the duration of the contract and as long as Msinsi remain a wholly owned subsidiary of Umgeni Water.

Contribution to Umgeni Water Objectives and Strategic Initiatives over next five years

The initiatives to be undertaken by Msinsi Holdings, in terms of the shareholder compact and service level agreement will include supporting Umgeni Water's strategy outcome of Environmental and Community Sustainability:

- The maintenance and enhancement of the natural environment around Umgeni Water managed dams.
    - Control of alien invasive plants.
    - Management of game species according to the carrying capacity of each reserve.
    - Grassland management.
- The control of pollution inside the purchase area surrounding Umgeni Water managed dams.
    - Ensuring that infrastructure developments takes place with minimum impacts on the environment.
    - Ensuring that there is no illegal dumping by industries within the purchase line.
- Controlling visitor access and activities on the water surface and within the purchase line.

9.2 Umgeni Water Services (SOC) Ltd

Umgeni Water has a 100% shareholding in Umgeni Water Services (UWS) (SOC) Ltd. This subsidiary holds an 18.5% investment in Durban Water Recycling.

A governance framework, in the form of a memorandum of incorporation, has been developed and approved by relevant structures within Umgeni Water will be implemented and complied with for as long as UWS remain a wholly owned subsidiary of Umgeni Water

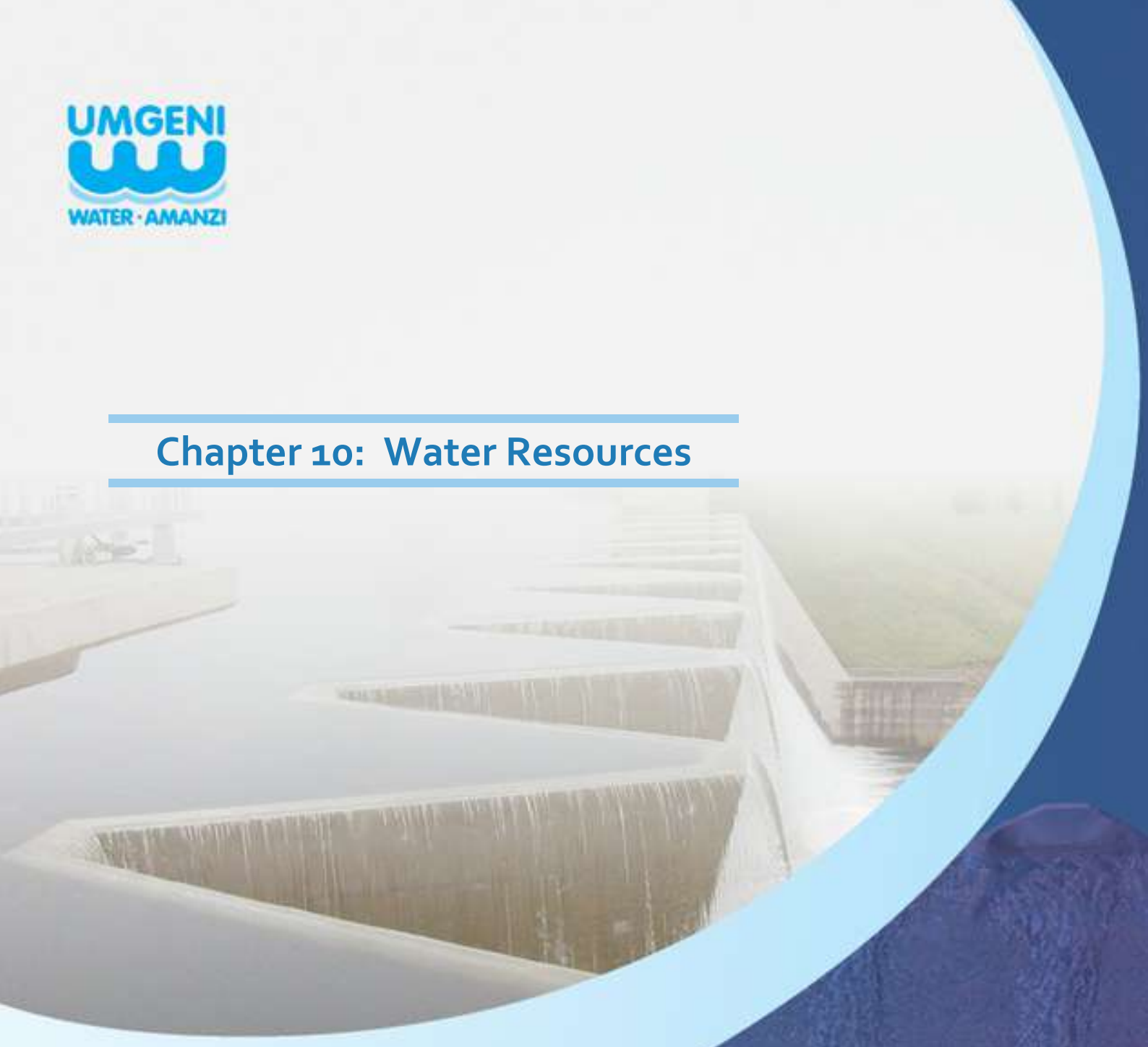
The financial information associated with Umgeni Water Services (UWS) (SOC) Ltd is contained in the financial plan of this Corporate Plan.

Contribution to Umgeni Water Objectives and Strategic Initiatives over the next five years

The initiatives undertaken by Durban Water Recycling (Pty) Ltd (through Umgeni Water Services (Pty) Ltd), contribute to Umgeni Water's strategy outcome of Water Resources Adequacy, specifically focussing on reuse/recycling.

UMGENI WATER · AMANZI

Chapter 10: Water Resources



Improving Quality of Life and Enhancing Sustainable Economic Development

Contents

10.1 Water Availability

Water resource systems and capacities are shown in **Table 10.1**. Umgeni Water sources water primarily from twelve (12) impoundments and one weir on three (3) major water resource systems, namely, the Mgeni System (Mooi and Mgeni rivers), the North Coast System (Mdloti River) and the South Coast System (Nungwane, Mzimayi and Mzinto rivers). Two impoundments (on the Mlazi and Msunduzi rivers) are not in use for water supply purposes.

Table 10.1: Capacity of Water Resource Systems

System	Catchment	Impoundment	Gross Capacity (million m^3)	Owner	Manager
Mgeni	Mooi	Mearns Weir	5.1	DWS	UW
	Mooi	Spring Grove Dam	139.4	DWS	UW
	Mgeni	Midmar Dam	235.4	DWS	UW
	Mgeni	Albert Falls Dam	290.1	DWS	UW
	Mgeni	Nagle Dam	24.6	UW	UW
	Mgeni	Inanda Dam	251.6	DWS	UW
	Mlazi	Shongweni Dam#	3.8	UW	UW
	Msunduzi, Mgeni	Henley Dam#	1.5	UW	UW
Total for Central System			**951.5**		
North Coast	Mdloti	Hazelmere Dam	17.9	DWS	UW
	iMvutshane, Hlimbitwa, Mvoti	iMvutshane Dam	3.1	UW	UW
Total for North Coast System			**21.0**		
South Coast	Nungwane, Lovu	Nungwane Dam	2.2	UW	UW
	Mzimayi	E J Smith Dam	0.9	Ugu DM	UW
	Mzinto	Umzinto Dam	0.4	Ugu DM	UW
	Mhlabatshane	Mhlabatshane Dam	2.5	UW	UW
Total for South Coast System			**6.0**		
Other	Ixopo, uMkhomazi	Ixopo Dam	0.6	UW	UW
Total for Umgeni Water Systems			979.1		

 # impoundments are owned and managed by Umgeni Water, but are no longer utilised for water supply purposes.

10.1.1 Mgeni System

The Mgeni System comprises four (4) dams on the Mgeni River, namely Midmar Dam, Albert Falls Dam, Nagle Dam and Inanda Dam. It is augmented by the Mooi-Mgeni Transfer Scheme (MMTS-Phase 1) which consists of the Mearns Weir on the Mooi River, the Mearns Pumping Station with a maximum transfer capacity of 3.2 cubic metres per second and a raw water transfer pipeline that discharges into the Mpofana Stream, which flows into the Lions River and then into the Mgeni River upstream of Midmar Dam.

During the MMTS-Phase 1 the yield of the Mooi/Mgeni System was 334 million cubic metres per annum (915 Ml/day). The Spring Grove Dam (MMTS-Phase 2A), which was completed in 2013, has improved the yield of the Mooi/Mgeni System to 381 million cubic metres per annum (1044 Ml/day). When the construction of MMTS-Phase 2B, which comprises a new pump station and transfer pipeline, is complete, it will further improve the Mooi/Mgeni System yield to 394 million cubic metres per annum (1080 Ml/day).

10.1.2 North Coast System

The North Coast System comprises the Hazelmere Dam on the Mdloti River. This dam serves a dual-purpose providing water for both potable and irrigation requirements. The dam has a yield (at a 98 % level of assurance) of 19.0 million cubic metres per annum available for treatment and potable usage, provided the reserve allocation is not imposed.

Since July 2007 Umgeni Water has also been abstracting water from the Mvoti River as part of managing the Mvoti Water Treatment Works and the supply of bulk potable water to the town of KwaDukuza on behalf of the iLembe District Municipality.

The Maphumulo Bulk Water Supply System, which was commissioned in May 2013, utilises raw water from the iMvutshane River via a temporary abstraction system. This system will be replaced by the permanent abstraction that is currently part of the iMvutshane Dam project commissioned in April 2015. The iMvutshane Dam has a yield (at 98% level of assurance) of 2.4 million cubic metres per annum. As a result of the drought in 2014 which continued into 2015, an emergency scheme to pump water from the Hlimbitwa River to the Maphumulo Abstraction Works was constructed. Raw water (up to 6 Ml/day) can now be pumped from the Hlimbitwa River to the Maphumulo Abstraction Works during drought periods.

10.1.3 South Coast System

The South Coast System comprises a number of interlinked operational entities. Water resources for this area are obtained from the Nungwane Dam on the Nungwane River (a tributary to the Lovu River), the Mzinto and EJ Smith dams on the Mzinto and Mzimayi rivers respectively, and a sand abstraction system on the Mtwalume River. This system is substantially augmented by the Mgeni system via the South Coast Augmentation Pipeline and the South Coast Pipeline.

The Nungwane Dam has a yield of 3.3 million cubic metres per annum, E J Smith Dam and Mzinto Dam together have a yield of 3.2 million cubic metres per annum, and Mtwalume River abstraction point has a yield of 1.2 million cubic metres per annum.

As a result of the drought in 2014 which continued into 2015/2016, an emergency scheme was constructed to pump water from the Mpambanyoni River into the EJ Smith Dam (Mzinto System). Raw water was pumped through this scheme during December 2014 and January 2015 increasing the level of EJ Smith Dam from 40% to 70%. The pumping resumed in June 2015 when EJ Smith Dam reached 40%, and stopped in September 2015 when the dam reached 78%.

The Mhlabatshane Dam on the Mhlabatshane River has a yield of 1.5 million cubic metres per annum and provides water to the Mhlabatshane Bulk Water Supply Scheme.

10.1.4 North-West Region Systems: Amajuba, Umzinyathi and uThukela DMs

The North-West Region covers a total area of 26 833km^2. The area has a population of 1.7 million people and 371 718 households. There are three water service authorities in the region.

- Amajuba DM / WSA with three (3) local municipalities: Newcastle LM / WSA, Dannhauser LM and eMadlangeni LM.
- uMzinyathi DM / WSA with four (4) local municipalities: Nquthu LM, eNdumeni LM, Msinga LM, uMvoti LM.
- uThukela DM / WSA with five (5) local municipalities: Indaka LM, Emnambithi/Ladysmith LM, Umtshezi LM, Okhahlamba LM and Imbabazane LM.

The current water resources in the area are shown in Table 10.2

By South African standards, the North-West region is exceptionally well endowed with water resources. Other than infrequent isolated instances of water shortages in severe drought periods, there is a surplus of water available. Four major dams have been constructed for water supply purposes, namely, Wagendrift Dam for water supply to Estcourt and Weenen, Spioenkop Dam for water supply to Ladysmith and regulating the Thukela River downstream, Woodstock Dam for storage of water to feed into the existing Transfer to the Vaal River System via the Tugela Vaal Transfer Scheme (i.e. via the Drakensberg Pumped Storage Scheme), and Ntshingwayo Dam supplying Newcastle. Most of the large dammed water in the North-West area is allocated to the Gauteng Province via the Transfer scheme.

Table 10.2: Estimated Yield of Existing Water Resource Systems

Municipality/Scheme	Water Resources	mil m^3/a	Ml/d
Amajuba DM - Ngagane Regional Water Supply	Ntshingwayo Dam, Buffalo River	26	72
Utrecht, Durnacol, Dannhauser and Alcockspruit			
Umzinyathi DM	Buffalo River	11	30
	Tom Worthington and Verdruk dams	0.5	1.3
	Sterkstroom River	1.6	4.4
	Mpati catchment dams	2.3	6.3
	Lake Merthely, Boreholes	1.2	3.2
	Tugela River	2.7	7.5
	Mooi River, Boreholes	1.6	4.4
uThukela DM - Zwelisha/Moyeni Water Supply Scheme	uThukela River - Khombe River,	1	2.7
uThukela DM - Winterton Water Supply Scheme.	uThukela River -Little uThukela River	0.37	1
uThukela DM - Bergville Water Supply Scheme.	uThukela River	0.44	1.2
uThukela DM - Loskop Water Supply Scheme	uThukela River	1.9	5.1
uThukela DM - Ladysmith Water Supply Scheme	uThukela River -Klip River, SpioenKop Dam	8.2	23
uThukela DM - Ezakheni Water Supply Scheme	uThukela River, SpioenKop Dam	12.5	34
uThukela DM - Colenso Water Supply Scheme	uThukela River	0.23	0.63
uThukela DM - Estcourt Water Supply	uThukela River - Bushman's River, Wagendrift Dam	5.6	15
uThukela DM - Weenen Water Supply Scheme	uThukela River - Bushman's River, Wagendrift Dam	0.7	1.9
uThukela DM - Ekuvukeni Water Supply Scheme	uThukela River – Sunday's River		
		78	213

10.1.5 Systems for other areas in KZN

The Pongola system has the Pongolapoort Dam with a full capacity 2 267 million cubic metres. The catchment is in balance upstream of the dam, with the Bivane Dam providing irrigation water to sugar cane farmers. The Pongolapoort Dam still has some available surplus water, all of which has been earmarked for use benefitting the local population. There is sufficient water available from Pongolapoort Dam to meet domestic and significant irrigation needs in the area, but this water has not been utilised yet. Even with the reduced full supply level there is still some 50 million cubic metres per annum available for use (NWRS, 2013).

Water in the Mkuze River catchment is very intensely utilised both by forestry and for irrigation purposes. Low flows, particularly, are over utilised. There is a 32,6 million cubic metres per annum transfer out of the Pongolapoort Dam into the Mkuze catchment for irrigation and domestic purposes. There is no suitable site or opportunity for a large dam on the Mkuze River and therefore little regulation (storage) of the river flow (NWRS, 2013).

The Mfolozi River catchment has very few dams and is therefore, like the Mkuze, largely unregulated. Off-channel storage is an option should the water be required for Richards Bay, situated in the neighbouring Mhlathuze catchment. The Klipfontein Dam, high upstream in the White Mfolozi River supplies both Abaqulusi Local Municipality (Vryheid) and Ulundi Local Municipality. There are increasing water requirements in both of these towns and one option is to increase yield by raising the wall of the dam (NWRS, 2013).

The available water in the Mhlathuze catchment has been over allocated to users but the full allocations have not been utilised and the system is therefore rarely subject to restrictions. There is an augmentation transfer out of the Thukela River that is activated when the level in the Goedertrouw Dam drops below a critical level. This provides a high assurance of supply to Richards Bay (NWRS, 2013).

10.2 Water Resource Assurance and Supply Security per Water Services Authority

10.2.1 eThekwini Metropolitan Municipality

The Mgeni system, supported by the Mooi Mgeni transfer scheme, is the primary resource for this municipality. Water in the municipality's northern areas is also secured from the Hazelmere Dam on the Mdloti River, as well as from the Tongati River. The Nungwane Dam on the Nungwane River provides a small portion of the municipality's water requirements in its southern areas. Groundwater is also used to a limited extent. Water transfers from the uMkhomazi River, wastewater reuse and seawater desalination are potential future sources of water for this area. Water from the uThukela River could also be utilised to a limited extent.

10.2.2 Msunduzi Local Municipality

The Midmar Dam on the Mgeni River is the only source of surface water for this municipality. Water transfers from the Mooi River are used to augment this resource. Groundwater is used to a limited extent.

10.2.3 uMgungundlovu District Municipality

The Midmar Dam on the Mgeni River, supported by the Mooi-Mgeni transfer scheme, is the primary source of water for this municipality. A number of minor abstractions on other rivers and tributaries are also undertaken and groundwater is used extensively for many of the rural and outlying peri-urban areas. The uMkhomazi River is a potential future source of water for this area.

10.2.4 iLembe District Municipality

The Hazelmere Dam on the Mdloti River is the primary source of water for this municipality. To a far lesser extent, water is also abstracted from the Mvoti and uThukela rivers, and groundwater is used extensively in the outlying rural areas. The Mvoti and uThukela rivers and seawater desalination are potential future sources of water for this municipality.

10.2.5 Ugu District Municipality

There are a number of rivers that are utilised in this area. The southern areas (not served by Umgeni Water) utilise water from the Mzimkhulu and Mtamvuna rivers, while the central area primarily receives water from the Mzinto Dam and EJ Smith Dam on the Mzinto and Mzimayi rivers respectively and from the Mtwalume River. The northern area primarily receives water from the Mgeni system via Inanda Dam and the Nungwane Dam on the Nungwane River. Groundwater is used extensively within this municipality to supply many of the rural areas. The uMkhomazi and Mzimkhulu rivers and seawater desalination are potential future sources of water for this municipality. The inland area of Mzumbe and Hibiscus Coast Local Municipalities receive water from the Mhlabatshane Dam.

10.2.6 Harry Gwala District Municipality

Numerous small abstractions on the uMkhomazi, Mzimkhulu and Mzintlava rivers and their tributaries are utilised within this area. The town of Ixopo is supplied from Ixopo Dam (Home Farm) and a borehole. Groundwater is also used extensively within this municipality to supply many of the rural areas. The uMkhomazi, Mzintlava and Mzimkhulu rivers are potential future sources of water for this municipality.

10.2.7 Comment on North-West Region: Amajuba DM and Newcastle LM

Ngagane System Bulk Water: The Ngagane System includes the 108 Ml/d Ngagane Water Treatment Works (WTW) and raw water pipelines, namely, 72 Ml/d pipeline from Ntshingwayo Dam, 18 to 30 Ml/d abstraction from Ngagane River Well-point and seasonal abstraction of 10 to 30 Ml/d from the Buffalo River. The Ngagane System supplies Newcastle and surrounding townships, including Osizweni and Buffalo Flats, with extensions up to Utrecht under construction.

10.2.8 Comment on North-West Region: Umzinyathi DM

Biggarsberg Bulk Water System: The Biggarsberg System supplies the Dundee Glencoe system and includes the 16 Ml/d Biggarsberg WTW, raw water pipeline from the Buffalo River and from six small dams.
The Biggarsberg WTW abstracts raw water from six sources of supply which are in the Buffalo River catchment:

i. The Buffalo River: The main source of supply for the Biggarsberg WTW. Raw water is abstracted at Tyside where it is pumped approximately 26 km to the Biggarsberg WTW. The raw water pumping main is a 400 mm diameter steel pipeline.
ii. Tom Worthington and Verdruk dams: Water is pumped from the raw water pumping stations to a 1.3 Ml capacity balancing dam from where it gravitates to a balancing dam at the WTW.
iii. The Sterkstroom River: Includes the Donald Mchardy Dam and the Preston Pan. It is estimated that the total available water from the Sterkstroom river is 4.5 Ml/d (1.6 million m^3/a).
iv. The Mpati catchment dams: Comprises two small dams located near the Biggarsberg WTW. Raw water is gravitated from both the upper and lower Mpati Dams directly into the water treatment works. The capacity of the dams has been estimated to supply 2.3 million m^3/a based on the 25% live storage capacity of the dams as the dams are very small.

10.2.9 Comment on North-West Region: uThukela DM

All water supplied by uThukela DM to the community is from sources within the DM's area of jurisdiction. With a household count of approximately 115 000 the DM requires at least 690 000 kl per month or 8,300 Ml per year to supply the whole population with basic services. This does not account for increased consumption in urban areas or industrial requirements.

The DM has a wealth of surface water resources with the water is transfer to Gauteng Province as part of the Tugela-Vaal scheme. Most surface water is abstracted from the Tugela River or one of its tributaries, such as the Klip, Little Tugela or Bushmans. Urban areas treat this water prior to distribution, with continuous quality testing being conducted at the treatment plants.

Approximately 52% of current rural water schemes utilise surface water as a resource. Some 79% of these schemes have water treatment facilities such as the Limehill Complex in the northeast of Indaka LM, which relies on the Oliphantskop Dam to supply water to most of its communities. The remaining schemes are treated through manual dosing of chlorine into the reservoirs, however very little monitoring of the water quality is conducted.

10.3 Water Quality of Raw Water Supplies

The status of water quality per supply source is shown in **Table 10.3**. Water quality management plans include:

- Monitoring quality of raw water resources to mitigate treatment risks.
- Assessing trends in eutrophication, chemical contaminants, pathogens and suspended solids, and effectiveness of raw water quality objectives.
- Engaging catchment management stakeholders to further influence resource quality and quantity objectives to safeguard consumer water quality.
- In addition, Umgeni Water will continue to improve quality of waste discharges from its own sites.

Umgeni Water has set resource quality objectives for water treatment abstraction sites. These will continue to be used to provide early warning information to mitigate risks to water treatment and public health. DWS is kept continuously apprised of the quality and risks associated with the source water and need to continue to regulate catchment practices and waste discharges to ensure long-term sustainability of these water resources.

Table 10.3: Resource Water Quality

System	Catchment	Impoundment	*Water Quality Status and Trend*				*Description of Raw Water Quality*
			Mar-2013	Mar-2014	*Mar-2015*	*Jan-2016*	
Mgeni	Mooi, Mgeni	Spring Grove	-	-	**Filling**	**Excellent to Good**	*Excellent to good quality from the abstraction point in Midmar Dam. Occasional elevated nutrient concentrations in the inflow rivers to the impoundments as a result of inputs from the catchment. These results in elevated algal counts in the impoundments on a few occasions each year.*
		Mearns Weir, Midmar Dam	Good	**Good**	**Good**	**Excellent to Good**	
	Mgeni	Albert Falls Dam	Good	**Good**	**Excellent**	**Excellent to Good**	*Excellent to good quality in Albert Falls Dam at the site from where water is released for abstraction downstream in Nagle Dam. Elevated nutrient concentrations in the inflow rivers to the impoundments as a result of inputs from the catchment, particularly from Howick WWW and problematic sewer infrastructure in that area.*
	Mgeni	Nagle Dam	Moderate	**Good**	**Excellent**	**Excellent to Good**	*Excellent to good quality from the abstraction points in Nagle Dam. Occasional elevated nutrient concentrations and turbidity problems in the inflow to the impoundment as a result of the catchment rain events.*
	Mgeni	Inanda Dam	Moderate	**Moderate**	**Moderate**	**Moderate**	*Excellent to good water quality from the abstraction point in Inanda Dam. Poor quality in upper reaches of the Dam due to high algal counts associated with nutrient enrichment from the Msunduzi catchment and Darvill WWW.*
North Coast	Mdloti	Hazelmere Dam	Good	**Excellent**	**Moderate**	**Poor**	*Quality generally poor as a result of elevated turbidity, algal counts and high iron and manganese concentration associated with the drought conditions and extremely low dam level.*
	Mvoti	Run-of-river abstraction	Moderate	**Good**	**Good**	**Moderate**	*Quality generally good with exception of elevated turbidity associated with rainfall events and erosion in the catchment.*
	Thukela	Run-of-river abstraction		**Poor**	**Poor**	**Moderate**	*Moderate quality due to elevated phosphates, turbidity and TOC associated with erosion due to rainfall runoff events and poor agricultural practices.*
	iMvutshane, Maphumulo	Run-of-river abstraction		**Good**	**Good**	**Moderate**	*Quality generally moderate with the exception of elevated turbidity associated with rainfall events.*
South Coast	Nungwane, Lovu	Nungwane Dam	Moderate	**Moderate**	**Good**	**Good**	*Quality generally good with high algal counts at times as well as TOC and iron concentration. Drought conditions' resulting in low water levels has reduced impoundment mitigation of problems.*
	Mzimayi	E J Smith Dam	Poor	**Poor**	**Poor**	**Moderate**	*Moderate quality from the abstraction point in EJ Smith Dam. The river inflow quality remains poor due to the presence of elevated E. coli, TOC and nutrient input as a result of sewage contamination from the Mzinto town.*
	Mzinto	Mzinto Dam	Moderate	**Moderate**	**Moderate**	**Good**	*Good quality in Mzinto Dam at the site from where water is released for abstraction downstream at Esperanza (Mzinto River).*

System	Catchment	Impoundment	*Water Quality Status and Trend*				*Description of Raw Water Quality*
			Mar-2013	Mar-2014	*Mar-2015*	*Jan-2016*	
	Mthwalume	River Abstraction	Moderate-Poor	**Moderate-Poor**	**Good**	**Excellent to Good**	*Quality generally good with exception of elevated turbidity associated with rainfall events.*
Ixopo	Xhobo (Ixopo area)	Ixopo Dam	Poor	**Poor**	**Poor**	**Poor**	*Poor quality from the abstraction point in Ixopo Dam. Eutrophication and elevated organic carbon, algal blooms, iron, manganese and aquatic weed problems, due to sewer problems in Ixopo Town and extremely low dam water level. Problems have been made worse due to drought conditions.*

10.4 Water Use Rights, Licences by Resource

Umgeni Water's registered abstractions and licence applications are shown in **Table 10.4**. The current registered use is greater than the licenced amount for a number of water resources. In this regard, Umgeni Water has submitted licence applications to DWS, however some of these dating back as far as 2006 are still outstanding.

Table 10.4: Registered Abstractions and Status of Licence Applications.

System	Abstraction Point	Registered Use at March 2013 (10^3 m^3/day)	Current Licence (10^3m^3/day) and date issued	Licence Application (10^3m^3/day) and date submitted to DWS
Mgeni	Midmar Dam Nagle Dam (Albert Falls Dam) Inanda Dam	1,099	1,096 *May 1985*	1,287 *November 2005* *Resubmitted 2012* *Resubmitted 2013* *Resubmitted 2015*
North Coast	Hazelmere Dam	45	31 *1985/88*	92 *April 2010* *Resubmitted 2013* *Resubmitted 2014*
	Mvoti River	16	11	18 *April 2008*
	iMvutshane Dam	*N/A*	*7* *August 2012*	-
	Lower Thukela	*N/A*	*110* *2013*	-
South Coast	Nungwane Dam	26.5*	-	-
	E J Smith Dam Mzinto Dam	12*	-	-
	Mtwalume River Well points	8.5	3	5 *May 2006*
	Mhlabatshane Dam	*N/A*	4.1 *June 2010*	
Other	Ixopo Dam	2.3*	-	-

**allocations to UW by DWS, new licence applications to be submitted once allocations are exceeded*

10.5 Water Demands, Planned Developments and Shortfalls

The sales forecast for 2014/2015 and 2015/2016 are estimated to be 1 220 Ml/day and 1 255 Ml/day, respectively. This represents a 2.0% year-on-year increase in growth, which is an improvement on the previous year, and is again primarily determined by the forecast provided by eThekwini MM.

The negative growth that was experienced in 2010/11 was as a result of eThekwini Metro's Water Demand Management Initiatives. After suspension of these initiatives, demands have again increased. The five year average annual positive growth rate is 1.1%.

Umgeni Water, as a bulk water services provider, requires sustainable and cost-effective water resources to meet its customer's demands. In view of the significant lead times required to plan, design, construct and commission major water resource development projects, future medium to long-term water resources from the Department of Water and Sanitation (DWS), as the custodian of the country's water resources, have to be secured in a timely manner.

DWS has, to date, undertaken regional water resource development investigations within Umgeni Water's area of operation in close collaboration with Umgeni Water and its major customers. A number of these studies were co-funded by Umgeni Water. The status of water demand within Umgeni Water's area of supply, however, requires several of these water resource investigations to be completed, failing which, customers could be faced with severe water shortages in coming years. A summary of resource needs is shown in **Table 10.5** and described further in the sections that follow.

Table 10.5: Summary of Water Resource/Supply needs, Timing and Estimated Cost

Scheme	Date Needed	Timing	Estimated Cost	Responsibility
Phase 1 uMkhomazi Water Project: Smithfield Dam	2010	Behind Schedule	R 17 000 million	DWS
North Coast System: Raising of Hazelmere Dam	2014	Behind Schedule	R 600 million	DWS
Phase 1 Lower Thukela Bulk Water Supply Scheme	2016	On Schedule	R 1 351 million	UW
Lower uMkhomazi Bulk Water Supply Scheme	2019	Behind Schedule	R 2 300 million	UW
Lower Mvoti Bulk Water Supply Scheme: Welverdient Dam	2030	On Schedule	R 4 000 million	DWS

Umgeni Water will continue to manage its existing resource supplies with the utmost diligence. In addition, Umgeni Water is investigating alternative sources to assist with meeting the medium and long-term water requirements of the region, including a detailed feasibility investigation of two large-scale seawater desalination plants for the East Coast region. Further initiatives are described in the water conservation and demand management plan later in this Corporate Plan.

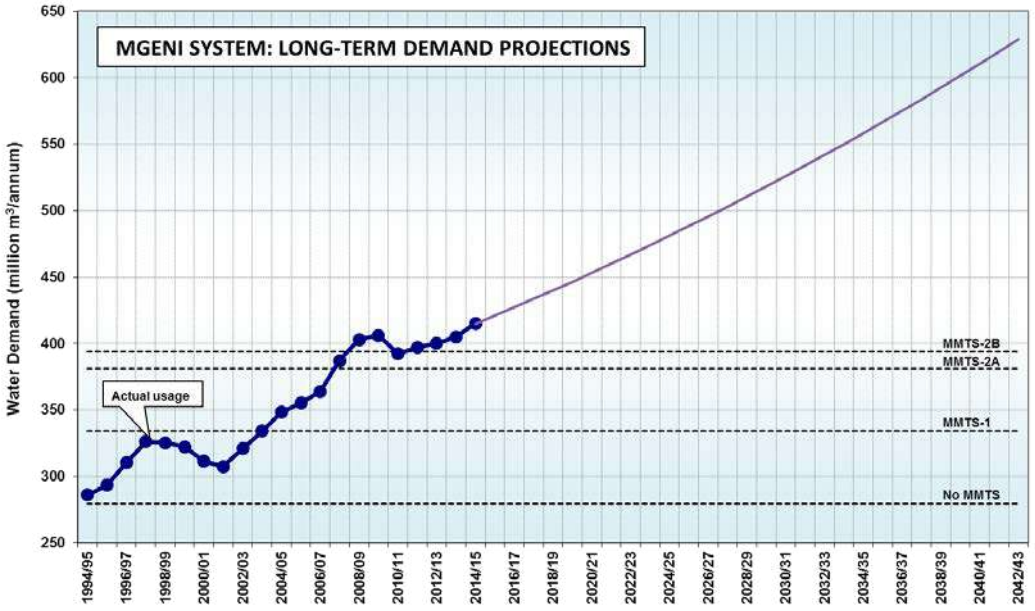
Going forward Umgeni Water, as the Regional Water Utility, will progressively take on more responsibility for regional water resources infrastructure to achieve greater integration with bulk systems. Umgeni Water will, over the next 12-month period, work closely with DWS regarding this.

10.5.1 Mgeni System: Planned Developments and Shortfalls

The long-term water demand projections for the Mgeni system are shown in **Figure 10.1.** Augmentation options for the Mgeni system comprise:

- Phase 2 of the Mooi-Mgeni Transfer Scheme: Spring Grove Dam with a pump station and pipeline.
- Phase 1 of the uMkhomazi Water Project: Smithfield Dam.

Figure 10.1: Long-Term Water Demand Projections for the Mgeni System



Phase 2 of the Mooi-Mgeni Transfer Scheme: Spring Grove Dam

Phase 2 of Mooi-Mgeni Transfer Scheme (MMTS-2) comprises the completed Spring Grove Dam (full supply capacity of 139.4 million cubic metres) on the Mooi River, a new pumping station at Spring Grove Dam and a new pipeline to transfer water directly into the Mpofana River in the Mgeni catchment. The overall transfer capacity of the MMTS will then be increased to its ultimate rate of 4.5 cubic metres per second.

Figure 10.1 indicates that current demands are slightly greater than the 99% assurance of supply level that will be achieved with the commissioning of the full MMTS-2, and even further augmentation of the Mgeni System is therefore needed.

The construction of the Spring Grove Dam has been completed and water was first transferred from this resource towards the end of 2014. The current transfer system relies on water to be released from Spring Grove Dam to the Mearns Weir from where it can be pumped at 3.2 cubic metres per second through the traditional transfer system. The construction of the upgraded transfer system will maximise the transfer capacity from the dam and is scheduled for completion towards the end of 2016.

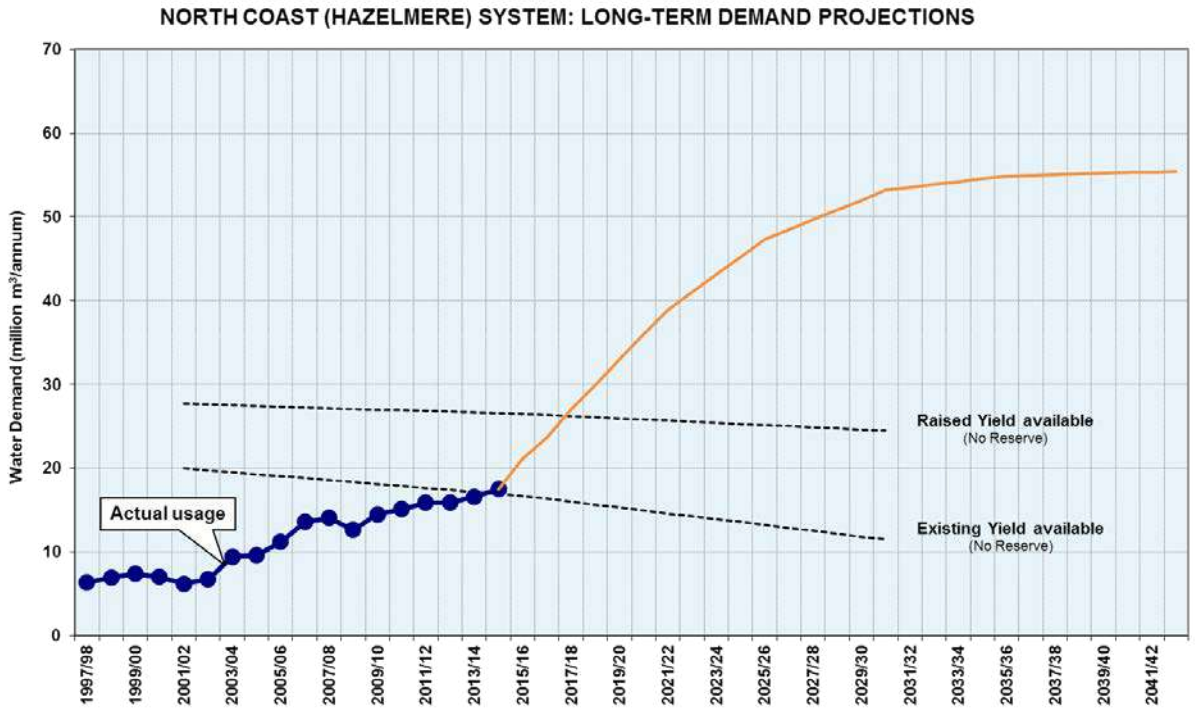
Phase 1 of the uMkhomazi Water Project: Smithfield Dam

The current and projected water demand trends (Figure **10.1**) show that the planning of the next major water resource development, the uMkhomazi Water Project, to support the Mgeni system urgently needs to be brought to a stage of implementation. Without this augmentation of the Mgeni system, Umgeni Water will be unable to ensure that future water demands can be met at the appropriate level of assurance. DWS has completed the detailed feasibility level investigation into this augmentation option and Umgeni Water has recently completed a detailed feasibility level investigation into the associated bulk potable water component in an integrated manner with the DWS water resource component. An environmental impact assessment of the entire project is currently underway and the ROD is expected to be issued by the end of 2016.

10.5.2 North Coast System: Planned Developments and Shortfalls

Water demand in the North Coast region - the coastal strip between Veralum, to the north of Durban, and the town of KwaDukuza - has risen over the past few years and is expected to continue to grow in the future (refer to **Figure 10.2**).

Figure 10.2: Long-Term Water Demand Projection for the Hazelmere (Mdloti) System



DWS recently commissioned the KwaZulu-Natal Coastal Metropolitan Areas Water Reconciliation Strategy Study, which amongst other things, considered strategies for augmenting the North Coast water supplies. The augmentation options included:

- Raising of Hazelmere Dam,
- Implementing the Lower Thukela Bulk Water Supply Scheme (BWSS), and
- Building a new dam on the Mvoti River (either the Welverdient Dam or Isithundu Dam).

Raising of Hazelmere Dam

Raising the full supply level of Hazelmere Dam by seven metres to increase the firm yield of the resource to approximately 27.3 million cubic metres per annum (at a 98 % level of assurance) is estimated to be the quickest option of augmenting the water supply to the North Coast region.

The construction commenced in 2015 and is expected to be completed in 2018. The dam currently has sufficient yield available to cater for the initial demand increases, however, once the demand increases to above 55Ml/d the assurance of supply will drop below 98% unless the dam wall is raised.

Lower Thukela Bulk Water Supply Scheme

The Lower Thukela Bulk Water Supply Scheme is a practical solution to implement to supply additional water to the area. This scheme will be required to augment the water supplies of the Mdloti System, as the raising of Hazelmere Dam on its own will not provide sufficient resources to supply this area in the medium term. The Lower Thukela Bulk Water Supply Scheme will draw water from the uThukela River and will not require raw water storage. Construction of the scheme is currently being undertaken with completion expected towards the middle of 2016.

iMvutshane Dam

Communities in the largely rural areas inland from the North Coast region - areas bounded by the uThukela and Mvoti rivers and extending from Greytown in the west to Maphumulo in the east - currently receive water from boreholes or small stand-alone surface water supply schemes. Many communities in this area receive a sub-RDP standard level of service.

Umgeni Water constructed Phase 1 of the Maphumulo Bulk Water Supply Scheme (BWSS) to supply the communities of Maphumulo, Maqumbi and Ashville. This scheme currently draws water directly from the iMvutshane River, which is a tributary of the Hlimbitwa River, which in turn is a tributary of the Mvoti River. Phase 2 of this scheme which entails the construction of a dam on the iMvutshane River was commisioned in April 2015. This will increase the yield from the scheme and ensure a more sustainable supply.

Lower Mvoti Bulk Water Supply Scheme: Welverdient Dam

DWS and Umgeni Water conducted numerous water resource and supply infrastructure investigations of the lower Mvoti River catchment during the latter half of the 1990s. At the time, the proposed Isithundu Dam (serving both irrigation and potable water demands) with a downstream abstraction works located near the town of KwaDukuza was identified as being the preferred infrastructure development configuration. However, a number of critical assumptions have since changed. Most significantly, legislative changes governing national raw water pricing led to the irrigation sector withdrawing from the proposed scheme on affordability grounds. The implication is that storage options serving only the potable water sector now need to be considered.

Umgeni Water has therefore requested DWS to review the findings of the previous investigations and develop detailed feasibility plans for the next phase of water resource augmentation for the North Coast System – most likely to be the proposed Isithundu Dam option. Umgeni Water will undertake concurrent detailed feasibility level investigations into the associated bulk water transfer infrastructure. It is envisaged that both investigations will proceed simultaneously and in an integrated manner.

10.5.3 South Coast System: Planned Developments and Shortfalls

The water resources that support the Middle South Coast area lack substantial storage capacity, making the area especially susceptible during periods of drought as witnessed during the latter part of 2010 and 2014 continuing into 2015. While the infrastructure linkages between the Mzinto, Mtwalume and Craigieburn water treatment works' are able to alleviate localised supply shortages for short periods, they are not able to sustain supply over longer periods significantly increasing the risk of applying water restrictions.

Several localised solutions have been investigated, including an assessment by DWS of the feasibility of a low-level weir on the Mtwalume River to improve abstractions at this point during low flow periods. These minor water resource developments address the constraint in the short-term only. As with the North Coast area, the Middle South Coast area is experiencing strong growth in water demand, driven by economic growth in the region, and it is envisaged that a major water resource development and/or inter-basin transfers will be required to provide a long-term solution to water scarcity in the area. An emergency scheme was developed to pump water from the Mpambanyoni River to the E J Smith Dam although this 8Ml/d inter-basin transfer can only be used during drought periods.

Lower uMkhomazi Bulk Water Supply Scheme

Umgeni Water commissioned Phase 1 of its South Coast Pipeline that transfers potable water from the Mgeni System to the Upper and Middle South Coast areas. It is recognised that the Mgeni System has insufficient resources to support this region in the medium to long-term and that a local sustainable long-term scheme needs to be developed to replace it. The uMkhomazi River is best suited for this purpose. Umgeni Water is currently undertaking a detailed feasibility investigation of the Lower uMkhomazi Bulk Water Supply scheme, which will abstract water from the lower reaches of the uMkhomazi River for treatment and to feed into the South Coast Pipeline.

The availability of a local sustainable source will then allow the extension of this pipeline (Phase 2) further southwards to increase the area of supply and enable a linkage to other supply systems in the south. A detailed feasibility study of the Lower uMkhomazi Bulk Water Supply Scheme is currently is currently underway.

Mhlabatshane Bulk Water Supply Scheme

Umgeni Water has constructed the Mhlabatshane BWSS as part of a larger regional scheme development by Ugu District Municipality and aimed at reducing water services backlogs in certain rural areas in the Mzumbe and Hibiscus Coast Local Municipalities. This scheme is situated within the Lower South Coast Sub-Region. The Ugu District Municipality is responsible for the reticulation component of the scheme, which in its entirety, is planned to serve an estimated 101,000 people (approximately 15,300 households) of which about half are currently classified as having a water service backlog.

The bulk component of the scheme comprises of a dam on the Mhlabatshane River (a tributary of the Mzumbe River), from where water is pumped to water treatment works situated in close proximity to a command reservoir. Potable water is then supplied to Ugu District Municipality from the command reservoir for reticulation through an extensive gravity-fed network to the various communities in the area. Some of the reticulation component currently exists as stand-alone schemes, with the remainder still to be installed.

When future water demands from this scheme exceed the firm yield of the dam, the intention is to develop the second phase of the project. Water will be abstracted directly from the Mzimkhulu River, pumped to the existing water treatment works (which will need to be upgraded) and then fed into the reticulation system via the command reservoir. A detailed feasibility of this second phase of the project is currently underway.

10.5.4 Comment on North-West Region: Amajuba DM and Newcastle LM,

Amajuba DM, Newcastle LM

Water resource needs, including competing water uses, to be met or confirmed includes:

i. A major irrigation-based agricultural development that would need to be supplied from the dam.
ii. Resource needs for the new eMadlangeni bulk regional scheme between Newcastle and Utrecht.
iii. Resource needs for all identified new potable water distribution and reticulation infrastructure being developed (as per previous section) to supply water to planned developments, as well as,
iv. Higher service level water needs that arise from water-borne sewage developments.

Water resources interventions that warrant further investigation include:

i. The Zaaihoek dam as a potential water supply dam for the Newcastle area.
ii. A water supply dam on the Ncandu River

Utrecht, Durnacol, Dannhauser and Alcockspruit

A possible strategy is to build a new water plant close to Ntshingwayo Dam to supply potable water to Ngagane Village, Kilbarchan, Ballingeich area, Alcockspruit, Durnacol and Dannhauser and should there be surplus water, further to Washbank and Hattingspruit areas. This will facilitate the closure of two small plants (Durnacol (1.6 Ml/Day) and Dannhauser (2 Ml/day). Medium term plans could involve closing the Dannhauser plant and using the Durnacol plant and upgrade it, as it can through gravity feed Dannhauser town and surrounding areas also.

The above would allow the Ngagane WTP to focus on supplying Newcastle and the increased demand to Madadeni, Osizweni, Buffalo Flats and Utrecht and surrounding areas. This could mean that the Utrecht plant (3 Ml/day) could be closed down. A bulk pipe line is already in place to feed Utrecht town with potable water, should the raw water dam dry up again.

10.5.5 Comment on North-West Region: Umzinyathi DMs

Greytown Bulk Water System

The town is experiencing water supply shortages because the available water supplies from Lake Merthely and the six boreholes cannot meet the current water requirements. The sustainable yield of Lake Merthley is estimated to be 3.2 Ml/d (1.168 million m3/a). However it is currently being overdrawn with the likelihood of the dam failing. As a result of water supply shortfalls, the town is receiving intermittent water supplies with temporary water restrictions being implemented during critical periods of low flows.

Long term implementation measures: The augmentation of water supply to Greytown in the long term can be reviewed once phase 2 has been implemented and the amount of groundwater that can be abstracted has been determined. The long term option will be the development of a dam on the Mvoti River to not only supply Greytown but other users, including Stanger downstream and irrigation water requirements. Also supply Kranskop (600 kl/day) is relying on borehole water at present. Then this small plant can be closed down.

Msinga Bulk Scheme (Tugela Ferry WTW)

The Tugela Ferry Water Supply Scheme has a total population of 63 306 (2008 figures). The Tugela Ferry Water Supply Scheme receives its raw water supplies from the Tugela River supplying the scheme. The required raw water abstraction for the scheme was estimated to be 7.5 Ml/d (2.73 million m^3/a) in 2008 with future raw water requirements expected to increase to 12.4 Ml/d (4.5 million m^3/a) by 2030.

uMzinyathi DM is at present busy with the upgrade of the Sampofu (Tugela Ferry) water treatment plant, it was a 4 Ml/day plant. The intention is to increase this plants capacity and to upgrade/secure the current raw water abstraction from the Tugela River.

Muden Bulk Scheme

The Muden Water Supply Scheme had a total population of 43 251 as at 2008. The Muden Water Supply Scheme receives its water supplies from the local surface water supplies of the Mooi River as well as groundwater which make up stand-alone borehole systems. The required raw water abstraction for the scheme was estimated to be 4.5 Ml/d (1.6 million m^3/a) in 2008.

It is possible that Muden plant will be upgraded to be a regional scheme to supply the Ethembeni area and communities along the way. If this plan continues, it will mean that the two small package plants Ethembeni (500 kl/day) and Fabeni (50 kl/day) can be shut down and water supply to this area will be from the Muden scheme.

10.5.6 Comment on North-West Region: uThukela DM

uThukela DM, Okhahlamba LM

Medium-Term – Six to Ten years: The WTW at Zwelisha will be upgraded to a capacity of 4Ml/d and the supply area extended to include Okhombe, Obonjani, and the Busingatha communities. Some of these communities also require reticulation development. The WTW will also link into the existing reticulation schemes of Newstand and Langkloof. A large bulk reservoir will be constructed above Langkloof, to supply large areas North of the Woodstock Dam via a gravity pipeline.

The Emmaus area will be supplied via a pumping main from the Bergville WTW to a single bulk reservoir located in Emmaus. The Bergville WTW will require an upgrade to accommodate this additional supply. The households not already supplied with VIPs in these areas will be partially accommodated in this phase. Therefore, overall most of the households within Okhahlamba LM will be supplied with basic sanitation by the end of this period.

Long-Term - Eleven to Twenty years: Construction of a gravity feed pipeline from the bulk reservoir at Langkloof to the land reform areas of Waterloo and Kameel Draai, with associated reticulation. A gravity connection into the existing Rookdale, Woodford and Bethany schemes will reduce the demand on the Bergville WTW. The excess capacity generated at the WTW will allow water from Bergville to be pumped to Hambrook and the Greenpoint Complex via Acton Homes which will need a reticulation scheme.

uThukela DM, Imbabazane LM

Medium-Term – Six to Ten years: Completion of both the Amangwe/Loskop scheme and the Ntabamhlope North scheme will occur during this period offering a standpipe level of service to a total of approximately 115,000 people. The households not already supplied with VIPs in these areas will be partially accommodated in this phase.

Long-Term (Eleven to Twenty years): The entire Ntabamhlope South area, except for the Power community, currently has a basic level of service in the form of stand-alone schemes. It is planned to incorporate these schemes into the Ntabamhlope North bulk supply and reticulate to Power during this period.

uThukela DM, Ladysmith LM

Medium-Term – Six to Ten years: A portion of the Driefontein block, north of Ladysmith, is currently served by independent borehole supply schemes. It is planned to extend the Burford scheme into the Compensation and Klipfontein communities. The Driefontein extension, incorporating all the outlying communities around Driefontein, will be developed as stand-alone borehole schemes. The schemes will be designed to accommodate the pressures generated from the future bulk reservoirs. Three of the four Driefontein

extension phases will be constructed during this period. A gravity feed pipeline will be constructed from the Aasvoelkop reservoir to the Mthembu West and East communities with new reticulation networks.

Long-Term (Eleven to Twenty years): The current underutilised capacity at the Ladysmith WTW will be used to supply bulk water to the Driefontein block via a rising main and three large bulk reservoirs located north of Burford, Driefontein and Amahuku. This bulk system will connect into the existing reticulations currently in place and infrastructure constructed in Phase 2 (6 – 10 Yrs). The boreholes currently supplying these schemes will be decommissioned and where possible pumps will be relocated to outlying stand-alone schemes. The fourth phase of the Driefontein extension will be completed during this period.

A gravity pipeline will be constructed from Aasvoelkop reservoir to the Colenso area. This pipeline will connect into the existing bulk infrastructure and the Colenso WTW will be decommissioned. This will improve the quality of service currently experienced in Colenso.

uThukela DM, Umtshezi LM

Long-Term (Eleven to Twenty years): It is planned to supply bulk water to Frere during this period and to construct reticulation and bulk supplies to the Wembezi North area. The gravity pipeline from the Cromley Bank reservoir and the reticulation supplying the "Ganna Hoek" land "Klip Berg" land reform areas will be constructed during this period.

uThukela DM, Indaka LM

It is planned to supply the Waaihoek North area directly from a connection on the Oliphantskop rising main. In addition the Ekuvukeni South area will be supplied via pipelines extending from the Rockcliff reservoir. The uMhlumayo East and Tugela Estates areas will be supplied from the previously constructed uMhlumayo bulks, and the existing package treatment works at Tugela Estates can be decommissioned and utilised elsewhere. These areas will also be supplied with VIPs during this period, possibly extending past the ten years.

Long-Term (Eleven to Twenty years): It is planned to supply the Ekuvukeni North area via a pumped pipeline from the existing reservoirs supplying Ekuvukeni. The Waaihoek Extension will be supplied via a pumped pipeline supplying a new reservoir located above Isoye.

10.5.7 Alternate Resource Options

As discussed in the previous section, Umgeni Water is highly reliant on surface water resources as a raw water source. The Mgeni System is now completely utilised and additional storage in the catchment will offer no additional yield. Augmentation of the Mgeni system resource is now reliant on inter-basin transfers from adjoining catchment areas, most notably the Mooi-Mgeni Transfer Scheme Phase 1 and, with the construction of the Spring Grove Dam, the Mooi-Mgeni Transfer Scheme Phase 2. As alternatives to using surface water as a resource, Umgeni Water is now committed to investigating other diversified resource options for augmenting the system with the intention of implementing viable options. These augmentation options include Wastewater Reuse and Seawater Desalination.

Wastewater Reuse

Umgeni Water has investigated the option of treating domestic sewage from its Darvill Wastewater Treatment Works to potable standards. The proposal would have been to return the treated water back into the distribution system at Umlaas Road. The water could then have been used to augment the supply to the Western Aqueduct (due for completion mid 2018) which will serve the high growth areas along the western corridor of the eThekwini Metropolitan Municipality. A full feasibility study of this scheme was completed in 2014. Aalthough the results of the feasibility study indicate that the scheme is not viable at this stage, Umgeni Water has the intention to investigate this reuse from Darvill to supply the industrial area of Msunduzi.

Seawater Desalination

Umgeni Water has recently completed a large-scale desalination pre-feasibility study. The objective of this study was to investigate the viability of constructing a large scale desalination plant in the eThekwini area as a possible alternative to the proposed uMkhomazi Water Project and the Lower uMkhomazi Bulk Water Supply Scheme.

A detailed feasibility study is now being undertaken by Umgeni Water using a revised approach. The detailed feasibility investigation is considering the option of a 150 Ml/d plant on both the North and South Coasts. The capacity of these plants is based on the capacity of existing and proposed bulk water supply infrastructure in these areas, which will be utilised to convey the potable water from the desalination plants to the various distribution points. eThekwini Metropolitan Municipality, Ugu District Municipality and iLembe District Municipality will be the beneficiaries of this project. The detailed feasibility study for this desalination project was completed in March 2015.

Locations for the plants have now been established on both the North and South Coasts and the detailed feasibility study of each plant is underway. Components of the study include, siting of the inlet and outfall and systems to link these to the plants, water quality monitoring to inform pre-treatment techniques, potable water supply infrastructure, economic and financial analysis and institutional arrangements that would be appropriate for commissioning the project.

10.5.8 Research to assess the impacts of climate change on water security

Climate change risks need to be considered to make allowances in appropriate planning and design, particularly given the significant costs and long planning period required for major infrastructure investments such as dams, pipelines, structures, buildings and transport infrastructure. Umgeni Water has largely been at the forefront of the consideration of potential climate change impacts and incorporating these into operations planning. There have, however, been a number of developments since the completion of work Umgeni Water first started in 2006, which provide the basis for further investigations.

DWS 2013 National Climate Change Strategy

The Strategy included the modelling of the potential impacts of climate change using five regional downscaled climate models in four pilot catchments. The conclusion for the East Coast from Pongola to Mzimkulu, was that there would likely be an increase in rainfall in the eastern part of the Zone with a potential increase in yields, but that more frequent and more extreme flooding is likely to occur. There could also be increased dam and evaporation losses and consideration should be given to changing dam operating rules to address potential risks due to flooding and consequential higher sediment loads.

Climate Change study development, National Treasury 2013

National Treasury commissioned a study by the United National University – World Institute for Development Economics to investigate the potential economic impacts of climate change through a number of impact channels including water supply and road infrastructure. The runoff scenarios were used look at the potential impacts on water supply in each of the 19 WMAs.

The majority of models showing an increase in runoff in the catchments along the east coast of South Africa. Some models showed very high impacts, likely to be accompanied by significant increases in the risk of flooding. There are, however, still a handful of models that show the potential for drying in these catchments. The results reflect the impacts on catchment runoff and show a general increase in the ability to supply future water demands in KwaZulu-Natal, although there is potential for a reduction in the uThukela catchment.

Long Term Adaptation Strategy (LTAS), DEA

This DEA flagship LTAS work is aimed at assessing the likely impacts of climate change on multiple sectors in South Africa as well as developing long term adaptation strategies. Phase 1 and 2 are complete and Phase 3 is scheduled to commence in July 2014. The objective is to focus on a few selected case studies to provide more detailed assessments of the potential impacts and adaptation options.

Climate Change in Water Resources Modelling, DWS 2013

The outcome of the DWS convened workshop on incorporating climate change and invasive alien plants into large scale water resources planning in South Africa was that climate change represents an added level of uncertainty in the modelling of water resources system in support of large scale planning in South Africa. Additional work and case studies are required to fully develop and operationalize the new approaches. Equally important was the consideration of how these results could best be interpreted and presented to water resource planners and decision makers.

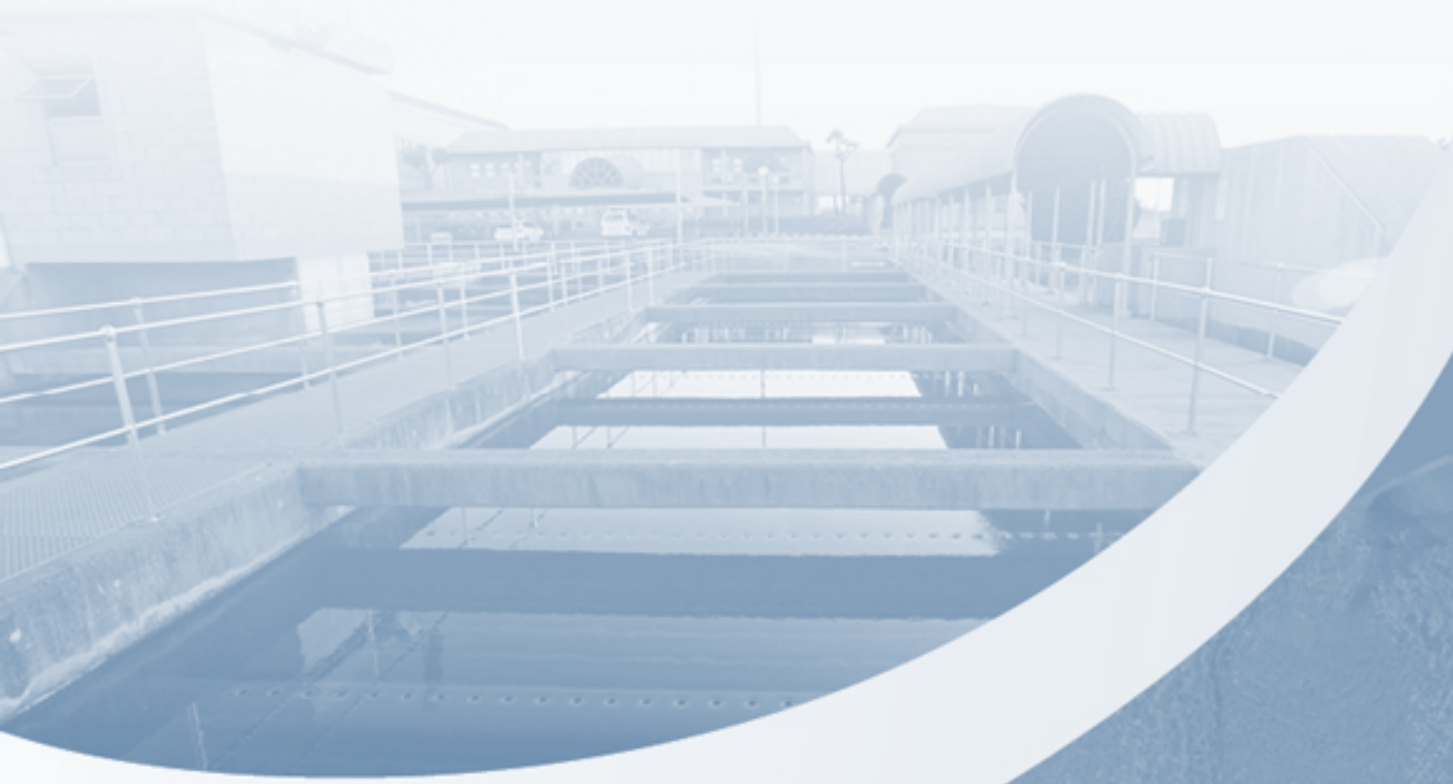
Future work on Climate Change Impacts for Umgeni Water

Umgeni Water is continuing to keep a watching brief on the impact of climate change on water resources, as well as look at other aspect of climate change. Plan are being formulated to update the research report.

10.6 Management Arrangements

Umgeni Water operates the majority of the water resources infrastructure it uses on behalf of the Department of Water and Sanitation (as per **Table 10.1**). This is currently undertaken with a signed agency agreement that Umgeni Water concluded with DWS in 2013.

Chapter 11: Bulk Potable Water Supply



Contents

11.1 Water Treatment Works Capacity, Condition and Water Quality Produced

Umgeni Water operates fourteen bulk water treatment works, for which the works capacities and utilisation are shown in **Figures 11.1** and **11.2** respectively.

In addition the water quality produced per water treatment works is shown in **Table 11.1.**

Figure 11.1: Water Treatment Works Design Capacity (Ml/d).

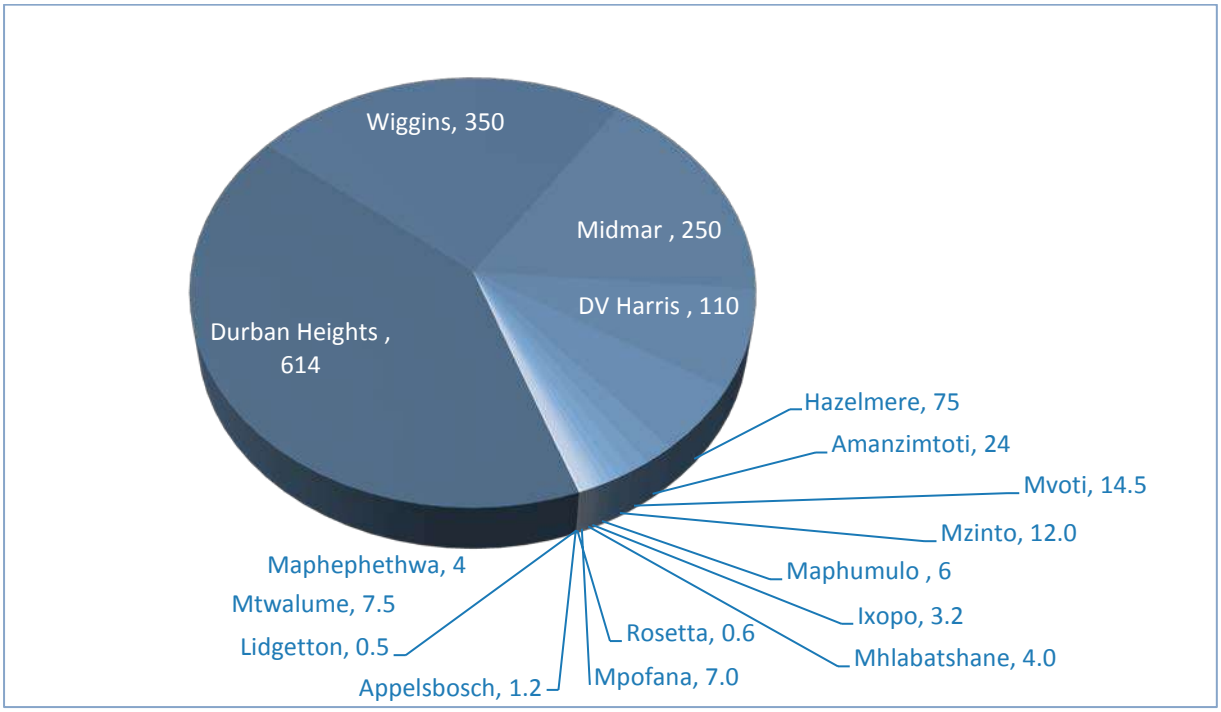
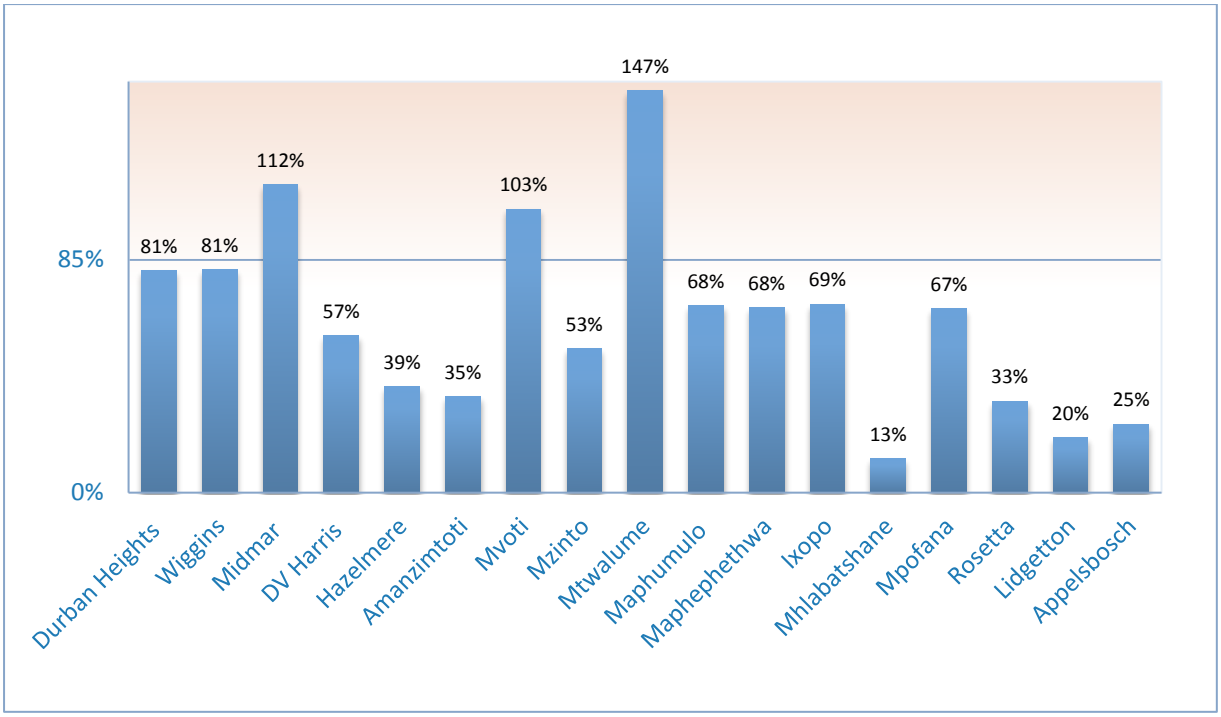


Figure 11.2: Water Treatment Works Capacity Utilisation.



Twenty one (21), comprising ten (10) smaller water treatment works and eleven (11) borehole schemes were managed on behalf of the iLembe District Municipality (IDM). These schemes were handed over to the IDM on the 9th of October 2015. Ngcebo WTW was also handed over to the IDM.

In addition four (4) water treatment works are managed on behalf of uMgungundlovu District Municipality and were acquired in August 2015. These include, Mpofana, Appelsbosch, Lidgetton and Rosetta Water Treatment Works.

Table 11.1: Water quality produced per water supply system for the period (July 2015 – December 2015)

Water Supply System	Average Daily Volume Treated (Ml/d)	% Total Supply Volume	Per cent Compliance with SANS 241:2015				
			Acute Health Microbiological	Acute Health Chemical	Chronic Health Chemical	Operational	Aesthetic
Durban Heights WTW	494.44	41.39	100.00	100.00	100.00	100.00	100.00
Wiggins WTW	282.51	23.59	100.00	100.00	100.00	98.84	100.00
Midmar Water Supply System	266.79	16.85	100.00	100.00	100.00	99.85	100.00
DV Harris Water Supply System	83.82	7.41	100.00	100.00	100.00	99.80	100.00
Hazelmere Water Supply System	23.41	5.06	100.00	100.00	100.00	99.73	100.00
Amanzimtoti Water Supply System	72.86	1.62	99.36	100.00	100.00	99.74	99.82
Mvoti Water Supply System	11.01	0.98	100.00	100.00	99.36	94.80	100.00
Mzinto WTW	10.49	0.81	100.00	100.00	100.00	100.00	100.00
Mtwalume WTW	10.92	0.51	100.00	100.00	100.00	100.00	100.00
Maphumulo Water Supply System	6.0	0.40	100.00	100.00	100.00	96.35	100.00
Maphephethwa WTW	2.70	0.27	100.00	100.00	100.00	100.00	100.00
Ixopo WTW	2.24	0.22	100.00	100.00	100.00	95.86	95.21
Mhlabatshane WTW	0.5	0.27	100.00	N/A	100.00	94.87	100.00
uMgungundlovu Schemes	9.3	0.63	99.01	100.00	100.00	90.13	98.75

11.2 Summary of Interventions to address Capacity and Water Quality Constraints

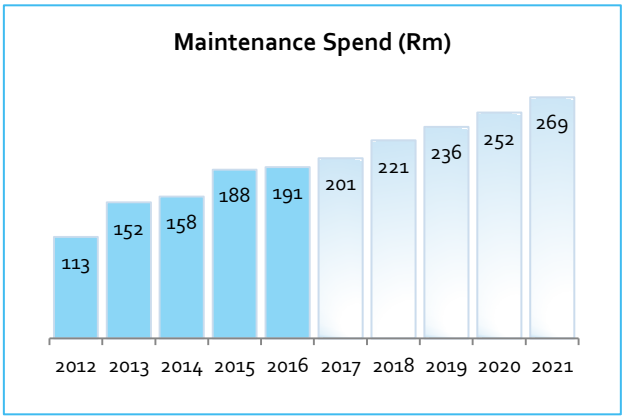
Several works, as shown in **Figure 11.2** are currently operated above their design capacity in response to demands and this also impacts on water quality. Specific interventions to address this in the five-Year Corporate Plan period including infrastructure plans are:

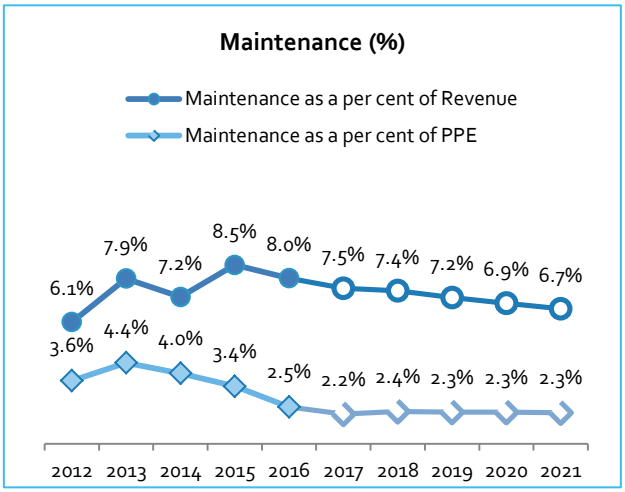
- **Midmar WTW:** A works upgrade is currently underway.
- **Mvoti WTW:** The Lower Thukela BWSS will replace this works by June 2016. As a short-term solution, the refurbishment of the filters was completed and a 2 Ml/d package plant installed.
- **Mtwalume WTW:** Operational and process enhancements will alleviate constraints. The load on the Mtwalume system will be shed to the South Coast Pipeline when the Pennington Link is completed by Ugu DM. The long-term solution to address the Mtwalume capacity constraints is the extension of the South Coast Pipeline and related system upgrades.
- **Ixopo System**: Umgeni Water provides bulk potable water to the town of Ixopo from a 2.8 Ml/day Water Treatment Plant (WTP), supplemented with a 0.4 Ml/day borehole. The Plant filtration has recently been upgraded to Pressure Filters. An additional source of raw water has been commissioned to cater for drought period.

11.3 Asset Condition, Maintenance and Management

Umgeni Water remains highly committed to meeting all obligations of its Bulk Supply Agreements and conducts regular maintenance and inspection of all its assets as an intrinsic part of continued operations management. This comprises planned maintenance, which is inclusive of preventative maintenance, repairs, redesign and modifications, which are complemented by on-going unplanned, reactive and corrective maintenance in line with an asset management implementation plan for the year. The asset management strategy further drives the focus of condition assessments of the various components of key strategic and critical infrastructure to its various sub-components i.e. civil, mechanical, electrical, instrumentation and control.

Figure 11.3: Maintenance spend current and planned (Rm) and spend (%) in respect of Revenue and PPE





A key output of these assessments is establishment of the condition status of assets. This status is vital in determining the useful life and future investments required to maintain our level of service to all our customers. The intention is to ensure there are no assets that pose significant risk to supply and there will be no major interruptions to business over the next five years and beyond.

Umgeni Water continues to invest on asset maintenance. The average expenditure planned for this period is 2.3% of PPE and 7% of revenue, based on assessments conducted over the past year. There are no assets that pose significant risk to supply and the entity envisages no major interruptions to its business over the next five years and beyond.

Water Loss Management and Metering

Umgeni Water has successfully maintained non-revenue water below 5% over the years. This has been a result of a metering strategy which focuses on metering all critical nodes and monitoring of meter accuracy. This initiative will continue through meters installed by Umgeni Water at various critical points in its systems.

For raw and potable water applications this includes meters at abstraction points, treatment works inflow, treatment works outflow, within the distribution system and at the point of sale. These provide value information for abstraction, storage monitoring and adequacy, water balancing purposes, computation of water loss between the various points and water loss management, distribution control sales and billing purposes.

In addition, measurement provides information for on-going operations and efficiency improvements including unit processes management, ensuring correct filter backwashing rates, pump efficiencies, pipeline operation and other information to inform asset management.

Equally for wastewater applications meters at influent and effluent points provide valuable information for assessing plant loading, process control management, storage and treatment, including storm dam, billing and discharge information. On-going operational efficiency improvements will be made including unit processes, pump efficiencies and asset management.

Meter Accuracy Testing and Replacement

Meters utilised by Umgeni Water for the purposes of trade in raw and potable water, will be tested at intervals prescribed by regulation or at agreed frequencies as stipulated in Contractual Agreements. Interventions for meter verification and testing have been identified. All testing is followed by an analysis which will be undertaken according to a recognised testing protocol and procedure and interventions to provide assurance of meter accuracy. A prioritised meter replacement programme is instituted for meters older than five-years and /or as per the asset renewal requirements of the Bulk Supply Agreement with customers.

Planned Technology to Improve Metering Accuracy and Water Loss Management

Umgeni Water is planning to leverage technology - spatial water balance - to simplify identification and make further gains in water loss management. Using GIS, spatial meters data is currently being verified and will be followed by extensive capturing of other network infrastructure spatial attributes.

To improve the accuracy and frequency of meter reading, Umgeni water is investigating the use Automated Meter Reading (AMR). This will result in more efficient and almost real time meter reading and metering data that will speed up fault finding and water loss identification.

11.4 Water Quality Management Plan

Umgeni Water is committed to providing all its customers with safe potable water which is suitable for lifetime consumption as required by the legislation. This is achieved through implementing a rigorous water quality management programme throughout the supply system. This includes carefully planned monitoring programmes, auditing, compliance reporting, water quality assessments – conducted using a catchment to consumer approach and the implementation of Water Safety Plans. This in turn ensures that all existing Blue Drop certifications for bulk sites are maintained, whilst the organisation is committed in supporting municipalities to ensure that all systems can be progressively improved toward joint Blue Drop Certification.

In relation to this and to ensure supply sustainability, Umgeni Water will enhance its support to municipalities over this period, including through targeted programmes extending to un-served areas, to ensure municipality supply systems deliver safe water quality that will ultimately benefit all end users and vulnerable communities.

Monitoring programmes will be reviewed each year. This to be done in accordance with: legislative requirements, customer bulk supply agreements, process requirements, and to ensure that previously identified water quality risks in the system can be mitigated. Umgeni Water continually reviews the water quality risk associated with abstraction, conveyance, treatment and bulk distribution to ensure the effectiveness of controls and assurance of water quality. All operational sites are equipped with a recently revised Incident Management Protocol aligned to SANS 241: Drinking Water specification.

Sampling and analysis is currently undertaken in accordance with UW ISO 9001 certified monitoring programme and SANAS 17025 Accredited laboratory. UW will endeavour to maintain its accreditation status with regards to monitoring and analysis.

In 2015/2016, Umgeni Water assessed risks by calculating compliance of the water supply system (water works together with the reservoirs) with the revised South African Drinking Water Specification - SANS 241: 2015 and will continue to use this water quality compliance standard for 2016/2017. The calculation and reporting of potable water quality compliance is in accordance with the requirements of the standard. Thus, the performance is reported against five risk categories, namely:
(1) Acute Health Microbiological,
(2) Acute Health Chemical,
(3) Chronic Health Chemical,
(4) Aesthetic, and
(5) Operational categories.

Information on water quality performance will be conveyed as per communication plan to all customers, stakeholders and legislative decision makers.

Blue Drop Certification in KZN Systems

The KZN Province has fourteen (14) Water Services Authorities providing water supply through 209 systems. Of the 209 systems, 67 are operated by water utilities: Umgeni Water (31), Umhlathuze Water (2) and uThukela Water Company (34).

The provincial Blue Drop score decreased from 92.1% in 2012 to 86.1% in 2014 (by 6%). Furthermore 61 systems have a Blue Drop score below 50% compared to 19 in 2012, while 18 water supply systems are in crisis achieving scores below 31%. The Blue Drop certified systems halved from 16 to 8. **Table 11.10** shows the Provincial performance trends for the period 2009 to 2014.

Table 11.10: Provincial performance trends from 2009 to 2014 (source DWS)

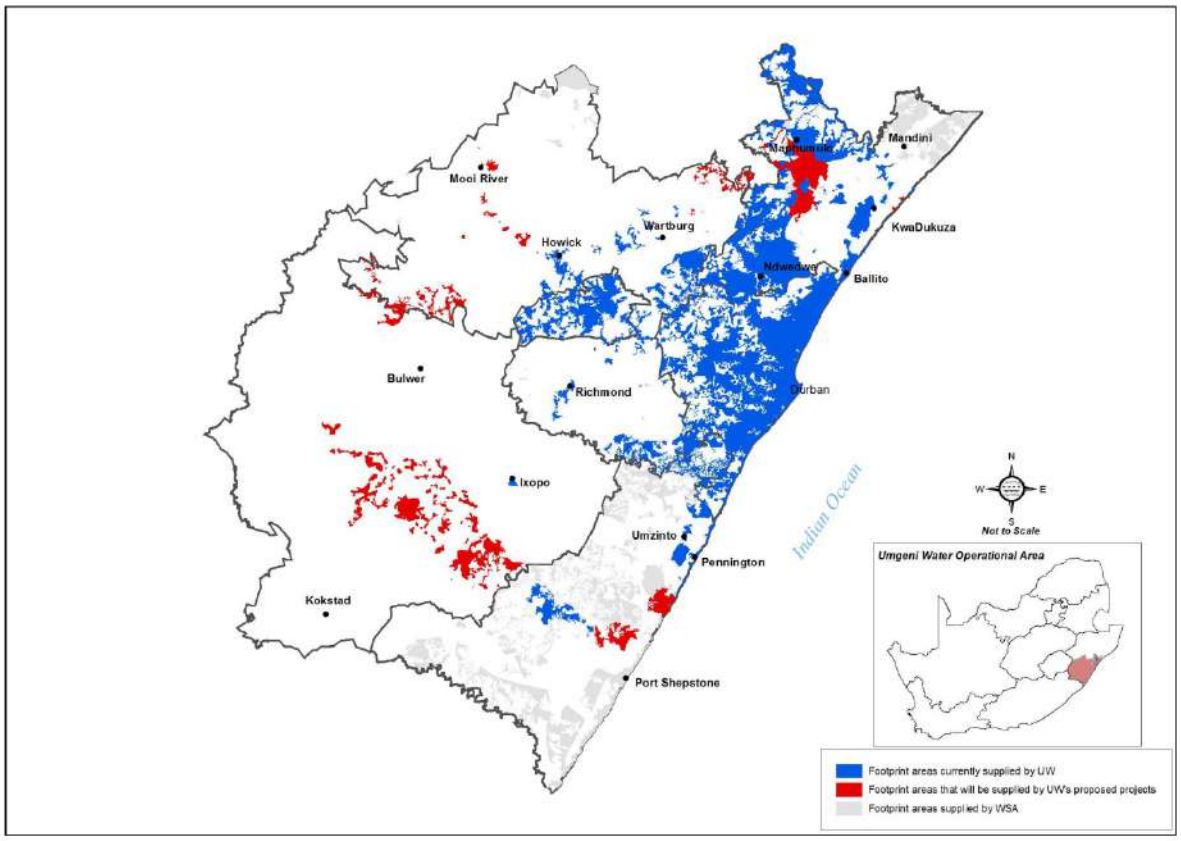
Water Services Authority	2009	2010	2011	2012	2014
Msunduzi Local Municipality	N/A	73%	96%	95%	98%
eThekwini Metropolitan Municipality	97%	96%	96%	99%	96%
uMgungundlovu District Municipality	21%	65%	56%	92%	90%
City of uMhlathuze Local Municipality	N/A	80%	89%	93%	90%
Newcastle Local Municipality	71%	75%	76%	97%	89%
iLembe District Municipality	100%	51%	86%	88%	87%
uMzinyathi District Municipality	80%	66%	70%	93%	78%
uThungulu District Municipality	78%	37%	71%	73%	74%
Ugu District Municipality	94%	87%	93%	93%	66%
Harry Gwala District Municipality	34%	54%	40%	69%	63%
Amajuba District Municipality	68%	56%	84%	83%	58%
uMkhanyakude District Municipality	N/A	22%	32%	78%	58%
Zululand District Municipality	92%	60%	72%	83%	51%
uThukela District Municipality	55%	54%	55%	57%	35%

11.5 Demand of Major Consumers by Scheme

11.5.1 Potable Water Quantity Demand

Umgeni Water's current supply footprint is shown as in **Figure 11.3**. The figure also shows future supply areas discussed in Section 11.2.3.

Figure 11.3: Footprint areas of Umgeni Water current supply together with proposed future expansion areas



Umgeni Water continues to develop water sales volume projections in consultation with its major consumers. This is undertaken annually to enable Umgeni Water to project revenues and future capital expenditure. For areas within the existing supply footprint area, the bulk water supply agreements require the water services authorities to provide Umgeni Water with projected demands at set intervals for each sales point, based on expected growth over the contract period. The two major urban areas, the eThekwini Metropolitan Municipality and the Msunduzi Local Municipality, currently account for approximately 90 % of the water supplied by Umgeni Water. Consequently, these customers remain the main drivers of demand within Umgeni Water's operational area.

Descriptions of Umgeni Water's overall short and long-term sales forecast are provided in the section that follows, as well as for the Water Service Authorities currently served by the organisation. These forecasts apply to the current supply footprint area.

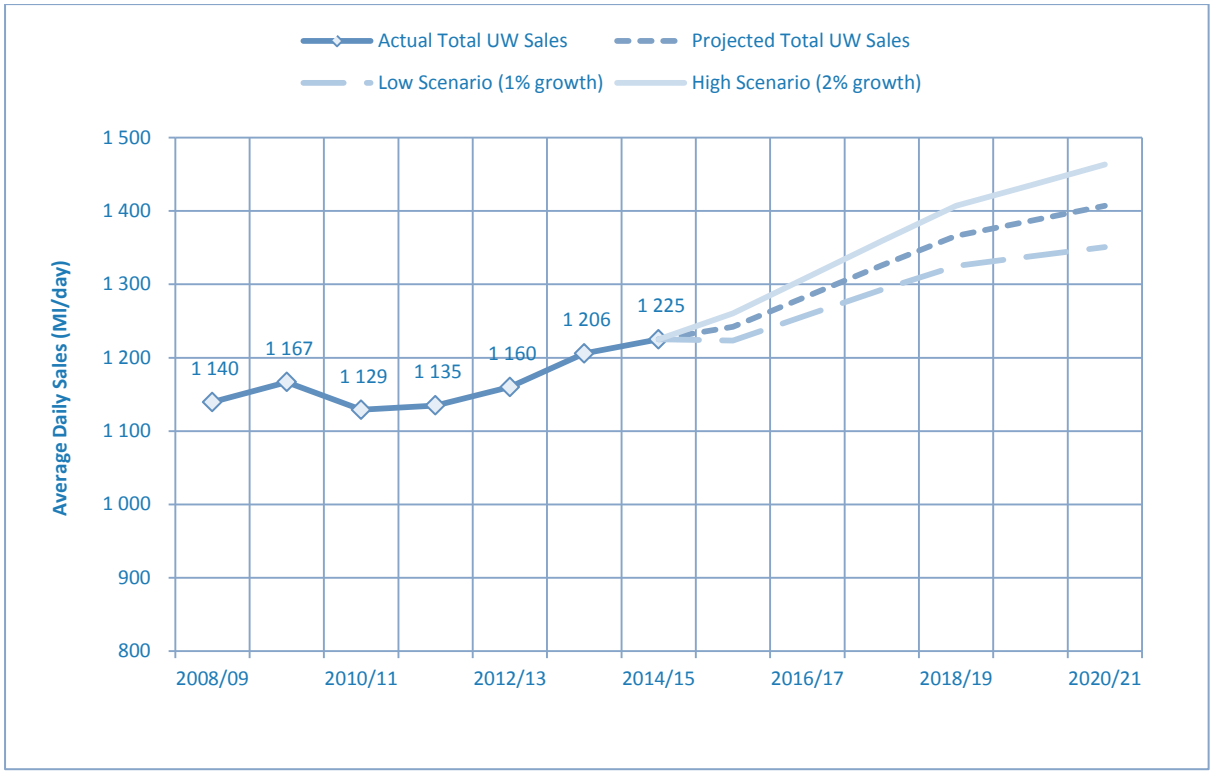
11.5.2 Umgeni Water Short-Term Bulk Sales Forecast

Growth in water demands is being tempered by the mandatory restrictions that are being enforced due to the drought and is not expected to be significant over the next few years.

Regarding customer water loss management, eThekwini Metropolitan Municipality did not achieve the same level of success with its initiatives in the past year compared to the prior year, whilst initiatives by the Msunduzi Local Municipality are expected to show benefits in the coming year.

The Umgeni Water short-term bulk water sales forecast is depicted in **Figure 11.4**. For 2016/2017, the estimate is 1 284 Ml/day, primarily determined by information provided by eThekwini Metropolitan Municipality.

Figure 11.4: Umgeni Water's Historic and Projected Total Sales Volumes



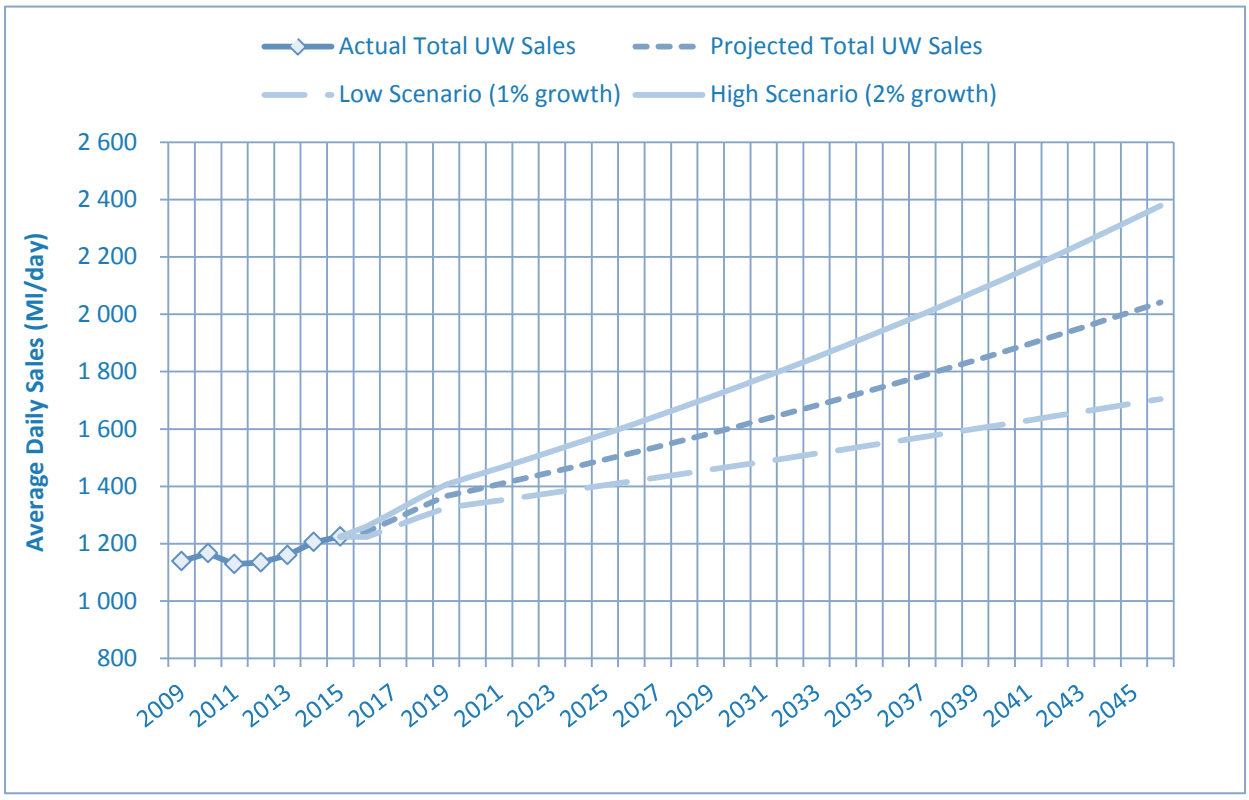
11.5.3 Umgeni Water Long-Term Bulk Sales Forecast

The 30-year long-term sales forecast for Umgeni Water's supply area, **Figure 11.5**, has been based on the anticipated natural growth from the existing supply system, plus bulk sales from new supply infrastructure that would extend the area supplied. The base projection has been developed from the short-term forecasts and then extended at a compounded 1.5% per annum growth rate until 2044/2045. This growth rate has been agreed to by the major water users in the region and is considered acceptable for this long-term forecast as it closely matches the forecast that was independently derived as part of the "Water Reconciliation Strategy Study for the KwaZulu-Natal Coastal Metropolitan Areas" completed by the Department of Water and Sanitation, which used a population projection technique to estimate demand forecasts.

The drop in sales in the 2021/2022 and 2025/2026 financial years, as shown **Figure 11.5** is as a result of the anticipated commissioning (by eThekwini Metropolitan Municipality) of the Northern and KwaMashu wastewater reuse plants, which are anticipated to produce 50 Ml/d and 60 Ml/d respectively. These plants intend to feed potable water directly into their bulk supply network, thereby reducing the requirement from Umgeni Water.

The long-term sales projections, present an average view and fluctuations around the mean values can be substantial, giving rise to localised infrastructure or water resources constraints. Sales are monitored on a regular basis to assess actual demand patterns.

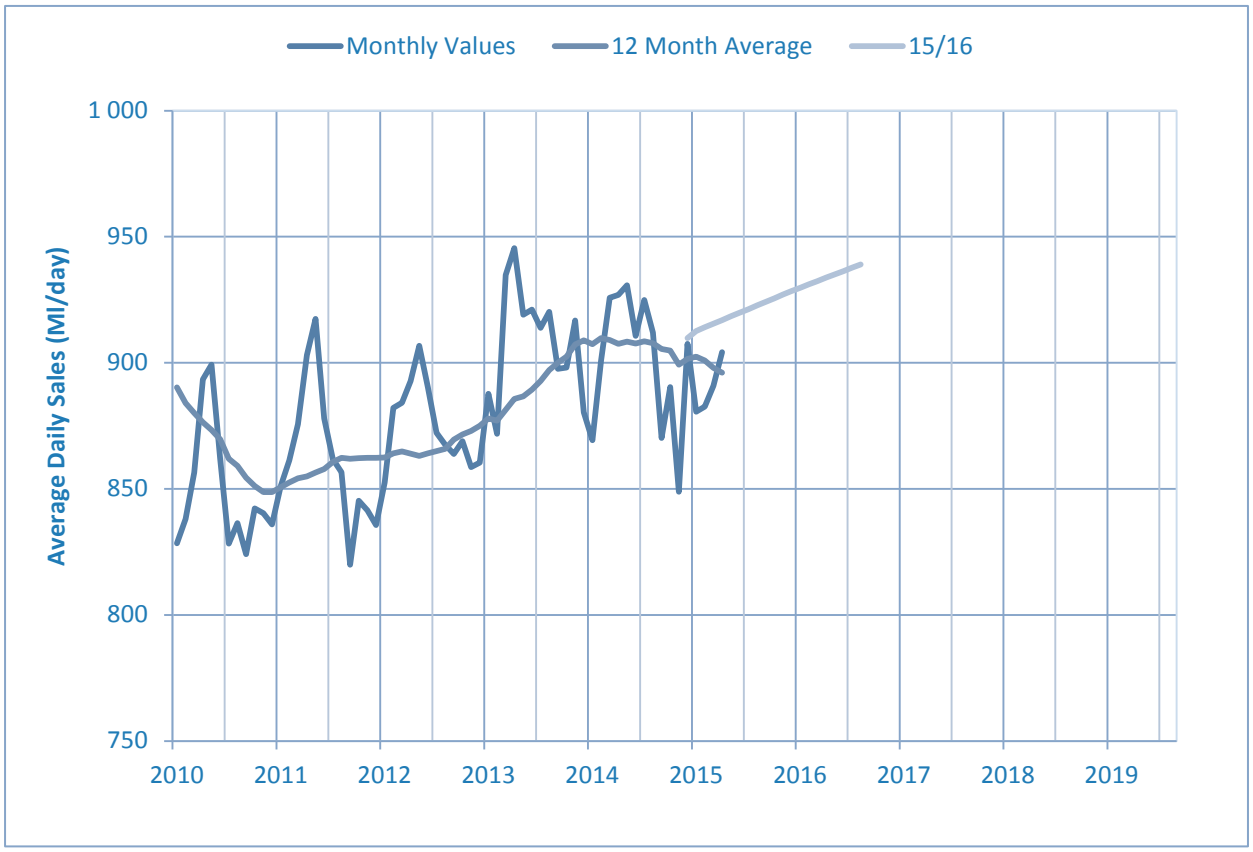
Figure 11.5: Long-Term Water Sales Projections, 2043/2044



11.6.1 eThekwini Metropolitan Municipality: Short-Term Bulk Sales Forecast

The historical sales and future demand projection for eThekwini Municipality are presented **Figure 11.6** and is based on information provided by eThekwini MM.

Figure 11.6: Total Daily Sales to eThekwini Metropolitan Municipality



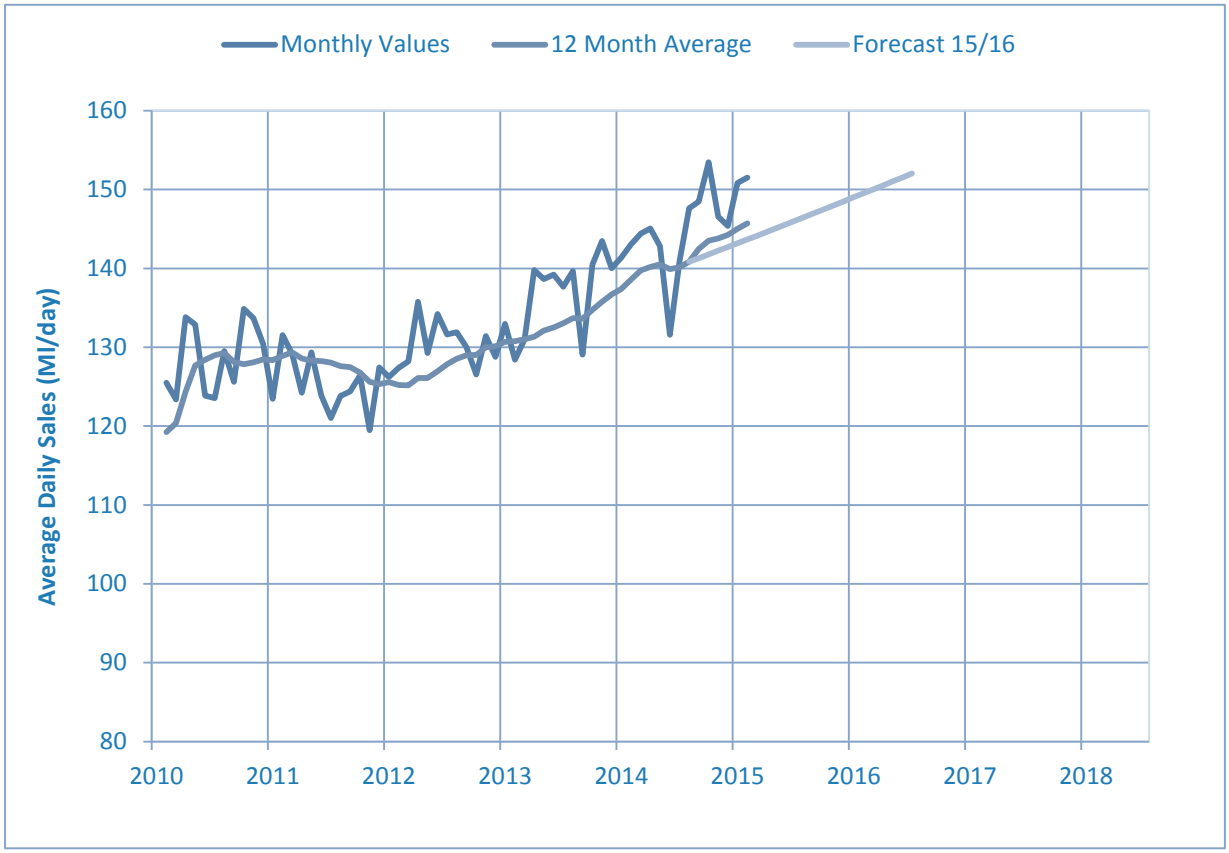
11.5.4 Msunduzi Local Municipality: Short-Term Bulk Sales Forecast

The projection for Msunduzi Local Municipality is shown in **Figure 11.7.** The projected demands were determined in consultation with the municipality and it was agreed that the demand will increase at a rate of 2% for the short term forecast. The following factors influenced this short term forecast:

There are developments for medium to low cost housing that will result in an increase in demand within the Vulindlela areas.

The Msunduzi Municipality is implementing water demand management (WDM) initiatives within the Vulindlela area. It is estimated that savings from these initiatives will offset the growth in sales in the near future for the area.

Figure 11.7: Total Daily Sales to Msunduzi Local Municipality



11.5.5 uMgungundlovu District Municipality: Short-Term Bulk Sales Forecast

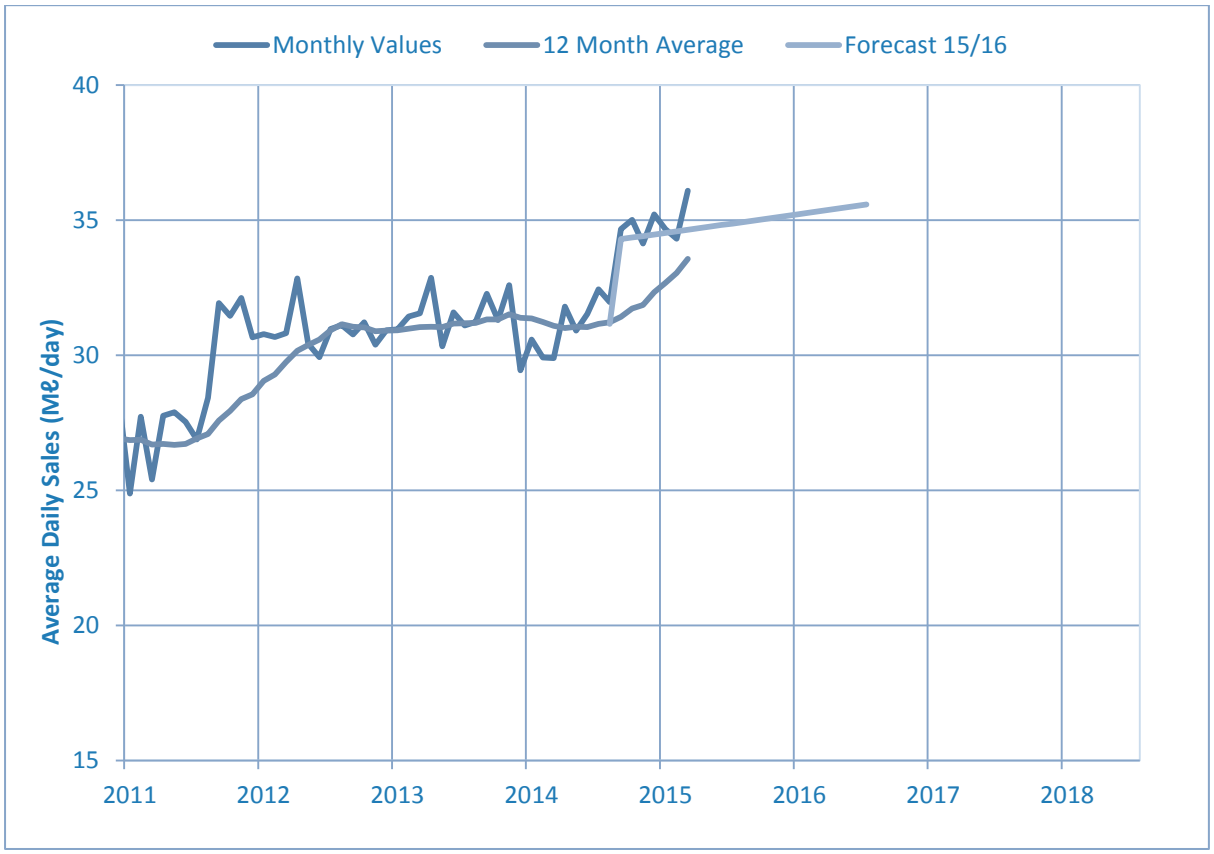
The projection for uMgungundlovu District Municipality is shown in **Figure 11.8.** The projected demands were determined in consultation with the municipality and it was agreed that the demand would increase at a rate of 2% for the short term forecast.

The expected demand for 2016/2017 is 48 Ml/day and in 2017/2018 a demand of 51 Ml/day is projected. The following significant factors influenced this short term forecast:

- Gradual implementation of the Greater Eston Bulk Water Supply Scheme.
- Khayelisha housing development.
- Expected commercial and industrial growth in Camperdown.

The stepped forecast represents sales for the Richmond area.

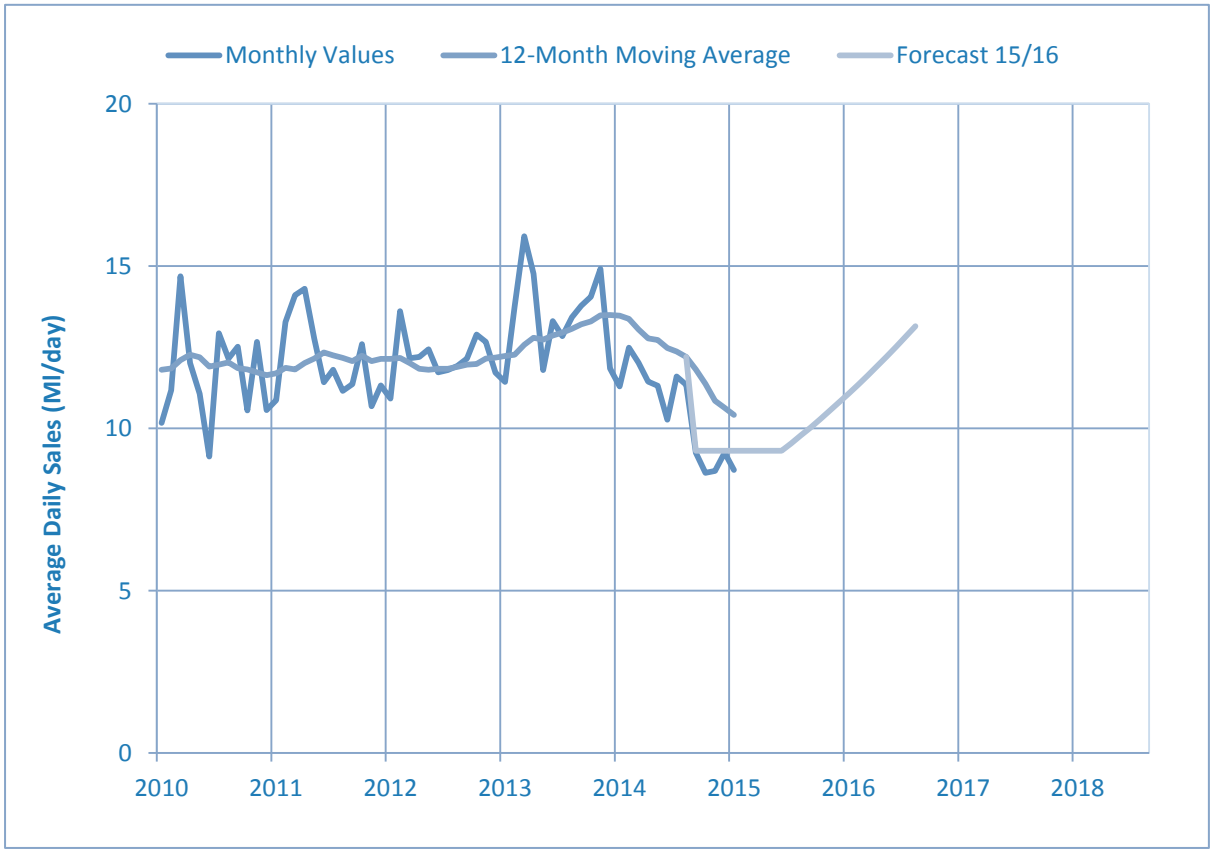
Figure 11.8: Total Daily Sales to uMgungundlovu District Municipality



11.5.6 iLembe District Municipality: Short-Term Bulk Sales Forecast

The historical and future predicted increase in demand for Sembcorp Siza Water is presented in **Figure 11.9.** The demand for Sembcorp Siza Water is expected to be 11.5 Ml/day in 2016/2017 and 13.4 Ml/day in 2017/2018.

Figure 11.9: Total Daily Sales to Sembcorp Siza Water



Sales to iLembe District Municipality can be described as follows:

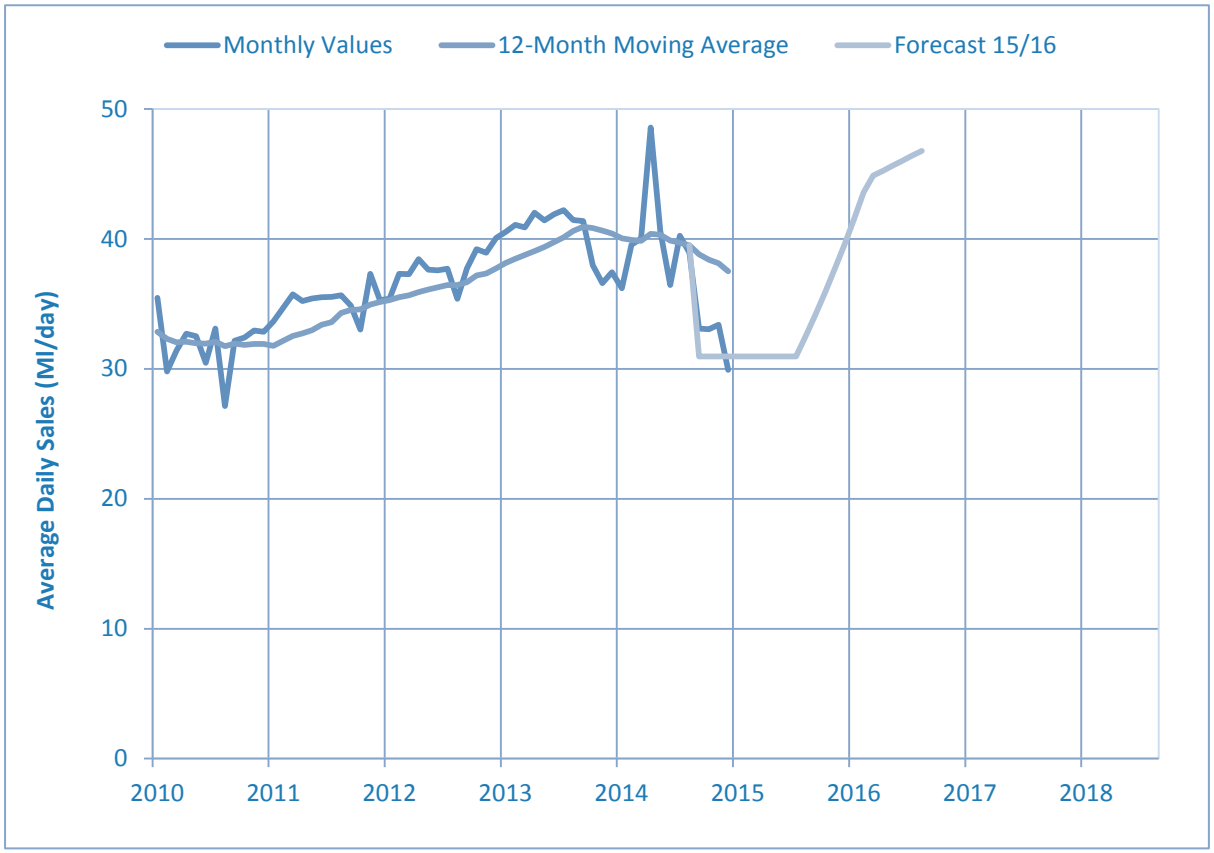
- Sales to the Coastal Area of iLembe through Sembcorp Siza Water.
- Sales to the Coastal Area of iLembe through ILembe District Municipality.
- Sales to iLembe District Municipality through schemes owned by the municipality and managed by Umgeni Water.

Due to the drought conditions that currently prevail over this region, mandatory restrictions have been instituted. As a result, demand in 2015 and up to May 2016 has been restricted to 40% of the three month average demand up to August 2014.

After May 2016, it is assumed that the restrictions will be lifted when the Lower Thukela Scheme is commissioned, thereby reducing the risk of declining resources. Once the restrictions are lifted, it is anticipated that demand will reach the pre-drought demands over a year and thereafter organic growth of about 2% to existing supply areas is expected.

Historical and predicted future sales to iLembe District Municipality are presented in **Figure 11.10.**

Figure 11.10: Total Daily Sales to iLembe District Municipality



11.5.7 Ugu District Municipality: Short-Term Bulk Sales Forecast

Growth in total sales to the Ugu District Municipality has slowed significantly since the last financial year. This is due to the drought experienced over the past ten months.

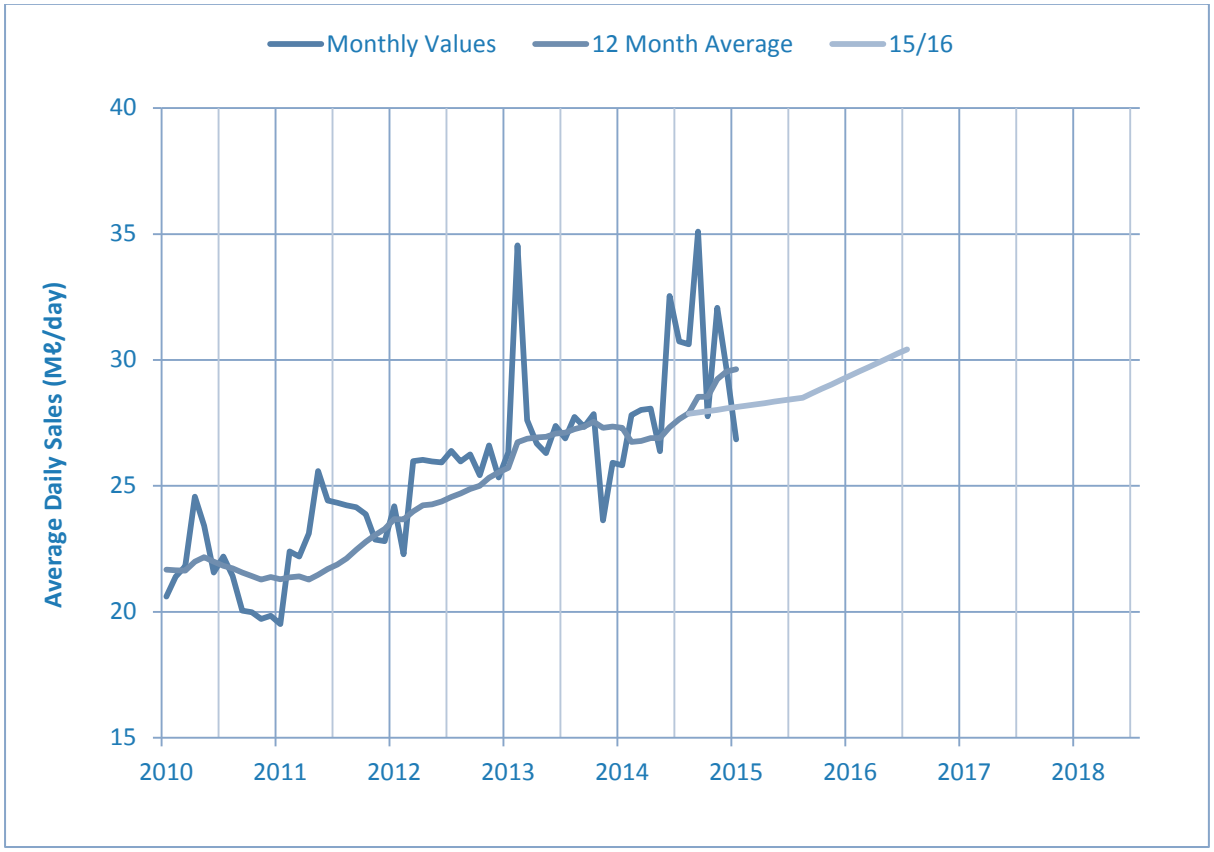
The South Coast Pipeline (SCP-2a) and Mpambanyoni River Emergency Scheme assisted in ensuring continued supply to the Middle South Coast Region.

The sales growth projection is shown in **Figure 11.11** and is based on information provided by Ugu District Municipality.

The Ugu District Municipality has embarked on a number of water demand management initiatives, but these have had limited success. These initiatives are therefore not expected to have a major impact on the projected water demand growth rates.

Growth is constrained by the available supply in the short term and sales growth will be realised once the South Coast Pipeline (SCP) Phase 2b is commissioned.

Figure 11.11: Total Daily Sales to Ugu District Municipality



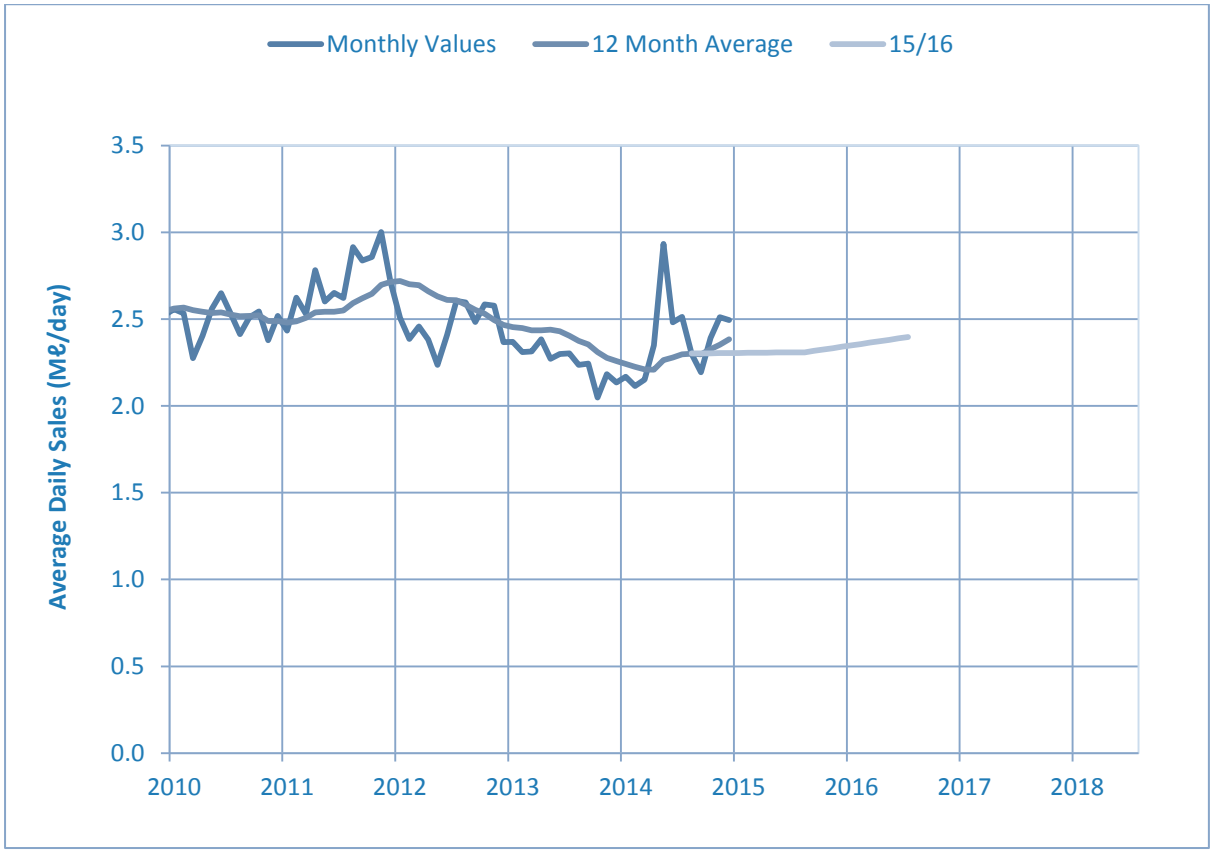
11.5.8 Harry Gwala District Municipality: Short-Term Bulk Sales Forecast

The Ixopo WTP supplies the Greater Ixopo area. Average daily sales from the WTP currently amount to approximately 2.3 Ml/day.

The sales growth projection is shown in **Figure 11.12** and is based on discussions with the municipality.

Currently the projected growth is zero. There is proposed development within the town of Ixopo and sales will increase after June 2016 once the new development is commissioned.

Figure 11.12: Total Daily Sales to Harry Gwala District Municipality



11.6 Bulk Water Supply Infrastructure Constraints and Requirements

This section describes the major constraints within Umgeni Water's bulk supply infrastructure and the proposed infrastructure development to overcome these and provide capacity required for expansion of the supply footprint. The proposed water supply infrastructure links directly to the proposed water resource infrastructure discussed in Chapter 10.

11.6.1 Mgeni System

In the past years the eThekwini Metropolitan Municipality has put considerable effort into optimising the operation of its distribution systems that are served by the Lower Mgeni System. This has led to the municipality implementing new infrastructure to undertake load shifting. The municipality's western aqueduct development, expected to be fully commissioned in mid-2018, will be the most significant of these load-shifting operations. Areas currently being served under pumping from the Lower Mgeni System, namely, from Durban Heights Water Treatment Works, will be transferred to the Upper Mgeni System, to be served under gravity from Midmar Water Treatment Works via the western aqueduct.

eThekwini Metropolitan Municipality further plans to link the western aqueduct to its northern aqueduct thereby extending this supply to the municipality's northern areas as far as the Dube Trade Port development zone. This measure will free up additional capacity within the Lower Mgeni System to be redirected elsewhere within the Municipality, but places considerable additional load on the Upper Mgeni System, including the '57, '61 and '251 Pipeline systems, Midmar Water Treatment Works, and ultimately on the water resources available from Midmar Dam.

Augmentation of the '57 Pipeline was undertaken in the past period in order to provide capacity in this portion of the supply network to meet the required demands of the western aqueduct. Phase 2 of the Mooi-Mgeni Transfer Scheme (MMTS-2) was also commissioned at the end of 2015, and the 99% assured yield of the Mgeni System at Midmar Dam has increased from 322.5 Ml/d to 476.2 Ml/d. However, the increased yield at Midmar Dam will be insufficient to support the imposition of the proposed full Western Aqueduct load shift for any significant period of time, and further water resource developments will be required.

The option being investigated, jointly by DWS and Umgeni Water, is the uMkhomazi Water Project which will transfer raw water from the uMkhomazi River to a Water Treatment Works (WTW) in the adjacent catchment. Potable water from this WTW will then be supplied to the Umlaas Road area to feed into the '57 Pipeline and subsequently into the western aqueduct. The uMkhomazi Water Project is currently in detailed feasibility stage. The earliest date envisaged for the scheme to be completed and operational is 2030.

The yield from Midmar Dam is fixed and all future bulk infrastructure upgrades within the Upper Mgeni System (Midmar Water Treatment Works - Umlaas Road) are limited to the dam's water resources capacity. The water available to meet demands downstream of Umlaas Road Reservoir is therefore limited until such time as the uMkhomazi Water Project is commissioned. The available water will continue to 'decrease' over time as the demands upstream of the Umlaas Road Reservoir increase.

To meet the anticipated load shift in demand by eThekwini Metropolitan Municipality from the Lower Mgeni System to the Upper Mgeni System, the following Umgeni Water infrastructure projects are required:

- Augmentation of the '61 Pipeline from Richmond offtake to Umlaas Road, which was commissioned in 2015, and
- Upgrade of Midmar Water Treatment Works, which has commenced.

Another major infrastructure development required to address capacity constraints is the uMshwathi Bulk Water Supply Scheme. This scheme includes the augmentation of the existing '69 Pipeline (Claridge to Wartburg), an increase in the capacity of Wartburg Reservoir and upgrade of the Wartburg Pump Station. In addition, an upgrade of the Bruyns Hill Pump Station, pipeline and Reservoir is needed. The final phase of the uMshwathi Bulk Water Supply Scheme will be to extend the system to the rural areas of Efaye, Ozwathini and Ndwedwe. The uMshwathi Bulk Water Supply Scheme development has commenced and is expected to be commissioned by 2018.

11.6.2 South Coast System

The water resource constraint at Nungwane Dam and the limited capacity of the Amanzimtoti Water Treatment Works, has made it necessary to augment supply to areas downstream of Amanzimtoti. This supply is provided by the Wiggins Water Treatment Works via the South Coast Augmentation Pipeline and should have sufficient capacity to meet the medium-term demands of Amanzimtoti and the South Coast Pipeline. Longer term options include either a new regional bulk water supply system needs on the lower reaches of the uMkhomazi River or a large scale desalination plant.

Hydraulic analysis has confirmed that the South Coast Augmentation Pipeline, together with the South Coast Augmentation Booster Pump Station Umgeni Water recently constructed has adequate capacity to meet current and projected demands up to the year 2021.

The main issue that needs to be addressed in this region is the continued reliance on the already stressed Lower Mgeni System as the primary water source for this region. The Amanzimtoti Water Treatment Works will thus need to continue to operate together with the South Coast Augmentation Pipeline in order to meet demands until a long-term solution is in place.

Umgeni Water also recently implemented Phase 2a of the South Coast Pipeline (SCP-2a), which will partially relieve the demand of the Umzinto Water Treatment Works. This will allow the capacity gained to be utilised for growth further inland. In addition, Umgeni Water has also implemented a new link from Scottburgh South Reservoir, via Ellingham Reservoir, to Umzinto Water Treatment Works to mitigate the risk of non-supply during dry periods and to meet future increases in water demand from the Umzinto Water Treatment Works. This link provides an additional 4.5 Ml/d to augment the supply from the Umzinto Water Treatment Works.

The demand in the area immediately south of Mtwalume, under the jurisdiction of Ugu District Municipality, has recently increased significantly. This has placed excessive stress on the Mtwalume Water Treatment Works. The development plans for the Upper and Middle South Coast regions is outlined below. This plan utilises the available resources from the Lower Mgeni, Nungwane, uMkhomazi , Mzimayi, Mzinto and Mtwalume systems in the most sustainable and cost effective manner.

- Water from the South Coast Augmentation Pipeline is expected to be available at the Amanzimoti Water Treatment Works, in ever reducing amounts, until 2020. Therefore, the Amanzimtoti Water Treatment Works will need to remain operational in the short to medium-term.
- Rehabilitation and/or replacement of the pipeline from Nungwane Dam to the Amanzimtoti Water Treatment Works will need to be undertaken.
- The long-term strategy is to develop a regional bulk water supply scheme that will receive raw water from either the lower uMkhomazi River or from a large scale desalination plant for distribution into the South Coast Pipeline. Potable water would be fed northwards to the Upper South Coast region and Amanzimtoti, and southwards to the Middle South Coast region.
- The South Coast Pipeline is to be further extended southwards. The South Coast Phase 2b project will tie into the end of SCP-2a and extend from Park Rynie to Pennington. The South Coast Phase 3 will link this pipeline to the Ugu District Municipality supply system at Hibberdene and will add a measure of flexibility and a contingency for drought situations to the Mzimkhulu system. The timing of SCP-3 is dependent on the development of either the regional BWS on the lower uMkhomazi River or the implementation of a large scale desalination plant.
- The Umzinto Water Treatment Works will continue to function in order to supply potable water to communities in the adjacent inland areas of Ugu District Municipality.
- To augment the supply from Umzinto Water Treatment Works, especially during low rainfall periods, the supply to Umzinto Water Treatment Works must be supplemented from the South Coast pipeline via Scottburgh South and Ellingham reservoirs.

11.6.3 North Coast System

The primary source of potable water supplied to the North Coast Supply System (NCSS) is from the recently upgraded Hazelmere Water Treatment Works. This treatment plant can now supply up to 75 Ml/d of potable water to the NCSS. To make full use of this capacity requires the Hazelmere Dam raising to increase the yield from 55 Ml/d to 75 Ml/d at a 98% assurance of supply.

The town of KwaDukuza is supplied from the Mvoti Water Treatment Works via the Mvoti Balancing Reservoirs. The average demand placed on the Water Treatment Works over the past year was 17.5 Ml/d. The capacity of the Water Treatment Works, including a recently constructed 2 Ml/d package plant is 14.5 Ml/d.

The strategic 30-year development plan for the region, that would utilise the available resources from the Hazelmere, Lower Thukela and Mvoti systems in the most sustainable and cost effective manner, is detailed below.

- Raising of full supply level of Hazelmere Dam to increase its firm yield to 75 Ml/d. The Hazelmere Water Treatment Works as well as the pump stations and pipelines within the NCSS have been augmented to ensure the demand placed on the system does not exceed the capacity of the infrastructure. Pipelines that are constructed as part of this augmentation process have been built with the ability to allow for bi-directional flow to ensure that in the future water can be brought south from the uThukela Water Treatment Works or the Mvoti River.
- The uThukela Water Treatment Works and associated infrastructure to supply water south to KwaDukuza Local Municipality and north to Mandini Local Municipality. This system will link into the NCSS. The Water Treatment Works will initially provide 55 Ml/d and when demands dictate it will be upgraded to 110 Ml/d.
- Develop water resource infrastructure on the Mvoti River, at Welverdient, with a regional Water Treatment Works and associated supply infrastructure to further augment the NCSS. At some stage in the future, the long-term water demands to the north of the uThukela River may require the full allocation from the Lower Thukela Water Treatment Works. In this scenario potable water may need to be supplied northwards from the NCSS (i.e. towards the Lower Thukela Water Treatment Works) to meet the demands on the southern side of the uThukela River.
- Phase 1 of the Maphumulo WTW was commissioned in May 2013 and is 100% operational. Phase 2, including the recently constructed Imvutshane Dam. Impoundment can only take place once the current drought conditions abate. An upgrade of the Maphumulo WTW to 12 Ml/day, will be complete by 2021.

11.7 New areas to be supplied

Umgeni Water is currently undertaking an assessment of potential expansion areas. This expansion could pertain to areas currently supplied with bulk potable water by a WSA or it could include backlog areas which don't have supply or where current supply is not sustainable. **Figure 11.10** highlights the high and low density areas within the WSAs currently supplied by Umgeni Water. By overlaying Umgeni Water's existing supply 'footprint' onto this map it is possible to identify areas of possible future expansion (areas of high population density outside of the 'footprint' area). **Figures 11.11-11.15** show that that there are many areas outside of Umgeni Water's current supply 'footprint' area that contain notable populations.

The following sections highlight some of the future expansion projects which Umgeni Water is undertaking in each of the WSAs.

Figure 11.10: Water Access Status (after Census 2011 and EKZNW 2011)

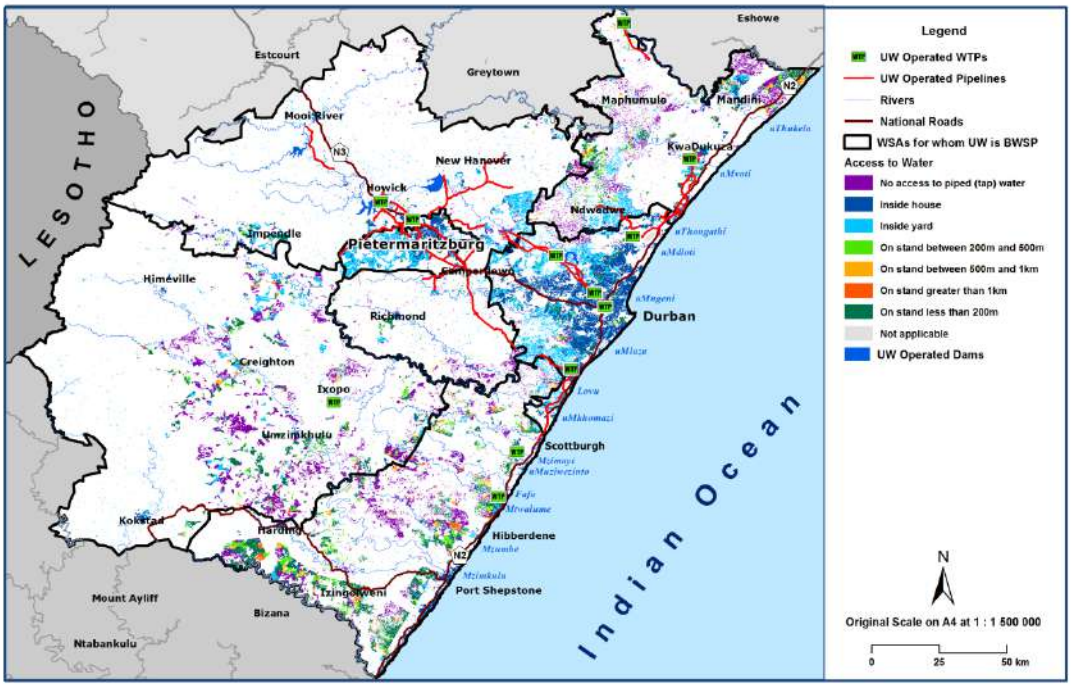


Table 11.3: Water Access Status (**Source: Census 2011 (Statistics SA 2013)**

WSA	Population	Total Number of Households	Piped (tap) water inside dwelling/institution	Piped (tap) water inside yard	Piped (tap) water on community stand: distance less than 200m from dwelling/institution	Piped water below RDP level	%
Ugu DM	722 484	179 444	44 215	17 477	56 539	61 213	34%
uMgungundlovu DM	399 227	108 674	37 870	33 680	13 230	23 894	22%
Msunduzi LM	618 536	163 993	78 626	63 323	9 335	12 709	8%
Harry Gwala DM	461 420	112 281	16 515	20 213	23 656	51 897	46%
iLembe DM	606 809	157 692	37 418	32 212	39 529	48 533	31%
eThekwini MM	3 442 360	956 712	575 760	196 265	113 910	70 777	7%
Total	6 250 836	1 678 796	790 404	363 170	256 199	269 023	16%

11.7.1 eThekwini Metropolitan Municipality

The strategic infrastructure development projects within eThekwini Metropolitan Municipality, to either consolidate existing supplies or to expand into new areas, are listed in **Table 11.4**. Potential expansion areas are shown in **Figure 11.11**.

Figure 11.11: Proposed extensions to Umgeni Water's Supply 'Footprint' in eThekwini Metropolitan Municipality.

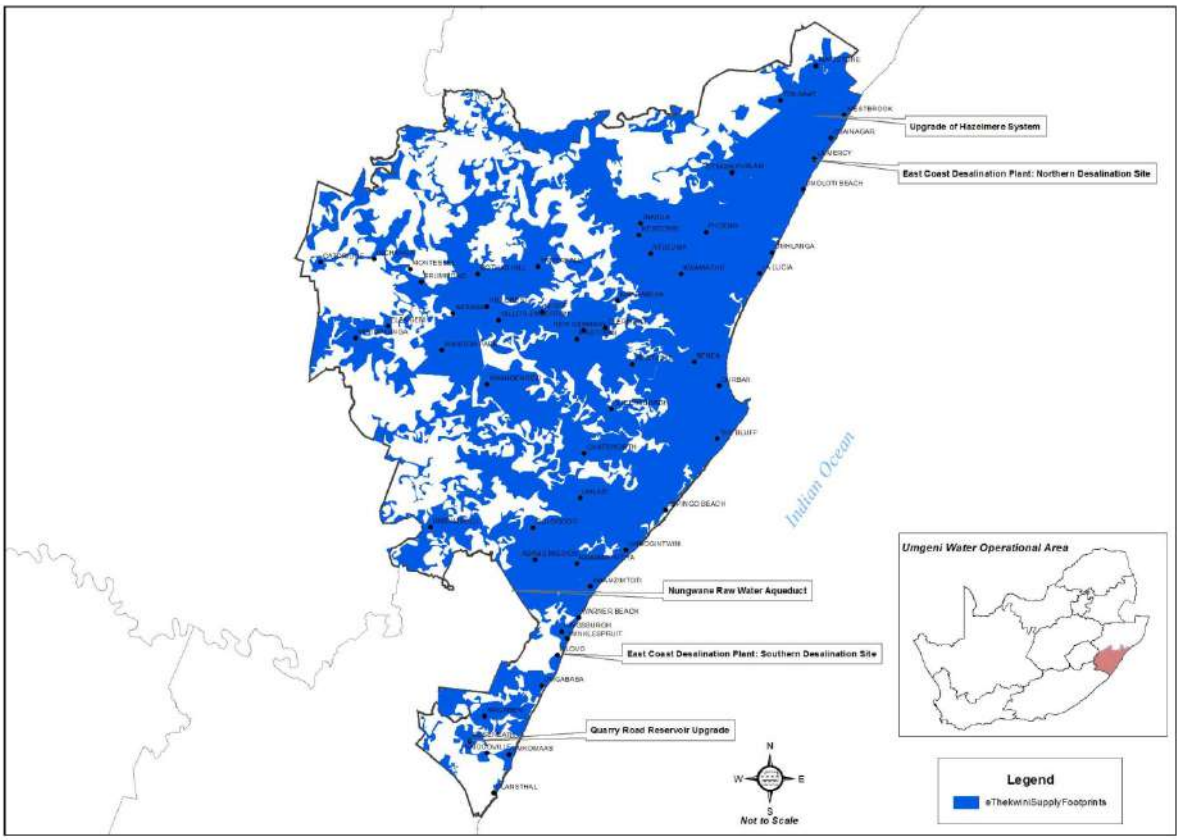


Table 11.4: Projects to be implemented in eThekwini Metropolitan Municipality within the next five years

Objective	Major Project	Project Total (R'm)	2017	2018	2019	2020	2021
			R'm	R'm	R'm	R'm	R'm
Augmentation	Mkhomazi Bulk Water Supply Scheme[1]	4,733		25	25	45	45
Augmentation	Lower Mkomazi Bulk Water Scheme[2]	2,483	15	50			
Upgrade	Durban Heights WTW – Filter Upgrade	646	1				
Upgrade	Nagle Aqueduct- Refurbishment	90	50	40			
Augmentation	Maphephethwa WTW: Upgrade Plant (5.0 Ml/d)	63	3				

[1] project will also serve UMDM
[2] project will also serve Ugu DM

11.7.2 iLembe District Municipality

The strategic infrastructure development projects within iLembe District Municipality, to either consolidate existing supplies or to expand into new areas, are shown in **Table 11.5**. Potential expansion areas are shown in **Figure 11.12**.

Figure 11.12: Proposed extensions to Umgeni Water's Supply 'Footprint' in iLembe District Municipality

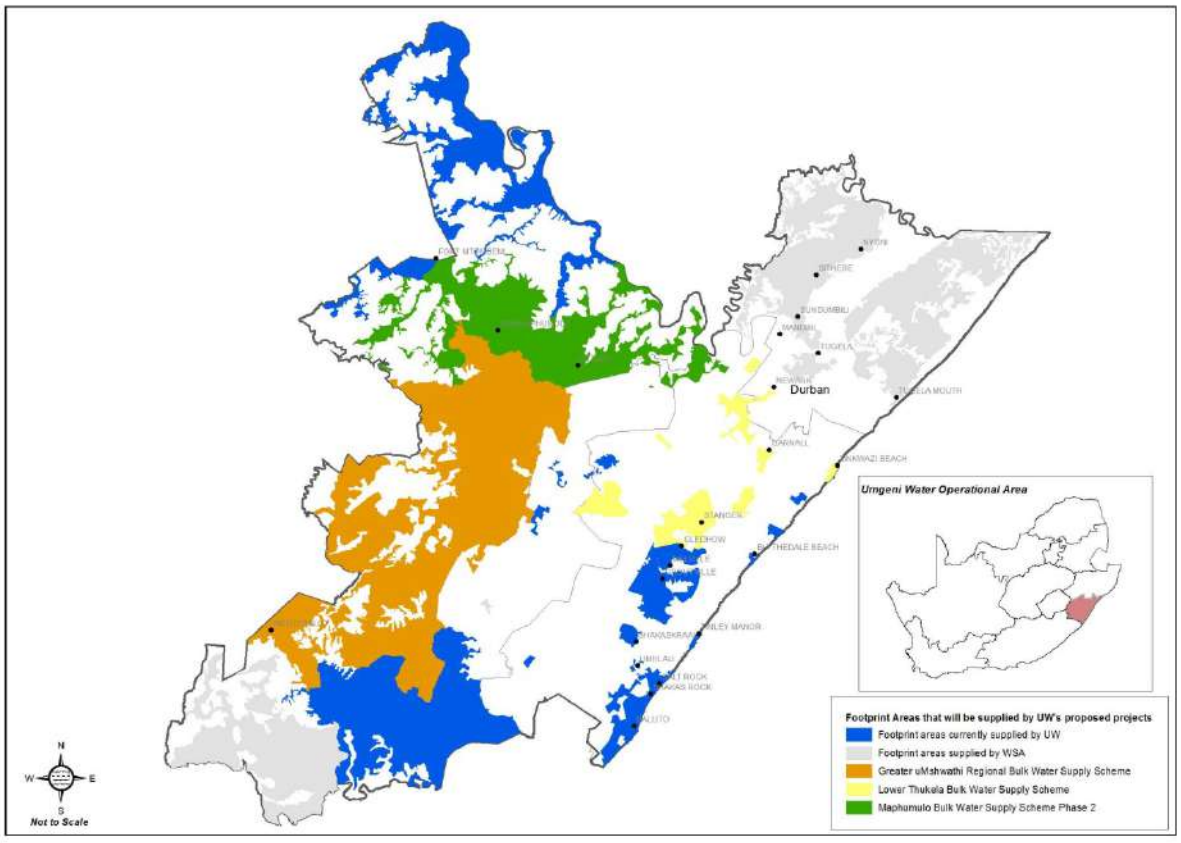


Table 11.5: Projects to be implemented in iLembe District Municipality within the next five years

Objective	Major Project	Project Total (R'm)	2017	2018	2019	2020	2021
			R'm	R'm	R'm	R'm	R'm
Rural Expansion	Lower Thukela BWSS Phase 1 [1]	1,460	36	2			
Rural Expansion	uMshwathi BWSS (Wartburg Phase 1 - 3)[2]	1,121	304	83	176		
Rural Expansion	uMshwathi BWSS Phase 4 (Southern Ndwedwe)	551	2	4	4		
Rural Expansion	Maphumulo BWSS Phase 3: WTW Upgrade (6Ml/d to 12/Ml/d)	53	1	10			

[1] project will also serve eThekwini MM
[2] Also see UMDM projects

11.7.3 uMgungundlovu District Municipality

The strategic infrastructure development projects within uMgungundlovu District Municipality, to either consolidate existing supplies or to expand into new areas, are shown in **Table 11.6**. Potential expansion areas are shown in **Figure 11.13**.

Figure 11.13: Proposed extensions to Umgeni Water's Supply 'Footprint' in uMgungundlovu District Municipality

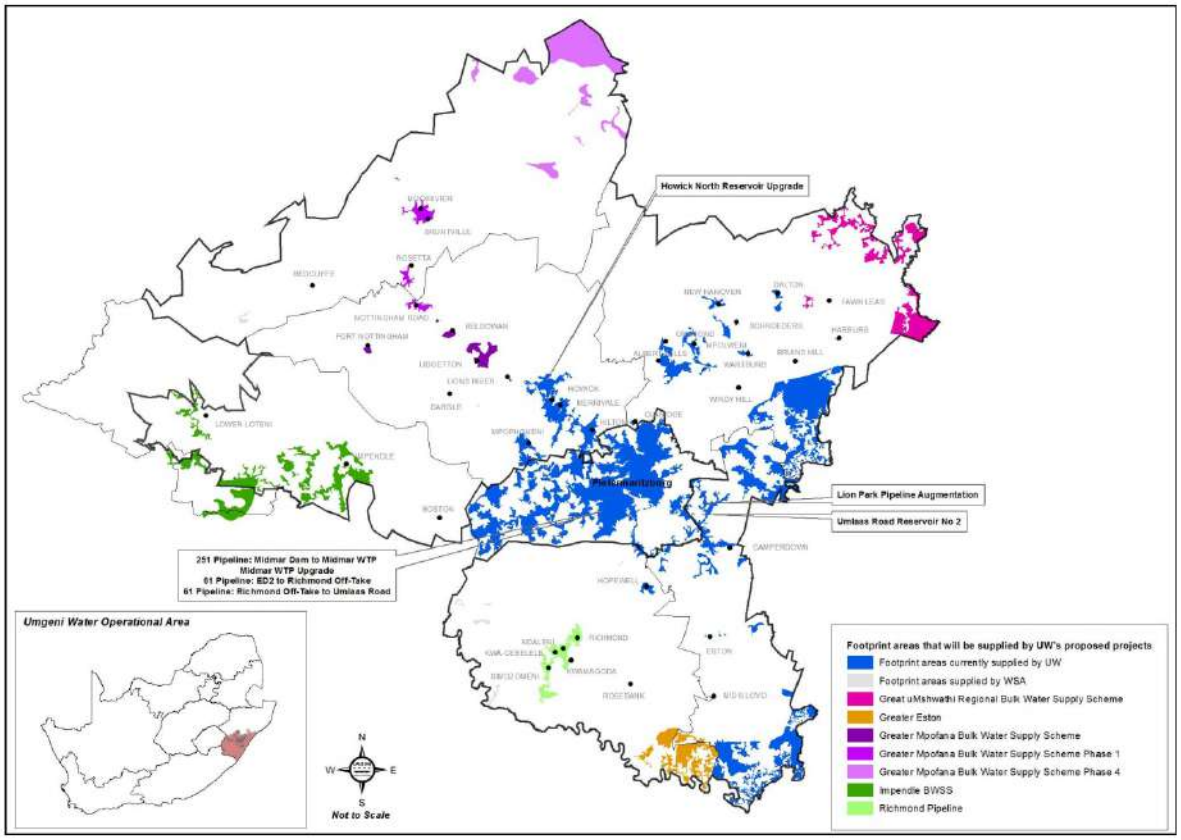


Table 11.6: Projects to be implemented in uMgungundlovu District Municipality in the next five years

Objective	Major Project	Project Total (R'm)	2017	2018	2019	2020	2021
			R'm	R'm	R'm	R'm	R'm
Rural Expansion	uMshwathi Bulk Water Supply Scheme (Wartburg Phase 1 - 3)[1]	1,121	304	83	176		
Rural Expansion	Greater Mpofana Regional Scheme Phase 1	640	191	186	46	13	73
Augmentation	Vulindlela PS and Reservoir	287	4				
Augmentation	Midmar WTW Upgrade (250 to 375Ml/d) and Dam RWPS[2]	244	94	20	28		
Rural Expansion	Impendle BWSS	200	10				
Augmentation	251/51 New RW p/l (Dam to Raw Water P/S)[2]	144	36	12			
Augmentation	Wartburg to Bruyns Hill Pipeline	123	83	13	15		
Augmentation	Lion Park Pipeline	52	12	5			

[1] Also see iLembe DM projects
[2] projects will also serve eThekwini MM

11.7.4 Harry Gwala District Municipality

The Umzimkhulu Bulk Water Supply Scheme will supply water from various sources to areas throughout the Umzimkhulu local municipality. Umgeni Water has allocated R20 million in its capital expenditure programme to undertake work in partnership with the Harry Gwala District Municipality. Umgeni Water is currently implementing the feasibility studies in an initiative to identify the best possible regional bulk water solutions to supply Umzimkhulu local municipality. The potential expansion area of the scheme is shown in **Figure 11.14**.

Figure 11.14: Proposed extensions to Umgeni Water's Supply 'Footprint' in Harry Gwala District Municipality

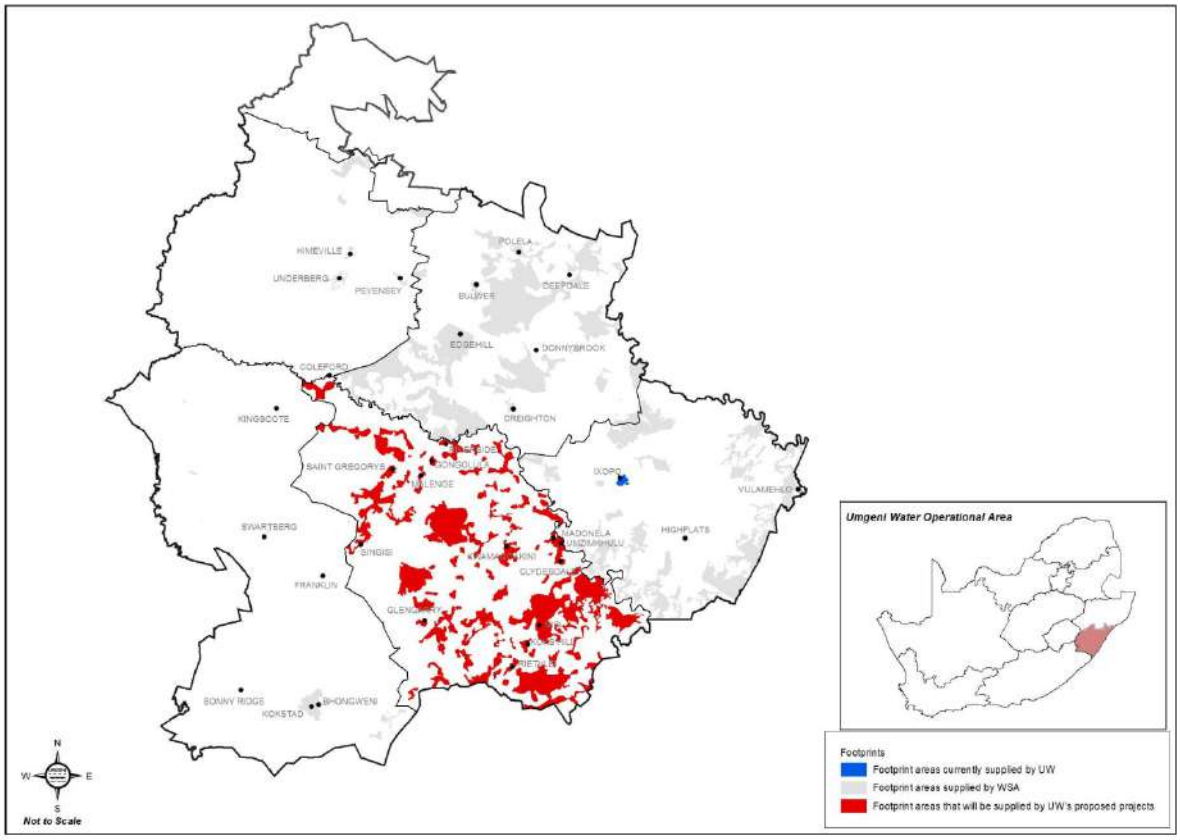


Table 11.7: Projects to be implemented in Harry Gwala District Municipality in the next five years

Objective	Major Project	Project Total (R'm)	2017	2018	2019	2020	2021
			R'm	R'm	R'm	R'm	R'm
Rural Expansion	Harry Gwala Regional Schemes	20	5	1	4		

11.7.5 Ugu District Municipality

The strategic infrastructure development projects within Ugu District Municipality, to either consolidate existing supplies or to expand into new areas, are shown in **Table 11.8**. Potential expansion areas are shown in **Figure 11.15**.

Figure 11.15: Proposed extensions to Umgeni Water's Supply 'Footprint' in Ugu District Municipality

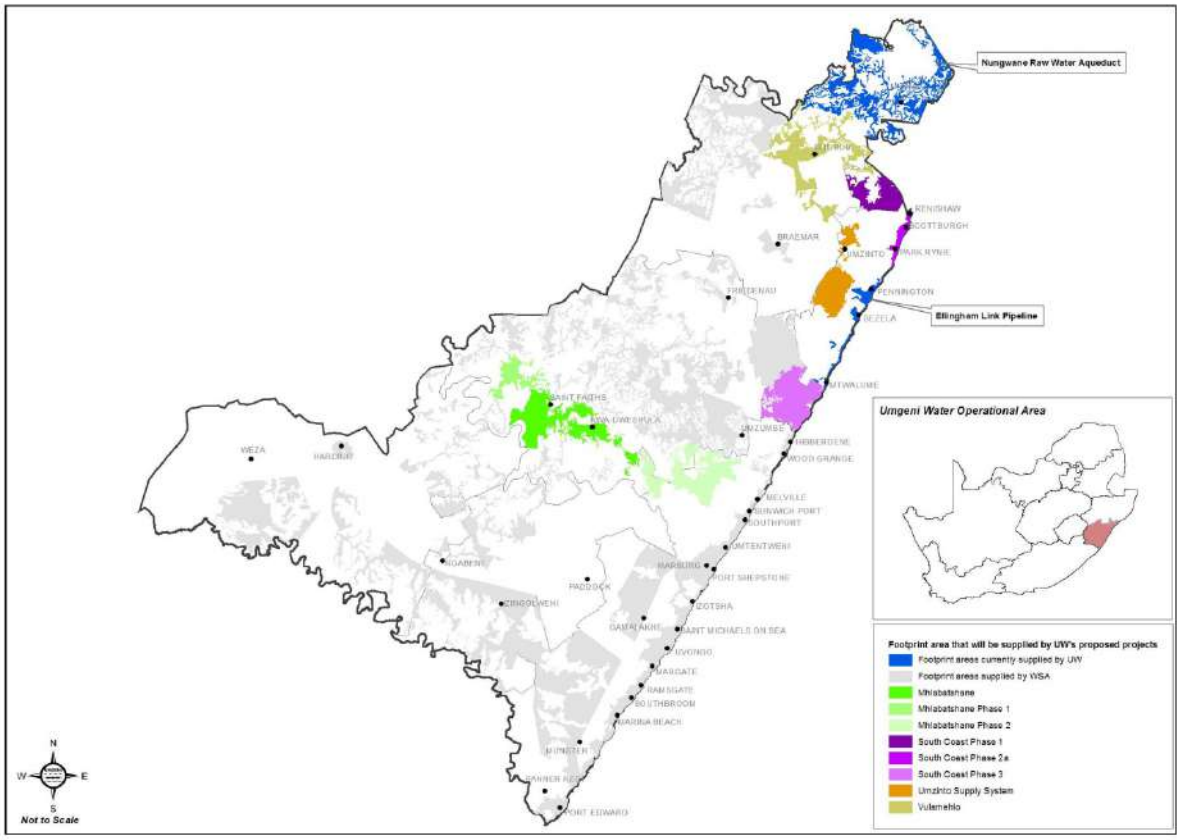


Table 11.8: Projects to be implemented in Ugu District Municipality within the next five years

Objective	Major Project	Project Total (R'm)	2017	2018	2019	2020	2021
			R'm	R'm	R'm	R'm	R'm
Expansion	South Coast Ph 2b (Kelso to Umdoni)	217	72	103	40		
Augmentation	Elysium Desalination	211	8				
Rehabilitation	Nungwane Raw Water Aqueduct	105	51	22			
Upgrade	Umzinto WTW	17	12	3			

11.7.6 Summary of Major Bulk Water Supply Infrastructure Projects

Table 11.9: Planned Major Infrastructure in Five-Year Corporate Plan Period.

Major Project	Objective	Key Municipality Beneficiary	Project Total R'm	Five-Year R'm
Mkhomazi Bulk Water Supply Scheme	Augmentation	eThekwini MM, uMgungundlovu DM	4,733	140
Lower Mkomazi Bulk Water Scheme	Augmentation	eThekwini MM, Ugu DM	2,483	65
Lower Thukela BWS Scheme Phase 1	Rural Expansion	eThekwini MM, iLembe DM	1,460	38
uMshwathi BWSS (Wartburg Phase 1 - 3)	Rural Expansion	uMgungundlovu DM iLembe DM	1,121	563
Durban Heights WTW – Filter Upgrade	Upgrade	eThekwini MM	646	1
Greater Mpofana Regional Scheme Phase 1	Rural Expansion	uMgungundlovu DM	640	509
uMshwathi BWSS Phase 4 (Southern Ndwedwe)	Rural Expansion	iLembe DM	551	10
Vulindlela Upgrade	Augmentation	Msunduzi LM	287	4
Midmar WTW Upgrade (250 to 375Ml/d) and Dam RWPS	Augmentation	uMgungundlovu DM	244	142
South Coast Ph 2b (Kelso to Umdoni)	Expansion	eThekwini MM, Ugu DM	217	215
Elysium Desalination	Augmentation	Ugu DM	211	8
Impendle BWSS	Rural Expansion	uMgungundlovu DM	200	10
251/51 New RW p/l (Dam to Raw Water P/S)	Augmentation	uMgungundlovu DM, eThekwini MM	144	48
Wartburg to Bruyns Hill Pipeline	Augmentation	uMgungundlovu DM	123	111
Nungwane Raw Water Aqueduct	Rehabilitation	Ugu DM	105	73
Nagle Aqueduct - Refurbishment	Upgrade	eThekwini MM	90	90
Maphephethwa WW: Upgrade Plant (5.0 Ml/d)	Augmentation	eThekwini MM	63	3
Maphumulo BWSS Phase 3: WTW Upgrade (6Ml/d to 12/Ml/d)	Rural Expansion	iLembe DM	53	11
Lion Park Pipeline	Augmentation	uMgungundlovu DM	52	17
Harry Gwala Planning Regional Schemes	Rural Expansion	Harry Gwala DM	20	10
Umzinto WTW	Upgrade	Ugu DM	17	15

11.8 Status of Bulk Supply Agreements with Major Customers

Umgeni Water has signed Bulk Supply Agreements with all of the six Water Service Authorities it currently supplies, namely eThekwini Metropolitan Municipality, iLembe District Municipality, Ugu District Municipality, uMgungundlovu District Municipality, Harry Gwala District Municipality and the Msunduzi Local Municipality.

These agreements cover obligations of both Umgeni Water and its customers for the management of bulk water in respect of planning and implementation of the quality and quantity of treated water, asset management and metering.

Umgeni Water's levels of service will continue to be regulated and monitored at a micro level at the water treatment works where the final treated water is distributed, as well as, at a macro level where regional systems are integrated for water supply. Monitoring frameworks have been formulated in response to the formal agreement and are incorporated into operating rules, schedules and plans.

Quarterly operational liaison meetings with the municipalities will continue, to ensure that customer requirements are continuously met and responses to new requirements are provided.

UMGENI WATER · AMANZI

Chapter 12: Bulk Wastewater Treatment and Disposal Plan

Improving Quality of Life and Enhancing Sustainable Economic Development

Contents

12.1 Wastewater Treatment Works Capacity, Condition and Effluent Quality

Umgeni Water owns and operates the Darvill Wastewater Treatment Works and Ixopo Wastewater Treatment Works, and operates and maintains the Howick Wastewater Treatment Works for the uMgungundlovu District Municipality (UMDM). At the beginning of April 2014, Umgeni Water also commenced operation of the small Lynnfield Park Wastewater Treatment Works (WWTW) on behalf of the Msunduzi Local Municipality. Two small "package" plants are also operated at Albert Falls Dam.

In August 2015 Umgeni Water entered into a contract with the UMDM to manage and operate the remainder of its wastewater works, including Mpofana (Mooi River), Mkhambathini (Camperdown), Cool Air, Richmond and Appelsbosch,.

Umgeni Water's involvement in managing wastewater works extends to assisting with planed upgrades and the construction of new works. Notably: Mpophomeni WWTW will be upgraded to 6Ml/d, Design and construction of the Trust Feeds WWTW, serving uMgungundlovu DM, will be completed in 2018, followed by constructions of the 2 Ml/day Mkhambathini WWTW.

Figure 12.1: Wastewater Treatment Works Design Capacity (Ml/d).

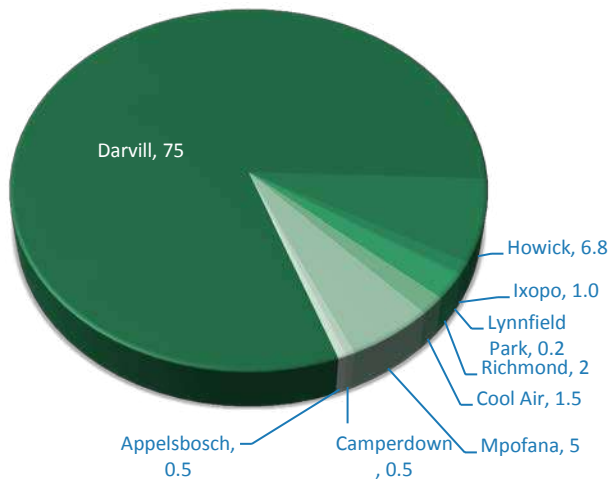


Figure 12.2: Wastewater Treatment Works Inflows relative to Works Capacity.

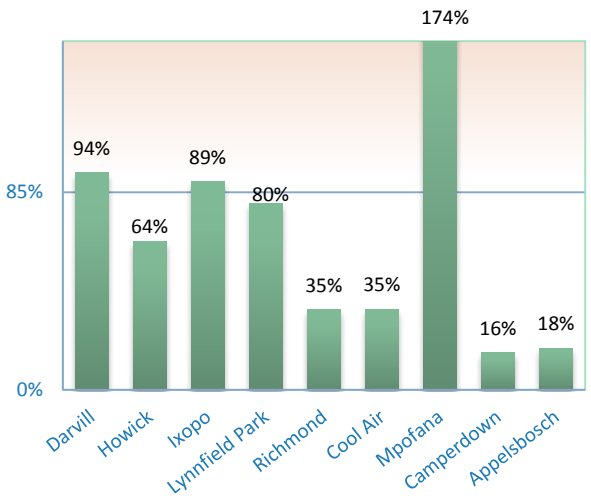


Table 12.1: Compliance projected to December 2015.

Wastewater Treatment Works	Design Capacity Ml/d	UW Effluent Compliance July 2015 – December 2015	DWS Green Drop Ratings 2014 Risk Rating
Darvill	75.0	79.77%	65.6%
Howick	6.8	84.17%	54.5%
Ixopo	1.0	96.00%	52.9%
Lynnfield Park	0.2	81.00%	52.9%
Richmond[β]	2.0	87.93%	47.1%
Cool Air[β]	1.5	88.60%	29.4%
Mpofana[β]	5.0	52.58%	64.7%
Camperdown[β]	0.5	93.00%	52.9%
Appelsbosch[β]	0.5	96.00%	23.5%

[β] Umgeni Water started operation of these sites on behalf of UMgungundlovu DM in August 2015

Table 12.2: Summary of Wastewater Capex projects to be implemented during 2016/17 to 2020/21

Objective	Major Project	Project Total (R'm)	2017	2018	2019	2020	2021
			R'm	R'm	R'm	R'm	R'm
Upgrade	Darvill WWTW: Plant Capacity Increase	940	254	29			
Expansion	Mpophomeni WWTW	151	30	75	13	27	
Upgrade	Trust Feeds WWTW	75	5	28	20	19	
Upgrade	Darvill Sludge Handling Facility	69	14	32	22		
Upgrade	Darvill WWTW: Power Co Generation	67					

12.2 Darvill Wastewater Treatment Works

The average daily flow of the Darvill Wastewater Treatment Works in 2014 was 77.3 Ml/d with peaks estimated to exceed 300 Ml/d during heavy rainfall events as a result of storm ingress. Drought conditions and problems with construction related by-passing to river in 2015 have reduced the average inflow slightly, to 74 Ml/d.

Even under optimal conditions, flows over 110 Ml/d cannot be processed through the treatment works, and the excess flow is diverted to the storm dam for later return. In some instances, the storm dam fills and the untreated sewage in the storm dam spills over to the treated effluent thus compromising the outgoing effluent quality significantly. In addition to the increase in the hydraulic load with development in Pietermaritzburg, a 33% increase in the organic load has been observed since 2008. Sewer rehabilitation work being conducted by the Municipality will increase delivered volumes.

The increase in the organic load has put a strain on the capacity of the plant to biologically treat and remove nutrients, especially nitrogen in the form of ammonia, from the wastewater. A number of the unit processes are currently operating well above nominal capacity, with the key limiting factor being the aeration capacity, leading to the discharge of non-compliant effluent into the Msunduzi River at times, especially in winter when biological processing is slower. Related sludge age issues, sludge bulking and sludge carryover problems are also increasing significantly. An interim upgrade of the works aeration capacity was implemented in October 2013 to minimise the impact of the increase in the organic load. While this helped significantly in 2014, and has improved the situation even further during 2015, a larger upgrade was recognised to be necessary.

After detailed investigation, an immediate capacity upgrade to 100Ml/d was found to be essential, which will be adequate until at least 2023. The design of this also allows for a further capacity upgrade of an additional 20 Ml/d, the timing for which will be determined by the demand growth patterns. A capital project to undertake this work is currently well under way and commissioning is expected in mid-2017. Unfortunately, despite on-going efforts to limit the problems caused by construction work within the existing plant, a number of problems affecting the existing processing capacity have occurred during the upgrade to date, leading to some serious noncompliant effluent discharges. Mitigation was attempted, but not always successful.

Umgeni Water has been issued with a 20 year licence (No. 21065561) from 24 June 2010, renewable every five years. The permitted discharge is 75Ml/d however; this is being reviewed as part of the licensing process for the upgraded site.

Summary of plans to achieve Green Drop Certification for Darvill WWTW over Corporate Plan Period

- Complete the upgrade to 100 ML/d capacity. This project is to include the sludge secondary treatment and disposal component.
- Multiple process optimisation interventions are in progress to address inefficient treatment processes and practical operational problems during the upgrade.
- The annual risk assessment review of the entire wastewater collection and treatment system was undertaken in conjunction with the Msunduzi Local Municipality. This exercise is a crucial aspect of the Wastewater Risk Abatement Plan (WRAP) that was previously developed for this system. This Municipality has identified storm water ingress as a high risk during the risk assessment review.

- Refurbishment of digester 5 was completed, but to avoid further process problems, the work on digester 6 is on hold until after construction and start-up of the 2 new digesters.
- Development an artificial wetland system is under investigation as a possibility for improvement of untreated spillages out of the storm dam at times of high inflow. Pre-feasibility work was undertaken and the project is in the planning phase, with the requirements for an EIA being followed up.
- Interim projects have been unable to meet the current load demands, and construction has caused further problems. Green Drop Certification for the Darvill WWTW can only be expected after completion of the major plant upgrade work.

12.3 Ixopo Wastewater Treatment Works

The initial design capacity of the Ixopo WWW was approximately 1 Ml/d, and an addition of a third aerator has increased this to 1.3 ML/d. The average daily inflow to the Ixopo WWW in 2013/14 was only 0.35 Ml/day, due to multiple problems experienced in the municipal sewer collector systems. Significant work was undertaken on the sewer network by UW on behalf of the municipality, and the 2015 average was 0.69 Ml/d, with flows in September-October 2015 averaging 1.37 ML/d. The estimated normal inflow will routinely exceed the works capacity if the District Municipality were to routinely deliver all the sewage generated in the town to the wastewater treatment works, but flows have subsequently decreased due to drought conditions and further sewer network issues. The early upgrading of the works capacity through the installation of the third aerator has provided sufficient capacity for the interim. The construction of an additional clarifier is now going ahead to further increase the plant capacity.

The wastewater treatment works inflow is currently well below 2 Ml/d and is operated under a General Authorisation.

Summary of plans to achieve Green Drop Certification for Ixopo WWTW over Corporate Plan Period

- The plant treatment capacity has been upgraded through the installation of a third aerator.
- The construction of the second clarifier is under way (completion in 2016).
- An automated screen has been installed to mitigate spillages at the plant during the night when the plant is unmanned. A return pumping system from the storm dam is also to be implemented.
- The annual risk assessment review of the entire wastewater collection and treatment system was undertaken in conjunction with Harry Gwala District Municipality. This exercise is a crucial aspect of the Wastewater Risk Abatement Plan (W2RAP) that was previously developed for this system. Wastewater discharges due to leaks in the sewer reticulation system was again highlighted as a high risk during the risk assessment review.
- Umgeni Water has been assisting the Municipality with sewer network problem interventions and has funded the replacement of sewer pipelines in the Fairview Area.
- Green Drop Certification for the Ixopo WWTW was achieved in the 2012/2013 period of assessment. Somewhat reduced compliance since has been due to the highly variable flows and also some disinfection problems, which are being addressed.

12.4 Howick Wastewater Treatment Works

Umgeni Water has an Operations and Maintenance Contract with the uMgungundlovu District Municipality for the Howick WWTW and this was extended for a 20 year period. Effluent quality non-compliance is primarily due to the lack of adequate sludge dewatering as numerous operational constraints have been encountered, despite the installation of 2 dewatering units. Upgrading of the solids removal process is currently in progress. Process and asset management improvements are also required to improve the wastewater quality compliance – a number of equipment failures have also contributed significantly to plant noncompliance. An increasingly urgent issue is that, despite low plant inflows, waste loads into the plant have increased. This is thought to be due to a marked increase in industrial activity, and also tankers bringing in very high-strength wastes. Effective trade effluent controls are needed. Although a number of sewer

pumpstation problems have been resolved, further work still remains necessary. Other reticulation problems have also been encountered, especially in the Mpophomeni area and on the main Merrivale sewer line, resulting in sewage discharges to the environment and reduced inflow to the WWW.

Summary of plans to achieve Green Drop Certification for Howick WWTW over Corporate Plan Period

- Multiple process optimisation and equipment repair interventions continue to be undertaken.
- Pumpstation issues are being addressed in the short term, whilst a longer-term project to upgrade these is in progress with uMgungundlovu District Municipality. Follow up on persistent sewer reticulation problems is ongoing.
- Telemetry has been implemented to allow rapid response to pumpstation problems. However, this still needs to be further improved and extended to include additional on-line instrumentation that will improve plant process control.
- The annual risk assessment review of the entire wastewater collection and treatment system was undertaken in conjunction with the uMgungundlovu District Municipality. This exercise is a crucial aspect of the Wastewater Risk Abatement Plan (WRAP) that was previously developed for this system.
- The construction of the new 6 Ml/d Mpophomeni WWTW will begin in 2016 and on completion in mid-2018 is expected to reduce loads to Howick WWTW.
- Green Drop Certification for the Howick WWTW is not expected to be achieved until the Mpophomeni WWTW is operational.

12.5 Lynnfield Park Wastewater Treatment Works

Umgeni Water has an Operations and Maintenance Contract with the Msunduzi Local Municipality for the Lynnfield Park WWTW. This is a small plant serving a residential area to the east of Ashburton. Some involvement and compliance monitoring (including assessment of the adjacent stream) began in 2014. There is currently a complete new sequencing batch reactor process, with new inlet works and sludge handling system being built on the existing site. While this will increase capacity to at least 0.5 Ml/d, and will improve compliance, this has been causing a number of complications during the construction.

Extensive refurbishment work, to keep the existing process functional, has been undertaken including;

- Installation of a new chlorine dosing system,
- Replacement of the electrical power panel,
- Implementation of a portable Waste Activated Sludge pump,
- Emptying, cleaning and re-starting both the reactor units,
- Major revision to both the clarifier units, including RAS pumps replacements, and
- Employment of a process controller during the day, 6 days a week.

Further work on improving the compliance including process optimisation at the site is on-going during the construction process.

12.6 Albert Falls Wastewater Package Plants

Umgeni Water operates two small package plants – 0.01 Ml/d at Albert Falls Dam. Compliance has improved significantly following completion of the refurbishment process that was recently undertaken.

12.7 Umgungundlovu WWTW – Operation and Maintenance

The largest of the wastewater treatment works' that Umgeni Water has taken over from the District Municipality is the Mpofana WWTW at Mooi River. This is a plant with severe challenges. Although the process might be capable of treating as much as 5 Ml/d under ideal conditions, average inflows significantly exceed this. Compliance has therefore been very poor to date.

Equipment problems, overflows, tripping aerators, compromised disinfection and other issues have all contributed to the poor compliance. Sludge removal and disposal is also a major concern. Multiple interventions have already been undertaken, but in the first 6 months of operation by Umgeni Water, the outgoing effluent has not yet achieved full compliance. Work is on-going to try to improve the situation, but it is increasingly apparent that either a major upgrade or, given the existing site constraints, a new WWTW, is needed.

At Richmond, sewage pumpstation problems have been severe at times, and are in the process of being addressed. The plant can operate well, but still needs a number of improvements to ensure full compliance. An upgrade to accommodate sewage reticulation from housing from a number of areas adjacent to Richmond is necessary, and some options are under consideration.

For the town of Cool Air, components of the effluent treatment works may be somewhat old and some of the equipment is in the process of being replaced, but the fully treated effluent compliance has been very good. A specific need at this site is for a second seepage discharge from the storm dam (frequently in use as part of the normal treatment process) to be properly resolved, and for a formal recovery system to be implemented to empty the dam after any use.

Both the Appelsbosch and Camperdown WWTW are small, in design capacity and in the inflow volume actually being received. They both quite old systems and need a number of interventions to keep them adequately functional in the long term, but both are capable of producing fully compliant effluent discharges. Work is on-going to address the identified problems.

12.8 Other initiatives

Achievement of Green Drop status is dependent on the municipalities' ability to fulfill and provide proof of compliance against the Green Drop requirements for sewer reticulation. In this regard Umgeni Water will increase its support to municipalities over this Corporate Plan period. These include:

- Assistance at Ixopo with improving the collector sewer network and repairing or replacing pipework in key areas,
- Assisting with the design and construction of new WWTW together with the WSA (Trust Feeds and Mpophomeni are currently in progress),
- Designing wastewater monitoring programmes for the WSA,
- Increasing awareness through presentations and communications to improve understanding of requirements to achieve Green Drop certifications, and
- Publication of effluent quality information in a format that is accessible to consumers.

12.9 Approach to Bulk Wastewater Treatment in KZN

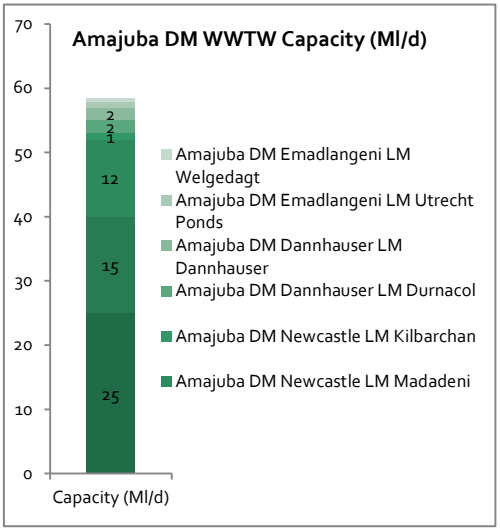
Umgeni Water will progressively improve wastewater quality through implementing a suitable wastewater quality management programme for target systems.

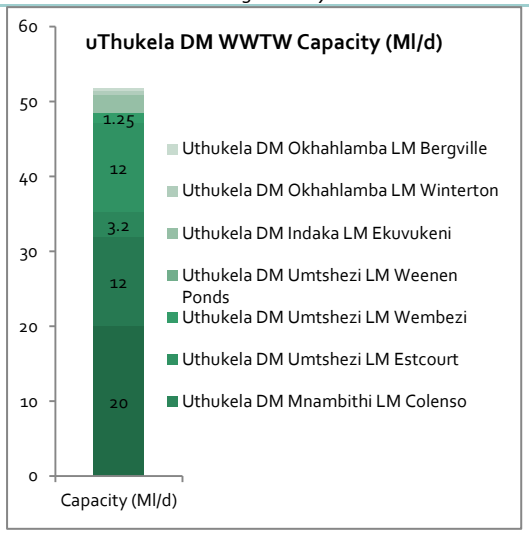
Water quality monitoring programmes will be developed and implemented to ensure sites are covered and programmes aligned to risk based methodology that would yield reliable information for treatment mitigation. Sampling and laboratory analysis will be undertaken in accordance with the organisation's ISO 9001 certified monitoring programme and SANAS 17025 Accredited laboratory.

These plans will further ensure that the bulk sites can achieve Green Drop certification at a future date. This will ensure systems deliver safe quality effluent that will benefit all downstream uses including vulnerable communities.

Table12.2: North-West Supply systems and Green Drop status.

Municipality	System / WWTW	Capacity (Ml/d)	2014 Risk Rating
Amajuba DM	*Newcastle*	*25*	***66.7%*** (↑)
Newcastle LM	*Osizweni*	*15*	***54.5%*** (↑)
	Madadeni	*12*	***54.5%*** (↑)
	Kilbarchan	*1*	***47.1%*** (↑)
	Charlestown Ponds	*0.5*	***58.8%*** (↑)
Dannhauser LM	*Durnacol*	*2*	***64.7%*** (↑)
	Dannhauser	*2*	***58.8%*** (↑)
Emadlangeni LM	*Utrecht Ponds*	*1*	***76.5%*** (↑)
	Welgedagt	*0.5*	***76.5%*** (↑)
Uthukela DM	*Ladysmith*	*21*	***86.4%*** (↑)
Mnambithi LM	*Ezakheni*	*12*	***86.4%*** (↑)
	Colenso	*3.2*	***88.2%*** (↑)
Umtshezi LM	*Estcourt*	*12*	***90.9%*** (↑)
	Wembezi	*1.25*	***94.1%*** (↑)
	Weenen Ponds	*0.1*	***94.1%*** (↑)
Indaka LM	*Ekuvukeni*	*2.4*	***88.2%*** (↑)
Okhahlamba LM	*Winterton*	*0.5*	***88.2%*** (↑)
	Bergville	*0.4*	***88.2%*** (↑)
Umzinyathi DM	*Dundee-Glencoe*	*12*	***68.2%*** (↑)
Endumeni LM	*Wasbank Ponds*	*0.25*	***NM***
Nquthu LM	*Nquthu New*	*3*	***64.7%*** (↓)
	Nquthu Ponds	*1*	***NM***
	Nondweni Ponds	*0.5*	***NM***
Umvoti LM	*Greytown*	*3.35*	***47.1%*** (→)
	Kranskop	*0.25*	***NM***
Msinga LM	*Pomeroy Ponds*	*0.5*	***64.7%*** (↑)
	Tugela Ferry	*0.5*	***76.5%*** (↑)





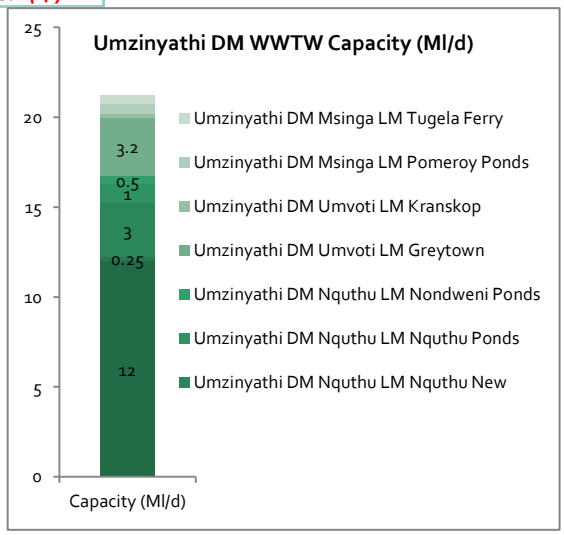
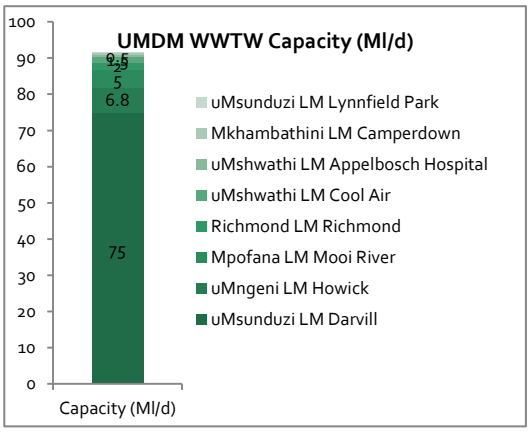
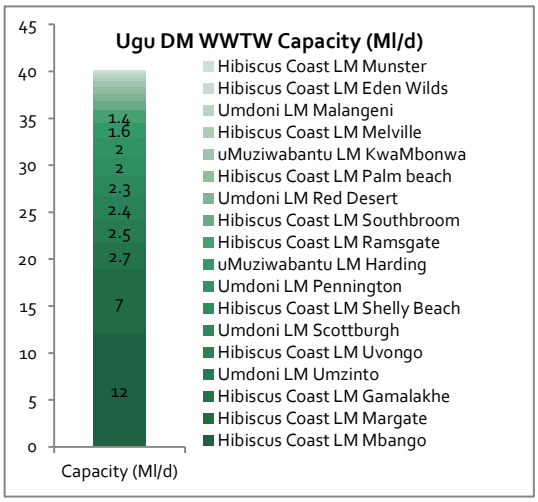
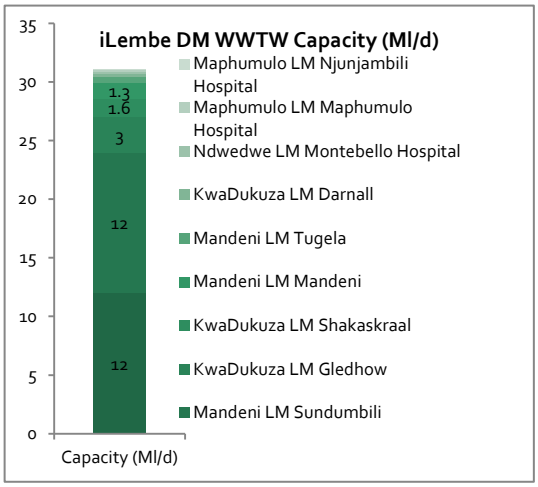


Table 12.3: Existing Customers' systems and Green Drop status.

Municipality	System / WWTW	Capacity (Ml/d)	2014 Risk Rating
uMgungundlovu DM	Darvill	75	***65.6%*** (↓)
uMsunduzi LM	Lynnfield Park	0.2	***52.9%*** (↑)
uMshwathi LM	Cool Air	1.5	***29.4%*** (↓)
	Appelbosch Hospital	0.5	***23.5%*** (↓)
Mkhambathini LM	Camperdown	0.5	***52.9%*** (↑)
Mpofana LM	Mooi River	5	***64.7%*** (↑)
Richmond LM	Richmond	2	***47.1%*** (↑)
uMngeni LM	Howick	6.8	***54.5%*** (↑)
Ugu DM	Mbango	12	***95.5%*** (↑)
Hibiscus Coast LM	Margate	7	***90.9%*** (↑)
	Gamalakhe	2.7	***64.7%*** (↑)
	Uvongo	2.4	***64.7%*** (→)
	Shelly Beach	2	***82.4%*** (↑)
	Palm beach	0.7	***71%*** (↑)
	Ramsgate	1.4	***76.5%*** (↑)
	Melville	0.4	***82.4%*** (↑)
	Eden Wilds	0.2	***82.4%*** (↑)
	Munster	0.2	***70.6%*** (↑)
	Southbroom	1	***70.6%*** (↑)
Umdoni LM	Scottburgh	2.3	***76.5%*** (↑)
	Pennington	2	***82%*** (↑)
	Umzinto	2.5	***64.7%*** (↑)
	Red Desert	0.75	***82.4%*** (↑)
	Malangeni	0.4	***82.4%*** (↑)
uMuziwabantu LM	Harding	1.6	***76.5%*** (↑)
	KwaMbonwa	0.6	***58.8%*** (↑)
iLembe DM	Frasers	12	***31.8%*** (↑)
KwaDukuza LM	Stanger	10	***73%*** (↑)
	Gledhow	3	***52.9%*** (↓)
	Shakaskraal	1.6	***23.5%*** (→)
	Darnall	0.33	***52.9%*** (↑)
Mandeni LM	Sundumbili	12	***59%*** (↑)
	Tugela	0.5	***41%*** (→)
	Mandeni	1.3	***47.1%*** (→)
Ndwedwe LM	Montebello Hospital	0.15	***94.1%*** (↑)
Maphumulo LM	Maphumulo Hospital	0.15	***76.5%*** (↑)
	Njunjambili Hospital	0.05	***76.5%*** (↑)
Harry Gwala DM	Kokstad	6.6	***68.2%*** (→)
Greater Kokstad LM	Franklin	0.18	***100%*** (↑)
Ubuhlebezwe LM	Ixopo	0.95	***52.9%*** (↑)
Umzimkhulu LM	Mzimkhulu	1.1	***64.7%*** (↑)
	Riverside Ponds	0.7	***64.7%*** (↑)
	St Apollinaris	0.4	***70.6%*** (↑)
KwaSani LM	Underberg	0.3	***82.4%*** (↑)
Ingwe LM	Polela	0.2	***76.5%*** (↑)
	Bulwer	0.08	***82.4%*** (↑)







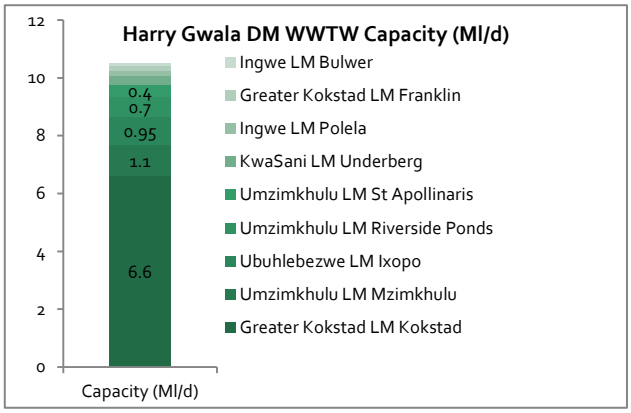
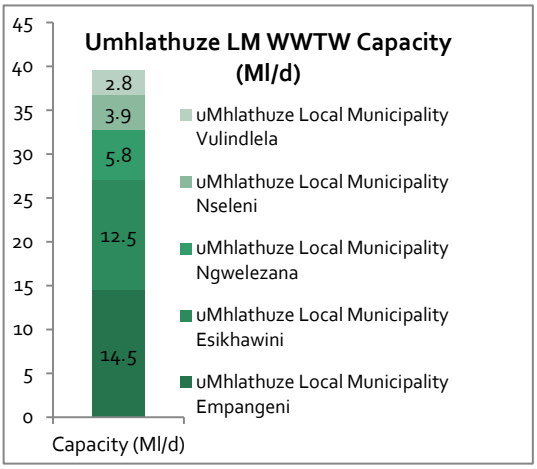
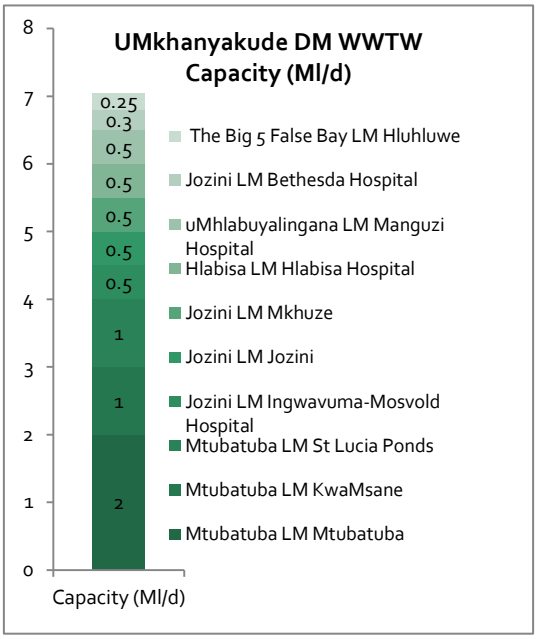
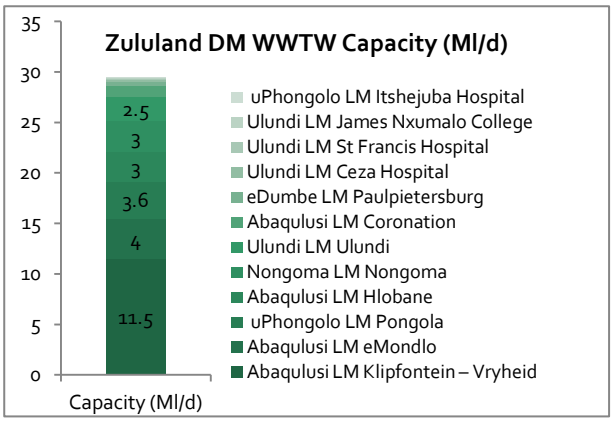


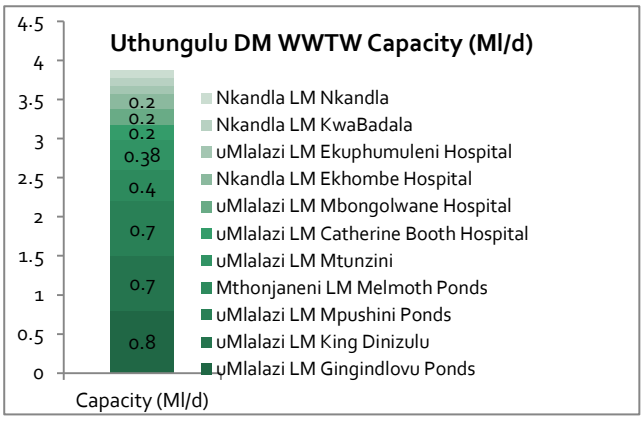
Table 12.4: Northern KZN Customers' systems and Green Drop status.

Municipality	System / WWTW	Capacity (Ml/d)	2014 Risk Rating
uMhlathuze Local Municipality	Empangeni	14.5	***54.5%*** (↓)
	Esikhawini	12.5	***50%*** (↓)
	Ngwelezana	5.8	***31.8%*** (↓)
	Nseleni	3.9	***29.4%*** (→)
	Vulindlela	2.8	***23.5%*** (↓)
uMkhanyakude DM *Jozini LM*	Bethesda Hospital	0.3	***58.8%*** (↓)
	Ingwavuma Hospital	0.5	***88.2%*** (↑)
	Jozini	0.5	***70.6%*** (↑)
	Mkhuze	0.5	***82.4%*** (↑)
(Mtubatuba LM	KwaMsane	1	***88.2%*** (↑)
	Mtubatuba	2	***88.2%*** (↑)
	St Lucia Ponds	1	***76.5%*** (↑)
The Big 5 False Bay LM	Hluhluwe	0.25	***82.4%*** (↑)
Hlabisa LM	Hlabisa Hospital	0.5	***76.5%*** (↑)
uMhlabuyalingana LM	Manguzi Hospital	0.5	***88.2%*** (↑)
Zululand DM *Ulundi LM*	Ceza Hospital	0.14	***76.5%*** (↑)
	James Nxumalo College	0.11	***65%*** (↑)
	St Francis Hospital	0.12	***64.7%*** (↑)
	Ulundi	2.5	***76.5%*** (↓)
Abaqulusi LM	Coronation	1	***64.7%*** (↓)
	eMondlo	4	***64.7%*** (↓)
	Hlobane	3	***64.7%*** (↓)
	Klipfontein – Vryheid	11.5	***82%*** (↓)
eDumbe LM	Paulpietersburg	0.45	***88.2%*** (↑)
Nongoma LM	Nongoma	3	***76.5%*** (↑)
uPhongolo LM	Itshejuba Hospital	0.11	***76.5%*** (↑)
	Pongola	3.6	***76.5%*** (→)
uThungulu DM *uMlalazi LM*	Catherine Booth Hospital	0.2	***70.6%*** (↓)
	Ekuphumuleni Hospital	0.1	***82.4%*** (↑)
	Gingindlovu Ponds	0.8	***88.2%*** (→)
	King Dinizulu	0.7	***88.2%*** (→)
	Mbongolwane Hospital	0.2	***94.1%*** (↑)
	Mpushini Ponds	0.7	***88.2%*** (↑)
	Mtunzini	0.38	***88.2%*** (↑)
Nkandla LM	Ekhombe Hospital	0.2	***70.6%*** (↓)
	KwaBadala	0.1	***88.2%*** (↑)
	Nkandla	0.09	***94.1%*** (↑)
Mthonjaneni LM	Melmoth Ponds	0.4	***76.5%*** (↑)

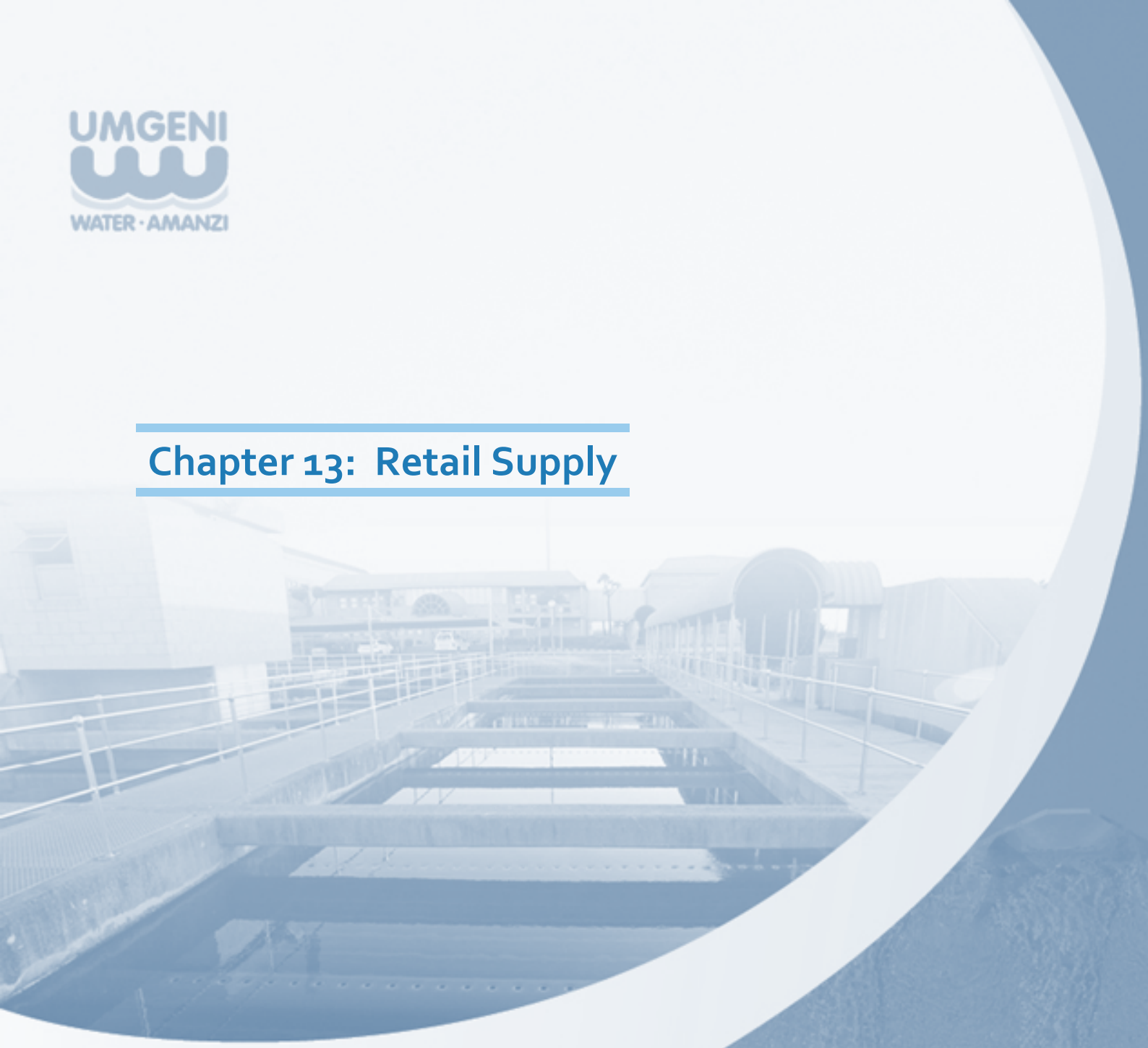








Chapter 13: Retail Supply



13.1 Retail Supply

Umgeni Water does not provide any retail water supplies.

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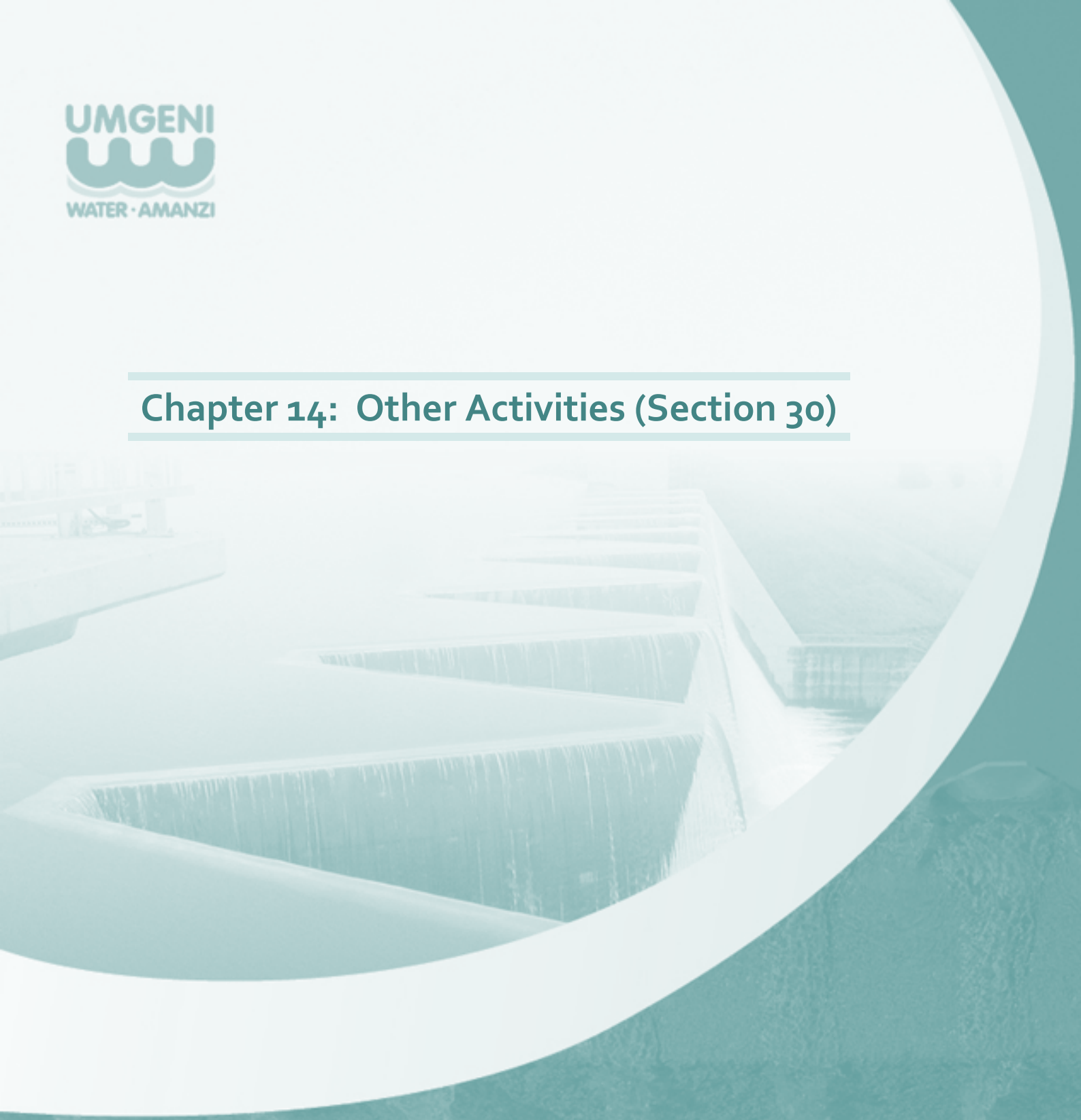
Chapter 14: Other Activities (Section 30)



Contents

14.1. O&M for Raw Water Supply System – Ludeke Dam

14.1.1 Agent for DWS and Alfred Nzo and OR Tambo Water Services Authorities for Bulk Water Supply Infrastructure Development.

Umgeni Water will continue to provide implementing agency services to the Department of Water and Sanitation, Alfred Nzo District Municipality and OR Tambo District Municipality for bulk water services. Work is being undertaken in terms of the infrastructure funding agreement that was signed by the former Department of Water Affairs & Forestry (Eastern Cape Region), the OR Tambo District Municipality and Umgeni Water in February 2008, and a tripartite funding and implementation agreement currently being concluded between the Department of Water and Sanitation, the Alfred Nzo District Municipality and Umgeni Water.

14.1.2 Greater Mbizana Regional Bulk Water Supply Scheme

The Greater Mbizana Regional Bulk Water Supply Scheme is currently being implemented, with some components completed and others under construction. As a result of changes that took place as part of the municipal demarcation process in 2011, the project is now under the jurisdiction of the Alfred Nzo District Municipality. Project progress and planned activities for contracts that have been awarded are:

Construction of the Ludeke Dam

- Construction work on the Ludeke Dam was completed in April 2014.
- The Ludeke Dam is a 40 m high, Category 3, clay-core rockfill embankment dam on the Ludeke River, a tributary of the Mtamvuna River.

Construction of the raw water pump station and rising main to the Nomlacu Water Treatment Plant

- The contract for the raw water pump station and 13.2 km long, 500 mm diameter rising main to the Nomlacu Water Treatment Plant was completed in December 2011.

Construction of the first phase of the Nomlacu Water Treatment Plant

- The civil and mechanical and electrical works required for Phase 1 of the upgrading and extension of the Nomlacu Water Treatment Plant have been designed to provide up to 10 000 cubic metres per day.
- Construction work of the first phase of the Nomlacu Water Treatment Plant is complete.
- Operational responsibility of the Nomlacu Water Treatment Plant was handed over to Alfred Nzo District Municipality in June 2013.

Construction work on the first phase of the Bulk Treated Water Supply System

- Phase 1 of the bulk treated water supply system comprises 28 km of pipelines, 8 bulk storage reservoirs, and a pump station.
- Construction work on the first phase of the bulk treated water supply system has reached practical completion stage, with a number of components having been brought into operation.
- The Certificate of Completion is expected to be issued by March 2016.

The target date for completion of Phase 1 of the Scheme is June 2016 at a total capital cost of approximately R664 million (including VAT).

The Department of Water and Sanitation has appointed Umgeni Water to operate and maintain the Raw Water Supply System (including the Ludeke Dam and Raw Water Pump Station and Rising Main up to, but excluding, the Nomlacu Water Treatment Plant) for an interim two-year period (until August 2017) on a cost recovery basis.

The implementation of further phases of the bulk water supply will depend on priorities within the area and the availability of funding.

The purpose of the project is to ultimately supply 20 Ml/d of potable water to a population of 266 000 people (approximately 44 500 households), allowing for an increase in the average consumption per capita from 25 litres per person per day to 75 litres per person per day over a 30-year time horizon. The targeted categories of consumers to be supplied with potable water are domestic water users throughout the region, and commercial and light industrial users and institutional users mainly within the town of Bizana. The estimated total capital cost of the entire bulk water supply scheme, including all phases, is in excess of R1.1 billion over a multi-year development period.

14.1.3 Ingquza Hill Regional Bulk Water Supply Scheme

Umgeni Water has been appointed as the Implementing Agent for the Study Phase of the Ingquza Hill Regional Bulk Water Supply Scheme, using the DWS RBIG "Framework for Implementation" as a guide in the implementation of this project. OR Tambo District Municipality is the Water Services Authority.

Work has not yet started on this project, as the RBIG Study Phase Agreement between the Department of Water and Sanitation and Umgeni Water has not yet been concluded. Once started, it is anticipated that this study will take about thirty three months to complete.

14.2. Agreement with DWS for Operation, Administration and Maintenance of Dams

Umgeni Water signed a 10 year renewable agreement for the operation, administration and maintenance of dams with DWS in 2013. This encompasses: Midmar Dam, Albert Falls Dam, Inanda Dam, Hazelmere Dam, Spring Grove Dam and the Mearns Diversion Weir, Mearns Pumping Station, Transfer Pipeline and Receiving Streams.

14.3. Implementing Agent for DEA: Working-for-Water

Umgeni Water has been an Implementing Agent for DEA for the control of terrestrial in selected catchments in the Mvoti to Mzimkhulu Water Management Area since 2003. Umgeni Water has been awarded a new contract until 31 March 2017. The terrestrial weed programme (contract value R 12 million for 2 years) will hire and train people from within the community as contractors or employed as part of the contractor's team.

The teams use approved Working for Water clearing methods and apply herbicide as per the Working for Water herbicide policy. The contractors employed by the programme are provided with functional and developmental training to ensure that they can either become contractors on exit from the programme or join the formal job market in other capacities. This will contribute to the social economy by creating jobs through clearing of alien vegetation in raw water supply catchments.

Table 14.1: Working-for-Water Programme

Project Name	Total Hectares	Total Person Days	Max People Employed per project
KZN Nagle	675	8400	88
KZN Mgeni Valley	784	8820	77
KZN Upper Mvoti	458	5160	55
Total	1917	22380	220

14.4. Implementing Agent for DWS: KZN River Health (RHP) and Adopt a River Programme (AaRP)

Umgeni Water has been appointed by DWS as the Implementing Agent River Health Programme and Adopt a River Programme for 2015-2018.

The focus of the RHP for 2015-2018 is monitoring 43 sites for the programme. These will include both reference and monitoring sites for WMA 6, WMA 7 and WMA 11 catchment management areas. The primary focus of this study is to conduct appropriate assessments of diatoms, macro invertebrates, fish, riparian vegetation and habitat integrity and develop an appropriate monitoring plan and sampling frequency per monitoring site.

The AaR will focus on clearing activities for 2015-2018 on the Mgeni Catchment Area and monitoring and maintaining cleared areas. Two projects have been identified for the 2016-17 year, Mthinzima Stream, in Mpophomeni and the Willowfountain River in Pietermaritzburg. Each project will employ 30 beneficiaries.

14.5. Laboratory Services

Umgeni Water provides an extensive array of ISO/IEC 17025 accredited laboratory testing services to various municipalities in KZN and the Eastern Cape. The primary objective of the partnership with the WSAs is to improve the level of compliance in terms of the Blue Drop and Green Drop Systems.

Currently, fixed term contracts are in place for water and wastewater quality monitoring with the eThekwini MM, Harry Gwala DM, Ugu DM, uMgungundlovu DM, Msunduzi LM, and Alfred Nzo DM.

Laboratory services are also provided to various other water sector entities including Mhlathuze Water, Amatola Water and uThukela Water, as well as to over 2500 other clients (industries, academic institutions, commercial labs, farmers, private individuals).

14.6. Support to Municipalities

Umgeni Water is supporting vulnerable customers implement projects to improve water service delivery. Interventions vary from emergency refurbishment of reticulation infrastructure to upgrades of municipal wastewater systems. In 2016/2017

14.7. KwaZulu-Natal Water Services Concept Plan

In November 2013, Umgeni Water assumed the role of programme management for the development of the conceptual water services plan for KwaZulu-Natal following a request from the Department of Co-operative Governance and Traditional Affairs (CoGTA). The work is primarily being done by consultants previously appointed by CoGTA and has a budget of R9m.

The first phase of the project was a consolidation of concurrent projects at CoGTA, the Department of Water and Sanitation (DWS) and at Umgeni Water and included identification of water service delivery gaps and the provision of conceptual plans focussing on regional schemes. Local schemes were identified as options in areas where regional schemes were not viable or where an interim water supply was needed.

The main immediate deliverable of this phase was the development of Conceptual Universal Water Access Plans for each District Municipality in KwaZulu-Natal by the end of May 2014. This was completed in September 2014, due to minor delays encountered.

The second phase of the project is being funded and implemented by Umgeni Water in collaboration with CoGTA and DWS. The consultants on the project were appointed through DWS term contract. The first deliverable of this phase of the project was a High level Status Quo report on the water supply in KwaZulu-Natal. This was completed in September 2015.

The second deliverable on the project is the detailed / reconnaissance level Universal Access Plan for KZN and is envisaged to be completed by April 2016. This suite of reports will provide options, per municipality, on the various water resource sources and possible regional schemes that can be implemented to provide universal access to water for the province and north eastern parts of the Eastern Cape.

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15 Human Resources Plan

Improving Quality of Life and Enhancing Sustainable Economic Development

Contents

15.1 Human Resources Strategy

Umgeni Water's Human Resources strategy is aligned to consolidation and growth and remains relevant to the changing Human Capital needs of the organisation. The purpose of the human resources strategy is to direct the organisation to respond to its people needs to deliver on its business strategies and plans, amid the critical skills challenges in the water sector and country as a whole. This strategy had been developed following consideration of the operating environment and organisation's vision, mission, strategies and plans.

This strategy comprises ten human resource focus areas with specific objectives for each:

- **Workforce Planning:** *Maintain a workforce that will enable Umgeni Water to deliver quality services to all its stakeholders.*
- **Employee Resourcing and Human Resources Administration:** *Ensure effective attraction, retention and engagement of staff with expertise, experience and skills, within a framework that ensures equity and diversity.*
- **Learning and Development:** *Create an environment in which all employees are recognised as well qualified, professionally engaged and committed to high quality and standards*
- **Performance Management***: Ensure achievement of Umgeni Water's strategic goals by managing skills, competencies, commitment of employees, recognising good performance and managing poor performance effectively.*
- **Reward and Recognition:** *Ensure that Umgeni Water pays employees market related salaries and has in place career advancement and reward systems that remain attractive to employees.*
- **Employee Wellness:** *Manage all aspects of employee wellness that can have a negative impact on employee's ability to deliver on organisational objectives*
- **Employee Relations:** *Create an environment in which our employees feel valued and support the organisation's values, strategies and priorities.*
- **Organisational Development:** *Improve on organisational effectiveness and efficiency by utilising diagnostic data, designing and implementing appropriate organisational development solutions and interventions to enable the organisation to optimise its strategy.*
- **Human Resources Information Technology:** *Provide real time reliable information and intelligence with improved discretion towards developing and delivering.*
- **Human Resources Risk Management:** *Provide a foundation for risk to be part of the HR Agenda and enhances Human Resources value proposition to the business.*

The organisation's Workforce Plan, Employment Equity, Training and Development, HIV/AIDS and Wellness, and Employee Relations plans are described further in this plan.

15.2 Workforce Profile

Umgeni Water will continue to maintain and enhance its core business functions, in support of implementation of this Corporate Plan.

The workforce plan has been used as the basis to develop the Human Resources Plan which includes projected human resource requirements shown in **Table 15.1** and **Figure 15.1.**

Table 15.1: Umgeni Water Projected Workforce Profile 2020/2021 (includes contract employees)

Occupational Levels	2015/16	2016/17	2017/18	2018/19	2019/20	2020/2021
Top management	5	5	5	5	5	5
Senior management	30	30	30	30	30	30
Professionally qualified and experienced specialists and mid-management	221	225	228	228	228	228
Skilled technical and academically qualified workers, junior management, supervisors, foremen, and superintendents	433	440	439	439	439	439
Semi-skilled and discretionary decision making	214	222	220	220	220	220
Unskilled and defined decision making	147	147	149	149	149	149
Total (excluding Board members)	**1050**	**1069**	**1071**	**1071**	**1071**	**1071**

Figure 15.1: Projected Employment by Occupational Category 2020/2021

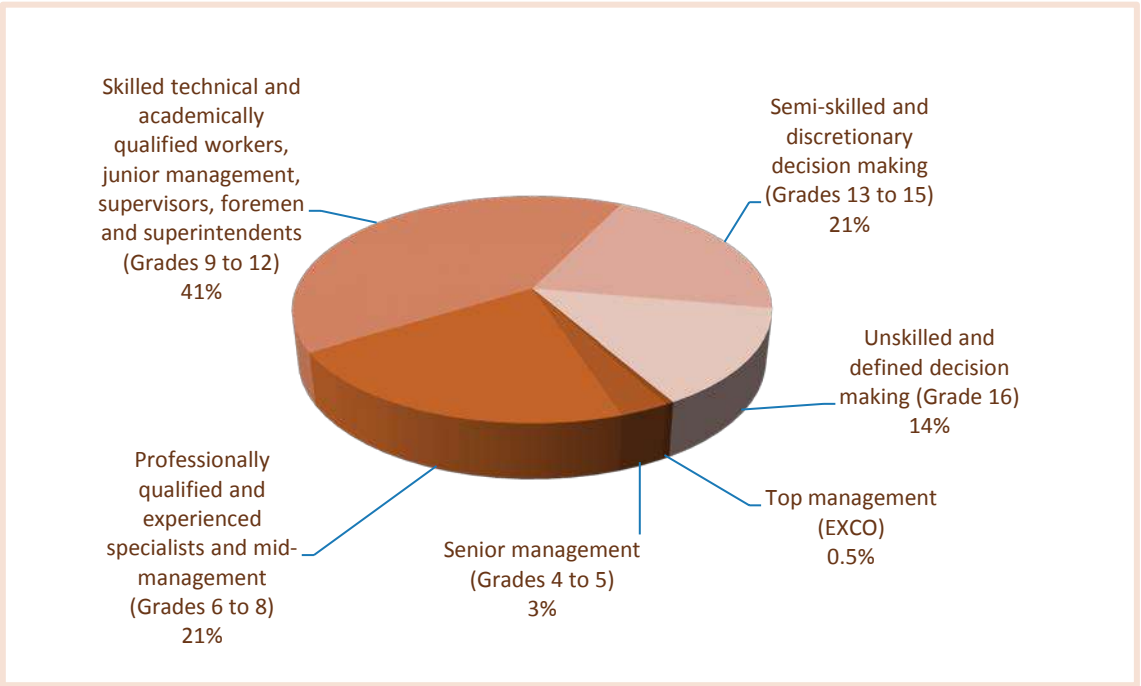
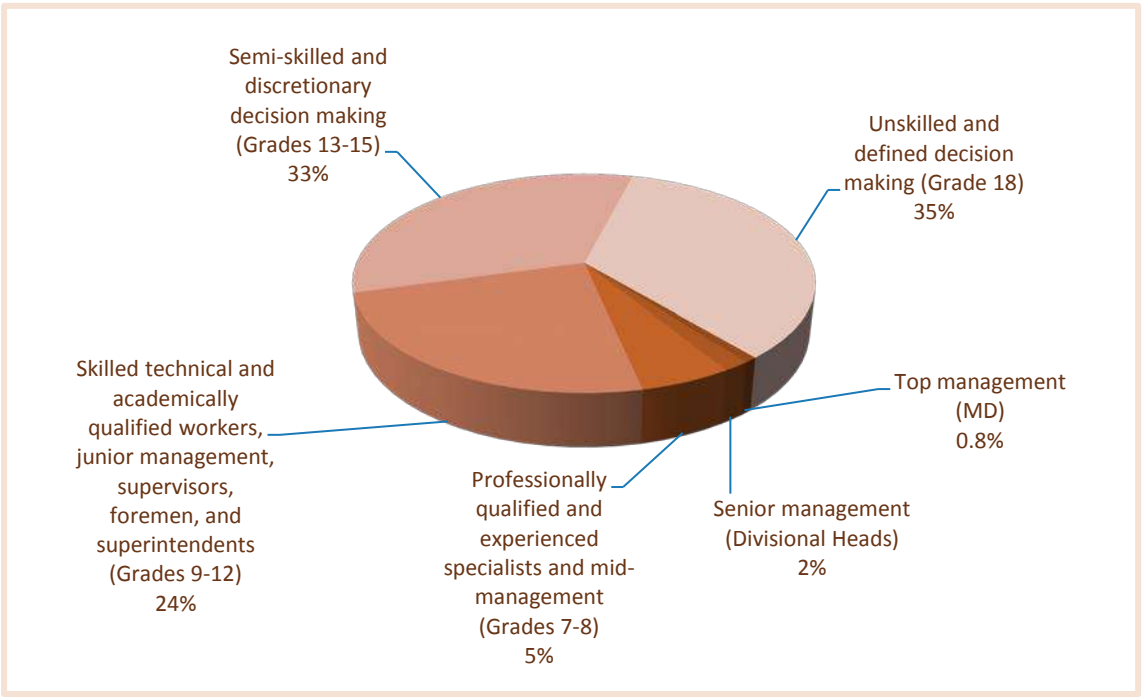


Table15.2: Msinsi Holdings Projected workforce profile for 2016/17 to 2020/21 (permanent employees only)

Occupational Levels	Baseline	2016/17	2017/18	2018/19	2019/20	2020/21
Top management (MD)	1	1	1	1	1	1
Senior management (Divisional Heads)	2	2	2	2	2	2
Professionally qualified and experienced specialists and mid-management (Grades 7-8)	7	7	7	7	7	7
Skilled technical and academically qualified workers, junior management, supervisors, foremen, and superintendents (Grades 9-12)	24	31	31	31	31	31
Semi-skilled and discretionary decision making (Grades 13-15)	41	43	43	43	43	43
Unskilled and defined decision making (Grade 18)	43	45	45	45	45	45
Total (excluding Board members)	**118**	**129**	**129**	**129**	**129**	**129**

Figure 15.2: Projected Employment by Occupational Category 2020/2021



15.3 Employment Equity and Profiles by Race, Gender, Disability and Age

Current profiles, including by race, gender and disability are depicted in **Figures 15.3 to 15.5.** Forty-seven (47) employees of the total workforce are also anticipated to retire normally from the organisation during this five Corporate Plan period.

The entity has plans in place to continue to diversity its workforce over the five-year period. These include succession planning, skills development interventions and leadership / employee development programmes. These will mitigate the loss of skills and institutional memory from normal retirement. The skills development interventions aim to introduce more young employees into the organisation.

Umgeni Water Parent

Figure 15.3: Employment status by race 2015/2016

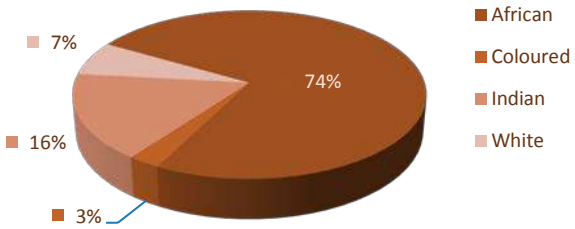


Figure 15.4: Employment status by gender 2015/2016

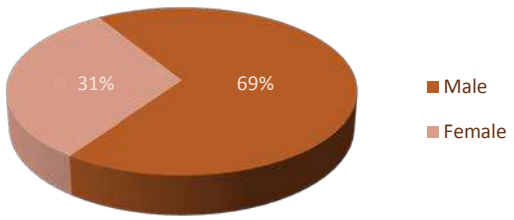


Figure 15.5: Disability Status 2015/2016

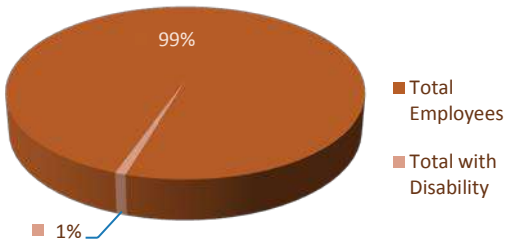
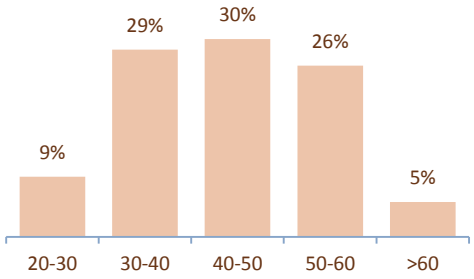


Figure 15.6: Age Profile 2016



Msinsi Holdings

Figure 15.3: Employment status by race 2020/2021

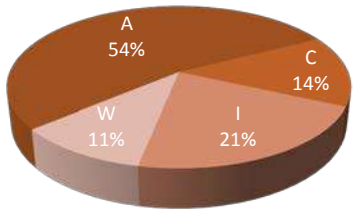


Figure 15.4: Employment status by gender 2015/2016

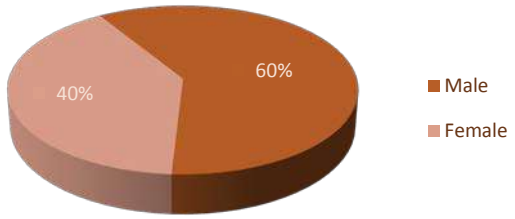
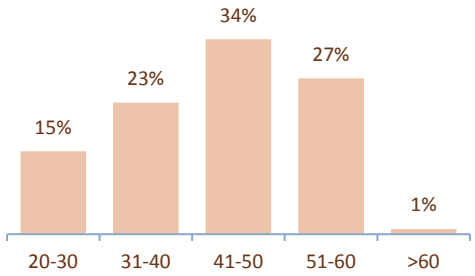


Figure 15.6: Age Profile 2016



15.4 Training programmes

Staff skills development is essential to enable staff to excel in their individual and organisational roles and functions and deliver on the organisation's strategy. The organisation's recruitment and retention interventions are intended to ensure the organisation has sufficient flexibility to obtain the skills that it needs to implement its Corporate Plan.

The approach will include options for buying, making, converting and creating skills, whilst continuing to ensure diversity is increased in under-represented areas. The convert strategy will focus on core, scarce and critical skills through retraining. This will be achieved through Learnerships, Training Interventions and Recognition of Prior Learning.

Umgeni Water will develop strong partnerships with Universities, University of Technologies, FET colleges and SETAs in support of its skills development initiatives. The organisation will also continue to maintain a strong partnership with National Treasury to assist in training Graduate Technicians, Technologists, Engineers and Scientists towards formal registration with the relevant professional bodies. These skills will be deployed to address the skills shortage in targeted rural municipalities in KwaZulu-Natal and Eastern Cape.

15.4.1 Build leadership, management and functional competence for KZN.

- The current Leadership and Management Development Programmes comprise: Management Development Programme (MDP), Emerging Development Programme (EMP) and Senior Management Development Programme (SMDP).
- These programmes are structured into three phases:
  - Phase one and Phase two comprise MDP and EMP programmes. These were successfully implemented in 2015
  - Phase three comprises the SMDP programme: Planning for this will be completed in 2016 and implementation commence in 2017.

Table 15.3: Leadership and Management Development Programmes

Initiatives/ plans	Actual 2014/2015	2015/2016	2016/17	2017-2021
Implement Management Development Programme and Emerging Development Programme	103 completed.	Review and Monitor	Review and Monitor	Review and assess future needs.
Identify Senior Management Development Programme	N/A	Programme sourced	28 enrolled	Review and assess future needs.

The staff skills development plan for the Five-Year Period is summarised in **Table 15.3**.

15.4.2 Artisan Learnership Programme

The Umgeni Water Artisan Learnership/apprenticeship Programme consists of two phases:

Phase 1: Learners are trained for a period of three years (phase 1 to phase 3) prior to writing trade tests. After passing their trade tests they become qualified artisans.
Phase 2: Following trade tests, Umgeni Water provides the artisans with further experiential training as Artisan trainees for a period of two years after which they become fully employable in the labour market.

For this Corporate Plan period:

- Fifty seven (57) Apprentices are appointed in Technical skills operations.
- Fifteen (15) employees are enrolled in Water and Wastewater Treatment Operation Learnerships and attend modules on a quarterly basis.
- Practical training will be provided for two (2) years to twelve (12) external apprentices who are qualified as Artisan Trainees after acquiring their trade tests in Mechanical Engineering, Electrical engineering and Instruments.

15.4.3 Bursary and Graduate Programme

A *create strategy* will be used to create a skills pool that would address future skills demands in the organisation. This will be achieved through:

- Continuing with the current bursary programme and awarding further bursaries for skills identified, namely, civil engineering, mechanical engineering, mechanical engineering, chemical engineering and financial accounting.
- Continue to ring-fence twenty-eight (28) positions in the structure for implementation of graduate development programmes as mechanisms for addressing the core, critical and scarce skills needed by the organisation.

15.4.4 Training and Development and Assisted Education Programmes

Training and development and assisted education programmes will be improved by better alignment of the skills and competency needs of the Corporate Plan to individual's development plan, as well as, the workplace skills plan.

15.4.5 Process Controller – Blue-drop and Green-drop Certification

- Umgeni Water has continued to assess the skills and competencies levels of water and wastewater treatment staff against requirements of Regulation 17 of the Water Services Act for Blue Drop and Green Drop certification. The training programme to close the gap is shown in Table 15.4.

15.4.6 Contribution to regional skills development – municipalities

- Umgeni Water has partnered with National Treasury to develop and train graduate Technicians, Technologist, Engineers and Scientist with specific emphasis on meeting the skills shortage in the municipalities in KwaZulu-Natal. As part of this programme, a total of forty-four (44) engineers are enrolled in the programme. Each year a target number will achieve professional registration with certified professional bodies.
- To ensure sustainability, the internship programme will be treated as a bursary for which trainees will be contracted to work for the municipalities for a period equal to the number of years they were trained by Umgeni Water.

Table 15.4: Staff Skills Development Plan for 2016/2017 to 2020/2021

Initiatives/Plans	Result Indicator	2017	2018	2019	2020	2021
Develop technical skills for the organisation (artisans).	Number of artisans training plans met.	40 training plans met	50 training plans met (year 1 apprenticeship)	50 training plans met (year 2 apprenticeship)	50 training plans met (year 3 apprenticeship) Year 1 artisan trainees	50 training plans met 50 trade tests passed Year 2 Artisan trainees
Develop technical skills for the organisation (process controllers).	Number of process controllers training plans met.	72 training plans met	72 training plans met	72 training plans met	-	-
Develop technical skills for the organisation (apprentices electrical, mechanical and instruments).	Number of apprentices training plans met.	12 apprentices trade tested	12 training plans met Year 1 Artisan trainees	Year 2 Artisan trainees	-	-
Develop technical skills for the organisation (graduates / interns).	Number of graduates / interns development plans met and professional registrations obtained.	28 development plans met	28 development plans met	28 development plans met	28 development plans met .	28 development plans met.
Develop technical skills for the organisation (bursars).	Number of bursars' degree requirements met.	10 degree plans met	10 degree plans met	10 degree plans met	10 degree plans met	10 degree plans met
Develop and train water sector professionals for municipalities.	Numbers of candidate engineers/ professionals developed and certification achieved.	40 developed. 11 certifications at year end.	29 developed. 11 certifications at year end.	18 developed. 18 certifications at year end.	-	-
Enable training, development and assisted education as informed by Individual Development Plans.		60% of training budget allocated to developing core / distinctive competencies.	60% of training budget allocated to developing core / distinctive competencies.	60% of training budget allocated to developing core / distinctive competencies.	60% of training budget allocated to developing core / distinctive competencies.	60% of training budget allocated to developing core / distinctive competencies.

Table 15.5: Training Plan to improve operations and process control skills for water and wastewater systems (in line with regulation 17 / Blue and Green Drop certification)

Designation	Current Class	Required Class	No. to be trained	Intervention Required		
				Short Term (0-1 year)	Medium Term (1-2 years)	Long Term (2- 5 years)
Superintendent	7 (Class V)	7 (Class V)	7	5-Refresher Course 2-Advanced Water Operation Course	2-Advanced Operation Course 5-Refresher Course	2-Refresher Course
Process and Quality Tech	4 (Class V) 2 (Class III)	6 (Class V)	6	3Advanced Water Operation	Process and Quality Tech Legal compliance courses	National Diploma Water Care
Senior Operator	2 (Class IV) 3 (Class V)	5 (Class V)	8	Refresher course N3 Water and Waste Water	Refresher course	Refresher course
Operator	12 (Class 0) 2 (Class I) 2 (Class III) 9 (Class IV) 13 (Class V)	2 (Class II) 1 (Class III) 20 (Class IV) 6 (Class V)	38	22-Refresher course 2-Enrolment in Learnership programme 1-Grandparenting	1 – Completing NTC III 1- Matriculation 18 - Require refresher training 1 – Enrol into WWW Learnership programme	2 – Currently completing B Tech 1 – Currently completing ND: Chemical Engineering – Require grand-parenting 4– Process environment experience 1 – to complete N3 1 – NTC III required 1 – Process training required 8–Refresher Course 3– Skills programme 2 – Water Purification Course
Process Controllers	8 (Class 0) 1(Class II) 1 (Class V) 1 (Class V) 9(not registered)	9(Class III) 2 (Class IV) 3 (Class IV) 6(Not registered)	20	15-Refresher course 5-Enrolment in Learnership programme 4-Skills programme	4 - Require refresher training Grand-parenting required- 2 10– Skills programme	2 – Enrol into WWW Learnership programme 4-Grandparenting required 8– Skills programme
Total			**72**			

Table 15.6: Umgeni Water registered engineering professionals with ECSA

Type	No.	Field	No.
Candidate Engineer	9	Chemical Engineering	4
		Civil Engineering	4
		Electrical Engineering	1
Candidate Technician	3	Chemical Engineering	2
		Civil Engineering	1
Candidate Technologist	7	Chemical Engineering	2
		Civil Engineering	5
Professional Engineer	15	Civil Engineering	8
		Agriculture	1
		Chemical Engineering	2
		Mechanical Engineering	3
		Electrical Engineering	1
Professional Certificated Engineer	1	Certified Electrical Engineering	1
Professional Engineering Technician	1	Electrical Engineering	1
Professional Technician	1	Civil Engineering	1
Professional Technologist	8	Chemical Engineering	1
		Civil Engineering	**7**
Total			**45**

Table 15.7: Umgeni Water (National Treasury Graduates) candidate engineers and scientists

Type / Field	No.
Chemical Engineering (B.Sc)	3
Chemical Engineering (N. Dip)	6
Chemical Engineering (B. Tech)	11
Chemical Engineering (M Tech)	1
Civil Engineering (N. Dip)	7
Civil Engineering (B.Sc)	4
Mechanical Engineering (N. Dip)	4
Electrical Engineering (N. Dip)	4
Total	**40**

The information on graduates who are being trained by Umgeni Water as part of a National Treasury funded initiative have been submitted to ECSA, SAICE and SACNASP for registration as candidate engineers, scientists, technologists and technicians in indicated fields. On completion of their training and registration with professional bodies the graduates will be deployed to municipalities as part of capacitating municipalities with skills.

15.4.7 Umgeni Water Young Professionals

- The Umgeni Water Young Professionals (UWYP) initiative was launched in November 2014 and provides a platform for Umgeni Water's employees below the age of 35 to ensure that Young Professionals are competent in their core skills and are groomed to become future leaders.

The objectives of the UWYP initiative are to:

- Create enabling environment for professional growth through affiliation and registration,
- Encourage active community participation, and
- To create a solid professional and social network amongst the Young Professionals within the organisation.

15.5 HIV/AIDS, Wellness, Health and Safety

Umgeni Water continues to provide health care programmes that include environmental health, occupational health, primary health and general wellness. Occupational health remains vitally important for Umgeni Water to ensure effective water service delivery to its customers. Occupational health is a primary function of medical services delivered at all our operating sites. Qualified Occupational Health Nursing Practitioners and part-time Occupational Health Doctor provide occupational health services, including job-related medical examinations, base line assessments, on-going monitoring and management of health conditions such as hearing, biological monitoring and lung function testing.

Occupational Health Risk Assessment identifies noise, dust and chemicals as principal risks factors requiring effective interventions. Active steps are being taken to prevent the occurrence of occupational diseases, particularly those resulting from exposure to principal risks. Medical Surveillance Programmes are reviewed on annual basis and continuously being monitored to ensure that employees exposed to high risk activities are not negatively affected by inherent occupational health risks. Medical Surveillance Programmes also provide an opportunity for urgent medical interventions to be taken and reverse the early detection of symptoms of occupational illness.

15.5.1 Management of HIV and AIDS

HIV and AIDS still remains the single biggest health challenge in the country. Umgeni Water has experienced the effects of the HIV/AIDS epidemic in its operations and has implemented interventions to address these challenges. Umgeni Water has also aligned its strategy with that of UNAIDS and Brothers For Life, referred to as the "I can't change my HIV status but you can change your attitude" strategy of zero stigma; zero discrimination; and zero AIDS related deaths.

Furthermore, Umgeni Water supports the government campaign of "get wise, get tested and get circumcised". Umgeni Water will therefore continue to partner with the contracted medical aid fund in its strategy to deliver HIV/AIDS programmes which will include:

- Access to Voluntary, Counselling and Testing Programmes known as HIV Counselling and Testing,
- Access Anti-retroviral Treatment, enabled through the Medical Aid Fund HIV/AIDS Programme known as Aid for Aids, and
- Strengthening of HIV/AIDS awareness in the organisation.

Employees who are living with HIV are encouraged to register on the programme and are being monitored by Aid for Aids for treatment and other special conditions. The programme offers the following benefits to the employees:-

- Medicine to treat HIV and other opportunistic infections;
- Regular monitoring of disease progression and response to therapy
- Regular monitoring tests to pick up possible side-effects of treatment and
- On-going patient support via a Nurse-Line.

Male Medical Circumcision (MMC) in combination with other HIV preventative measures, have been shown to reduce the transmission of HIV in men by sixty per cent (60%) and in light of this, the organisation is encouraging MMC to its employees.

Umgeni Water's HIV/AIDS Management Forum plays a significant role and will further be utilised to encourage employees to participate in the World AIDS day and Wellness Programme events, amongst others. Implementation of HIV/AIDS programmes and wellness programmes will be achieved through collaboration with other organisations and partnerships with Umgeni Water's medical aid fund and associated institutions.

The current HIV prevalence levels in the general adult population is estimated at 19.8%, compared to 7% at Umgeni Water, as derived from the organisation's medical aid health profile.

15.5.2 Health and Safety Plan at Operational Sites

Umgeni water is committed to the safety of its employees, contractors, visitors as well as the health of its employees. The organisation has implemented systems to ensure that health and safety issues are dealt with and managed effectively and timeously. This is achieved through:

- Continuous risk management through participative risk reviews,
- Implementation of safety plans to ensure that existing hazards and risk are continuously monitored and managed,
- Ensuring legal appointments are in place and proper training is afforded for the appointed individuals,
- Sound health programmes to ensure employee job fitness at all times,
- There is a plan in place for a standardised comprehensive induction programme at site level to elevate risks associated with Umgeni Water operations for new and existing employees as well as contractors,
- Continuous improvement initiatives are in place to ensure that OHSAS 18001 certificate is maintained within the operations division,
- Adequately trained emergency teams available at site level to deal with operational emergencies, and
- Planned job observations that enforce compliance to the safe/ standard operating procedures.

15.6 Employee Relations

Sound labour relations are the foundation of the business. Umgeni Water has always strived to create an environment in which our employees feel valued and support the organisation's values, strategies and priorities. Effective communication and employee engagement is critical for maintaining open and productive relationships between management and employees. The relationship with trade union in the organisation is managed by human resources department through open communication forums which allow for internal issues to be effectively dealt with. Trade union representatives are included in formal joint management-worker health and safety committees.

Umgeni Water employees have the right to freedom of association and this is entrenched in the company's code of ethics, business principles and policies. There is one trade union formally recognised (National Education Health and Allied Workers Union) which represents fifty-eight per cent (58%) of the total workforce.

Umgeni Water continued to maintain a constructive relationship with organised labour and a climate of industrial peace has generally prevailed. The relationship between the organisation and NEHAWU is subject to a collective bargaining agreement. Umgeni Water will continue to negotiate salaries and other substantive employment conditions through negotiated collective agreements.

UMGENI WATER · AMANZI

Chapter 16: Environmental Management and Research and Innovation Plans

Improving Quality of Life and Enhancing Sustainable Economic Development

Contents

16.1 Approach to Environmental Management

Umgeni Water strives for sustainable growth and will ensure continued provision and extension of sustainable water services to all areas. Mindful of the high reliance on adequate supplies of raw water resources, energy, chemicals and other natural resources to undertake the water business, Umgeni Water is committed to efficient use and protecting and sustaining these resources.

Environmental management programmes and plans are implanted throughout the project life-cycle, which is during planning, construction, operation and decommissioning. The different environmental management programs and plans are categorised as:

- *Corporate environmental management* focusing on aligning the business activities towards environmental sustainability and promoting a shift towards the state of green economy
- *Operational environmental management* focusing on ensuring compliance of the organisation with applicable governing environmental legislations and regulations and avoiding and or minimising environmental impacts as a result of business activities
- *Integrated environmental management* focusing on the identification, mitigation and implementation of management plans for potential environmental impacts for infrastructure projects.

Corporate environmental sustainability focus areas include:

- Energy Efficiency
- Carbon Footprint
- Biodiversity Management
- Waste Management
- Green Buildings

16.2 Energy Usage and Efficiency

Energy is a core resource for water and wastewater treatment processes and Umgeni Water will continue to look for opportunities to improve energy efficiency.

Current plans are:

- The Mooi-Mgeni Transfer scheme hydropower project which is currently underway at the EIA phase,
- Darvill WWTW cogeneration initiative - utilising digester methane to produce electricity which is in final design stage. The energy generation system will comprise a biogas pre-treatment unit and two generators. The plant will utilise the methane gas generated in the bio-digesters to produce electricity. Preliminary studies indicated that approximately 40% of the total energy requirements of the wastewater treatment works can be generated from this source. The produced energy can be used for pumping raw water from various sources to treatment plants and can also be used for pumping bulk potable water to customer points,
- Optimal management of pumping, and
- Implementation of energy efficient lighting measures aligned to national initiatives.

The proposed future plan is to undertake a specialist energy demand management study.

16.3 Carbon Footprint

Umgeni Water's direct CO_2 emissions arise from fuel usage for transport (vehicles), general waste and from generators and boats, while indirect CO_2 emissions are primarily due to electricity usage, and to a minor extent flights. The organisation's carbon footprint is primarily due to electricity consumption.

It is anticipated that implementing energy efficient measures will contribute to reducing the carbon footprint over time.

The current initiatives include the above-mentioned development of an electricity co-generation plant at the Darvill Wastewater Treatment Works. Umgeni Water also implements on-going carbon offsetting initiatives such as

- On-going tree planting initiatives and
- Implementing the Darvill constructed artificial wetland project.

A specialist carbon footprint mapping exercise is also proposed for this Corporate Plan period.

16.4 Biodiversity Management

A biodiversity management strategy has been developed which provides a framework for assessing the biodiversity status of the operational areas to highlight areas of high conservation status and to minimise negative impacts on biodiversity from construction of new infrastructure projects. Current measures being implemented include:

- Biodiversity management implemented by Msinsi Holdings (detailed in section below),
- Biodiversity Impact Assessments as a component of EIAs for new infrastructure projects,
- Alien and aquatic vegetation control,
- Management and rescue for listed tree removals during construction of new infrastructure, and
- Bio-monitoring of river systems.

During this Corporate Plan cycle Umgeni Water will continue to ensure that Biodiversity Impact Assessments are being carried out for all listed activities identified in the CAPEX programme. Where rare species are identified further specialist studies are commissioned and trees of importance are avoided or a search and rescue plan is implemented if proposed construction site cannot be deviated from.

16.5 Msinsi Holdings Land and Sustainable Resource management

Msinsi Holdings SOC Ltd, a wholly-owned subsidiary of Umgeni Water is mandated to manage the land and biodiversity of the areas around the dams owned or managed by Umgeni Water in a manner that balances the divergent factors of local community development, provision of recreational facilities for the public and water resources/biodiversity protection.

These reserves are located at Spring Grove Dam, Albert Falls Dam, Nagle Dam, Inanda Dam, Hazelmere Dam, and Shongweni Dam.

Detailed management plans for each of the reserves, in line with industry best practice, have been completed and form the basis for all operations in the reserves. The resource management plans focus on:

- The management of the game and species according to the carrying capacity of each reserve,
- Local community development,
- Recreation for the public,
- Grassland management,
- Control of pollution inside the purchase areas, and
- Removal of alien invasive plants, both terrestrial and aquatic.

16.6 Waste Management

The alignment of the entities waste management strategy with the national strategy has been completed and will better assist operational sites with application of the waste management hierarchy, identification, categorisation and classification of waste, management of waste with respect to the storage, labelling, transport and other aspects, and waste disposal.

Progress and future plans include:

- A study to assess and recommend the beneficial use of the Water Treatment Residues from all UW treatment works and the sludge from the Waste Water Works to be conducted,
- Re classification of the water treatment residue from Durban Heights, Wiggins and uMzinto Water Works, and
- Rollout of the recycling initiative to the operational sites.

16.7 Green Buildings

A new project aimed at promoting sustainable development has been embarked upon. The project will utilise the services of a specialist to assess and recommend Green Building initiatives/opportunities for implementation with the view of transforming the organisation's infrastructure/business activities and achieve environmental sustainability. The project is still at the initiation stages and progressing according to plan. The project aims at achieving the following:

- Undertaking assessments of the organisation's operational sites/buildings to assess the green buildings status.
- Developing a guideline to improve the development of proposed infrastructure (incorporating resource efficiency during the planning and design phases).
- Certifying three office buildings with the Green Building Council of South Africa (GBCSA).

16.8 Chemicals Usage and Efficiency

Umgeni Water monitors chemical usage at all its sites. Initiatives to ensure and improve chemical usage efficiency and effectiveness include:

- Water treatment process evaluation audits, which identify areas to improve process and operational efficiency,
- Monitoring and reviewing seasonal variation of the water column/ dam levels, to optimise raw water quality.
- Participating in catchment management activities and forums, and contributing to the information base, including water quality. This helps shape and influence decisions for sustainable catchment land use activities and development, and
- Monthly chemical optimisation audits to ensure that optimal use of treatment chemicals is maintained and to facilitate a prompt response should a problem be identified through the monthly sampling.

16.9 Summary of Environmental Management Initiatives

A summary of the initiatives planned for implementation in this Corporate Plan period are shown in **Table 16.1** below.

Table 16.1: Environmental initiatives planned for implementation in this Corporate Plan period:

Project	Objectives and Outcomes	2016/2017 Milestones
1. **Biodiversity Management**	Assessment of biodiversity status within Umgeni Water operational areas to highlight areas of high conservation status and to minimise negative impacts of new infrastructure projects on biodiversity.	Preliminary investigation completed. On-going biodiversity management for water resources and construction projects completed.
2. **Waste Management**	Implementation of the waste management strategy across the organisation.	Roll-out of the waste recycling bins and awareness campaign for all Regional Offices. Conduct a study to investigate the suitable beneficial use for water treatment residues and waste water sludge Reclassification of water treatment residues for Durban Heights, Wiggins and uMzinto Water Treatment Works.
3. **Green Buildings**	Ensure that all buildings are operated in an environmentally sustainable way and that new infrastructure is designed, built and operated in an environmentally sustainable	Baseline assessments finalised at all operational sites. Commencement of the certification process for targeted office buildings.
4. **Carbon Footprint**	Carbon Footprint Mapping of the organisation	Procurement of specialist to conduct the mapping of the organisation's carbon footprint.
5. **Energy Demand Management**	Investigation of energy efficiency measures to reduce the organisation's electricity consumption.	Procurement of specialist to conduct the energy demand management exercise.

16.10 Research and Innovation Projects and Plans

The thrust of Umgeni Water's Innovation, Research and Development Programme is to nurture and encourage research within the organisation to gain knowledge about new technology and processes that can be implemented to improve efficiencies and increase effectiveness by reducing chemical and operating costs as well as lowering energy consumption.

Priorities that are driven by Umgeni Water's Organisational Strategies include the following:

- Evaluation and implementation of new technologies and processes to address technical and non-technical challenges of a medium to long term nature in Umgeni Water,
- Implementation of an Innovation scheme in Umgeni Water,
- Equipment evaluation and approval to help achieve standardisation of certain products used by Umgeni Water. Benefits of standardisation include compliance with the minimum requirements for performance, quality, reliability and safety to mitigate risk as well as cost reductions and increased efficiencies through simplification of procurement processes and inter-changeability of equipment within the organisation. These measures are expected to lower Umgeni Water's risks with respect to its mandate in the provision of safe drinking water, cost-effectively and sustainably,
- Greater collaboration with tertiary institutions within the province to encourage more fundamental research in water and wastewater treatment and water resource management,
- Increased number of research proposals for WRC funded research. The target is one successful research project per year for the next 5 years,

- Establishment of a centre of competence that would serve the best interests of the water and sanitation sector in KZN to enhance training and collaboration as well as build capacity. Key stakeholders include Umgeni Water customers, academic institutions, Department of Science and Technology and WRC,
- Close collaboration with uMhlathuze Water Board for comparative review of Research and Development Strategy Plans.

Projects that are planned for implementation in this Corporate Plan period are shown in Table 16.2.

Table 16.2: Research projects planned for implementation in the Corporate Plan period:

Research Project	Objectives	Status and Planned Work	Milestones 2015/2016	Estimated Investment
1. Evaluation of Alternative Technologies for Treatment of Sludge from Potable Water Works.	To identify and investigate alternative lower cost technologies and methods for treatment and disposal of sludge from potable water works at Umgeni Water.	Procurement of three viable dewatering technologies is being finalised. It is planned to commence with site preparation.	Equipment installation. Evaluation of technologies.	R 25 000 000
2. Ultrafiltration Full Scale Evaluation	To investigate Ultrafiltration technology for low turbidity waters on full scale.	Detailed design in progress.	Detailed Design. Construction and evaluation.	R 30 000 000
3. Evaluation of pre-treatment technologies for Seawater Desalination on Pilot Scale.	To evaluate different pre-treatment technologies for seawater desalination and recommend the most appropriate pre-treatment for the main desalination plant.	Equipment under construction. It is planned to commence with installation and commissioning.	Evaluation of technologies and recommendation of most appropriate pre-treatment.	R 15 000 000

16.11 Operational Sites Environmental Management and Compliance

The organisation will continue with the implementation of environmental management at all operational sites and implement recommendations from the previous periods environmental audits which:

- Assess whether the site is complying with all relevant environmental legislation,
- Assess internal policy and procedural compliance,
- Assess the status of energy, waste, biodiversity and resource consumption management at the sites, and
- Recommend management measures for implementation.

16.12 Infrastructure Project Environmental Impact Assessments and Management

The organisation continues to apply Integrated Environmental Management (IEM) principles to the life cycle of its infrastructure projects, including, conducting Environmental Impact Assessments for proposed projects and developing Environmental Management Plans.

There are eleven (11) projects in the Corporate Plan period that require environmental impact assessment studies to be conducted. Table 16.3 shows the key projects requiring environmental authorisations during this period.

Table 16.3: Bulk Infrastructure Projects that require environmental authorisations in the Corporate Plan period:

Project name	Requirements
East Coast Desalination	Obtain EA
uMkhomazi Water Project	Obtain EA
uMshwathi BWSS	Amend existing EA
Southern Ndwedwe BWSS	Obtain EA
Hazelmere Sludge Plant	Obtain EA
Lower Umkhomazi BWSS	Obtain EA
Bruyns Hill Pipeline	Obtain EA
South Coast Pipeline Phase 2B	Obtain EA

For construction projects not triggering listed activities under the NEMA regulations, an EMP for the project is developed to identify and mitigate any environmental impacts in alignment with Umgeni Water's environmental management system.

Seventeen (17) projects in construction phase are currently monitored for compliance against the Environmental Management Plans. Non-conformances and mitigation measures are reported on a monthly basis.

For operation sites, to date, environmental performance has been satisfactory with minor challenges in the prevention of hydrocarbon and cement spillages, waste management and management of alien plants invasion. The organisation will continue to strive for good environmental practice and management of these challenges.

Management of remote sites – including decommissioned sites and servitudes

A focus area for this period is development of environmental management strategies and plans, which by nature include safety measures, for remote and / or decommissioned sites to ensure assets, community and public are adequately protected.

These particular include dam sites, including the decommissioned Henley Dam, as well as, various pipelines and other servitudes, which may be threatened by encroachment, illegal settlements and construction of unauthorised services.

For decommissioned sites, plans to legally dispose of the asset and/or mitigate risks will be developed and implemented.

Community Liaison

As part of Institutional Support for Social Development, Umgeni Water has recognised the role of communities in the planning and implementation of water and sanitation projects and has institutional support programmes which support Umgeni Water's objectives in providing sustainable water solutions to District Municipalities.

Programmes include mobilising communities for support in the implementation of Umgeni Water's pipeline projects, formalising liaison between various leadership structures including traditional and local leadership in negotiating for access to land and cooperative governance during project Implementation.

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Chapter 17: Water Education and Awareness

Contents

17.1 Background

Umgeni Water continues to strive for society to be aware of societal pressure on a water scarce non-renewable resource. UW will develop and implement an integrated water education and/or awareness programme that take cognisance of the following:

- Water scarcity, climate change and environmental degradation are intertwined challenges exacerbated by anthropological activities
- Water is a scarce resource as approximately 97% of all water on earth is salt water, and of the remainder about 70% is locked in ice leaving humans with about 1% of freshwater available.
- Considerable resources are required to access, store, treat and distribute water to consumers.
- Major sources of both water and environmental pollution are humans, industry and agricultural activities.
- Although water is a public good, society needs to be aware of their contribution to the opportunity costs associated with water use

Thus Umgeni Water's integrated water and environmental education programme for the 2016'17 to 2020'2021 Corporate Plan puts a concentrated focus on influencing behavioural change by facilitating and promoting awareness; knowledge transfer and stewardship of water and environmental ecosystems. This behavioural change will be achieved by fostering and maintaining relationships by recognising the value in ensuring that Umgeni Water's stakeholders have relevant information and also actively participate in water and environmental issues. Our programme is geared to both our internal stakeholders and external stakeholders such as customers; communities; industry as well as the general public. Our commitment as an organisation is to implement appropriate strategies that are aimed at building better understanding about water and environmental issues.

The integrated water and environmental education programme employs a variety of methods where the pervasive themes that include water conservation and demand management; freshwater ecosystems; integrated catchment management as well as the entire water and sanitation value chain.

Key thrusts underpinning the programme include the following:

- Internal Environmental Education and Awareness
- Water Education Classrooms;
- Integrated Schools and Community Outreach: Our resource our future.

17.2 Internal Environmental Education and Awareness

The environmental awareness thrusts endeavours to build understanding as well as achieve employee involvement regarding environmental sustainability. Awareness events are aligned with targeted environmental days at identified operational sites. For the 2016'17 to 2020'2021 Corporate Plan the environmental awareness programme will support UW's community and environmental sustainability by ensuring environmentally informed and responsible human capital.

17.3 Water Education Classrooms

Umgeni Water has three accessible water education classroom facilities at its largest water and wastewater treatment works, namely at Durban Heights WTW, Darvill WWTW and Midmar WTW. The programme has been designed to provide an opportunity for learners to gain understanding about the water and sanitation value chain. A combination of educational presentations as well water and wastewater treatment tours.

17.4 Schools and Community Outreach: Our Resource, Our Future

The programmes and initiatives are aimed at accelerating efficient use of natural resources and incorporating it as a social norm. The organisation realise that water and environment challenges cannot be addressed or resolved without the buy in by its external stakeholders. Thus the programme's overarching goal is for an informed society regarding effects of behavioural actions on non-renewable resource. Included in this is the objective to reduce both water and environmental pollution and the approach combines both adopt-a school as well as outreach models that targets external stakeholders and communities within our area of operation. The rationale for the adopt-a-school and schools outreach programmes is aligned to the understanding of the learners' role as the next generation as well as them being the conduit to impart information to their parents and the larger communities. Synergetic partnerships and collaborations will continue to be enhanced particularly with the Department of Education as well as other relevant government departments; Educators and learners in order to meet the programme's objectives.

The adopt-a-school initiative will focus on vulnerable schools that do not have proper access to water, sanitation and environmental education resources. Initiatives at the targeted schools will comprise facilitating the development of school environmental management plans, creating linkages with relevant departments to facilitate development of library resource centres, creating food gardens and providing access to mainstream environmental programmes and competitions. The primary goal is to leave the schools that have been beneficiaries of this programme empowered to serve as platforms for bringing together social and ecological learning across diverse communities in support of the sustainable livelihoods agenda.

The schools' outreach programme aims to identify and develop suitable educational materials and mechanisms to facilitate communication of key messages. Educator workshops will be introduced and environmental groups formed, the latter trained to fast track environmental programmes including adopt-a-spot and other greening initiatives. Information to improve effectiveness and alignment of programmes will be gathered from the learners and stakeholder interest groups. Umgeni Water has formed partnerships with the Department of Education and will distribute materials aligned with school curricula targeting learners and educators from Grade R to Grade 9.

17.5 Integrated water and environmental education plan for 2016'17 to 2020'2021

Programme	Goal	Details	2016-2017 targets
Internal Education and Awareness	Create environmental awareness and educate staff in order to actively involve staff in environmental sustainability initiatives	Undertake themed awareness programmes for operational sites focussing on natural resource efficiency.	Environmental Awareness campaigns undertaken for operational sites
Water Education Classrooms	Schools and community education and awareness	90 water classroom lessons in total are planned for each year. In addition appropriate and updated learning materials will be developed classrooms.	90 classrooms to be undertaken
Schools and Community Outreach	Adopt-a-school	For the adopted schools the School Environmental Plans will be developed and implemented. These plans will outline strategies for: o Developing a water warriors *fora* that includes ward representatives; learners and teachers o Educational programmes developed and implemented to enable water warriors to undertake peer education as well as implementing appropriate interventions aimed at addressing identified social needs	20 schools will be adopted over the five-year Corporate Plan period. Water warriors framework developed and aligned to War on Leaks campaign
	Schools and community outreach	o Educator materials aligned with curriculum will be developed and educators work shopped; o Planning and launching selected environmental themed or special days' events to boost outreach objectives. o Events in rural communities and urban centres will be undertaken in collaboration with relevant authorities and stakeholders.	Educator materials reviewed and update to include water conservation and UW's strategic imperatives Environmental programme implemented in all UW' DMs
	Public health	o Participatory methodologies utilising indigenous knowledge to be developed; o Undertaking public health awareness regarding water pollution incidences arising from our activities	Public health awareness undertaken as per incident management protocol An investigative report completed for using pervasive technology such as apps

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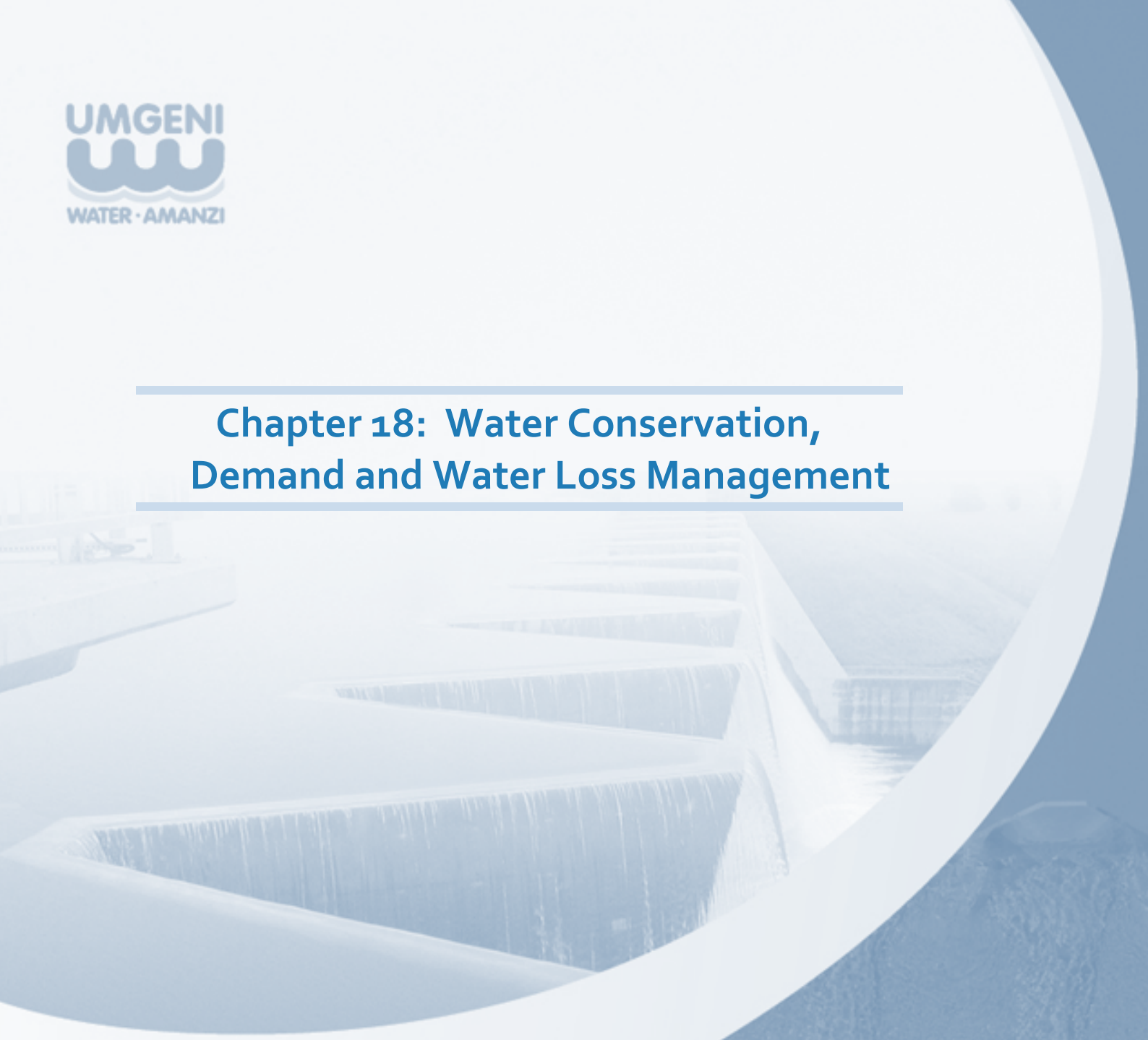
Chapter 18: Water Conservation, Demand and Water Loss Management



Contents

18.1 Background

Umgeni Water is mindful that water demand management relieves the stress already imposed on many water resource and supply systems. This further influences Umgeni Water's capital expenditure programme, enabling some of the augmentation projects to be deferred to later dates.

18.2 Umgeni Water Bulk System Water Loss Management

Umgeni Water experiences very low water loss from its bulk infrastructure operations (average is below 5%) and the organisation is committed to reducing / maintaining its average water loss below this level through continuing to implement asset management plans and ensuring targeted investment in maintenance throughout the bulk network.

18.3 Darvill Wastewater Reuse

The option of treating domestic sewage from the Darvill Wastewater Treatment Works to potable standards is being investigated as a reuse initiative. The proposal is to return the treated water back into the distribution system at Umlaas Road. The water could be used to augment the supply to the Western Aqueduct which will serve the high growth areas along the western corridor of the eThekwini Metropolitan Municipality. The advantage of this is that water is made available higher up in the system. A full feasibility study of this scheme is being undertaken. The initiative has however been put on hold due to a rationalisation of the CAPEX programme over the next five-year period.

18.4 Non-Revenue Water in municipality / customer systems

Umgeni Water recognises that the water loss being experienced in reticulation system is substantial and seriously threatens the sustainability of the water value chain. Customers are at various stages regarding implementation of water conservation and demand management measures within their respective districts. Notwithstanding the efforts to date, the estimated non-revenue water / water loss in the region remains very high (Figure 18.1).

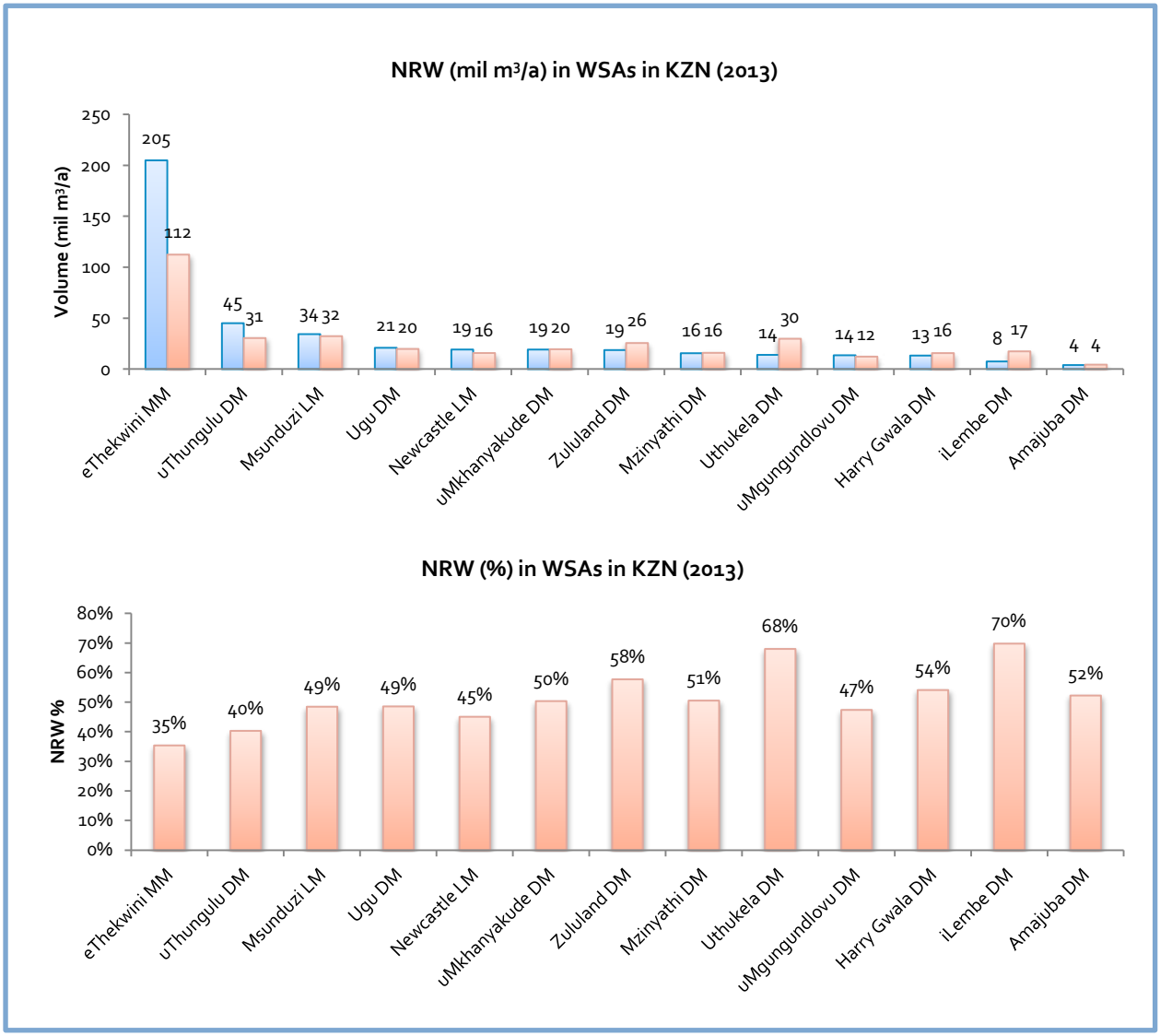
In this period therefore, Umgeni Water will focus resources to collaboratively reduce water loss in the value chain. This includes establishing a water conservation / demand management unit to assist municipalities / develop focused programmes to address reticulation water losses.

18.5 eThekwini Metropolitan Municipality Non-Revenue Water Reduction Initiative

eThekwini Metropolitan Municipality has over the past several years been implementing a significant Water Demand Management Programme to reduce its unaccounted-for-water. Some benefits from this programme were realised in 2011 with a sustained reduction in water purchases from Umgeni Water. The interventions that had the most marked impact included pressure management, active leakage control, and the implementation of a sewer tariff which was linked to water consumption.

Umgeni Water has offered its support to the eThekwini Metropolitan Municipality and is currently awaiting approval from the eThekwini Metropolitan Municipality to start undertaking the assessment on water losses in the area.

Figure 18.1: Status of non-revenue water for KZN Municipalities



18.6 iLembe DM Water Demand Management initiative

Umgeni Water, in collaboration with the iLembe district municipality and Sembcorp Siza Water, has piloted the continuous trending of water demand at all sales meters to identify instantaneous anomalies at the meter points. This initiative has led to the immediate identification of possible leaks and valve problems and the dispatching of maintenance teams to attend to the leaks. This has resulted in the optimisation of the North Coast System. This initiative prompted the implementation of a pilot project in the use of Automatic Meter Reading for billing and monitoring purposes.

18.7 Ntshingwayo Dam to Ngagane WTW water loss management and supply security

The Premier of the Province of KwaZulu-Natal declared a state of disaster in several District and Local municipalities as a result of the severe drought being experienced. Water loss management / water conservation is one of the disaster response mechanisms. Over time the integrity of the grouting at the joints of pre-stressed concrete pipelines, constructed pre-1980, has diminished and led to increase in water leaks. The Ngagane raw water bulk pipeline is a case in point. Umgeni Water in partnership with the Department of

Water and Sanitation is implementing a raw water pipeline replacement and refurbishment project that will reduce the significant water loss from Ntshingwayo Dam to the Ngagane WTW and increase the much needed supply and supply assurance to the Newcastle Local Municipality and Amajuba District Municipality.

18.8 NRW Benchmarking Partnership with SALGA

Umgeni Water, under the banner of SAAWU has commenced collaboration with SALGA to share and exchange water related benchmarking information. This includes non-revenue water data and information. There is joint commitment to initiatives that focus on and reduce non-revenue water in the coming period.

18.9 Water Loss / Water Conservation Education and Awareness

Umgeni Water will also continue with its education and awareness programmes, focusing on water loss / water conservation, through the environmental education unit targeting schools and communities.

In conjunction with the Department of Water and Sanitation, Umgeni Water will provide technical, scientific and process support to Water Services Authorities, extending the Blue/Green Drop Programmes to the DWS branded 'No Drop' Programmes targeting water loss management initiatives in the water supply and distribution systems.

Chapter 19: Corporate Social Investment (CSI) Plan

Contents

19.1 CSI Policy and Approach

The intention of Umgeni Water's Corporate Social Investment programmes is to support and/or implement socio-economic development initiatives to improve community livelihoods. An approved Corporate Social Investment Policy is in place, which ensures a co-ordinated approach in the implementation of CSI initiatives. In terms of the CSI policy projects are clustered and prioritised around the following categories:

- Education and Training,
- Job Creation,
- Public Health, Community Development and Support,
- Environmental Conservation, and
- Arts, culture and sport.

A CSI Committee was established to facilitate implementation of the policy. CSI projects are funded by an annual approved budget. CSI projects are also linked to the Capex Programme implementation.

19.2 CSI Initiatives and Plans

For 2016'17 Umgeni Water will implement initiatives that support socio-economic development. Some of the key initiatives are as shown **Table 19.1.** A minimum total budget of 0.5% of net profit after tax will be allocated to CSI initiatives. The projected total budget for 2016'17 is R3 million.

Table 19.1: Umgeni Water CSI initiatives for 2016/2017

Project	Beneficiaries and Outcomes	Status and planned work.	Milestones
Mandela Day: Charity begins at home	Rural or impoverished communities within operational area	In 2016/2017: - Identify target communities - Identify projects - Develop investment criteria - Implement projects	Communities identified and investment criteria finalised by December 2016 Projects implemented by June 2017
School Multi resource centre	Development of a Multi Resource Centre at KwaHaza Primary School.	Multi Resource centre designed and established. Centre will incorporate: - Upgrading of an existing classroom into a multi-purpose centre that will be utilised as a library, computer room and a hall. - Installation of a water classroom model depicting the various aspects of water conservation.	Handover ceremony by December 2016
Youth Empowerment and/or Job Creation Project	Empowerment and job creation project earmarked for uMngeni local municipalities	Training of unemployed youth with post matric in plumbing, welding and water treatment to enter formal markets or start their own enterprises. Skills development and transfer: Training of technikon and university students during the construction phase of the project.	1 Cooperative functional by June 2017 Emerging enterprise Hub Strategy developed by June 2017
Dam Safety Programme	Earmarked for communities in the vicinity of Mhlabatshane and Imvutshane Dams Objective: build awareness and teach local communities how to swim.	2015'2016 Dam Safety Education programme implemented in 2015/2016. 2016'2017 Swimming clubs established. Annual Water Sport Events Launch.	2 swimming clubs established by June 2017.

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Chapter 20: Financial Plan

Improving Quality of Life and Enhancing Sustainable Economic Development

Contents

20.1 Introduction

As momentum is gaining in terms of Umgeni Water preparing itself for the regional water board, a sound credit rating preceded by liquidity, solvency and sustainable operations continues to be the focus for the planning period (2016/17 to 2020/21).

The financial business plan 2016/17 to 2020/21 aims at counteracting the impact of the operating and financial risks which are as follows:

1. Reduction in bulk water sales volumes due to the drought conditions currently plaguing Umgeni Water's area of supply,
2. Affordability concerns:
   a. By Umgeni Water: Fixed cost structure but lower revenue base in this drought season,
   b. By Customer: Although stronger case for imposition of higher tariffs and early funding of the uMkhomazi Scheme this may impact on the affordability by the customer,
3. Higher capex requirements due to water resource requirements and replacement of aging infrastructure, and
4. The ability to borrow mired by the borrowing limit and loan covenant constraints.

The financial strategy which is designed to ensure Umgeni Water remains a sustainable entity during the ensuing period of low income and high expenditure is as follows:

1. Deferral of capex projects which have not been awarded for construction, for a maximum of five years,
2. Reduction of non-critical (controllable and semi-controllable) operating expenditure in 2017,
3. Increased efforts to secure grant funding ahead of the project or funding for S30 projects, and
4. Proactive liaison with investors on the impact of the drought on the financial position of Umgeni Water.

The key assumptions underlying the financial business plan include:

- Real tariff increases of at least 3% which is required to sustain Umgeni Water's operations during the drought season,
- Negative sales volumes have been assumed for 2016 and 2017 with a recovery in 2018,
- The assumption of a rising cost base (key cost drivers) in excess of CPI levels has been maintained as Umgeni Water's cost base is largely non-controllable or semi-controllable,
- Total capital expenditure of R5.9bn over the next 6 years (2016 included) with approximately 37% of expenditure attributable to developmental projects (R2.16bn), and
- Grant funding of R1.3bn assumed to be received from 2016 to 2021 whilst tolerable impairments on projects in progress are limited to R331m for the same period.

In terms of the projected financial performance over the planning period, net profit margins are positive with 28.2% in 2016 declining to 21.4% in 2017. A recovery in the net profit margin is projected to occur from 2021 onward. Operating cashflows are projected to be in excess of R800m however the "funds flow to debt ratio" (which is a leverage ratio that a credit rating agency or an investor can use to evaluate a company's financial risk) indicates a negative trend declining from 0.9 times in2015 to less than 0.5 times in 2016 and 2017 until a recovery in 2020 to 0.72 times. By 2021, the redemption of the UG21 sees a marked improvement in the ratio in excess of 1.1 times.

The deferral of capital expenditure to start from 2022 onward will assist in ensuring that borrowings are at affordable levels and that loan covenants and borrowing limits are not breached. However, to make certain that Umgeni Water continues on its progressive path, a six-monthly review will be conducted on capital investment projects to determine if deferred projects need to return to the five year financial plan. To this extent, meetings with the Department of Water and Sanitation (DWS) and National Treasury (NT), as well as, investors will be held to apprise such stakeholders of the intention to secure higher borrowing limits and a relaxation of loan covenants given the sound financial position even in the midst of a drought.

20.2 Financial planning assumptions

20.2.1 Macroeconomic Factors

Table 20.1: Macroeconomic assumptions

	ACTUAL			BUDGET	FORECAST					
	F'13	F'14	F'15	F'16	F'16	F'17	F'18	F'19	F'20	F'21
1. MACRO-ECONOMIC FACTORS										
Inflation										
As measured by CPI per the BER	5.70%	6.10%	4.60%	6.00%	6.90%	6.60%	5.30%	5.60%	5.40%	5.40%
PPI										
Per the BER	6.00%	8.10%	4.00%	6.10%	6.80%	6.10%	5.50%	5.60%	5.80%	5.80%
% Adjustment				1.00%	1.00%	1.00%	1.00%	1.00%	1.00%	1.00%
Revised calendar average	6.00%	8.10%	3.60%	7.10%	7.80%	7.10%	6.50%	6.60%	6.80%	6.80%
Interest Rate - Borrowings										
Short-term				6.21%	7.49%	7.77%	7.99%	8.17%	8.34%	8.47%
Spread				0.60%	0.60%	0.60%	0.60%	0.60%	0.60%	0.60%
				6.81%	**8.09%**	**8.37%**	**8.59%**	**8.77%**	**8.94%**	**9.07%**
Long-term				8.17%	9.20%	10.20%	8.82%	8.87%	8.83%	8.83%
Spread				1.40%	1.95%	2.00%	2.00%	2.00%	2.00%	2.00%
				9.57%	**11.15%**	**12.20%**	**10.82%**	**10.87%**	**10.83%**	**10.83%**
European Investment Bank = Variable rate (Repayment in 2028)										
6 month jibar			7.38%	6.88%	8.63%	8.88%	8.88%	8.88%	8.88%	8.88%
Add: 58.6bps (floating rate)			0.59%	0.59%	0.59%	0.59%	0.59%	0.59%	0.59%	0.59%
All in rate			**7.96%**	**7.47%**	**9.21%**	**9.46%**	**9.46%**	**9.46%**	**9.46%**	**9.46%**
European Investment Bank = Fixed rate (Repayment in 2029)			**8.44%**	**9.08%**	**9.08%**	**9.08%**	**9.08%**	**9.08%**	**9.08%**	**9.08%**
Interest Rate - Investments	**5.39%**	**6.15%**	**6.78%**	**6.31%**	**7.59%**	**7.87%**	**8.09%**	**8.27%**	**8.27%**	**8.27%**
Weighted average cost of capital	**9.20%**	**9.28%**	**9.47%**	**9.52%**	**10.57%**	**10.92%**	**10.97%**	**11.02%**	**11.05%**	**11.25%**
Exchange rates										
R/$	9.650	10.844	12.120	11.880	16.863	16.613	16.352	16.518	16.820	16.820
R/euro	12.824	14.403	13.220	13.130	18.213	18.193	18.180	18.640	19.265	19.265
R/pound sterling	15.106	17.858	18.250	17.700	24.575	25.750	25.988	26.908	28.085	28.085

Reference was made to the following publications in order to arrive at the macro-economic factors for 2017 to 2020:

- Bureau for Economic Research (BER) Inflation forecast - January 2016
- BER interest Forecast – January 2016
- BER Exchange Rate forecast – January 2016

*Interest rate borrowings:

a) The short term (3 month) rates are based on the average of the local money market average obtained from the mid-rate between the 3 m Banker's Acceptance (BA) from forward Rate Agreement (FRA) bid, and 3m BA from FRA (offer), converted to NACM and the swap rates per Inet Bridge.

b) The long term (10 year) rate was based on the forecast per the BER.

20.2.2 Staff Costs

Table 20.2: Workforce: Umgeni Water Group

	F'13	F'14	F'15	F'16 Budget	F'16	F'17	F'18	F'19	F'20	F'21
Approved establishment Umgeni Water	**907**	**925**	**954**	**989**	**1 103**	**1 062**	**1 074**	**1 074**	**1 074**	**1 074**
Staff Complement Umgeni Water										
Filled	832	835	846	989	913	1 062	1 074	1 074	1 074	1 074
Vacant	75	94	108		131					
SUB-TOTAL: Permanent establishment	**907**	**929**	**954**	**989**	**1 044**	**1 062**	**1 074**	**1 074**	**1 074**	**1 074**
contract Staff - Recoverable	50	58	49	59	59	59	59	59	59	59
contract Staff - General	21	21								
Total complement Umgeni Water	**978**	**1 008**	**1 003**	**1 048**	**1 103**	**1 121**	**1 133**	**1 133**	**1 133**	**1 133**
Approved establishment Msinsi	**141**	**141**	**144**	**144**	**144**	**144**	**144**	**144**	**144**	**144**
Staff Complement Msinsi										
Filled	**73**	**106**	**144**	**144**	**151**	**151**	**151**	**151**	**151**	**151**
Vacant	**68**	**35**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**
Total complement Msinsi	**141**	**141**	**144**	**144**	**151**	**151**	**151**	**151**	**151**	**151**
TOTAL GROUP COMPLEMENT	**1 119**	**1 149**	**1 147**	**1 192**	**1 254**	**1 272**	**1 284**	**1 284**	**1 284**	**1 284**

In 2016/17, Umgeni Water approved establishment was 1 121. However, the filling of 13 posts (which are not core posts), have been deferred to 2018, due to affordability concerns arising from impact of the drought.

For Msinsi, the organisational establishment responds to its projected operational requirements for the next 5 years. The establishment for 2017 is projected to be 151 employees in line with the revised organisational organogram which was approved by the Board in 2016.

The staff establishment increased in the previous period from 2014/15 (1003) to 2015/16 (1103) due to additional operational and support staff required to operate new schemes.

The staff increase from 2015/16 to 2017/18 is mainly due to additional staff required to operate new schemes (Lower Thukela, Greater Mpofana), additional maintenance staff required to meet the operational requirements for maintenance of bulk water infrastructure for new schemes and additional Process services and laboratory staff to meet the water quality standards requirements

Support staff form 39% of the establishment in 2016 and 2017.

Table 20.3: Staff Costs (R'000)

	Actual			Budget	Forecast					
	F'13	F'14	F'15	F'16	F'16	F'17	F'18	F'19	F'20	F'21
Staff Costs : Umgeni Water										
Annual Salary Increase Forecast based on nominal wage rate	7.9%	8.0%	8.0%	8.0%	8.0%	8.0%	7.5%	7.3%	7.4%	7.4%
Per the Income statement:										
- Direct staff costs	117 203	130 305	155 676	185 106	180 892	199 433	214 390	230 041	247 064	265 347
- Indirect staff costs	174 112	201 304	247 742	252 620	256 706	254 498	338 664	363 386	390 277	419 157
Maintenance Payroll (included in maintenance cost)	62 504	70 516	80 104	87 426	85 222	96 454	103 689	111 258	119 491	128 333
CPG Monitoring & Compliance		781	966	1 250	-	-	-	-	-	-
O&M Dams Payroll	6 617	7 085	-	-	-	-	-	-	-	-
Subtotal	360 436	409 990	484 488	526 403	522 820	550 386	656 743	704 685	756 832	812 837
- % Increase before recoveries	12.0	13.7	18.2	14.1	7.9	5.3	19.3	7.3	7.4	7.4
- Less WIP Recoveries	(17 505)	(18 370)	(20 840)	(23 030)	(26 732)	(29 639)	(31 862)	(34 188)	(36 718)	(39 435)
Total staff costs (Income Statement)	342 931	391 620	463 648	503 373	496 088	520 747	624 881	670 497	720 114	773 403
- % Increase after recoveries	9.3	14.2	18.4	14.1	7.0	5.0	20.0	7.3	7.4	7.4
- Average pay (based on complement)	369	407	483	502	474	491	580	622	668	717
- % Increase	3.3	10.4	18.8	10.3	(1.9)	3.6	18.1	7.3	7.4	7.4
Productivity - Kl'000 per employee	432.3	436.1	445.2	437.0	397.3	382.9	415.7	428.8	435.2	441.8
Other payroll related costs included in Retirement benefit costs (included in other operating costs)										
- Post employment medical aid	29 026	38 444	39 875	47 779	40 634	43 722	46 958	50 526	54 366	58 498
Current service cost	7 944	8 750	8 941	9 136	8 984	9 667	10 382	11 171	12 020	12 934
Interest cost	21 082	24 763	30 934	38 643	31 650	34 055	36 575	39 355	42 346	45 565
Past service cost		4 931								
Actuarial (gain)/loss	-		-	-	-	-	-	-	-	-
- Pension	47 031	55 275	49 615	55 704	56 084	63 118	69 430	76 373	84 010	92 411
Current service cost	29 599	36 071	34 752	38 018	38 409	42 010	46 211	50 832	55 915	61 507
Interest cost	50 140	65 603	77 537	87 712	87 622	99 008	108 909	119 800	131 780	144 958
Expected return on assets	(36 093)	(46 399)	(62 674)	(70 026)	(69 947)	(77 900)	(85 690)	(94 259)	(103 685)	(114 053)
Past service cost	3 385									
Total	76 057	93 719	89 490	103 483	96 718	106 840	116 387	126 899	138 376	150 909
- % Increase	(42.6)	23.2	(4.5)	15.6	8.1	10.5	8.9	9.0	9.0	9.1
Other payroll related costs included in Other Comprehensive Income										
Other comprehensive income (IAS 19 -	159 906	(119 883)	-	-	-	-	-	-	-	-
Total Retirement Benefit Cost	**235,963**	**(26,164)**	89 490	**103,483**	**96,718**	**106,840**	**116,387**	**126,899**	**138,376**	**150,909**
Trainees										
establishment	20	22	35	56	71	71	56	56	56	56
cost	1 719	1 976	3 714	6 334	8 047	8 691	9 343	10 025	10 767	11 563
National Treasury trainees										
establishment	52	52	52	52	52	52	52	-	-	-
cost	11 510	13 613	14 386	15 605	15 605	16 759	18 016	-	-	-
Learners										
establishment	47	45	50	64	56	64	52	52	52	52
cost	574	2 497	3 968	2 558	1 545	1 907	1 666	1 787	1 919	2 062

20.2.3 Operating costs

Table 20.4: Major operating costs

	Actual			Budget	Forecast					
	F'13	F'14	F'15	F'16	F'16	F'17	F'18	F'19	F'20	F'21
Energy										
- Forecast Price increase	16.0%	8.0%	11.2%	12.7%	12.7%	9.4%	9.5%	10.0%	10.5%	11.5%
- Usage		1.0%	12.3%	7.6%	20.2%	9.5%	3.5%	3.0%	2.5%	1.0%
- total price & impact of new schemes	16.0%	9.0%	23.5%	20.3%	32.9%	18.9%	13.0%	13.0%	13.0%	12.5%
- Cost	111 898	140 919	175 373	236 659	232 720	276 136	312 034	352 599	398 436	448 241
Direct	107 884	136 074	169 940	229 879	226 046	268 835	303 783	343 275	387 901	436 388
Indirect	4 014	4 845	5 433	6 780	6 674	7 302	8 251	9 324	10 536	11 853
- Increase in cost (%)	**4.6**	**25.9**	**24.4**	**20.3**	**32.7**	**18.7**	**13.0**	**13.0**	**13.0**	**12.5**
- Cost per kilolitre	26.5	32.1	39.3	51.7	53.1	64.3	66.2	72.6	80.8	89.6
- Allocated to S30 O&M dams	5 009	4 299	-	-	-	-	-	-	-	-
- Increase in cost (%)	**(63.1)**	**(14.2)**	**(100.0)**							
TOTAL ENERGY COSTS	116 907	145 218	175 373	236 659	232 720	276 136	312 034	352 599	398 436	448 241
Chemicals										
- Forecast Price increase	11.4%	13.0%	9.5%	9.2%	10.5%	10.5%	10.5%	10.5%	10.5%	10.5%
- Usage	9.4%	-19.5%	-6.1%	8.4%	-0.1%	16.9%	0.0%	0.0%	0.0%	0.0%
- Cost	50 452	47 181	48 786	59 017	53 850	68 623	75 829	83 791	92 589	102 311
- Increase in cost	**20.7**	**(6.5)**	**3.4**	**17.6**	**10.4**	**27.4**	**10.5**	**10.5**	**10.5**	**10.5**
- Cost per kilolitre	11.9	10.7	10.9	12.9	12.3	16.0	16.1	17.2	18.8	20.4
Maintenance										
- Forecast Price increase	8.8%	8.4%	7.7%	8.3%	7.8%	7.1%	6.5%	6.6%	6.8%	6.8%
- Total Cost	152 335	158 405	188 020	217 327	177 969	206 416	219 833	234 342	250 278	267 296
Direct	137 456	143 313	173 481	200 525	163 300	191 143	203 567	217 002	231 759	247 518
Indirect	14 879	15 092	14 538	16 801	14 669	15 274	16 266	17 340	18 519	19 778
- Maintenance payroll included in	62 504	70 516	80 104	87 426	85 222	96 454	103 689	111 258	119 491	128 333
- Total excl Maint payroll	89 831	87 889	107 916	129 901	92 747	109 962	116 145	123 084	130 787	138 963
- Increase in cost	**4.9**	**4.0**	**18.7**	**6.5**	**(5.3)**	**16.0**	**6.5**	**6.6**	**6.8**	**6.8**
- Increase in cost (excl Maint payroll)	**1.9**	**(2.2)**	**22.8**	**3.8**	**(14.1)**	**18.6**	**5.6**	**6.0**	**6.3**	**6.3**
- % of Assets (PPE excl CWIP)	**4.4**	**4.6**	**3.4**	**3.0**	**3.5**	3.0	2.8	2.7	2.8	3.1

20.2.4 Raw water costs

Table 20.5: Raw water cost assumptions (R'000)

	Actual			Budget	Forecast					
	F'13	F'14	F'15	F'16	F'16	F'17	F'18	F'19	F'20	F'21
Raw Water Abstraction Volumes (Kl'm)										
Volume Mgeni System	406	418	438	428	421	392	411	424	430	437
Volume Mdloti System	17	19	18	18	11	10	12	12	12	13
Volume Lower Thukela System					2	12	12	13	13	13
Volume Other	21	26	30	26	21	15	16	16	17	17
Total Abstraction Volume	443	463	485	472	454	430	451	465	472	479
Raw Water Consumption Charge per System										
Mgeni System										
Tariff existing infrastructure	23.11	26.09	29.39	31.12	33.39	37.47	41.59	46.16	51.24	56.88
Increase	10.8	12.9	12.6	5.9	13.6	12.2	11.0	11.0	11.0	11.0
Mdloti system										
Tariff existing infrastructure	91.96	102.13	105.04	108.45	117.85	126.14	135.63	147.83	161.14	175.64
Increase	17.1	11.1	2.9	3.2	12.2	7.0	7.5	9.0	9.0	9.0
Lower Thukela System										
Tariff existing infrastructure					43.32	44.51	49.40	54.84	60.87	67.57
Increase						2.8	11.0	11.0	11.0	11.0
Consumption charge - New Capex										
Cost Raising Hazelmere Dam Wall (R'000)							27 444	27 444	27 444	27 444
Increase		-	-				-	-	-	-
Spring Grove Dam	40.80	40.80	42.60	45.80	45.80	48.40	48.70	48.90	49.00	49.50
Increase		-	4.4	7.5	7.5	5.7	0.6	0.4	0.2	1.0
Operation and maintenance Charge per System										
Mgeni System										
Cost	8.99	10.45	1.48	2.11						
Increase		16.3	(85.8)	42.5						
Mdloti system										
Cost	36.42	39.62	7.82	7.86						
Increase		8.8	(80.3)	0.4						
Water Resource Management (WRM) Charge										
Tariff - existing	2.30	2.43	2.52	1.71	1.75	1.96	2.13	2.25	2.38	2.52
Increase	5.3	5.9	3.6	(32.0)	(30.8)	12.2	8.8	5.7	5.7	5.7
Total Raw Water Costs										
- Abstraction	109 102	128 203	154 926	152 110	158 326	170 216	198 784	227 456	255 884	287 873
- Abstraction - New Infrastructure	-	-	-	-	-		27 444	27 444	27 444	27 444
- Abstraction - C.U.C. - Recoverable	-	-								
- O & M Dams*	42 120	51 101		10 400						
- Water Resource Management charge	10 168	11 235	12 305	8 082	8 343	9 674	11 047	12 018	12 884	14 293
Total Raw Water Costs	161 390	190 540	167 230	170 592	166 669	179 890	237 276	266 918	296 213	329 610
Increase in cost	7.2	18.1	(12.2)	6.7	(0.3)	7.9	31.9	12.5	11.0	11.3
Effective unit cost	36.43	41.17	34.48	36.18	36.75	41.86	52.56	57.36	62.71	68.75
Increase in unit cost	5.0	13.0	(16.2)	4.6	6.6	13.9	25.6	9.1	9.3	9.6

The capital unit charge (C.U.C.) is an agency cost, rather than a direct cost of operation. As a result, both the revenue and cost associated with the C.U.C. will not be reflected in the Income Statement.

* From 2015 onward, Umgeni Water has agreed with DWS that the costs borne by Umgeni Water for the O&M of DWS owned dams will not be recovered from DWS. In turn, DWS will not charge Umgeni Water as part of its raw water charge that amount which is required to recover the O&M of DWS owned dams carried out by Umgeni Water.

20.3 Sales volumes

Table 20.6: Sales volumes projections (kl'000)

	Actual			Budget	Forecast					
	F'13	F'14	F'15	F'16	F'16	F'17	F'18	F'19	F'20	F'21
- Bulk	422 791	439 542	446 548	457 928	438 197	429 209	471 024	485 832	493 119	500 516
- eThekwini MM	315 669	327 011	331 347	338 832	323 740	315 035	339 039	348 578	353 807	359 114
- Sembcorp Siza Water	4 352	4 767	4 438	4 998	3 362	3 434	3 502	3 574	3 627	3 682
- other WSA's	102 769	107 765	110 763	114 099	111 095	110 740	128 484	133 680	135 685	137 720
- % Increase	1.4	4.0	1.6	2.0	(1.9)	(2.1)	9.7	3.1	1.5	1.5
- Raw water	595	574	574	615	576	573	573	573	573	573
- % Increase	(24.4)	(3.6)	(0.0)	-	0.4	(0.5)	-	-	-	-

Figure 20.1: Bulk water sales volumes (kl'm)

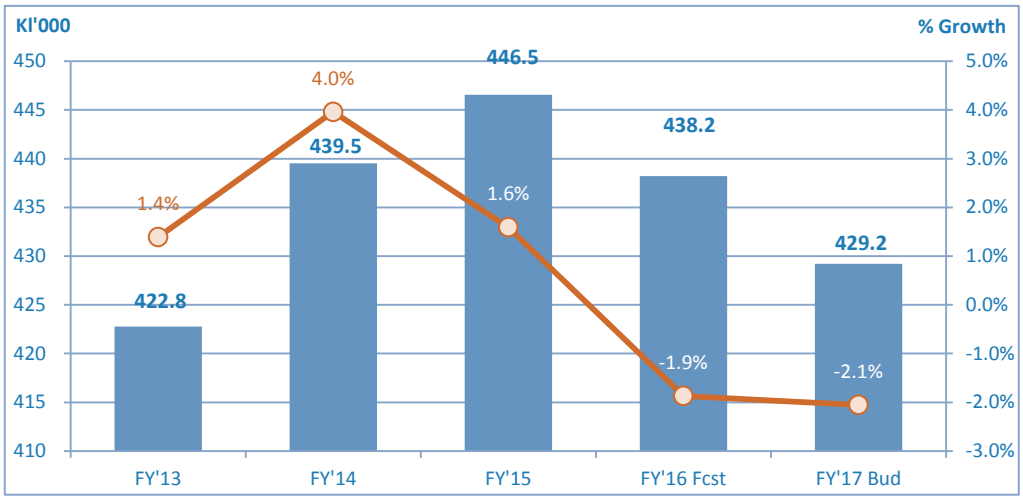


Table 20.7: Bulk water sales volume per customer

Customer	FY 2013 Actual Vol Kl'000	FY 2014 Actual Vol Kl'000	FY 2015 Actual Vol Kl'000	Growth %	FY 2016 Budget Vol Kl'000	Growth %	Forecast Vol Kl'000	Growth %	FY 2017 Budget Vol Kl'000	Growth %
eThekwini MM	315 669	327 011	331 347	1.3	338 832	2.2	323 740	(2.3)	315 035	(2.7)
Msunduzi LM	64 668	66 991	70 362	5.0	73 334	4.1	69 540	(1.2)	66 457	(4.4)
uMgungundlovu DM	14 772	15 052	15 041	(0.1)	14 736	(2.1)	17 898	19.0	16 213	(9.4)
Ugu DM	9 012	9 890	10 317	4.3	10 984	6.1	11 099	7.6	11 048	(0.5)
iLembe DM	13 244	14 810	14 060	(5.1)	14 152	0.7	11 793	(16.1)	16 352	38.7
Semcorp Siza Water	4 352	4 767	4 438	(6.9)	4 998	11.2	3 362	(24.2)	3 434	2.1
Harry Gwala DM	936	862	837	(2.9)	752	(11.3)	636	(24.0)	539	(15.4)
Other - Retail	97	153	145	(5.1)	140	(3.8)	128	(11.7)	131	2.4
Total Bulk Potable	**422 791**	**439 542**	**446 548**	**1.6**	**457 928**	**2.5**	**438 197**	**(1.9)**	**429 209**	**(2.1)**
Raw Water	595	574	574	(0.0)	615	6.7	576	0.4	573	(0.5)
Total Bulk Water	**423 386**	**440 116**	**447 121**	**1.6**	**458 543**	**2.5**	**438 773**	**(1.9)**	**429 782**	**(2.0)**

Figure 20.2: Composition of customer base 2016

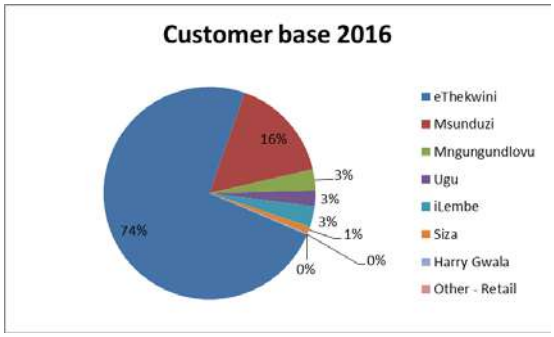
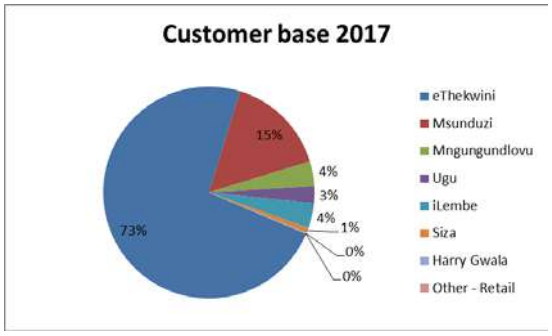


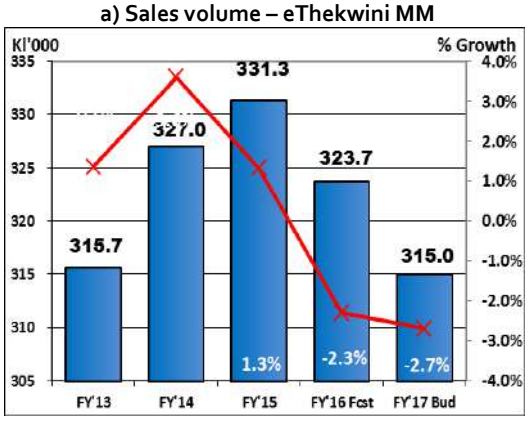
Figure 20.3: Composition of customer base 2017



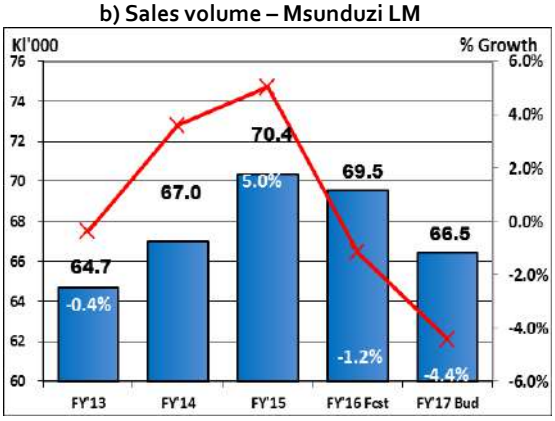
20.3.1 Volume Trends per customer

Figure 20.4 (a to g): Bulk sales per customer

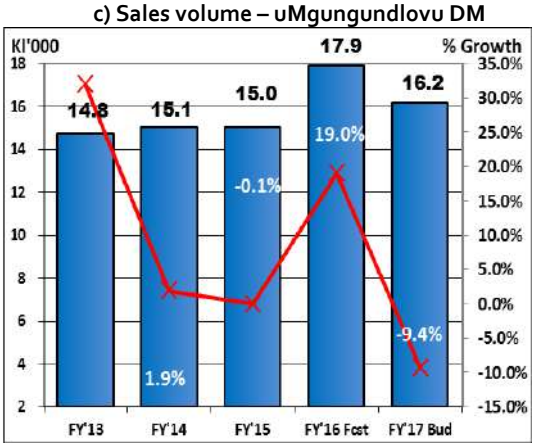
a) Sales volume – eThekwini MM



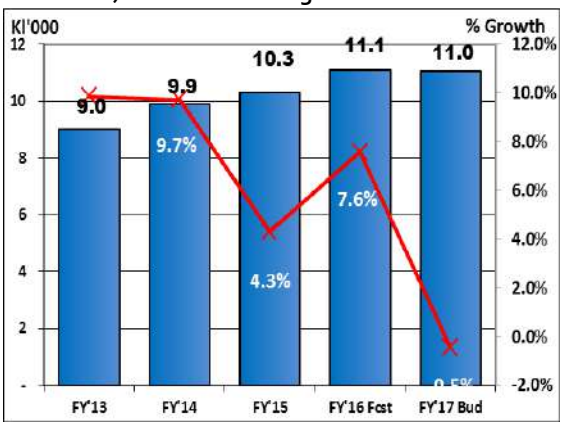
b) Sales volume – Msunduzi LM



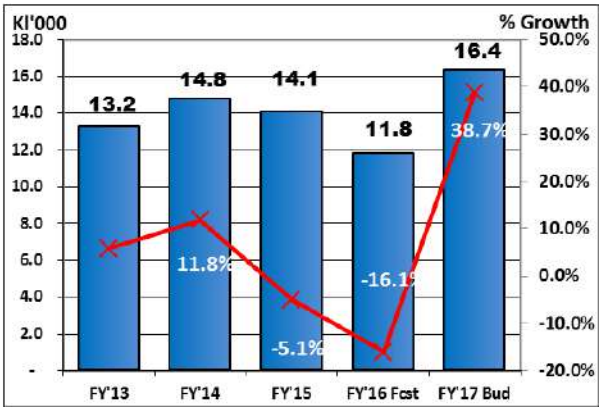
c) Sales volume – uMgungundlovu DM



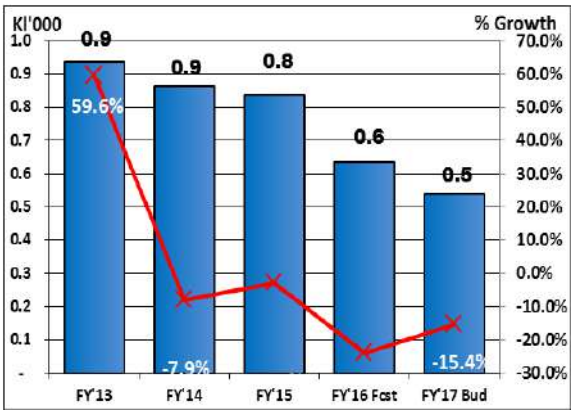
d) Sales volume – Ugu DM



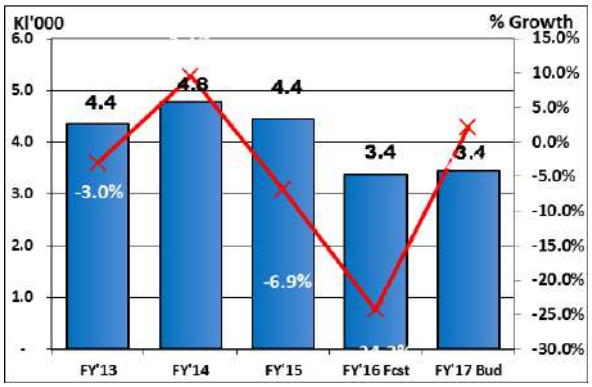
e) Sales volume – iLembe



f) Sales volume – Harry Gwala DM



g) Sales volume – Sembcorp Siza Water



20.4 Tariff Projections

20.4.1 Bulk water tariff 2017: Consultation process

1. Customers

A customer Tariff consultation meeting was held on 12 November 2015. This is compliance with S42 of the Municipal Finance Management Act. Representatives of Department and Sanitation (DWS), SALGA and National Treasury also attended the tariff consultation session. TCTA consulted with the stakeholders on the 2017 increase for the capital unit charge for the MMTS-2.

A further meeting was held with Msunduzi Municipality in Nov-early Dec 2015 regarding the pricing of the wastewater services to the municipality.

The contents of the tariff presentation highlighted the operational risks facing Umgeni Water and the financial impact thereof. The legislative framework governing the tariff computation was highlighted and discussed with the customers and the infrastructure plan to be funded from 2017 was also presented.

The presentation further highlighted the impact of the current drought and the effect this could have on the tariff. The Department of Water and Sanitation proposed that a drought levy be introduced to offset costs during times of drought.

Overall there was good interaction between the customers and Umgeni Water. The main issues raised by the customers are tabulated below.

Issue	*Response*
1. **Base tariff increase 9.5% plus CUC.** **What is the overall increase?**	*TCTA combines potable and raw water costs so there is a double up. The tariff Umgeni Water calculated is only the Umgeni Water tariff, and the Mooi-Mgeni Transfer Scheme 2 (MMTS-2), and the uMkhomazi Scheme. The drought tariff is not immediately applicable and will be submitted to DWS for approval.* *In summary: 9.51% for Umgeni Water, 5.6% for CUC MMTS-2 and 2% for the uMkhomazi Scheme. Umgeni Water will have to work out the total average tariff with both CUC charges (MMTS-2 and the uMkhomazi Scheme).*
2. **Please provide the Municipality with the information Council approved for the uMkhomazi tariff to be charged from now to ease the burden for end users. The Municipality wants to see the Umgeni Water Base plus MMTS 2 plus uMkhomazi to reflect the overall total tariff required. (Msunduzi LM)**	*Umgeni Water responded that it puts on the table what is required and indicated the pack will be sent out to all the Municipalities and DMs on Monday 16 November.* *All figures will be explained in this pack.*
3. **Umgeni Water has reduced volumes based on drought and demand. What steps is Umgeni Water taking to reduce expenditure? For example; 1% increase for additional staff, Municipality has to use existing approved posts. Umgeni Water should look at this. (eThekwini MM)**	*Umgeni Water responded that it does have cost cutting measures in place agreed with the Board and processes are optimised.* *The additional staff is required to operate the infrastructure on the ground. Umgeni Water has constructed new bulk infrastructure and needs people to operate the infrastructure.* *Umgeni Water urged eThekwini MM to try and reduce the 40% water losses to an acceptable 15-20% level. Both Umgeni Water and eThekwini MM has a common objective of service delivery, and should work together.*
4. **Drought Levy – Umgeni Water has already reduced the forecast which will have taken this into account, Why this levy?**	*Umgeni Water responded that this was proposed by the Department of Water and Sanitation as a deterrent for all. This will only be effective if it is applied to all Water Boards and WSAs. Furthermore, this has to cascade down the line all the way in order to be effective.*

Issue	*Response*
5. Umgeni Water was asked to comment on the establishment of the new KZN Water Board. Has Umgeni Water included anything in the tariff?	*This disestablishment of Umgeni Water and Mhlathuze Water is being led by the DWS and the programme is still underway. Therefore Umgeni Water cannot factor in anything in the tariff until this is formalised.*
6. What has been factored in terms of the iLembe DM non-payment?	*iLembe DM is not paying the CUC MMTS-2 as the DM believes they don't draw water from Spring Grove.* *Customers must be mindful of regional water distribution, especially in times of load shedding.* *The non-payment does not affect the calculation of the tariff.*

7. SALGA

SALGA's main concern was the percentage increase of 9.5% instead of the expected increase of 8.3% citing reasons that the tariff will be unaffordable.

Other comments raised included the capital unit charge for the uMkhomazi project in terms of the interest earned and the benefit to municipalities.

It was assumed the water research levy which did not form part of the tariff will not be charged.

SALGA also required clarity on the drought levy regarding the criteria to be used for the charge.

There were two responses from SALGA, one from their Regional office and a late response from the National office received on 15th January 2016, informing Umgeni Water that responses from municipalities will only be provided around 20th January 2016.

8. National Treasury

National Treasury was complimentary, recognising Umgeni Water's efforts to implement the developmental projects on a sustainable basis but cautioned Umgeni Water that with projected sales volumes decreasing over the next five years revenue growth will depend on the tariff increases.

Concerns raised by National Treasury include the funding requirement for the planned R8 billion capital expenditure programme, mainly as the required grant funding remains unconfirmed and developmental projects constitute 40% of the capital expenditure programme.

20.4.2 Bulk water tariff 2017: approval by DWS

Umgeni Water has submitted all tariff documentation to the Department of Water and Sanitation. Despite the difficult operating environment facing UW, DWS has approved a tariff increase of 9% for 2017/17 which is 0.5% lower than requested. In subsequent meeting with UW, DWS has made firm indications that it will review the allocation of RBIG toward the projects that are impacting negatively on UW's operating profits through impairments as an increase in grant funding will reduce the level of impairments anticipated in 2017, when the interest cover ratio is most vulnerable to being breached.

20.4.3 Bulk water tariff projections

Table 20.8: Tariffs for bulk water sales

	ACTUAL			BUDGET		PROPOSED	FORECAST			
	F'13	F'14	F'15	F'16	F'16	F'17	F'18	F'19	F'20	F'21
CPI	5.70%	6.10%	4.20%	6.00%	6.20%	6.60%	5.30%	5.60%	5.40%	5.40%
+ provision for internal inflation	-0.10%	2.20%	4.50%	1.80%	3.90%	2.40%	3.60%	3.00%	3.00%	3.00%
Total Umgeni Water Tariff Increase	5.60%	8.30%	8.70%	7.80%	10.10%	9.00%	8.90%	8.60%	8.40%	8.40%
Capital Unit charge	100.00%	0.00%	4.41%	7.50%	7.80%	6.60%	5.30%	5.60%	5.40%	5.40%
Effective all in tariff increase	16.81%	7.52%	8.32%	8.11%	8.00%	8.64%	8.22%	7.96%	7.80%	7.91%
Bulk Water Tariff										
Other WSA's – excl eThekwini MM										
- Base Tariff	3.694	3.901	4.225	4.593	4.593	4.951	5.397	5.877	6.382	6.918
- Tariff Increase	0.207	0.324	0.368	0.358	0.358	0.446	0.480	0.505	0.536	0.581
- New Tariff - Umgeni Water	3.901	4.225	4.593	4.951	4.951	5.397	5.877	6.382	6.918	7.499
- % Increase - Umgeni Water	5.6	8.3	8.7	7.8	7.8	9.0	8.9	8.6	8.4	8.4
Add Capital unit charge										
- Spring grove	0.408	0.408	0.426	0.458	0.458	0.484	0.487	0.489	0.490	0.495
- Total Tariff	4.309	4.633	5.019	5.409	5.409	5.881	6.364	6.871	7.408	7.994
- % Increase -Total	16.6	7.5	8.3	7.8	7.8	8.7	8.2	8.0	7.8	7.9
eThekwini MM										
- Base Tariff	3.622	3.825	4.142	4.502	4.502	4.853	5.290	5.761	6.256	6.782
- Tariff Increase	0.203	0.317	0.360	0.351	0.351	0.437	0.471	0.495	0.526	0.570
- New Tariff - Umgeni Water	3.825	4.142	4.502	4.853	4.853	5.290	5.761	6.256	6.782	7.352
- % Increase - Umgeni Water	5.6	8.3	8.7	7.8	7.8	9.0	8.9	8.6	8.4	8.4
Add Capital unit charge										
- Spring grove	0.408	0.408	0.426	0.458	0.458	0.484	0.487	0.489	0.490	0.495
- Total Tariff	4.233	4.550	4.928	5.311	5.311	5.774	6.248	6.745	7.272	7.847
- % Increase -Total	16.9	7.5	8.3	7.8	7.8	8.7	8.2	8.0	7.8	7.9
Semcorp Siza Water										
- Base Tariff	3.726	3.935	4.262	4.633	4.633	6.518	7.105	7.737	8.402	9.108
- Tariff Increase	0.209	0.327	0.371	1.885	1.885	0.587	0.632	0.665	0.706	0.765
- New Tariff - Umgeni Water	3.935	4.262	4.633	6.518	6.518	7.105	7.737	8.402	9.108	9.873
- % Increase - Umgeni Water	5.6	8.3	8.7	40.7	40.7	9.0	8.9	8.6	8.4	8.4
Add Capital unit charge										
- Spring grove	0.408	0.408	0.426	0.458	0.458	0.484	0.487	0.489	0.490	0.495
- Total Tariff	4.343	4.670	5.059	6.976	6.976	7.589	8.224	8.891	9.598	10.368
- % Increase -Total	16.6	7.5	8.3	37.9	37.9	8.8	8.4	8.1	8.0	8.0
WEIGHTED AVERAGE TARIFF										
Excluding the capital unit charge	3.845	4.163	4.526	4.896	4.890	5.332	5.807	6.306	6.835	7.410
- % Increase -Total	5.6	8.3	8.7	8.2	8.1	9.0	8.9	8.6	8.4	8.4
Including the Capital unit charge	4.253	4.571	4.952	5.354	5.348	5.816	6.294	6.795	7.325	7.905
- % Increase -Total	16.8	7.5	8.3	8.1	8.0	8.7	8.2	8.0	7.8	7.9

20.4.4 Other commercial/management fee increases

Table 20.9: Other Revenue charges

	Actual F'13	% change	Actual F'14	% change	Actual F'15	% change	Forecast F'16	% change	Budget F'17	% change
Potable Water – Other (R/kl)										
Retail	4.079	*7.4%*	4.442	*8.9%*	4.828	*8.9%*	5.229	*8.3%*	5.726	*9.5%*
Bulk Raw Water(R/kl)										
Piped	2.359	*7.2%*	2.550	*8.1%*	2.754	*8.1%*	3.040	*10.4%*	3.329	*9.5%*
Dam	0.611	*38.9%*	0.662	*8.3%*	0.715	*8.3%*	0.789	*10.4%*	0.864	*9.5%*
Wastewater(R/kl)										
Ixopo**	8.734	*7.5%*	9.459	*8.3%*	N/A	*8.3%*	N/A		N/A	
Management Fee(R'ooo)										
Darvill Wastewater	52 481	*8.0%*	57 152	*8.9%*	64 268	*8.9%*	76 898	*19.7%*	92 035	*19.7%*
Howick Wastewater	7 024	*5.5%*	8 318	*18.4%*	13 350	*60.5%*	17 191	*28.8%*	20 987	*21.6%*
Ixopo Wastewater**	N/A		N/A		3 789		4 130	*9.0%*	4 402	*6.6*
Lynnfield Park WWW	N/A		378		1 133		1 210	*6.8%*	1391	*15%*
UMDM WWW	N/A		N/A		N/A		18 247		40,013	*119.3%*
Reticulation - Msunduzi	7 419	*0.4%*	455	*-93.9%*	N/A	*-93.9%*	N/A		N/A	
Water Research Levy(R/kl)										
Levy	0.046	*7%*	0.049	*5.7%*	0.051	*5.7%*	0.055	*6.9%*	0.058	*6.6%*

**In terms of the new agreement signed with Harry Gwala DM in 2015, the basis for recovery of costs associated with managing the Ixopo Wastewater Treatment Works changed in 2014 from a charge per kl to a fixed fee per annum.

Table 20.10: Tariff Cost Components

Components	2012/2013		2013/2014		2014/2015		2015/2016		2015/2016		2016/2017		2017/2018		2018/2019		2019/2020		2020/2021	
	Tariff R.c/kl	*Chang %*	*Tariff R.c/kl*	*Chang %*	*Tariff R.c/kl*	*Chang %*	*Tariff R.c/kl*	*Chang %*	*Tariff R.c/kl*	*Chang %*	*Tariff R.c/kl*	*Chang %*	*Tariff R.c/kl*	*Chang %*	*Tariff R.c/kl*	*Chang %*	*Tarif R.c/kl*	*Chang %*	*Tariff R.c/kl*	*Chang %*
Direct Costs																				
Chemicals	0.104	17%	0.094	-10%	0.101	7%	0.119	18%	0.111	10%	0.144	30%	0.145	1%	0.155	7%	0.169	9%	0.184	9%
Depreciation	0.176	2%	0.206	17%	0.233	13%	0.278	19%	0.293	26%	0.403	38%	0.391	-3%	0.404	3%	0.426	5%	0.448	5%
Energy	0.226	1%	0.277	23%	0.345	24%	0.459	33%	0.467	35%	0.563	20%	0.579	3%	0.635	10%	0.707	11%	0.783	11%
Maintenance	0.299	4%	0.290	-3%	0.345	19%	0.400	16%	0.337	-3%	0.399	19%	0.388	-3%	0.401	3%	0.422	5%	0.444	5%
Raw Water	0.382	**6%**	0.433	**14%**	0.374	**-14%**	0.373	**-1%**	0.380	**2%**	0.419	**10%**	0.504	**20%**	0.549	**9%**	0.601	**9%**	0.659	**10%**
Staff Costs	0.244	11%	0.267	9%	0.317	19%	0.371	17%	0.361	14%	0.399	10%	0.391	-2%	0.406	4%	0.430	6%	0.455	6%
Other direct operating activities	0.069	143%	0.041	-40%	0.063	52%	0.055	-12%	0.052	-17%	0.058	11%	0.057	-2%	0.061	7%	0.064	6%	0.068	6%
Total Direct Costs	1.500	8%	1.610	7%	1.779	10%	2.056	16%	2.001	13%	2.385	19%	2.454	3%	2.612	6%	2.818	8%	3.040	8%
Indirect Costs																				
Overheads	0.212	10%	0.203	-4%	0.422	108%	0.536	27%	0.527	25%	0.633	20%	0.637	1%	0.661	4%	0.699	6%	0.734	5%
staff costs	0.409	14%	0.455	11%	0.555	22%	0.552	-1%	0.586	6%	0.593	1%	0.719	21%	0.748	4%	0.791	6%	0.837	6%
Depreciation	0.036	6%	0.035	-2%	0.050	43%	0.097	94%	0.062	24%	0.167	170%	0.162	-3%	0.167	3%	0.176	5%	0.185	5%
Amortisation	0.015	9%	0.012	-18%	0.017	42%	0.013	-24%	0.016	-6%	0.027	69%	0.024	0%	0.022	0%	0.017	0%	0.012	0%
Impairments	0.180	4%	0.419	133%	0.202	-52%	0.218	8%	0.282	40%	0.183	-35%	0.162	-11%	0.039	-76%	0.010		0.060	
Retirement benefits	0.176	-27%	0.213	21%	0.127	-41%	0.193	52%	0.184	45%	0.207	13%	0.247	19%	0.261	6%	0.281	7%	0.302	7%
Total Indirect Costs	1.027	2%	1.336	30%	1.372	3%	1.608	17%	1.656	21%	1.810	9%	1.951	8%	1.898	-3%	1.974	4%	2.129	8%
Total direct & indirect cost	**2.526**	**6%**	**2.946**	**17%**	**3.151**	**7%**	**3.664**	**16%**	**3.657**	**16%**	**4.195**	**15%**	**4.405**	**5%**	**4.510**	**2%**	**4.792**	**6%**	**5.170**	**8%**
Finance Costs	(0.17	238%	(0.186	7%	(0.301	62%	0.107	-136%	(0.210	-30%	(0.116	-45%	0.087	-175%	0.079	-8%	0.022	-73%	(0.21	-
Cost - Bulk Water	**2.353**	**0%**	**2.760**	**17%**	**2.850**	**3%**	**3.771**	**32%**	**3.448**	**21%**	**4.079**	**18%**	**4.492**	**10%**	**4.589**	**2%**	**4.814**	**5%**	**4.957**	**3%**
Less: Sundry income	0.036	-69%	0.038	8%	0.065	69%	0.010	-85%	0.009	-87%	0.008	-7%	0.008	0%	0.009	5%	0.009	7%	0.010	7%
Net Cost - Bulk Water	**2.317**	**4%**	**2.722**	**17%**	**2.785**	**2%**	**3.761**	**35%**	**3.439**	**23%**	**4.071**	**18%**	**4.484**	**10%**	**4.581**	**2%**	**4.805**	**5%**	**4.947**	**3%**
Contribution from Wastewater	0.008	-26%	0.012	39%	0.030	160%	0.008	-74%	0.090	201%	0.092	2%	0.068	-26%	0.102	50%	0.152	49%	0.213	40%
Contribution from Section 30	0.033	-378%	0.080	138%	0.021	-74%	0.012	-44%	0.037	76%	0.038	2%	0.002	-94%	0.002	-3%	0.002	-1%	0.002	-1%
Total cost	**2.276**	**2%**	**2.631**	**16%**	**2.734**	**4%**	**3.742**	**37%**	**3.312**	**21%**	**3.941**	**19%**	**4.414**	**12%**	**4.477**	**1%**	**4.651**	**4%**	**4.732**	**2%**
Total Average UW Tariff excluding	**3.845**	**5.6%**	**4.163**	**8.3%**	**4.526**	**8.7%**	**4.896**	**8.2%**	**4.891**	**8.1%**	**5.332**	**9.0%**	**5.807**	**8.9%**	**6.306**	**8.6%**	**6.835**	**8.4%**	**7.410**	**8.4%**
Net profit Margin/(deficit)	**1.569**	**11%**	**1.532**	**-2%**	**1.792**	**17%**	**1.154**	**-36%**	**1.579**	**-12%**	**1.391**	**-12%**	**1.394**	**0%**	**1.830**	**31%**	**2.185**	**19%**	**2.678**	**23%**
applied to other comprehensive			**0.273**		-		-		-		-		-		-		-		-	
Surplus Margin/(deficit)	**1.569**		**1.259**		**1.792**		**1.154**		**1.579**		**1.391**		**1.394**		**1.830**		**2.185**		**2.678**	
applied to capex	1.512		2.299		3.719		4.661		5.176		4.228		2.083		1.225		0.374		0.455	
Surplus Margin/(deficit) for future	**0.057**		**(1.04**		**(1.92**		**(3.50**		**(3.59**		**(2.83**		**(0.68**		**0.605**		**1.810**		**2.223**	
Bulk water Tariff excluding CUC	**3.901**	6%	**4.593**	18%	**4.593**	0%	**4.951**	8%	**4.951**	8%	**5.397**	9%	**5.877**	9%	**6.382**	9%	**6.91**	8%	**7.499**	8%
Projected water sales (Ml)	422.7	1%	439.5	4%	446.5	2%	457.9	3%	438.2	-2%	429.2	-2%	471.02	10%	485.8	3%	493.1	1%	500.5	2%
Projected revenue (R m)	1915	1%	2216	16%	2240	1%	2384	6%	2402	7%	2797	16%	3274	17%	3321	1%	3666	10%	4047	10%
Projected costs (R m)	1250	-4%	1542	23%	1439	-7%	1855	29%	1727	20%	2199	27%	2617	19%	2431	-7%	2587	6%	2706	5%
Projected surplus (Rm)	612	0%	794	30%	801	1%	529	-34%	675	-16%	598	-11%	657	10%	890	35%	1079	21%	1342	24%
Reserves (R m)	3602	20%	4396	22%	5197	18%	5586	7%	5872	13%	6470	10%	7127	10%	8017	12%	9095	13%	10437	15%
Projected surplus as a % of reserves	17%	-17%	18%	6%	15%	-15%	9%	-39%	12%	-25%	9%	-20%	9%	0%	11%	20%	12%	7%	13%	8%
Debt service cost (R m)	66	-21%	46	-32%	3	-94%	130	4768%	1	-58%	14	1158%	141	902%	175	24%	216	23%	186	-14%
Debt (Debt + Equity) ratio	0.239	-19%	0.251	5%	0.174	-31%	0.243	40%	0.242	39%	0.242	0%	0.211	-13%	0.178	-16%	0.149	-16%	0.124	-17%
Capex (R m)	639	33%	1 011	58%	1 661	64%	2 134	29%	2 268	37%	1 815	-20%	981	-46%	595	-39%	185	-69%	228	23%

20.5 Surplus Policy

20.5.1 Introduction

The purpose of the policy is to guide the accrual and application of surpluses earned in any one year.

20.5.2 Policy

Surpluses are accrued for the following:

1. Maintain optimal capital structure
2. Repayment of debt during the current financial year.
3. Provision for repaying debt during a future year (for example, provision for a bullet payment).
4. Cash contribution toward the purchase of Plant and equipment during the current year.
5. Provision of cash contribution toward the purchase of plant and equipment during the future.
6. Refurbishment of plant and equipment during the current year.
7. Provision towards refurbishment of plant and equipment during a future year.
8. Provision for contingencies which could materialise in the form of either a reduction in revenue or increased unexpected costs or both.

20.5.3 Optimal Capital Structure

In terms of the optimal capital structure, the debt to equity ratio should not exceed 0.7 times. Thus retained surpluses contribute toward achievement of this target ratio and the optimal level of equity.

Amounts retained in excess of the optimal accumulated surplus are in terms of 1 to 8 in section 20.5.2 above.

20.6 Subsidy projections

Subsidy projections are based on the social component of developmental projects and are critical to Umgeni Water's financial viability and funding requirements. The overall Developmental Programme totals R6534 million with a specific allocation for the period 2016-2021 of R2 158 million, representing 40% of Umgeni Water's planned capital expenditure for that same period. These projects have a social component which is calculated as the amount which cannot be recovered through an affordable tariff structure. Umgeni Water's Financial Plan has allowed for the following funding split for the overall developmental programme:

- R2 751 million or 42% funding by Umgeni Water.
- R3 783 million or 58% funding by DWA for the remaining social components.

To date DWA has confirmed R1 845 million RBIG whilst R1 937million funding is unconfirmed and still at risk. The tables below reflect the projected subsidy projections to co-fund the social component of the developmental projects.

Table 20.11: Optimal funding mix for rural developmental projects (R'000)

	Project Cost Estimate R x 1000(*)			Project Funding R x 1000(*)			Analysis of RBIG Funding			
	Total Cost	Component Split		Total	Source					
Project		Economic	Social		DWA	UW	Total RBIG (DWA)	Invoiced to date Dec'15	Confirmed but not yet Invoiced	Not confirmed
Total	**6 533 973** *100%*	**2 207 700** *34%*	**4 326 273** *66%*	**6 533 973** *100%*	**3 783 153** *58%*	**2 750 820** *42%*	**3 783 153** *100%*	**794 333** *21%*	**1 051 074** *28%*	**1 937 747** *51%*
Projects started with confirmed Grant Funding	3 211 549	1 778 755	1 432 794	3 211 549	1 845 406	1 366 143	1 845 406	794 333	1 051 074	
Projects Started with no confirmation of grant funding	1 015 819	428 945	586 874	1 015 819	161 324	854 495	161 324			161 324
New capex projects with no confirmed grant funding	461 199		461 199	461 199		461 199				
Projects to start on Confirmation of RBIG	1 845 406		1 845 406	1 845 406	1 776 423	68 983	1 776 423			1 776 423

Table 20.12: Grant Funding Confirmed per annum for developmental projects (R'000)

Project	Total RBIG Funding R'000	Cumulative to F'15 R'000	F'16 R'000	F'17 R'000	F'18 R'000	F'19 R'000	F'20 R'000	F'21 R'000	F'16-F'21 R'000
Greater Eston	171 487	138 405	33 082						33 082
Richmond P/L-30kms	38 194	38 194							
Lower Thukela BWS - Phase 1	870 770	294 420	214 358	186 903	175 089				576 350
North Coast Emergency Pipeline*	34 203		34 203						34 203
Mpambanyoni River Emerg*	13 584		13 584						13 584
Hlimbitwa Emergency Scheme*	2 072		2 072						2 072
Mhlabatshane BWS Scheme Phase 1	108 955	108 955							
uMshwathi Bulk Water Supply Scheme	656 000				170 175	485 825			656 000
TOTAL incl drought funding of R50m*	**1 895 265**	**579 974**	**297 299**	**186 903**	**345 264**	**485 825**			**1 315 291**

The social value component funded by Umgeni Water will be reflected as impairments in the income statements over the next 5 years as follows:

Table 20.13: Impairment Summary (R'000)

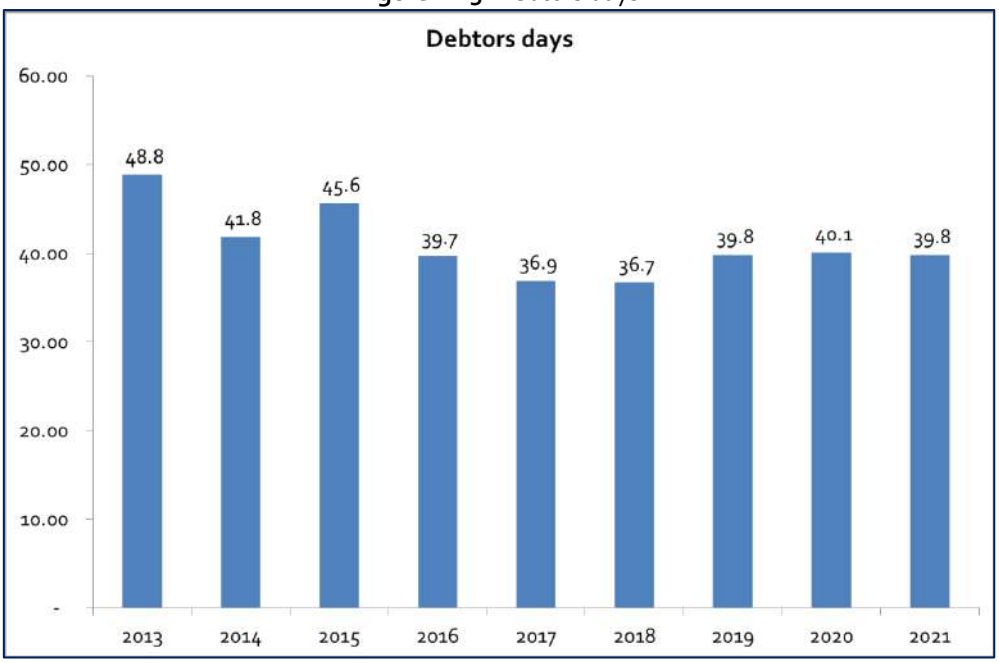
Project	Impairment %	Total Impairment	Accumulated Impairments 2015		F'16	F'17	F'18	F'19	F'20	F'21
Greater Eston	Commissioned		29 924		-29 924					
Hlimbithwa Pumpstation	Commissioned	**2 031**	1 178		854					
Maphumulo BWS Scheme Phase 1	Commissioned	**187 260**	106 467		80 793					
Maphumulo BWS Scheme Phase 2	Commissioned	**207 237**	119 742		87 495					
Mhlabatshane Sub-Regional Scheme	Commissioned	**118 621**	90 879		27 742					
Mpambanyoni Emergency Scheme	Commissioned	**19 737**	20 644		-908					
Ngcebo BWS Scheme Phase 1	Commissioned	**38 775**	38 775							
North Coast Emergency Pipeline	Commissioned	**21 888**	18 664		3 224					
Richmond P/L-30kms	Commissioned		45 886		-45 886					
Greater Mpofana Regional Scheme Phases 1	41%	**263 587**	20 282		34 369	78 357	76 395	19 043	5 154	29 987
uMshwathi Bulk Water Supply Scheme)	0%		34 338		-34 338					
Impairment as per Business Plan 2016/17		859 137	526 779		123 422	78 357	76 395	19 043	5 154	29 987

20.7 Challenges in collection of debtors

There have been no significant challenges in terms of collection of amounts due by debtors.

Based on the historical debtors payment cycle Umgeni Water does not expect debtors days outstanding to exceed 41 days.

Figure 20.5: Debtors days



20.8 Subsidiaries and associates

20.8.1 Msinsi Holdings (Pty) Ltd

Msinsi Holdings (Pty) Ltd is a 100% owned subsidiary of Umgeni Water, which provides land and wildlife management of the land surrounding some of Umgeni Water's major dams and treatment works. The entity is projected to break even over the next 5 years from 2017 , with positive operating cash flows. Going forward, the entity will be investing in capex to upgrade the tourism facilities and Umgeni Water will be increasing its management fee for the management of the dams, after careful consideration of Msinsi's cost drivers.

20.8.2 Umgeni Water Services (Pty) Ltd

Umgeni Water Services (Pty) Ltd is a 100% owned subsidiary of Umgeni Water. Its main business is holding of an investment (18.5%) in an associate, namely, Durban Water Recycling and carrying out other commercial activities. Thus the main source of income for Umgeni Water Services is the dividend distribution by the associate company Durban Water Recycling. It is envisaged that Umgeni Water Services will retain its current investment in Durban Water Recycling at R6m for the next 5 years.

20.9 Financial Statement projections

The financial statement projections of Umgeni water, its subsidiaries and the Group are presented in this section.

The deviations in growth and decline in significant line items are explained in chapter 24, Self-evaluation on financial viability of Umgeni Water.

As the capital unit charge is an agency cost, rather than a direct cost of operation, both the revenue and cost associated with the C.U.C. have not been reflected in the Income Statement.

Table 20.14: Umgeni Water Income Statement Total (R'000)

For the year ended June 30,	F13	F14	F15	F16	F16	F17	F18	F19	F20	F21
TOTAL	**Restated**	**Actual**	**Actual**	**BUDGET**	**Forecast**					
Volume of Bulk treated water sold (in kl'000)	422 791	439 542	446 548	457 928	438 197	429 209	471 024	485 832	493 119	500 516
Revenue	**1 895 886**	**2 187 886**	**2 207 704**	**2 376 273**	**2 394 973**	**2 789 651**	**3 266 336**	**3 316 688**	**3 661 088**	**4 042 508**
Water Sales - Bulk	1 625 480	1 830 137	2 021 053	2 241 867	2 143 091	2 288 636	2 735 439	3 063 924	3 371 278	3 709 379
Water Sales - Raw Water	428	415	505	679	626	610	664	721	782	848
Wastewater Sales	2 504	1 682	18 396	22 869	40 778	66 794	73 856	82 729	91 024	100 150
Wastewater Management Fee	52 481	58 084	64 268	76 899	76 898	92 035	110 442	132 530	159 036	190 843
Section 30 activities	214 993	297 567	103 482	33 959	133 580	341 577	345 935	36 782	38 969	41 289
Cost of sales	**869 910**	**1 034 890**	**950 056**	**1 038 177**	**1 076 478**	**1 451 608**	**1 612 456**	**1 427 662**	**1 561 517**	**1 707 846**
Changes in water inventory	(616)	246	(70)							
Chemicals	50 452	47 181	48 786	59 017	53 850	68 623	75 829	83 791	92 589	102 311
Depreciation	76 653	92 897	106 992	131 637	131 140	179 839	191 528	204 169	218 053	232 880
Energy	107 884	136 074	169 940	229 879	226 046	268 835	303 783	343 275	387 901	436 388
Maintenance	137 456	143 313	173 481	200 525	163 300	191 143	203 567	217 002	231 759	247 518
Raw Water	161 390	190 540	167 230	170 592	166 669	179 890	237 276	266 918	296 213	329 610
Staff Costs	117 203	130 305	155 676	185 106	180 892	199 433	214 390	230 041	247 064	265 347
Section 30 activities	184 123	271 560	93 647	28 612	121 273	320 149	339 358	32 270	34 206	36 259
Other direct operating activities	35 365	22 775	34 372	32 807	33 308	43 697	46 724	50 195	53 733	57 533
Gross profit	**1 025 977**	**1 152 996**	**1 257 648**	**1 338 096**	**1 318 496**	**1 338 043**	**1 653 880**	**1 889 026**	**2 099 571**	**2 334 662**
	54%	***53%***	***57%***	***56%***	***55%***	***48%***	***51%***	***57%***	***57%***	***58%***
Other operating income	**18 665**	**28 486**	**32 647**	**8 106**	**7 424**	**7 098**	**7 391**	**4 136**	**4 479**	**4 851**
Administration Expenses	**447 726**	**584 561**	**622 664**	**747 477**	**741 530**	**796 687**	**938 759**	**941 603**	**994 231**	**1 087 827**
Staff Costs (excl Maintenance Payroll costs)	174 112	201 304	247 742	252 620	256 706	254 498	338 664	363 386	390 277	419 157
Energy	4 014	4 845	5 433	6 780	6 674	7 302	8 251	9 324	10 536	11 853
Depreciation	15 481	15 294	22 642	44 710	27 598	71 953	76 630	81 687	87 242	93 175
Amortization	6 175	5 239	7 563	5 875	7 003	11 583	11 396	10 620	8 593	5 805
Impairments	76 034	183 976	90 058	99 626	123 422	78 357	76 395	19 043	5 154	29 987
Maintenance	14 879	15 092	14 538	16 801	14 669	15 274	16 266	17 340	18 519	19 778
Retirement Benefits	75 244	93 719	57 859	88 201	81 708	90 333	116 387	126 899	138 376	150 909
Other operating & administrative expenses (net	81 787	65 091	176 829	232 863	223 750	267 386	294 769	313 304	335 534	357 162
Operating income before interest	**596 917**	**596 921**	**667 631**	**598 725**	**584 389**	**548 454**	**722 512**	**951 559**	**1 109 820**	**1 251 687**
Net interest and finance charges	**(67 552)**	**(77 048)**	**(133 296)**	**69 679**	**(91 072)**	**(49 340)**	**65 343**	**61 850**	**31 139**	**(90 157)**
Interest Paid	66 478	45 510	2 663	129 605	1 116	14 043	140 680	174 957	215 504	185 583
Interest Received	(134 029)	(122 558)	(135 958)	(59 926)	(92 188)	(63 383)	(75 337)	(113 107)	(184 366)	(275 740)
Net Profit (Loss) for the year	**664 468**	**673 969**	**800 927**	**529 046**	**675 461**	**597 794**	**657 169**	**889 708**	**1 078 681**	**1 341 844**
Other Comprehensive Income										
- Retirement Benefit adjustment (IAS 19)	(52 502)	119 883	-							
Other Comprehensive Income for the year	**(52 502)**	**119 883**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**
Total comprehensive income for the year	**611 966**	**793 852**	**800 927**	**529 046**	**675 461**	**597 794**	**657 169**	**889 708**	**1 078 681**	**1 341 844**

Table 20.15: Umgeni Water Income Statement: S29 Activities (R'000)

For the year ended June 30,	F13	F14	F15	F16	F16	F17	F18	F19	F20	F21
PRIMARY (S29)	**Restated**	**Actual**	**Actual**	**Budget**				**Forecast**		
Volume of treated water sold (in kl'000)	422 791	439 542	446 548	457 928	438 197	429 209	471 024	485 832	493 119	500 516
Revenue	**1 680 894**	**1 890 318**	**2 104 222**	**2 342 314**	**2 261 394**	**2 448 074**	**2 920 401**	**3 279 905**	**3 622 120**	**4 001 219**
Water Sales - Bulk	1 625 480	1 830 137	2 021 053	2 241 867	2 143 091	2 288 636	2 735 439	3 063 924	3 371 278	3 709 379
Water Sales - Raw Water	428	415	505	679	626	610	664	721	782	848
Wastewater Sales	2 504	1 682	18 396	22 869	40 778	66 794	73 856	82 729	91 024	100 150
Wastewater Management Fee	52 481	58 084	64 268	76 899	76 898	92 035	110 442	132 530	159 036	190 843
Cost of sales	**673 557**	**753 793**	**856 408**	**1 009 565**	**953 486**	**1 127 978**	**1 269 375**	**1 392 056**	**1 523 735**	**1 667 755**
Changes in water inventory	(616)	246	(70)	-	-	-	-	-	-	-
Chemicals	50 271	46 784	48 786	59 017	53 850	68 623	75 829	83 791	92 589	102 311
Depreciation	76 653	92 897	106 992	131 637	131 140	179 839	191 528	204 169	218 053	232 880
Energy	105 452	133 381	169 940	229 879	226 046	268 835	303 783	343 275	387 901	436 388
Maintenance	134 299	140 348	173 481	200 525	162 346	190 182	202 544	215 912	230 594	246 274
Raw Water	161 390	190 540	167 230	170 592	166 669	179 890	237 276	266 918	296 213	329 610
Staff Costs	111 789	127 110	155 676	185 106	180 700	197 541	212 357	227 859	244 721	262 830
Other direct operating activities	34 319	22 487	34 372	32 807	32 735	43 069	46 059	50 132	53 666	57 462
Gross margin/profit	**1 007 337**	**1 136 526**	**1 247 814**	**1 332 749**	**1 307 908**	**1 320 095**	**1 651 026**	**1 887 849**	**2 098 384**	**2 333 464**
	60%	***60%***	***59%***	***57%***	***58%***	***54%***	***57%***	***58%***	***58%***	***58%***
Other operating income	**18 665**	**20 759**	**32 645**	**8 106**	**7 424**	**7 098**	**7 391**	**4 136**	**4 479**	**4 851**
Administration Expenses	**443 225**	**595 354**	**622 215**	**747 477**	**740 428**	**794 937**	**936 904**	**941 427**	**994 044**	**1 087 628**
Staff Costs	172 859	199 908	247 742	252 620	256 706	254 498	338 664	363 386	390 277	419 157
Energy	4 014	4 845	5 433	6 780	6 674	7 302	8 251	9 324	10 536	11 853
Depreciation	15 470	15 273	22 642	44 710	27 598	71 953	76 630	81 687	87 242	93 175
Amortization	6 175	5 239	7 563	5 875	7 003	11 583	11 396	10 620	8 593	5 805
Impairments	76 034	183 976	90 058	99 626	123 422	78 357	76 395	19 043	5 154	29 987
Maintenance	13 735	14 948	14 538	16 801	14 669	15 274	16 266	17 340	18 519	19 778
Retirement Benefits	75 244	93 719	57 859	88 201	81 708	90 333	116 387	126 899	138 376	150 909
Other operating & administrative expenses	79 694	77 445	176 380	232 863	222 648	265 637	292 915	313 127	335 347	356 963
Operating income before interest	**582 777**	**561 931**	**658 244**	**593 378**	**574 904**	**532 256**	**721 512**	**950 559**	**1 108 820**	**1 250 687**
Net interest and finance charges	**(67 553)**	**(77 048)**	**(133 296)**	**69 679**	**(91 072)**	**(49 340)**	**65 343**	**61 850**	**31 139**	**(90 157)**
Interest Paid	66 476	45 510	2 663	129 605	1 116	14 043	140 680	174 957	215 504	185 583
Interest Received	(134 029)	(122 558)	(135 958)	(59 926)	(92 188)	(63 383)	(75 337)	(113 107)	(184 366)	(275 740)
Net Profit (Loss)	**650 330**	**638 979**	**791 540**	**523 700**	**665 976**	**581 596**	**656 169**	**888 708**	**1 077 681**	**1 340 844**

Table 20.16: Umgeni Water Income statement - Bulk water segment (R'000)

For the year ended June 30,	F13	F14	F15	F16	F16	F17	F18	F19	F20	F21
BULK WATER	**Restated**	**Actual**	**Actual**	**Budget**	**Forecast**					
Volume of treated water sold (in kl'000)	422 791	439 542	446 548	457 928	438 197	429 209	471 024	485 832	493 119	500 516
Revenue	**1 625 909**	**1 830 552**	**2 021 558**	**2 242 546**	**2 143 718**	**2 289 245**	**2 736 103**	**3 064 646**	**3 372 060**	**3 710 226**
Water Sales - Bulk	1 625 480	1 830 137	2 021 053	2 241 867	2 143 091	2 288 636	2 735 439	3 063 924	3 371 278	3 709 379
Water Sales - Raw Water	428	415	505	679	626	610	664	721	782	848
Cost of sales	**633 502**	**707 827**	**794 252**	**941 434**	**876 902**	**1 023 799**	**1 156 113**	**1 268 852**	**1 389 502**	**1 521 613**
Changes in water inventory	(616)	246	(70)	-	-	-	-	-	-	-
Chemicals	44 142	41 393	44 933	54 531	48 535	61 782	68 269	75 438	83 359	92 111
Depreciation	74 265	90 576	104 124	127 350	128 245	173 091	184 342	196 509	209 871	224 143
Energy	95 397	121 871	154 139	210 305	204 815	241 553	272 955	308 439	348 537	392 104
Maintenance	126 223	127 500	154 216	183 337	147 511	171 455	182 599	194 651	207 887	222 024
Raw Water	161 390	190 540	167 230	170 592	166 669	179 890	237 276	266 918	296 213	329 610
Staff Costs	103 372	117 533	141 656	169 955	158 235	171 142	183 978	197 408	212 016	227 705
Other direct operating activities	29 329	18 168	28 022	25 363	22 893	24 886	26 693	29 489	31 619	33 916
Gross margin/profit	**992 407**	**1 122 725**	**1 227 307**	**1 301 112**	**1 266 816**	**1 265 446**	**1 579 990**	**1 795 794**	**1 982 557**	**2 188 614**
	61%	***61%***	***61%***	***58%***	***59%***	***55%***	***58%***	***59%***	***59%***	***59%***
Other operating income	**15 053**	**16 888**	**29 014**	**4 486**	**3 801**	**3 475**	**3 819**	**4 136**	**4 479**	**4 851**
Administration Expenses	**434 005**	**587 259**	**612 563**	**736 342**	**725 718**	**776 778**	**918 965**	**922 304**	**973 621**	**1 065 816**
Staff Costs	172 859	199 908	247 742	252 620	256 706	254 498	338 664	363 386	390 277	419 157
Energy	4 014	4 845	5 433	6 780	6 674	7 302	8 251	9 324	10 536	11 853
Depreciation	15 145	15 370	22 278	44 344	27 050	71 474	76 119	81 143	86 661	92 554
Amortization	6 175	5 239	7 563	5 875	7 003	11 583	11 396	10 620	8 593	5 805
Impairments	75 978	183 976	90 058	99 626	123 422	78 357	76 395	19 043	5 154	29 987
Maintenance	13 356	15 092	14 312	16 613	13 060	13 180	14 037	14 964	15 981	17 068
Retirement Benefits	74 283	93 719	56 502	88 201	80 505	89 018	116 387	126 899	138 376	150 909
Other operating & administrative expenses	72 195	69 110	168 676	222 282	211 298	251 365	277 716	296 925	318 042	338 482
Operating income before interest	**573 455**	**552 354**	**643 757**	**569 257**	**544 898**	**492 144**	**664 843**	**877 626**	**1 013 416**	**1 127 649**
Net interest and finance charges	**(73 361)**	**(81 549)**	**(134 392)**	**49 120**	**(91 891)**	**(49 939)**	**40 836**	**38 553**	**10 644**	**(106 440)**
Interest Paid	60 665	41 009	1 566	109 046	297	13 444	116 173	151 660	195 009	169 300
Interest Received	(134 026)	(122 558)	(135 958)	(59 926)	(92 188)	(63 383)	(75 337)	(113 107)	(184 366)	(275 740)
Net Profit (Loss)	**646 816**	**633 903**	**778 150**	**520 137**	**636 789**	**542 082**	**624 007**	**839 073**	**1 002 773**	**1 234 089**

Table 20.17: Umgeni Water Income statement Wastewater (R'000)

For the year ended June 30,	F13	F14	F15	F16	F16	F17	F18	F19	F20	F21
WASTE WATER	**Restated**	**Actual**	**Actual**	**Budget**	**Forecast**					
Volume of treated water sold (in kl'000)	-	-	-	-	-	-	-	-	-	-
Revenue	**54 985**	**59 766**	**82 664**	**99 768**	**117 676**	**158 828**	**184 298**	**215 259**	**250 060**	**290 993**
Wastewater Sales	2 504	1 682	18 396	22 869	40 778	66 794	73 856	82 729	91 024	100 150
Wastewater Management Fee	52 481	58 084	64 268	76 899	76 898	92 035	110 442	132 530	159 036	190 843
Cost of sales	**40 055**	**45 967**	**62 157**	**68 131**	**76 584**	**104 179**	**113 262**	**123 204**	**134 233**	**146 142**
Chemicals	6 129	5 391	3 853	4 486	5 316	6 841	7 559	8 353	9 230	10 199
Depreciation	2 388	2 321	2 868	4 287	2 895	6 747	7 186	7 660	8 181	8 738
Energy	10 055	11 510	15 801	19 574	21 230	27 281	30 828	34 835	39 364	44 284
Maintenance	8 076	12 848	19 265	17 189	14 835	18 727	19 944	21 261	22 706	24 250
Staff Costs	8 417	9 577	14 020	15 151	22 466	26 400	28 379	30 451	32 705	35 125
Other direct operating activities	4 990	4 319	6 350	7 444	9 842	18 183	19 365	20 643	22 047	23 546
Gross margin/profit	**14 930**	**13 800**	**20 507**	**31 637**	**41 092**	**54 649**	**71 036**	**92 056**	**115 827**	**144 851**
	27%	***23%***	***25%***	***32%***	***35%***	***34%***	***39%***	***43%***	***46%***	***50%***
Other operating income	**3 612**	**3 871**	**3 632**	**3 620**	**3 620**	**3 623**	**3 572**	**-**	**-**	**-**
Administration Expenses	**9 221**	**8 095**	**9 651**	**11 136**	**14 709**	**18 160**	**17 939**	**19 123**	**20 423**	**21 812**
Staff Costs	-	-	-	-	-	-	-	-	-	-
Energy	-	-	-	-	-	-	-	-	-	-
Depreciation	325	218	364	366	548	479	510	544	581	621
Amortization	-	-	-	-	-	-	-	-	-	-
Impairments	56									
Maintenance	379	367	227	188	1 608	2 093	2 229	2 376	2 538	2 710
Retirement Benefits	961	1 661	1 357		1 203	1 315				
Other operating & administrative expenses	7 501	5 849	7 704	10 582	11 350	14 272	15 199	16 203	17 304	18 481
Operating income before interest	**9 321**	**9 576**	**14 487**	**24 121**	**30 003**	**40 112**	**56 669**	**72 933**	**95 403**	**123 039**
Net interest and finance charges	**5 811**	**4 501**	**1 097**	**20 559**	**819**	**599**	**24 507**	**23 297**	**20 495**	**16 283**
Interest Paid	5 811	4 501	1 097	20 559	819	599	24 507	23 297	20 495	16 283
Interest Received					-	-	-	-	-	-
Net Profit (Loss)	**3 510**	**5 075**	**13 390**	**3 563**	**29 184**	**39 514**	**32 162**	**49 635**	**74 908**	**106 755**

Table 20.18: Umgeni Water Income statement: S30 Activities (R'000)

For the year ended June 30,	F13	F14	F15	F16	F16	F17	F18	F19	F20	F21
OTHER (S30)	Restated	Actual	Actual	Budget	Forecast					
Volume of treated water sold (in kl'000)	-	-	-	-	-	-	-	-	-	-
Revenue	**214 993**	**297 567**	**103 482**	**33 959**	**133 580**	**341 577**	**345 935**	**36 782**	**38 969**	**41 289**
Other	214 993	297 567	103 482	33 959	133 580	341 577	345 935	36 782	38 969	41 289
Cost of sales	**196 353**	**281 097**	**93 647**	**28 612**	**122 992**	**323 630**	**343 081**	**35 606**	**37 782**	**40 091**
Chemicals	181	396		-	-	-	-	-	-	-
Depreciation	-	-		-	-	-	-	-	-	-
Energy	2 432	2 692		-	-	-	-	-	-	-
Maintenance	3 157	2 964		-	954	961	1 023	1 091	1 165	1 244
Staff Costs	5 414	3 195		-	192	1 892	2 033	2 182	2 343	2 517
Projects/WIP costs	184 123	271 560	93 647	28 612	121 273	320 149	339 358	32 270	34 206	36 259
Other direct operating activities	1 046	289		-	573	628	665	63	67	71
Gross margin/profit	**18 640**	**16 470**	**9 835**	**5 347**	**10 588**	**17 947**	**2 854**	**1 176**	**1 187**	**1 198**
	9%	*6%*	*10%*	*16%*	*8%*	*5%*	*1%*	*3%*	*3%*	*3%*
Other operating income	**-**	**7 726**	**1**							
Administration Expenses	**4 501**	**(10 793)**	**450**	**-**	**1 102**	**1 749**	**1 854**	**176**	**187**	**198**
Staff Costs	1 252	1 396		-	-	-	-	-	-	-
Energy	-	-		-	-	-	-	-	-	-
Depreciation	11	21		-	-	-	-	-	-	-
Amortization	-	-		-	-	-	-	-	-	-
Impairments	-	-		-	-	-	-	-	-	-
Maintenance	1 145	144		-	-	-				-
Retirement benefits										
Other operating & administrative expenses	2 092	(12 354)	450	-	1 102	1 749	1 854	176	187	198
Operating income before interest	**14 139**	**34 990**	**9 387**	**5 347**	**9 485**	**16 198**	**1 000**	**1 000**	**1 000**	**1 000**
Net interest and finance charges	**2**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**
Interest Paid	2	-	-	-	-	-	-	-	-	-
Interest Received										
Net Profit (Loss)	**14 137**	**34 990**	**9 387**	**5 347**	**9 485**	**16 198**	**1 000**	**1 000**	**1 000**	**1 000**

Table 20.19: Umgeni Water Balance sheet (R'000)

As at June 30,	F13	F14	F15	F16	F16	F17	F18	F19	F20	F21
	Restated	Actual	Actual	Budget	Forecast					
ASSETS										
Non-current assets	3 474 480	4 131 362	5 641 768	7 397 482	7 613 474	8 999 241	9 150 258	9 582 806	9 565 316	8 936 979
Property, plant and equipment	3 441 872	3 984 471	5 502 792	7 193 449	7 409 094	8 728 201	8 804 491	9 152 919	9 039 468	8 928 200
Intangible assets	9 374	18 104	44 190	10 367	40 177	31 584	22 991	14 397	5 804	(1)
Other non-current assets	13 140	11 259	8 910	8 437	6 694	4 290	1 869			()
Investments	5 179	83 561	77 097	151 262	148 729	226 386	312 128	406 709	511 263	-
Investments in subsidiaries	4 915	33 967	8 780	33 967	8 780	8 780	8 780	8 780	8 780	8 780
Assets held for sale	-	-	-	-	-	-	-	-	-	-
Current Assets	2 418 927	2 658 956	1 956 905	1 169 797	1 568 171	1 066 676	1 524 568	1 900 787	2 937 565	4 342 523
Inventories	11 029	11 455	12 067	12 371	12 721	13 419	14 153	14 928	15 746	16 607
Accounts receivable	289 174	422 670	255 057	308 769	297 102	321 397	374 224	412 342	458 651	502 592
Sundry Debtors	10 271	25 376	84 986	25 376	84 986	84 986	84 986	84 986	84 986	84 986
Short-term investments	2 075 826	2 156 795	1 569 583	822 900	1 138 797	612 616	1 017 170	1 354 274	2 343 563	3 704 000
Interest Receivable	27 610	40 720	33 751	-	33 751	33 751	33 751	33 751	33 751	33 751
Bank balances and cash	5 017	1 940	1 462	381	814	507	284	506	869	587
Total assets	5 893 407	6 790 318	7 598 673	8 567 279	9 181 645	10 065 916	10 674 826	11 483 593	12 502 881	13 279 502
Reserves										
Accumulated reserves	3 601 757	4 395 609	5 196 537	5 585 825	5 871 998	6 469 792	7 126 961	8 016 669	9 095 350	10 437 194
Non-current liabilities	1 539 149	1 630 539	1 596 942	2 404 770	2 511 676	2 847 869	2 839 133	2 889 555	2 346 509	2 415 401
Interest bearing borrowings	1 025 930	1 171 765	1 093 331	1 864 712	1 949 712	2 220 902	2 141 890	2 112 668	1 483 226	1 458 388
Post employment medical benefit obligations	502 661	450 383	497 675	536 906	558 811	626 967	697 243	776 887	863 282	957 013
Other non-current liabilities	10 558	8 391	5 935	3 152	3 153					
Current liabilities	752 501	764 170	805 195	576 683	797 971	748 255	708 731	577 368	1 061 021	426 907
Accounts payable (including accruals & leases)	567 391	609 448	606 898	389 448	566 898	518 167	479 875	400 806	283 274	275 274
Provisions	44 263	49 053	93 028	49 053	93 028	93 028	93 028	93 028	93 028	93 028
Current portion of interest bearing loans	109 451	78 264	78 434	78 619	78 619	78 810	79 012	29 222	629 442	24 839
Other payables/loans	31 396	27 406	26 836	59 563	59 427	58 249	56 816	54 312	55 277	33 767
Bank overdrafts										
Total reserves and liabilities	5 893 407	6 790 318	7 598 673	8 567 279	9 181 645	10 065 916	10 674 826	11 483 593	12 502 881	13 279 502

Table 20.20: Umgeni Water Statement of changes in equity (R'000)

For the Year ended June 30,	Capital Contributions	OCI Reserve	Accumulated Profit (Loss)	Total
Balance at 30 June 2013	**442 847**	**(184 100)**	**3 343 011**	**3 601 757**
Profit for the year	-	-	673 969	673 969
Other comprehensive income	-	119 883	-	119 883
Balance at 30 June 2014	**442 847**	**(64 217)**	**4 016 980**	**4 395 609**
Profit for the year	-	-	800 927	800 927
Other comprehensive income	-	-	-	-
Balance at 30 June 2015	**442 847**	**(64 217)**	**4 817 907**	**5 196 537**
Profit for the year	-	-	675 461	675 461
Other comprehensive income	-	-	-	-
Balance at 30 June 2016	**442 847**	**(64 217)**	**5 493 368**	**5 871 998**
Profit for the year	-	-	597 794	597 794
Other comprehensive income	-	-	-	-
Balance at 30 June 2017	**442 847**	**(64 217)**	**6 091 162**	**6 469 792**
Profit for the year	-	-	657 169	657 169
Other comprehensive income	-	-	-	-
Balance at 30 June 2018	**442 847**	**(64 217)**	**6 748 331**	**7 126 961**
Profit for the year	-	-	889 708	889 708
Other comprehensive income	-	-	-	-
Balance at 30 June 2019	**442 847**	**(64 217)**	**7 638 039**	**8 016 669**
Profit for the year	-	-	1 078 681	1 078 681
Other comprehensive income	-	-	-	-
Balance at 30 June 2020	**442 847**	**(64 217)**	**8 716 720**	**9 095 350**
Profit for the year	-	-	1 341 844	1 341 844
Other comprehensive income	-	-	-	-
Balance at 30 June 2021	**442 847**	**(64 217)**	**10 058 564**	**10 437 194**

Table 20.21: Umgeni Water Cashflow Statement (R'000)

For the year ended June 30,	F13 Actual	F14 Actual	F15 Actual	F16 Budget	F16	F17	F18 Forecast	F19	F20	F21
OPERATING ACTIVITIES										
Operating profit before working capital changes	794 869	950 168	1 017 857	924 789	938 781	961 022	1 155 368	1 354 239	1 523 284	1 715 838
Changes in working capital	60 061	(90 151)	104 433	(78 240)	(82 699)	(73 723)	(91 853)	(117 963)	(164 659)	(52 803)
Net cash from operating activities	**854 930**	**860 017**	**1 122 290**	**846 549**	**856 081**	**887 298**	**1 063 516**	**1 236 276**	**1 358 626**	**1 663 036**
INVESTING ACTIVITIES										
Additions to property, plant and equipment	(639 465)	(1 010 619)	(1 660 528)	(2 134 260)	(2 268 059)	(1 814 762)	(981 178)	(595 237)	(184 616)	(227 734)
Additions to intangible assets	(2 990)	(11 150)	(30 506)							
Proceeds on disposal of Property, plant & equipment	15 636									
Grant Funding	167 080	245 343	26 517	282 471	214 358	357 078	660 914	-	-	-
Payments of intercompany borrowings	(1 720)	(29 052)	696	-	-	-	-	-	-	-
Net cash used in investing activities	**(461 459)**	**(805 478)**	**(1 663 821)**	**(1 851 789)**	**(2 053 701)**	**(1 457 684)**	**(320 264)**	**(595 237)**	**(184 616)**	**(227 734)**
FINANCING ACTIVITIES										
Net change in long-term borrowings	(121 756)	114 657	(78 264)	(78 434)	856 566	(78 619)	(78 810)	(79 012)	(29 222)	(629 442)
New Debt proposed			-	850 000	-	350 000	-			
Capital contributions	-	-	-	-	-	-	-	-	-	-
Net Investments - LTI & RED	(290 675)	(159 349)	615 323	349 000	386 397	480 000	(454 000)	(390 000)	(1 046 000)	(1 057 124)
Proceeds on disposal of available for sale investments										
Proceeds from (repaid to) short-term borrowings	-	-	-	-	-	-	-	-	-	-
Net interest (Paid) Received	14 003	(12 924)	3 993	(115 410)	(45 991)	(181 303)	(210 664)	(171 805)	(98 426)	250 982
Interest received	134 029	122 558	135 958	59 926	92 188	63 383	75 337	113 107	184 366	275 740
Deferred interest amortized	(53 548)	(89 972)	(129 302)	(45 731)	(137 063)	(230 643)	(145 321)	(109 955)	(67 287)	160 825
Interest paid	(66 478)	(45 510)	(2 663)	(129 605)	(1 116)	(14 043)	(140 680)	(174 957)	(215 504)	(185 583)
Net Repo & Market-making	-	-	-	-	-	-	-	-	-	-
Net cash used in financing activities	**(398 428)**	**(57 616)**	**541 052**	**1 005 156**	**1 196 972**	**570 078**	**(743 475)**	**(640 817)**	**(1 173 647)**	**(1 435 584)**
CASH AND CASH EQUIVALENTS										
Net increase/(decrease) in cash and cash equivalents	(4 957)	(3 077)	(478)	(85)	(648)	(307)	(223)	222	363	(282)
At beginning of year	9 974	5 017	1 939	466	1 462	814	507	284	506	869
At end of year	**5 017**	**1 939**	**1 462**	**381**	**814**	**507**	**284**	**506**	**869**	**587**

Table 20.22: Notes to Umgeni Water Cashflow Statement (R'000)

NOTES TO THE CASHFLOW STATEMENT	F13 Restated	F14 Actual	F15 Actual	F16 Budget	F16	F17	F18	F19 Forecast	F20	F21
RECONCILIATION OF NET PROFIT TO CASH GENERATED FROM OPERATIONS										
Net profit	664 468	673 969	800 927	529 046	675 461	597 794	657 169	889 708	1 078 681	1 341 844
Adjust for:										
Amortisation of intangible asset	3 369	2 420	4 324		4 013	8 593	8 593	8 593	8 593	5 805
Amortisation of financial asset	2 806	2 819	3 239	5 349	2 990	2 990	2 803	2 027	-	-
Asset Impairments	76 025	183 976	90 058	99 626	123 422	78 357	76 395	19 043	5 154	29 987
Depreciation	95 179	108 191	137 411	176 348	166 729	258 412	275 209	293 373	313 322	334 628
Darvill liability amortisation	(3 572)	(3 572)	(3 572)	(3 572)	(3 572)	(3 572)	(3 572)			
Doubtful debts provision	12 376	(16 818)	408							
Fair value of biological assets										
Finance costs	66 477	45 510	2 663	129 605	1 116	14 043	140 680	174 957	215 504	185 583
Interest received	(134 029)	(122 558)	(135 958)	(59 926)	(92 188)	(63 383)	(75 337)	(113 107)	(184 366)	(275 740)
Investment Impairments			24 491							
Increase/(decrease) in Provisions and non-current liabilities	12 235	73 802	92 380	48 314	60 810	67 787	73 428	79 644	86 396	93 730
Profit (loss) on disposal of PPE	392	2 430	1 487							
Profit (loss) on disposal of non-current asset held for sale	(858)									
Profit on disposal of shares										
Operating income before changes in working capital	794 869	950 168	1 017 857	924 789	938 781	961 022	1 155 368	1 354 239	1 523 284	1 715 838
Working capital changes:	60 061	(90 151)	104 433	(78 240)	(82 699)	(73 723)	(91 853)	(117 963)	(164 659)	(52 803)
(Increase)/decrease in inventories	(2 063)	(426)	(612)	(471)	(654)	(697)	(734)	(775)	(817)	(862)
(Increase) decrease in accounts receivable	(109 393)	(131 782)	107 595	(17 769)	(42 045)	(24 295)	(52 827)	(38 118)	(46 309)	(43 941)
Increase/(decrease) in accounts payable	171 517	42 057	(2 550)	(60 000)	(40 000)	(48 731)	(38 292)	(79 069)	(117 532)	(8 000)
Net Cash generated from operations	**854 930**	**860 017**	**1 122 290**	**846 549**	**856 081**	**887 298**	**1 063 516**	**1 236 276**	**1 358 626**	**1 663 036**

Table 20.23: Msinsi Income Statement (R'000)

For the year ended June 30, TOTAL	F13 Actual	F14 Actual	F15 Actual	F16 Budget	F16	F17	F18	F19 Forecast	F20	F21
Revenue	27 904	41 668	42 353	47 156	48 554	56 646	59 563	64 172	68 819	73 769
Enviromental Management Fee	14 740	23 804	26 404	28 256	33 127	37 000	39 960	43 157	46 609	50 338
Shongweni dam revenue	-	-	-	-	-	2 095	1 104			
Tourism & Other Revenue	13 164	17 864	15 949	18 900	15 428	17 551	18 499	21 015	22 209	23 431
Cost of sales	-	-	-	-	-	-	-	-	-	-
Gross profit	27 904	41 668	42 353	47 156	48 554	56 646	59 563	64 172	68 819	73 769
Other operating income	0	0	635	0	150	599	631	666	702	741
Administration Expenses	28 977	36 753	47 848	49 815	56 057	56 475	59 410	64 073	68 781	73 859
Staff Costs	18 510	22 311	24 460	25 218	29 537	34 329	38 889	44 143	47 542	51 203
Depreciation	742	831	1 339	900	1 650	2 200	2 319	2 446	2 581	2 723
Shongweni Dam - Expenditure	0	0	0	0	0	3 866	2 037	0	0	0
Opex spend against equity contribution	0	0	7 600	8 000	6 500	0	0	0	0	0
Other operating & administrative expenses	9 725	13 610	14 450	15 697	18 370	16 081	16 165	17 484	18 658	19 933
Operating income before interest	-1 074	4 915	-4 860	-2 659	-7 353	770	784	764	740	650
Net interest and finance charges	-87	-99	1 671	175	175	-769	-784	-764	-740	-651
Interest Paid	107	161	137	75	75	1 119	984	914	840	751
Interest Received	20	62	1 808	250	250	350	200	150	100	100
Net Profit (Loss)	-1 161	4 816	-3 189	-2 484	-7 178	0	0	0	0	0

Table 20.24: Msinsi Balance Sheet (R'000)

As at June 30,	F13 Actual	F14 Actual	F15 Actual	F16 Budget	F16	F17	F18	F19	F20	F21
					Forecast					
ASSETS										
Non-current assets	6 153	8 053	9 204	11 686	32 856	34 195	34 176	34 030	34 249	34 056
Property, plant and equipment	2 063	3 811	4 145	7 537	27 705	28 863	28 544	28 098	28 017	27 794
Intangible Assets	0	0	328	0	118	0	0	0	0	0
Other non-current assets	4 089	4 241	4 732	4 149	5 032	5 332	5 632	5 932	6 232	6261963
Current Assets	3 390	40 706	30 774	9 965	14 244	11 483	10 703	10 100	9 043	8 334
Accounts receivable	796	522	355	120	415	386	355	286	251	286
Sundry Debtors	0	0	0	0	0	0	0	0	0	0
Net Intercompany receivable	0	12 915	1 229	0	0		0	0	0	0
Cash and cash equivalents	2 594	27 269	29 191	9 845	13 829	11 098	10 347	9 814	8 792	8 048
Total assets	9 543	48 759	39 979	21 651	47 100	45 678	44 879	44 130	43 292	42 390
Equity	1 607	36 423	33 234	14 103	26 056	26 056	26 056	26 056	26 055	26 055
Share Capital	0	0	0	0	0	0	0	0	0	0
Equity contribution from parent	0	30 000	20 476	30 000	0	0	0	0	0	0
Accumulated reserves	1 607	6 423	12 757	-15 897	26 056	26 056	26 056	26 056	26 055	26 055
Non-current liabilities	3 232	0	0	853	13 963	12 296	11 423	10 485	9 477	8 395
Interest bearing borrowings	3 232	0	0	853	853	0	0	0	0	0
Non-Interest bearing Loan - UW	0	0	0	0	13 110	12 296	11 423	10 485	9 477	8 395
Current liabilities	4 704	12 336	6 745	6 695	7 081	7 326	7 400	7 590	7 760	7 940
Provisions	2 004	2 454	2 066	2 560	2 301	2 466	2 480	2 570	2 620	2 710
Accounts Payable	2 699	9 882	4 679	4 135	4 780	4 860	4 920	5 020	5 140	5 230
Total reserves and liabilities	9 543	48 759	39 979	21 651	47 100	45 678	44 879	44 130	43 292	42 390

Table 20.24: Msinsi Cashflow Statement (R'000)

For the year ended June 30,	F12	F13	F14	F15	F16	F16	F17	F18	F19	F20	F21
	Actual				Budget	Forecast					
OPERATING ACTIVITIES											
Operating profit before working capital changes	-1 528	-464	4 624	-4 145	-5 800	-5 793	2 697	2 528	2 806	2 761	3 138
Changes in working capital	1 288	1 274	-8 691	6 263	88	1 504	365	379	364	465	350
Net cash from operating activities	**-240**	**809**	**-4 067**	**2 118**	**-5 712**	**-4 290**	**3 062**	**2 907**	**3 170**	**3 226**	**3 488**
INVESTING ACTIVITIES											
Additions to property, plant and equipment	-460	-743	-1 277	-1 672	-2 500	-25 211	-3 358	-2 000	-2 000	-2 500	-2 500
Additions to intangible assets	0	0	0	-339	0	0	0	0	0	0	0
Proceeds on disposal of Property, plant & equipment	0	462	0	0	0	0	0	0	0	0	0
Proceeds on disposal of biological assets	27	550	118	144	0	0	0	0	0	0	0
Net cash used in investing activities	**-433**	**268**	**-1 158**	**-1 867**	**-2 500**	**-25 211**	**-3 358**	**-2 000**	**-2 000**	**-2 500**	**-2 500**
FINANCING ACTIVITIES											
Net change in long-term borrowings	0	0	0	0	-734	13 963	-1 667	-874	-938	-1 008	-1 082
Interest received	47	20	62	1 808	250	250	350	200	150	100	100
Equity Contribution from parent	0	0	30 000	0	0	0	0	0	0	0	0
Interest paid	-36	-107	-161	-137	-75	-75	-1 119	-984	-914	-840	-751
Net cash used in financing activities	**12**	**-87**	**29 901**	**1 671**	**-559**	**14 138**	**-2 436**	**-1 658**	**-1 703**	**-1 748**	**-1 733**
CASH AND CASH EQUIVALENTS											
Net increase/(decrease) in cash and cash equivalents	-661	990	24 675	1 923	-8 771	-15 362	-2 732	-750	-533	-1 022	-744
At beginning of year	2 266	1 604	2 594	27 269	18 616	29 191	13 829	11 098	10 347	9 814	8 792
At end of year	**1 604**	**2 594**	**27 269**	**29 192**	**9 845**	**13 829**	**11 098**	**10 347**	**9 814**	**8 792**	**8 048**

Table 20.25: Msinsi Notes to Cashflow Statement (R'000)

NOTES TO THE CASH FLOW STATEMENT	Actual				Forecast				
	2013	2014	2015	2016	2017	2018	2019	2020	2021
RECONCILIATION OF PROFIT FOR THE YEAR TO NET CASH GENERATED FROM OPERATING ACTIVITIES	Total R'000	Total R'000	Total R'000	Total R'000	Total R'000	Total R'000	Total R'001	Total R'001	Total R'001
Net Profit	**(1 161)**	**4 816**	**(3 189)**	**(7 178)**		**()**	**()**	**()**	**()**
Depreciation	743	831	1 339	1 650	2 200	2 319	2 446	2 581	2 723
Asset impairment - Powaprops	105								
Profit /Loss on disposal of assets	(415)		11						
Profit /Loss on sale of game	(12)								
Donations of Plant, Property & Equipment		(1 315)							
Fair Value Adjustment	272	(270)	(635)	(91)	(272)	(575)	(405)	(560)	(235)
Amortisation		13							
Interest received	(20)	(62)	(1 808)	(250)	(350)	(200)	(150)	(100)	(100)
Interest paid (net of interest capitalized)	107	161	137	75	1 119	984	914	840	751
Operating Profit before working capital changes	**(382)**	**4 174**	**(4 145)**	**(5 793)**	**2 697**	**2 528**	**2 806**	**2 761**	**3 138**
Working capital changes	**1 191**	**(8 241)**	**6 263**	**1 504**	**365**	**379**	**364**	**465**	**350**
Change in receivables	(531)	274	167	(60)	(266)	60	100	105	-
Change in accounts payable.	47	7 182	(5 202)	101	725	140	160	220	210
Change in Long term provisions (ret Ben Obligations)	1 720	(16 147)	11 686		-	-	-	-	-
Change in Net Intercompany receivable				1 229	-	-	-	-	0
Change in Inventories	37								
Change in provisions	(82)	450	(388)	235	(94)	179	104	140	140
Cash Generated from operations	**809**	**(4 067)**	**2 118**	**(4 290)**	**3 062**	**2 907**	**3 170**	**3 226**	**3 488**

Table 20.26: UWS Income statement (R'000)

For the year ended June 30, TOTAL	F13 Actual	F14 Actual	F15 Actual	F16 Budget	F16	F17	F18	F19	F20	F21
					Forecast					
Revenue	0	0	0	0						
Cost of sales	0	0	0	0	0	0	0	0	0	0
Gross profit	0	0	0	0	0	0	0	0	0	0
Other operating income	0	0	0	30	0	0	0	0	0	0
Administration Expenses	27	26	42		45	48	51	55	59	63
Share of profit from associate	3 482	3 627	4602	-30						
Operating income before interest	3 455	3 601	4560	0	-45	-48	-51	-55	-59	-63
Net interest and finance charges	54	43	194		0	0	0	0	0	0
Interest Paid										
Interest Received	54	43	194							
Net Profit (Loss)	3 509	3 644	4754	-30	-45	-48	-51	-55	-59	-63

Table 20.26: UWS Balance (R'000)

As at June 30,	F13 Actual	F14 Actual	F15 Actual	F15 Budget	F16	F17	F18	F19	F20	F21
					Forecast					
ASSETS										
Non-current assets	6 255	6 037	6 005	6 037	6 005	6 005	6 005	6 005	6 005	6 005
Other non-current assets	250	32		32						
Investments in subsidiaries and associates	6 005	6 005	6 005	6 005	6 005	6 005	6 005	6 005	6 005	6 005
Current Assets	6 166	9 829	14 617	8 088	14 589	14 544	14 496	14 445	14 390	14 331
Total assets	12 421	15 866	20 622	14 125	20 594	20 549	20 501	20 450	20 395	20 336
Reserves	10 513	14 157	18 911	14 099	18 866	18 818	18 767	18 712	18 653	18 590
Accumulated reserves & Share Capital	10 513	14 157	18 911	14 099	18 866	18 818	18 767	18 712	18 653	18 590
Non-current liabilities	0	0		0	1682	1682	1682	1682	1682	1682
other non current liabilities	1 682	1 682	1 682	0	1682	1682	1682	1682	1682	1682
Current liabilities	26	26	28	26	45	48	51	55	59	63
Accounts payable (including accruals & leases)	26	26	28	26	45	48	51	55	59	63
Total reserves and liabilities	12 421	15 866	20 621	14 125	20 593	20 548	20 500	20 449	20 394	20 335

Table 20.27: GROUP Income Statement (R'000)

For the year ended June 30,	F13	F14	F15	F'16	F'16	F'17	F'18	F'19	F'20	F'21
	Restated	Actual	Actual	Budget	Forecast					
Volume of Bulk treated water sold (in kl'000)	416 995	439 542	446 548	457 928	438 197	429 209	471 024	485 832	493 119	500 516
Revenue	**1 908 833**	**2 204 140**	**2 222 565**	**2 391 132**	**2 410 401**	**2 809 297**	**3 285 939**	**3 337 702**	**3 683 298**	**4 065 939**
Water Sales - Bulk	1 625 480	1 830 137	2 021 053	2 241 867	2 143 091	2 288 636	2 735 439	3 063 924	3 371 278	3 709 379
Water Sales - Reticulation	-	-	-	-	-	-	-	-	-	-
Water Sales - Raw Water	428	415	505	679	626	610	664	721	782	848
Wastewater Sales	2 504	1 682	18 396	22 869	40 778	66 794	73 856	82 729	91 024	100 150
Wastewater Management Fee	52 481	58 083	64 268	76 899	76 898	92 035	110 442	132 530	159 036	190 843
Section 30 activities	227 940	313 822	118 343	48 819	149 007	361 223	365 538	57 797	61 178	64 720
Cost of sales	**869 909**	**1 034 890**	**950 056**	**1 038 177**	**1 076 478**	**1 451 608**	**1 612 456**	**1 427 662**	**1 561 517**	**1 707 846**
Changes in water inventory	(616)	246	(70)	-	-	-	-	-	-	-
Chemicals	50 452	47 181	48 786	59 017	53 850	68 623	75 829	83 791	92 589	102 311
Depreciation	76 653	92 897	106 992	131 637	131 140	179 839	191 528	204 169	218 053	232 880
Energy	107 884	136 074	169 940	**229 879**	**226 046**	**268 835**	**303 783**	**343 275**	**387 901**	**436 388**
Maintenance	137 456	143 313	173 481	**200 525**	**163 300**	**191 143**	**203 567**	**217 002**	**231 759**	**247 518**
Raw Water	161 389	190 540	167 230	170 592	166 669	179 890	237 276	266 918	296 213	329 610
Staff Costs	117 203	130 305	155 676	185 106	180 892	199 433	214 390	230 041	247 064	265 347
Section 30 activities	184 123	271 560	93 647	28 612	121 273	320 149	339 358	32 270	34 206	36 259
Other direct operating activities	35 365	22 776	34 372	32 807	33 308	43 697	46 724	50 195	53 733	57 533
Gross profit	**1 038 924**	**1 169 250**	**1 272 509**	**1 352 955**	**1 333 923**	**1 357 689**	**1 673 483**	**1 910 041**	**2 121 780**	**2 358 093**
	54%	*53%*	*57%*	*56%*	*52%*	*52%*	*52%*	*52%*	*52%*	*52%*
Other operating income	**18 814**	**28 778**	**33 871**	**8 106**	**7 574**	**7 696**	**8 021**	**4 802**	**5 182**	**5 592**
Administration Expenses	**461 925**	**596 217**	**619 147**	**769 065**	**764 505**	**816 210**	**958 260**	**962 574**	**1 016 462**	**1 111 411**
Staff Costs	192 622	223 615	272 202	277 838	286 243	288 828	377 553	407 530	437 819	470 360
Energy	4 014	4 845	5 433	6 780	6 674	7 302	8 251	9 324	10 536	11 853
Depreciation	15 111	16 439	23 581	45 610	29 248	74 153	78 949	84 133	89 823	95 898
Amortization	6 175	5 239	7 574	5 875	7 003	11 583	11 396	10 620	8 593	5 805
Impairments	75 978	183 976	90 058	99 626	123 422	78 357	76 395	19 043	5 154	29 987
Maintenance	16 068	16 874	24 048	24 801	14 669	15 274	16 266	17 340	18 519	19 778
Retirement Benefits	42 482	93 719	89 287	88 201	81 708	90 333	116 387	126 899	138 376	150 909
Other operating & administrative expenses	109 475	51 509	106 964	220 334	215 538	250 380	273 063	287 685	307 641	326 820
Operating income before interest	**595 813**	**601 811**	**687 234**	**591 996**	**576 992**	**549 176**	**723 244**	**952 268**	**1 110 500**	**1 252 275**
Net interest and finance charges	**(67 519)**	**(76 991)**	**(135 152)**	**69 504**	**(91 247)**	**(48 571)**	**66 127**	**62 615**	**31 879**	**(89 506)**
Interest Paid	66 507	45 555	2 705	129 605	1 116	14 043	140 680	174 957	215 504	185 583
Interest Received	(134 026)	(122 546)	(137 857)	(60 101)	(92 363)	(62 614)	(74 553)	(112 342)	(183 626)	(275 090)
Share of profit from associate	3 482	3 627	4 602	-	-	-	-	-	-	-
Net Profit (Loss)	**666 814**	**682 429**	**826 988**	**522 493**	**668 239**	**597 747**	**657 117**	**889 653**	**1 078 622**	**1 341 781**
Other Comprehensive Income				-	-	-	-	-	-	-
- Retirement Benefit adjustment (IAS 19)			(4 065)	-	-	-	-	-	-	-
Other Comprehensive Income for the year				-	-	-	-	-	-	-
				-	-	-	-	-	-	-
Total comprehensive income for the year	**666 814**	**682 429**	**831 053**	**522 493**	**668 239**	**597 747**	**657 117**	**889 653**	**1 078 622**	**1 341 781**

Table 20.28: GROUP Balance Sheet (R'000)

As at June 30,	F13 Restated	F14 Actual	F15 Actual	F'16 Budget	F'16	F'17	F'18	F'19	F'20	F'21
					Forecast					
ASSETS										
Non-current assets	3 481 721	4 111 452	5 648 197	7 415 205	7 652 335	9 039 441	9 190 439	9 622 841	9 605 570	8 977 040
Property, plant and equipment	3 443 935	3 988 282	5 506 937	7 200 986	7 436 799	8 757 064	8 833 035	9 181 018	9 067 485	8 955 994
Intangible assets	9 374	18 104	44 517		40 295	31 584	22 991	14 397	5 804	(1)
Other non-current assets	17 229	15 499	13 641	22 984	11 726	9 622	7 500	5 932	6 232	6 262
Investments - Financial Instruments	5 179	83 561	77 097	151 262	148 729	226 386	312 128	406 709	511 263	-
Investments in subsidiaries and associates	6 005	6 005	6 005	39 973	14 785	14 785	14 785	14 785	14 785	14 785
Assets held for sale	-	-	-	-	-	-	-	-	-	-
Current Assets	2 426 175	2 694 074	1 998 382	1 186 999	1 594 468	1 091 020	1 548 083	1 923 650	2 959 315	4 363 506
Inventories	11 029	11 456	12 067	12 371	12 721	13 419	14 153	14 928	15 746	16 607
Accounts receivable	236 658	258 048	255 056	308 889	297 517	321 783	374 579	412 628	458 902	502 878
Sundry Debtors	67 441	194 362	89 992	29 129	89 785	90 639	90 639	90 639	90 639	90 639
Short-term investments	2 075 826	2 156 793	1 569 583	822 900	1 138 797	612 616	1 017 170	1 354 274	2 343 563	3 704 000
Interest Receivable	27 610	40 722	33 751	-	33 751	33 751	33 751	33 751	33 751	33 751
Bank balances and cash	7 611	32 693	37 933	13 710	21 896	18 812	17 791	17 429	16 714	15 630
Total assets	5 907 897	6 805 526	7 646 579	8 602 203	9 246 802	10 130 461	10 738 523	11 546 491	12 564 885	13 340 546
Reserves										
Accumulated reserves	3 613 872	4 416 184	5 239 108	5 614 029	5 916 920	6 514 667	7 171 784	8 061 437	9 140 059	10 481 841
Non-current liabilities	1 539 149	1 630 540	1 601 004	2 404 770	2 524 786	2 860 166	2 850 556	2 900 040	2 355 986	2 423 796
Interest bearing borrowings	1 025 930	1 171 766	1 093 331	1 864 712	1 949 712	2 220 902	2 141 890	2 112 668	1 483 226	1 458 388
Post retirement medical benefit obligations	502 661	450 383	501 738	536 906	558 811	626 967	697 243	776 887	863 282	957 013
Other Non Current Liabilities	10 558	8 391	5 935	3 152	16 263	12 297	11 423	10 485	9 477	8 395
Current liabilities	754 876	758 802	806 466	583 404	805 097	755 629	716 182	585 013	1 068 840	434 910
Accounts payable (including accruals & leases)	568 649	602 688	606 470	389 474	571 722	523 075	484 847	405 881	288 473	280 567
Provisions	45 380	50 445	94 727	51 613	95 329	95 494	95 508	95 598	95 648	95 738
Current portion of interest bearing loans	109 451	78 263	78 434	78 619	78 619	78 810	79 012	29 222	629 442	24 839
Other payables/loans	31 396	27 406	26 836	63 698	59 427	58 249	56 816	54 312	55 277	33 767
Bank overdrafts	-			-	-	-	-	-	-	-
Total reserves and liabilities	5 907 897	6 805 526	7 646 579	8 602 204	9 246 802	10 130 461	10 738 523	11 546 491	12 564 886	13 340 546

Table 20.29: GROUP Cashflow Statement (R'000)

As at June 30,	F13 Restated	F14 Actual	F15 Actual	F'16 Budget	F'16	F'17	F'18	F'19	F'20	F'21
					Forecast					
OPERATING ACTIVITIES										
Operating profit before working capital changes	794 186	955 903	1 013 988	918 990	932 942	963 671	1 157 845	1 356 989	1 525 986	1 718 914
Changes in working capital	60 240	(94 136)	114 727	(78 152)	(81 178)	(73 355)	(91 470)	(117 595)	(164 190)	(52 448)
Net cash from operating activities	**854 426**	**861 767**	**1 128 715**	**840 838**	**851 764**	**890 316**	**1 066 375**	**1 239 394**	**1 361 796**	**1 666 465**
									-	-
INVESTING ACTIVITIES									-	-
Additions to property, plant and equipment	(640 208)	(1 013 194)	(1 662 201)	(2 136 760)	(2 293 269)	(1 818 120)	(983 178)	(597 237)	(187 116)	(230 234)
Additions to intangible assets	(2 990)	(11 150)	(30 845)	-	-	-	-	-	-	-
Proceeds on disposal of Property, plant & equipment	15 635	121	146	-	-	-	-	-	-	-
Transfer to financial asset				-	-	-	-	-	-	-
Grant Funding	167 080	245 343	26 517	282 471	214 358	357 078	660 914	-	-	-
Proceeds on disposal of Biological Assets	550			-	-	-	-	-	-	-
Increase of intercompany borrowings				-	-	-	-	-	-	-
Net cash used in investing activities	**(459 932)**	**(778 880)**	**(1 666 383)**	**(1 854 289)**	**(2 078 911)**	**(1 461 042)**	**(322 264)**	**(597 237)**	**(187 116)**	**(230 234)**
									-	-
FINANCING ACTIVITIES									-	-
Net change in long-term borrowings	(121 756)	114 648	(78 265)	(79 168)	870 529	(80 286)	(79 684)	(79 950)	(30 229)	(630 524)
New Debt proposed				850 000	-	350 000	-	-	-	-
Net Investments - LTI & RED	(290 675)	(159 349)	615 321	349 000	386 397	480 000	(454 000)	(390 000)	(1 046 000)	(1 057 124)
Proceeds on disposal of available for sale investments										
Equity Contribution from parent				-	-	-	-	-	-	-
Net interest (Paid) received	13 970	(13 104)	5 852	(115 235)	(45 816)	(182 072)	(211 448)	(172 570)	(99 166)	250 332
Net Repo & Market-making				-	-	-	-	-	-	-
					-		-	-	-	-
Net cash used in financing activities	**(398 461)**	**(57 805)**	**542 908**	**1 004 597**	**1 211 111**	**567 642**	**(745 132)**	**(642 519)**	**(1 175 395)**	**(1 437 316)**
CASH AND CASH EQUIVALENTS										
Net increase/(decrease) in cash and cash equivalents	(3 967)	25 082	5 240	(8 855)	(16 036)	(3 084)	(1 020)	(362)	(715)	(1 085)
At beginning of year	11 578	7 611	32 693	22 565	37 933	21 897	18 813	17 793	17 431	16 716
At end of year	**7 611**	**32 693**	**37 933**	**13 710**	**21 897**	**18 813**	**17 793**	**17 431**	**16 716**	**15 631**

NOTES TO THE CASHFLOW STATEMENT RECONCILIATION OF NET PROFIT TO CASH GENERATED FROM OPERATIONS	F13 Actual	F14 Actual	F15 Actual	F16 BUDGET	F16	F17	F18	F19 Forecast	F20	F21
NET PROFIT	666 814	682 429	831 053	522 493	668 239	597 747	657 117	889 653	1 078 622	1 341 781
Adjust for:										
Amortisation of intangible asset	3 369	2 420	4 335	5 349	7 003	11 583	11 396	10 620	8 593	5 805
Amortisation of financial asset	2 806	2 819	3 239							
Asset Impairments	76 130	183 976	90 058	99 626	123 422	78 357	76 395	19 043	5 154	29 987
Depreciation	95 921	109 022	138 750	177 248	168 379	260 612	277 528	295 819	315 903	337 351
Darvill liability amortisation	-3 572	-3 572	-3 572	-3 572	-3 572	-3 572	-3 572		0	0
Doubtful debts provision	12 376	-16 818	408							
Fair value adjustment of biological assets	273	-475	-668		-91	-272	-575	-405	-560	-235
Finance costs	66 507	45 555	2 704	129 605	1 116	14 043	140 680	174 957	215 504	185 583
Interest received	-134 026	-122 546	-137 858	-60 101	-92 363	-62 614	-74 553	-112 342	-183 626	-275 090
Profit from associate	-3 482	-3 627	-4 602							
Increase/(decrease) in Provisions and non-current liabilities	11 502	74 074	92 686	48 494	62 273	67 692	73 608	79 748	86 536	93 870
Profit (loss) on disposal of PPE	438	2 442	1 487							
Profit (loss) on sale of biological assets	-12	204	33	0						
(Profit) loss on disposal of Non-current asset held for sale	-858									
Other adjustment						2	4	5	3	4
Operating income before changes in working capital	794 186	955 903	1 018 053	919 141	934 406	963 579	1 158 029	1 357 098	1 526 129	1 719 058
Working capital changes:	60 240	-94 137	114 727	-78 303	-82 642	-74 124	-91 816	-117 857	-164 445	-52 707
(Increase)/decrease in inventories	-2 026	-426	-612	-471	-654	-697	-734	-775	-817	-862
(Increase) decrease in accounts receivable	-109 972	-143 240	111 555	-17 626	-42 105	-25 422	-52 929	-38 172	-46 316	-44 056
Increase/(decrease) in accounts payable	172 238	49 530	3 784	-60 236	-39 883	-48 006	-38 152	-78 909	-117 312	-7 790
Increase/(decrease) in intercompany loan (UWS)				29						
Net Cash generated from operations	**854 426**	**861 767**	**1 132 780**	**840 838**	**851 764**	**889 455**	**1 066 212**	**1 239 241**	**1 361 685**	**1 666 350**

Table 20.32: Umgeni Water Segmental Report (R'000)

Segmental Report (in R'000)	F'14				F'15				F'16				F'17			
For the year ended June 30,	Primary				Primary				Primary				Primary			
	Bulk Water	Waste Water	S30	Total	Bulk Water	Waste Water	S30	Total	Bulk Water	Waste Water	S30	Total	Bulk Water	Waste Water	S30	Total
Volume sold	439 542		0	439 542	446 548		0	446 548	438 197		0	438 197	429 209		0	429 209
Revenue	**1 830 552**	**59 766**	**313 822**	**2 204 140**	**2 021 558**	**82 664**	**118 343**	**2 222 565**	**2 143 718**	**117 676**	**149 007**	**2 410 401**	**2 289 245**	**158 828**	**361 223**	**2 809 297**
Cost of sales	**-707 827**	**-45 966**	**-281 097**	**-1 034 890**	**-794 250**	**-62 157**	**-93 647**	**-950 054**	**-876 902**	**-76 584**	**-122 992**	**-1 076 478**	**-1 023 799**	**-104 179**	**-323 630**	**-1 451 608**
Changes in water inventory	-246	0	0	-246	70	0	0	70	0	0	0	0	0	0	0	0
Chemicals	-41 393	-5 391	-397	-47 181	-44 933	-3 853		-48 786	-48 535	-5 316	0	-53 850	-61 782	-6 841	0	-68 623
Depreciation	-90 576	-2 321	0	-92 897	-104 124	-2 868		-106 992	-128 245	-2 895	0	-131 140	-173 091	-6 747	0	-179 839
Energy	-121 871	-11 510	-2 693	-136 074	-154 139	-15 801		-169 940	-204 815	-21 230	0	-226 046	-241 553	-27 281	0	-268 835
Maintenance	-127 500	-12 848	-2 965	-143 313	-154 216	-19 265	0	-173 481	-147 511	-14 835	-954	-163 300	-171 455	-18 727	-961	-191 143
Raw water	-190 540	0	0	-190 540	-167 230	0	0	-167 230	-166 669	0	0	-166 669	-179 890	0	0	-179 890
Section 30 activities	0	0	-271 560	-271 560	0	0	-93 647	-93 647	0	0	-121 273	-121 273	0	0	-320 149	-320 149
Staff costs	-117 533	-9 577	-3 195	-130 305	-141 656	-14 020		-155 676	-158 235	-22 466	-192	-180 892	-171 142	-26 400	-1 892	-199 433
Other direct operating expenses	-18 168	-4 319	-287	-22 774	-28 022	-6 350		-34 372	-22 893	-9 842	-573	-33 308	-24 886	-18 183	-628	-43 697
Gross profit	**1 122 725**	**13 800**	**32 726**	**1 169 250**	**1 227 308**	**20 507**	**24 696**	**1 272 511**	**1 266 816**	**41 092**	**26 015**	**1 333 923**	**1 265 446**	**54 649**	**37 594**	**1 357 689**
Other income	**16 888**	**3 871**	**8 018**	**28 778**	**28 521**	**3 624**	**1 726**	**33 871**	**3 801**	**3 620**	**153**	**7 574**	**3 475**	**3 623**	**599**	**7 696**
Other operating & administration expenses	**-587 259**	**-8 095**	**-863**	**-596 217**	**-561 164**	**-7 399**	**-50 584**	**-619 147**	**-725 718**	**-14 709**	**-24 078**	**-764 505**	**-776 778**	**-18 160**	**-21 272**	**-816 210**
Amortisation	-5 239	0	0	-5 239	-7 563	0	0	-7 563	-7 003	0	0	-7 003	-11 583	0	0	-11 583
Impairments and write-offs	-183 976	0	0	-183 976	-90 058	0	0	-90 058	-123 422	0	0	-123 422	-78 357	0	0	-78 357
Depreciation	-15 370	-218	-853	-16 441	-22 278	-364	-1 339	-23 981	-27 050	-548	-1 650	-29 248	-71 474	-479	-2 200	-74 153
Other expenses	-382 674	-7 877	-10	-390 561	-441 265	-7 035	-49 245	-497 545	-568 243	-14 161	-22 428	-604 832	-615 364	-17 680	-19 072	-652 116
Profit from operations	**552 355**	**9 576**	**39 880**	**601 811**	**694 665**	**16 732**	**-24 162**	**687 235**	**544 898**	**30 003**	**2 091**	**576 992**	**492 144**	**40 112**	**16 920**	**549 176**
Interest income	122 558	0	-12	122 546	135 958		1 899	137 857	92 188	0	175	92 363	63 785	0	-1 171	62 614
Finance costs	-41 009	-4 501	-45	-45 555	2	-1 097	-33	-1 128	-297	-819	0	-1 116	-13 444	-599	0	-14 043
Share of profit from associate	0		3 627	3 627	0		4 602	4 602				0				0
Profit for the year	**633 904**	**5 075**	**43 450**	**682 429**	**830 625**	**15 635**	**-17 694**	**828 566**	**636 789**	**29 184**	**2 266**	**668 239**	**542 484**	**39 514**	**15 749**	**597 747**
Capital expenditure	**1 008 786**	**15 558**	**0**	**1 024 344**	**1 367 429**	**325 617**	**0**	**1 693 046**	**1 886 452**	**381 606**	**25 211**	**2 293 269**	**1 487 959**	**326 803**	**3 358**	**1 818 120**
Segment assets	4 086 067	95 531	277 200	4 458 798	5 299 899	442 308	154 296	5 896 503	6 438 471	820 471	177 857	7 436 799	7 438 002	1 140 048	179 015	8 757 064
Interest in associate			6 005	6 005			6 005	6 005			6 005	6 005			6 005	6 005
Investments	2 240 354			2 240 354	1 525 416		121 264	1 646 680	1 287 526			1 287 526	839 002			839 002
Unallocated				100 368				97 392				451 315				528 390
Consolidated total assets				**6 805 526**				**7 646 580**				**9 181 645**				**10 130 461**
				0				-1				0				0
Segment liabilities	1 228 781	21 249	142 116	1 392 145	1 154 429	16 065	128 480	1 298 974	1 995 603	12 493	20 235	2 028 331	2 299 712	8 922	19 670	2 328 304
Unallocated				997 197				1 108 498				1 301 551				1 287 490
Consolidated total liabilities				**2 389 342**				**2 407 472**				**3 329 883**				**3 615 794**
				0				-1				0				0

20.10 Capital Expenditure Programme

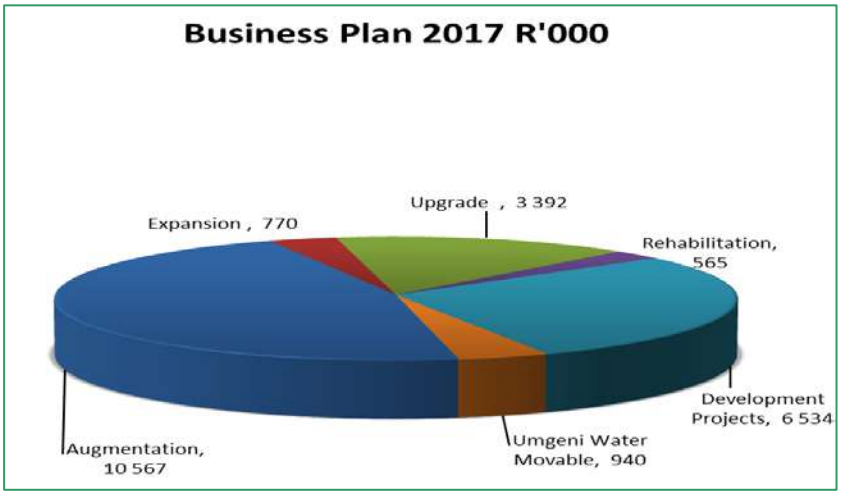
The capital expenditure programme is integral to the execution of Umgeni Water's growth and water services delivery strategy and is thus a significant component of Umgeni Water's Business Plan. The capital infrastructure programme is based on Umgeni Water's Infrastructure Master Plan which is aligned to the KZN Bulk water supply plan. Umgeni water's Infrastructure Master Plan is updated annually and outlines the organisation's future bulk infrastructure requirements to meet the regional demands. The capital infrastructure programme is drawn from this Master Plan and structured according to the provincial and local strategic priorities.

In drafting this Infrastructure Master Plan Umgeni Water takes into consideration customer IDPs & WSDPs whilst aligning development with government's Provincial Growth and Development Strategy (PGDS). In addition, Umgeni Water meets regularly with its customers to ensure that this alignment is current.

Table 20.33: Summary of Capex Cashflow to 2021 (R'000)

CASHFLOWS UNESCALATED										
CAPEX CATEGORY	Actual F'13	Actual F'14	Actual F'15	Total 2016 - 2021	Forecast					
					F16	F17	F18	F19	F20	F21
	R'000	R'000	R'000	R'000	R'000	R'000	R'000	R'000	R'000	R'000
AUGMENTATION	172 386	158 671	118 715	815 941	259 588	268 408	130 343	67 602	45 000	45 000
EXPANSION		83	598	382 082	12 168	107 896	178 603	56 412	27 002	
UPGRADE	78 817	89 182	468 585	1 736 474	704 604	610 963	250 149	97 698	51 505	21 555
REHABILITATION	53 293	42 376	148 118	293 276	63 913	155 526	56 711	17 127		
DEVELOPMENT PROJECTS	307 912	693 844	798 616	2 158 086	999 186	565 648	275 324	226 220	12 570	79 140
IMMOVABLE	**612 408**	**984 155**	**1 534 631**	**5 385 861**	**2 039 459**	**1 708 440**	**891 130**	**465 059**	**136 077**	**145 695**
Business plan 2016/17				7 221 961	1 832 815	1 733 263	903 175	736 269	565 560	1 450 878
% Increase / (Decrease)				-25%	11%	-1%	-1%	-37%	-76%	-90%
EQUIPMENT & VEHICLES	5 228	22 013	41 836	89 148	40 964	13 040	2 044	33 048	52	
ICT	17 947	7 138	90 559	341 495	183 053	71 793	29 100	22 850	14 750	19 950
LABORATORY & PROCESS SERVICES	6 926	8 447	24 006	40 192	4 583	21 489	2 493	5 816	2 819	2 992
MOVABLE	**30 101**	**37 598**	**156 402**	**470 836**	**228 600**	**106 322**	**33 637**	**61 714**	**17 621**	**22 942**
Business plan 2016/17				234 763	128 821	28 005	24 685	38 250	5 010	9 992
% Increase / (Decrease)				101%	77%	280%	36%	61%	252%	130%
TOTAL CAPITAL BUDGET	**642 508**	**1 021 753**	**1 691 034**	**5 856 696**	**2 268 059**	**1 814 762**	**924 767**	**526 773**	**153 698**	**168 637**
Business plan 2016/17				7 456 724	1 961 636	1 761 268	927 860	774 520	570 570	1 460 870
Increase / (Decrease)				-1 600 028	306 422	53 495	-3 093	-247 747	-416 872	-1 292 233
% Increase / (Decrease)				-21%	16%	3%	0%	-32%	-73%	-88%

Figure 20.6: Summary of 5-Year Capital Expenditure (R'000)



20.10.1. Major movements from the 2016 Business Plan

Table 20.34 (a): Comparison of project totals 2017 Tariff vs 2016 BP (R'000)

CAPEX CATEGORY	Comparison of Project Totals			
	Business Plan 2017 R'000	Business Plan 2016 R'000	(Decrease) / Increase R'000	%
Augmentation	10 567 015	8 108 635	2 458 380	30%
Expansion	770 179	819 367	-49 188	-6%
Upgrade	3 392 450	3 003 653	388 797	13%
Rehabilitation	565 114	490 754	74 360	15%
Development Projects	6 533 973	6 463 241	70 732	1%
Information Communication & Technology	550 509	417 208	133 301	32%
Equipment, Vehicles, Laboratory & Process Services	389 387	392 610	-3 223	-1%
	22 768 627	**19 695 468**	**3 073 159**	**16%**

- Augmentation increases due revision of planning cost estimates: Midmar WW Upgrade Ph 2 (250 to 375Ml/d) & Midmar Dam RWPS R27m, Vulindlela PS and Reservoir R190m, Elysium Desalination R180m.

- Expansion increases due to revision of planning cost estimates and prices based on latest tenders and escalation: Mpophomeni WWW R8m, Camperdown WWW R5m and South Coast Ph. 2b (Kelso to Umdoni) R10m.

- Upgrade increases due to revision of price estimates based on the stage of the project and scope changes: Darvill plant capacity increase R83m, Durban Heights filter upgrade R175m, Mpambanyoni Pumps R12m, Dbn Hgts Switchgear R9m, Wiggins Switchgear R 8m, Chlorine Upgrade R30m

- Rehabilitation increase due to revision of price estimates and new projects : Nungwane raw Water Aqueduct R 11m, Concrete Repair Work to Shaft R40m, Verulam Pipeline R10m, Nagle Dam Turbine System R10m, Dbn Hgts Filter Rehab R43m, Renewals R85m

- Developmental Projects increase due to revision of price estimates based on the stage of the project and latest tenders: Greater Mpofana phase 1 R38m and uMshwathi Bulk Water Supply Scheme (Wartburg Phase 1 ,2 & 3) R42m. :Lower Thukela Ph 1 R38m, Central Ndwedwe-R204m, Maphumulo Phase 4 : Weir on Hlimbithwa River R39m.

- Information communication technology increase due to increase in project budget for ERP system in order to cater for the purchase of new servers to accommodate the new ERP system: R83m , Electronic Document System R24m, GIS Consolidation R11m, Networking Wireless/Telephony R14m, Corporate Access Control R12m

Table 20.34 (b): Major movement between the 2017 BP and 2016 BP (5 year Cashflows) (R'000)

CAPEX CATEGORY	Comparison of Cashflows F'16 - F'21			
	Business Plan 2017 R'000	Business Plan 2016 R'000	(Decrease) / Increase R'000	%
Augmentation	815 941	1 286 974	-471 032	-37%
Expansion	382 082	432 517	-50 434	-12%
Upgrade	1 736 474	2 260 216	-523 742	-23%
Rehabilitation	293 276	335 997	-42 721	-13%
Development Projects	2 158 086	3 130 213	-972 127	-31%
Information Communication & Technology	341 495	283 860	57 635	20%
Equipment, Vehicles, Laboratory & Process Services	129 340	106 429	22 911	22%
	5 856 696	**7 836 206**	**-1 979 510**	**-25%**

The major movements between the 2016 business plan five year cashflows and that of the 2017 corporate plan is due to the deferral of the following projects:

CAPEX SPONSOR	SPONSOR	Business Plan 2017- Cashflows F'16 - F'21						
		F'16	F'17	F'18	F'19	F'20	F'21	F'22 & Beyond
		R'000	R'000	R'000	R'000	R'000	R'000	R'000
Electronic Document Management System	ICT		-10 000		8 000	1 000		1 000
Actuators for all Critical Valves	OPS - ULW		-15 000	15 000				
Aqueducts 2,3,&4 Steel Pipe coating/wrapping - bridge crossings	OPS - ULW		-10 000			10 000		
Automated Meter Reading	OPS - ULW	-2 000	-10 000	-2 500	-2 500			17 000
Nagle Aquaduct Con, Repair on Pipe as per Eddy current report	OPS - ULW	-10 000	-30 000	40 000				
Nagle Dam New turbine system	OPS - ULW		-50 000					50 000
Verulam Pipeline Under surge vessel to isolation valve	OPS - ULW	-10 000						10 000
Hydropower unit on MMTS 3	Planning					-4 000	-74 382	78 382
Umbumbulu Pump Station	Planning		-5 000	-2 500	-2 500	-40 000	-54 800	104 800
Table Mountain BWSS (PL, PS and 3Ml Reservoir)	Planning		-1 000	-30 000	-30 000	-30 000	-9 000	100 000
Impendle BWSS	Planning		-10 000	-20 000	-50 000	-32 500	-12 000	124 500
Lower Mkomazi Bulk Water Scheme	Planning				-125 000	-315 000	-305 000	745 000
Vulindlela PS and Reservoir	Project Office			-48 962	-158 238	-48 538	-25 215	280 954
Howick West Reservoir Upgrade (16Ml)	Project Office		-12 705	-39 259	-8 696			60 660
Darvill WWTW: Co Generation	Project Office		-45 058	-15 546				60 604
Dbn Hts WTW: Filter Upgrade	Project Office		-4 744	-77 050	-104 480	-102 353	-111 904	400 531
Maphumulo Phase 3 : 6Ml WW	Project Office		4 000	-33 337	-12 247			41 584
Hazelmere WTW - Sludge Treatment Plant Upgrade	Project Office		-14 850	-11 424	-2 616			28 890
Elysium Desalination	Project Office			-83 271	-75 790	-42 070		201 131
Refurbishment Head Office	Property Services		-39 628	-13 267				52 895
Total Adjustment		**-22 000**	**-253 985**	**-322 116**	**-564 067**	**-603 461**	**-592 301**	**2 357 932**

20.10.2. Rural developmental projects

In response to customer water demands and the need to eliminate water service delivery backlogs, a capital expenditure programme of approximately R6.4bn has been planned for rural development. The value of Developmental projects is R2.2bn for 5 years and represents 37% of the 2016 to 2021 capex programme (In the previous 2016 business plan when developmental projects represented 32% of capex programme).

Due to their developmental nature, there is a need for government support via subsidy or grant funding to support part of the social component of these projects which cannot be recovered through the existing tariff structure. The social component carried by Umgeni Water is reflected in the statement of comprehensive income as impairments. These impairments are recognised during the construction period and reflected in work in progress on a progressive basis.

Projected funding mix for rural developmental projects

The following table illustrates the required funding mix for the Rural Development (Excl. Vat and Interest).

Table 20.40: Projected Funding mix for development projects (R'000)

Project	Project Cost Estimate R x 1000(*)			Project Funding R x 1000(*)			Analysis of RBIG Funding			
	Total Cost	Component Split		Total	Source					
	R'000	Economic R'000	Social R'000	R'000	DWA R'000	UW R'000	Total R'000	Invoiced to R'000	Confi R'00	Not R'000
Completed projects										
Greater Eston	200,015	53,262	146,753	200,015	171,487	28,528	171,487	138,405	33,08	
	100%	*27%*	*73%*	*100%*	*86%*	*14%*				
Richmond	224,964	216,949	8,015	224,964	38,194	186,770	38,194	38,194		
	100%	*96%*	*4%*	*100%*	*17%*	*83%*				
Mhlabatshane BWS Scheme - Phase 1	204,962	1,257	203,705	204,962	108,955	96,007	108,955	108,955		
	100%	*1%*	*99%*	*100%*	*53%*	*47%*				
Projects started with confirmed Grant										
uMshwathi BWS	1,121,442	763,942	357,500	1,121,44	656,000	465,441	656,000		656,0	
	100%	*68%*	*32%*	*100%*	*58%*	*42%*				
Lower Thukela BWS - Phase 1	1,460,166	743,344	716,821	1,460,16	870,770	589,396	870,770	508,778	361,9	
	100%	*51%*	*49%*	*100%*	*60%*	*40%*				
Projects Started with no confirmation of grant										
Maphumulo BWS Scheme - Phase 1 & 2	376,120	170,499	205,621	376,120	99,000	277,120	99,000			99,000
	100%	*45%*	*55%*	*100%*	*26%*	*74%*				
Greater Mpofana - Phase I	639,699	258,446	381,253	639,699	62,324	577,376	62,324			62,324
	100%	*40%*	*60%*	*100%*	*10%*	*90%*				
New capex projects with no confirmed grant										
Impendle BWSS	200,000		200,000	200,000		200,000				
	100%	*0%*	*100%*	*100%*	*0%*	*100%*				
Maphumulo Phase 3 : 6Ml WW	52,750		52,750	52,750		52,750				
	100%	*0%*	*100%*	*100%*	*0%*	*100%*				
Maphumulo Phase 4 : Weir on Hlimbithwa River	161,181		161,181	161,181		161,181				
	100%	*0%*	*100%*	*100%*	*0%*	*100%*				
North Coast Emergency Pipeline	47,268		47,268	47,268		47,268				
	100%	*0%*	*100%*	*100%*	*0%*	*100%*				
Projects to start on Confirmation of RBIG										
Greater Mpofana - Phase 2	119,000		119,000	119,000	119,000		119,000			119,00
	100%	*0%*	*100%*	*100%*	*100%*	*0%*				
Lower Thukela BWS - Phase 2	223,777		223,777	223,777	223,777		223,777			223,77
	100%	*0%*	*100%*	*100%*	*100%*	*0%*				
Mhlabatshane BWS Scheme - Phase 2	290,506		290,506	290,506	291,662	-1,156	291,662			291,66
	100%	*0%*	*100%*	*100%*	*100%*	*0%*				
Mshwathi Ph4 - Southern Ndwedwe	551,496		551,496	551,496	341,984	209,512	341,984			341,98
	100%	*0%*	*100%*	*100%*	*62%*	*38%*				
Mshwathi Ph5 - Central Ndwedwe	160,626		160,626	160,626	300,000	-	300,000			300,00
	100%	*0%*	*100%*	*100%*	*187%*	*-87%*				
Upper-Mvoti Regional Water Scheme	500,001		500,001	500,001	500,000	1	500,000			500,00
	100%	*0%*	*100%*	*100%*	*100%*	*0%*				
Total Business Plan 2017	***6,533,973***	***2,207,700***	***4,326,27***	***6,533,97***	***3,783,15***	***2,750,8***	***3,783,153***	***794,333***	***1,051***	***1,937,7***
	100%	*34%*	*66%*	*100%*	*58%*	*42%*	*100%*	*21%*	*28%*	*51%*

Table 20.40 shows the timing of funding for developmental projects projected to be received from RBIG.

Table 20.41: RBIG funding (R'000)

Capex Funding Requirements	Total R'000	Cumulative to F'15 R'000	F'16 R'000	F'17 R'000	F'18 R'000	F'19 R'000	F'20 R'000	F'21 R'000	F'16-F'21 R'000
Total Rural Development Capex	6,533,973	2,202,148	999,186	571,648	353,660	313,467	65,070	141,140	2,444,170
DWA	2,897,545	579,974	308,163	188,903	349,264	489,825		6,000	1,342,155
% of Cashflows	44%	26%	31%	33%	99%	156%	0%	4%	55%
UW	3,636,428	1,622,174	691,023	382,745	4,396	-176,358	65,070	135,140	1,102,015
% of Cashflows	56%	74%	69%	67%	1%	-56%	100%	96%	45%
Total Rural Development Projects	6,533,973	2,202,148	999,186	571,648	353,660	313,467	65,070	141,140	2,444,170

Impairment of development projects – Umgeni Water's investment in the social component of developmental projects

In accordance with IAS 36, the carrying amounts of non-financial assets should be reviewed to determine whether there is any indication that the carrying value may not be recoverable and whether those assets should be impaired. If any such indication exists, the recoverable amount of the asset is estimated in order to determine the extent of the impairment loss.

The recoverable amount is the higher of the assets fair value less costs to sell and its value in use. In Terms of International Financial Reporting Standards: (IFRS)

IAS 36 Impairment of Assets - An item of property, plant, or equipment shall not be carried at more than recoverable amount. Recoverable amount is the higher of an asset's fair value less costs to sell and its value in use. The impairment reflects the social component funded by Umgeni Water

Table 20.42: Impairments (R'000)

Project	Impairment %	Total Impairment	Accumulated Impairments 2015		F'16	F'17	F'18	F'19	F'20	F'21
Greater Eston	Commissioned		29 924		-29 924					
Hlimbithwa Pumpstation	Commissioned	**2 031**	1 178		854					
Maphumulo BWS Scheme Phase 1	Commissioned	**187 260**	106 467		80 793					
Maphumulo BWS Scheme Phase 2	Commissioned	**207 237**	119 742		87 495					
Mhlabatshane Sub-Regional Scheme	Commissioned	**118 621**	90 879		27 742					
Mpambanyoni Emergency Scheme	Commissioned	**19 737**	20 644		-908					
Ngcebo BWS Scheme Phase 1	Commissioned	**38 775**	38 775							
North Coast Emergency Pipeline	Commissioned	**21 888**	18 664		3 224					
Richmond P/L-30kms	Commissioned		45 886		-45 886					
Greater Mpofana Regional Scheme Phases 1	41%	**263 587**	20 282		34 369	78 357	76 395	19 043	5 154	29 987
uMshwathi Bulk Water Supply Scheme)	0%		34 338		-34 338					
Impairment as per Business Plan 2016/17		859 137	526 779		123 422	78 357	76 395	19 043	5 154	29 987
Impairment as per Business Plan 2015/16		1 196 706	543 787		99 626	179 763	186 910	186 621		
Movement Increase / (Decrease)		-320 562			23 796	-101 406	-110 515	-167 578	5 154	29 987

20.10.3. Summary of major capital investments 2016 to 2021

Table 20.43: Major projects

EIB Funded Projects	Umgeni System	Project Description	Customer	Project Total Business Plan 2017	work in progress 30 June 2015	2016-2021 Cashflows	Business Plan 2017 Cashflows 2016 - 2021						Cashflows Beyond 5 Years F'22 - F'46
							F'16	F'17	F'18	F'19	F'20	F'21	
				R'000	R'000	R'000	R'000	R'000	R'000	R'000	R'000	R'000	R'000
		AUGMENTATION		10 567 015	934 076	815 941	259 588	268 408	130 343	67 602	45 000	45 000	8 816 997
		EXPANSION		770 179	686	382 082	12 168	107 896	178 603	56 412	27 002		387 411
		UPGRADE		3 392 450	551 818	1 736 474	704 604	610 963	250 149	97 698	51 505	21 555	1 104 157
		REHABILITATION		565 114	165 837	293 276	63 913	155 526	56 711	17 127			106 000
		DEVELOPMENT PROJECTS		6 533 973	2 166 723	2 158 086	999 186	565 648	275 324	226 220	12 570	79 140	1 709 163
		IMMOVABLE		**21 828 730**	**3 819 141**	**5 385 861**	**2 039 459**	**1 708 440**	**891 130**	**465 059**	**136 077**	**145 695**	**12 123 727**
		EQUIPMENT & VEHICLES		389 387	83 905	129 340	45 547	34 529	4 537	38 864	2 871	2 992	176 141
		INFORMATION COMMUNICATION TECHNOLOGY		550 509	113 954	341 495	183 053	71 793	29 100	22 850	14 750	19 950	95 060
		MOVABLE		**939 896**	**197 859**	**470 836**	**228 600**	**106 322**	**33 637**	**61 714**	**17 621**	**22 942**	**271 201**
		TOTAL CAPITAL BUDGET		**22 768 625**	**4 017 000**	**5 856 696**	**2 268 059**	**1 814 762**	**924 767**	**526 773**	**153 698**	**168 637**	**12 394 929**
		AUGMENTATION PROJECTS											
	Upper Umgeni	251/51 New RW p/l (Dam - RW P/S)	1,2,3	144 333	28 307	116 026	67 957	35 694	12 375				
	Upper Umgeni	Umbumbulu Pump Station	3	125 000		200		200					124 800
EIB	Upper Umgeni	Midmar WW Upgrade Ph 2 (250 to 375Ml/d) & Midmar Dam RWPS	1,2,3	244 207	20 412	223 795	82 185	94 368	19 610	27 632			
	Upper Umgeni	61 p/l: extension (Richmond Offtake to Umlaas Road)	1,3	178 313	157 854	20 458	18 151	179	2 129				
	Upper Umgeni	Howick West Reservoir Upgrade (16Ml)	3	61 236		576	576						60 660
	Upper Umgeni	Vulindlela PS and Reservoir	3	287 112		6 158	2 120	4 038					280 954
	Upper Umgeni	Wartburg to Bruyns Hill Pipeline	3	123 147	535	122 612	11 833	83 035	12 774	14 970			
	Upper Umgeni	Lion Park Pipeline	3	52 282	3 074	49 208	31 899	12 125	5 184				
	Lower Umgeni	Mapaphetwa WW: Upgrade Plant (5.0 Ml/d) (incl reseviour)	1	63 390	51 827	11 563	8 407	3 156					
	Lower Umgeni	East Coast Desalination Plants	1,5,4	32 912	16 270	16 642	11 902	4 740					
	Upper Mkomazi System	Mkomazi Bulk Water Supply	1,3	4 733 101	4 905	141 381	1 381		25 000	25 000	45 000	45 000	4 586 815
	South Coast	Ellingham Link Pipeline	4	25 829	24 416	1 413	1 413						
	South Coast	South Coast Augmentation Booster Pump Station	1,4	87 062	86 859	203	203						
	Mkomazi	Lower Mkomazi Bulk Water Scheme	1,4	2 482 778	1 445	70 023	5 023	15 000	50 000				2 411 310
	Lower Mvoti	Fawsley Park-Mvoti Balancing Res Pipeline (4km)	5,7	203 789		130	130						203 659
EIB	Hazelmere	Hazelmere WW: Upgrade (45 to 75Ml/day)	1,5,7	125 806	118 546	7 260	7 260						
	Upper Umgeni	Hydropower unit on MMTS 2	1,2,3	78 382									78 382
	Upper Umgeni	61 pipeline extension (ED2 to Richmond Offtake)	1,2,3	70 432	68 773	1 659	200	913	546				
	Upper Umgeni	57 Pipeline Augmentation (Umlaas Road to Point M)	1	119 437	116 428	3 009	1 009	1 905	95				
	Upper Umgeni	Howick Reservoir Upgrade (6.5 Ml)	3	19 720	19 716	4	4						
	Upper Umgeni	Table Mountain BWSS (PL, PS and 3Ml Reservoir)	3	100 000									100 000
	South Coast	South Coast Ph. 2a (Park Rynie to Kelso)	4	40 075	40 075								

EIB Funded Projects	Umgeni System	Project Description	Customer	Project Total Business Plan 2017	work in progress 30 June 2015	2016-2021 Cashflows	Business Plan 2017 Cashflows 2016 - 2021						Cashflows Beyond 5 Years F'22 - F'46
							F'16	F'17	F'18	F'19	F'20	F'21	
				R'000	R'000	R'000	R'000	R'000	R'000	R'000	R'000	R'000	R'000
	South Coast	Umzinto link (Ellingham Reservoir to Umzinto WW)	4	31 236	28 063	3 173	200	1 403	1 570				
	North Coast	Fawsley Park BWS	5	278 663									278 663
	North Coast	Hazelmere to Bifurcation Pipeline Augmentation (700dia x 10km)	5	66 588	66 438	150	150						
	North Coast	Honolulu to Mvoti Balancing Reservoir Pipeline (800dia x 7km)	5	82 158	80 133	2 025	1 025	1 000					
	North Coast	Mvoti River abstraction works & raw water line	5	490 624									490 624
	South Coast	Elysium Desalination	4	211 208		10 077	2 500	7 576					201 131
		Various Projects <R5m Cashflows within the 5Yr		**8 196**		**8 196**	**4 061**	**3 075**	**1 060**				
		Sub Total: Augmentation Projects		10 567 015	934 076	815 941	259 588	268 408	130 343	67 602	45 000	45 000	8 816 997
		EXPANSION PROJECTS											
	Upper Umgeni	Mpophomeni WWW	1,3	150 837	115	150 722	6 034	30 133	75 037	12 515	27 002		
	Upper Umgeni	Camperdown WWW	1,3	3 808	86	3 722	2 761	961					
	Upper Umgeni	Harry Gwala Planning Regional Schemes	6	20 000		10 590	1 327	4 557	1 000	3 705			9 411
	South Coast	South Coast Ph. 2b (Kelso to Umdoni)	1,4	217 534	486	217 048	2 046	72 244	102 566	40 192			
	South Coast	South Coast Ph. 2c (Umdoni to Hibberdene)		378 000									378 000
		Various Projects <R5m Cashflows within the 5Yr											
		Sub Total: Expansion Projects		770 179	686	382 082	12 168	107 896	178 603	56 412	27 002		387 411
		UPGRADE PROJECTS											
	Upper Umgeni	Midmar PLC Upgrades (10-yr upgrade cycle)	2,3	45 000	4 771	10 229			10 000	229			30 000
	Upper Umgeni	DV Harris PLC Upgrades (10-yr upgrade cycle)	1	16 800	4 412								12 388
	Upper Umgeni	Darvill WWW: Plant Capacity Increase (85Ml/d) (MBR - 10Ml/d in 3-5yrs)	2,3	940 422	317 030	623 392	340 681	254 106	28 605				
	Upper Umgeni	Darvill WWW: Digestor Upgrade	2,3	18 233	16 180	2 052	-484	2 536					
	Upper Umgeni	Ultrafiltration Full Scale Evaluation	1	31 387	10	31 378	2 303	3 290	25 785				
	Upper Umgeni	Sludge Treatment Technology Evaluation	1	20 035		20 035	8 035	5 000	7 000				
	Upper Umgeni	Darvill Sludge Handling Facility	1	69 283	14	69 269	2 117	13 536	32 042	21 574			
	Upper Umgeni	Darvill WWW: Co Generation	1	67 163	347	6 212	6 212						60 604
	Lower Umgeni	Inanda Dam Pumpstation Switch Gear Upgrade	1	22 897	3 880	287	287						18 730
	Lower Umgeni	Inanda Dam Pumpstation Pump/Motor Protection System	1,4	8 000		8 000	1 000				7 000		
	Lower Umgeni	Aqueducts 2,3,&4 Steel Pipe coating/wrapping - bridge crossings	4	10 000		10 000					10 000		
	Lower Umgeni	Nagle Aquaduct Con, Repair on Pipe as per Eddy current report	1	90 000		90 000		50 000	40 000				
	Lower Umgeni	Dbn Hts WW: Filter Upgrade	1	646 288	5 034	17 334	16 834	500					623 920
	Lower Umgeni	Dbn Hts WW: PLC Upgrade (5-yr upgrade cycle)	1	19 000	230	4 770						4 770	14 000
	Lower Umgeni	Dbn Hts WW: Degremont Standby Power	1	10 000	454								9 546
	Lower Umgeni	Dbn Hts WW: Shaft Pump Lifts	1	20 000	4 439	561				561			15 000
	Lower Umgeni	Dbn Hts WW: Shaft Pumps Switch Gear Upgrade	1	34 013	5 064	942	942						28 008
	Lower Umgeni	Dbn Hts WW: Candy Filters and Actuators upgrade	1	16 678	16 626	52	52						
	Lower Umgeni	Dbn Hts WW: Critical Isolation Valves Replacement	1	40 864	28 512	12 352	12 352						
	Lower Umgeni	Dbn Hts WW: Res 2 and 3 Sales Meter Replacment	1	21 209	1 209	5 000		5 000					15 000
	Lower Umgeni	Dbn Hts WW: Equipment Room Communication System Upgrade	1	6 179	1 059	2 120				1 120		1 000	3 000
	Lower Umgeni	Installation of 42 No. 1400 dia valves and chambers	1	80 000		80 000	20 000	40 000	20 000				
	South Coast	Quarry Reservoir upgrade (7.5Ml)	4	17 761	17 761								
	Lower Umgeni	Wiggins PLC Upgrade (5-yr upgrade cycle)	1	25 000		5 000		2 000	1 000	1 000	1 000		20 000
	Lower Umgeni	Wiggins Highlift Pumpstation Switch Gear Upgrade	1	20 000	2 471								17 529

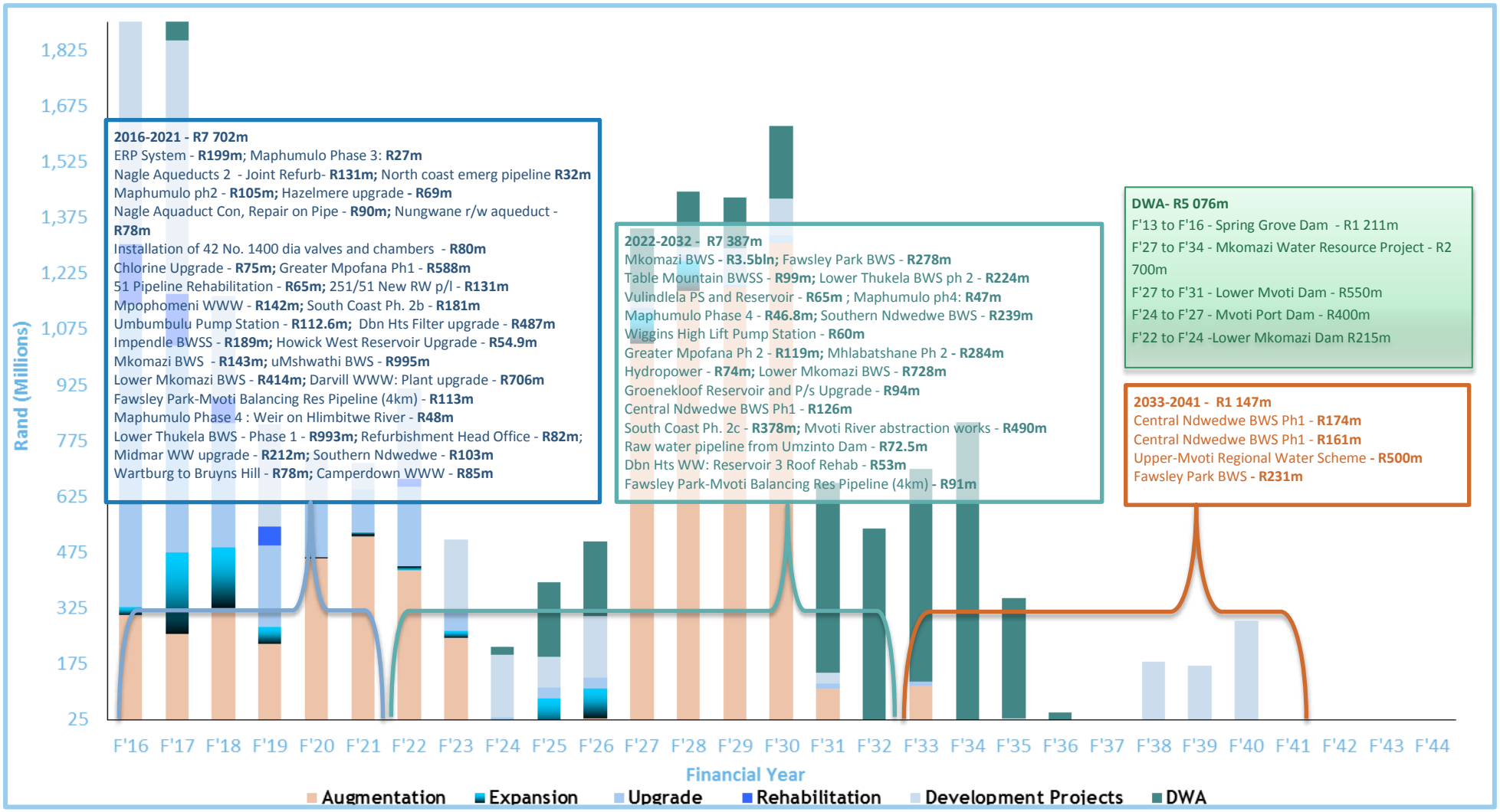
EIB Funded Projects	Umgeni System	Project Description	Customer	Project Total Business Plan 2017	work in progress 30 June 2015	2016-2021 Cashflows	Business Plan 2017 Cashflows 2016 - 2021						Cashflows Beyond 5 Years F'22 - F'46
							F'16	F'17	F'18	F'19	F'20	F'21	
				R'000	R'000	R'000	R'000	R'000	R'000	R'000	R'000	R'000	R'000
	Lower Umgeni	Wiggins Ozone Plant Rahb and Element Replacement (every ten years)	1	33 573	1 614	31 959	1 847	14 033	10 457	5 621			
	Lower Umgeni	Wiggins Dam Safety: Concrete Rehab	1	20 548	166	20 382	717	6 435	8 353	4 877			
	Lower Umgeni	Wiggins Equipment Room Communication System Upgrade	1	6 174	1 046	2 128				1 128		1 000	3 000
	Lower Umgeni	Wiggins Filter Valve & Actuator Upgrade	1	6 467	5 253	1 214	1 214						
	Lower Umgeni	Wiggins High Lift Floors	1	8 000		8 000				2 500	5 500		
	Lower Umgeni	Wiggins High Lift Pump Station	1	38 001		38 001	42	1 209	16 618	20 132			
	Lower Umgeni	Re-location Backwash pipe to Raw Water Canal	1	7 000		7 000						7 000	
	Lower Umgeni	Wiggins Water Works. Upgrade of 11kV switchgear at Sub M	1	8 000		8 000				8 000			
	South Coast	Raw water pipeline from Umzinto Dam to Water Treatment Plant – 450 diam 6km line	4	71 700									71 700
	South Coast	Umnini Pumpstation Standby Generator	4	10 000	1 454	8 546					8 546		
	South Coast	Mpambanyoni pumps	4	18 477	6 534	11 942	11 942						
	South Coast	Amanzimtoti WW Equipment Room Communication System Upgrade	4	6 382	1 816	1 000				1 000			3 566
	North Coast	Hazelmere WW pumpstation upgrade	5	39 302	36 560	2 742	2 742						
	North Coast	Hazelmere WW: Equipment Room Communication System Upgrade	5	6 602	1 602	1 000				1 000			4 000
	North Coast	Hazelmere WW: PLC Upgrade (10-yr upgrade cycle)	5	15 000		5 000				5 000			10 000
	North Coast	Hazelmere WW: Upgrade Clarifier No. 03	5	9 000	231	111	111						8 658
	North Coast	Hazelmere WW - Sludge Treatement Plant Upgrade	5	29 885	493	502	502						28 890
	North Coast	Hazelmere WW - Upgrade of Reservoir No.2	5	28 222		2 000	500	1 500					26 222
	North Coast	Hazelmere Pumpstation Pump/Motor Protection System	5	5 000		5 000	3 000					2 000	
	North Coast	Hazemere Electrical Upgrade - Dual Incomers	5	13 763	12 763	1 000	1 000						
	North Coast	Hazemere Generator	5	10 000	4 215	5 785						5 785	
	North Coast	Waterloo/Ndwedwe Pump Station Switchgear Upgrade	5	8 000									8 000
	Upper Umgeni	Refurbishment Head Office		81 776	13 508	15 372	15 372						52 895
	Upper Umgeni	Trust Feeds WWTW		75 056		75 056	2 426	4 880	28 460	19 830	19 459		
	Upper Umgeni	Aircon Renewal:Head Office		8 119	8 016	103	103						
	South Coast	Amanzimtoti WTP - Filter Upgrade	4	7 420		7 420	182	6 894	345				
	South Coast	Mtwalume WTP - Additional Filter (New Project)	4	5 601		5 601	194	5 150	258				
	Upper Mkomazi System	Ixopo WWW Upgrade (Clarifier)	6	6 515	783	5 732	5 732						
	South Coast	Umzinto Water Works	4	16 869	260	16 610	1 522	12 350	2 737				
	Upper Umgeni	Training Room Upgrade:Head Office & UTC		15 000		15 000	6 850	5 000	3 150				
	Upper Umgeni	Office Space Rationalisation		13 000	3 152	9 848	9 848						
	Upper Umgeni	Mpofana www - Contrained unit processes upgrade	3	14 800		14 800		14 800					
	North Coast	Maphumulo standby generator	5	7 500		7 500	7 500						
	Lower Umgeni	Durban Heights WW -Chlorine Upgrade	1	131 224		131 224	111 224	20 000					
	Lower Umgeni	Actuators for all Critical Valves	1	15 000		15 000			15 000				
	Lower Umgeni	Renewals Coastal		71 675		71 675		71 675					
	Lower Umgeni	Clarifier Desludge Valves and Actuators Upgrade	1	5 000		5 000	5 000						
	Lower Umgeni	Lime Dosing System Upgrade	1	5 000		5 000		5 000					
	Upper Umgeni	Renovations to Prince Alfred Street Building		5 000		5 000		5 000					
	Lower Umgeni	Durban Heights WW -Cathodic Protection of all Pipes in Plant	1	5 000									5 000
	Lower Umgeni	Durban Heights WW -Unit Process valves	1	10 000		10 000		10 000					
	Lower Umgeni	Nagle Dam Sleeve and Needle Valves	1	12 000		12 000	7 000	5 000					
	Upper Umgeni	Darvill WWW - Electrical Dual Supply	1	15 000		15 000	12 500	2 500					
	Upper Umgeni	Renewals Inland		10 000		10 000		10 000					

EIB Funded Projects	Umgeni System	Project Description	Customer	Project Total Business Plan 2017	work in progress 30 June 2015	2016-2021 Cashflows	Business Plan 2017 Cashflows 2016 - 2021						Cashflows Beyond 5 Years F'22 - F'46
							F'16	F'17	F'18	F'19	F'20	F'21	
				R'000	R'000	R'000	R'000	R'000	R'000	R'000	R'000	R'000	R'000
	Lower Umgeni	Inanda Dam River Valves	1,4	7 500		7 500	7 500						
	Lower Umgeni	Dbn Heights KwaDabeka Pumpstation Transformer relocation	1	9 025	254	8 771	1 637	6 794	340				
	Lower Umgeni	Wiggins WW High Lift Pumpstation Pump/Motor Protection System	1	7 091	3 091	4 000	2 000	2 000					
	Lower Umgeni	Wiggins P/S Non Return Valves	1	5 000		5 000	5 000						
	South Coast	Amanzimtoti WW PLC System Upgrade	1,4	5 046	2 047	999	373			626			2 000
	Upper Umgeni	Midmar Sludge Plant - 3rd Centrifuge	3	5 046	1 682	3 364	3 364						
		Various Projects <R5m Cashflows within the 5Yr		**121 879**	**15 778**	**93 601**	**65 327**	**24 774**		**3 500**			**12 500**
		Sub Total: Upgrade Projects		3 392 450	551 818	1 736 474	704 604	610 963	250 149	97 698	51 505	21 555	1 104 157
		REHABILITATION PROJECTS											
	Upper Umgeni	51 Pipeline Rehabilitation	1,3	59 227	39 227	20 000	20 000						
	Upper Umgeni	Howick WWW - Major Rehab of Constrained Unit Processes	3	17 000									17 000
	Lower Umgeni	Nagle Aqueducts 2 - Joint Refurbishment	4	124 681	121 899	2 781	2 781						
	Lower Umgeni	Nagle Dam New turbine system	1	50 000									50 000
	Lower Umgeni	Dbn Hts WW: Reservoir 3 Roof Rehabilitation & Dam Safety	1	57 887	244	57 643	2 060	10 623	31 334	13 627			
	Lower Umgeni	Durban Heights WW -Candy Plant refurbishment	1	10 000									10 000
	Lower Umgeni	Pulsators - Roof Refurbishment	1	10 000									10 000
	Upper south coast	Nungwane Raw Water Aqueduct (450dia x 18km)	4	104 725	4 467	100 258	27 311	50 569	22 377				
	Lower Umgeni	Verulam Pipeline Under surge vessel to isolation valve	1	10 000									10 000
	Lower Umgeni	Refurbishment of Pineside Regional Offices		10 000		1 000	500	500					9 000
	south coast	Park Rynie Office		17 000		17 000	10 000	4 000	3 000				
		Various Projects <R5m Cashflows within the 5Yr		**94 595**		**94 595**	**1 261**	**89 834**		**3 500**			
		Sub Total: Rehabilitation Projects		565 114	165 837	293 276	63 913	155 526	56 711	17 127			106 000
		DEVELOPMENT PROJECTS											
	Mooi	Greater Mpofana Regional Scheme Phases 1	3	639 699	24 213	615 487	105 888	191 115	186 329	46 446	12 570	73 140	
EIB	Mooi	Greater Mpofana Regional Scheme Phases 2	3	119 000									119 000
	Upper Umgeni	Richmond P/L-30kms	3	224 964	219 913	5 051	2 369	2 682					
	Upper Umgeni	Greater Eston	3	200 015	190 874	9 141	3 775	5 111	256				
	upper mkomazi	Impendle BWSS	3	200 000		10 500	500	10 000					189 500
	Upper Umgeni	uMshwathi Bulk Water Supply Scheme (Wartburg Phase 1,2,3)	3	1 121 442	262 861	858 581	295 955	303 954	82 898	175 774			
	Upper Umgeni	Mshwathi Ph5 - Central Ndwedwe	5	160 626		1 000						1 000	159 626
	South Coast	Mhlabatshane Sub-Regional Scheme	4	204 962	198 330	6 632	6 632						
	South Coast	Mhlabatshane Sub-Regional Scheme Ph 2 - Mkimkhulu River abstraction	4	290 506	1 901	9 525	4 525					5 000	279 080
	Upper Mvoti	Maphumulo BWS PH 1	5	177 029	175 396	1 633	224	1 342	67				
	Upper Mvoti	Maphumulo BWS PH 2	5	199 091	193 334	5 756	3 319	2 437					
	Upper Mvoti	Maphumulo Phase 3 : 6Ml WW	5	52 750		11 167	801	10 366					41 584
	Upper Mvoti	Maphumulo Phase 4 : Weir on Hlimbitwe River	5	161 181		1 295	150	1 145					159 886
	Upper Mvoti	North Coast Emergency Pipeline	5	47 268	18 531	28 737	28 737						
	Upper Mvoti	Lower Thukela BWS - Phase 1	5	1 460 166	877 368	582 797	545 528	35 495	1 775				
	Upper Mvoti	Lower Thukela BWS - Phase 2	5	223 777									223 777
	Upper Mvoti	Mshwathi Ph4 - Southern Ndwedwe	3	551 496	4 001	10 785	785	2 000	4 000	4 000			536 710
	Upper Mvoti	Upper-Mvoti Regional Water Scheme	3,5	500 001									500 001
		Various Projects <R5m Cashflows within the 5Yr											

EIB Funded Projects	Umgeni System	Project Description	Customer	Project Total Business Plan 2017	work in progress 30 June 2015	2016-2021 Cashflows	Business Plan 2017 Cashflows 2016 - 2021						Cashflows Beyond 5 Years F'22 - F'46
							F'16	F'17	F'18	F'19	F'20	F'21	
				R'000	R'000	R'000	R'000	R'000	R'000	R'000	R'000	R'000	R'000
		Sub Total: Development Projects		6 533 973	2 166 723	2 158 086	999 186	565 648	275 324	226 220	12 570	79 140	1 709 163
		TOTAL IMMOVABLES		21 828 730	3 819 141	5 385 861	2 039 459	1 708 440	891 130	465 059	136 077	145 695	12 123 727
	ICT	Sub Total: Information Communication & Technology		550 509	113 954	341 495	183 053	71 793	29 100	22 850	14 750	19 950	95 060
	OTHER	Sub Total: Equipment , Vehicles, Laboratory & Process Services		389 387	83 905	129 340	45 547	34 529	4 537	38 864	2 871	2 992	176 141
		TOTAL MOVABLES		939 896	197 859	470 836	228 600	106 322	33 637	61 714	17 621	22 942	271 201
		TOTAL UW CAPEX		22 768 625	4 017 000	5 856 696	2 268 059	1 814 762	924 767	526 773	153 698	168 637	12 394 929

AUG = Augmentation EXP = Expansion UPG = Upgrade REH = Rehabilitation DEV = Development Projects ICT = Information & Communication Technology Other = Equipment & Vehicles
Customers 1: eThekwini MM 2: Msunduzi LM 3: uMgungundlovu DM 4: Ugu DM 5: iLembe DM 6: Harry Gwala DM 7: SembCorp Siza Water

Figure 20.7: 30 year capex programme by nature



UMGENI WATER · AMANZI

Chapter 21: Debt Management Plan

Improving Quality of Life and Enhancing Sustainable Economic Development

Contents

21.1 Long-term cashflow and outstanding debt projections

21.1.1 Introduction

Based on the debt maturity profile and cumulative debt curve, the following key issues have been identified and are taken into account in terms of creating the short, medium and long-term funding strategy:

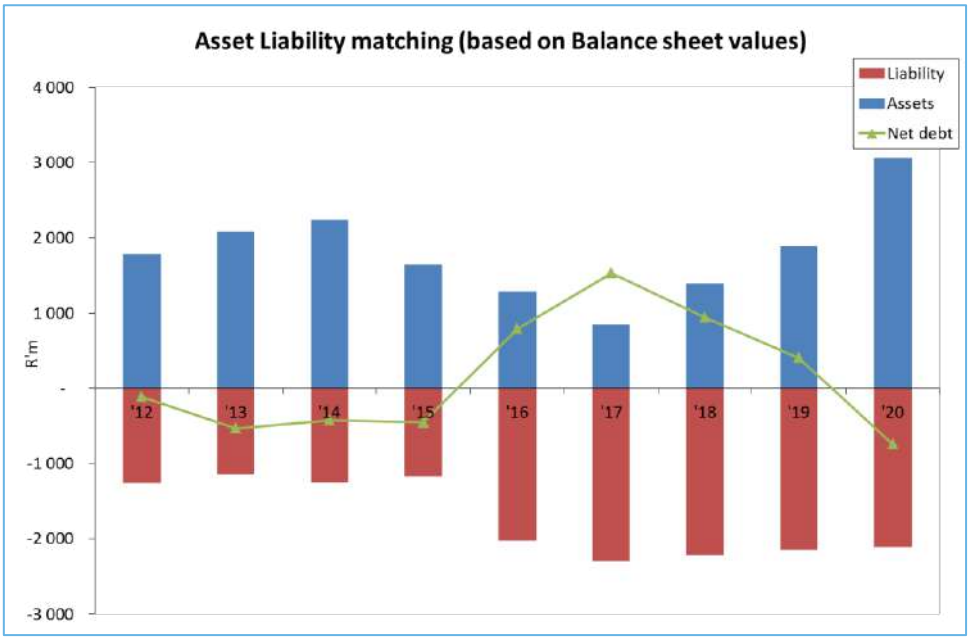
1. **Capital structure**
   A key principle to managing the outstanding debt is to target the optimum capital structure of 70 % fixed and 30 % floating interest rate so as to minimise volatility of both the tariff and income statement.

2. **Asset/liability matching**
   A further key principle to managing Umgeni Water's debt is to match the maturity dates and quantum of debt outstanding in any year to the free cash generated by operations after servicing interest and operational expenditure. This is a pro-actively managed / on-going process.

3. **Optimal Debt Level**
   The key driver in determining the optimal level of debt for Umgeni Water is the ability to service debt given the cashflows generated after capital expenditure.

4. **Redemption portfolio**
   Having debt with large bullet repayments, such as the UG21 bond, exposes Umgeni Water to forward starting interest rate and refinancing risk. These risks are eliminated through redemption portfolio management.

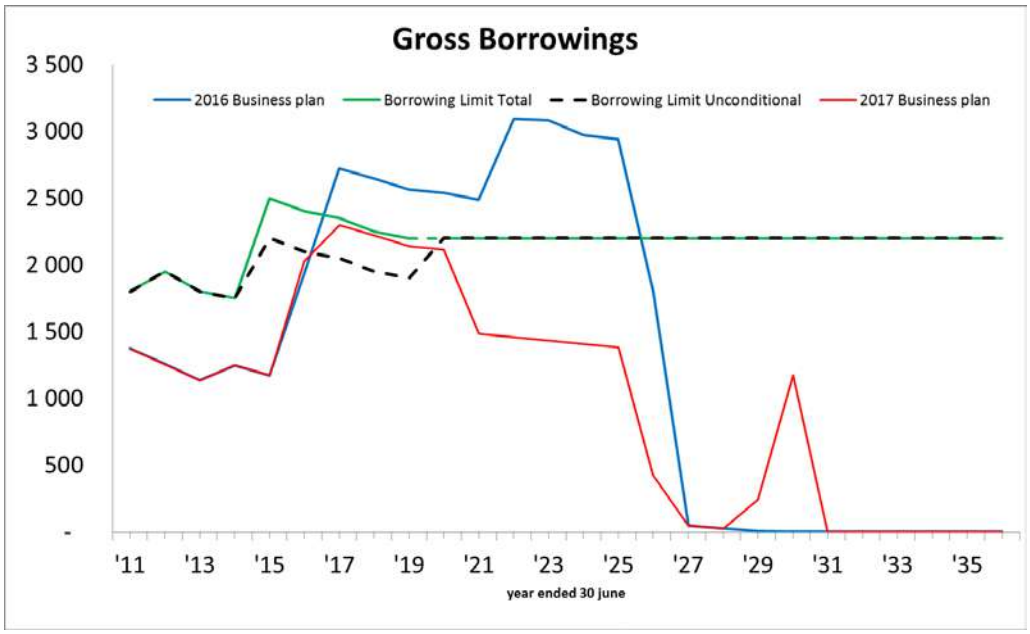
Figure 21.1: Asset liability matching (based on Balance Sheet)



21.2 Debt Curve

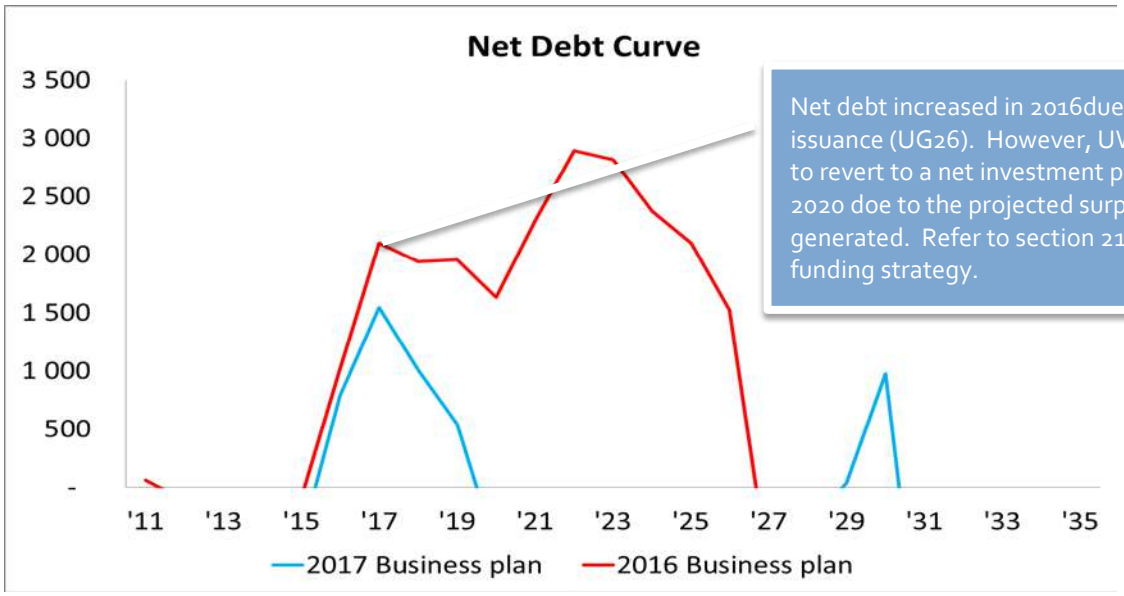
The 2016 Business Plan indicated that gross borrowings will peak at R3093m in 2022. The gross borrowings curve has decreased since then due to the implementation of the financial strategies to counteract the impact of the drought on the financial position of Umgeni Water. Therefore the peak in gross borrowings is expected to occur in 2017 at R2 300m.

Figure 21.2: Gross borrowings (R'm)



From 2019 onward, operating cashflows generated are not sufficient to fund both operating and capital expenditure thus the available investments will be utilised to meet funding requirements and will decrease thereby placing Umgeni Water in a net debt position.

Figure 21.3: Net debt curve (R'm)



21.3 Funding Strategy

21.3.1 Introduction

The funding strategy recommends a long term issuance from 2016 as indicated in the 2016 Business Plan, to meet the funding requirements. This is also captured as the base case funding strategy in the 2017 Business plan per Table 21.1.

Table 21.1: Funding requirements 2016 to 2021 (R'm)

FUNDING REQUIREMENTS	short term		Medium Term			L/Term
Financial Year (R'm)	F16	F17	F18	F19	F20	F21
Operational Cash flows	856	887	1 064	1 236	1 359	1 663
CapEx - Gross (Escalated)	(2 268)	(1 815)	(981)	(595)	(185)	(228)
Net Operating and CapEx cash flow	**(1 412)**	**(927)**	**82**	**641**	**1 174**	**1 435**
CapEx - Grants: Confirmed	**214**	**357**	**661**	**-**	**-**	**-**
Refinance - Capital (existing Debt net of asset capital)	(78)	(79)	(79)	(79)	(29)	(29)
UG26 issued March 2016	935		-	-	-	-
New Debt	-	350				
UG21 repayment	-	-	-	-	-	(600)
Refinance - Finance costs (existing Debt incl UG26)	(46)	(181)	(168)	(129)	(56)	48
Refinance - Finance costs (new Debt)		-	(43)	(43)	(43)	(42)
Funding Requirements	**(387)**	**(480)**	**454**	**390**	**1 046**	**811**
Redemption Portfolio - UG21						363
Redemption Portfolio - Interest earned						245
Net Incremental Funding Requirement p.a.	**(387)**	**(480)**	**454**	**390**	**1 046**	**1 419**
Net (Funding) Investing requirements						
Opening Balance Call investments	1 063	676	195	649	1 039	2 086
Closing Balance	**676**	**195**	**649**	**1 039**	**2 086**	**3 505**

21.3.2 Short-term (F16 to F17) funding strategy

(a) All surplus cash is invested in financial assets that ensure sufficient liquidity.

(b) New debt, proposed at R350m, to be accessed in 2017. Funding options and products to be evaluated to determine the most suitable funding instrument taking into account, UW's future operating cashflows.

21.3.3 Medium-term (F18 to F20) funding strategy

(a) All surplus cash is invested in short-term financial assets (3 to 6 month term deposits).

(b) The continued investment in the redemption asset to meet the funding requirement for the redemption of the ug21 bond in 2021.

21.3.4 Long-term funding strategy (F21 to F26)

Refer to Table 21.2

(a) The long term funding requirements indicate that the entity will remain in an investment position.
(b) UW may look to increase its capex investment during this time and bring back the deferred projects

Table 21.2: Funding requirements 2021 to 2026 (R'm)

FUNDING REQUIREMENTS Financial Year (R'm)	L/Term F21	L/Term F22	L/Term F23	L/Term F24	L/Term F25	L/Term F26
Operational Cash flows	1 663	1 831	1 988	2 140	2 301	2 472
CapEx - Gross (Escalated)	(228)	(1 392)	(2 154)	(1 937)	(2 362)	(4 187)
Net Operating and CapEx cash flow	**1 435**	**438**	**(166)**	**203**	**(62)**	**(1 715)**
CapEx - Grants: Confirmed	-	-	-	-	-	-
Refinance - Capital	(29)	(25)	(25)	(25)	(25)	(25)
UG26 issued March 2016	-	-	-	-	-	(935)
New Debt						
UG21 repayment	(600)	-				
Refinance - Finance costs	48	180	198	210	216	88
Refinance - Finance costs (new Debt)	(42)	(43)	(43)	(43)	(43)	(43)
Funding Requirements	**811**	**551**	**(35)**	**345**	**86**	**(2 629)**
Redemption Portfolio - UG21	363	-	-	(73)	(266)	(244)
Redemption Portfolio - Interest earned	245					
Net Incremental Funding Requirement p.a.	**1 419**	**551**	**(35)**	**273**	**(179)**	**(2 873)**
Net (Funding) Investing requirements						
Opening Balance Call investments	2 086	3 505	4 056	4 021	4 293	4 114
Closing Balance	**3 505**	**4 056**	**4 021**	**4 293**	**4 114**	**1 241**

21.4 Sources of funding: terms and conditions on which money is borrowed

The terms and conditions on which money is borrowed differ according to loan agreements and bond issues. Bank committed facilities offered can be for a full twelve months or for a specified seasonal period. This committed facility would attract a facility fee on any unutilised balances during the agreed period only.

A summary of the various funding facilities that Umgeni Water currently has and major conditions relating to those facilities are as follows:

21.4.1 Issuance through the DMTN programme

The programme has an authorized amount of R4 billion, and is a useful funding tool in terms of the following:

- Refining the duration of the stock of debt.
- Refining the fixed to floating ratio of the debt book.
- Meeting short-term liquidity requirements.
- Filling gaps in the debt maturity profile.

Commercial paper and other short term notes can be issued through this programme.

21.4.2 Bank Funding

Umgeni Water's bank facilities are shown in Table 21.3. The banks are currently in the process of reviewing these facilities.

Table 21.3: Sources of liquidity

SOURCES OF LIQUIDITY	LIMIT	TYPE OF FACILITY	UTILISATION	AVAILABLE	COMMITTED FACILITIES	UNCOMMITTED FACILITIES
General banking facilities	**R'm**		**R'm**	**R'm**	**R'm**	**R'm**
FirstRand Facility	50	Working capital	0	20	20	0
Nedbank facility	50	General banking	0	50	0	50
Absa Facility	50	General banking	0	50	50	0
Investec Facility	50	General banking	0	50	0	50
			0	**170**	**70**	**100**

First National Bank

Instruments available under the short-term direct facility are:

- Overdraft – prime less 1% up to R10 million, thereafter prime;
- Corporate term loans – negotiable rate;
- Bankers acceptances (Acceptance credits) – negotiable rate;
- Call loans – negotiable rate.

Investec Bank

Instruments available under the general credit facility are:

- Bank call facility – negotiable rates;
- Foreign financing facility – negotiable rates; and
- Foreign exchange dealing facility – negotiable rates.

Nedbank

Instruments available under the general credit facility are:

- Overnight loans;
- Electronic banking facilities.

ABSA Bank

Instruments available under the short-term direct facility are:

- Overdraft – prime less 1.5%.

21.4.3 Annuity Loans

Terms, conditions and maturity are specific to each loan agreement. The most significant loan is the DBSA loan 71 and the loan balance as at 30 June 2016 (forecast) is R150million, which is a variable interest rate fifteen-year loan. The EIB loans are annuity loans which is forecast to be at R161m (variable interest rate) and R161m (fixed interest rate) by 30 June 2016.

21.4.4 Capital Market Bonds

Domestic Medium Term Note (DMTN) Programme

The DMTN Programme was established in 2009 to fund long term capital expenditure requirements and to fund short term working capital requirements. Under this DMTN Programme, Umgeni Water may from time to time issue unsecured or secured registered notes of any kind, in an aggregate outstanding nominal amount which will not exceed R 4 billion.

- **Notes may comprise without limitation:**
  Fixed rate, floating rate, mixed rate, zero coupon notes or a combination of such foregoing notes or any other type of notes determined by Umgeni Water and the relevant dealers.
- **Interest rate**
  The interest rate will be determined at the time of issuance of notes and will be specified in the Applicable Pricing Supplement.
- **Maturity**
  The Notes are not subject to any minimum or maximum maturity.
- **Issuance of UG21 bond under the DMTN Programme**
  The UG21 falls due on 02 March 2021 and interest payments are due on 02 March and 02 September each year. The coupon rate is 10.7%.
  The UG21 was oversubscribed at the time of issuance.

  The UG26 is the latest issuance under the DMTN programme. A total of R935m was issued and like its predecessor, was oversubscribed at the time of issuance. The coupon rate is 11.31%.

21.4.5 Development Funding Institutions

European Investment Bank (EIB) Loan

The European Investment Bank provided EUR 35 million (R385 million) long-term funding facility to Umgeni Water for new investment and upgrading of existing pipelines, water treatment works, pumping and service reservoirs that will contribute to improved supply of bulk potable water in the Umgeni Water operational area. The granting of the loan to Umgeni Water is the first loan to be made to a South African water board by the European Investment Bank. The loan is unsecured.

21.5 Compliance with Loan covenants

The financial covenants, per the EIB loan agreement, are:

- Consolidated EBIT to Borrowing Costs (Interest Cover) of not less than 2.5 : 1
- Consolidated Gross Borrowings to Consolidated Equity (Debt: Equity) not greater than 0.7 : 1

Table 21.4: Loan covenants

Ratio	2013	2014	2015	2016	2017	2018	2019	2020	2021
Debt: Equity	0.315	0.334	0.225	0.345	0.355	0.312	0.267	0.232	0.142
Interest Cover	5.267	5.082	5.764	4.062	2.584	2.910	3.956	4.603	3.653

21.6 Debt guaranteed by government

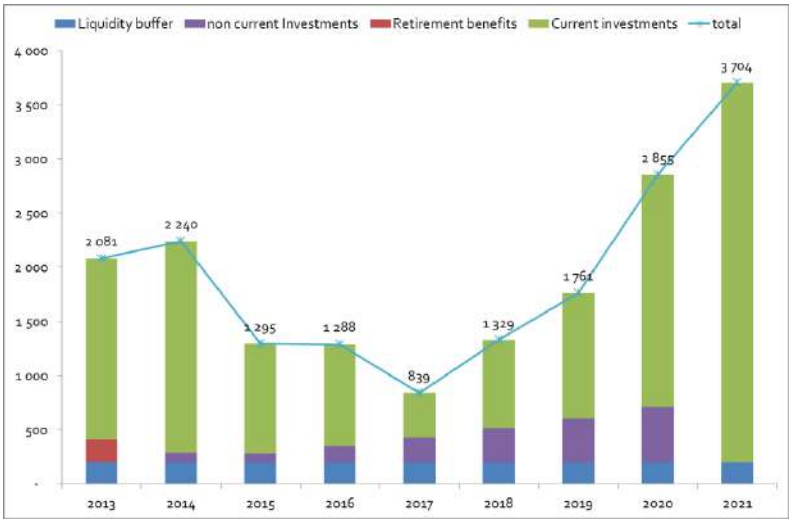
Umgeni water does not have any government guaranteed debt.

21.7 Maturity profile of debt and investments

Table 21.5: Maturity profile of investments (R'm)

Investment maturity structure (R'm)	F'13	F'14	F'15	F'16	F'17	F'18	F'19	F'20	F'21
< 1year	2 076	2 157	1 570	1 139	613	1 017	1 354	2 344	3 704
	100%	96%	95%	88%	73%	77%	77%	82%	100%
1-5 years	5	84	77	149	226	312	407	511	-
Total Investments	2 081	2 240	1 647	1 288	839	1 329	1 761	2 855	3 704

Figure 21.10: Analysis of Investments (R'm)



To ensure sufficient liquidity, Umgeni Water will maintain a liquidity buffer of R200m. Non-current investment represents the first redemption asset toward the redemption of the UG21. Current investments are held for the funding of operating and capital expenditure requirements.

Table 21.6: Debt maturity structure (R'm)

Debt maturity structure (R'm)	F'13	F'14	F'15	F'16	F'17	F'18	F'19	F'20	F'21
< 1year	109	79	79	79	79	79	29	629	25
	10%	6%	7%	4%	3%	4%	1%	30%	2%
1-5 years	417	346	895	841	787	733	729	974	949
	37%	28%	76%	43%	34%	33%	34%	46%	64%
5-10 years	609	731	124	1 059	1 409	1 403	1 384	509	509
	54%	58%	11%	50%	61%	63%	65%	24%	34%
+10 Years		94	74	49	24	6			
	0%	8%	6%	3%	1%	0%	0%	0%	0%
Total Borrowings	1 135	1 250	1 172	2 028	2 300	2 221	2 142	2 113	1 483

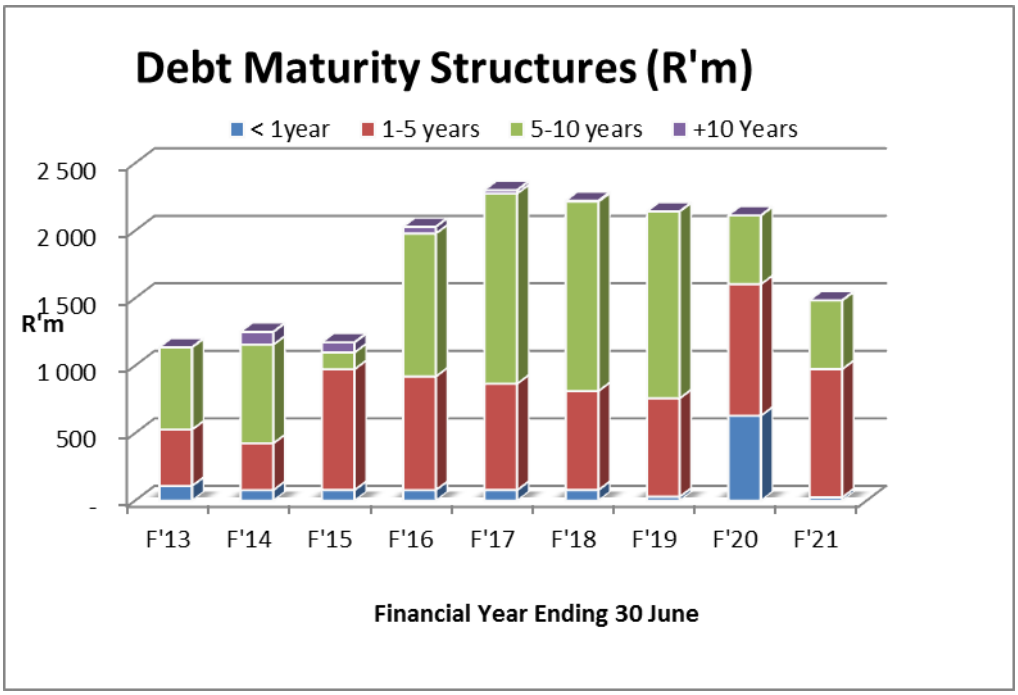
Table 21.7: Ratio of Fixed to floating rate debt

Ratio of Fixed to floating interest rate debt	F16	F17	F18	F19	F20	F21
Fixed Interest Rate Debt	84.7%	89.2%	91.6%	94.3%	94.8%	93.5%
Floating Interest Rate Debt	15.3%	10.8%	8.4%	5.7%	5.2%	6.5%

Table 21.8: Profiles of existing & proposed loans (R'000)

Capital balances	Lender	Maturity date	F15	F16	F17	F18	F19	F20	F21
LN71A (Floating)	DBSA	2019/03/31	200 000	150 000	100 000	50 000			
LN72	DBSA	2021/03/31	24 507	20 911	17 131	13 159	8 987	4 603	
UG21	Capital market		600 000	600 000	600 000	600 000	600 000	600 000	
EIB1 (Floating)	EIB	2028/12/18	174 194	161 290	148 387	135 484	122 581	109 677	96 774
EIB 2	EIB	2019/03/31	173 065	161 129	149 194	137 258	125 323	113 387	101 452
UG26	Capital market	2026/06/30		935 000	935 000	935 000	935 000	935 000	935 000
Proposed funding	Capital market	2027/06/30			350 000	350 000	350 000	350 000	350 000
Total debt capital			**1 171 765**	**2 028 331**	**2 299 712**	**2 220 901**	**2 141 890**	**2 112 668**	**1 483 226**

Figure 21.11: Debt maturity structure



The increase in the amounts maturing in 5 to 10 years' time from 2015 onward is due to the UG21 which will be redeemed in 2021 and the proposed funding of R350m to be obtained in 2017.

21.8 Analysis of funding against approved borrowing limits

In preparing the funding strategy, cognisance was taken of the level of gross debt against the unconditional borrowing limit set by the Department of Water Affairs and National Treasury which is based on:

- F16 – R2 400m
- F17 – R2 350m (R2 050m is confirmed and R300m is conditional)
- F18 – R2 250m (R1 950m is confirmed and R300m is conditional)
- F'19 – R2 200m (R1900m is confirmed and R300m is conditional)

Figure 21.1: Debt curve against funding limits (R'm)

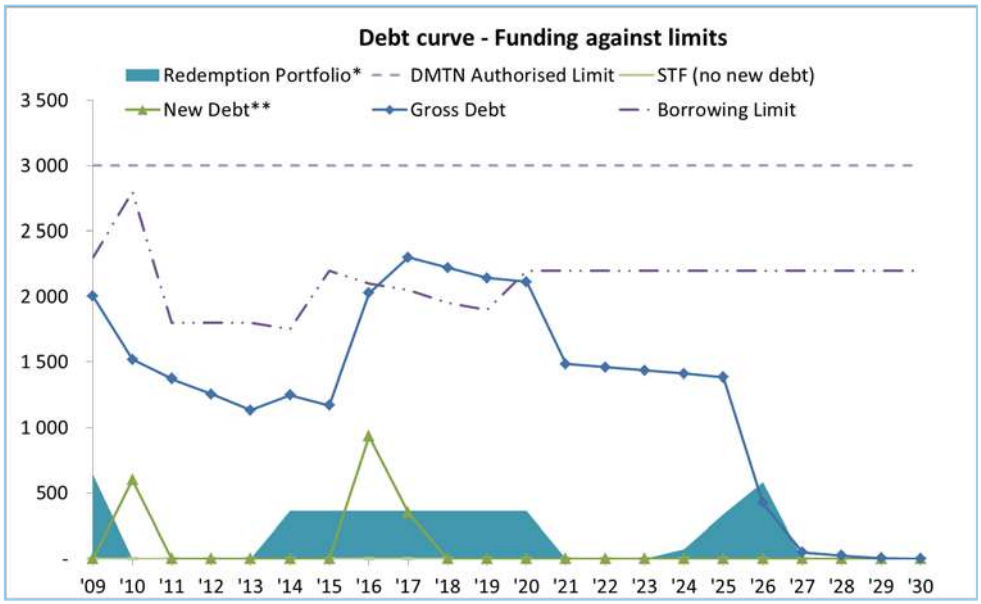


Table 21.9: Gross borrowings (R'm)

Borrowing Limit	F16	F17	F18	F19	F20	F21
Gross Borrowings	2 028	2 300	2 221	2 142	2 113	1 483
At Peak						600
Contingencies	-	-	-	-	-	-
TOTAL GROSS BORROWINGS	**2 028**	**2 300**	**2 221**	**2 142**	**2 113**	**2 083**
Approved borrowing Limit	**2 400**	**2 850**	**2 750**	**2 700**		
- Confirmed	2 400	2 050	1 950	1 900		
- Unconfirmed	-	300	300	300		
- further increase in limit		500	500	500		
(Over) Under utilisation	**372**	**550**	**529**	**558**	**(2 113)**	**(2 083)**

21.9 Proposed Borrowings

Table 21.10: Total borrowings (R'000)

DATE OF BORROWING	TOTAL GROSS ORROWING	TOTAL PORTION					
		LONG TERM			SHORT TERM		
	Actual	Actual			Actual Total Short term	Short-term portion of long term debt	Short-term borrowings
2011/2013	1 135 381	1 025 930	0	1 025 930	109 451	109 451	0
2013/2014	1 250 029	1 171 765	0	1 171 765	78 264	78 264	0
2014/2015	1 171 765	1 093 331	0	1 093 331	78 434	78 434	0
	Projected	Projected	Proposed	Total	Projected	Projected	Projected
2015/2016	2 028 331	1 014 712	935 000	1 864 712	78 619	78 619	0
2016/2017	2 299 712	1 870 902	350 000	2 220 902	78 810	78 810	0
2017/2018	2 220 902	2 141 890	0	2 141 890	79 012	79 012	0
2018/2019	2 141 890	2 112 668	0	2 112 668	29 222	29 222	0
2019/2020	2 112 668	1 483 226	0	1 483 226	629 442	629 442	0
2020/2021	1 483 226	1 458 388	0	1 458 388	24 839	24 839	0

Table 21.11: Foreign borrowings (EIB) (R'000)

DATE OF BORROWING	TOTAL GROSS ORROWING	FOREIGN PORTION					
		LONG TERM			SHORT TERM		
	Actual	Actual			Actual Total Short term	Short-term portion of long term debt	Short-term borrowings
2012/2013	0	0		0	0		
2013/2014	372 097	162 258	185 000	347 258	24 839	24 839	0
2014/2015	347 258	322 419	0	322 419	24 839	24 839	0
	Projected	Projected	Proposed	Total	Projected	Projected	Projected
2015/2016	322 419	297 581	0	297 581	24 839	24 839	0
2016/2017	297 581	272 742	0	272 742	24 839	24 839	0
2017/2018	272 742	247 903	0	247 903	24 839	24 839	0
2018/2019	247 903	223 065	0	223 065	24 839	24 839	0
2019/2020	223 065	198 226	0	198 226	24 839	24 839	0
2020/2021	198 226	173 387	0	173 387	24 839	24 839	0

Table 21.12: Domestic borrowing programme (R'000)

DATE OF BORROWING	TOTAL GROSS BORROWING	DOMESTIC PORTION					
		LONG TERM			SHORT TERM		
	Actual	Actual			Actual Total Short term	Short-term portion of long term debt	Short-term borrowings
2012/2013	1 135 381	1 025 930	0	1 025 930	109 451	109 451	0
2013/2014	877 932	1 009 507	-185 000	824 507	53 425	53 425	0
2014/2015	824 507	770 912	0	770 912	53 595	53 595	0
	Projected	Projected	Proposed	Total	Projected	Projected	Projected
2015/2016	1 620 912	632 132	935 000	1 567 132	53 780	53 780	0
2016/2017	2 002 132	1 598 160	350 000	1 948 160	53 972	53 972	0
2017/2018	1 948 160	1 893 987	0	1 893 987	54 173	54 173	0
2018/2019	1 893 987	1 889 604	0	1 889 604	4 383	4 383	0
2019/2020	1 889 604	1 285 001	0	1 285 001	604 603	604 603	0
2020/2021	1 285 001	1 285 001	0	1 285 001	0	0	0

21.10 Hedging Policies

21.10.1 Interest rate derivatives

Purpose

- To improve the ability to raise long term finance
- To reduce the cost of long term finance
- To provide instruments to assist in the management of the interest rate and liquidity risk on long term finance.

Approved instruments

- Table 21.13 shows the derivative instruments approved for the purpose stated.
- The writing of options is only permitted for approved non-Umgeni Water bond issues where the issuer makes a market in the underlying issues.
- Both options written and purchased may have a maximum expiry of 12 months from transaction date.
- Options include caps, floor, collar, rate swaps.

Table 21.13: Approved derivative instruments

	Funding	Risk management
Written Over the counter (OTC) interest rate options on Umgeni Water bonds	X	X
Written OTC interest rate options on non-Umgeni Water bonds which are on the approved list		X
Purchased OTC interest rate options on Umgeni Water bonds	X	X
Purchased OTC interest rate options on Non-Umgeni Water bonds		X

Delegation of Authority

The Board of Umgeni Water is responsible for approving the following:

- Approve instruments and combinations thereof for utilisation in funding, investment and hedging activities
- Select instruments and techniques from the approved list
- Appoint dealers to deal in the Options Market
- Approve special transactions entered into with market participants
- Determine which underlying bonds can be utilised for buying and writing options

21.10.2 Derivatives for management of foreign currency risk

Purpose

- To reduce the cashflow risk associated with transactions concluded in foreign currency.

Policy

- Umgeni Water's risk profile requires that all funding transactions be South African Rand denominated, and thus the only foreign currency transactions permitted are those required to hedge transactions arising from the operating environment.
- Depending on the business and economic environment prevailing, minimum hedging level for foreign exchange risk should be 30% to 40% of the underlying risk.
- Any prepayments in terms of foreign currency transactions should not exceed 30% as determined by the South African Reserve Bank.
- There must be a bona fide business basis for all foreign exchange transactions.

Approved instruments

- Natural hedging
- Forward market hedging

Delegation of Authority

- All forward cover transactions to be approved by the General Manager: Finance as delegated by the Board from time to time.

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Chapter 22: Materiality and Significance Framework

Contents

22.1 Quantitative aspects: Materiality level

The framework is applied under two main categories: quantitative aspects and qualitative aspects. With respect to quantitative aspects, Umgeni Water assesses the level of a materiality as being ½ % of its gross revenue.

It is recognised that different levels of materiality can be set for different classes of transactions. Umgeni Water has, however, taken the approach of setting a more conservative materiality level that will be used for all classes of transactions.

22.2 Factors considered:

- Nature of Umgeni Water's business: Revenue for Umgeni Water primarily comprises sales of water, fees for management of water and wastewater treatment works' and revenue from S30 activities.
- Statutory requirements applicable to Umgeni Water:
    - Umgeni Water is listed as a PFMA Schedule 3B public entity.
    - The Board of Umgeni Water is required to execute its mandate in terms of the PFMA.
    - Umgeni Water accordingly elects to give preference to a stricter level of materiality as the entity is closely governed by legislation and has public accountability.
- The control and inherent risks associated with Umgeni Water: In assessing the control risk, Umgeni Water concluded that the level of materiality of ½ % of gross revenue is appropriate and prudent.

  This assessment is based on the fact that a sound control environment is being maintained. In this regard cognisance was given to amongst other matters:
    - Proper and appropriate governance structures are established which include a Board of Directors (Accounting Authority), CE and Executive Management,
    - A Risk Management Committee with specific risk management responsibilities,
    - An audit committee that closely monitors the control environment of Umgeni Water,
    - The function of internal audit is outsourced to professional independent internal auditors, and
    - A three year Internal Audit Coverage Plan, based on annual risk assessments.

22.3 Qualitative Aspects

Materiality is not confined to the size of the entity and the elements of its financial statements.

- Umgeni Water recognises that misstatements that are large either individually or aggregate may affect a "reasonable" user's judgement. Further, misstatements may also be material on qualitative grounds. These qualitative grounds include amongst other:
    - New ventures that Umgeni Water may enter into,
    - Unusual transactions entered into that are not of a repetitive nature and are required to be disclosed purely due to the nature thereof due to knowledge thereof affecting the decision making of the user of the financial statements,
    - Transactions entered into that could result in reputational risk to Umgeni Water,
    - Any fraudulent or dishonest behaviour of an officer or staff of Umgeni Water,

- Any suspected corruption, irregularities or fraud,
- Any infringement of Umgeni Water's agreed performance levels,
- Procedures/processes required by legislation or regulation (e.g. PFMA and Treasury Regulations),
- Unauthorised, irregular or fruitless and wasteful expenditure, and
- Items of a non-financial nature, which would impact on the continued operation and deliverables of Umgeni Water.

The policy contained in this framework will be appropriately presented in the Annual Report of Umgeni Water.

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23 Financial Ratios

The financial ratios reflected in the following tables are defined wherever applicable in the footnotes that follow table 23.1

Table 23.1: Umgeni Water financial indicators and ratios

Financial Indicators and Ratios		F13 Actual	F14 Actual	F15 Actual	F16 Budget	F16 Forecast	F17	F18	F19	F20	F21
A	**Performance criteria/indicators**										
1	Volume of water sold (kl'000)	422 791	439 542	446 548	457 928	438 197	429 209	471 024	485 832	493 119	500 516
	eThekwini Municipality(kl'000)	315 669	327 011	331 347	338 832	323 740	315 035	339 039	348 578	359 114	364 501
	Siza Water	4 352	4 767	4 438	4 998	3 362	3 434	3 502	3 574	3 682	3 737
	Other WSA's(kl'000)	102 769	107 765	110 763	114 099	111 095	110 740	128 484	133 680	130 324	132 278
2	Total gross revenue (R'000)	1 895 886	2 187 886	2 207 704	2 376 273	2 394 973	2 789 651	3 266 336	3 316 688	3 661 088	4 042 508
3	Total Bulk Revenue (R'000)	1 625 480	1 914 907	2 021 053	2 241 867	2 143 091	2 288 636	2 735 439	3 063 924	3 371 278	3 709 379
	eThekwini Municipality(R'000)	1 207 439	1 207 439	1 491 725	1 644 350	1 571 108	1 666 537	1 953 201	2 180 706	2 399 519	2 640 207
	Siza Water	17 126	17 126	20 560	32 576	21 915	24 396	27 096	30 026	33 037	36 350
	Other WSA's(R'000)	400 916	690 343	508 769	564 941	550 068	597 702	755 142	853 192	938 721	1 032 822
4	Total Bulk Revenue (R'000) (excl Capital Unit charge)	1 625 480	1 830 137	2 021 053	2 241 867	2 143 091	2 288 636	2 735 439	3 063 924	3 371 278	3 709 379
5	Bulk Revenue Growth (excl Cap Unit Charge)	6.99%	4.39%	10.43%	10.33%	-4.41%	2.09%	19.52%	12.01%	10.03%	10.03%
6	Weighted average Water tariff (R/kl) (total bulk rev/total bulk vol)	3.845	4.164	4.526	4.896	4.891	5.332	5.807	6.306	6.835	7.410
	eThekwini Municipality	3.825	4.142	4.502	4.853	4.853	5.29	5.761	6.256	6.782	7.352
	Siza Water	3.935	4.262	4.633	6.518	6.518	7.105	7.737	8.402	9.108	9.873
	Other WSA's	3.901	4.225	4.593	4.951	4.951	5.397	5.877	6.382	6.918	7.499
7	Weighted average Water tariff (R/kl) (total bulk rev/total bulk vol) incl CUC	4.253	4.572	4.952	5.354	5.349	5.816	6.294	6.795	7.325	7.905
	eThekwini Municipality	4.233	4.550	4.928	5.311	5.311	5.774	6.248	6.745	7.272	7.847
	Siza Water	4.343	4.670	5.059	6.976	6.976	7.589	8.224	8.891	9.598	10.368
	Other WSA's	4.309	4.633	5.019	5.409	5.409	5.881	6.364	6.871	7.408	7.994
8	Net profit (loss) for the year	664 468	673 969	800 927	529 046	675 461	597 794	657 169	889 708	1 078 681	1 341 844
9	Profit from Operations/Revenue	0.315	0.273	0.302	0.252	0.244	0.197	0.221	0.287	0.303	0.310
10	Total expenditure/Revenue	0.659	0.705	0.652	0.781	0.721	0.788	0.801	0.733	0.707	0.669
11	Cost of sales/Revenue	0.459	0.473	0.430	0.437	0.449	0.520	0.494	0.430	0.427	0.422
12	Total cost/volume (Rand/kl) (Bulk only)	2.351	3.687	2.849	3.771	3.448	4.079	4.492	4.589	4.814	4.957

	Financial Indicators and Ratios	F13 Actual	F14 Actual	F15 Actual	F16 Budget	F16 Forecast	F17	F18	F19	F20	F21
13	Net Finance costs (Rand/kl)	(0.160)	(0.175)	(0.299)	0.152	(0.208)	(0.115)	0.139	0.127	0.063	(0.180)
14	Personnel cost ratio (Total Personnel costs/Total Costs excl finance costs)	0.221	0.205	0.257	0.245	0.241	0.202	0.217	0.250	0.249	0.245
15	Personnel cost per kilolitre (Personnel costs/Annual volume)	0.689	0.754	0.903	0.956	0.999	1.058	1.174	1.221	1.292	1.368
16	Personnel cost per kilolitre (Personnel costs/Annual volume) (Primary only)	0.673	0.812	0.903	0.956	0.998	1.053	1.170	1.217	1.288	1.363
17	Personnel cost per kilolitre (Personnel costs/Annual volume) (Bulk only)	0.653	0.788	0.872	0.923	0.947	0.992	1.110	1.154	1.221	1.292
B	**Operating Risks**										
18	Working ratio (total expenses excluding depreciation, amortisation and finance costs divided by Total revenue)	0.643	0.688	0.650	0.675	0.690	0.7115	0.6955	0.625	0.612	0.609
19	Operating Ratio (Total Costs excluding depreciation & amortisation/Total Revenue)	0.608	0.653	0.590	0.704	0.652	0.694	0.715	0.644	0.621	0.587
20	Controllable working ratio (total expenses exclud.raw water, deprec, amort & inter. divided by total. rev.)	0.558	0.601	0.574	0.603	0.620	0.647	0.623	0.544	0.531	0.528
21	Return on assets (income before interest & taxes divided by total assets excluding investments)	15.66%	13.30%	11.22%	7.89%	7.40%	5.94%	7.73%	9.79%	11.50%	13.07%
22	Asset turnover (revenue divided by total assets excluding investments)	0.497	0.487	0.371	0.313	0.303	0.302	0.350	0.341	0.379	0.422
23	Gross margin %	54.12%	52.70%	56.97%	56.31%	55.05%	47.96%	50.63%	56.96%	57.35%	57.75%
24	Current asset turnover (revenue divided by current assets excl investments)	5.526	7.151	5.700	6.850	5.578	6.144	6.437	6.069	6.163	6.331
25	Fixed asset turnover (revenue divided by fixed assets)	0.551	0.527	0.401	0.330	0.323	0.320	0.371	0.362	0.405	0.453
26	Debtors collection period (debtors divided by revenue times 365) (Excl. VAT) *	48.835	41.843	36.990	41.603	39.719	36.888	36.683	39.805	40.111	39.806
27	Trade debtors collection period (Trade	48.835	41.843	36.990	41.603	39.719	36.888	36.683	39.805	40.111	39.806

	Financial Indicators and Ratios	F13 Actual	F14 Actual	F15 Actual	F16 Budget	F16 Forecast	F17	F18	F19	F20	F21
	Debtors divided by revenue times 365) Excl VAT										
28	Accounts receivable turnover (revenue divided by accounts receivable) (Excl. VAT)	6.556	7.652	8.656	7.696	8.061	8.680	8.728	8.044	7.982	8.043
	* Accounts receivable is made up as follows:										
	Trade Debtors	289 174	285 932	255 057	308 769	297 102	321 397	374 224	412 342	458 651	502 592
	Provision for Doubtful debts	-	-	-	-	-	-	-	-	-	-
		289 174	285 932	255 057	308 769	297 102	321 397	374 224	412 342	458 651	502 592
C	**Financial Risks**										
29	Current ratio (current assets divided by current liabilities)	3.215	3.825	2.430	2.028	1.965	1.426	2.151	3.292	2.769	10.172
30	Debt ratio (total debt divided by total assets)	0.193	0.215	0.154	0.227	0.221	0.228	0.208	0.187	0.169	0.112
31	Gross Debt-equity ratio (total liabilities divided by total accumulated reserves)	0.315	0.334	0.225	0.348	0.345	0.355	0.312	0.267	0.232	0.142
32	Net Debt-equity ratio (Net liabilities divided by total accumulated reserves)	(0.263)	(0.077)	(0.091)	0.174	0.126	0.226	0.125	0.048	(0.082)	(0.213)
33	Weighted Average Cost of Capital (WACC) (Per AFS)	9.20%	9.28%	9.47%	9.52%	10.57%	10.92%	10.97%	11.02%	11.25%	11.56%
34	Weighted Average Cost of Capital (WACC) (Finance costs/Gross borrowings)	5.86%	3.48%	0.23%	6.67%	0.06%	0.61%	6.33%	8.17%	10.20%	12.51%
35	Financial Leverage (D/(D+E)) (Net of redemption assets)	0.239	0.251	0.174	0.243	0.242	0.243	0.211	0.178	0.150	0.124
C	**Debt Management**										
	Net Debt										
	Total Borrowings (as per Balance sheet)	1 135 381	1 250 029	1 171 765	1 943 331	2 028 331	2 299 712	2 220 902	2 141 890	2 112 668	1 483 226
	Total Investment (as per Balance sheet)	2 081 005	1 609 862	1 646 680	974 162	1 287 526	839 002	1 329 298	1 760 983	2 854 826	3 704 000
	Net Borrowings (Total Borrowings - Total Investment)	**(945 624)**	**(359 833)**	**(474 914)**	**969 170**	**740 805**	**1 460 710**	**891 604**	**380 907**	**(742 157)**	**(2 220 774)**

	Financial Indicators and Ratios	F13 Actual	F14 Actual	F15 Actual	F16 Budget	F16 Forecast	F17 Forecast	F18 Forecast	F19 Forecast	F20 Forecast	F21 Forecast
D	**Business Credit Risk**										
36	Interest Cover ratio *(EBIT/int paid)*	5.267	5.082	5.764	3.362	4.062	2.584	2.910	3.956	4.603	3.653
37	EBITDA interest coverage (EBITDA/int paid)	10.458	15.609	302.268	6.026	672.22	58	7.123	7.133	6.606	8.533
38	Cash from operations/average total debt	0.753	0.490	0.958	0.436	0.422	0.386	0.479	0.577	0.643	1.121
39	Return on average total capital	0.166	0.152	0.128	0.107	0.100	0.085	0.101	0.119	0.122	0.120
40	EBITDA/Sales	0.367	0.325	0.365	0.329	0.313	0.291	0.307	0.376	0.389	0.392
41	Funds flow net debt pay back *(cash from op before WC adj/total int bearing debt)*	0.700	0.514	0.869	0.476	0.463	0.418	0.520	0.632	0.721	1.157
E	**Surplus Ratios**										
42	Accounting Surplus (NP)/Fixed Assets (PPE)	0.193	0.162	0.146	0.074	0.091	0.068	0.075	0.097	0.119	0.150
43	Return on turnover (NP)/Revenue (Total org)	0.350	0.308	0.363	0.223	0.282	0.214	0.201	0.268	0.295	0.332
44	Return on turnover (NP)/Revenue (S29)	0.387	0.190	0.376	0.224	0.294	0.238	0.225	0.271	0.298	0.335
45	Return on turnover (NP)/Revenue (S30)	0.066	0.047	0.091	0.157	0.071	0.047	0.003	0.027	0.026	0.024
46	EBITDA	695 226	710 351	804 828	780 947	750 131	811 829	1 002 066	1 248 035	1 423 707	1 583 547
47	Net Debt/EBIDAR	1.633	1.760	1.456	2.488	2.704	2.833	2.216	1.716	1.484	0.937

Table 23.2: Umgeni Water GROUP financial indicators and ratios

Financial Indicators and Ratios		F13 Actual	F14 Actual	F15 Actual	F16 Budget	F16 Forecast	F17 Forecast	F18 Forecast	F19 Forecast	F20 Forecast	F21 Forecast
A	**Performance criteria/indicators**										
1	Total gross revenue (R'000)	1 908 833	2 204 140	2 222 565	2 391 132	2 410 401	2 809 297	3 285 939	3 337 702	3 683 298	4 065 939
2	Bulk Water Business segment										
	2.1 Volume of water sold (kl'000)	416 995	439 542	446 548	457 928	438 197	429 209	471 024	485 832	493 119	500 516
	2.2 Total Bulk Revenue (R'000)	1 625 480	1 830 137	2 021 053	2 241 867	2 143 091	2 288 636	2 735 439	3 063 924	3 371 278	3 709 379
	2.3 Average increase in revenue	7.0%	12.6%	24.3%	10.3%	-4.4%	6.8%	19.5%	12.0%	10.0%	10.0%
	2.4 Weighted average Water tariff (R/kl) (total bulk rev/total bulk vol)	3.898	4.164	4.526	4.896	4.891	5.332	5.807	6.307	6.837	7.411
	2.5 Total cost per kl sold	2.353	2.760	2.850	3.771	3.448	4.079	4.492	4.589	4.814	4.957
3	Net profit (loss) for the year	666 814	682 429	826 988	522 493	668 239	597 747	657 117	889 653	1 078 622	1 341 781
4	Profit from Operations/Revenue	0.312	0.273	0.309	0.248	0.239	0.195	0.220	0.285	0.301	0.308
5	Total expenditure/Revenue	0.662	0.705	0.645	0.785	0.726	0.790	0.802	0.735	0.709	0.671
6	Cost of sales/Revenue	0.456	0.470	0.427	0.434	0.447	0.517	0.491	0.428	0.424	0.420
7	Total cost/volume (Rand/kl) (Consolidated)	3.032	3.536	3.211	4.098	3.993	5.171	5.598	5.049	5.293	5.454
8	Net Finance costs (Rand/kl)	(0.162)	(0.175)	(0.303)	0.152	(0.208)	(0.113)	0.140	0.129	0.065	(0.179)
9	Personnel cost ratio (TotalPersonnel costs/Total Costs excl finance costs)	0.233	0.217	0.273	0.256	0.254	0.215	0.230	0.267	0.266	0.261
10	Personnel cost per kilolitre (Personnel costs/Annual volume)	0.743	0.805	0.958	1.011	1.066	1.138	1.257	1.312	1.389	1.470
B	**Operating Risks**										
11	Working ratio (total expenses excluding depreciation, amortisation and finance costs divided by Total revenue)	0.646	0.688	0.644	0.679	0.694	0.713	0.697	0.627	0.614	0.611
12	Operating Ratio (Total Costs excluding depreciation & amortisation/Total Revenue)	0.611	0.653	0.583	0.708	0.656	0.695	0.717	0.645	0.623	0.589
13	Controllable working ratio (total expenses exclud.raw water, deprec, amort & inter. divided by total. rev.)	0.562	0.602	0.569	0.608	0.625	0.649	0.624	0.547	0.534	0.530
14	Return on assets (income before interest & taxes divided by total assets excluding investments)	15.57%	13.18%	11.45%	7.76%	7.25%	5.91%	7.69%	9.73%	11.44%	13.00%
15	Asset turnover (revenue divided by total assets excluding investments)	0.499	0.483	0.370	0.313	0.303	0.302	0.349	0.341	0.379	0.422
16	Gross margin %	54.43%	53.05%	57.25%	56.58%	55.34%	48.33%	50.93%	57.23%	57.61%	58.00%
17	Current asset turnover (revenue divided by	5.448	4.102	5.183	6.567	5.290	5.872	5.771	5.862	5.982	6.165

	Financial Indicators and Ratios	F13 Actual	F14 Actual	F15 Actual	F16 Budget	F16 Forecast	F17 Forecast	F18 Forecast	F19 Forecast	F20 Forecast	F21 Forecast
	current assets excl investments)										
18	Fixed asset turnover (revenue divided by fixed assets)	0.554	0.553	0.404	0.332	0.324	0.321	0.372	0.364	0.406	0.454
19	Debtors collection period (debtors divided by revenue times 365) (Excl. VAT) *	39.696	37.484	36.743	41.361	39.519	36.674	36.498	39.582	39.891	39.599
20	Accounts receivable turnover (revenue divided by accounts receivable) (Excl. VAT)	8.066	8.542	8.714	7.741	8.102	8.730	8.772	8.089	8.026	8.085
	* Accounts receivable is made up as follows:										
	Trade Debtors	236 658	258 048	255 056	308 889	297 517	321 783	374 579	412 628	458 902	502 878
	Provision for Doubtful debts	-	-	-	-	-	-	-	-	-	-
		236 658	258 048	255 056	308 889	297 517	321 783	374 579	412 628	458 902	502 878
C	**Financial Risks**										
21	Current ratio (current assets divided by current liabilities)	3.214	3.550	2.478	2.035	1.980	1.444	2.162	3.3	2.8	10.0
22	Debt ratio (total debt divided by total assets)	0.192	0.184	0.153	0.226	0.219	0.227	0.207	0.186	0.168	0.111
23	Gross Debt-equity ratio (total liabilities divided by total accumulated reserves)	0.314	0.283	0.224	0.346	0.343	0.353	0.310	0.266	0.231	0.142
24	Net Debt-equity ratio (Net liabilities divided by total accumulated reserves)	(0.262)	(0.224)	(0.091)	0.173	0.125	0.224	0.124	0.047	(0.081)	(0.212)
25	Weighted Average Cost of Capital (WACC) (Per AFS)	9.20%	9.28%	9.28%	9.52%	9.35%	9.52%	9.90%	10.03%	10.04%	10.06%
26	Weighted Average Cost of Capital (WACC) (Finance costs/Gross borrowings)	5.86%	3.64%	0.23%	6.67%	0.06%	0.61%	6.33%	8.17%	10.20%	12.51%
28	Financial Leverage (D/(D+E)) (Net of redemption assets)	0.238	0.209	0.173	0.242	0.241	0.241	0.210	0.177	0.149	0.124
C	**Debt Management**										
	Net Debt										
29	Total Borrowings (as per Balance sheet)	1 135 381	1 250 029	1 171 765	1 943 331	2 028 331	2 299 712	2 220 902	2 141 890	2 112 668	1 483 226
30	Total Investment (as per Balance sheet)	2 081 005	2 240 354	1 646 680	974 162	1 287 526	839 002	1 329 298	1 760 983	2 854 826	3 704 000
31	Net Borrowings (Total Borrowings - Total Investment)	**(945 624)**	**(990 325)**	**(474 915)**	**969 170**	**740 805**	**1 460 710**	**891 604**	**380 907**	**(742 157)**	**(2 220 774)**
D	**Business Credit Risk**										
32	Interest Cover *(EBIT/int paid)*	(5.924)	(3.012)	(2.832)	(3.873)	(11.027)	(2.046)	(24.521)	(3.063)	5.153	6.748
33	EBITDA interest coverage (EBITDA/int paid)	10.431	15.726	305.132	5.981	667.070	58.017	7.145	7.151	6.622	8.551
34	Cash from operations/average total debt	0.753	0.689	0.963	0.433	0.420	0.387	0.480	0.579	0.645	1.124
35	Return on average total capital	0.165	0.136	0.131	0.105	0.098	0.084	0.101	0.118	0.121	0.119

Financial Indicators and Ratios		F13	F14	F15	F16	F16	F17	F18	F19	F20	F21
		Actual	Actual	Actual	Budget	Forecast					
36	EBITDA/Sales	0.363	0.325	0.371	0.324	0.309	0.290	0.306	0.375	0.387	0.390
37	Funds flow net debt pay back *(cash from op before WC adj/total int bearing debt)*	0.699	0.765	0.865	0.473	0.460	0.419	0.521	0.634	0.722	1.159
E	**Surplus Ratios**										
38	Accounting Surplus (NP)/Fixed Assets (PPE)	0.194	0.171	0.150	0.073	0.090	0.068	0.074	0.097	0.119	0.150
39	Return on turnover (NP)/Revenue	0.349	0.310	0.372	0.219	0.277	0.213	0.200	0.267	0.293	0.330
40	EBITDA	693 752	716 387	825 381	775 119	744 383	814 750	1 005 117	1 251 191	1 426 969	1 586 857
41	Net Debt/EBIDAR	(1.363)	(1.382)	(0.575)	1.250	0.995	1.793	0.887	0.304	(0.520)	(1.399)

Definition of ratios

- ✓ Weighted average Water tariff (R/kl): Total bulk revenue/total bulk volumes
- ✓ Personnel cost ratio: Total Personnel costs/Total Costs excluding finance costs
- ✓ Personnel cost per kilolitre: Personnel costs/Annual volume
- ✓ Working ratio: Total expenses excluding depreciation, amortisation & finance costs/ Total revenue
- ✓ Operating Ratio: Total Costs excluding depreciation & amortisation/Total Revenue
- ✓ Controllable working ratio: Total expenses excluding raw water, depreciation, amortisation/ Total revenue
- ✓ Return on assets: Income before interest & taxes/ Total assets excluding investments
- ✓ Asset turnover: Revenue / Total assets excluding investments
- ✓ Current asset turnover: Revenue/Current assets excluding investments
- ✓ Fixed asset turnover: Revenue/Fixed assets
- ✓ Trade debtors collection period: Trade Debtors/ Revenue times 365 (Excl. VAT)
- ✓ Accounts receivable turnover: Revenue/Accounts receivable (Excl. VAT)
- ✓ Current ratio: Current assets/ Current liabilities
- ✓ Debt ratio: Total debt /Total assets
- ✓ Gross Debt-equity ratio: Total borrowings/Total accumulated reserves
- ✓ Net Debt-equity ratio: Net borrowings/ Total accumulated reserves
- ✓ Weighted Average Cost of Capital (WACC): Finance costs/Gross borrowings
- ✓ Financial Leverage: Debt/(Debt+Equity) (Net of redemption assets)
- ✓ Net Borrowings: Total Borrowings - Total Investment
- ✓ Interest Cover ratio: EBIT/Interest paid
- ✓ EBITDA interest coverage: EBITDA/Interest paid
- ✓ Funds flow net debt pay back: Cash generated from operations before working capital adjustments/Total interest bearing debt
- ✓ Accounting Surplus: Net Profit/Fixed Assets (PPE)
- ✓ Return on turnover: Net Profit/Revenue

UMGENI WATER · AMANZI

Chapter 24: Self-Evaluation on Financial Viability

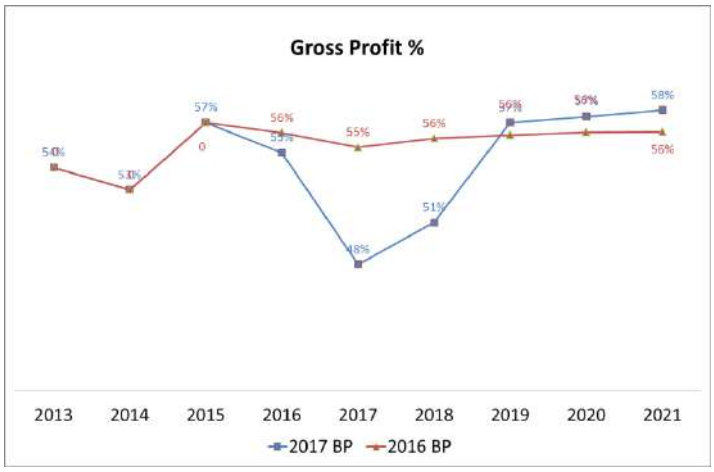
Contents

24.1 Operating performance Analysis

24.1.1 Key indicators of operating performance

Umgeni Water's operating performance can be measured in terms of the key indicators: Gross Profit, Operating Profit, Net Profit, Return on Asset and Interest Cover. Each of these is illustrated and discussed below.

Figure 24.1: Gross Profit



Due to the increases in the main cost drivers, , the GP margins are lower than the 2016 BP, however, still greater than 50% from F18 onwards. In F17 the GP% drops below 50% to 48% due to the fixed nature of main cost drivers being unaffected by decrease in volumes. A recovery to 2015 levels is only anticipated in 2022.
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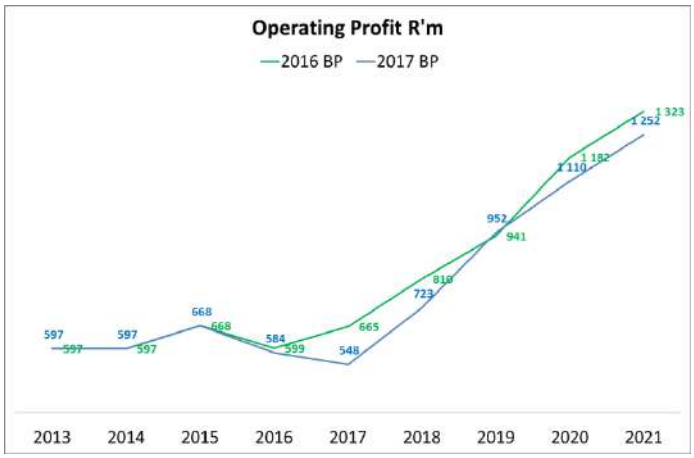
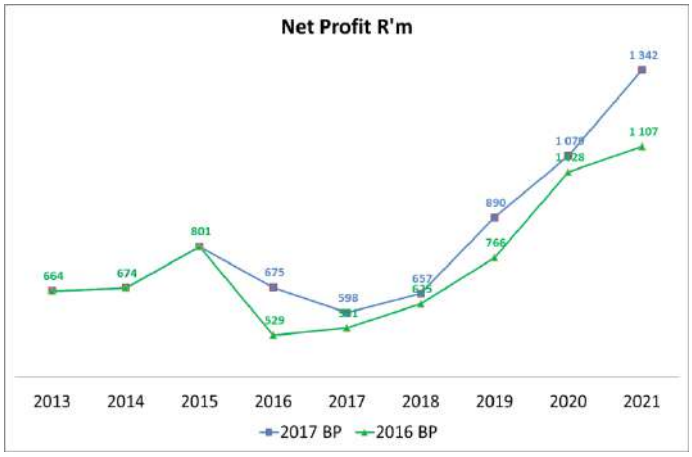
Figure 24.2: Operating Profit



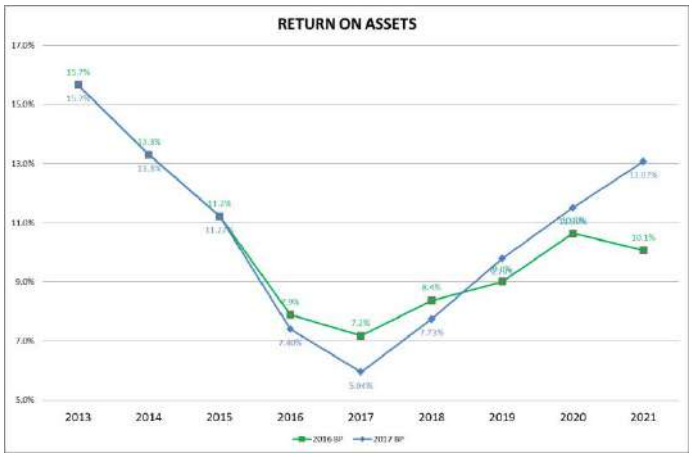
Operating profits is projected to decrease to R584m in 2016 with a further decline noted for 2017, to R548m. The decrease in operating margins is due to increasing cost of sales, higher impairment costs and lower sale volumes.

Figure 24.3: Net Profit



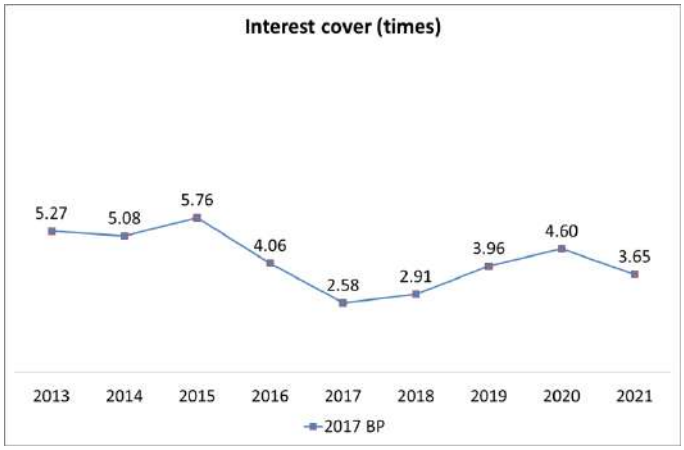
As a result of lower indirect costs including impairments the Net profit level and NP% will be higher than the 2016 BP.

Figure 24.4: Return on assets



The return on assets ratio is expected to decline in 2016 to 7% and further in 2017 to 6%. The low ROA is anticipated due to the intensive capital expenditure programme being implemented over the next 5 years – the returns on these projects only being realised after 5 years.

Figure 24.5: Interest cover

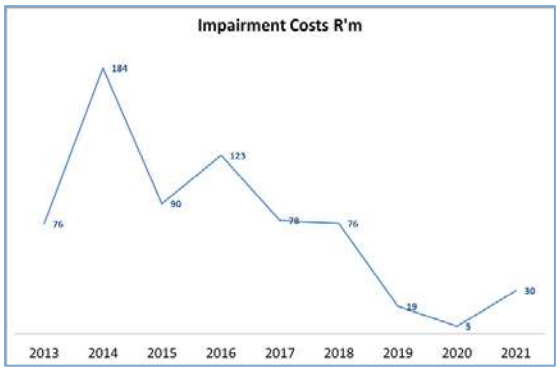


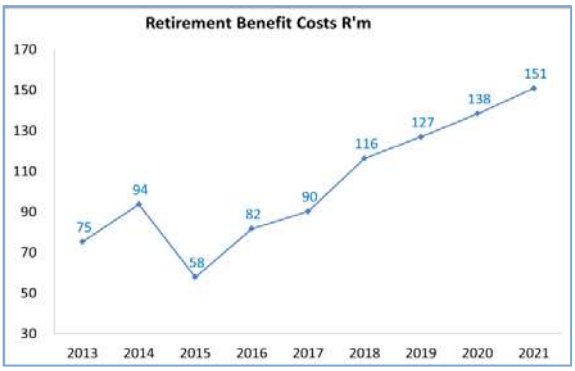
The interest cover ratio over the next 5 years is expected to be within the covenant level of greater than 2.5.

24.1.2 Factors impacting on operating performance

The operating performance of Umgeni Water is being negatively impacted by:

1. Impairment of assets and retirement benefit costs:



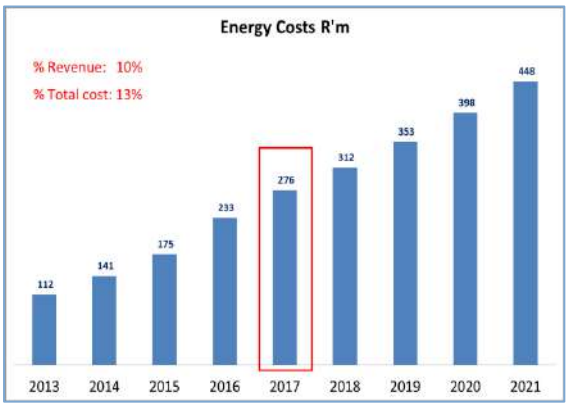


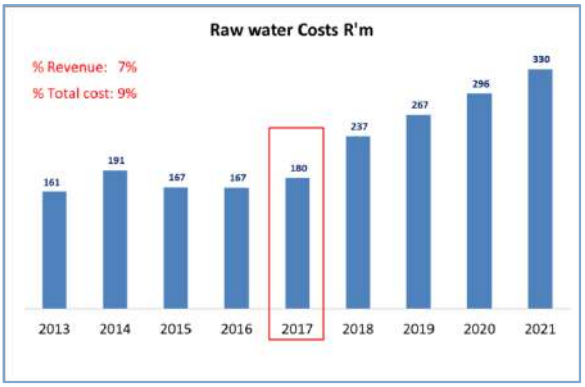
Impairment cost will be 7% of total operating costs in 2016 and 3% in 2017. A total of R332m in impairments will be recognised in from 2016 to 2021. An increase in the impairments may compromise compliance with the interest cover ratio.

The increasing cost of retirement benefit cost is due to the defined benefit pension fund not being converted to a defined contribution fund. Therefore, any deficit in the fund will be funded by the employer.

2. Higher than inflationary increases in the main operating cost drivers

The main operating cost drivers are as follows:





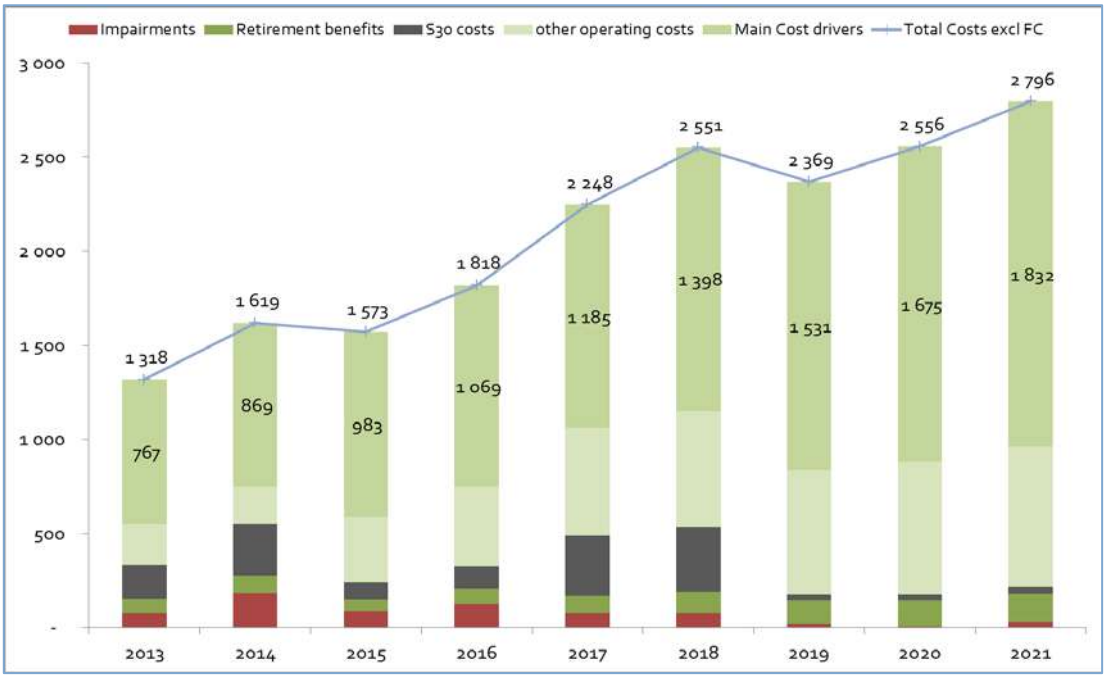
Raw Water will increase by 7.9%% in 2016/17 with the additional cost coming from the Lower Thukela bulk water scheme being commissioned late in 2016.

Chemicals used for water treatment processes is projected to increase by 10.4% in 2015/16 due to an average price increase of 10.5% per annum and an increase in usage of chemicals to maintain raw water quality including the introduction of Lower Tugela scheme. In 2016/17 due to the new schemes coming on line and price increases of chemicals, the cost to UW will increase by 16.9%

Energy costs increase by 32.9% in 2016 and 19% per cent in 2017 due to price increases of 12.7% and 9.4% respectively, together with additional pumping requirements and introduction of new schemes.

Maintenance costs decrease by 5.3% in 2016 due to major renewals undertaken in terms of the entity's asset management plan being capitalised going forward and increase of 16% in 2017 due to establishment at new schemes.

A combined view of the impact of the main cost drivers relative to total costs is shown below.



The ratio of the main cost drivers to total operating costs is predicted to increase from 59% in 2016 to 66% by 2021. This is due to the higher than inflationary increases in the main cost

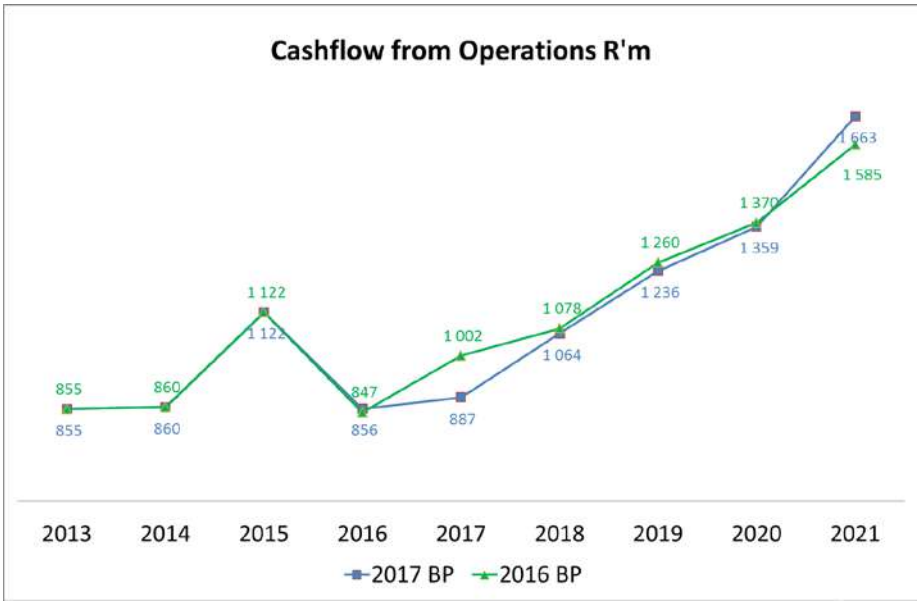
Increase in cost per kl of bulk water sold places pressure on tariffs charged per annum.

Total Bulk Water cost per kl is projected to increase in 2016 by 21% and in 2017 by 18% as follows:

Table 24.1: Cost per kl

Components	2014/2015		2015/2016 Budget		2015/2016		2016/2017	
	Tariff R.c/kl	*Change* %	*Tariff* R.c/kl	*Change* %	*Tariff* R.c/kl	*Change* %	*Tariff* R.c/kl	*Change* %
Direct Costs								
Chemicals	0.101	7%	0.119	18%	0.111	10%	0.144	30%
Depreciation	0.233	13%	0.278	19%	0.293	26%	0.403	38%
Energy	0.345	24%	0.459	33%	0.467	35%	0.563	20%
Maintenance	0.345	19%	0.400	16%	0.337	-3%	0.399	19%
Raw Water	0.374	**-14%**	0.373	**-1%**	0.380	2%	0.419	10%
Staff Costs	0.317	19%	0.371	17%	0.361	14%	0.399	10%
Other direct operating activities	0.063	52%	0.055	-12%	0.052	-17%	0.058	11%
Total Direct Costs	1.779	10%	2.056	16%	2.001	13%	2.385	19%
Indirect Costs								
Overheads	0.422	108%	0.536	27%	0.527	25%	0.633	20%
staff costs	0.555	22%	0.552	-1%	0.586	6%	0.593	1%
Depreciation	0.050	43%	0.097	94%	0.062	24%	0.167	170%
Amortisation	0.017	42%	0.013	-24%	0.016	-6%	0.027	69%
Impairments	0.202	-52%	0.218	8%	0.282	40%	0.183	-35%
Retirement benefits	0.127	-41%	0.193	52%	0.184	45%	0.207	13%
Total Indirect Costs	1.372	3%	1.608	17%	1.656	21%	1.810	9%
Total direct & indirect cost	**3.151**	**7%**	**3.664**	**16%**	3.657	16%	4.195	15%
Finance Costs	(0.301)	62%	0.107	-136%	(0.210)	-30%	(0.116)	-45%
Cost - Bulk Water	**2.850**	**3%**	**3.771**	**32%**	3.448	21%	4.079	18%

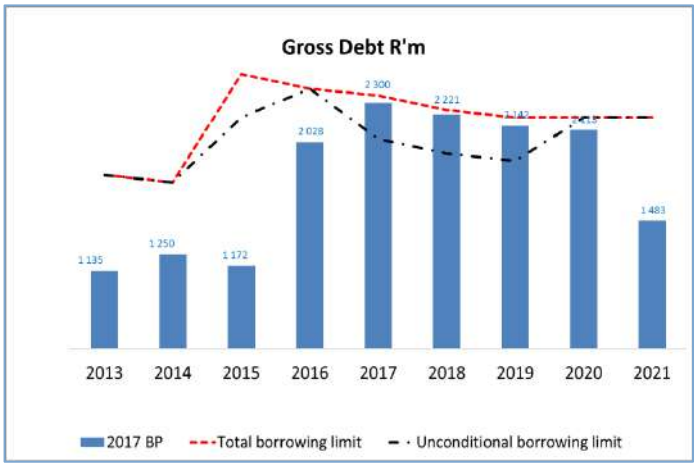
24.2 Cashflow Analysis



Net cash generated from operations is expected to continue its trend in terms of being in excess of R600m. This is due to the increase in operating profit arising from above CPI tariff increases and better cost control. Over the next 5 years, operating cashflow will be increasingly directed toward the capex and operational expenditure cashflow but is insufficient to fund the 2017 requirements, therefore approximately R350m funding will be required.

24.3 Financial Position

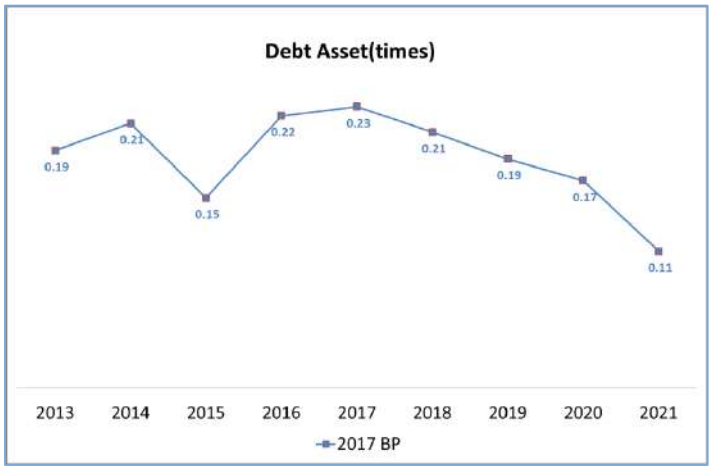
PPE is projected to increase to R8.9bn by 2021 from R5.5bn achieved in 2015. The increase is due to the R3.3bn capital expenditure over the next 5 years offset by R332m impairments from 2016 to 2021.



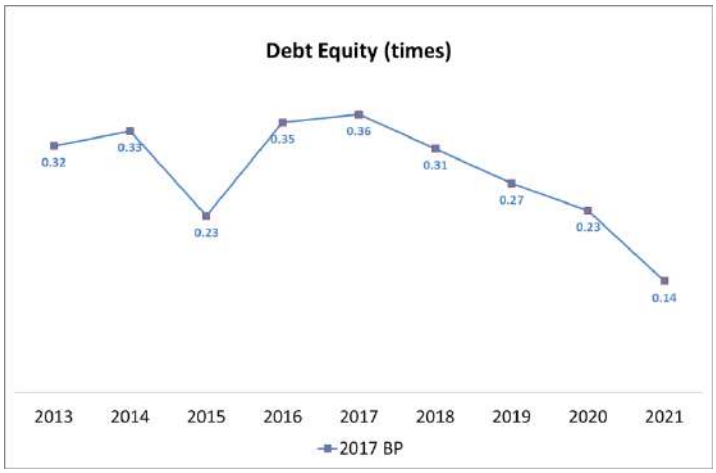
Total borrowings will increase in 2016 and 2017 due to the entity requiring additional financing to fund capex which will result in an increase in gross borrowings to R2.4bn by 2020. Once the UG21 is redeemed in 2021, the entity reverts to a more affordable debt level.

To ensure sufficient liquidity, UW will maintain a liquidity buffer of R200m or more. From 2014, long term investment represents the redemption assets set aside to fund the redemption of the UG21 in 2021. Current investments are held for the funding of operating and capital expenditure requirements.

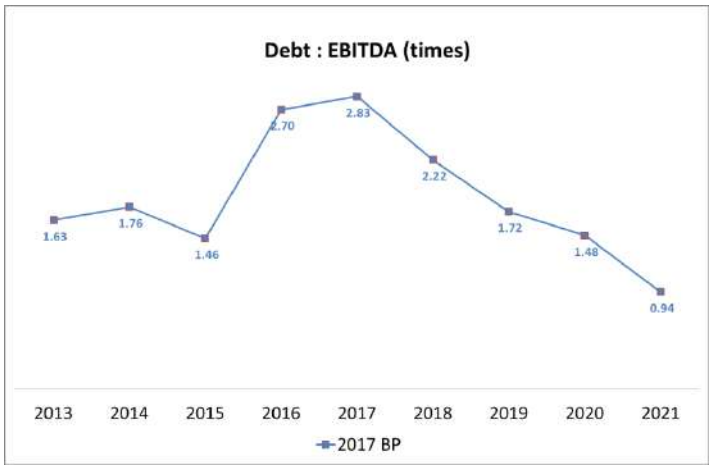
24.4 Debt Management



The ratio of debt to assets is projected to decline favourably to 0.23 in 2017 to 0.11 times in 2021. In the long term the ratio does not look to exceed the target of less than 0.4.



The ratio of debt to equity will decline from 0.36 in 2017 to 0.14 by 2021. The loan covenant requirement with the EIB of less than 0.7 times, will not be breached. This is due to the strong equity base accumulated over the last 10 years.



The ratio of debt to EBITDA ("Leverage ratio") will increase to 2.70 times in 2016 and 2.8 times in 2017 due to new debt in 2016 as well as weak operating margins in 2017. A recovery of the ratio is expected from 2018 onward as EBITDA improves.

24.5 Business Segment Information

Table 24.2: Business segments: Operating Profit

	2015		2016		2017
	R'm		R'm		R'm
Bulk	644	-15%	545	-8%	502
Wastewater	15	51%	30	33%	40
S30	9	-73%	9	-7%	16
TOTAL	**668**	**12%**	**503**	**-25%**	**519**

Bulk Segment

In 2016 the operating profit margin is 15% lower than the prior year owing to lower sales revenue and higher operating costs than 2015. The negative trend continues in 2017 where the operating profit margin declines by 8%.

Wastewater Segment

The bulk wastewater segment is projected to show a 51% improvement in 2016 owing to introduction of new schemes and higher management fee increase for Darvill at 20%. The margin will continue to improve in 2017.

Section 30 Segment

Analysis of S30 segment is shown in Table 24.3.

Table 24.3: Analysis of S30 segment in terms of projects

	FY 2015	FY 2016					FY 2017			
	Actual	Budget	Forecast	Budget Var		Inc / (Dec) F'15	Tariff	Budget	Inc / (Dec) F'16	
	R'000	R'000	R'000	R'000	%	%	R'000	R'000	R'000	%
Revenue	**103 482**	**33 959**	**133 580**	**99 621**	**293.4**	**29.1**	**42 769**	**341 625**	**208 045**	**155.7**
Laboratory Services	2 715	3 296	3 296	-	(0.0)	21.4	3 480	3 513	218	6.6
Research	700	600	1 975	1 375	229.1	182.1	-	-	(1 975)	(100.0)
Scientific & Environmental	36 141	11 147	15 589	4 442	39.9	(56.9)	8 278	13 643	(1 947)	(12.5)
Sanitation	-	-	-	-	-	-	-	-	-	-
Water Infrastructure	47 859	-	91 431	91 431	-	91.0	-	300 411	208 980	228.6
Other	16 067	18 916	18 043	(873)	(4.6)	12.3	18 946	18 043	-	-
O & M	-	-	3 245	3 245	-	-	12 064	6 014	2 769	85.3
Cost of Sales	**93 647**	**28 612**	**122 992**	**(94 380)**	**(329.9)**	**31.3**	**34 987**	**323 630**	**200 637**	**163.1**
Chemicals	-	-	-	-	-	-	-	-	-	-
Energy	-	-	-	-	-	-	2 417	-	-	-
Maintenance	-	-	954	(954)	-	-	3 165	961	7	0.7
Raw water	-	-	-	-	-	-	-	-	-	-
Staff costs	-	-	192	(192)	-	-	1 881	1 892	1 699	884.0
Section 30 activities	93 647	28 612	121 273	(92 660)	(323.8)	29.5	26 407	320 149	198 877	164.0
Laboratory Services	1 353	1 648	1 648	-	-	21.8	1 740	1 757	109	6.6
Research	700	600	1 975	(1 375)	(229.1)	182.1	-	-	(1 975)	(100.0)
Scientific & Enviromental	31 823	9 168	12 442	(3 274)	(35.7)	(60.9)	7 444	11 137	(1 305)	(10.5)
Sanitation	-	-	-	-	-	-	-	-	-	-
Water Infrastructure	45 165	-	88 805	(88 805)	-	96.6	-	290 853	202 048	227.5
Other	14 607	17 197	16 403	793	4.6	12.3	17 223	16 403	-	-
O&M Dams	-	-	-	-	-	-	-	-	-	-
Other direct operating expenses	-	-	573	(573)	-	-	1 117	628	54	9.5
Gross Profit	**9 835**	**5 347**	**10 588**	**5 241**	**98.0**	**7.7**	**7 781**	**17 995**	**7 407**	**70.0**
GP %	**9.5%**	**15.7%**	**7.9%**	**7.8%**		**-1.6%**	**18.2%**	**5.3%**	**-2.7%**	
Other income	**1**	**-**	**-**	**-**	**-**	**(100.0)**	**-**	**-**	**-**	**-**
Administration expenses	**450**	**(0)**	**1 102**	**(1 102)**	**(100.0)**	**145.2**	**2 387**	**1 749**	**647**	**58.7**
Bad Debts	450	-	-	-	-	(100.0)	-	-	-	-
Depreciation	-	-	-	-	-	-	-	-	-	-
Maintenance	-	-	-	-	-	-	46	-	-	-
Staff costs	1 099	1 472	-	1 472	100.0	(100.0)	-	-	-	-
Other Admin	(1 099)	(1 472)	1 102	(2 574)	174.9	(200.3)	2 341	1 749	647	58.7
Profit/(Loss) from Operations	**9 387**	**5 347**	**9 485**	**4 139**	**77.4**	**1.1**	**5 394**	**16 246**	**6 760**	**71.3**
Net Finance charges	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**
Profit/(Loss) for the year	**9 387**	**5 347**	**9 485**	**4 139**	**77.4**	**1.1**	**5 394**	**16 246**	**6 760**	**71.3**
Net Profit %	**9.1%**	**15.7%**	**7.1%**	**8.6%**		**-2.0%**	**12.6%**	**4.8%**	**-2.3%**	

24.6 Sensitivity Analysis

The occurrence of each of the following mutually exclusive scenarios during the 5 year planning period:

1. Lower sales volumes;

2. Real tariff increases less than 3%;

3. Increase in operating costs trend not identified on time; and

4. Increase in capex expenditure not identified on time;

Will result in higher debt levels which could lead to a breach of the interest cover ratio covenant in 2017 and 2018 thus making the loans from the EIB callable at that time.

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Chapter 25: Analysis of Financial Risk

Improving Quality of Life and Enhancing Sustainable Economic Development

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25.1 Approach

Umgeni Water assumes a low tolerance approach to risk. The risks described in this section have been identified as either strategic financial risks and or treasury risks that are managed proactively to ensure timely mitigation.

25.2 Ability to secure funding to meet developmental goals

This risk arises from the inability to secure the required project grant funding which may delay the implementation of projects.

This risks impacts on the organisational strategy to *increase services and customers, increase customer and stakeholder value, improve and Increase infrastructure assets and increase mobilisation of funds.*

Mitigation approach

Umgeni Water manages this risk as follows:

- Business Plan for funding prepared well ahead of project implementation.
- Regular meetings with DWS on funding requirements.
- Transparent Tariff consultation process.
- Project evaluations to assess the optimal funding mix.

25.3 Sustainable Tariff

An unsustainable tariff will affect Umgeni Water's ability to fund future capital expenditure programmes and undertake operational expansion. This risk impacts on the organisation's ability to deliver on its financial strategy to remain a financially viable entity and improve on financial ratios.

Mitigation approach

- Umgeni Water monitors and reports on cash flow funding requirements and maintains optimal debt levels and has a transparent and formalised tariff policy embedded in a robust tariff model. The organisation undertakes water demand planning, liaises with stakeholders to obtain commitment to the capital expenditure programme and subsequently undertakes project evaluation to assess sustainability of the programme. The organisation pro-actively manages the impact of non-viable projects and expansion plans to ensure the relevant infrastructure funding mix is in place.

25.4 Liquidity Risk

Liquidity risk will result in Umgeni Water being unable to raise sufficient funds in the required currency and at the correct time to meet its financial obligations. This will impact on the organisation's ability to achieve its financial strategy of Financial Viability and sustainable debt.

Mitigation approach

To mitigate liquidity risk, Umgeni Water has:

- Short-term funding facilities to meet on-going cash requirements for which facility options are in place with four banks (FNB, Nedbank, ABSA, Investec).
- A Domestic Medium Note (DMTN) Programme has been established allowing for longer dated debt such as bonds to be issued with relative ease;

- Provided for a R 200 million cash buffer investment to cater for delayed payments by its customers;
- A redemption strategy framework, which provides guidelines for managing the risks associated with refinancing large debt maturities (such as the UG21 bond). The build-up in the redemption portfolio over a three-year period is: 10 % of the capital redemption value three years before maturity, 40 % two years before maturity, 75 % a year before maturity, and the balance of 25 % is funded during the year of maturity; and
- Borrowing limits approved by National Treasury, which are currently: R 1,800million for F'13, R 1 750million for F'14 and R2 500million for F'15 of which R2 200million is confirmed and R300million is unconfirmed.

25.5 Credit Investment Risk

Credit investment risk will result in Umgeni Water being exposed to counter-party failure. This has the potential to impact on the organisation's ability to maintain, sustainable debt level and improve financial ratios

Mitigation approach

Umgeni Water will:

- According to its Investment Policy, mitigate credit risk by conducting transactions only with counter parties and issuers who satisfy soundly based and acceptable assessment processes, and only after formal limits have been set. In addition, same-day settlement limits will be set wherever possible and/or strict settlement procedures set and adhered to, and
- Continue monitoring of the credit quality of counterparties.

25.6 Interest rate risk

The main risk driver comes from changes in the market place, whilst a minor driver comes from changes in the capital structure from loan servicing and new loan generation. Unanticipated increases in interest costs could result in an increase in the funding requirements.

Mitigation approach

Umgeni Water will:

- Maintain a ratio of 70% fixed to 30% floating interest rate debt to manage the impact of volatility of changes in interest rates on cash flow and net profit.
- Use an interest-rate-hedging instrument for a maturity period that matches the underlying re-pricing risk, which is in line with Umgeni Water's overall interest rate risk profile.
- Depending on the business and economic environment prevailing, minimum hedging level for interest rate risk should be 30% to 40% of the underlying risk.

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Chapter 27: Analysis of Risk

Improving Quality of Life and Enhancing Sustainable Economic Development

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27.1 Integrated Risk Management

Umgeni Water defines risk as all sources of uncertainty that could, positively or negatively, affect the organisation's ability to achieve its strategic objectives and outcomes. Risk management in the organisation is guided by an Integrated Risk Management Framework (Figure 27.1). Umgeni Water's risk management process is aligned to strategy, which ensures a focused and integrated process of risk management in the organisation.

Integrated Risk Management Governance structure

- The **Board** is ultimately accountable for integrated risk management, providing guidance and direction and is kept informed of the status and effectiveness of the risk management system.

- The **Audit Committee** monitors the status of strategic risks quarterly and the overall effectiveness of the organisation's risk management function and its implementation by management and reports the status to the Board.

- The **Corporate Risk Committee**, which comprises a member of the Audit Committee, the Chief Executive, the Executive Management, the Company Secretary, Internal Audit Manager and the Risk Manager assists the Audit Committee in discharging its duties relating to implementation of the integrated risk management framework by monitoring the status of strategic and operational risks and making recommendations on matters of policy and strategy based on best practise such as SANS 31000: Risk Management-Principles and guidelines and King III prior to approval by the Board, via the Audit Committee.

- The **Management Risk Committee**, which comprises the Executive and Senior Managers ensures implementation of the integrated risk management framework in compliance with all applicable legal and regulatory requirements and that that there is management of risk at the operational levels of the organisation. Risks that potentially affect the organisation's ability to meet it objectives are escalated to the Corporate Risk Committee.

- The **Executive** and **Senior Management,** supported by Divisional Risk Champions integrate risk management into their day-to day management processes by undertaking risk assessments at a departmental and divisional level to continually identify emerging risks, review, treat, monitor existing risks and report the status of the risks assigned to them.

The organisation's strategic risks are shown is **Table 27.1** and show the link to strategic perspectives, objectives and outcomes and how these have been treated / mitigated.

Of a total of ten (10) strategic risks, 70% (7) have been treated to a level equal to or above 70% (good) overall control strength. One strategic risk is rated as a high risk and is outside the organisation's risk appetite and tolerance level, the balance are rated as low with five being outside the organisation' s risk appetite but within risk tolerance.

Financial risks are detailed in the financial section of this Corporate Plan.

Emerging Risks

In line with the regular revision of strategy and as required by governance frameworks, the Board, assisted by its Sub-committees, Executive and Senior Management regularly review the internal and external landscape that affect Umgeni Water's risk profile with a view to identifying and maintaining a watching brief on possible emerging risks. Emerging risks refer to those uncertainties that have the potential to affect the organisation meeting its objectives but for which there is insufficient information to fully understand. These risks will be monitored on an on-going basis. The following risk has been classified as an emerging risk:

- Climate change

Table 27.1 Umgeni Water Strategic Risks as at March 2016

Risk #	Risk Name, Score and Status	Cause, Context and Treatment	Main Strategic, Perspective, Strategic Objectives and Outcomes Impacted
1	**Short-term Water resources availability** • Overall Control Strength: Poor 40% • Severity: Catastrophic: 400 • Probability: 91% Virtually certain and/or already occcurred • Risk Owner: GM Engineering & Scientific Services Score 364 High **Risk Appetite and Tolerance** • Outside Appetite • Outside Tolerance	Cause & Context: Coastal dam levels are such that there is a threat of non-supply if mitigation measures are not put in place (Restrictions, emergency schemes *Treatment Approach: Short-term augmentation of systems. Water resource and demand management initiatives.Review of water resources mix including reuse and desalination. Inter-organisational drought management team. Continued use of emergency schemes: Uthongati to Hazelmere, Hlimbitwa, Mpambanyoni and Ixopo. Implementation of emergency scheme at Applesbosch.*	**Customer and Stakeholder Perspective:** SO1: Increase services and customers SO2: Increase customer and stakeholder value **Organisational Capacity Perspective:** SO8: Increase water resources sustainability **Outcomes:** Water Resources Adequacy Customer Satisfaction Stakeholder Understanding and Support Community and Environmental Sustainability.
2	**Infrastructure investment to meet service delivery mandate and growth plans.** • Overall Control Strength: Good 78% • Severity: Moderate: 19 • Probability: 70% Likely &/or could occur within 1 year • Risk Owner: GM Engineering & Scientific Services Score 13.3 Low **Risk Appetite and Tolerance** • Outside Appetite • Within Tolerance	Cause & Context: Alignment and prioritisation of the infrastructure plan and budget to increase capacity to meet demand, improve service levels and for growth. *Treatment Approach: Critical supply infrastructure is annually identified, aligned, prioritised, funded and implemented as part of the organisation's capital infrastructure programme linked to strategy.*	**Customer and Stakeholder Perspective:** SO1: Increase services and customers. SO2: Increase customer and stakeholder value. **Organisational Capacity Perspective:** SO7: Improve and increase infrastructure assets. **Outcomes:** Infrastructure Stability Product Quality Customer Satisfaction Stakeholder Understanding and Support Community and Environmental Sustainability.
3	**Performance of bulk wastewater infrastructure assets.** • Overall Control Strength: Good 75% • Severity: Moderate-Low: 15 • Probability: 72% Likely &/or could occur within 1 year • Risk Owner: GM Operations Score 10.8 Low **Risk Appetite and Tolerance** • Outside Appetite • Within Tolerance	Cause & Context: Process failures, capacity and technology constraints, poor influent quality- illegal discharges and stormwater infiltration resulting in non-compliance with effluent discharge requirements. *Treatment Approach: Initiatives planned and implemented at each WWTW and critical refurbishment and upgrades of major works included and implemented as part of capital programme.*	**Customer and Stakeholder Perspective:** SO2: Increase customer and stakeholder value. **Organisational Capacity Perspective:** SO7: Improve and increase infrastructure assets. **Outcomes:** Infrastructure Stability Product Quality Customer Satisfaction Stakeholder Understanding and Support Community and Environmental Sustainability.
4	• **Breach of materiality and significance framework** • Overall Control Strength: Reasonable 60% • Severity: Minor: 5 • Probability: 80% Likely &/or could occur within 1 year • Risk Owner: GM Finance Score 4.0 Low **Risk Appetite and Tolerance** • Outside Appetite	Cause & Context: Irregular expenditure occurring as a result of lack of understanding and adherence to SCM policies and procedures. *Treatment Approach: BAC oversight, SCM policies and procedures together with regular Internal Audits.*	**Customer and Stakeholder Perspective:** SO6: Improve service delivery systems. **Outcomes:** **Operational optimisation** **Operational reiliency**

Risk #	Risk Name, Score and Status	Cause, Context and Treatment	Main Strategic, Perspective, Strategic Objectives and Outcomes Impacted
	• Within Tolerance		
5	**Sustainable Tariff** • Overall Control Strength: Good 70% • Severity: Minor-High: 7 • Probability: 51% Even probability &/or could occur within 1- 2 years • Risk Owner: GM Finance Score 3.6 Low **Risk Appetite and Tolerance** • Within Appetite • Within Tolerance	Cause & Context: Constraints on ability to charge a tariff that will ensure financial viability and protection of operating cash flows against operating risk including low volume growth, above inflation input costs, significant capital investments with low returns and high impairment costs. *Treatment Approach: Tariff policy ensures transparency and formal tariff process. Scenario analysis on the impact of operational risk factors on financial viability. On-going optimisation of funding mix from tariff, grants and borrowing for capital programme. Enhanced stakeholder engagement to secure grant funding for developmental projects.*	**Customer and Stakeholder Perspective:** SO1: Increase services and customers. SO2: Increase customer and stakeholder value. **Financial Perspective:** SO4: Increase fi nancial sustainability. **Organisational Capacity Perspective:** SO7: Improve and increase infrastructure assets. **Outcomes:** Financial Viability Infrastructure Stability Customer Satisfaction Stakeholder Understanding and Support Community and Environmental Sustainability.
6	**Protection and safeguarding of assets.** • Overall Control Strength: Reasonable 65% • Severity: Minor: 5 • Probability: 65 % Even probability &/or could occur within 1- 2 years • Risk Owner: GM Corporate Services Score 3.3 Low **Risk Appetite and Tolerance** • Outside Appetite • Within Tolerance	Cause & Context: Illegal settlements and unauthorised construction on properties and servitudes. Umgeni Water's right of access limited. General encroachment and impact on assets. Increased vandalism and theft especially in remote areas. Ineffective disposal management processes. *Treatment Approach: Implementation of servitude management procedure. Safety and security measures to protect staff, assets and public. Properties and servitudes maintained and monitored. Replacement and strengthening of infrastructure. Disposal of property no longer in use.*	**Customer and Stakeholder Perspective:** SO2: Increase customer and stakeholder value. **Organisational Capacity Perspective:** SO7: Improve and increase infrastructure assets. **Outcomes:** Infrastructure Stability Stakeholder Understanding and Support Community and Environmental Sustainability.
7	**Ability to deliver projects on time and within budget.** • Overall Control Strength: Good 70% • Severity: Minor: 5 • Probability: 51% Even probability &/or could occur within 1- 2 years • Risk Owner: GM Engineering & Scientific Services Score 2.5 Low **Risk Appetite and Tolerance** • Within Appetite • Within Tolerance	Cause & Context: Actual cost and delivery time of projects may significantly differ from approved plans. *Treatment Approach: Alignment of effective engineering, procurement and construction management (EPCM) process within the specified time-frames.*	**Customer and Stakeholder Perspective:** SO1: Increase services and customers. SO2: Increase customer and stakeholder value. **Organisational Capacity Perspective:** SO7: Improve and increase infrastructure assets. **Outcomes:** Infrastructure Stability Product Quality Customer Satisfaction Stakeholder Understanding and Support Community and Environmental Sustainability.
8	**Ability to secure funding to meet developmental goals.** • Overall Control Strength: Good 80% • Severity: Minor: 5 • Probability: 40 % Fairly poor &/or could possibly occur within 2 years • Risk Owner: GM Finance Score 2 Low **Risk Appetite and Tolerance** • Within Appetite • Within Tolerance	Cause & Context: Inability to secure required project grant funding. Delayed receipt of funding resulting in projects not being delivered on time. *Treatment Approach: Enhanced stakeholder engagement to secure grant funding for developmental projects. On-going optimisation of funding mix from tariff, grants and borrowing. Dis- establishment of UW- inability to raise funding due to required borrowing limits not being approved and perceived credit risk of UW by investors*	**Customer and Stakeholder Perspective:** SO1: Increase services and customers SO2: Increase customer and stakeholder value **Financial Perspective:** SO3: Increase mobilisation of funds **Organisational Capacity Perspective:** SO7: Improve and increase infrastructure assets **Outcomes:** Infrastructure Stability Customer Satisfaction Stakeholder Understanding and Support Community and Environmental Sustainability Financial Viability.
9	**Long-term water resources availability** • Overall Control Strength: Good 70% • Severity: Minor: 4	Cause & Context: Mgeni, Hazelmere, South Coast & Ixopo systems have insufficient capacity to meet projected demand.	**Customer and Stakeholder Perspective:** SO1: Increase services and customers SO2: Increase customer and stakeholder value **Organisational Capacity Perspective:**

Risk #	Risk Name, Score and Status	Cause, Context and Treatment	Main Strategic, Perspective, Strategic Objectives and Outcomes Impacted
	• Probability: 45% Fairly poor and/or could occur within 2 years • Risk Owner: GM Engineering & Scientific Services Score 1.8 Low **Risk Appetite and Tolerance** • Outside Appetite • Within Tolerance	*Treatment Approach: Integrated planning and implementation for short, medium and long-term augmentation of systems with stakeholders. Water conservation and demand management initiatives. Review of water resources mix including reuse and desalination.*	SO8: Increase water resources sustainability **Outcomes:** Water Resources Adequacy Customer Satisfaction Stakeholder Understanding and Support Community and Environmental Sustainability.
10	**Performance of bulk potable water infrastructure assets.** • Overall Control Strength: Excellent 95% • Severity: Minor-Low: 3 • Probability: 35 % Doubtful &/or unlikely to occur within next 2 years Risk Owner: GM Operations Score 1 Low **Risk Appetite and Tolerance** • Within Appetite • Within Tolerance	Cause & Context: Process failures, capacity and technology constraints at water treatment plants resulting in final water non-compliance with potable water standard. *Treatment Approach: Initiatives planned and implemented at each WTW and critical refurbishment and upgrades of works included and implemented as part of asset programme.*	**Customer and Stakeholder Perspective:** SO2: Increase customer and stakeholder value. **Outcomes:** Product Quality Customer Satisfaction Stakeholder Understanding and Support Score Community and Environmental Sustainability.

27.2 Key Internal Audit Issues

Umgeni Water has eighteen (18) unresolved internal audit findings as at 31 March 2016. Details as per Table 27.2.

- One (1) is categorised as a High finding. Umgeni Water is currently upgrading the Darvill WWTW with completion scheduled for June 2016.
- Ten (10) findings have been categorised as medium risk (significant) in nature. All of these have been allocated to a manager with an action plan and action date for resolution.
- Seven (7) findings which are outstanding are categorised as low risk (housekeeping) in nature.

Internal Audit is satisfied that all control deficiencies are adequately elevated at the correct levels withing Umgeni Water in accordance with severity and continues to monitor the resolution of control deficiencies on an on-going basis.

IRM Rating		Time-frame
🔴	High	Action to be taken immediately; within 1 month
🟡	Medium	Action to be taken within 3 months
	Low	Action to be taken within 1 year or on-going as part of the management system

Table 27.2 Umgeni Water Internal Audit Findings as at 31 March 2016

#	Finding		Rating	Comment	Progress
1	Servitude Management	The finding relates to Servitude Database not updated and maintained.	🟡	**Due date: 31 Oct 2015** In progress.	Umgeni Water is installing a GIS Software Tool to improve servitude management. This has started and is partially complete. **New date: 30 Jun 2016**
2	Servitude Management	The finding relates to ineffective servitude monitoring.	🟡	**Due date: 30 Sep 2015** In progress	Umgeni Water has drafted a Policy and TOR for a Servitude Management Committee. This is being reviewed for finalisation. **New date: 30 Jun 2016**
3	Servitude Management	The finding relates to lack of terms of reference for the servitude management committee.	🟡	**Due date: 30 Sep 2015** In progress.	Umgeni Water has drafted a TOR for a Servitude Management Committee. This is being reviewed for finalisation. **New date: 30 Jun 2016**
4	Servitude Management	The finding relates to gaps noted in the servitude management procedure manual.	🟡	**Due date: 30 Sep 2015** In progress.	The servitude management procedure manual will be reviewed and finalised. **New date: 30 Jun 2016**
5	Contract Management	The finding relates to gaps in the contract management manual.	🟡	**Due date: 29 Feb 2016** In progress.	Umgeni Water is in the process of amending the manual to close the gap. **New date: 30 Jun 2016**
6	Supply Chain Management	The finding relates to non-adherence to terms and conditions of a service level agreement.	🟡	**Due date: 31 Dec 2015** In progress.	Finding will be reassessed by 30 June 2016. **New date: 30 Jun 2016**
7	Supply Chain Management	The finding relates to policies and procedures manuals not reviewed and updated timeously.	🟢	**Due date: 30 Jun 2015** In progress.	The procedures for 2015/2016 are currently being reviewed. **New date: 30 Jun 2016**
8	Supply Chain Management	The finding relates to ineffective procurement planning.	🟡	**Due date: 30 Jun 2015** In progress.	SCM Operating Plan to be developed and implemented. **New date: 30 Jun 2016**
9	Supply Chain Management	The finding relates to conflict of interest – awards to persons in service of the state and close family members.	🟢	**Due date: 31 Dec 2015** In progress.	Finding will be reassessed by 30 June 2016. **New date: 30 Sep 2016.**
10	Business Continuity Management (BCM)	The finding relates to: Business Continuity Strategy not updated / aligned to Crisis Management Plan, Divisional BCM	🟢	**Due date: 31 Mar 2016** In progress.	Umgeni Water has development a training schedule for implementation in 2016/2017. Update to the BCM Strategy has been deferred to 2016/2017, following the

#	Finding		Rating	Comment	Progress
		Plans and the BCM Policy, and Lack of formalised training BCM programme.			completion of the SAP ERP project which may impact on the BCM Strategy. **New date: 30 Jun 2016**
11	Information Security Management	This finding relates to inadequate incident management process related to surveillance information and data.		**Due date: 30 Nov 2015** In progress.	Umgeni Water is in the process of updating its CCTV system, but in the interim will back up surveillance data and restrict access to surveillance tapes. **New date: 30 Jun 2016**
12	Information Management	The finding relates to the ICT Steering Committee not holding meetings.		**Due date: 31 Dec 2015** In progress.	The next ICT Steering Committee Meeting is scheduled for May 2016. **New date: 30 Jun 2016**
13	Legal Compliance Management	The finding relates to compliance risk assessment not being conducted in the financial period under review.		**Due date: 31 Jul 2015** In progress.	Umgeni Water is in the process of compiling a Compliance Risk Management plan to address this. **New date: 30 Jun 2016**
14	Performance Management	The finding relates to key performance indicators not being are not well defined.		**Due date: 31 Mar 2016** Open	This will be addressed with review of Umgeni Water 2016/2017 KPIs definitions document. Scheduled for finalisation by June 2016. **New date: 30 Sep 2016**
15	Safeguarding of Assets	The finding relates to inadequate controls in place to ensure completeness of assets bought through Operating Expenditure		**Due date: 30 Jun 2016** In progress.	Umgeni Water will address this with the current SAP ERP implementation, scheduled to go live on 4 Jul 2016. **New date: 30 Sep 2016**
16	Human Resources / Payroll	The finding relates to inaccuracy of the HR master data.		**Due date: 30 Jun 2016** In progress.	Umgeni Water will address this with the current SAP ERP implementation, scheduled to go live on 4 Jul 2016. **New date: 30 Sep 2016**
17	Supply Chain Management	The finding relates to PFMA S51(1)(a)(iii) - Supplier database not used on a rotation basis.		**Due date: 30 Jun 2016** In progress.	Umgeni Water will address this with the current SAP ERP implementation, scheduled to go live on 4 Jul 2016. **New date: 30 Sep 2016**
18	Wastewater Quality Compliance	The finding relates to non-compliance to DWS licence and authorisation limits for the Darvill WWTW.		**Due date: 30 Jun 2016** In progress.	Umgeni Water is currently upgrading the Darvill WWTW with completion scheduled for June 2016. **New date: 30 Jun 2016**

27.3 Compliance Management

In the previous period Umgeni Water developed a Compliance Framework and determined its Compliance Universe. In addition a formal organisation-wide compliance register has been developed together with individual divisional compliance registers. These registers will be consistently used as the basis for reporting compliance in a structured manner for this Corporate Plan period.

27.4 Contingent Liabilities

- **Collateral**
  Collateral security is given to certain financial institutions in respect of mortgage loans advanced to employees under the home ownership scheme.
  This amount is Rnil for 2016/17.

- **Guarantees**
  Guarantees are given by certain financial institutions in respect to payments to utility service providers.
  This amount is R0.822million for 2016/17.

Figure 27.1: Umgeni Water Integrated Risk Management Framework

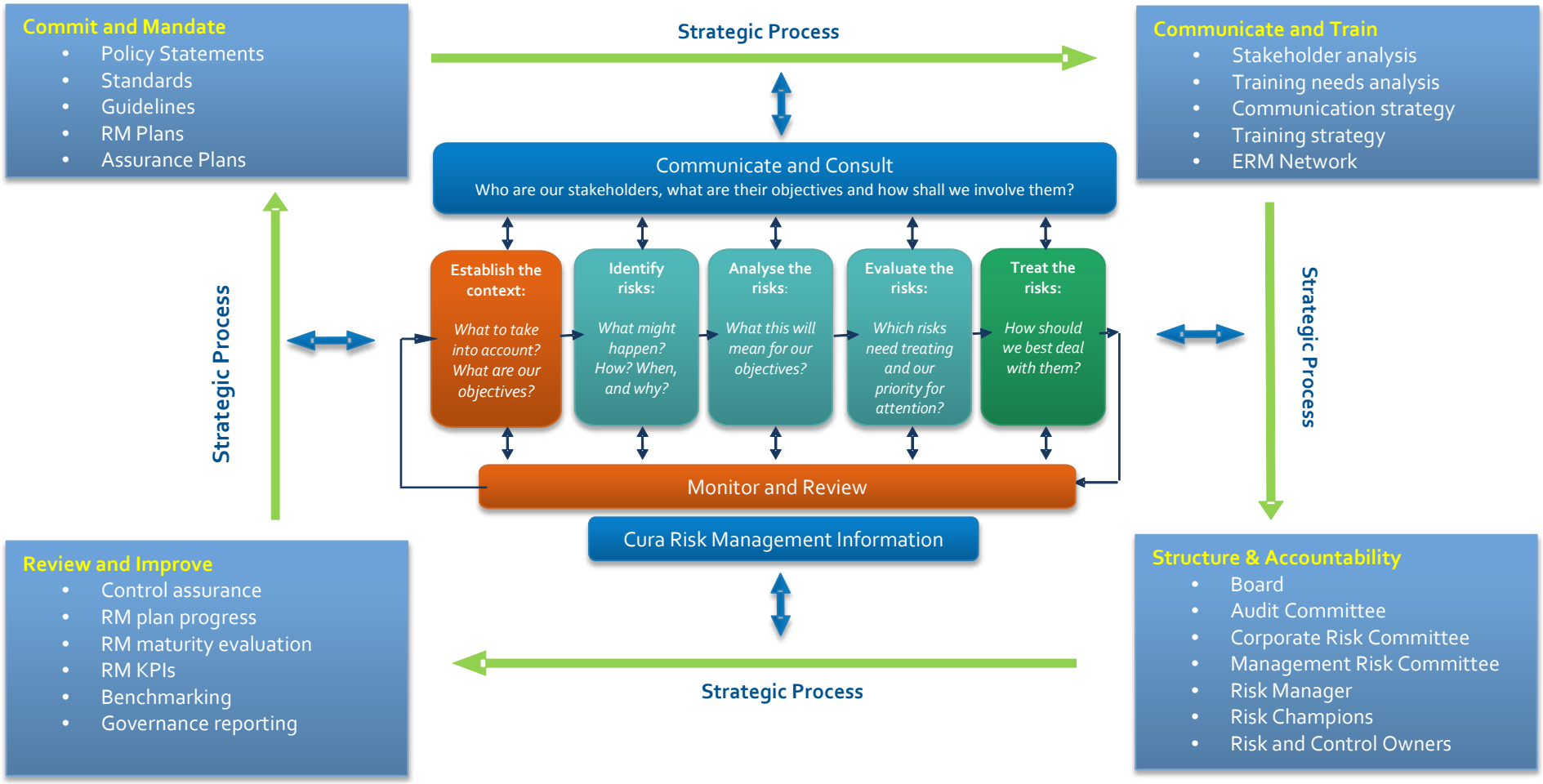
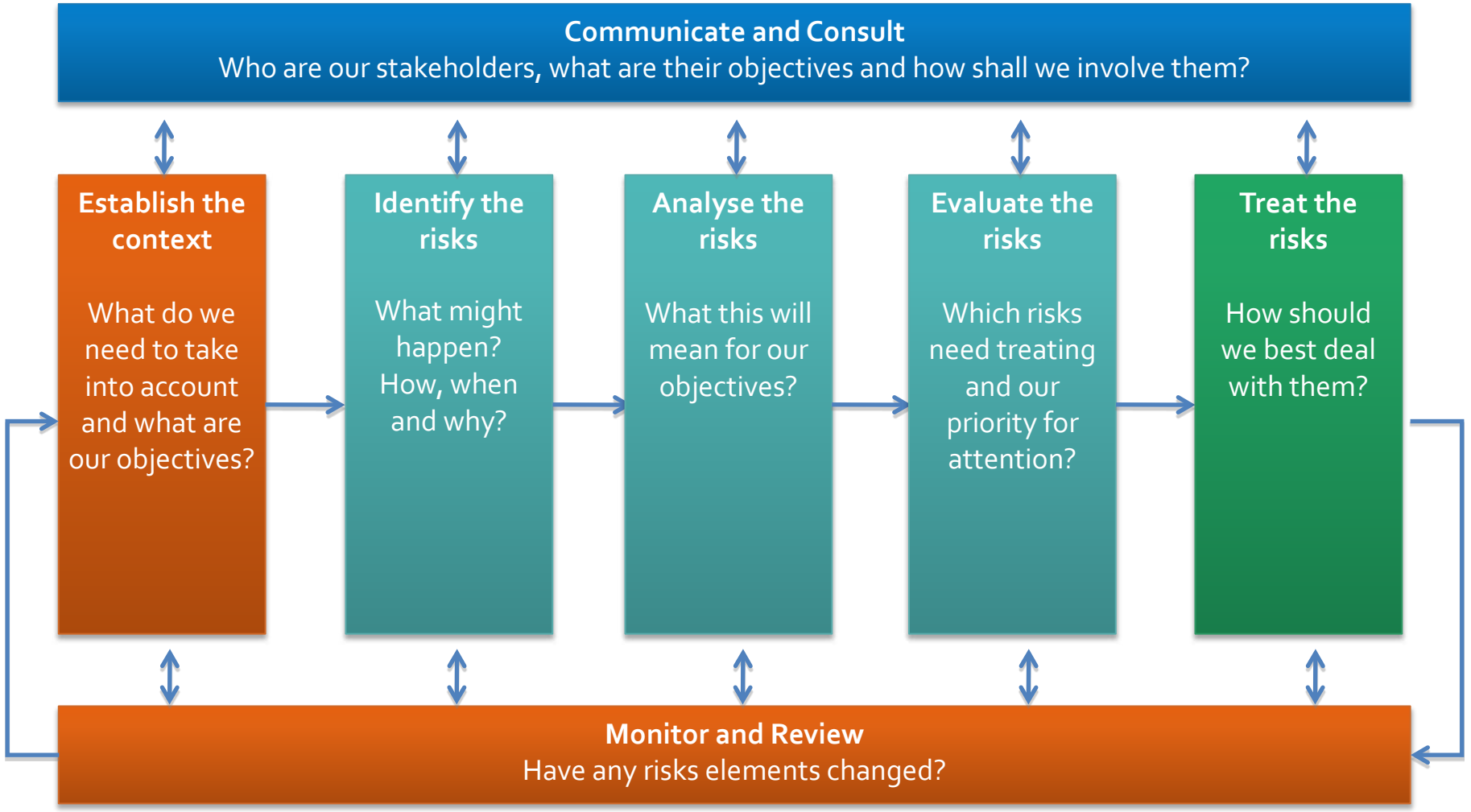


Figure 27.2: Umgeni Water IRM Process



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28 Fraud Prevention Plan

Contents

28.1 Background

The King III Code on Corporate Governance for South Africa ("King III") and the Companies Act No. 71 of 2008 obliges all state-owned enterprises to establish a Social and Ethics Committee, the functions of which includes:

- Monitoring the organisation's activities regarding prevailing codes of best practice,
- Promotion of equality,
- Prevention of unfair discrimination, and
- Eliminating corruption.

In line with this, Umgeni Water has in place a fully functional Ethics Committee. The Committee has a broad mandate to promote ethical behaviour, which includes preventing incidences of fraud, bribery and other corrupt activities. The committee further looks at all aspects of the ethics relating to the triple bottom line, i.e. Environmental, Financial and Social Ethics.

Umgeni Water addresses fraud specifically through an Integrated Fraud Management Framework managed by five guiding principles.

28.2 Principle 1 - Fraud Governance Structure

The fraud governance structure is the Ethics Committee, composed of:

- **Executive Management** (prescribed officers),
- A **Non-Executive Director** – who is not involved in the day to day running of the business,
- An **Independent Chairperson** - who is neither a member of management nor a member of the Board, and
- Members, including a **Board** member, **Managers** and **Organised Labour**.
- The Ethics Committee accounts to the Board, through the **Audit Committee**. The Audit Committee is mandated to achieve the highest level of financial management, accounting and reporting to the shareholder. The Audit Committee guided by its charter, sets out its responsibilities regarding risk management and specifically has oversight of financial reporting risks and internal financial controls as well as fraud and IT risks as they relate to financial reporting.
- Matters that fall within its competence are subjected to both **Internal** and **External Audit** as part of the organisation's combined assurance framework.

The Board of Umgeni Water is committed to sound governance and manages fraud risks by ensuring that written policies and procedures are in place to manage fraud risk. A fraud risk management framework is in place to convey the expectations of the Board and senior management regarding managing fraud risk. The approved fraud prevention policy has the following objectives:

- Promote standards of honest and fair conduct,
- Prevent fraud and corruption,
- Detect and investigate fraud and corruption,
- Take appropriate action against offenders,
- Recover any losses, and
- Maintain strong systems of internal control.

Expectations of the Board and senior management regarding managing fraud risk are communicated.

28.3 Principle 2 - Fraud Risk Assessments

The Board has developed and approved a comprehensive risk management framework that articulates the risk management mandate of the Board, its committees and management to formally conduct and review risk assessments, including any fraud risks faced by the organisation. High fraud risks are managed with appropriate mitigation to increase the control strengths.

Fraud risk exposure will continue to be assessed as part of the implementation plan.

28.4 Principle 3 - Fraud Prevention Plan and Implementation Plan

Umgeni Water's Code of Ethics establishes a set of principles to promote and encourage ethical behaviour and decision making by all employees, board members and stakeholders.

This regulates, inter alia

- Integrity in the workplace,
- Conflicts of interest,
- Bribery and Corruption,
- Information and use of Umgeni Water property,
- Gifts and entertainment,
- Human Rights and Dignity,
- Corporate Governance,
- Suppliers and Business Partners,
- Customers and other stakeholders,
- Corporate Social Investment, and
- Integrity with regard to the environment.

Umgeni Water has aligned its Fraud Implementation plan, which also has well-established systems of delegation of authority, procurement and recruitment processes, with the new Code of Ethics as indicated in Table 28.1.

28.5 Principles 4 and 5: Fraud Detection and Investigation - Anonymous Hotline Facility

Umgeni Water uses its external whistle-blowing hotline service managed by an external service provider as means of fraud detection. This 24 hour - 365 day facility provides an anonymous and confidential communication channel for all stakeholders to report suspicions of fraud or otherwise unethical conduct.

All hotline calls are investigated and appropriately followed through using a hotline protocol to ensure that all calls received are dealt with in a transparent and consistent manner. Trends and information of the hotline calls are further used to improve internal controls. Umgeni Water endeavours to create and maintain awareness of this facility and ensure that the number is adequately advertised by means of posters, intranet, staff information and induction sessions, supplier forums as well as and other means deemed effective and appropriate.

28.6 Fraud Implementation Plan

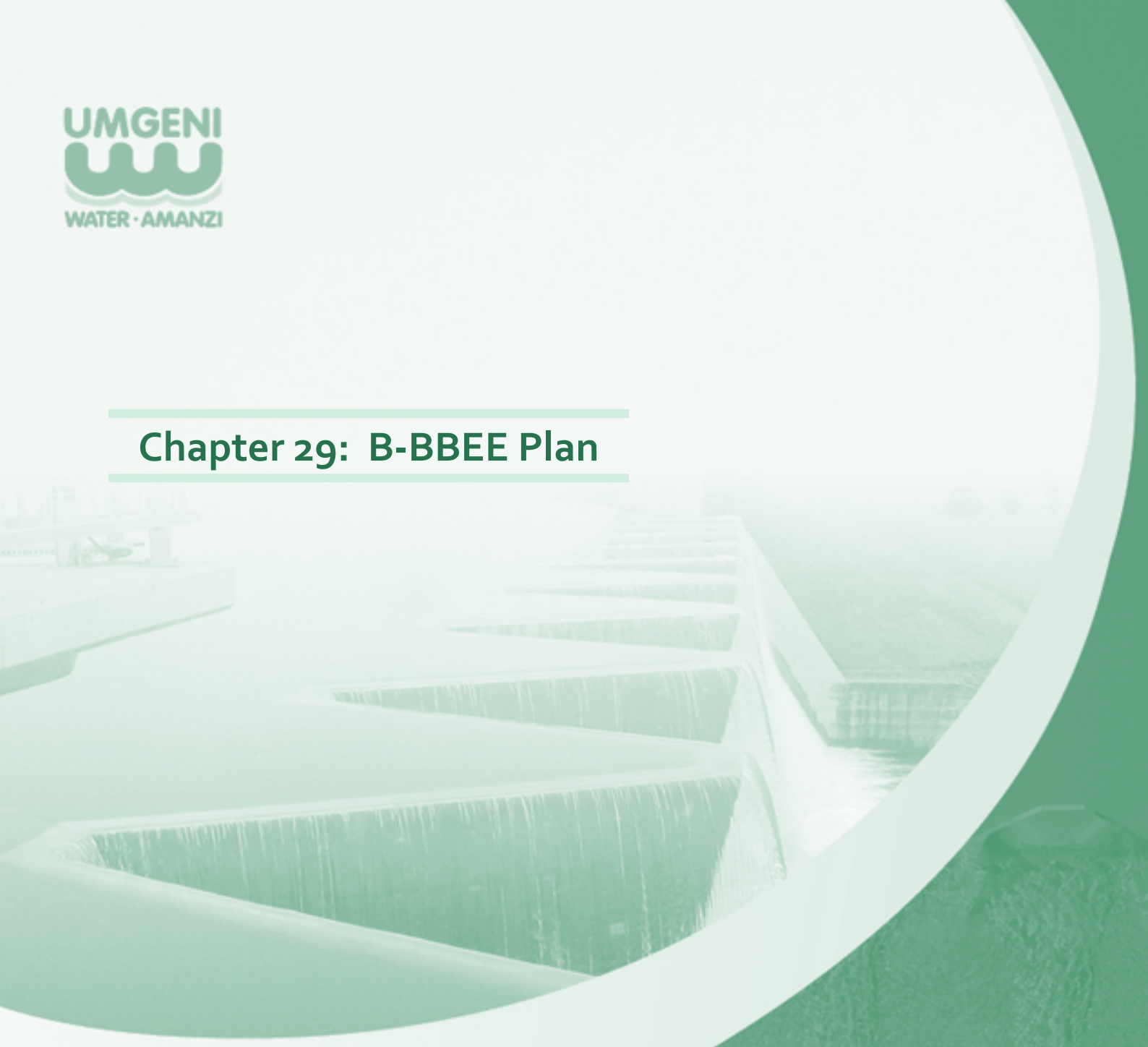
Table 28.1: Fraud implementation Plan

Task	Plan 2015/16 to 2019/20	Primary Responsibility
Fraud monitoring and reporting	Quarterly assessment of Fraud Status Reports; Non-compliance to laws and policies; Misconduct involving fraud, theft, workplace violence, discrimination, harassment, misuse of computer resources, information ICT breaches; Fraud Status Reports; Disciplinary reports.	Chief Executive, Ethics Committee, Audit Committee, Board.
Fraud Control testing and reporting	Internal Audit risk assessment in accordance with annual internal audit plan.	Internal Audit, Ethics Committee, Audit Committee, Board.
Review and update of Fraud Policy and Plans	Annual review and alignment with legislative imperatives and best practise.	Chief Executive, Executive Management, Ethics Committee, Audit Committee, Board.
Fraud Awareness Communication of Code of Ethics and Awareness of Hotline calls	General staff and line management communication at meetings and quarterly staff Information sessions.	Executive Management, All Umgeni Water Divisions, Corporate Stakeholder Management Unit.
	Communication at Supplier Briefings at least annually.	Chief Executive, Supply Chain Management.
	Internal newsletters and publications.	Corporate Stakeholder Management Unit.
	Presentation and communication at corporate Induction programmes held twice per annum.	Corporate Services, Manager CE office.
Disclosure of Interests	Individual disclosure at all Board, Committee and Executive Management meetings; Quarterly written disclosure or disclosure updates by employees.	Board, Committees, Executive Management, All employees.
Fraud Risk Workshop	Review of operating environment, legislative imperatives, and emergent risks at annual risk workshop..	Executive Management, Audit Committee, Board.
Human Capital report	Recruitment for quarter; EE Reports and targets; Training and development report; Succession, mentoring and coaching report; Health and Safety report; HIV implementation programme; Wellness report.	Chief Executive, Ethics Committee, Audit Committee, Board.
	Performance management system review.	Human Resources.
	Conducting exit interviews of terminated employees or those who have resigned to help both prevention and detection efforts.	Chief Executive, Corporate Services.
	Continuous training and induction programmes implemented.	Chief Executive, Corporate Services
	Senior Management candidates subject to detailed National Intelligence Agency vetting process.	Chief Executive, Corporate Services
	Staff vetting processes for all new employees.	Chief Executive, Corporate Services
	Obtaining certified copies of qualification certificates.	Chief Executive, Corporate Services.
	Ethics/ Fraud awareness a standing item on agenda of induction programmes.	Chief Executive, Corporate Services.
Disclosure of interest	Board/EXCO declaration registers. Organisational Disclosures. Declarations of Bid Committees signed at all meetings.	Chief Executive, Ethics Committee, Audit Committee Board, EXCO, all employees.
	Gifts and donations register and declaration.	Chief Executive, Ethics Committee, Audit Committee Board, EXCO, all employees.

Task	Plan 2015/16 to 2019/20	Primary Responsibility
Information and use of UW property	Information security - Internal audit and external audit Penetration testing by external vendor to indicate loopholes in information security	Chief Executive, Corporate Services
Suppliers and Business Partners	BBBEE status report and Contractor Participation Goal (CPG) status.	Chief Executive, Finance Division-SCM.
	Tender issues, appeals, objections.	Chief Executive, Finance Division-SCM.
	All suppliers and contractors made aware of Umgeni Water's fraud policy and management thereof.	Chief Executive, Finance Division-SCM.
Financial Ethics	Finance internal controls, policies and procedures. Delegation of Authority (DOA) is updated every two years or amended as required. Irregular expenditure procedure. Wasteful and fruitless expenditure procedure.	Chief Executive, Finance.
	Materiality and Significance Framework. Duty to report corrupt transactions and actions	Chief Executive, Finance.
Corporate Social Initiatives	Implementation of project, amount of project, targeted sector, socio-economic value add, Job creation and capacity building.	Chief Executive , Engineering and Scientific Services, Water Quality and Environment
Environmental Integrity	Environmental report; Complaints; EIA reports; Water quality / public health issues.	Chief Executive, Engineering and Scientific Services.
Customer and stakeholder feedback and complaints	Customer feedback reports.	Chief Executive, Corporate Stakeholder Management.

UMGENI WATER · AMANZI

Chapter 29: B-BBEE Plan



Contents

29.1 Management Approach

Umgeni Water recognises the historical disparity of previously disadvantaged communities and commits to promote B-BBEE by making procurement accessible to Black Economic Enterprises, through processes which are competitive, fair, transparent, equitable and cost effective. This will be done within the framework of the Constitution of South Africa, the Preferential Procurement Policy Framework Act and Regulations and the Broad-Based Black Economic Empowerment Act.

To ensure a focussed approach to empowerment, Umgeni Water treats economic empowerment as a business imperative aimed at the following:

- Facilitate access to the entity's procurement activities by Suppliers who comply with B-BBEE Framework.
- Ensure that previously disadvantaged individuals achieve full participation and involvement in businesses that support Umgeni Water in the supply of water services
- Develop and/or establish new, sustainable business with black entrepreneurs, through the procurement process.
- Encourage the establishment of value adding joint ventures between traditional and emerging suppliers, thus giving the latter access to technology, skills and knowledge.
- Contribute to skills development and job creation through the employment of targeted labour.

29.2 Contract Participation Goals

In this period Umgeni Water will continue to enhance its B-BBEE initiatives through the continued implementation of Contract Participation Goals (CPGs). CPGs require tenderers to commit a certain percentage of the tender scope of work and value for which the tenderer will contract targeted enterprises through provision of meaningful economic opportunities. CPG targets set for 2016/2017 are ≥ 35% for construction contracts and professional services projects. Included in this is a target ≥ 5% specifically for women contractors or PSPs.

29.3 BBBEE Spend Performance

Companies have been classified and registered on a supplier database, according to their progress in achieving B-BBEE. The spend target for 2016/2017 is ≥ 80% of total discretionary spend. In addition Umgeni Water will continue to add new entrants to the database for which each year ≥ 2 of the new entrants will be awarded work.

29.4 Monitoring BBBEE / CPG implementation at Umgeni Water

Umgeni Water has appointed two analysts, part of the functions of which is monitoring BBBEE / CPG implementation of awarded contracts to ensure:

- Established enterprises are in fact engaging the targeted enterprises as per contracts,
- Targeted enterprises are in fact performing the scope as per contract,
- Payments due to targeted enterprises are processed at the correct rates and at agreed timeframes.

29.5 Skills Development and Job Creation

The targeting of local communities in construction projects is mostly linked to employment-intensive work and results in a meaningful flow of income to the poorest sectors of communities. The work on infrastructure construction is self-targeting towards the poorest members of society because it does employ unskilled workers. Although the construction jobs created are not permanent, the volume of work available to the poor is high. This kind of work albeit temporary, enables skills to be developed and utilised at a local community level. Umgeni Water will therefore continue to create temporary jobs from implementing its extensive Capex Programme and from other programmes implemented during this Corporate Plan period.

29.6 B-BBEE Scorecard and Verification Plan

Umgeni Water recognises the historical disparity of previously disadvantaged communities and commits to promoting B-BBEE by making procurement accessible to Black Economic Enterprises. At the same time, Umgeni Water as an entity of state is also seeking to meet the requirements for B-BBEE compliance. In this independent verification was sought for the first time in 2015. The outcome of the verification, received in November 2015, was that the entity has some gaps to close before it can be rated as B-BBEE compliant.

Umgeni Water appreciates that as the Measured Entity (ME) it is responsible for conforming to the requirements for Verification, whilst the B-BBEE Verification Professional will undertake the verification and validation thereof. As a result, during this Corporate Plan period, Umgeni Water will strive to monitor and evaluate its performance against the required elements and progressively close gaps in order to achieve B-BBEE compliance at a future date.

Indicators and target plan to achieve verification is shown in **Table 20.1 (a) & (b).** The elements of relevance to Umgeni Water as a state-owned entity are: (1) Management Control, (2) Skills Development, (3) Preferential Procurement, (4) Enterprise and Supplier Development and (5) Socio-economic Development.

Table 20.1 (a): B-BBEE Scorecard Summary per Element

B-BBEE Element:	Weight	2016 Actual Score	2017 Target Minimum	2017 Target Maximum
1. Management Control	20	14.65	≥ 14.8	20
2. Skills Development	25	7.88	≥ 9.0	25
3. Preferential Procurement	30	9.97	≥ 18.5	32
4. Enterprise and Supplier Development	20	0.02	≥ 12	22
5. Socio- Economic Development	5	0.43	≥ 0.5	5
Overall B-BBEE Compliance	**100**	**32.95**	**≥ 54.8**	**100**

Table 20.1 (b): B-BBEE Scorecard Detailed Indicators and Targets

Indicators	Weight	Target %	2016 Actual %	2016 Score	2017 Target Minimum	2017 Target Maximum
1. B-BBEE Element: Management Control	**20**			**14.65**	**≥ 14.8**	**20**
o Exercisable Voting Rights of black Board members as a percentage of all board members	2	50%	91.67%	2.00	2.00	2.00
o Exercisable Voting Rights of black female Board members as a percentage of all board members	1	25%	41.67%	1.00	1.00	1.00
o Black Executive Directors as a percentage of all executive directors	2	50%	100.00%	2.00	2.00	2.00
o Black Female Executive Directors as a percentage of all executive directors	1	25%	0.00%	0.00	0.0	1.00
o Black Other Executive Management as a percentage of all executive managers	2	60%	75.00%	2.00	2.00	2.00
o Black Female Other Executive Management as a percentage of all executive managers	1	30%	25.00%	0.83	≥ 0.8	1.00
o Black employees in Senior Management as a percentage of all senior management	2	60%	44.97%	1.50	≥ 1.5	2.00
o Black female employees in Senior management as a percentage of all senior management	1	30%	15.03%	0.50	≥ 0.5	1.00
o Black employees in Middle Management as a percentage of all middle management	2	75%	61.16%	1.63	≥ 1.6	2.00
o Black female employees in Middle Management as a percentage of all middle management	1	38%	27.41%	0.72	≥ 0.7	1.00
o Black employees in Junior Management as a percentage of all junior management	2	88%	76.64%	1.74	≥ 1.5	2.00
o Black female employees in Junior	1	44%	32.26%	0.73	≥ 0.7	1.00

	Indicators	Weight	Target %	2016 Actual %	2016 Score	2017 Target Minimum	2017 Target Maximum
	Management as a percentage of all junior management						
o	Black disabled employees as a % of all such employees	2	2%	0.00%	0.00	≥ 0.5	2.00
2.	**B-BBEE Element: Skills Development**	**25**			**7.88**	**≥ 9**	**25**
o	Skills development spend on learning programmes as a percentage of leviable amount.	9	7.9%	1.48%	2.21	≥ 2.1	9.00
o	Skills development spend on learning programmes for black employees with disabilities as a percentage of leviable amount.	4	7.9%	0.00%	0.00	≥ 0.5	4.00
o	Number of black employees participating in Learnerships, Apprenticeships and Internships as a percentage of total employees.	6	0.3%	2.36%	5.66	≥ 5.3	6.00
o	Number of unemployed black people participating in Learnerships, Apprenticeships and Internships as a % of total employees	6	2.5%	0.00%	0.00	≥ 1.0	6.00
o	*Bonus: Number of black people absorbed by the Measured Entity at the end of the Learnership Programme.*	*5*	*100%*	*0.00%*	*0.00*	≥ 0.1	*5.00*
3.	**B-BBEE Element: Preferential Procurement**	**30**			**9.97**	**≥ 18.5**	**30**
o	B-BBEE Procurement Spend from all Empowering Suppliers as a percentage of Total Measured Procurement Spend	5	80%	80%	5.00	≥ 5.0	5.00
o	B-BBEE Procurement Spend from all Empowering Suppliers that are QSEs, as a percentage of Total Measured Procurement Spend	4	15%	7.65%	2.04	≥ 2.5	4.00
o	B-BBEE Procurement Spend from all EMEs as a percentage of Total Measured Procurement Spend.	5	15%	0.31%	0.10	≥ 2.5	5.00
o	B-BBEE Procurement Spend from Empowering Suppliers that are at least 51% black owned, as a percentage of Total Measured Procurement Spend.	11	40%	5.39%	1.48	≥ 5.0	11.00
o	B-BBEE Procurement Spend from Empowering Suppliers that are at least 30% black women owned, as a percentage of Total Measured Procurement Spend	5	12%	3.24%	1.35	≥ 2.5	5.00
o	*Bonus: B-BBEE Procurement Spend from Designated Group Suppliers that are at least 51% black owned.*	*2*	*2%*	*0.00%*	*0.00*	≥ 1.0	*2.00*
4.	**B-BBEE Element: Enterprise and Supplier Development**	**20**			**0.02**	**≥ 12**	**20**
o	Annual value of all Supplier Development Contributions made by the Measured Entity as a percentage of the target.	15	2.00% of NPAT	0.00%	0.01	≥ 7.5	15.00
o	Annual value of all Enterprise Development and Sector Specific Contributions made by the Measured Entity as a percentage of the target	5	1.00% of NPAT	0.00%	0.01	≥ 2.5	5.00
o	*Bonus: Graduation from Enterprise*	*1*	*Yes*	*No*	*0.00*	≥ 1	*1.00*

	Indicators	Weight	Target %	2016 Actual %	2016 Score	2017 Target Minimum	2017 Target Maximum
	Development to Supplier Development Beneficiary						
0	*Bonus: Jobs created directly as a result of Supplier Development and Enterprise Development initiatives by the Measured Entity*	*1*	*Yes*	*No*	*0.00*	*≥ 1*	*1.00*
5.	**B-BBEE Element: Socio- Economic Development**	**5**			**0.43**	**≥ 0.5**	**5**
0	Average annual value of all Socio-economic Development Contributions made by the measured entity as a percentage of the target	5	1.00% of NPAT	0.09%	0.43	≥ 0.5	5.00

Signed Declaration

Umgeni Water hereby declares that all information is disclosed, is correctly disclosed and included in this Corporate Plan document, as required in terms of the Water Services Act (Act 108 of 1997), Public Finance Management Act (Act 1 of 1999), and associated regulations and prescribed guidelines issued by the Department of Water and Sanitation and National Treasury.

MR CYRIL VUYANI GAMEDE
Chief Executive
31 May 2016

MR ANDILE MAHLALUTYE
Chairperson of the Board
31 May 2016