

Creating Value

“Umgeni Water views value creation as the intersection between its customer and stakeholder needs and the active application of the entity’s skills and competencies to respond to those needs.”

8.1 PRODUCT QUALITY

Management Approach

The most significant impact of Umgeni Water’s business is provision of water that does not impact negatively on consumer health over a lifetime of consumption. To this end, water quality is managed through a rigorous management system which covers the entire operational area and includes carefully planned monitoring programmes, auditing, compliance reporting, water quality risk assessments - conducted using a source-tap-source approach - and the implementation of Water Safety Plans.

Water quality monitoring programmes are reviewed annually for all operational sites and sampling and analysis are undertaken in accordance with Umgeni Water’s ISO 9001 certified monitoring programme and SANAS 17025 accredited laboratory methods, respectively. An emergency response protocol which includes various alert level triggers has been developed, is reviewed and updated each year and is in force. Water quality performance data, information and reports are disseminated regularly to all stakeholders.

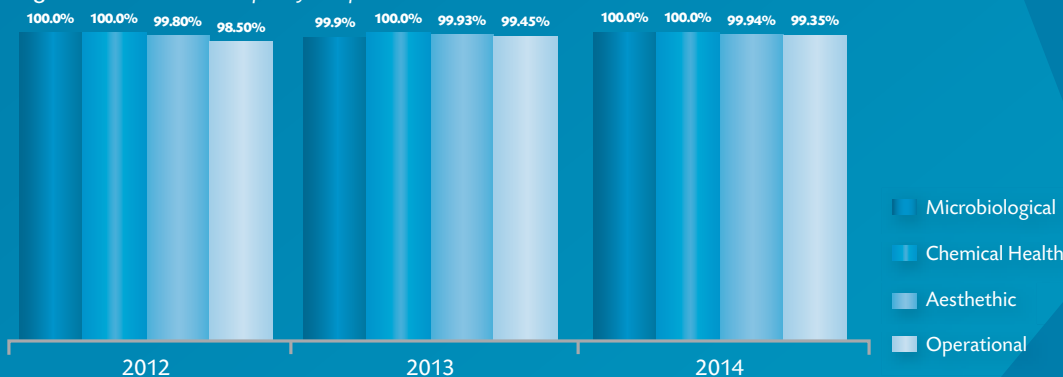
Umgeni Water is also committed and steadfast in supporting municipalities to ensure that all systems can be progressively improved toward joint Blue and Green Drop Certification.

Potable Water Quality Performance

Umgeni Water’s Bulk Water Treatment Works and iLembe Rural Schemes are required to comply with South African National Standards SANS 241: 2011 which requires quality to be evaluated and reported against four risk categories:

- (1) Acute Health 1 – Microbiological,
- (2) Chemical Health,
- (3) Aesthetic, and
- (4) Operational.

Figure 8.1: Potable water quality compliance with SANS 241 standard.



Wiggins Water Treatment Works - increasing supply to Durban - 1980

UMGENI

Increasing access



ANNIVERSARY

Inanda Wiggins Tunnel - 1991



Inanda Dam view from Maphephethwa

Creating Value

Overall, for the reporting period, Umgeni Water provided excellent drinking water quality to customers. The detailed potable water quality compliance per water treatment works is shown in **Table 8.1**.

Table 8.1: 2013/2014 Potable Water Quality Compliance (%) with SANS 241:2011 per Water Treatment Works (WTW)

Water Treatment Works	Treated Volume Ml/d	Volume %	Acute Health 1 - Microbiological	Chemical Health	Operational	Aesthetic
Durban Heights	562	43%	100%	100%	99.98%	100%
Wiggins	270	20%	100%	100%	100%	100%
Midmar	267	20%	100%	100%	99.91%	99.94%
DV Harris	88	7%	100%	100%	99.87%	100%
Hazelmere	52	4%	100%	100%	98.58%	100%
Amanzimtoti	21	2%	100%	100%	99.53%	100%
Mvoti	19	1%	99.05%	100%	95.86%	99.84%
Mzinto	13	1%	100%	100%	98.28%	98.22%
Mtwalume	10	1%	100%	100%	99.32%	100%
Maphumulo	6	0.5%	100%	100%	99.73%	100%
Maphophethwa	2.9	0.2%	100%	100%	92.96%	100%
Ixopo	2.4	0.2%	100%	100%	100%	99.72%
Ngebo	0.6	0.05%	100%	100%	98.03%	99.42%
Mhlabatshane	0.5	0.04%	100%	100%	94.92%	100%
iLembe small schemes and boreholes	6 ¹	0.5%	97.98%	99.25%	83.85%	94.61%

¹ estimate

Key to classification of the performance of drinking water supply systems according to SANS 241: 2011

	Population up to 100 000 Proportion of samples compliant			Population > 100 000 Proportion of samples compliant		
	Excellent	Good	Unacceptable	Excellent	Good	Unacceptable
Microbiological Health	≥97%	≥95%	<95%	≥99%	≥97%	<97%
Chemical Health	≥95%	≥93%	≥93%	≥97%	≥95%	<95%
Operational	≥93%	≥90%	<90%	≥95%	≥93%	<93%
Aesthetic	≥93%	≥90%	<90%	≥95%	≥93%	<93%

Bulk Water Treatment Works

All fourteen (14) water treatment works complied with the SANS:241 standard. Notably, excellent performance was recorded for all water treatment works against the SANS 241:2011 Acute Health 1 - Microbiological category.

The iLembe small schemes and boreholes

Umgeni Water operates fourteen (14) small water treatment works and ten (10) borehole schemes.

Overall these schemes were compliant with three of four categories:

Acute Health 1 Micro 97.98%,
Chemical Health 99.25%, and
Aesthetic 94.61%.

Variance:

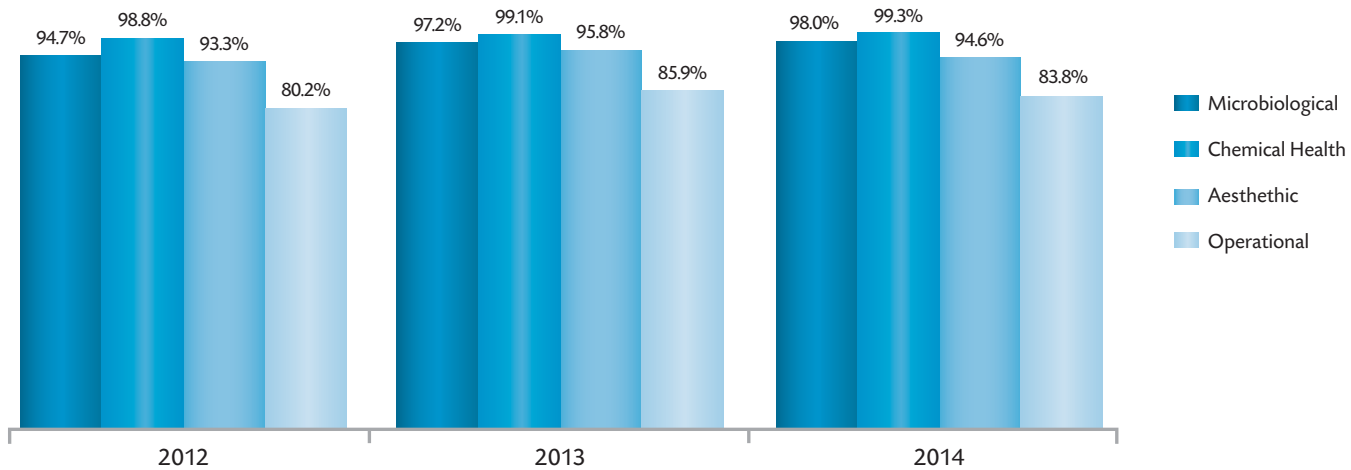
Non-compliant with Operational category: 83.85%.

Reason and Action Plan

Non-compliances were due to: poor performance of process units, overdosing of coagulant, failure of disinfection units, poor raw water quality following heavy rain events and inadequate process monitoring as the WTWs are unmanned during the night.

The Lower Thukela BWSS is being implemented and will replace some of the small unsustainable schemes, whilst other schemes will be upgraded. In the interim, necessary optimisation continues to be undertaken where failures occur.

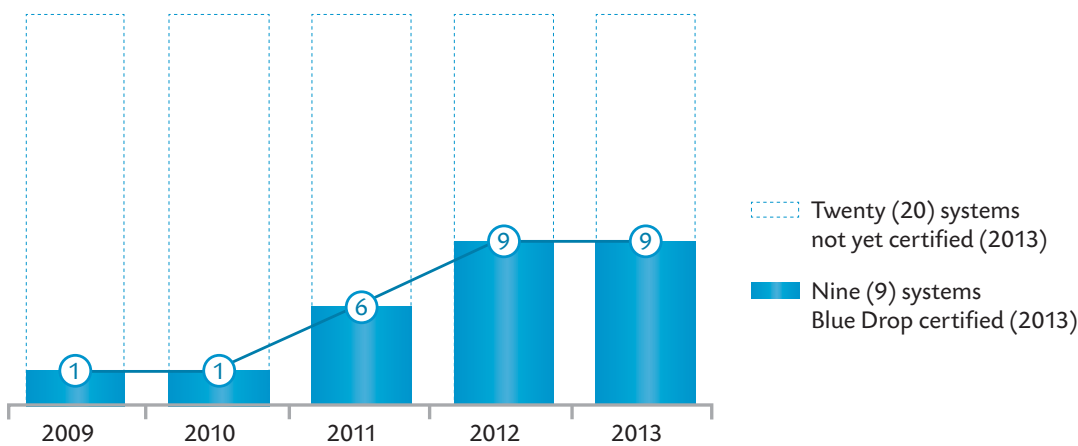
Figure 8.2: iLembe Small Schemes and Boreholes Compliance (%) with SANS 241



Blue Drop Certification and Drinking Water Quality Management Excellence

Umgeni Water received nine (9) Blue Drop certifications for drinking water quality management excellence, together with the relevant Water Services Authorities in 2012. Assessments are conducted every two years. In January 2014, the Department of Water and Sanitation (DWS) conducted a detailed blue drop assessment for all Umgeni Water systems, twenty-nine (29) in total, together with the relevant Water Services Authorities. The results of the assessments will be released in 2014/2015.

Figure 8.3: Blue Drop Certifications



The prior year nine Blue Drop certifications comprise:

1. eThekweni Main (Midmar, DV Harris, Durban Heights, Wiggins, Maphephethwa, Amanzimtoti and Hazelmere WTW) with eThekweni Metropolitan Municipality
2. Msunduzi (Midmar and DV Harris WTW) with Msunduzi Local Municipality
3. Ixopo (Ixopo WTW) with Harry Gwala District Municipality
4. Mathulini, Mthwalume and Qoloqolo (Mthwalume WTW) with Ugu District Municipality
5. Mzinto and Pennington to Scottburgh (Mzinto WTW) with Ugu District Municipality
6. Howick, Camperdown and Mshwathi (Midmar and DV Harris WTW) with uMgungundlovu District Municipality
7. Dolphin Coast (Hazelmere WTW) with iLembe District Municipality and Sembcorp SIZA Water
8. Groutville (Hazelmere WTW) with iLembe District Municipality
9. Ndwedwe (Hazelmere WTW) with iLembe District Municipality

Wastewater Quality Performance

The performance of the wastewater treatment works is assessed against the relevant licence or General Authorisation Limits prescribed by the Department of Water and Sanitation (DWS).

Table 8.2: Wastewater compliance (%) per treatment works

WWTW	Volume (ML/d)	Volume %	2011	2012	2013	2014
Darvill	69	91%	80.5%	86.0%	87.0%	78%
Howick	5.9	8%	83.1%	92.0%	82.7%	87%
Ixopo	0.44	0.6%	95.4%	83.2%	88.1%	95%
Lynnfield Park	0.16	0.2%	-	-	-	66%
Albert Falls North	0.01	-	77.1%	69.7%	72.2%	89%
Albert Falls South	0.01	-	54.0%	N/A	N/A	83%

For 2013/2014, the overall effluent compliance was 81.4% . Umgeni Water set an achievable target of ≥ 85% compliance for wastewater for 2013/2014.

2 of 4 WWTW ≥ 85% compliant:

- Darvill WWTW: 78%,
- Howick WWTW: 87%,
- Ixopo WWTW: 95%, and
- Lynnfield Park WWTW: 66%.

Variance

2 of 4 WWTW < 85% compliant:

- Darvill WWTW: 7% below target, and
- Lynnfield Park WWTW: 19% below target.

Reasons for gap and action plans to address

Darvill WWTW: Non-compliances were due to overloading of the aerobic treatment process, poor processing of septic sewage from a storm event, equipment failures, trade effluent related problems, problems with the primary settling tanks, sludge bulking and inadequate chlorination.

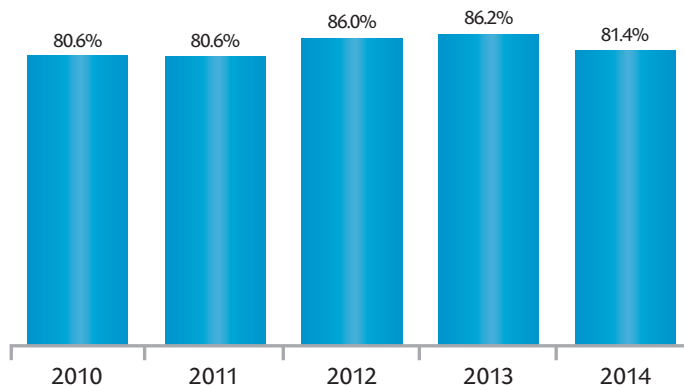
Darvill WWTW: The overall Darvill plant upgrade remains critical in order to achieve sustainable final effluent compliance.

Practical Municipal support for Trade Effluent enforcement needs to be obtained.

All equipment failures and critical issues dealt with. On-going optimisation until the upgrade is complete.

Lynnfield Park WWTW (Umgeni Water acquired this works in June 2014): The process is overloaded due to only one of two reactors being operational. Suspended solids is non-compliant due to intermittent solids carryover. Chlorination is problematic due to blockages in the dosing system. Umgeni Water will develop a plan of action to improve water quality for this system over the next 12-month period. Proper operational procedures will be formulated and implemented. A future plant upgrade is needed in order to meet development needs in the area.

Figure 8.4: Bulk Wastewater Water Quality Compliance (%)



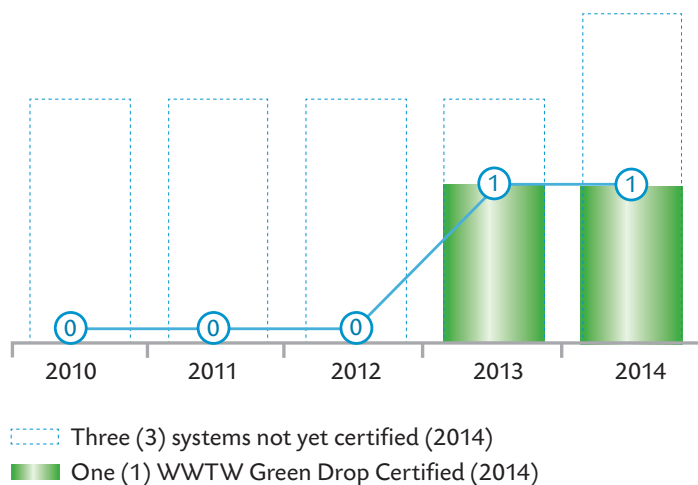


Green Drop Certification Preparedness

Umgeni Water initiatives in the year included completion of internal process audits for all wastewater treatment works, identifying optimal water quality monitoring programmes for each site, developing multi-year training plans to address the skills gap to meet the requirements of the Water Services Act, Regulation 17, registration of superintendents and process controllers and overall preparedness to facilitate DWS assessments.

In 2014, DWS released the 2013 Green Drop scorecard which contained results from the full Green Drop Assessment for the period 1 July 2011 to 30 June 2012. Of the three (3) Umgeni Water WWTW systems assessed, Green Drop status was awarded to Ixopo WWTW for the first time since the inception of the Green Drop Certification Programme (Figure 8.5). A significant improvement in the Green Drop Score was noted for Ixopo WWTW which improved from 64.6% (2011) to 91.79% (2013). This was largely attributed to an improvement in effluent quality compliance which contributes to 30% of the overall Green Drop Score.

Figure 8.5: Green Drop Certifications



Poor effluent compliance is a high risk area at both Howick WWTW and Darvill WWTW with the latter faced with a further challenge of the operational flow exceeding the design capacity of the works. Short and long term action and plans are in place to improve the water quality.

Support to Municipalities

Umgeni Water is providing support to vulnerable customers to implement projects to improve product quality. In the year seven (7) projects (R7.6 million spend) were implemented. These comprise:

- Two (2) projects for Msunduzi LM (R3.1 million),
- Two (2) projects for uMgungundlovu DM (R0.5 million),
- Three (3) projects for Ugu DM (R4.03 million).

In addition, four (4) projects are in progress for uMgungundlovu District Municipality.

Other vulnerable municipalities were assisted with possible solutions which require capital investment. Business plans were developed to assist with funding applications.

8.2 CUSTOMER SATISFACTION

Customer Markets

Umgeni Water has the following markets for bulk water services (water and wastewater):

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

The organisation’s bulk supply customers in its operational area are the eThekweni Metropolitan Municipality, iLembe District Municipality, Ugu District Municipality, Harry Gwala District Municipality, uMgungundlovu District Municipality and Msunduzi Local Municipality.

Bulk Provision and Infrastructure Assets

Umgeni Water purposefully undertakes its core bulk water and wastewater business to effectively serve its customer and stakeholder base. As part of its water supply function, raw water is consciously abstracted from dams, river and borehole sources, is conveyed using both gravity and the most effective pumping options to bulk water treatment works, treated to meet SANS 241:2011 quality standards and distributed to customers.

Equally, as part of its wastewater supply function, Umgeni Water receives influent from municipal sewer systems, treats this at bulk wastewater treatment works and constantly strives to improve the quality of effluent discharged back to receiving systems.

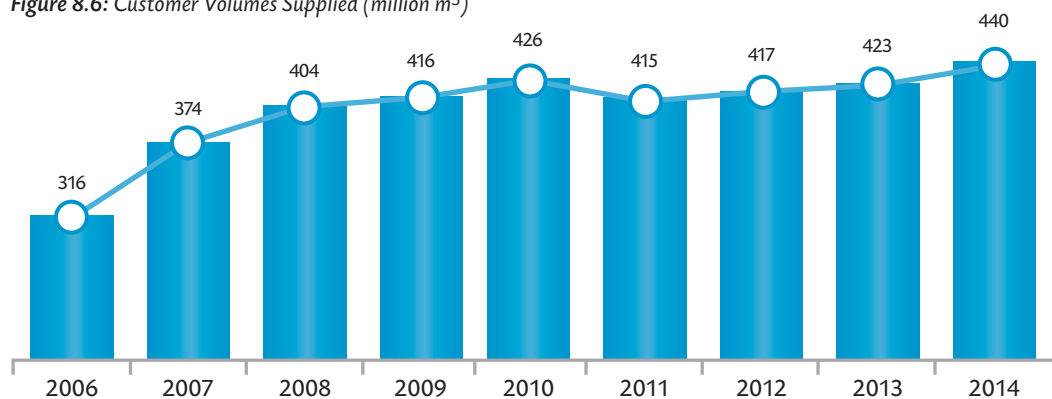
Umgeni Water’s infrastructure assets in support of its primary business comprise: approximately 746 kilometres of pipelines and sixty-six (66) kilometres of tunnels, fourteen (14) dams, fourteen (14) water treatment works and an additional fourteen (14) small water treatment works and ten (10) borehole schemes managed on behalf of the iLembe District Municipality.

Infrastructure assets in support of bulk wastewater, either owned or operated, comprise the Darvill Wastewater Treatment Works, Howick Wastewater Treatment Works, Ixopo Wastewater Treatment Works, the recently acquired Lynnfield Park Wastewater Treatment Works and two smaller works Albert Falls North and South Works.

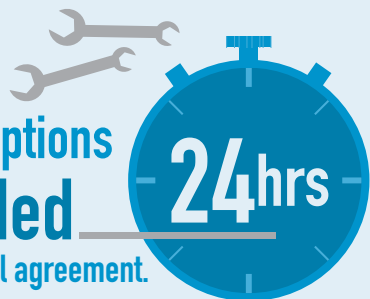
A total of 440 million cubic metres of potable water per annum (1205 Ml/d) are currently supplied to customers (**Figure 8.6**) who serve a population of 6 million or 1.64 million households through reticulation networks. Treatment works’ capacities and utilisation are shown in **Figures 8.7 (a)** and **(b)** respectively. In the year there were no unplanned supply interruptions that exceeded 24 hours as per service level agreement.

The organisation currently treats bulk wastewater totalling 28 million cubic metres per annum (75 Ml/d). Wastewater treatment works’ capacities and utilisation are shown in **Figure 8.7 (c)** and **(d)** respectively.

Figure 8.6: Customer Volumes Supplied (million m³)



no unplanned
supply interruptions
that exceeded
as per service level agreement.



Bulk Supply Agreements

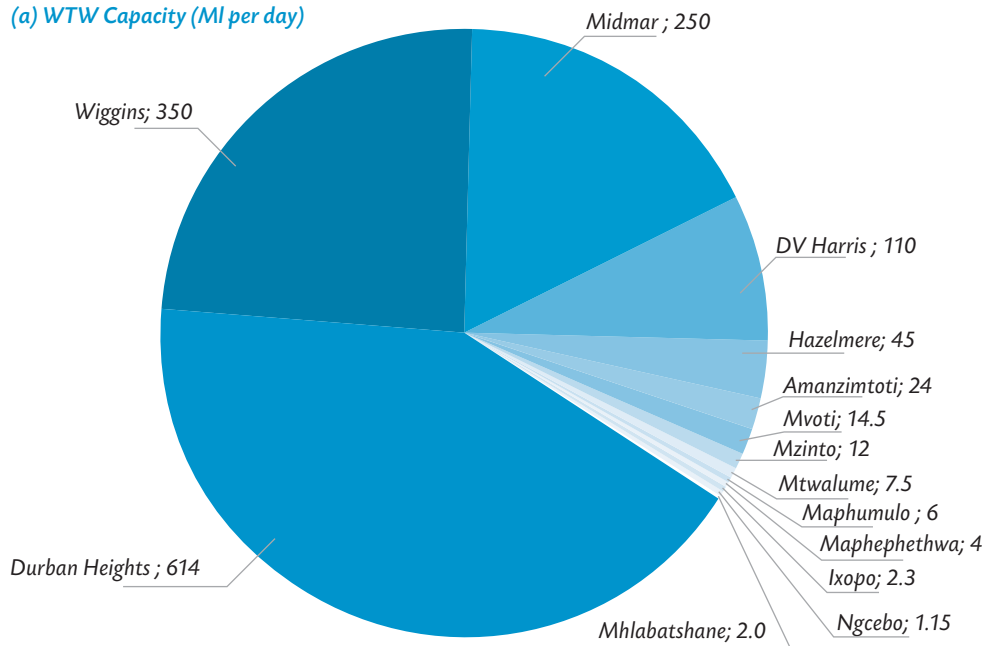
Bulk Supply Agreements are concluded to cover obligations of both Umgeni Water and its customers in relation to water volumes, water quality, supply pressure, service interruption intervals, metering, tariff consultation, assurance of supply and capital infrastructure plans.

Signed agreements have been concluded with all customers. Of note, a long-term (ten-year) supply agreement was concluded and signed in the 2013/2014 reporting year with Harry Gwala District Municipality.

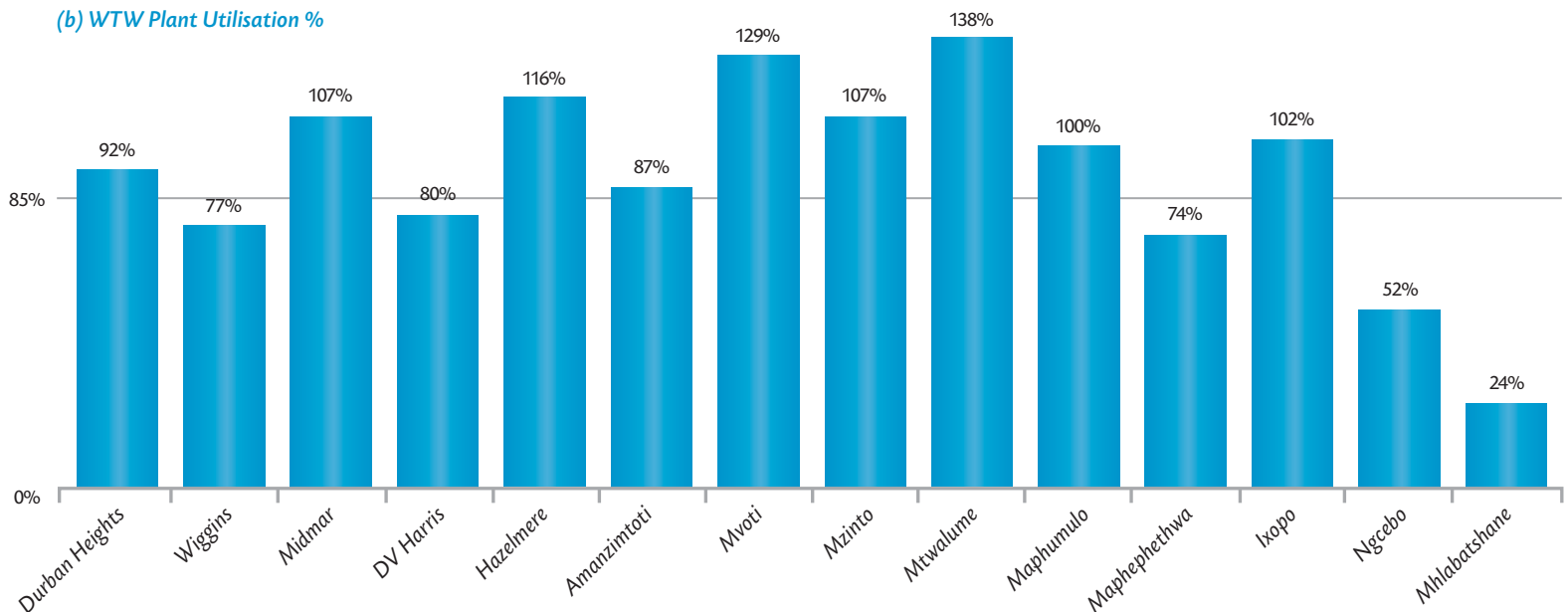
Water demand projections are updated based on trends in historical water sales volumes and customer demand trends. In parallel, analysis of Umgeni Water's bulk infrastructure and water works capacity in relation to demands highlight any infrastructure supply constraints or limitations on future growth that need to be responded to.

Figure 8.7: Water Treatment Works (a) Capacity, (b) Utilisation and Wastewater Treatment Works (c) Capacity and (d) Utilisation.

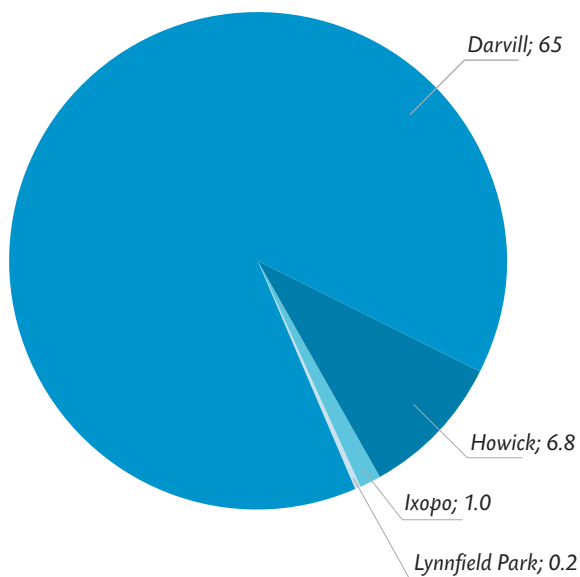
(a) WTW Capacity (Ml per day)



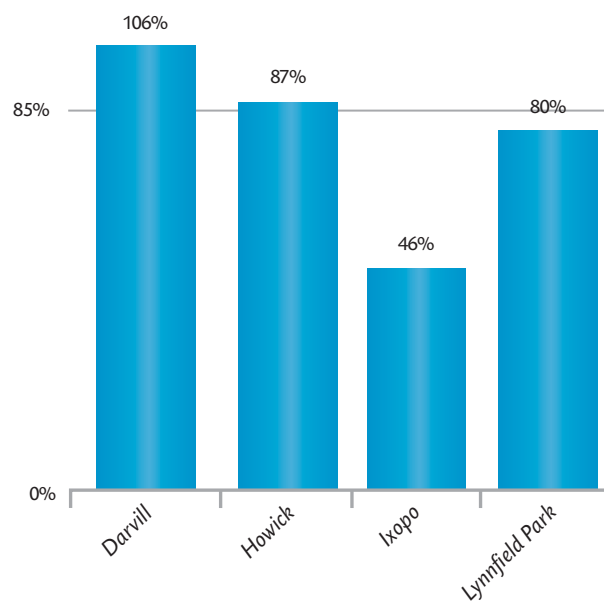
(b) WTW Plant Utilisation %



(c) WWTW Design Capacity (MI per day)



(d) WWTW Utilisation



Supply Capacity and Constraints

Several works, as shown in Figure 8.7 are currently operated above their design capacity to meet demands and this also impacts on water quality. Umgeni Water has put in place specific interventions to address these including:

- **Midmar WTW:** A works upgrade is planned for 2016-2018. Once complete, the load between the DV Harris WTW and Midmar WTW will be optimally managed.
- **Hazelmere WTW:** Capacity constraint will be addressed through the current works upgrade from 45 MI/d to 75 MI/d to be commissioned in October 2014. In the short-term, a 5 MI/d package plant is augmenting the supply to meet demands.
- **Mvoti WTW:** The Lower Thukela BWSS will replace this works by 2015. A 2 MI/d package plant is installed as a short-term solution.
- **Ixopo, Mzinto and Mtwalume WTWs:** Operational and process enhancements will alleviate constraints for these works in the short term: the Mzinto system load is to be shed through the planned Scottburgh-Ellingham Link pipeline in 2015. 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 and Ixopo WTWs' capacity constraints is the planned extension of the South Coast Pipeline and related system upgrades.
- **Darvill WWTW:** capacity upgrade from 65 MI/d to 100 MI/d is in progress.

Operational Performance and Service Planning

In the year, Umgeni Water met formally with all customers for operational performance and service planning and customer liaison was significantly enhanced to ensure critical feedback was received regarding service level improvements and upgrades. Umgeni Water successfully met all customer requirements in relation to water volumes, supply pressure and service

levels and metering.

Structured consultation was also undertaken with customers, for communication of future demands, infrastructure plans and tariff assumptions, and responses were used to inform the future tariffs and infrastructure plans.

Conceptual plans for growth and expansion of water services have been developed, for existing and new customer areas, notably where there are high water services backlogs. The growth plans will be refined and implemented in line with identified priorities and opportunities that unfold in the coming period. Customer engagement and consultation remains core to Umgeni Water successfully extending access to unserved areas.

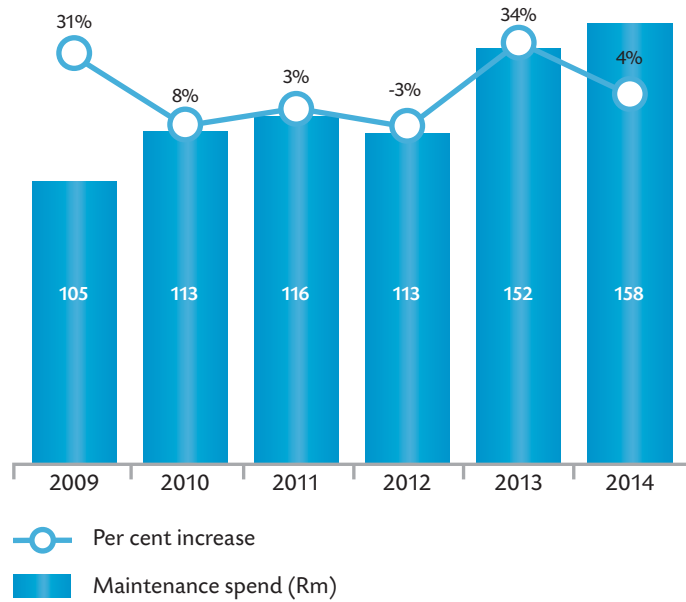
Asset Condition, Maintenance and Management

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.

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 the level of service to all customers. The intention is to ensure there are no assets that pose significant risk to supply and no major interruptions to business.

In the year the asset maintenance spend was R158 million (Figure 8.8). Over the years Umgeni Water has continued to maintain its assets and on average invests 7% of its revenue on asset maintenance. Based on assessments conducted over the past year, there are no assets that pose significant risk to supply and the organisation envisages no major interruptions to its business over the next five years and beyond.

Figure 8.8 (a): Maintenance Spend (Rm)



Water Loss Management and Metering

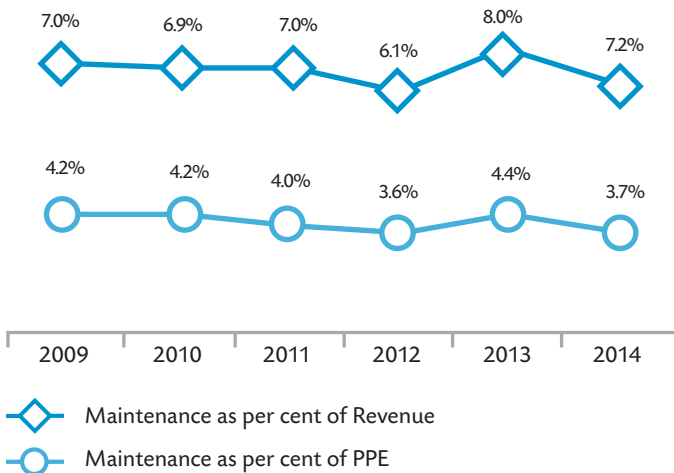
Umgeni Water has over the years successfully maintained non-revenue water below 5%. This has been a result of a metering strategy which focuses on metering all critical nodes and monitoring of meter accuracy. This initiative will continue through meters installed by Umgeni Water at various critical points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

Figure 8.8 (b): Maintenance Spend (%)



8.3 INFRASTRUCTURE STABILITY

Management Approach

Umgeni Water strives to balance continued provision of reliable bulk water supply to existing customers and to support economic growth whilst extending and increasing access to vulnerable municipalities and rural areas to reduce backlogs and improve local development. The entities infrastructure development programme therefore comprises:

- Infrastructure upgrades and rehabilitation to continue to achieve product quality and a sustainable supply to customers,
- Infrastructure development for expansion and growth to new areas and to serve unmet needs, and
- Infrastructure development and expansion to supply rural areas and municipalities to reduce backlogs and increase community sustainability.

In implementing infrastructure, Umgeni Water uses local labour as its preferred work force to facilitate skills transfer and economic support to local communities.

Umgeni Water further ensures meaningful BBBEE and incorporates Contract Participation Goals (CPGs) in its infrastructure developments, the latter requiring projects to commit a certain percentage of the scope of work and value to targeted enterprises through provision of meaningful economic opportunities, which are independently monitored and audited during implementation.

All bulk water infrastructure developments are undertaken in an environmentally sustainable manner. Appropriate projects are subjected to Environmental Impact Assessments during project planning, design, construction and commissioning phases and manifests in the development and implementation of sound Environmental Management Plans, which are independently monitored and audited during implementation.

Status of water access in supply area

Overall water access status is 84%. There are many areas that are still outside Umgeni Water’s bulk water infrastructure supply footprint that receive no water from schemes, **Figure 8.9** (Census 2011). In addition, components of the served areas that are characterised by small schemes have been found to be unsustainable.

Figure 8.9 (a) : Water Supply Access and Backlog

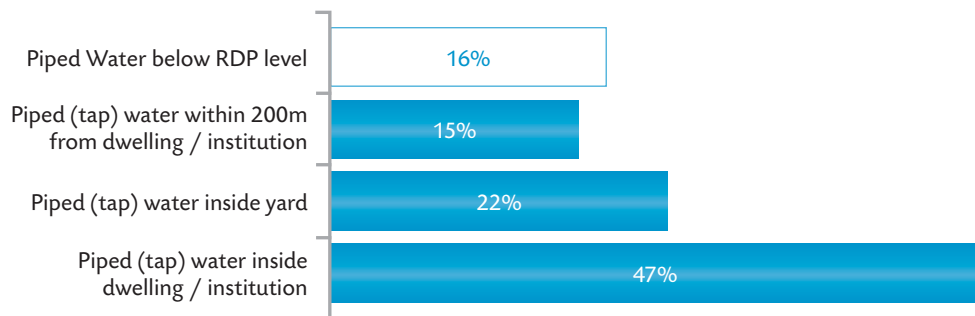
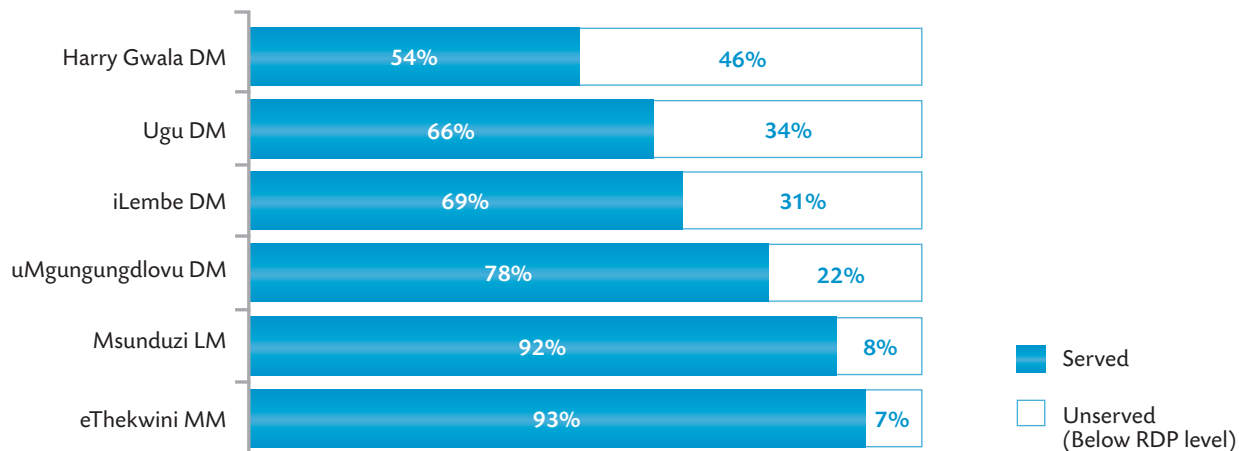


Figure 8.9 (b) : Water Supply Access and Backlog by Customer



Working closely with national and provincial stakeholders, existing customers and proposed new customers (the latter outside the current gazetted boundary), Umgeni Water is developing and will complete in 2015, a regional bulk potable water supply access plan to sustainably serve all customers and will further commence with development of a bulk sanitation access plan to address wastewater gap.



Bulk Potable Water Pipeline
construction from Richmond
Off take to Umkaas Road
(6.1 Pipeline Augmentation)

Figure 8.10 and Table 8.3 show Umgeni Water’s current bulk infrastructure, supply footprint and the status of bulk infrastructure implemented in the 2013/2014 period.

Lesotho

Table 8.3: Major projects implemented in 2013/2014

	Project name	Objective	Major Customer	Total Project Budget (Rm)	Implemented as at 30 June 2014 (Rm)	Implemented %
1	Lower Thukela Bulk Water Supply Scheme Phase 1	Rural Development	iLembe DM	1351	399	30
2	uMshwathi Bulk Water Supply Scheme (Wartburg Phases 1 - 3)	Rural Development	uMgungundlovu DM, iLembe DM	1010	134	13
3	Greater Mbizana Regional Bulk Water Supply Scheme*	Rural Development	Alfred Nzo DM	790	533	67
4	Durban Heights WTW - Various Projects	Upgrade	eThekwini MM	629	37	6
5	Greater Mpofana Bulk Water Supply Scheme Phase 1	Rural Development	uMgungundlovu DM	463	8	2
6	Midmar WTW Upgrade (250-375 MI/d) and Dam Raw Water Pump Station	Augmentation	uMgungundlovu DM	245	3	1
7	Richmond Pipeline	Rural Development	uMgungundlovu DM	224	162	72
8	Maphumulo Bulk Water Supply Scheme Phase 2	Rural Development	iLembe DM	224	120	54
9	Mhlabatshane Bulk Water Supply Scheme Phase 1	Rural Development	Ugu DM	219	187	85
10	Greater Eston Bulk Water Supply Scheme	Rural Development	uMgungundlovu DM	202	163	81
11	Hazelmere WTW: Upgrade and Pumpstation Upgrade	Augmentation	iLembe DM	180	94	52
12	South Coast Phase 2b Park Rynie to Pennington	Expansion	Ugu DM	172	38	22
13	Richmond offtake to Umlass Road (61 Pipeline Augmentation)	Augmentation	uMgungundlovu DM	166	154	93
14	Wiggins WTW - Various Projects	Upgrade	eThekwini MM	149	27	18
15	Maphophethwa WTW Upgrade	Augmentation	eThekwini MM	56	46	82
16	Ellingham Link Pipeline	Augmentation	Ugu DM	37	15	41

*UW appointed as Implementing Agent; Budget separate from Umgeni Water Business Plan Capital Expenditure Budget

Major Capex Projects Status

- Feasibility
- Design
- Construction

Future Installations and Upgrades

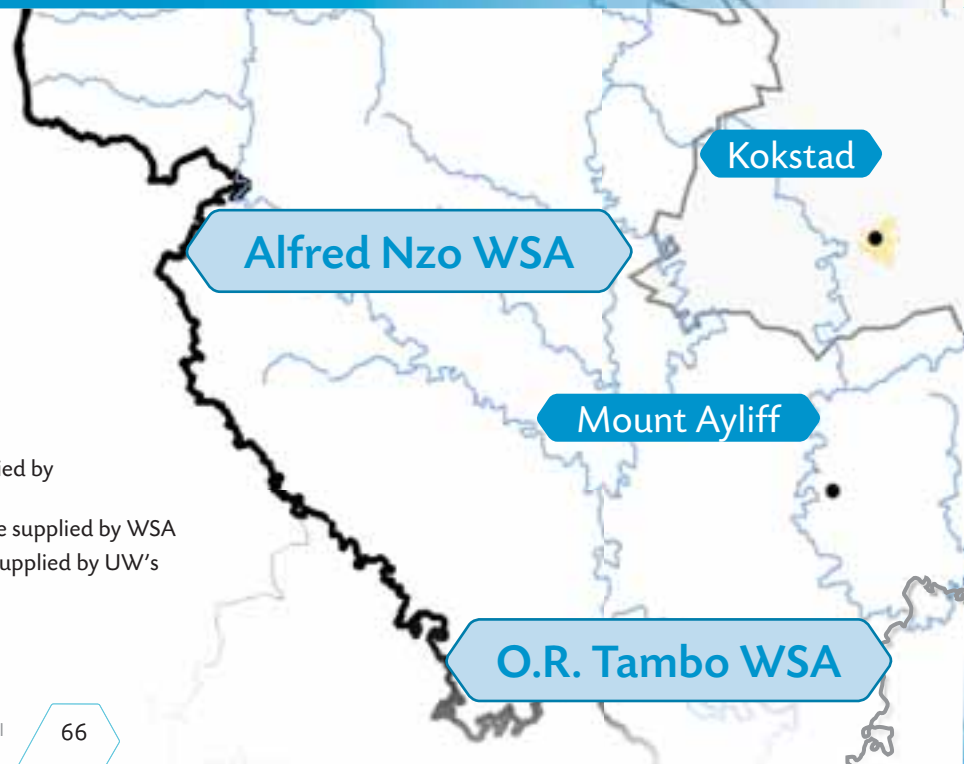
- WTW Water Treatment Works
- PS Pumpstation
- Storage Reservoir

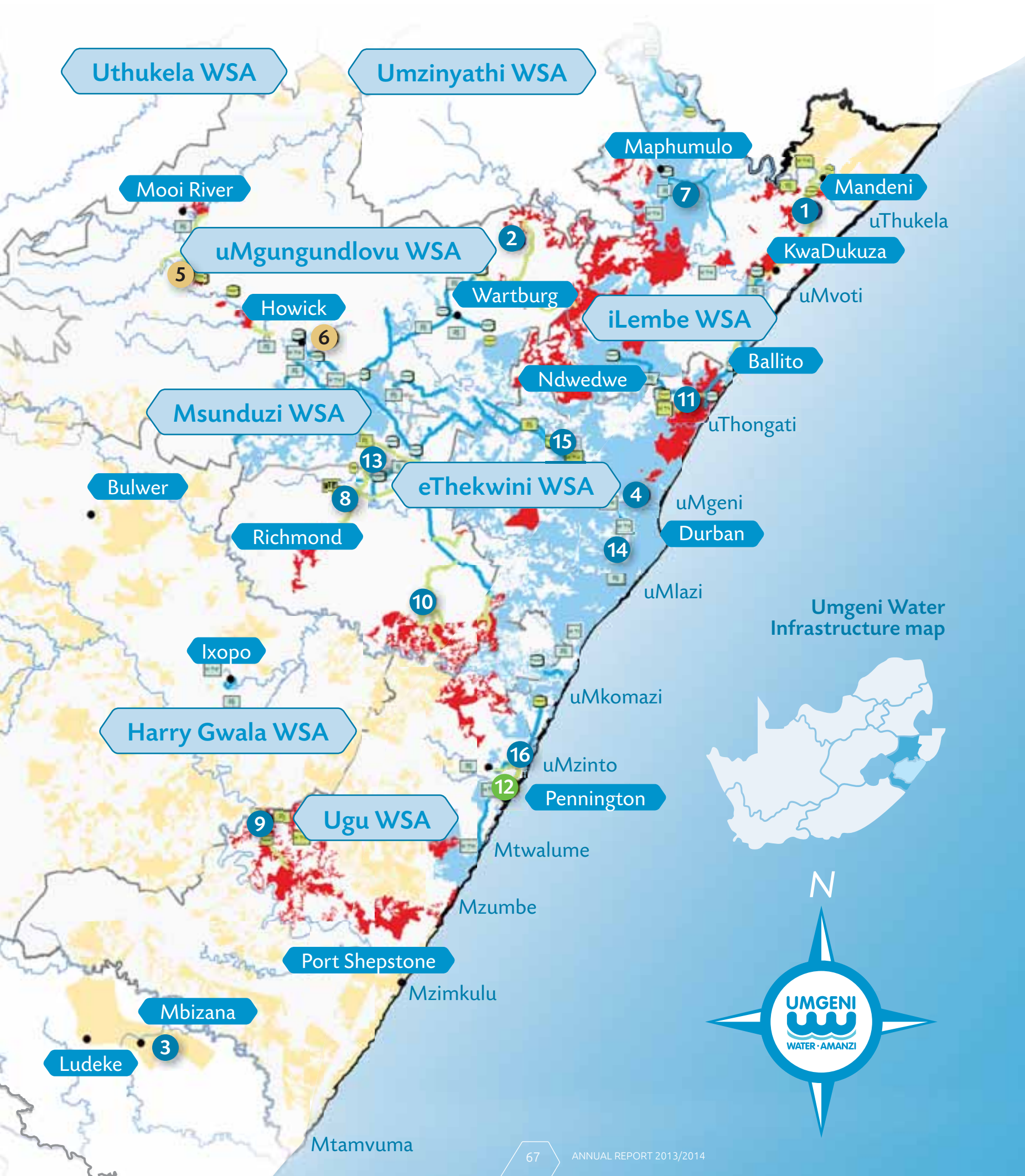
Existing Installations

- WTW Water Treatment Works
- PS Pumpstation
- Storage Reservoir
- Proposed Pipelines
- Existing Pipelines
- Main Rivers

Footprints

- Footprint areas currently supplied by UW Bulk Infrastructure
- Footprint areas supplied / to be supplied by WSA
- Footprint of areas that will be supplied by UW's proposed projects





Uthukela WSA

Umzinyathi WSA

Mooi River

Maphumulo

Mandeni

uMgungundlovu WSA

KwaDukuza

Howick

Wartburg

iLembe WSA

Ballito

Msunduzi WSA

Ndwedwe

uThongati

Bulwer

eThekweni WSA

uMgeni

Richmond

Durban

Ixopo

Umgeni Water Infrastructure map

Harry Gwala WSA

uMkomazi

Ugu WSA

uMzinto

Pennington

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Mtwalume

Mzumbe

Port Shepstone

Mzimkulu

Mbizana

Ludeke

Mtamvuma

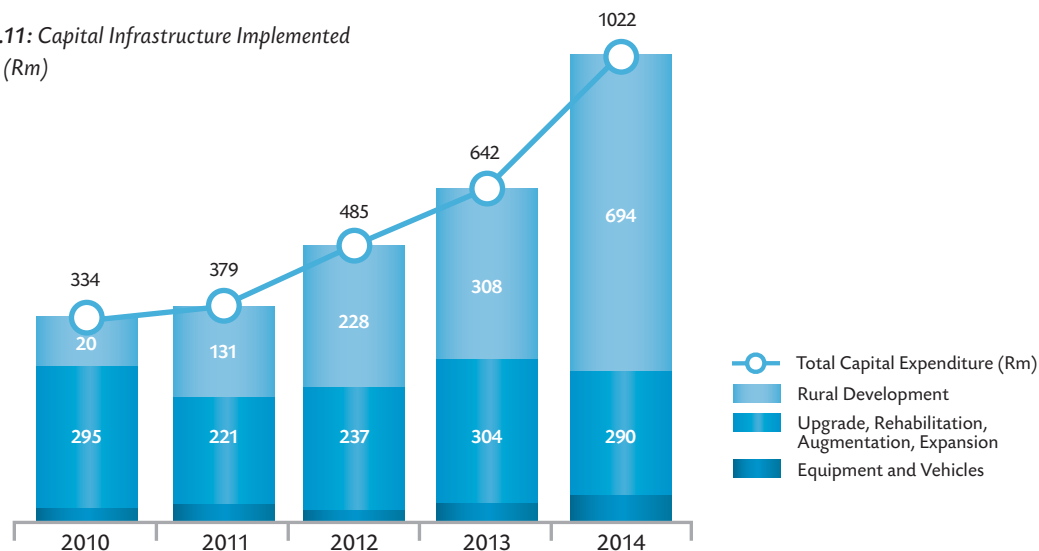
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Performance with Capital Infrastructure plan

In 2013/2014, the value of Umgeni Water’s five-year capital infrastructure programme was R4.8 billion of which R2.3 billion (49%) targeted rural access. Overall, significant progress with capital infrastructure implementation was achieved. The key projects are illustrated in **Figure 8.10**.

Figure 8.11: Capital Infrastructure Implemented (Parent) (Rm)



Variance:

Achievement of target project milestones 4% below planned level of 85%.

Reasons for Variance and Action plan to complete

Delays in capital infrastructure implementation for major projects: Mhlabatshane BWSS WTW, Hazelmere WTW Upgrade, Richmond Off-take to Umlaas Road Pipeline, Maphephethwa WTW Upgrade and Darvill WWTW Capacity Increase, due to a combination of contractor issues and terminations, contractor negotiations, and award delays.

The Mhlabatshane BWSS Commissioning is in progress with planned completion in September 2014,

The Hazelmere WTW upgrade is in progress and commissioning will start in October 2014, The Richmond Off-take to Umlaas Road Pipeline environmental rehabilitation will be completed in 2014 rainy season, The Darvill WWTW capacity upgrade will commence by September 2014 and will be completed by June 2016, and The Maphephethwa WTW upgrade will be completed during 2014/2015.

Umgeni Water is continuing to improve processes that support more effective implementation of its capital infrastructure programme. Notably review and alignment of its Engineering, Procurement and Construction Management (EPCM) process, including, optimisation of the supply chain process to reduce the turnaround time for awarding of capital expenditure programme tenders.

The EPCM process was successfully reviewed in the year and action plans to improve alignment are being implemented.

Umgeni Water is targeting a turnaround time for awarding of capital expenditure programme tenders of 90 working days. In 2013/2014 an average of 128 working days (median of 107 working days) was achieved.

Variance:

Of 14 capital expenditure projects awarded:

- 1 of 13 projects was within 60 days, and
- 4 of 13 projects were within 90 days.

Action Plan to improve

Umgeni Water is using a Bid Tracker system to manage bottlenecks in the SCM process and will

continue to streamline its processes to achieve a 90 day turnaround time.

Customers targeted and progress with key bulk infrastructure developments

- **'61 Pipeline Augmentation, Richmond Offtake to Umlaas Road**
Serves uMgungundlovu District Municipality and eThekweni Metropolitan Municipality
 - All main civil works are practically complete.
 - Environmental rehabilitation will be completed during the rainy season.

- **Lower Thukela BWSS**

Serves the iLembe District Municipality and eThekweni Metropolitan Municipality along the coastal strip from north of Durban to the uThukela River.

The infrastructure development comprises an abstractions works, pump station and weir on the uThukela River, water treatment works and potable water pipelines to deliver 55 MI/d in Phase 1. WTW is upgradable to deliver 110 MI/d in Phase 2.

- The bulk of the detailed design of Phase 1 was completed in 2011/2012.
- During 2013/2014, construction of Access Roads, Weir and Abstraction Works, Gravity main and the Water Treatment Works, were in progress.

- **Hazelmere WTW Upgrade**
Serves eThekweni Metropolitan Municipality and iLembe District Municipality.

- Construction is close to completion.
- Commissioning will commence in October 2014.

- **Darvill WWTW Capacity Increase**
Serves The Msunduzi Local Municipality.

- Upgrade of plant capacity from 65 MI/d to 100 MI/d. The new or additional components include an inlet works, primary and secondary settling tanks, pumps and pump station, reactor, chlorination house and anaerobic digesters, amongst other components.
- Construction due to commence in first quarter of 2014/2015.
 - Completion by July 2016.

- **Maphephethwa WTW Upgrade**
Serves the rural areas of Greater Maphephethwa in Inanda area, in the eThekweni Metropolitan Municipality.

- Upgrade of reservoir and WTW from 1.4 to 5 MI/d.
- The works upgrade to 5 MI/d was undertaken and partially commissioned in December 2012.
 - The remaining work will be completed in 2014/2015.

- **Richmond Pipeline**
Serves the Msunduzi Local Municipality and uMgungundlovu District Municipality and will reach and provide access to rural communities in Richmond Local Municipality.

- Infrastructure comprises a 30 km potable water pipeline from the '61 Pipeline to Richmond Reservoirs, a booster pump station and a reservoir.
- The pipe laying is ahead of programme,
 - The reservoir is complete,
 - The pump station construction is in progress,
 - The infrastructure development will be completed by April 2015.

- **Greater Eston BWSS**
Serves uMgungundlovu District Municipality and will reach and provide potable water access for 41240 people in 4 wards in Mkhambathini Local Municipality and 2 wards in Richmond

Local Municipality, making a significant impact in alleviating water backlogs in these areas.

- The bulk infrastructure capacity is 4 MI/d, upgradable to 8 MI/d. Infrastructure development phases comprise:
- Phase 1: Bulk Supply, 0.4 MI Reservoir and Reticulation to uMacalagwala
 - Phase 2: Bulk Supply, 4 Storage Reservoirs and Reticulation to Ogagwini (Currently in construction by Umgungundlovu District Municipality).
 - Phase 3: Bulk Supply to Ukhalo, 3.5 MI Bulk Reservoir, Pump Station and Trunk Main for supply to Phases 4 and 5.
 - Phase 4: Bulk Supply and Reticulation to Ismont and Dwengu.
 - Phase 5: Bulk Supply to Embuthweni and Inhlazuka.
- Phases 1 and 3 have been in construction and will be completed by September 2014. Phases 4 and 5 are in construction and will be completed by December 2014.

- **uMshwathi RBWSS**
Serves the uMgungundlovu District Municipality and iLembe District Municipality

- Phase 1: 27 km Pipeline from Claridge to Wartburg, a booster pump station and 8 MI Reservoir at Wartburg. Design completed in 2012/2013. Construction will be completed in December 2015.
- Phase 2: 17 km Pipeline from Wartburg to Dalton, a booster pump station and a 10 MI Reservoir at Dalton. Design completed in 2013/2014. Construction will be completed in May 2016.
- Phase 3.2: 29 km Pipeline from Dalton to Efaye via Fawn Leas and a booster pump station house. Design completed in 2013/2014. Construction will be completed in September 2016.
- Phase 3.3: 18 km pipeline from the Fawn Leas to Ozwathini pipeline and 12 MI Reservoir at Ozwathini. Construction will be completed in December 2016.
- Phase 3.4: Mechanical, Electrical and Instrumentation of the pump station at Dalton.

- **Mhlabatshane BWSS**
Serves Ugu District Municipality and will reach and provide potable water access for over 100000 inhabitants of ten tribal authority

areas: Bhekani, Nhlanguwini (west), KwaCele 1, Hlubi, Mabhaleni (west), KwaCele K, Frankland, Qwabe P, Shabeni, and KwaMadladla.

- The bulk infrastructure capacity is 4MI/d, upgradable to 8 MI/d. Infrastructure comprises: 25m high dam, access roads, Raw water pump station and Rising main, 4 MI upgradable to 8 MI/d WTW, Potable water pump station, 2MI upgradable to 4 MI reservoir, and Potable water gravity main.
- Commissioning of the BWSS is in progress and will be completed in September 2014.

- **Maphumulo BWSS**
Serves the iLembe District Municipality, and KwaMaphumulo, Ndwedwe, and KwaDukuza Local Municipalities, and will serve 150000 people in Maqumbi and Ashville.

- Phase 1 comprises Imvutshane River abstraction, 6 MI/d WTW, Potable water pipelines, Booster pump stations and Reservoirs. Phase 2 comprises construction of the Imvutshane Dam.
- Phase 1 was commissioned in 2012/2013.
 - Phase 2, the construction of the Imvutshane Dam, is in progress and will be completed in April 2015.

- **Greater Mbizana Regional Bulk Water Supply Scheme**
Serves the Mbizana Local Municipality within the Alfred Nzo District Municipality in the Eastern Cape area.

- The regional bulk water supply scheme includes a dam and bulk treated water system:
- Construction of Ludeke Dam, on a tributary of the Mtamvuna River, was completed in April 2014.
 - The raw water pump station and rising main to the Nomlacu Water Treatment Works are complete.
 - Phase 1 of the Nomlacu Water Treatment Works, design capacity of 10 MI/d, was completed in June 2013.
 - Construction work on the first phase of the Bulk Treated Water Supply System, comprising 28 km of pipelines, eight (8) bulk storage reservoirs and a pump station, started in March 2012 and will be complete by December 2014.

8.4 CORPORATE SOCIAL INVESTMENT (CSI)

Management Approach

Umgeni Water is committed to the economic and social transformation of its stakeholders and the communities within which it operates. The organisation's CSI projects focus, inter alia, on education and training, job creation, public health, community development, environmental conservation, arts culture and sport.

To ensure a focussed approach to empowerment, Umgeni Water has in place a BBBEE Policy which is aimed at facilitating, inter alia, the procurement of goods and services from black owned entities, promotion of entrepreneurship in historically disadvantaged communities and promoting participation of new business entrants in the water sector.

BBBEE Performance

In the year Umgeni Water revised and enhanced its BBBEE initiatives to expand and improve implementation 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.

Performance with Contract Participation Goals (CPG) Targets in 2013/2014

CPG targets set for 2013/2014 were 35% for construction contracts and 30% for professional services projects.

Forty-one (41) open tenders were awarded and signed as at 30 June 2014. For these an average of 36% CPG was achieved with a total CPG value of R311 million being achieved (240 million in 2013). The CPG per cent breakdown is listed below:

The average CPG achieved for construction contracts is 37.3% (R274 million). Of 20 contracts awarded:

- Fifteen (15) achieved CPG \geq 35%,
- One (1) achieved CPG of 34%,
- One (1) achieved CPG of 33%,
- Two (2) achieved CPG of 30%,
- One (1) was exempted.

The average CPG achieved for PSPs (professional service providers) is 33.5% (R35 million). Of 12 PSP contracts awarded:

- Eleven (11) achieved CPG \geq 30%,
- One (1) achieved CPG of 18%.

Nine (9) special materials tenders were awarded, of which:

- Three (3) achieved CPG of 30%,
- One (1) achieved CPG of 28%,
- One (1) achieved CPG of 7.2%,
- Two (2) achieved 0%, and
- Two (2) were exempted.

As a result of this initiative nuances of economic transformation will be visible in the forthcoming period and demonstrate the success of this BBBEE initiative.

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, and
- Payments due to targeted enterprises are processed at the correct rates and at agreed timeframes.

Performance with Broad-Based Black Economic Empowerment (BBBEE) in 2013/2014

The BBBEE target for 2013/2014 was 70% BBBEE spend and three (3) new entrants to be added to the database.

As at the end of June 2014, the BBBEE spend per cent was **65.6%**. The BBBEE spend represents a 14% increase in BBBEE spend over the prior year (51.6% spend in 2013).

The calculation of this percentage is based on the BBBEE levels of the companies that have been awarded work by Umgeni Water which includes other SOEs. If the spend with SOEs is excluded, the BBBEE spend is **85.7%**.

Fourteen (14) new entrants were added to the database.



Job Creation

In 2013/2014 Umgeni Water created a total of 3375 temporary jobs, comprising:

- 1073 - from Capital Expenditure Programme, and
- 2302 - from s30 projects.

The 2302 jobs created through s30 projects, comprise:

- 470 jobs created through the Greater Mbizana Bulk Water Supply Scheme to Alfred Nzo District Municipality,
- 49 jobs created through the Adopt-a-River Programme, and
- 1783 jobs created through the Working-for Water Programme.

Job creation through Umgeni Water infrastructure projects implementation, is shown in **Table 8.4**

Table 8.4 Jobs created through Umgeni Water Capital Infrastructure Programme in 2013/2014

Project	Jobs Created						Wages Paid
	Male	Female	Adult	Youth	Disabled	Total Jobs ¹	
Richmond off Take to Umlaas Road	387	8	140	255	0	73	R 1 063 917
Hazelmere Raw Water Pipelines	103	34	38	99	0	24	R 552 522
Greater Eston Phase 1	216	52	89	179	0	54	R 1 290 567
Lower Thukela- Gravity Main	874	245	391	728	0	205	R 5 523 099
Groutville Booster Pumpstation	69	0	39	30	0	13	R 411 278
Maphumulo Phase 2	592	293	333	552	0	154	R 4 239 034
Hazelmere Water Treatment Works Upgrade	524	14	203	335	0	97	R 2 899 878
Richmond Pipeline	901	33	262	672	0	177	R 4 073 079
Lilliefontein Reservoir	78	10	35	53	0	15	R 305 532
Howick Reservoir	102	24	84	42	0	22	R 408 415
Quarry Reservoir	148	11	52	107	0	70	R 511 137
Hazelmere Pumpstation	41	1	10	32	0	8	R 158 832
Mhlabatshane BWSS	253	14	213	54	0	62	R 1 199 626
Ellingham Link	167	24	57	134	0	33	R 1 567 192
Greater Eston Phase 3	15	6	6	15	0	4	R 113 414
Greater Eston Phase 4	61	33	31	63	0	20	R 504 320
Greater Eston Phase 5	49	12	30	31	0	13	R 324 041
uMshwathi BWSS	59	9	25	43	0	11	R 214 107
Lower Thukela (55 Ml/d WTW civil works)	28	16	44	0	0	6	R 136 533
Richmond Pumpstation	10	0	2	8	0	2	R 52 347
Lower Thukela (Weir, Abstraction Works and Access Roads)	38	14	18	34	0	10	R 208 389
TOTAL	4715	853	2102	3466	0	1073	R 25 757 258

¹ 100 person days of employment = 1 job created.

A total of R25.8 million was paid in wages to local labour (R10.8 million in 2013).

Successful community engagement is a critical success factor for Umgeni Water during water supply infrastructure construction and is approached in a manner that would facilitate communities participating in the identification, definition, and joint solution seeking with other stakeholders regarding issues affecting their surroundings. Umgeni Water, through institutional and social development facilitators, consulted and involved communities in the implementation process in the year. Each project had unique issues that required relevant interventions. As a result of successful management of this process, a foundation of trust is built with community stakeholders. The changes in political landscape and servitude encroachments are added factors that require re-negotiation. Notwithstanding this Umgeni Water has found that all stakeholders are willing to work together in the interest of providing sustainable water supply access to communities.



Community Participation

Water Education and Community Outreach

Three (3) initiatives were implemented in the year:

- Water Classroom programme,
- Community outreach programme, and
- Adopted schools programme.

Umgeni Water continues to reap success from its Water Classrooms and Water Education Programmes it hosts at three operational sites, namely, the Durban Heights WTW, the Midmar Water Treatment Works (WTW) and the Darvill Wastewater Treatment Works (WWTW). A total of 100 water classrooms reaching more than 4800 participants were conducted.

Umgeni Water also continued to reach out to schools through special environmental day awareness programmes. These included road shows, clean-up campaigns and tree planting activities during Arbor Week, Wetlands Day, Water Week and Environmental Week. Tree

planting included 142 trees planted at various schools sites within eThekweni Metropolitan Municipality, iLembe, Ugu and Harry Gwala District Municipalities, at the Amanzimtoti and DV Harris WTWs' and at Ixopo WWTW. A range of water related educational materials were provided to communities in the year to raise awareness about various themes in the environmental calendar, most notably the dam safety awareness campaign which educates communities on the dangers of raw water contamination and swimming in dams.

Umgeni Water worked with the twenty (20) schools it has adopted as part of a multi-year initiative which includes environmental education. Interventions during the 2013/2014 year has seen partnerships forged with various state departments in assisting schools within Umgeni Water's area of jurisdiction:

- Awareness events at the schools included Arbor Week, Water Week, Wetlands and Environment Week. Events included a clean-

up campaign conducted during Environment Week, a wetlands awareness walk and tree planting activities at all adopted schools during Arbor Week,

- Sponsorship of garden tools to all adopted schools,
- Umgeni Water sponsored transport for six (6) adopted schools to visit the Durban Heights WTW for an education tour, and
- Work continued with various partners towards strengthening environmental management at the schools. Five (5) of the adopted schools have received certificates for the School Environment Education Programme (SEEP) while one (1) of the schools was registered in the Eco-schools programme. Both programmes are nationally recognised and aimed at encouraging children and youth to take an active role in environmental conservation.



Umgeni Water implemented the following Corporate Social Investment (CSI) programmes in the year:

- Maphephethwa CSI initiative – for which Umgeni Water continued to work with the Cooperative established in Maphephethwa towards the establishment of a block making business. Umgeni Water has assisted the community in site clearing and demarcation, and purchase of tools and protective clothing.

In addition, six (6) other CSI initiatives were implemented in the year:

- Swayimani area – provision of Jojo tanks in response to water crisis,
- KZN Eye Care Coalition - purchase of equipment for cataract surgery,
- Refurbishment of potable water and sanitation infrastructure at Woodlands Primary School which is in progress,
- Heather Secondary School - refurbishment of laboratory and library resources centre,
- Northdale Primary School - purchase of

school uniforms for children from poor households, and

- Isidingo Primary School - Provision of additional classrooms to ease overcrowding.

Adopt a River Project

Umgeni Water continues to provide capacity and support as an Implementing Agent on behalf of the Department of Water and Sanitation (DWS), for the Adopt a River Project. The project focused on a 2km section of the Ncandu River that flows through the town of Newcastle.

The project employed forty-nine (49) people (71% were women), of whom six (6) were trained as First Aiders, fifteen (15) were trained in Herbicide Application and all forty-nine (49) beneficiaries were trained in Health and Safety, and Alien Plant Identification. Over 1000 bags of litter were collected during the course of the project.

Apart from creating job opportunities for the forty-nine (49) beneficiaries, this project has been beneficial in that: sensitivity has been built within the communities of Newcastle, regarding the impact of illegal dumping and negligence, exposure to aquatic invertebrates has been provided to schools using Mini SASS, and learners and communities have participated in presentations and communication on the benefits of keeping the riverine environment healthy and sustaining the river ecology.

Through this project, one (1) of the beneficiaries was awarded a bursary from DWS National Office for a related degree study at the University of KwaZulu-Natal.