

# Product Quality

## Potable Water Quality Compliance

As the focus on drinking water quality in South Africa intensifies, Umgeni Water has endeavoured to ensure that the quality of potable water it supplies remains safe to consumer health over a lifetime of consumption. Water quality at all water treatment works and bulk supply points is measured and reported against the South African National Standard (SANS) Drinking Water Specification, SANS 241:2006.

For the 2009/2010 period, the organisation's compliance with health-related chemical and microbiological constituents was 99.93%. Figure 5 shows the water quality compliance trend for the past five (5) years. Compliance has consistently shown improvement over the last three (3) years.

Information per bulk water treatment works is shown in Table 6.

Committed operations and water treatment coupled with rigorous water quality monitoring, testing and assessment throughout the year enabled the organisation to provide this excellent quality potable water to its customers.

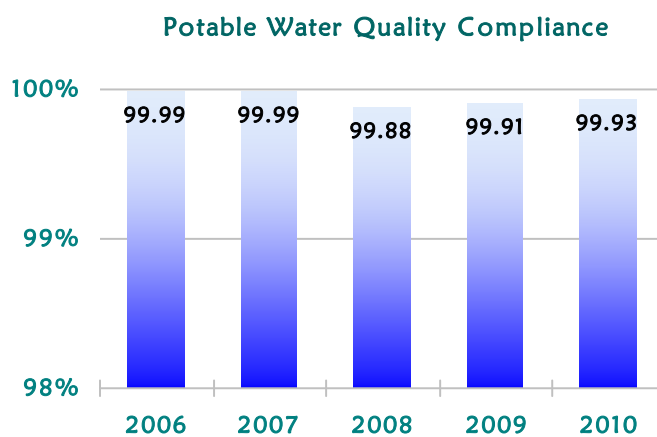
### Drinking Water Quality Standards

The SANS 241: 2006 Drinking Water specification was used to assess compliance for the organisation's bulk water as well as the off-site and reticulation reservoirs fed by the works.

#### SANS 241 Classifications:

- **Excellent water quality:**  $\geq 99\%$  compliance with Microbiological requirements,  $\geq 95\%$  compliance with Class I Chemical requirements and  $\geq 97\%$  compliance with Class II Chemical requirements.
- **Good water quality:** 98% compliance with Microbiological requirements,  $\geq 90\%$  compliance with Class I Chemical requirements and  $\geq 95\%$  compliance with Class II Chemical requirements.
- **Fair water quality:**  $\geq 97\%$  compliance with Microbiological requirements,  $\geq 85\%$  compliance with Class I Chemical requirements and  $\geq 90\%$  compliance with Class II Chemical requirements.
- **Poor water quality:**  $< 97\%$  compliance with Microbiological requirements,  $< 85\%$  compliance with Class I Chemical requirements and  $< 90\%$  compliance with Class II Chemical requirements.

Figure 5: Potable Water Quality Compliance Trend



**Table 6:** Potable Water Quality Compliance with SANS 241:2006 per Water Treatment Works

Water Treatment Works	Percent Total Treated Volume	Percent Compliance with SANS 241:2006	
		Chemical	Microbiological
Durban Heights	43.2	100.0	100.0
Wiggins	23.0	100.0	100.0
Midmar	19.9	100.0	100.0
DV Harris	5.2	100.0	100.0
Hazelmere	3.5	100.0	100.0
Amanzimtoti	1.4	100.0	100.0
Mvoti	1.0	99.1	100.0
Mzinto	0.9	100.0	98.1
Mtwalume	0.8	100.0	100.0
Ixopo	0.2	100.0	100.0
Ogunjini	0.1	100.0	100.0

The majority of bulk potable water treatment works achieved 100% compliance for both the chemical and microbiological requirements of SANS 241:2006 with the exception of Mvoti Water Treatment Works and Mzinto Water Treatment Works.

At the Mzinto Treatment Works a single non-compliant microbiological result (*E.coli*, one (1) per 100 ml) was recorded due to an operational error during the disinfection process, whilst at the Mvoti Works, two high turbidity results (5.7 & 7.5 NTU) were recorded, due to filter problems experienced at the site.

## Blue Drop Certification

The Blue Drop Certification Programme is an incentive-based regulatory tool used by the Department of Water Affairs (DWA) to monitor the status of drinking water management and compliance in South Africa. The certification process is based on performance against criteria specified by DWA.

During the 2010 Blue Drop Assessments, all Umgeni Water bulk potable water supply systems were assessed. Water safety plans, asset management and drinking water quality performance reporting were some of the new requirements introduced and accumulatively accounted for twenty-five (25%) of the overall weighting.

Umgeni Water was once again awarded Blue Drop status with eThekweni Metropolitan Municipality for the Greater Durban area. This Water Services Provider-Authority partnership was further placed ninth (9<sup>th</sup>) in the National list of Top Ten (10) Blue Drop Performers.

The general observation regarding Umgeni Water's performance during the 2010 assessments was that the organisation employs very good drinking quality management practices, and produces safe drinking water at its major water treatment works. Umgeni Water was also recognised for excellence in drinking water data credibility, with Durban Heights Water Treatment Works recognised as the most presentable large water treatment works during the Blue Drop audits.

## Wastewater Quality Compliance

Compliance of all wastewater treatment works operated, managed and/or owned by Umgeni Water continued to be assessed, and effluent quality compliance for the period under review was 80.6%. Figure 6 shows the compliance history for the past five (5) years.

A slight downward trend in compliance from the previous financial year is noted, attributable to the following:

- At the Darvill Wastewater Treatment Works operational problems as well as storm water ingress into the Msunduzi Local Municipality sewage network, coupled with incoming industrial effluent impacted on the work's final effluent quality.
- At the Howick Wastewater Treatment Works fluctuations in the inflow volumes to the works impacted on the works operation and the final effluent quality.
- The Ixopo Wastewater Treatment Works, at times, experienced very significant fluctuations in inflow volumes due to problems within the municipal sewer system, causing operational problems at the Works and impacting on the quality of the final effluent.

## Green Drop Certification Assessments

Green Drop assessments conducted by DWA in 2009 help identify priority areas and tangible targets for Umgeni Water to reduce its wastewater treatment works' risks within an acceptable time frame.

These assessments provided Umgeni Water with vital feedback that it used to develop and commence implementation of appropriate short and long term interventions, to address the non-compliant areas at the Darvill, Howick and Ixopo Wastewater Treatment Works.

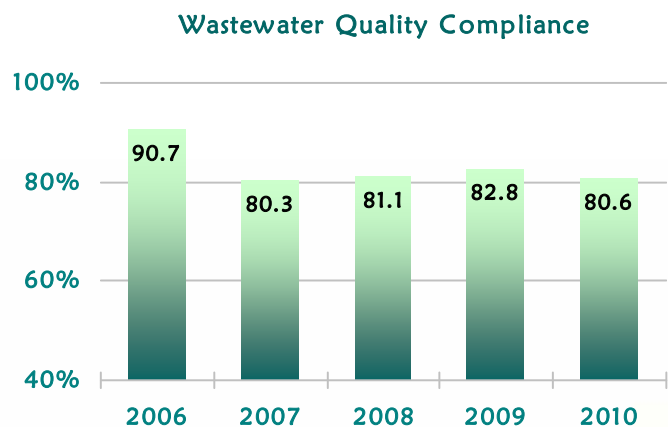
**Table 7: Percent Effluent Compliance per Treatment Works for 2009/2010**

Works	Volume 10 <sup>3</sup> m <sup>3</sup> / d	% Compliance 2009/10
Darvill	77.7	78.6
Howick	4.8	86.7
Ixopo	0.53	90.9
Albert Falls North	0.01	70.8
Albert Falls South	0.01	62.5

### Wastewater Quality Standards

- Darvill Wastewater Treatment Works** compliance with DWA General/Special Effluent Standard and Exemption Permit 2045B.
- Howick Wastewater Treatment Works** compliance with DWA General/Special Effluent Standard and Exemption Permit 1887B.
- Ixopo, and Albert Falls North and South Wastewater Treatment Works** compliance with DWA General Authorisation General Limits.

**Figure 6: Wastewater Quality Compliance Trend**



# Customer Satisfaction

## Bulk Supply Agreements

Umgeni Water continued to meet the requirements of Bulk Supply Agreements with its customers.

Signed Bulk Supply Agreements are in place with five (5) of the six (6) Water Service Authorities supplied, notably eThekweni Metropolitan Municipality, iLembe District Municipality, Ugu District Municipality, uMgungundlovu District Municipality and Sisonke District Municipality. The agreement with the Msunduzi Local Municipality is awaiting council approval.

During the year regular customer engagements ensured obligations in respect of bulk water supply planning and implementation, quality and quantity, as well as asset management and metering were satisfied.

## Customer Demands & Treatment Works Capacity & Utilisation

Umgeni Water operated all of its water treatment works effectively during the year to meet demands. In addition, the organisation effectively managed 632 km of bulk pipelines and 118 km of tunnels to assure bulk potable water transfer and distribution.

A total of 426 million cubic metres of potable water were supplied to customers for the year (Figure 7). The two (2) major customers, the eThekweni Metropolitan Municipality and Msunduzi Local Municipality, accounted for approximately ninety-one percent (91%) of the water supplied by Umgeni Water. Consequently, they remained the main drivers of demand during the year.

The eThekweni Metropolitan Municipality had intensified

implementation of its water demand management programme, which included a multi-million rand pipe replacement project and installation of pressure reduction technology, which had a marked reduction in bulk water purchases from Umgeni Water. Umgeni Water also ensured its own water loss level was maintained well below its target of five percent (5%).

Bulk water treatment works supply volume percent and utilisation is shown in Figure 8. Some of the smaller water treatment works needed to be operated above their design capacity in response to customer demands. The organisation continued to implement its asset management plan to ensure assets were operated within its best efficiency range, and maintained as planned to remain resilient in the face of demands. The status of infrastructure informed the organisation's infrastructure upgrades, refurbishments and developments described in a later section of this annual report.

Figure 7: Bulk Water Volume Supplied

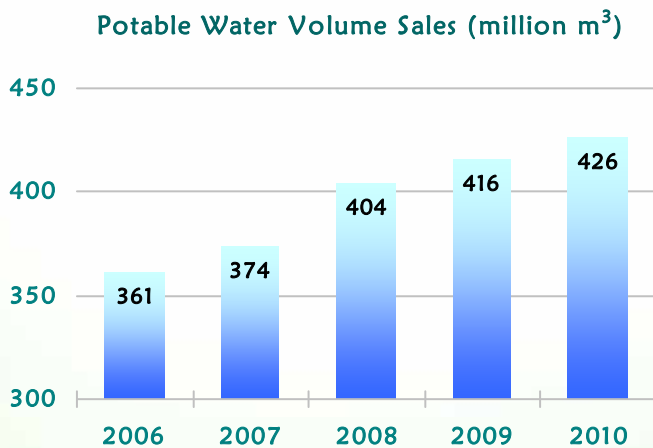
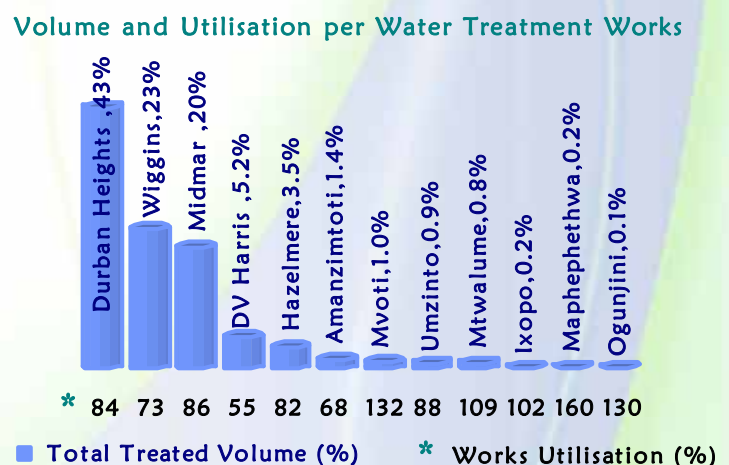


Figure 8: Water Treatment Works Supply & Utilisation





### Assuring Water Safety & Security For 2010 World Cup Soccer

Umgeni Water supported its major customer, eThekweni Metropolitan Municipality, as well as the surrounding municipalities, in the lead up to the 2010 Soccer World Cup, to ensure that water services continued to remain reliable and sustainable over the period.

The World Cup event was anticipated to increase demand from the system over a short period of time, resulting in a very rapid turnaround of storage reservoirs. The key requirement therefore was to create sufficient operational flexibility and system interconnectedness to minimise or eliminate water interruptions and restore any supply disruptions, in a minimum amount of time.

Critical assets and processes throughout Umgeni Water's area of operations were identified, risk assessments completed and suitable control measures instituted. This impacted on Umgeni Water's full water value chain infrastructure, namely, its water resource dams, raw water aqueducts, potable water treatment works, bulk water pipelines, as well as the supply security to rural communities that are served from the system.

Effective controls were put in place that minimised the risks, and provided resilient operations. The success of this undertaking to ensure that eThekweni Metropolitan

Municipality delivered a water secure world cup soccer event, was primarily due to the collaboration and mutual efforts between Umgeni Water, eThekweni Metropolitan Municipality, as well as adjacent customers.

### Assuring Water Safety & Security Major Reservoir Shutdown

In the reporting period, Umgeni Water had completed the construction of the Durban Heights Booster Pump Station.

Closely associated with the pump station is Durban Heights Reservoir 3, a critical supply node to the eThekweni Metropolitan Municipality, supplying an average daily demand of 280,000 cubic metres, which is twenty-five percent (25%) of Umgeni Water's bulk potable supply. The booster pump station was constructed to sustain the desired pressures to meet the demands in the Northern areas of eThekweni Metropolitan Municipality.

Safety, technical, social and environmental risk assessments associated with the tie-in between the pump station and the reservoir outlet required that the reservoir be completely drained to safely effect the forty-eight (48) hour tie-in.

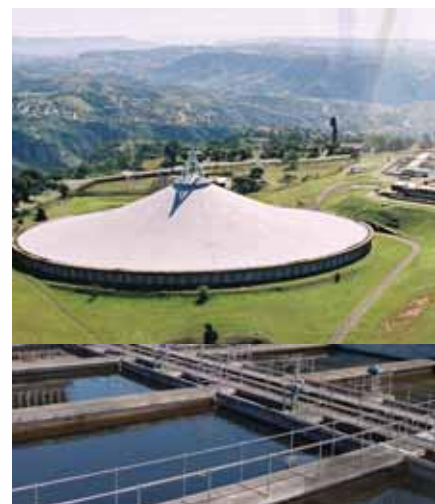
Curtailing the supply from the Durban Heights Water Treatment Works, for as much as 280,000 cubic metres per day, approximately fifty percent (50%) of the supply from the works, for four (4) days (including the draining and re-filling of the

twenty-five (25) metre deep uniquely shaped reservoir), required water supply restrictions and demand management processes to be imposed on consumers.

This process therefore required close collaboration with all stakeholders, notably with eThekweni Metropolitan Municipality, end users and downstream communities.

Umgeni Water ensured it minimised the shutdown period, while retaining acceptable water supply quality and quantity from the remaining two smaller reservoirs at the Water Treatment Works. Umgeni Water's successful execution of this major shutdown was a display of its ability to leverage its people, assets and systems to ensure resiliency in the face of major asset infrastructure endeavours.

This undertaking, working closely with eThekweni Metropolitan Municipality, their end users and affected stakeholders, further deepened relations between the parties resulting in a level of mutual trust that will bode well for future customer relations.



# Infrastructure Stability

## Umgeni Water's Five-Year 2009-2014

### Infrastructure Development Programme

Cognisant of customer water demands and water backlogs, Umgeni Water committed R3 billion over five (5) years for its water supply infrastructure developments, notably for:

- Rural development and reduction of water backlogs,
- Infrastructure expansion and growth to augment and expand supply to customers, and
- Infrastructure upgrade and rehabilitation to assure product quality and a sustainable supply to customers.

The infrastructure development programme is extensive, comprising more than thirty (30) major projects including, construction of new dams, water treatment works, pipelines, pump stations and storage reservoirs, as well as, upgrade and refurbishment of existing infrastructure.

The infrastructure development plan responds to current and projected increases in potable water demands made by customers: eThekweni Metropolitan Municipality, Msunduzi Local Municipality, Ugu District Municipality, iLembe District Municipality, uMgungundlovu District Municipality, and Sisonke District Municipality.

The projects are further aligned to the Water Services Development Plans of these municipalities, together with the KwaZulu-Natal Spatial and Economic Development Strategies and Plans.

The major infrastructure developments and recipient municipalities are shown in **Figure 9**.

As at 30 June 2010, progress with these capital infrastructure development projects was as follows:

- Five (5) were completed,
- Five (5) were in construction phase,
- Six (6) were in tender phase,
- Fifteen (15) in detailed design phase, and
- Four (4) in detailed feasibility phase.

Elaboration of progress and further information on strategic projects are provided further in this chapter.

### Capital Infrastructure for Rural Development

The capital infrastructure developments that support rural development are also discussed extensively in the next chapter, notably in terms of the people that will be served, jobs and empowerment opportunities created and the key assets they will create to ensure infrastructure stability for Umgeni Water.

### Capital Infrastructure for Growth and Expansion

Umgeni Water infrastructure projects for expansion and growth to augment and expand supply to customers, in the past year included, amongst others:

- The Avondale to Honolulu Pipeline, and
- The DV Harris to World's View Pipeline.

These are described in detail further in this chapter.

### Capital Infrastructure for Asset Upgrade & Refurbishment

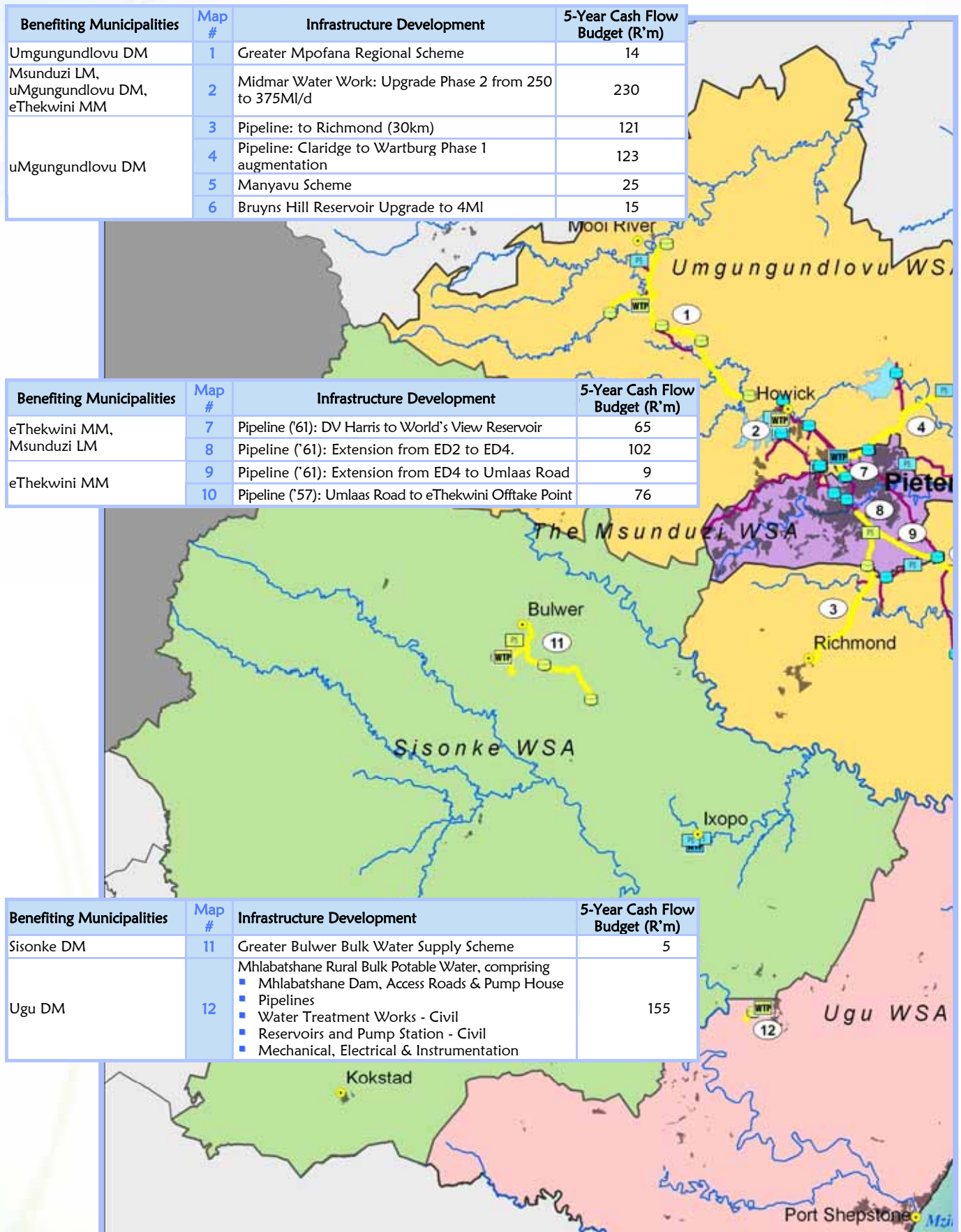
Infrastructure upgrades and rehabilitations to further stabilise assets and continue to assure product quality and sustainable supply to customers, in the past year included, amongst others:

- Construction of the Durban Heights Booster Pump Station,
- Planning of the Midmar Water Treatment Works upgrade, and
- Planning of the Hazelmere Water Treatment Works upgrade.

These are described further in the chapter.

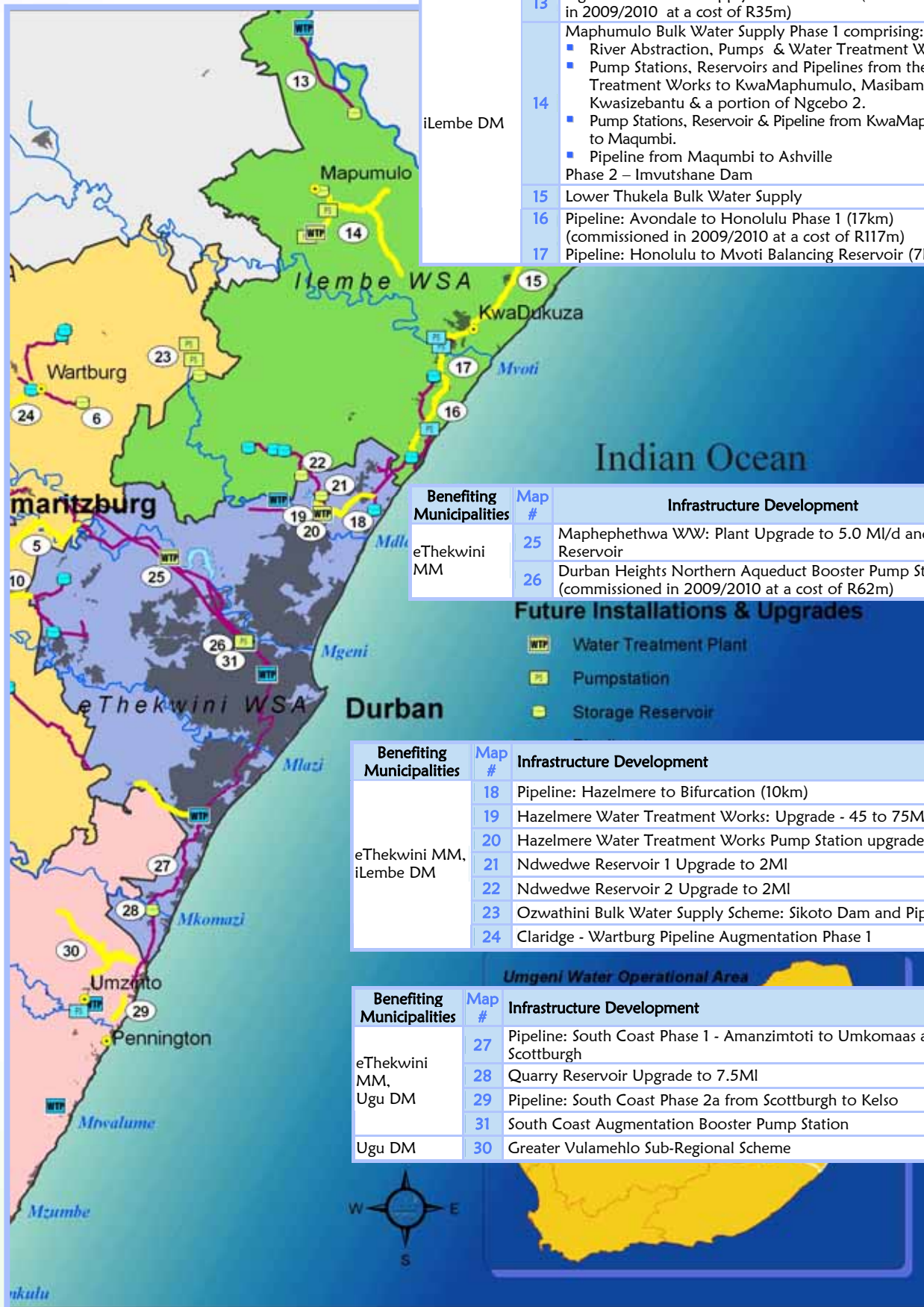
# Infrastructure Stability continued

Figure 9: Description of Major projects in the Five-Year Capital Infrastructure Programme





# Creating Value for Customers



Benefiting Municipalities	Map #	Infrastructure Development	5-Year Cash Flow Budget (R'm)
iLembe DM	13	Ngcebo Bulk Water Supply Scheme Phase 1 (commissioned in 2009/2010 at a cost of R35m)	-
	14	Maphumulo Bulk Water Supply Phase 1 comprising: <ul style="list-style-type: none"> <li>River Abstraction, Pumps &amp; Water Treatment Works</li> <li>Pump Stations, Reservoirs and Pipelines from the Water Treatment Works to KwaMaphumulo, Masibambisane, Kwasizebantú &amp; a portion of Ngcebo 2.</li> </ul>	181
		Pump Stations, Reservoir & Pipeline from KwaMaphumulo to Maqumbi. Pipeline from Maqumbi to Ashville Phase 2 – Imvutshane Dam	74
	15	Lower Thukela Bulk Water Supply	351
	16	Pipeline: Avondale to Honolulu Phase 1 (17km) (commissioned in 2009/2010 at a cost of R117m)	-
17	Pipeline: Honolulu to Mvoti Balancing Reservoir (7km)	77	

Benefiting Municipalities	Map #	Infrastructure Development	5-Year Cash Flow Budget (R'm)
eThekweni MM	25	Maphephethwa WW: Plant Upgrade to 5.0 MI/d and Reservoir	36
	26	Durban Heights Northern Aqueduct Booster Pump Station (commissioned in 2009/2010 at a cost of R62m)	-

### Future Installations & Upgrades

- Water Treatment Plant
- Pumpstation
- Storage Reservoir

Benefiting Municipalities	Map #	Infrastructure Development	5-Year Cash Flow Budget (R'm)
eThekweni MM, iLembe DM	18	Pipeline: Hazelmere to Bifurcation (10km)	97
	19	Hazelmere Water Treatment Works: Upgrade - 45 to 75MI/day	76
	20	Hazelmere Water Treatment Works Pump Station upgrade	20
	21	Ndwedwe Reservoir 1 Upgrade to 2MI	8
	22	Ndwedwe Reservoir 2 Upgrade to 2MI	8
	23	Ozwothini Bulk Water Supply Scheme: Sikoto Dam and Pipelines	148
	24	Claridge - Wartburg Pipeline Augmentation Phase 1	123

### Umgeni Water Operational Area

Benefiting Municipalities	Map #	Infrastructure Development	5-Year Cash Flow Budget (R'm)
eThekweni MM, Ugu DM	27	Pipeline: South Coast Phase 1 - Amanzimtoti to Umkomaas and to Scottburgh	15
	28	Quarry Reservoir Upgrade to 7.5MI	22
Ugu DM	29	Pipeline: South Coast Phase 2a from Scottburgh to Kelso	31
	31	South Coast Augmentation Booster Pump Station	75
	30	Greater Vulamehlo Sub-Regional Scheme	6



## Infrastructure Stability continued

### **A**vondale to Honolulu Pipeline for Future Growth in iLembe District Municipality

Umgeni Water's North Coast Bulk Water Pipeline is intended to meet future potable water demands within the iLembe District Municipality.

The development comprises two phases. The first phase:

- A 17.6 km bulk potable water pipeline from the Avondale Reservoir in Ballito to the Honolulu Reservoir in Groutville.

**This was constructed and commissioned in December 2009 at a cost of R117 million.**

The second phase comprises:

- A 7.2 km bulk pipeline from the Honolulu Reservoir to the Mvoti Balancing Reservoir, for which construction began in February 2010 and is ninety percent (90%) complete.
- A booster pump station and pipe bridge over the Mvoti River associated with this development is expected to be completed and commissioned by December 2010.

The bulk water supply pipeline will supply reservoirs along the route of the pipeline at Shakashead, Mhlali, Royal Palm Estates, Tinley Manor/Blythdale and Etete/Groutville.

The development was preceded by an EIA and stakeholder engagement continued during the construction period which had minimal or no disruption or impacts.

This development is welcomed by the iLembe District Municipality as it will assist significantly in enhancing assurance of water supply to meet future growth demands, which have been precipitated by housing and industrial development and existing backlogs in many rural areas of the iLembe District Municipality. In this region, future potable water demand is estimated at five percent (5%) per annum.

The total projected capital investment is R158 million.

### **D**V Harris to World's View Pipeline Augmentation to support Growth in Msunduzi Local Municipality and eThekweni Metropolitan Municipality

The bulk water supply pipeline augmentation, from DV Harris Water Treatment Works to World's View, was implemented to improve the water supply to both eThekweni Metropolitan Municipality and Msunduzi Local Municipality.

The projected investment of R92 million for the 5.7 km bulk pipeline will boost the water supply rate from 130,000 cubic metres per day to 330,000 cubic metres per day.

The development comprised the following:

- 3.84 km pipeline from DV Harris Water Treatment Works to Clarendon Reservoir.
- 1 km pipeline from Clarendon Reservoir to World's View
- 0.8 km pipeline from World's View Reservoir to the Umlaas System.

The development from DV Harris Water Treatment Works to Clarendon Reservoir, in particular, required rigorous engagement with stakeholders to agree on a pipeline route that provided the best balance between technical, geotechnical, economic, and environmental requirements, as the route traversed nature reserves, a golf estate, crossed the national road and went alongside a very sensitive mist-belt grassland biome.

Managing the Environmental sensitivities was a critical success factor of this development. A comprehensive report is provided in the environmental chapter of this annual report.

Pipe jacking under the N3 provided several challenges that required sound and innovative engineering solutions, including, adopting unconventional installation approaches to cross the busy N3 highway between Johannesburg and Durban, sound management of ground instabilities highlighted by geotechnical investigations, and several other engineering challenges. Despite these issues, the pipe jacking was completed within budget and without affecting the programme of the main pipe-laying contractor.

**The pipeline construction had commenced in March 2009 and was completed in June 2010, with outstanding performance during the construction phase.**

## Durban Heights (Northern Aqueduct) Booster Pump Station to serve eThekweni Metropolitan Municipality

Construction of the Northern Aqueduct Booster Pump Station at the Durban Heights Water Treatment Works was completed and commissioned during the year to ensure the higher pressure demand requirement is met for eThekweni Metropolitan Municipality's northern supply network.

Durban Heights Reservoir 3 is a critical supply node supplying an average daily demand of 280,000 cubic metres. Of significance, is eThekweni Metropolitan Municipality's requirement to maintain the reservoir at its maximum capacity pressure of twenty-five (25) metres to meet the pressure requirements of its northern supply areas. To sustain this level, a booster pump station was built at the Durban Heights Water Treatment Works.

## Hazelmere Water Treatment Works Upgrade to serve eThekweni Metropolitan Municipality and iLembe District Municipality

Umgeni Water intends upgrading the Hazelmere Water Treatment Works from 45,000 to 75,000 million cubic metres per day in order to meet anticipated future demands. The timing and size of this upgrade has been matched to the raising of the full supply level of Hazelmere Dam by the Department of Water Affairs.

## Midmar Water Treatment Works Upgrade to serve Msunduzi Local Municipality, uMgungundlovu District Municipality, eThekweni Metropolitan Municipality

An upgrade from 250,000 to 375,000 million cubic metres per day is planned for the Midmar Water Treatment Works to ensure the projected future demands can continue to be met. The timing and size of this upgrade will be matched to the implementation of the second phase of the Mooi-Mgeni Transfer Scheme (Spring Grove Dam), by the Trans-Caledon Tunnel Authority (TCTA). The upgrade will also serve to sustain the load shed demands that would result from the eThekweni Metropolitan Municipality's Western Aqueduct, scheduled to be completed in 2012.

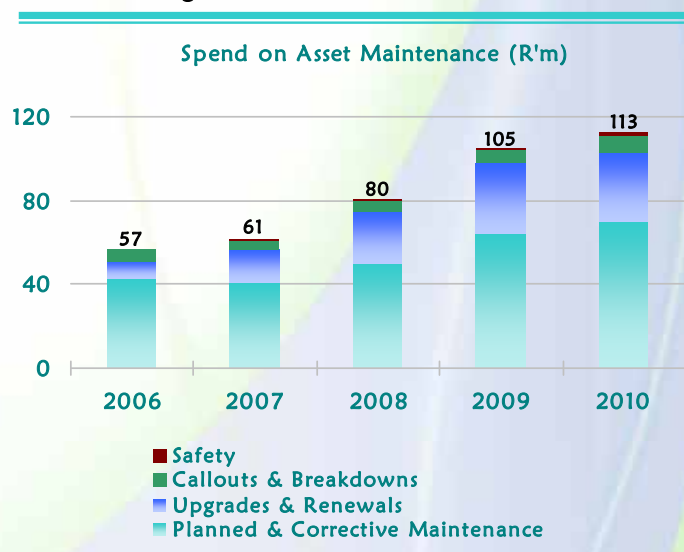
In 2009/2010 Umgeni Water spent R334 million of its five-year R3 billion capital infrastructure investment.

In addition, the organisation continued to maintain its existing assets as per the asset management strategy and plan, and spent R113 million on asset maintenance in the past year (Figure 10).

In implementing its infrastructure development programmes, Umgeni Water strived to create employment opportunities and advance Broad-based Black Economic Empowerment, thereby supporting the Expanded Public Works Programme of government. More details are provided in the community sustainability chapter.

The capital infrastructure development programme would thus ensure the organisation's infrastructure is stable, provides reliable bulk water supply to customers and contributes to community sustainability through deeper penetration and increased ward coverage in rural areas.

Figure 10: Asset Maintenance Trend



# Stakeholder Understanding & Support

## Stakeholder Engagements

Further to the stakeholder engagements described in the opening chapter of the annual report, **Table 9** shows detailed stakeholder interactions in line with the legislative framework within which Umgeni Water operates and the requirements of contracts it has with customers and suppliers. In addition, some interactions took place on a voluntary basis as per the organisation's commitment to engage with all parties that are affected by or have an interest in the activities of Umgeni Water.

In the period under review the organisation had continued to be held in high esteem, as a result of its relevance and compliance, which is attested by feedback received from the **Executive Authority during performance appraisals**. This was further underscored by media coverage. Coverage of Umgeni Water monitored by an independent company indicated that there were 402 occasions on which Umgeni Water was reported on in the print and electronic media. The vast majority of coverage received was of a positive, balanced or neutral nature.

The relationship Umgeni Water has with its stakeholders is based on transparency and mutual respect and its achievements are testimony to the success it has achieved in stakeholder relations.

Umgeni Water was invited onto the **KwaZulu-Natal Provincial Government Lekgotla** and will help develop a Bulk Water Supply Strategy for the entire

**Table 9: Stakeholder Interventions in 2009/2010**

Stakeholder	Nature of Interaction
<b>Statutory</b>	
Minister of Water and Environmental Affairs	Shareholder Compact; Tariff; Expectations of Executive Authority; Statutory submissions; Strategy planning for water sector.
Department of Water Affairs	Implementation of DWA's strategic objectives for water boards.
Department of Finance and National Treasury	Compliance with Public Finance Management Act and National Treasury Regulations; Financial performance and organisational viability and sustainability.
<b>Contracted</b>	
Customers: eThekweni MM; Msunduzi LM; Ugu DM; iLembe DM; Sisonke DM, uMgungundlovu DM;	Tariff consultation as per Municipal Finance Management Act; Confirmation of Bulk Supply and satisfaction with Service Level agreements.
Employees	Information communication regarding organisational performance and policy issues including: Medical aid presentations and survey; Best Company to Work For survey; Human Resources policies workshop; Wellness Day and World Aids Day; Staff Information Sessions and Executive Site visits; Staff recognition and awards.
Organised labour (National Education, Health and Allied Workers' Union)	Organised labour appropriately informed and engaged on key organisational and sector issues: Consultation on Human Resources policies; Wage negotiation; Best company to Work For survey; Medical aid survey and presentations; Wellness Day and World Aids Day; Staff and operational matters; Discussion on Budget 2010-2011.
Suppliers	Supplier forum and supply chain processes awareness briefings; Service and products issues; Skills level of construction staff; Extended Public Works Programme compliance.
<b>Non Contracted</b>	
Water Research and Academia	Water sector knowledge, water, and wastewater research and skills development.
Water sector utilities in South Africa and Africa.	Exchange and expansion of water sector knowledge;
Chambers of Business	Participation as Member. Knowledge gathering relating to Water and Waste, Air Quality, Environmental Sustainability; Information, Communication and Technology; Innovation & Development.
Media	Annual Report; Statements and interviews granted on operational, strategic and sector issues.

province together with the Department of Cooperative Governance and Traditional Affairs, the Department of Human Settlements, and the Regional Office of the Department of Water Affairs.

**In support of national and the KwaZulu-Natal Government** thrusts to promote regional / SADC integration, relations were developed with the Water

and Sanitation Company of Benguela. This is in line with a proposed Twinning Agreement between the provinces of KwaZulu-Natal and Benguela Province of Angola.

The establishment of ties between Umgeni Water and the **Water and Sanitation Company of Benguela** is also aligned to a call by the Minister of Water and Environmental Affairs to



assist water utilities in Africa enhance expertise in their functional areas.

In the period under review, interactions with the MEC for Education took place over the provision of water and sanitation at schools and the refurbishment of schools, where Umgeni Water is an [Implementing Agent for the Department of Education](#).

Members of the board and personnel of [NamWater](#) (Namibia Water Corporation) visited Umgeni Water as part of a study and familiarisation exercise to gather information and receive input from Umgeni Water on various water sector issues. The visit by NamWater paves the way for an exchange of knowledge and skills in order to assist the further development of staff from NamWater and Umgeni Water.

In the reporting period, Umgeni Water continued to collaborate with water boards in South Africa, [Rand Water](#), [Mhlathuze Water](#), [uThukela Water](#), [Amatola Water](#), [Bloem Water](#) and [Magalies Water](#). These collaborations occurred in various fields, including exchange of knowledge, best practices and marketing projects.

Umgeni Water has established links with universities in [England](#), [France](#) and [Denmark](#) for the purpose of sharing best practices and knowledge and research in areas related to water treatment. Presently Umgeni Water is conducting an evaluation of membrane technology and its application in the developing world on behalf of the European Union.

Collaboration with these universities is ground-breaking for Umgeni Water as it opens opportunities to share knowledge and best practices about water treatment in the developing world.

Umgeni Water already works closely with universities in South Africa, among them, [Durban University of Technology](#), [KwaZulu-Natal](#), [Stellenbosch](#), [Pretoria](#), [Cape Town](#) and [Western Cape](#), in various areas, namely research into climate change, design of dams and bacteriological analytical methods.

Umgeni Water has consolidated its long-standing relationship with the [University of KwaZulu-Natal \(UKZN\)](#) through the establishment of the Umgeni Water Chair of Water Resource Management at UKZN for ten (10) years. The Chair will promote study and research in water resource management, further interaction between the two institutions and industry and it will also further the aims of education and teaching in the fields of water resource management, science and engineering. The endowment made by Umgeni Water towards the Chair will allow UKZN to increase production of scarce skills required by the water sector.

Umgeni Water will continue to meet its obligations as it places great value on maintaining cordial relations with its stakeholders, and it will also ensure that this healthy relationship is maintained.