a world class African city

Johannesburg Water

JOHANNESBURG WATER (SOC) LTD

BUSINESS PLAN
2021-2022

DRAFT 2

Version: 14 March 2021

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OFFICIAL SIGN-OFF

It is hereby certified that this business plan:

- was developed by management of Johannesburg Water under the guidance of the Managing Director, Ntshavheni Mukwevho;
- takes into account all the relevant policies, legislation and other mandates for which Johannesburg Water is responsible; and
- accurately reflects the performance targets which Johannesburg Water will focus to achieve given the resources available for the 2021–2022 financial year.

Designation	Name	Signature	Date
Managing Director	Ntshavheni Mukwevho		
A/Executive Director: Environment and Infrastructure Services	Tiaan Ehlers		
Member of the Mayoral Committee: Environment and Infrastructure Services	Clr Mpho Moerane		

ABBREVIATIONS AND ACRONYMS

AGSA	Auditor-General South Africa
AMI	Advanced Metering Infrastructure
B-BBEE	Broad-Based Black Economic Empowerment
Capex	Capital Expenditure
CBD	Central Business District
CIDB	Construction Industry Development Board
CoJ	City of Johannesburg
COO	Chief Operations Officer
CSD	Central Supplier Database
DIFR	Disabling Injury Frequency Rate
EE	Employment Equity
EPWP	Expanded Public Works Programme
EWSETA	Energy and Water Sector Education and Training Authority
FD	Financial Director
GDS	Growth and Development Strategy
GFIS	Group Forensic Investigation Services
GRAP	Generally Recognised Accounting Practices
HR&CS	Human Resources and Corporate Services
ICT	Information and Communications Technology
IDP	Integrated Development Plan
IoT	Internet of Things
Kl	Kilolitre
KPI	Key Performance Indicator
l/c/d	Litres per capita per day
LGSETA	Local Government Sector Education and Training Authority
LIMS	Laboratory Information Management System
LoS	Level of Service
mSCOA	Municipal Standard Chart of Accounts
Ml	Megalitre
MoU	Memorandum of Understanding

NDP	National Development Plan
NRW	Non-revenue Water
OHS	Occupational Health and Safety
Opex	Operational Expenditure
PPE	Property, Plant and Equipment
PRV	Pressure-reducing Valve
PWD	People with Disabilities
QCTO	Quality Council for Trades and Occupations
RDI	Research, Development and Innovation
RFQ	Request for Quotation
RSSC	Revenue Shared Services Centre
SAP	Systems, Applications and Products
SCM	Supply Chain Management
SDA	Service Delivery Agreement
SDBIP	Service Delivery Budget Implementation Plan
SETA	Sector Education and Training Authority
SMME	Small, Medium and Micro Enterprise
STS	Standards Transfer Specification
TOD	Transit-oriented Development
UISP	Upgrading of Informal Settlements Programme
VIPs	Ventilated Improved Pit latrines
WULA	Water use licence application
WDM	Water Demand Management
WWTW	Wastewater Treatment Works

Chapter 1: Executive Summary

EXECUTIVE SUMMARY

The Business Plan presents the activities of the Company to create value for the shareholder, as mandated with provision of water and sanitation services to the residents of the City of Johannesburg (CoJ) outlined in the Service Delivery Agreement (SDA).

The plan is premised on the political direction contained in the Shareholder's three strategic documents: the Growth and Development Strategy (GDS) 2040, the Integrated Development Plan (IDP) 2021-26 and the Service Delivery Budget Implementation Plan (SDBIP) 2021/22.

The plan responds to the Government of Local Unity (GLU) strategic priorities through the Company's developed seven Strategic Goals and programmes. The goals and programmes are regarded as operational plans which will guide in delivering the aforementioned priorities. The linkage between the three areas is indicated in table 1

Table 1: linkage between strategic priorities, goals and programmes

Strategic Priority	Strategic Goal	JW Programme
SP1: Good Governance	SG5: Enhance sound financial management, sustainability and good governance	• Systems of Internal Control • Antifraud and Corruption • Reviewing of Supply Chain Process
SP2: Financial sustainability	SG5: Enhance sound financial management, sustainability and good governance	• Metering and revenue focus • Embracing technology • Improving customer experience and support • Reviewing of Supply Chain Process • Enhancement of payment levels • Reducing Non-revenue Water
SP3: Integrated human settlements	SG 2: Deliver water and sanitation services of good quality that is accessible, reliable and efficient	• Provision of basic services – water • Provision of basic services – sanitation • Nominal water and sanitation services
SP4: Sustainable service delivery	SG 1: Utilise infrastructure delivery to create jobs, support SMMEs and attract investment.	• Water and Sewer Pipe replacement • Upgrades and storage infrastructure • WWTW programme • Transit-oriented Development • Corridors of freedom • Repairs and maintenance (water and sewer networks)
	SG7: Invest in our staff to sustain optimal performance and a service focused culture	• Skills development • Talent Management • Retention of scarce skills • Health and Safety • Employee wellness • Security management • Fleet management • Facilities management

Strategic Priority	Strategic Goal	JW Programme
SP5: Job opportunity and creation	SG1: Utilise infrastructure delivery to create jobs, support SMMEs and attract investment.	• Job creation programme (EPWP) • SMME support through co-production • Corridors of freedom
SP6: Safer City	SG3: Operate in a manner that promotes environmental conservation and sustainability	• Security for infrastructure • Wastewater Treatment Works Programme for compliance
SP7: Active and engage citizenry	SG4: Improve customer and stakeholder satisfaction	• Stakeholder and Customer Satisfaction • Stakeholder Engagement • Public Education • Corporate and Social Responsibility • Media Relations and External Communications
SP8: Economic development	SG1: Utilise infrastructure delivery to create jobs, support SMMEs and attract investment.	• Water and Sewer Pipe replacement • Upgrades and storage infrastructure • WWTW programme • Corridors of freedom • Repairs and maintenance (water and sewer networks)
SP9: Sustainable development	SG3: Operate in a manner that promotes environmental conservation and sustainability	• Reduction of Carbon dioxide in atmosphere • Wastewater Treatment Works (WWTW)/management Programme • Water conservation and demand management • Reduction of spillages at WWTW • Drought Plan
SP10: Smart City	SG6: Use of technology for effective and efficient operations.	• Digital transformation • Workforce optimisation • Mobile Application (App) • Smart metering - Standard Transfer Specification (STS) • Online water quality monitoring • Treatment of grey water nuisance • Access Controlled Chambers • Non-sewered sanitation
SP11: Minimising the impact of COVID-19 (and future pandemics)	SG 2: Deliver water and sanitation services of good quality that is accessible, reliable and efficient	• Continued provision of water and sanitation services • Staggered working hours • Sewer blockage teams operating from home • Medical Surveillance and Testing

Strategic Priority	Strategic Goal	JW Programme
		• Company-wide workplace Plans • Company-wide protocols developed and implemented
SP12: Eradicating Gender based Violence and violence against children	SG7: Invest in our staff to sustain optimal performance and a service focused culture	• Awareness campaigns • Gender equality and diversity across the workplace

The financial capital to deliver on the plan is through a capital budget of R1.1 billion, operating budget of R13.8 billion, revenue of R14.9 billion based on the annual average tariff increase of 7.8%. The company's human capital of 2 716 (June 2020) employees will be utilised to deliver on the plan. In delivering the plan the following risks have been identified and mitigations will be applied and monitored frequently

- Non-Award of Tenders
- Inadequate funding of mega infrastructure and expansion projects
- Security of Supply (Service demands outstripping supply)
- Vandalism and theft of Infrastructure.
- Public health and safety (Johannesburg Water operations and Water Quality failures posing threat to Public Health and Safety).
- Infrastructure Failure
- Waste Water Treatment Works Spillages
- Loss of Stakeholder Confidence
- Inadequate infrastructure and operational funding
- Unsustainable water losses
- Unethical behaviour
- Declining payment levels
- Slow adoption of technologies
- Loss of critical skills

Implementation of plans will be monitored through five scorecards namely Institutional Service Delivery Budget Implementation Plans (SDBIP), Corporate Balanced Scorecard, Service Standards, National Treasury Circular 88 Indicators and Upgrading Informal Settlements Programme (UISP) Indicators, to measure progress towards the achievement of planned targets.

Johannesburg Water has a unitary Board, which consists of a minority of executive and a majority of non-executive directors respectively. The Board is chaired by a non-executive director. The Board meets regularly (at least quarterly) and retains full control of Johannesburg Water. It remains accountable to the CoJ as its single shareholder, its stakeholders, and the citizens of Johannesburg. In addition, the Board has established the following committees, Audit and Risk Committee, Service Delivery, Procurement and Information and Communication Technology Oversight committee, and the Human resources and Social and Ethics Committee. These committees play a critical role in the monitoring of company performance to ensure that the Company achieves the performance it has contracted to with the shareholder.

Chapter 2: Strategic Overview

Strategic Overview

2.1 Vision

To be a World-Class African water and sanitation utility.

2.2 Mission

To provide all the people of Johannesburg with access to quality water and sanitation services by doing the following:

- Delivering a professional, sustainable, affordable and cost-effective service
- Upgrading services in marginalised areas
- Creating a customer-focused culture that responds to the needs of citizens, customers and business
- Valuing and developing its employees to build a sustainable capacity
- Safe-guarding public health and safety within the CoJ
- Preserving natural resources
- Managing assets and leveraging on technology

2.3 Organisational Values

- We value and promote **teamwork**
- We take **accountability** for our individual and team performance
- We deliver a **customer service** that we have promised
- We ensure that **communication** with our stakeholders is a priority
- We build **cost effectiveness** in our business activities

2.4 Core mandate

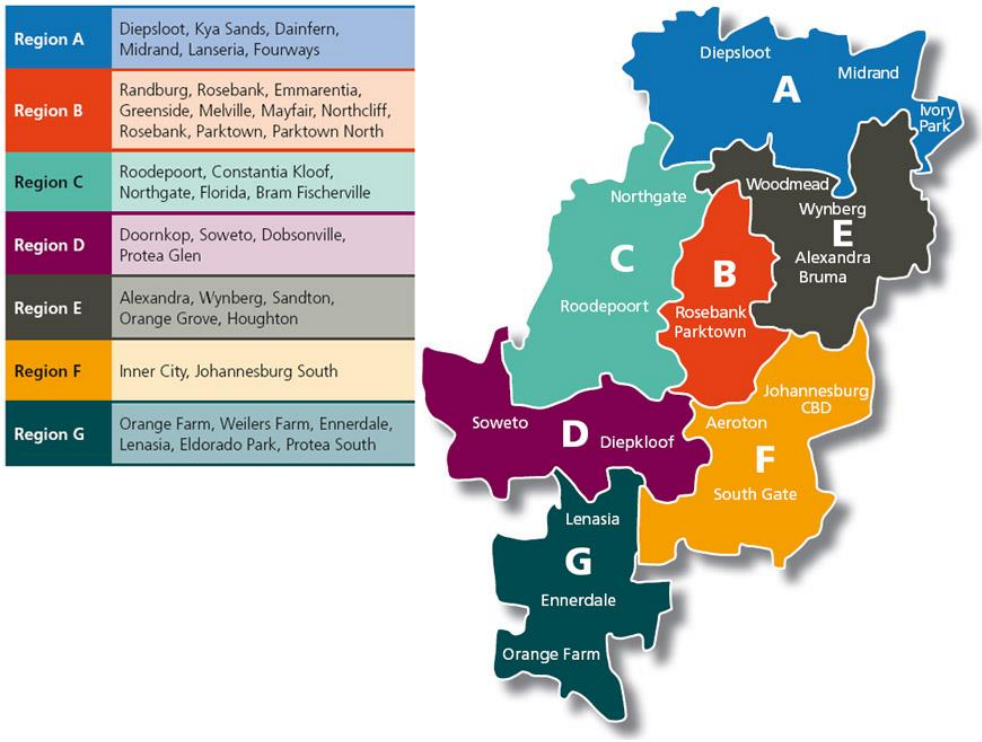
Johannesburg Water SOC Ltd, a municipal entity wholly owned by the CoJ, was incorporated on 21 November 2000 and commenced business on 1 January 2001.

The mandate of Johannesburg Water is to provide water and sanitation services to the residents of Johannesburg. The company's strategic objectives are linked to the Shareholder's objectives through the GDS 2040, IDP, SDBIP and cluster plans. The relationship between the Company and the Shareholder is governed through the SDA, which is reviewed from time-to-time and prescribes the company's mandate.

The Company provides services to an area stretching from Orange Farm in the south of Johannesburg to Midrand in the north, Roodepoort in the west and Alexandra in the east, as depicted in Figure 1. Johannesburg Water has six operating regions, with 10 network depots and six wastewater treatment plants, with a total of 2 716 employees (as at June 2020). Over and above the aforementioned number of employees, the Company also employs 78 cleaners and 311 security guards whose salaries are administered by the CoJ. These employees are appointed on the CoJ's conditions of service.

The company supplies 1.6 billion litres of potable water per day, procured from Rand Water, through a water distribution network of 12 307 km, 128 reservoirs and water towers, and 37 water pump stations. Wastewater is then collected and reticulated via 11 769 km of wastewater distribution network and 39 sewer pump stations. Johannesburg Water treats 1 043 Ml of sewage per day at its six wastewater treatment works (WWTW), which includes one pilot biogas-to-energy plant at Northern WWTW where methane gas is converted to energy.

Figure 1: City regions



2.5 The business model

The mandate of Johannesburg Water for providing water and sanitation services is guided by the business model or strategy depicted in Table 2. The value proposition is to provide potable water and sanitation to formal and informal households, as well as businesses and industries, while providing the Shareholder with a revenue stream. The defined communication channels and the relationship are premised on the annual IDP public participation process, which holds the company accountable to these communities that are served, as required by legislation. The Company will achieve this mandate through key activities that are supported by key resources. Key partners have been identified in the value chain.

Table 2: Johannesburg Water business model

<table>
<tr><th>Key partners</th><th>Key activities</th><th>Value propositions</th><th>Customer relationships</th><th>Customer segments</th></tr>
<tr><td rowspan="2">1. Rand Water
2. City Power
3. Eskom
4. Department of Water and Sanitation
5. Department of Human Settlement
6. Johannesburg Roads Agency
7. CoJ - Department of Housing</td><td>1. Distribution of potable water
2. Servicing of Informal Settlements
3. Wastewater treatment
4. Infrastructure renewal and expansion
5. WC/WDM
6. Meter Reading</td><td rowspan="2">1. Piped potable water
2. Tanked potable basic water
3. Piped sanitation services
4. Permanent basic sanitation services
5. Temporary nominal services</td><td>1. Integrated Development Plan – public participation</td><td rowspan="2">1. Residents of Johannesburg in formal areas
2. Residents of Johannesburg in informal areas
3. Businesses of Johannesburg
4. Industries of Johannesburg</td></tr>
<tr><td>Key resources/Input
1. Financial capital
2. Intellectual capital
3. Human capital
4. Social and relationship capital
5. Natural capital</td><td>Channels
1. Call centre
2. Social Media platforms
3. Walk-in centres
4. Depots
5. SMS
6. Commercial and community based radio stations</td></tr>
<tr><td colspan="3">Cost structure
1. Cost of sale: R6.91 billion
2. Operational expenditure: R3.9 billion
3. Gross profit margin: 52.7%
4. Net profit: R1.192 billion
5. Bad Debt: R2.989 billion</td><td colspan="2">Revenue streams
1. Revenue: R14.9 billion (water sales and sanitation services)
2. USDG: R182 million
3. Interest income: R194 million</td></tr>
</table>

2.6 Legislation and policy environment

The following legislation is applicable to Johannesburg Water's operating environment

- Basic Conditions of Employment Act, No.75 of 1997
- Broad-based Black Economic Empowerment Act, No.53 of 2003
- Companies Act, No.71 of 2008
- Compensation for Occupational Injuries and Diseases Act, No.130 of 1993
- Disaster Management Act, No.57 of 2002
- Employment Equity Act, No.55 of 1998
- Hazardous Substances Act, No.15 of 1973
- Income Tax Act, No.58 of 1962
- Infrastructure Development Act, No.23 of 2014
- Labour Relations Act, No.66 of 1995
- Legal Metrology Act, No.9 of 2014

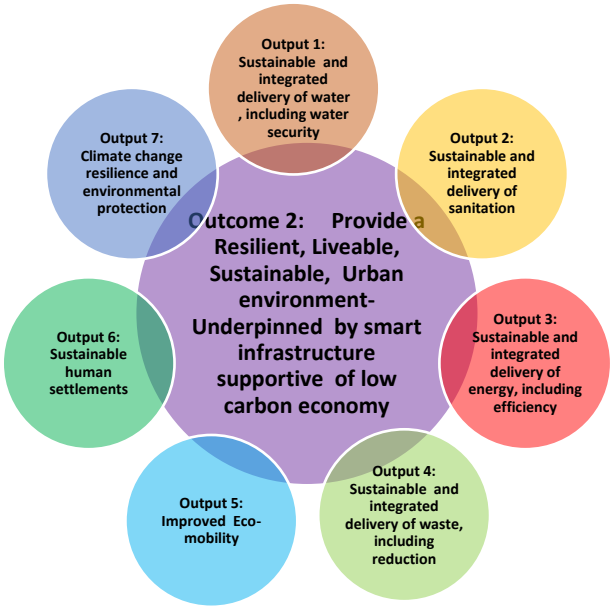
- Local Government: Municipal Finance Management Act, No.56 of 2003
- National Environmental Management: Biodiversity Act, No.10 of 2004
- National Environmental Management Act, No.107 of 1998
- National Environmental Management: Waste Act, No.59 of 2008
- National Water Act, No.36 of 1998
- Occupational Health and Safety Act, No.85 of 1993
- Preferential Procurement Policy Framework Act, No.5 of 2000
- Prevention and Combating of Corrupt Activities Act, No.12 of 2004
- Promotion of Access to Information Act, No.2 of 2000
- Promotion of Equality and Prevention of Unfair Discrimination Act, No.4 of 2000
- Protection of Personal Information Act, No.4 of 2013
- Skills Development Amendment Act, No.97 of 1998
- Skills Development Levies Act, No.9 of 1999
- Protected Disclosures Act, No.26 of 2000
- Unemployment Insurance Contributions Act, No.4 of 2002
- Unemployment Insurance Act, No.3 of 2001
- Value-added Tax Act, No.89 of 1991
- Water Services Act, No.108 of 1997

2.7 Strategic objectives

The focal point of the Johannesburg Water 2021/22 business plan is to accelerate the 2021/22 strategic course of the GLU, as outlined during the 2020 Mayoral Lekgotla in support of the 2021/26 IDP, read with GDS 2040. The revised Shareholder Strategy advocates a paradigm shift in terms of how service delivery focus areas in the 2021/22 Financial Year (FY).

In executing its mandate, the Company has taken cognisance of the vision of the CoJ, which is detailed in GDS 2040, in light of that, the business plan has been developed to support Outcome 2 of the GDS 2040: “A resilient, liveable, sustainable urban environment – underpinned by infrastructure supportive of a low carbon economy”, as depicted in Figure 2.

Figure 2: Outcome 2 of GDS 2040



The business plan has also taken into account the seven strategic goals as indicated in Table 3 with their strategic objectives and the associated risks. The goals support the achievement of the outcomes of GDS 2040 and CoJ priorities.

Table 3: Strategic Priorities, Priority programmes, Johannesburg Water Strategic goals and objectives

Strategic Priorities	Priority Programmes
1. Good governance 2. Financial sustainability 3. Integrated human settlements 4. Sustainable service delivery 5. Job opportunities and creation 6. Safer city 7. Active and engaged citizenry 8. Economic development 9. Sustainable development 10. Smart City 11. Minimising the impact of Covid -19 pandemic (and future pandemics) 12. Eradicating Gender Based Violence against children	1. Accelerated and visible service delivery and reintroduce co-production in the delivery of basic services 2. Improve and strengthen financial position 3. Impact on housing market including the integration , development and maintenance of hostels and flats 4. A safer city by introducing ward-based policing (joburg 10+) and effective by-law enforcement 5. Job opportunities and job creation 6. Development and support of SMMEs 7. Community-based planning and enhanced community engagement, including Mayoral imbizos 8. Manage displaced communities and homelessness 9. Combat drug, subsistence abuse and gender-based violence 10. Combat corruption, fraud and maladministration 11. Combat illegal land invasion and promote regulated land use 12. Formalisation of informal settlements and rapid land release
Strategic Goals	**Strategic Objectives**
1. Utilise infrastructure delivery to create jobs, support SMMEs and attract investment. 2. Deliver water and sanitation services of good quality that is accessible, reliable and efficient 3. Operate in a manner that promotes environmental conservation and sustainability 4. Improve customer and stakeholder satisfaction 5. Enhance sound financial management, sustainability and good governance. 6. Use of technology for effective and efficient operations. 7. Invest in our staff to sustain optimal performance and a service focused culture	1. Roll out infrastructure that attracts investment in the CoJ, while rolling out infrastructure, jobs will be created with an emphasis on developing SMMEs. 2. Roll out additional at least a minimum Level of Service 1 (LoS1) for water and sanitation basic services, where there is inadequate provision of water and to improve the quality, reliability and efficiency of the provision of these services. 3. Minimise and prevent environmental pollution 4. Enhance internal and external communication, stakeholder engagement, which will lead to improved customer satisfaction. 5. Enhance the business processes and internal controls, with a focus on sound financial management, financial sustainability and good governance. 6. Maximise the use of technology to be effective and efficient in processes company-wide. 7. Attract, develop and retain competent and skilled talent in order to enable high performance. The focus is also to create and promote an environment that enables diversity, inclusiveness and a conducive organisational culture

The main strategic Interventions for improvement for 2021/22 financial year which are to be implemented by the Entity in order to realise the CoJ's priorities, read with the outcomes of GDS 2040 are as follows:-

- Implementation of a **Job Creation Programme** that will increase the number of Expanded Public Works Programme (EPWP) jobs created, as well as the number of SMMEs supported through co-production
- Continued implementation of the **Informal Settlements Upgrade Programme** to ascertain that residents have access to basic water and sanitation services, as projected.
- Implementation of the **Infrastructure Investment Programme**, with special emphasis on investment that is focused on renewal and refurbishment and preventative maintenance.
- Implementation and enhancement of the **Water Service Programme**, where the quality and standard of water provided is maintained, new water meters are connected within the prescribed timeframes and timeous response to water interruptions and water bursts is upheld
- Implementation of the **Sanitation Service Programme**, where there is a reduction of wastewater spills at WWTW and timeous response to sewer blockages, as reported
- Implementation of the **Water Revenue Programme**, through the continued implementation of efforts to reduce the levels of Non-revenue Water (NRW) and the improvement of meter reading levels as this will go a long way in addressing Johannesburg Water's financial sustainability.
- Implementation of the **Water Demand Management Programme**, where household consumption of water per day is maintained at acceptable levels.
- In response to the implementation of the **Climate Change Programme**, Johannesburg Water will continue to maintain the Biogas Programme, in which methane gas is converted to electrical energy to offset greenhouse gas emissions, reduce demand for water and reduce energy consumption.

Table 4 depicts the alignment of strategic goals, priorities and priority programmes, where applicable.

Table 4: Alignment of the strategic goals to the CoJ's priorities and programmes (landscape

GDS's 2040 outcomes	Outputs	COJ Strategic priorities	COJ Priority programmes	Johannesburg Water's Strategic goal	Johannesburg Water's strategic Objective
2. Provide a resilient, liveable, sustainable urban environment underpinned by smart infrastructure supportive of a low carbon economy	• Sustainable and integrated infrastructure services • Eco-mobility • Sustainable human settlements • Climate change resilience and environmental protection	• Integrated human settlements • Sustainable development • Minimising the impact of Covid -19 pandemic (and future pandemics)	• Accelerated and visible service delivery and the reintroduction of co-production in the delivery of the basic service • Impact on the housing market, including the integration, development and maintenance of hostels and flats • Combat illegal land invasion and promote regulated land use • Formalise informal settlements and accelerate rapid land release	**Strategic Goal 2:** Deliver water and sanitation services of good quality that is accessible, reliable and efficient **Strategic Goal 3:** Operate in a manner that promotes environmental conservation and sustainability	SO 2.1 Roll out additional at least a minimum Level of Service 1 (LoS1) for water and sanitation basic services, where there is inadequate provision of water and to improve the quality, reliability and efficiency of the provision of these services SO 3.1 • Minimise and prevent environmental pollution
An inclusive, job-intensive, resilient, competitive and smart economy that harnesses the potential of citizens	• Job intensive economic growth • Promotion and support to small businesses • Increased competitiveness of the economy	• Economic development • Job opportunity and creation • Sustainable service delivery	• Job opportunities and creation • Development and support of SMMEs	**Strategic Goal 1** Utilise infrastructure delivery to create jobs, support SMMEs and attract investments	**SO 1.1** Roll out infrastructure that attracts investment in the CoJ, while rolling out infrastructure, jobs will be created with an emphasis on developing SMMEs.

GDS's 2040 outcomes	Outputs	COJ Strategic priorities	COJ Priority programmes	Johannesburg Water's Strategic goal	Johannesburg Water's strategic Objective
A high-performing metropolitan government that proactively contributes to and builds a sustainable, socially inclusive, locally integrated and globally competitive Gauteng City Region	• Effective citizen of the Gauteng City Region • Responsive, accountable, efficient metropolitan municipality • Financially and administratively sustainable and resilient city • Citizen empowerment and participation • Customer care and service • Global positioning of Johannesburg • Building cooperative and intergovernmental partnerships A responsive, corruption-free, efficient and productive metropolitan government.	• Active and engaged citizenry • Financial sustainability	• Improve and strengthen financial position • Combat corruption, fraud and maladministration • Community-based planning and enhanced community engagement, including Mayoral imbizos	**Strategic Goal 4** Improve customer and stakeholder satisfaction **Strategic Goal 5** Enhance sound financial management, sustainability and good governance	**SO 4.1** Enhance internal and external communication, stakeholder engagement which will lead to improved customer satisfaction. **SO 5.1** Enhance the way the company is doing business, with a focus on sound financial management, financial sustainability and good governance

Chapter 3: Strategic Analysis

3.1 Service delivery and Infrastructure backlog and challenge

Johannesburg Water has total infrastructure assets with a current replacement cost of R88 billion, as at 30 June 2020. The infrastructure consists mainly of water networks (12 307 km), sewer networks (11 769 km), water and sewer pump stations (76), reservoirs and water towers (128, with a combined capacity of 1 928 Ml) and WWTW (six with a combined capacity of 1 043 Ml/day).

Asset management plans dictate a renewal rate of 2% per year of assets' replacement value as per industry norm. An asset renewal rate is defined as the yearly proportion of an asset that needs to be replenished to ensure that the asset is replaced by the end of its expected useful life. Short expected useful life assets, such as electro-mechanical equipment, will have a higher renewal rate compared to long expected useful life assets, such as civil infrastructure.

The current expenditure pattern indicates that an average renewal rate of 1.1% has been achieved with current funding allocations. The company has an infrastructure renewal backlog of approximately R20.4 billion as a result of underfunding, which has also led to having 24% of the asset base that has a remaining useful life of less than 10 years, as indicated in Figure 4. The renewal backlog requirement is categorised as follows:

- Water mains replacement: R2.1 billion
- Sewer mains replacement: R3.2 billion
- Water and sewer capacity upgrading backlog: R12.6 billion
- WWTW capacity upgrading and equipment replacement: R2.5 billion

Figure 3 indicates the entire assets portfolio and its current conditions. The condition of infrastructure assets is assessed by means of a generic five-point grading scale. Infrastructure falling in the poor to very poor category can be described as having significant deterioration and generally correlating within the 0 – 5 year Remaining Useful Life category as indicated in Table 3. Where physical inspections were not possible (e.g. pipes), the condition was extrapolated from historical performance data such as bursts and blockages.

Figure 3: Assets condition profile distribution

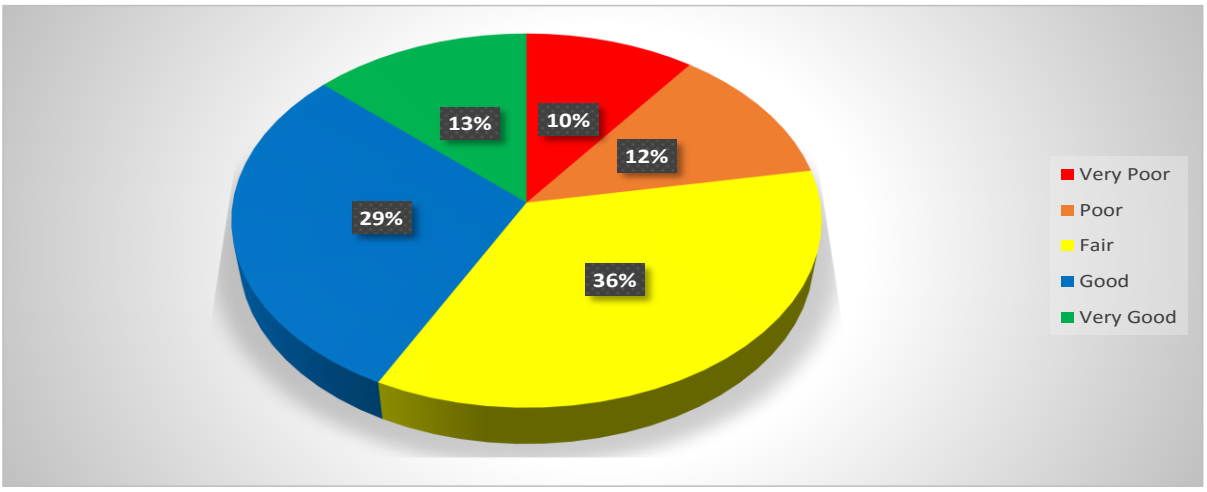


Figure 4 depicts the remaining useful life asset portfolio level over a period from 0 to over 20 years.

Figure 4: Remaining useful life

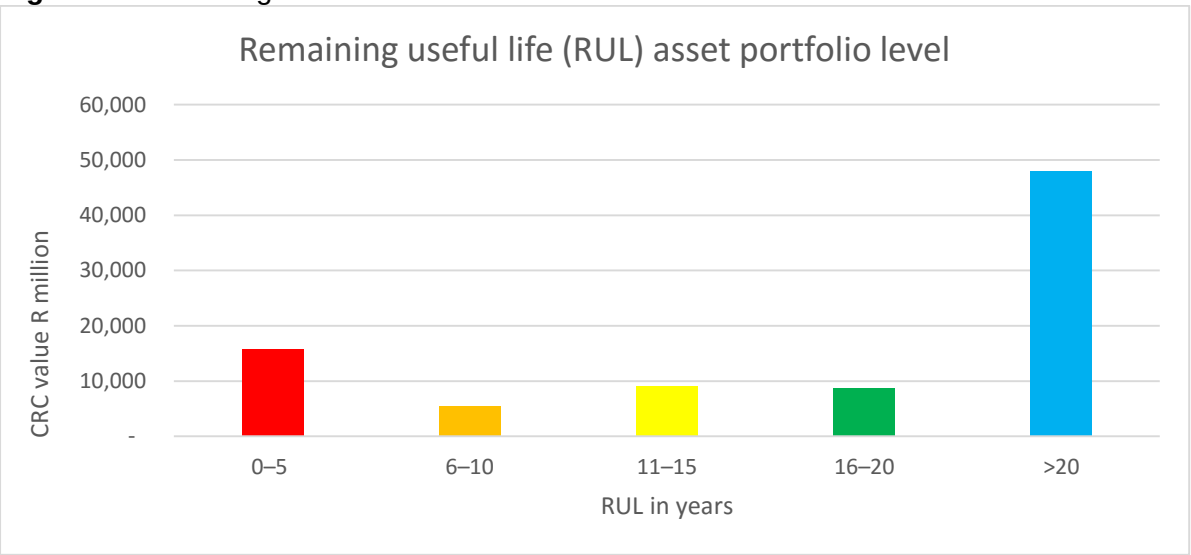


Table 5 depicts the remaining useful life of assets per asset category group.

Table 5: Remaining useful life of assets

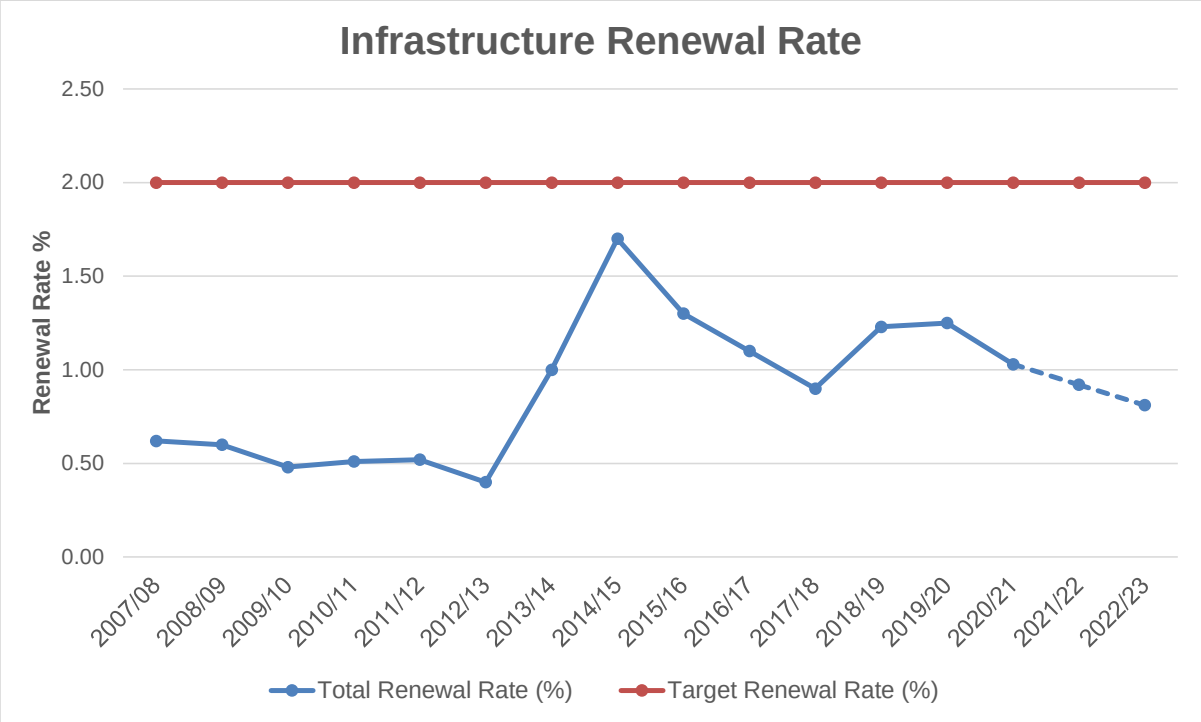
Asset group	Remaining useful life (years) (CRC amounts – R million)					
	0–5	6–10	11–15	16–20	>20	Total
Water supply network	7 772	1 997	4 175	696	20 502	**35 142**
Wastewater network	6 534	764	4 532	5 212	24 370	**41 412**
Wastewater Treatment works	1 265	2 530	355	2 762	3 084	**9 996**
Operational buildings	205	160	51	125	92	**633**
Total	**15 777**	**5 451**	**9 113**	**8 795**	**48 048**	**87 183***
Composition	**18%**	**6%**	**10%**	**10%**	**55%**	**100%**

*Land and servitudes to the value of R 1.11 billion are excluded from this summary to avoid skewering the 0-5 year RUL band

It is estimated that, on average, Johannesburg Water pipe replacements per year should amount to R660 million for water and R700 million for sewer in order to meet the pipe renewal target of replacing 1.5% of its asset value per year.

Over the past ten-year period, Johannesburg Water has never met the 1.5% renewal rate due to funding limitations. Figure 5 provides the detailed past performance of the infrastructure renewal rate, which included pipe replacements at a target of 1.5%. Infrastructure renewal should amount to R2.1 billion in order to meet the pipe renewal target of replacing 2 % of its asset value per year.

Figure 5: **Johannesburg Water infrastructure renewal rate**



Johannesburg Water's upgrading masterplans are informed by hydraulic models which analyse the performance of the water and sewer networks. The models are continuously updated in accordance with the Strategic Development Framework (SDF) and development trends. The objective of the masterplans is to ensure that capacity is available to support existing and future development. Increased demand because of continuous development and population influx has resulted in a significant upgrading backlog due to underfunding.

The masterplans identify existing as well as future capacity constraints and the infrastructure needed to resolve them. The capital investment required for capacity upgrading to support development for the 10-year horizon is reflected in Table 6 below.

Table 6: Upgrades Summary

Upgrade Category	Existing Upgrades (Current) R'000	Future (10-Year projection) R'000	Total 10-Year Requirement R'000
Water			
Bulk pipelines	4,108,360	5,212,646	9,321,006
Distribution mains	1,253,970	1,666,271	2,920,242
Reticulation	168,897	233,210	402,108
Sub-Total	**5,531,228**	**7,112,128**	**12,643,356**

Upgrade Category	Existing Upgrades (Current) R'000	Future (10-Year projection) R'000	Total 10-Year Requirement R'000
Sewer			
Outfall sewers	2,761,063	5,294,377	8,055,441
Collector sewers	3,027,723	6,136,144	9,163,867
Reticulation	1,334,187	1,443,283	2,777,470
Sub-Total	**7,122,974**	**12,873,805**	**19,996,779**

Total	**12,654,203**	**19,985,933**	**32,640,136**

The existing upgrades (R12.6 billion) are required where capacity has already been exceeded and are therefore classified as backlog. The future upgrades are required for anticipated demand over the next 10 years. Network backlogs have increased significantly because of underfunding which poses a serious risk to development potential and economic objectives.

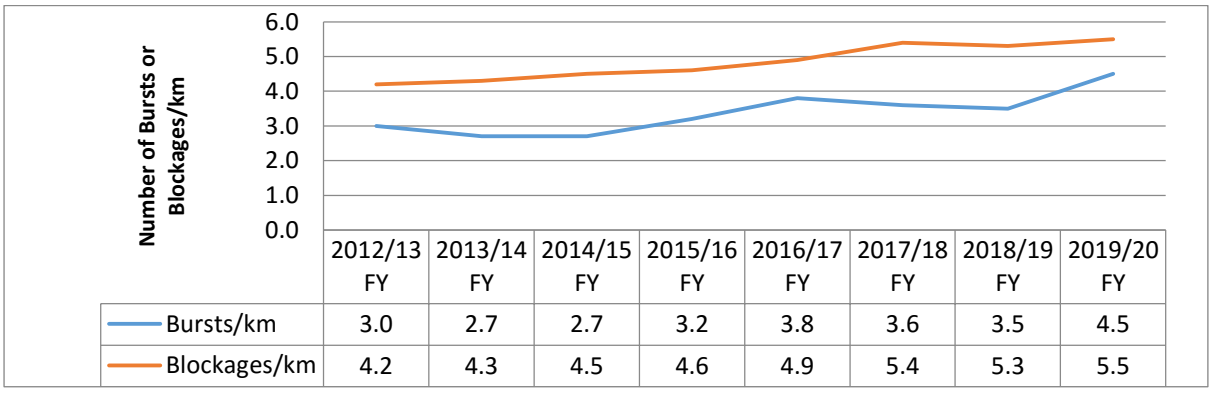
The upgrading for water and sanitation infrastructure takes into consideration the requirements for basic services for informal settlements and marginalised areas. The bulk upgrading requirements for informal settlements therefore forms part of the R19.9 billion future upgrades.

Reservoir storage is required to provide service security in the event of supply disruptions as well as pressure to the network. Reservoir storage enables development and expansion of the network in line with the SDF and growth objectives of the CoJ. The reservoir programme accounts for areas where there is currently a 24-hour deficit as well as the future storage required as the city develops. This may change depending on the rate at which the city develops.

It is estimated that additional 909 Ml of storage will be required at a cost of R1.6 billion over the next 10 years. It should be noted there are projects currently in progress to address some of the backlog to the amount of R497 million for an estimated additional 80 Ml reservoir storage.

Figures 6 affirm that lower capital funding on renewal rates has a direct impact on the quality of services rendered to citizens, but an increase will lower the failure rates and lead to more satisfied customers.

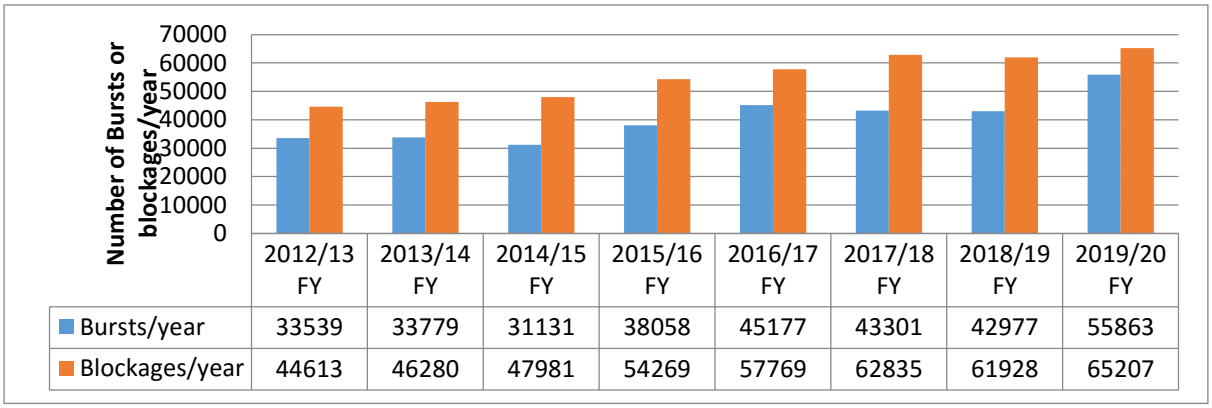
Figure 6: Number of bursts and blockages per km



	2012/13 FY	2013/14 FY	2014/15 FY	2015/16 FY	2016/17 FY	2017/18 FY	2018/19 FY	2019/20 FY
Bursts/km	3.0	2.7	2.7	3.2	3.8	3.6	3.5	4.5
Blockages/km	4.2	4.3	4.5	4.6	4.9	5.4	5.3	5.5

Figure 7 shows the increase in the number of bursts and blockages per year until 2016/17 for bursts and 2017/18 for blockages, after which the number started to decline with an increase again in 2019/20.

Figure 7: Bursts and blockages per year



	2012/13 FY	2013/14 FY	2014/15 FY	2015/16 FY	2016/17 FY	2017/18 FY	2018/19 FY	2019/20 FY
Bursts/year	33539	33779	31131	38058	45177	43301	42977	55863
Blockages/year	44613	46280	47981	54269	57769	62835	61928	65207

The resultant value of critical assets that require replacement or renewal is R21.2 billion (over the next 10-year period). This equates to a requirement of R2.1 billion per annum over the next 10 years for capital replacement or renewal, which is currently a barrier due to funding allocation or availability. In addition, the network upgrading and expansion requirement amounts to R32.6 billion and wastewater treatment works R 3.8 billion over the 10-year period. The total combined requirement is R57.6 billion or R 5.8 billion per annum for the upgrade and renewal of infrastructure.

The total water upgrading and renewal requirement is R2.2 billion per year. This is further detailed below:

- Water pipe renewals requires R693 million to replace 1.5% of its asset value
- Reservoirs rehabilitation requires R257 million
- Water pump stations renewals require R15 million
- Water upgrading and extensions require R1.264 billion

The outcome of the water networks infrastructure renewal or replacement is to reduce bursts, improved response times and improved water supply.

The total sewer upgrading and renewal requirement is R3.6 billion per year, this is further detailed below:

- Sewer pipe renewals require of R731 million to replace 1.5% of its asset value
- Sewer pump stations renewals require R8 million
- WWTW renewal requires R477 million
- WWTW capacity upgrading requires R366 million
- Sewer upgrading and extensions require R1.999 billion

In response to infrastructure renewal needs or backlogs, the proposed budget for Johannesburg Water over the next five years amounts to R7.6 billion.

3.2 Environmental analysis

The environment within which the company operates is inclusive and complex. In terms of the planning cycle, the company undertakes environmental scanning, which provides the input required to develop an informed business plan, taking all internal and external factors into consideration through the strengths, weaknesses, opportunities and threats (SWOT) and the political, economic, social, technological, legislative and environmental (PESTLE) analysis respectively.

3.2.1 SWOT

The SWOT analysis as outlined in Table 7, highlights the operating environment opportunities and threats, together with the company's strength and weaknesses. Johannesburg Water's strategic goals, as identified, strive to enhance the strengths and opportunities, while, in the same breath, apply mitigating strategies to address the weaknesses and threats identified**.**

Table 7: SWOT analysis

	Strengths	Weaknesses
INTERNAL FACTORS	• Leadership alignment and provision of clear direction • Turnaround times • Good governance • Capital infrastructure investment planning • Workplace culture • Depots in communities • Committed teams • Stable workforce • Business viability	• Supply chain management processes • Responsiveness • None/slow awarding of tenders • Payment collection
	Opportunities	**Threats**
EXTERNAL FACTORS	• Water conservation • Water losses • Infrastructure renewal • Increase revenue • Delivery of Capex projects • Community education • Diverse revenue streams • Service delivery • Sole provider • Technology and innovation	• Under-funding • Aging infrastructure • Vandalism of infrastructure • Capital Project stoppages

3.2.1 PESTLE

The (PESTLE) analysis involves the collection and portrayal of information about external factors, which have, or may have, an impact on Johannesburg Water. These factors are detailed in Table 8.

Table 8: PESTLE strategic analysis

CATEGORY	FACTORS
Political	• Frequent local government arrangements - to re word • Service delivery protests and interruptions • Culture of non-payment for services including illegal connections • Demand for services triggered by land invasion
Economic	• Increased bulk water tariffs • Low economic growth rate • High unemployment rate • Low payment and/or non-payment for services • Inability to raise independent funding • Sovereign rating of the country • In-ward migration • Higher demand for social investment (financial impact on the organisation)
Social	• Urbanisation • Increased demand for services in informal settlements (financial impact on the organisation) • High-density settlements • Consumer awareness and ignorance on infrastructure usage, i.e. abuse of infrastructure • Vandalism of infrastructure • Consumer awareness of water as a scarce resource. • Higher demand for social investment (financial impact on the organisation) • Higher awareness of human rights leading to demand of better services – to be reworded • Rising community activism (business forums)
Technological	• Rapid change in technology(Smart city requirements) • Communication infrastructure gaps • Research and technology advancement • Lack of high-technology skills (countrywide) • Increase in level of cyber attacks • Influence of social media
Legislative	• Compliance to legislative prescripts relevant to Johannesburg Water • Contractual obligations (including construction) • Directives by statutory bodies
Environmental	• Climate change • Quality and environmental standards • Increased water demand • Carbon emissions • Acid mine drainage • Alternative water resources • Impact of drought • Spatial planning • Pollution of water resources

3.3 Enterprise Risk Management

Enterprise Risk Management (ERM) is a critical component of the Company's Strategic Management and is a tool that enables the achievement of its strategic objectives and the long-term sustainable growth of the business. Johannesburg Water has a structured and dynamic risk management system which aligns with the City's' approved ERM Framework. This ensures that the company maintains a systematic and consistent approach to the management of business risks as mandated by Section 95 (c) (i) of the Local Government Municipal Finance Management Act, No.56 of 2003.

The company has an established Risk and Compliance Department that facilitates the embedding of risk management across the organisation and the creation of a risk intelligent culture. It furthermore serves to ensure that significant risks and related opportunities within the organisation are adequately identified and managed within defined risk appetite levels. This ultimately supports the company in its endeavours to accomplish its overall business objectives.

Johannesburg Water recognises the important role of risk management in ensuring good governance and equally places strong emphasis on the need to continuously strengthen and enhance its internal control environment. To this end, the company devotes substantial attention and effort to the management of significant risks around key areas such as strategic, reputational, operational, financial, legal and environmental as well as compliance risks within the organisation.

3.3.1 Risk Management Approach

The Board of Directors provides oversight over risk management and is accountable for ensuring that Johannesburg Water has an advancing level of risk maturity that enables an effective risk leadership culture. This includes ensuring that the Company has robust and effective risk management structures, systems and processes that enable identification and management of significant risks and opportunities. In carrying out this responsibility, the board has delegated this oversight responsibility to the Audit and Risk Committee. The Committee fulfills this role by overseeing the development and maintenance of ERM Policy, ERM Strategy, the annual Risk and Compliance Implementation Plan and through the review of quarterly reports that are furthermore presented to the Board in each quarterly reporting cycle.

Risk Management as applied throughout the organisation, is centered on improving internal controls, operational efficiencies, and enhancing service delivery and customer relations. Risk taking is a necessary element of the service delivery model. The Company promotes responsible risk taking by ensuring that risks remain within the risk appetite and tolerance levels from decision making through to day-to-day operations.

In managing risks on a daily basis, operational risk registers are maintained in all Departments, and the risks allocated to those best placed to manage them. A number of platforms exists that enable frequent and ongoing engagements and collaboration on the management of interconnected risks across various functions and these include a Risk Champions Forum and the Risk and ICT Steering Committee.

The following outcomes underpin risk management practices within Johannesburg Water:

- More sustainable and reliable delivery of services;
- Informed decisions underpinned by appropriate rigour and analysis;
- Reduction of wasteful expenditure;
- Prevention of fraud and corruption;
- Better value for money through more efficient use of resources; and
- Better outputs and outcomes through improved project and programme management.

3.3.2 Understanding Significant Risks to the Business Plan

The Board of Directors set the tone at the top for ERM within Johannesburg Water and this has been demonstrated through the alignment of risk management with strategy development processes within the company. Strategic risk identification and assessment is considered a critical part of strategy development whereby the Board actively engages with respect to the potential risks and opportunities that can impact the achievement of company goals.

A Board Strategic Planning and Risk Workshop was held 25 – 26 November 2020 whereby the Board level discussions informed the determination of the company's strategic goals leading up to the development of this Business Plan. This process resulted in the identification of Johannesburg Waters Strategic Risks on the development and implementation of the Business Plan as well as significant risks to the overall sustainability of the organization as whole. The approach adopted by the Board ensures that an inherent risk assessment is performed at Board level with the subsequent review of existing controls and control effectiveness performed by Executives. This process concludes with the Strategic Risk Register that is presented to the Audit and Risk Committee for validation prior to final adoption by the Board.

The company has adopted a 5 by 5 (25) rating scale method which was used in the assessment of strategic risks. The Strategic Risks of Johannesburg Water for the 2021/22 period are presented in table 8 below as follows:

Table 9: Strategic Risk register 2021/22

Risk #	Strategic Goal	Risk Name	Inherent Risk Exposure		Risk Owner
1	Utilise infrastructure delivery to create jobs, support SMMEs and attract investments	Non-Award of Tenders	20	Very High	Financial Director
2		Inadequate funding of mega infrastructure and expansion projects	20	Very High	Financial Director
3	Deliver water and sanitation services of good quality that is accessible, reliable and efficient	Security of Supply (Service demands outstripping supply)	20	Very High	Chief Operations Officer
4		Vandalism and theft of Infrastructure.	15	High	Chief Operations Officer
5		Public health and safety (JW operations and Water Quality failures posing threat to Public Health and Safety).	20	Very High	Chief Operations Officer
6		Infrastructure Failure	20	Very High	Chief Operations Officer
7	Deliver services in a manner that promotes environmental conservation and sustainability	Wastewater Treatment Works Spillages	25	Very High	Chief Operations Officer
8	Improve customer and stakeholder satisfaction	Loss of Stakeholder Confidence	20	Very High	EM: Stakeholder Relations & Communications
9	Enhance sound financial management, sustainability and good governance	Inadequate infrastructure and operational funding	25	Very High	Financial Director
10		Unsustainable water losses	25	Very High	Chief Operations Officer
11		Unethical behaviour	20	Very High	EM: Governance & Legal Services
12		Declining payment levels	25	Very High	Financial Director
13	Use technology for effective and efficient operations	Slow adoption of technologies	15	High	Chief Operations Officer
14	Invest in our staff to sustain optimal performance and service focused culture	Loss of critical skills.	25	Very High	EM: Human Resources & Corporate Services

3.3.3 COVID-19 Risks and Mitigations

Johannesburg Water has responded to the ongoing global novel corona virus (COVID-19) pandemic by implementing a number of measures in order to respond to the risks presented by the outbreak. The entity has the mandate to continue providing essential basic water and sanitation services with the view of supporting and sustaining national and local efforts on promoting community hygiene and greater public health in the fight against the spread of the COVID-19 virus. Furthermore, the entity as an employer has a legal obligation in accordance with the Occupational Health and Safety Act, No.85 of 1993, as amended, and as guided by the various Regulations to provide and maintain as far as is reasonably practicable, a safe and healthy work environment that is without risk to employees. It is against this background that a number of health and safety measures were implemented to minimise the spread of the disease in the workplace and to furthermore ensure the continuity of services.

At the onset of the pandemic, the entity performed a risk assessment in order to identify risks to the business and measures implemented to ensure continuity of business operations. This was followed by an in depth Site-specific Safety, Health and Environment risk assessment that enabled the entity to put health and safety protocols in place in mitigating against the risk of the spread of the virus. The entity recognises that its workers are a critical asset to the organisation more specifically in the fight against the virus. The measures implemented to date include the following:

COVID-19 Management Oversight

A Crisis Management Committee was activated and remains in place in order to provide oversight on the implementation of COVID-19 initiatives. The Managing Director chairs the committee, which meets on a regular basis to make decisions and to monitor the implementation of COVID-19 measures. In addition, Compliance Officers as required by the Regulations were appointed and tasked with the responsibility of oversight at their respective sites.

Medical Surveillance and Testing

Daily temperature screening and risk screening through a risk assessment questionnaire was introduced in all our workplaces. Where positive cases are identified, protocols are in place to respond adequately including placing employees on quarantine, contact tracing, testing of employees, employee recoveries as well as the disinfection of the specific facilities.

Company-wide Workplace Plans

The Workplace Plan of the entity outlines measures implemented to promote social distancing and to minimise risk of exposure. Measures articulated in the plan include those that ensure the health and safety of vulnerable employees such as employees who are 60 years and older, employees with comorbidities including pregnant women.

Workplace measures in place further include amongst others the following:

- The limit on the number of employees in the workplace, Work-From-Home and rotational attendance has been implemented for employees who can work from home.
- The use of the biometric system was suspended whilst a COVID-19 proof system is being investigated.
- Business meetings are conducted through Microsoft Teams to minimise face-to-face gatherings in the business.

Workplace Hygiene, Health and Safety Measures

- The issuing of three sets of cloth face-masks to all employees.
- The provision of hygiene products such as hand sanitisers and wipes in all our buildings.
- All vehicles are provided with liquid soap and hand sanitisers to enable workers to continually clean hands even whilst off-site.
- The periodic deep cleaning of buildings and disinfection of cars.
- Provision of face shields for employees who are public facing at the depots and sites.

Internal and External Stakeholder Relations and Communications

The entity acknowledges the importance of maintaining good public relations especially during difficult times and to this end, continues to implement initiatives around communications and community engagement whilst upholding safety protocols. These measures include the following:

- Ongoing Communications take place including updates on COVID-19 infections in the entity.
- Ongoing customer education programmes take place through social media and other platforms including COVID-19 hygiene measures for washing of hands, etc.
- Ongoing communications takes place to keep management and employees informed around new developments.
- Management and Labour meetings are facilitated regularly to provide input and status on COVID-19.
- The entity's COVID-19 e-mail (jw.covid19@jwater.co.za) remains effective with regular questions being posed by employees and responded to by the administrator together with Occupational Health practitioners.
- A COVID-19 employee awareness and education plan has been developed and implementation is ongoing.

The entity has in addition to workplace health and safety protocols developed operational continuity plans in ensuring that water and sanitation services remain in force with minimal interruptions. A number of measures are under consideration for reasonable assurance of continuity of operations and these measures include the following:

- **Staggering of working hours:** This option will ensure that sufficient workforce capacity is available at work during a 24-hour period.

- **Sewer Blockage teams operating from home:** This option will promote and ensure that social distancing requirements are easily achieved, as lesser staff will be required to present themselves at the depots during the week. This will however take into consideration supervision and workload management.

- **Introduction of Shift system:** This long-term solution is to be considered in line with the entity's business model. It will be both feasible and cost effective when considering the benefits.

The COVID-19 pandemic has revealed the pressing need for the comprehensive Company-wide Business Continuity and Disaster Recovery Plans to be in place. A process is underway to ensure this is realised.

Future view of COVID-19 Risks

The key risks that the entity may face moving forward will have to do with the uncertainties surrounding the sustainability of finances and key operations for the duration of the COVID-19 crisis. In addition to the above, risks around the entity's readiness to respond to any new disruptions especially in relation to workforce stability, supplier dependencies, equipment and inventory requirements, power supply as well as the ability to capitalise and maintain strategic relationships will be key to note.

With the current economic outlook and financial sustainability risks, the key risks that the entity may face post the COVID-19 pandemic will have to do with the entity's financial and operational capacity to continue investing in higher standards of service delivery as introduced in the attempt to respond effectively to the pandemic. Communities and other stakeholders will have become accustomed to the higher service delivery standards and expectations created for the new norm to be upheld by the entity.

Chapter 4: Strategic Response – Implementation, Performance

4.1 Key performance Areas

This section entails Johannesburg Water's implementation plans to respond to priorities identified. The response is executed through the medium-term plan, Accelerated service delivery plan and strategic goals programmes that are supporting the CoJ's strategic priorities and priority programmes.

4.1.1 Medium-term (2021-26) focus areas

The 2021/22 is the commencement of the new IDP period for 2021/26 and the Company's focus areas for the period will be the following;

- Water Demand Management
- Water and sanitation infrastructure backlogs
- Upgrading programme (Expansion)
- Water and sewer network
- Reservoir upgrade programme
- Wastewater treatment works programme

4.1.2 Accelerated service delivery plan

The CoJ developed an Accelerated Service Delivery Strategy to drive high impact service delivery outputs in the regions in targeted wards that were identified as hotspots, this will ensure that the CoJ is felt, seen and heard by communities. In support of the aforementioned strategy, Johannesburg Water has developed short-to-medium term interventions to address the water and sanitation issues per region and ward as identified.

Region A: Activities which includes jetting, Closed Circuit Television (CCTV) sewer inspections and repair of sewer infrastructure in Ivory Park and Diepsloot will be the focus points. Encroachments especially in Ivory Park and reinstatements with the assistance of Johannesburg Road Agency (JRA) will also be focused on.

Region B: The focus will be on improved performance in the repair of water and sewer infrastructure failures, addressing stolen infrastructure, the maintenance of reservoir sites within the regions as well as augmenting the water supply capacity in the Crosby, Hurst Hill and Brixton reservoir areas.

Region C: The emphasis will be on improving productivity of network teams but also repairs of standpipes in the informal settlements, increased frequency of desludging of Ventilated Improved Pit-latrine (VIP) toilets and addressing illegal water and sewer connections.

Region D: The focus areas will be to address re-occurring sewer blockages in identified areas, working with the housing department to deal with infrastructure issues in hostels and lastly maintaining reservoir sites in the region.

Region E: The focus areas will be to address frequent water bursts, maintaining standpipes in Alexandra and especially addressing illegal water and sewer connections.

Region F: The major focus will be on illegal connections, vandalism of infrastructure and in conjunction with JRA addressing the backlog of reinstatements due to water and sewer infrastructure failures.

Region G: The focus will largely be on illegal connections, vandalism of infrastructure, the maintenance of standpipes and the augmentation of water supply into the Lenasia South and High Level water supply area.

4.1.3 Strategic Goals Programmes

Strategic Goal 1:	**Utilise infrastructure delivery to create jobs, support SMMEs and attract investments**
Strategic objective:	Roll out infrastructure that attracts investment in the CoJ, while rolling out infrastructure, jobs will be created with an emphasis on developing SMMEs.
Strategic Priorities	Priority 4: Sustainable service delivery
	Priority 5: Job opportunity and creation
	Priority 8: Economic development
Priority programmes:	• Accelerated and visible service delivery and reintroduce co-production in the delivery of basic services • Job opportunities and job creation • Development and support of SMMEs

This goal is about rolling out infrastructure, which attracts investment in the CoJ. While rolling out infrastructure, jobs will be created, with an emphasis on developing SMMEs.

Infrastructure Investment Programme

The CoJ has identified 11 priorities in order to streamline strategic key performance areas with a view to enhancing performance and strengthening the ability of the CoJ to achieve the outcomes of the IDP 2021–2026 and the GDS 2040. In order to contribute to the accomplishment of GDS 2040, Johannesburg Water has identified various infrastructure investment programmes that are key in the achievement of the CoJ's strategic objectives. The focus is mainly on the upgrading and renewal of networks, expansion of WWTW, reservoir storage capacity and water demand management initiatives. The programmes have also taken into account the applicable national outcomes from the National Development Plan (NDP), as reflected below:

- **Outcome 2:** A long and healthy life for all South Africans.
- **Outcome 4:** Decent employment through inclusive economic growth.
- **Outcome 5**: A skilled and capable workforce to support an inclusive growth path.
- **Outcome 6:** An efficient, competitive and responsive economic infrastructure network.
- **Outcome 8:** Sustainable human settlements and improved quality of household life.
- **Outcome 10:** Environmental assets and natural resources that are well protected and continually enhanced.

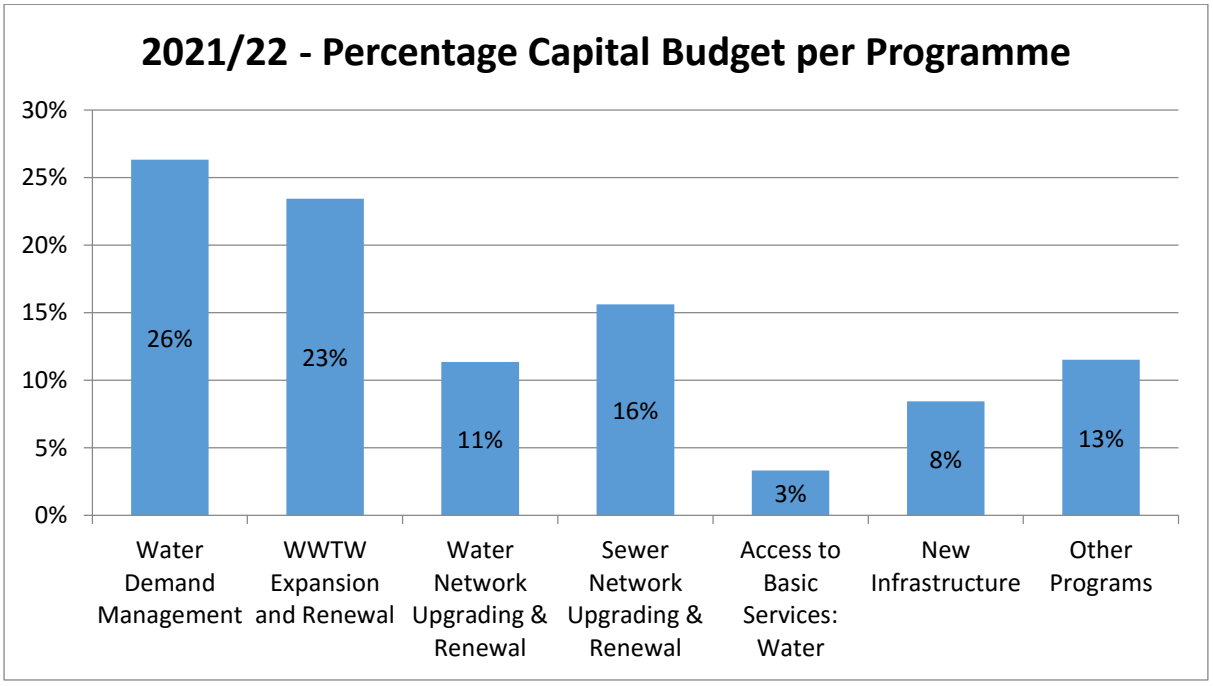
In response to infrastructure renewal needs and backlogs, the proposed budget for Johannesburg Water over the next five years amounts to R7.6 billion. Table 9 provides a detailed breakdown of the capital budget per category. In 2021/22, R1.1 billion will be invested in various programmes. These programmes have been structured in a manner that they respond to political direction, the CoJ priorities, and Johannesburg Water's strategic goals

Table 10: Five-year capital budget

Category	2021/22 R'000	2022/23 R'000	2023/24 R'000	2024/25 R'000	2025/26 R'000
Corporate Requirements	87,000	15,000	15,000	20,000	22,000
Water Demand Management	236,864	194,216	105,000	155,500	160,000
Operate and Maintain	66,000	47,000	60,000	70,000	75,000
Upgrading and Renewal	292,500	413,000	340,000	445,000	470,000
New Infrastructure	126,350	45,000	224,000	260,000	270,000
Planning and Engineering Studies	19, 500	21,000	23,000	25,000	28,000
Marginalised Areas Program	60,000	74,500	116,000	110,000	115,000
Bulk Wastewater	246,587	470,500	378,000	510,000	530,000
Total	**1,134,801**	**1,280,216**	**1,261,000**	**1 ,595,500**	**1,670,000**
Renewal Rate	**0.81%**	**0.88%**	**0.76%**	**1.30%**	**1.40%**

Figure 8 indicates the split of the capital budget programme with a bigger emphasis on infrastructure upgrade and renewal to ensure that the existing infrastructure does not deteriorate.

Figure 8: The 2021/22 capital budget per programme



Pipe Replacement Programme

In order to achieve a renewal rate target of 1.5% per annum, the renewal of 185 km of water mains amounting to R 693 million is required per year. Similarly, sewer mains require R 731 million to replace 177km per annum.

This programme is designed to ensure a continued reduction of Non-Revenue Water (NRW), pipe bursts and sewer blockages throughout the CoJ and to sustain a good level of service to CoJ's customers. Johannesburg Water will continue, in the coming year, to replace water and sewer network infrastructure that has a remaining useful life of less than two years.

In order to ensure the continued provision of quality services, Johannesburg Water intends to continue with the Pipe Replacement Programme in the current IDP period, and 373 km of the water network and 176 km of the sewer network will be replaced. As highlighted above, 234 km of water networks has been replaced to date against a five-year target of 373 km, while 169.1 km of sewer networks has been replaced to date against a five-year target of 176 km. This represents a 65.6% and a 96% achievement for the water and sewer networks against the five-year targets respectively. Table 11 details a plan of water pipe replacement with an average renewal rate of 0.4% per year which is below the required rate to reduce the number of bursts

Table 11: Water Pipe Replacement Plan

CoJ Region - Johannesburg Water Depots	2021/22	2022/23	2023/24	2024/25	2025/26	Total
	Length (m)	Length (m)	Length (m)	Length (m)	Length (m)	Length (m)
Region A-Midrand	4 000	1 653	1 722	1 700	1 600	10 675
Region B-Sandton	6 000	1 653	1 922	2 000	2 000	13 575
Region C-Roodeport/Randburg	10 000	2 480	2 500	2 500	2 500	19 980
Region D-Central	2 000	1 653	2 191	2 000	2 000	9 844
Region E-Soweto	4 000	827	1 000	1 000	1 000	7 827
Region F-Orange Farm		4 959	1 000	1 000	1 000	7 959
Total	**26 000**	**13 224**	**10 335**	**10 200**	**10 100**	**69 860**

Table 12 outlines the detailed sewer pipe replacement plan per region city-wide for five years. These sewer projects will assist in reducing the high sewer blockages experienced in these areas. In order minimize the number of sewer blockages being experienced increased investment is required, as the current renewal rate low.

Table 12: Sewer Pipe Replacement Plan

CoJ Region - Johannesburg Water Depot	2021/22	2022/23	2023/24	2024/25	2025/26	Total
	Length (m)	Length (m)	Length (m)	Length (m)	Length (m)	Length (m)
Region A-Midrand	2 500	1 299	2 000	1 500	1 500	8 799
Region B-Sandton	1 250	7 792	5 200	2 000	2 000	18 242
Region C-Roodeport/Randburg	2 100	3 896	3 800	3 500	3 500	16 796
Region D-Central	5 000	1 299	1 500	1 500	1 500	10 799
Region E-Soweto	4 925	2 597	2 600	2 500	2 500	15 122
Region F-Orange Farm		1 299	1 500	1 500	1 500	5 799
Total	**15 775**	**18 182**	**16 600**	**12 500**	**12 500**	**75 557**

Bulk water mains rehabilitation/ replacement

Johannesburg Water has the responsibility of maximising the working life of infrastructure to ensure sustainability and reliability through a programmed and systematic approach to pipeline rehabilitation and renewal.

Johannesburg Water has 2 312 km of bulk water mains of which 845 km comprises of pipes diameters greater than 400 mm. A total of 103 km of bulk mains pipelines have a Remaining useful Life of less than 5 years. A 50% split of these bulk pipelines is steel and their life span can be prolonged almost indefinitely through protection against corrosion (internal and external coating plus cathodic protection). However, construction practises, such welding without internal rehabilitation can results in localised weakness and similarly deterioration of coating can also result in reduced working life of the pipeline. Table 13 below shows a list of a prioritised bulk pipelines rehabilitation/ renewal program including the capital replacement costs.

Table 13: Bulk water main Rehabilitation/ Renewal program

Name of bulk supply main	Diameter (mm)	Length (m)	CRC (R) 000	Region
Phase 1: 2021/22				
Peri-urban bulk line	700/600/470	15 500	107,800	B
Alexander Reservoir bulk supply (G7)	800	1 000	11,000	F
Lenasia Reservoir bulk supply	675	10 000	79,000	G
Alexandra Township bulk supply	600	2 460	17,100	E
TOTAL		**28 960**	**214,900**	
Phase 2: 2022/23				
Protea Glen Reservoir	600	5000	35,000	D
Supply from Aeroton res. to Orlando res	700	6700	58,400	D
Pipe replacement at Cnr. Heald and Maseru, Meadowlands	500	795	4,400	D
Primary supply to Eldorado Park	900	10.5	129,000	G
Jabulani Reservoir bulk supply	900	1 270	15,600	D
Chiawelo Reservoir bulk supply	800	1 000	11,000	D
Meadowlands Reservoir bulk supply	800	1 500	16,500	D
Zondi Reservoir bulk supply	1000	2 600	39,800	D
TOTAL		**29 365**	**309,700**	
Phase 3: 2023/24				
G15 bulk supply to Berea and Yeoville Reservoirs	1225	6 200	113,500	F
Hursthill Reservoir bulk supply	700/600	2 700	23,500	B
Moffatview bulk main (G17)	915	3 750	46,100	F
Honeydew and Boschop Bulk supply	760/700	6 520	68,000	C
TOTAL		**19 170**	**251, 100**	
Phase 4: 2024/25				
Crosby Reservoir bulk supply main	1 050/ 750	3 700	36,000	B
Kibler Park Reservoir bulk supply main	450	1 250	5,740	F
Randjeslaagte Reservoir bulk supply main	750	4 700	41,000	E
TOTAL		**9 650**	**82,740**	
Phase 5: 2025/26				
Linksfield Ridge reservoir bulk supply main	600	2 700	19,000	E
Diepkloof Reservoir bulk supply main	700	1 600	14,000	D
Grobler Park Reservoir bulk supply main	450	2 500	9,400	C
TOTAL		**6 800**	**42,400**	

The above list of bulk mains was compiled considering the strategic importance and risk posed by the pipeline such as having no alternative supply line or redundancy, operational considerations such history of repairs and reported condition, extent of area that would be affected through disruption of services should the pipeline fell and water loss potential.

Bulk water mains are the backbone of water reticulation system and the impact should they fail would result in huge disruption and water losses. The projects are typically complex by nature, with long lead times, which requires careful planning and design.

Phase 1 will begin with assessment and preliminary design and construction commencement. It is expected that these projects will run for the 3-year Medium Term Revenue and Expenditure Framework period. Phases 2 and 3 will involve planning and assessment to determine priorities for the roll out in later years.

Upgrades and storage infrastructure

The Reservoir Storage Upgrade Programme is informed by the need to provide a 24-hour storage capacity in all of Johannesburg Water's reservoirs. The storage capacity is required to mitigate against service disruption should network bursts occur or should there be a supply disruption from the bulk supplier, Rand Water, and to maintain adequate supply pressure in the reticulation system.

In 2021/22, Johannesburg Water will continue to roll out its network infrastructure upgrade projects. These projects will position the CoJ to be a preferred investment destination, given its ability to offer business opportunities through its infrastructure. Infrastructure upgrade projects will ensure the continuous development of key municipal developmental nodes within the CoJ.

In rolling out its network upgrade projects, Johannesburg Water will also construct four new reservoir storages and two new water towers. Over the remainder of the five-year period, it is projected that the opportunity to provide additional capacity of 77 750 household equivalent will be created. Table 14 provides detailed descriptions of the reservoirs scheduled for construction and their projected outputs.

The implementation of water storage infrastructure is affected mainly by prolonged delays with respect to land acquisition which includes procurement, transfer and registration of servitudes. The land owned by the CoJ takes less time to acquire however the delays are due to rezoning and or subdivision of the required land, whilst the private land acquisition add to more time due to engagements relating to valuation of land, purchase process including transfer, rezoning and subdivision and even more when the expropriation process is considered.

In some instances, land invasions and cropping up of informal settlements on land earmarked for infrastructure development becomes a challenge as it brings the element of the protracted eviction process.

Table 14: Storage capacity projects and output

Project	Storage Capacity (Ml)	Proposed Budget 2021/22 (R'000)	Output	COJ Region
Erand Tower	0.75	20,000	Additional water storage of 500 h/h equivalent	A
Woodmead Reservoir	22	20,000	Additional 22 000 h/h equivalent	E
Linbro Park Tower 1.5Ml	1.5	5,000	Additional storage	
Halfway House Reservoir	20	25,000	Additional 20 000 h/h equivalent	A
Blue Hills Tower	1.8	5,000	Additional 1 000 h/h equivalent	A
Robertville Tower	2.25	10,000	Additional 2 250 h/h equivalent	C
Aeroton Direct Tower	1.4	0	Additional 1 000 h/h equivalent	F
Crown Gardens Tower	1.1	0	Additional 1 000 h/h equivalent	F
Lenasia High Level Reservoir	10	26,350	Additional 10 000 h/h equivalent	G
Carleswald Reservoir	20	15,000	Additional 10 000 h/h equivalent	A
Total	**80.8**	**126,350**	**Additional 72 250 h/h equivalent**	

Leaking reservoirs operations

Johannesburg Water has 128 reservoir and towers of which 42 reservoirs were assessed and found to be leaking through the structural walls or pipework. Over the years, some of those reservoirs have deteriorated to a degree that they require immediate repairs. The cost of repairs at the time was estimated at R330 million which is a substantial amount as such it is not financially feasible to repair all reservoir in one financial year.

Repairs will be executed in a phased approach due to budgetary constraints. The implementation of the repairs will be phased according to the level of criticality. In the 2020/21 FY one reservoir has been scheduled for repairs which is the Jabulani Reservoir.

There is currently no data to quantify the amount of water that is lost as a result of bulk meters that are not operational, however during assessment, it was evident that a huge quantity of water is being lost on these reservoirs. The following reservoirs have been identified as critical and prioritised for repairs in the 2021/22 FY, Aeroton, Meadowlands and Power Park.

Transit-Oriented Development Programme and Corridors of Freedom

In an effort to re-energise its economy, the CoJ has identified economic developmental nodes that need attention in the current IDP period, namely the Inner City, Randburg, Roodepoort (Mining Belt) and Transit-oriented Development (TOD) areas. In support of the political strategic direction, Johannesburg Water has planned various projects that seek to support economic activities within the identified nodes. Johannesburg Water has also planned for the refurbishment of the Hector Norris pump station, with construction commencing 2020/21. With regard to the Randburg and Roodepoort nodes, Johannesburg Water will align its programme with the CoJ's vision and strategic direction of these two nodes. The TOD areas are one of the CoJ's special programmes that are designed to correct the imbalances of the past. The programme is geared towards ensuring that high-density human settlements are developed within the CoJ. This initiative will ensure that people come closer to the CoJ or working zones, while also being provided with mobility through public transport (Rea-vaya).

In support of the TOD areas, Johannesburg Water has identified various capital projects as indicated further in the business plan in Table 23 that are geared to support the expected population and economic activities within the nodes. The company will provide additional capacity for water supply infrastructure and sanitation services to support higher density settlements. It should be noted that the current system has sufficient capacity to support development in the short term and that funding will be allocated to ensure that the ultimate development scenario is supported.

The Inner City Programme, comprising the Johannesburg Central business district (CBD) and adjacent suburbs, has been defined as a priority development node for the CoJ. Similar to the TOD areas, the vision is to provide higher density mixed-use development in support of the GDS 2040.The focus in 2021/22 will be Perth Empire Corridor Water and Sewer upgrade projects. Further, as stated above, upgrading of Hector Norris pump station.

The Perth Empire Corridor water upgrades will be the focus in 2021/22. Brixton, which falls within the Corridor, is currently supplied from the existing 22.7 Ml Reservoir and the 10.1MLBrixton Tower. The said infrastructure was constructed in 1917 and has exceeded its useful life. Due to the planned densification resulting from the Corridors of Freedom programme as well as the growing student population commune population, Johannesburg Water requires additional water capacity in the Brixton area. The supply system will be efficient upon completion of the multiyear programme which entails;

- Construction of the new 26 Ml Brixton Reservoir
- Construction of the new 2 Ml Brixton Tower and Installation of the pump station able to delivery at least 200l/s at 35m head.
- Construction of Brixton Pump station.

- Construction of 1000m Pipeline from Rand Water connection.
- Installation of approximately 7 110m of water mains of various diameters ranging from 110 to 800mm.

Table 15: Corridors of Freedom

Node	Projects Names	2021/22 Budget (R'000)	2022/23 Budget (R'000)	2023/24 Budget (R'000)	Output
Louis Botha	Water Upgrade (1.4 km) and 37 Ml Reservoir (Linksfield)	5,000	0	0	Support densification initiatives on economic development areas or zones
	Sewer Upgrade (5.4 km)	5,000	-	0	Create jobs
Empire Perth	Water Upgrade (7.2 km) and 26 Ml reservoir (Hursthill) and 2 Ml Tower Brixton (to be corrected)	15,000	13,000	13,000	Support densification initiatives on economic development areas or zones
	Sewer Upgrade (3.5 km)	-	-	0	SMME's Support
Turffontein	Water Upgrade (2.2 km) and 2.5Ml Water Tower(Forest Hill)	-	-	0	Support densification initiatives on economic development areas or zones
	Sewer Upgrade (5.1 km)	-	-	0	Promote private investment
Total		**25,000**	**13,000**	**13,000**	

Repairs and maintenance (water and sewer networks)

The ratio of operating budget to the carrying value of Property, Plant and Equipment (PPE) for repairs and maintenance is currently at an annualised percentage of 9.76% (this includes labour, as required by the Accounting Standards Board). This is just below the recommended 10% in alignment with the CoJ's priorities but above the 8% norm of National Treasury. It must be highlighted that the current expenditure on repairs and maintenance is mainly on a reactive basis, which is not ideal (1% is preventative). From 2018/19, the aim was therefore to create a balance between reactive and preventative maintenance and to move to a 50/50 spilt of the targeted 10%. This is possible if Johannesburg Water increases the current rate of capital expenditure on the replacement and refurbishment of its existing infrastructure. The plan is to increase the rate of preventative maintenance on all electromechanical equipment (Bulk Wastewater included), large diameter valves (>300 mm in diameter), hydrants and sewer network infrastructure. Preventative cleaning of the sewer network will move from 1 500 km per year to 2 500 km per year. The change from reactive to preventative maintenance will be

achieved with Johannesburg Water's existing human resources. This is possible when a renewal rate of 2% is spent on the replacement or refurbishment of the existing infrastructure. This implies that fewer failures need to be attended to and that resources that are usually used for reactive work will be freed up for preventative work. Increased preventative maintenance will ensure reduced infrastructure failures and improved service standards, which is in line with the CoJ's priorities.

Furthermore, sewer infrastructure challenges have been increasing in Ivory Park. This area has since been prioritised. Ivory Park is a northern suburb of CoJ located in Midrand Depot jurisdiction, CoJ Region A, comprising of formal and informal settlements with the total of approximately 30 000 stands of which 6 183 are informal settlement. Ivory Park is reasonably newly established township as no network showing the Remaining Useful Life (RUL) less than five years. The network system is dominant of clay and Polyvinyl Chloride (PVC), commonly known as plastic pipes with sizes varying from 160mm diameter to 900m.

The sewer network model for the area was compiled and updated over the years. The current model results show the area to be having adequate relative spare capacity. The area is known to be having backyard dwellings, however, the system was analysed taking into consideration the land use stipulated on the Spatial Development Framework.

There are number of blockages consistently experienced in the area which often lead to complaints from the residents. The main contributing factor to blockages experienced in the area is assumed to be system abuse. This is a social problem prevalent in most areas particularly where there are backyard dwellers and/or inadequate refuse bins. This requires social awareness intervention for the community to be aware of the system sensitiveness to foreign object. Dumping unwanted garbage into the sewer system depletes all efforts and interventions implemented in the past years to resolve the issues in the area. The action plan to reduce and/or eliminate the sewer issues in the area will consist of;

- Mapping of problematic areas
- Clearing of blockages
- CCTV Inspection
- Point repairs
- Flow Loggings
- Hydraulic Model Update
- Identify Upgrades
- Community Awareness
- Upgrade of infrastructure

Johannesburg Water is also participating in the accelerated service delivery initiative driven by the CoJ. This entails addressing basic service delivery failures which includes burst pipes, sewer blockages and leaking standpipes on a consistent and sustainable manner.

Job creation programme and SMME support through co-production

In line with the CoJ's commitment of supporting Small, Medium and Micro-Enterprises (SMMEs), Johannesburg Water will continue to implement various programmes that are geared towards job creation, SMME development and empowerment. In its endeavour to reduce unemployment within the CoJ, Johannesburg Water will complete the Learnership Contractor Development Programme in 2020/21. The programme is aimed at capacitating local SMMEs to achieve Construction Industry Development Board (CIDB) Grade 4 by the end of June 2021. With the completion of this programme, the company will be looking at another model better suited to develop SMMEs.

Other programmes that have been identified include the repair and maintenance of infrastructure, with more focus on townships. The programme intends to use local SMMEs to deliver services within the CoJ. As an entity of the CoJ, the company will ensure the maximum participation of youth, women and People with Disabilities (PWDs) in the Job Creation Programme in order to transform the economic and social standing of the CoJ community. In 2021/22, Johannesburg Water has planned to support 91 local SMMEs by rolling out infrastructure projects. To further boost the development of SMMEs, Johannesburg Water will also implement the following initiatives:

- Subcontract at least 30% of the project budgets exceeding R30 million to Small Medium Enterprise (SME) and co-operatives in line with regulation 4 of the Public Finance Management Act, No.1 of 1999 (PFMA). Unbundle large projects to suit SMME CIDB grading and capacity in particular instances.
- Encourage larger businesses to not only subcontract, but also to form partnerships with SMMEs through joint ventures that will result in the transfer of skills and improve the capacity and expertise of SMMEs.

Table 16 details the number of SMMEs to be supported and the number of jobs to be created as a result of the implementation of the various programmes.

The City of Johannesburg encourages economic development and growth with the aim of creating jobs and growing local businesses in areas where entities are implementing projects. Johannesburg Water has utilised infrastructure delivery projects to create jobs and supported SMMEs through community upliftment projects. This was done through the enforcement of subcontracting clause as part of tender conditions and implementation of Contractors Development Programme Vuk'uphile programme which ends in 2020/21 FY. The entity will develop another SMME Development Programme to replace Vuk'uphile.

The entity further intends to empower cooperatives through subcontracting to implement contracts or projects as an enabler for local economic development and capacity building which will be procured as set asides. This will be done in line with the Supply Chain Management (SCM) approach aligned to regulations 4 and 9 of the Preferential Procurement Policy Framework Act, No. 5 of 2000 (PPPFA) to enable the objective of empowering designated groups which includes cooperatives. The cooperatives will be involved in Water Conservation/Demand Management (WC/WDM) Projects where they will be part of the following;

- Ongoing retrofitting and removal of household devices in the household.
- Act as ambassadors for WC/WDM within their area or jurisdiction
- Lead the WC/WDM awareness creation

Table 16: Job Creation Plan – 2021/22

Programme	Number of entity	Entities owned by youth	Entities owned by women	Entities owned by disabled	Number of jobs created	Capital expenditure budget (R'000)	Operational expenditure budgets (R'000)
Pipe Renewal	22	13	7	2	558	76,200	
Operations and Maintenance	1	0	0	0		0	105,000
Installation of Basic water and Sanitation	5	3	2		110	15,000	
Water Demand Management	34	20	11	3	522	71,230	
Bulk waste Water	10	6	3	1	398	54,300	
New Infrastructure	12	7	4	1	95	12,900	
Other Projects	8	2	1	0	398	54,300	
Total	**91**	**54**	**29**	**8**	2 081	283,930	**105,000**

Johannesburg Water also propose to partner with local communities in identified hotspot wards/areas in order to improve service delivery needs. Due to a limitation of internal resources, it is planned that two service providers cooperatives be appointed. One service provider cooperative will deal with matters relating to softer skills such as public education, identifying and reporting of service delivery failures not yet reported. Another service provider cooperative can deal with technical matters such as: carrying out basic standpipe maintenance in informal settlements, identifying semi-skilled technical staff, training and upskilling them, daily work supervision, workflow management and reporting.

Strategic Goal 2	Deliver water and sanitation services of good quality that is accessible, reliable and efficient
Strategic objective:	Roll out additional at least a minimum Level of Service 1 (LoS1) for water and sanitation basic services, where there is inadequate provision of water and to improve the quality, reliability and efficiency of the provision of these services
Strategic Priorities	Priority 3: Integrated human settlement
	Priority 11: Minimising the impact of Covid-19 (and future pandemics)
Priority programmes:	Accelerated and visible service delivery and reintroduce co-production in the delivery of basic services

The purpose of this goal is to roll out additional LoS 1 basic water and sanitation services and to improve the reliability of the provision of these services.

Informal Settlements level of service upgrade Programme

The programme is aimed at improving service delivery through the upgrading of the level of service from nominal service to at least a minimum of LoS 1 where water, in the form of communal standpipes, yard water connections and sanitation, in the form of Ventilated Improved Pit-latrines (VIP), waterborne toilets and ablution blocks, is provided. The programme also provides an opportunity for job creation during project implementation. The criteria for the selection of informal settlements benefitting from the basic services programme entail the following:

- Alignment with the UISP, driven by the CoJ's Housing Department, where informal settlements are categorised for the interim and emergency provision of water and sanitation services. The interim services will be driven by the requirements of UISP programme which will align to the CoJ Water By-laws' level of services 1 and 2 depending on the implementation plan status per settlement, while the emergency service equates to nominal services.
- Other factors considered include the feasibility of the provision of related infrastructure where, in many instances, there are limitations due to improper settlement layout, densification or congestion of households within the settlement, land tenure (especially privately owned land with no permission to occupy) and other geotechnical factors like high water level and poor soil conditions.
- The funding availability determines the number of households that can be provided access to basic services.

Provision of basic services – water

The UISP business plan with the list of prioritised informal settlements has not yet been finalised by Department of Housing. However based on the budgetary provisions under basic water, it is estimated about 3 325 households will be provided with at least a minimum of service level 1 interim water services.

Provision of basic services – sanitation

Basic sanitation services in informal settlements will be provided to 5 720 households by end of 2021/22. The level of service to be provided will be at least minimum service level 1 in the form of ablution facilities or Ventilated Improved Latrines (VIP), which will depend on the type of services agreed by the communities under the social compact agreement. It should be noted that due to various social, political, environmental legal and administrative challenges, the planned targets may vary and settlements may be replaced with others that are ready for implementation. In addition the targeted households are an estimate and the final figures will be confirmed at completion of the project implementation. Table 17 reflects the settlements planned for the provision of basic sanitation in 2021/22.

Table 17: Additional households to be provided with sanitation

Region	Ward	Settlements	Targeted households
D	53	Bottom Compound (Slovo)	212
C	113	Zandspruit	1 910
C	71	Rugby Club	1 100
C	128	Tshepisong	500
G	10	Protea South	1200
D	130/21	Naledi & Tladi	350
G	53	Dark City	450
Total			**5 720**

Nominal water and sanitation services

Nominal (water and sanitation) services provided to informal settlements has increased (54%) significantly during the past 24 months. It is envisaged that this number will increase further. Nominal water services are provided through stationary water tanks, which are filled daily via mobile water tanks.

Nominal sewer services are provided through chemical toilets, which are serviced twice a week. Johannesburg Water is aiming to provide chemical toilets at a ratio of one toilet to seven households, and water tanks at a distance as determined on site and as per the density of the settlement**.** Johannesburg Water provides these services via service providers appointed through framework contracts.

Strategic Goal 3	Operate in a manner that promotes environmental conservation and sustainability
Strategic objective:	Minimise and prevent environmental pollution
Strategic Priorities	Priority 9: Sustainable development
Priority programmes:	Accelerated and visible service delivery and reintroduce co-production in the delivery of basic services

The purpose of this goal is to minimise and prevent environmental pollution with focus on water conservation, prevention of spills at WWTW and harnessing methane gas for conversion into energy.

Wastewater Treatment Works Programme

In support of the outcomes of the GDS 2040, Johannesburg Water has planned to roll out a series of high-level projects and interventions that seek to increase the current infrastructure capacity in order to support the CoJ's economic development needs. Lanseria (50 Ml) WWTW is one of the major capital projects intended to be implemented. The project is expected to be implemented over eight years and has been included in the three-year capital plan. Upon completion, the project will provide additional capacity to at least 50 000 household equivalent. This project will also relieve the current pressure on the Northern WWTW, while also unlocking economic development, which will result in job creation and poverty alleviation within the CoJ.

This project will further positively contribute to protecting the environment and mitigating against climate change in that, with less pressure on Northern WWTW, spills into the environment will be reduced. The treatment of sewer at the new Lanseria works will also be done in a more energy efficient manner with newer technologies for pumps, motors and gearboxes being implemented. It will further positively impact on the environment in that a number of network pump stations will be decommissioned due to the fact that sewer will then flow by gravity to the new works instead of being pumped to Northern WWTW. The detailed design, including all reports and drawings for the new works, has been completed. The water use licence has been granted, however the environmental authorisation was granted with off-set conditions which the entity is engaging the Gauteng Department of Agriculture and Rural Development for approval. The procurement process to appoint contractors for the commencement of construction activities will only commence after the approval of the offset conditions. Johannesburg Water will continue to roll out bulk wastewater infrastructure projects, which include upgrades, renewals and expansion in the six WWTW. The Northern WWTW Unit 5 Module 2 project is at procurement stage and is envisaged to commence with construction in the beginning of 2021/22. Upon completion, the project will provide the CoJ with an additional 50 Ml/day sewage treatment capacity. As a result of the additional capacity, the CoJ will be in an advantageous position for unlocking development as an additional 50 000 household equivalent can be connected to the works. Through this process, more jobs will be created within the CoJ, and SMMEs will be supported through subcontracting during the implementation of the project.

The renewal of bulk wastewater electromechanical infrastructure through the implementation of the Infrastructure Renewal Plans are key projects that are intended to maintain the current

treatment capacity and improve plant availability through enhanced improvements to electrical and mechanical efficiencies, which will improve effluent compliance. These projects are at varying project stages at Northern, Olivantsvlei, Bushkoppies and Goudkoppies WWTWs with some in the procurement phase. Table 18 reflects the 2021/22 projects and anticipated upgrading and renewal budget for subsequent years.

Lanseria has been identified as a key economic zone in the north western catchment of the City of Johannesburg (CoJ). Urban development (Lanseria Smart City) is currently being stifled due to the lack of bulk infrastructure. In particular, sewage generated in the catchment is being pumped to the Northern Wastewater Treatment Works, which is proving to be problematic due to lack of capacity to accommodate new Lanseria Smart City developments. The implementation of the Lanseria Wastewater Treatment Works will open and activate economic development in this region. A new Bulk Outfall Sewer will also need to be constructed so that sewage generated in the Lanseria Basin can be transported, by gravity, to the new WWTW.

A pre-feasibility study conducted in 2009, and concluded in 2013, identified a “green-fields” site, located adjacent to Northern Farm in Lanseria, as feasible for the construction of three 50 Mℓ/d modules of an activated sludge WWTW. The implementation of the three modules will be phased over a number of years.

The project is estimated to cost about R2.8 billion covering the construction of both WWTW and the bulk sewer outfall. The planning of the first phase of the project is in progress with Water Use licence issued and Environmental authorisation granted with off-set conditions. In 2021/22, the first phase of the project will commence construction of the Main Access Road and Potable Water Pipeline, whilst Offset Conditions are being resolved.

Table 18: Wastewater Treatment Works Programme

Project	Additional Capacity	2021/22 Budget (R’000)	2022/23 Budget (R’000)	2023/24 Budget (R’000)	Output
Olifantsvlei Refurbishment Works	Operational efficiency Improvement	36,000	45,000	20,000	Operational efficiency Improvement Job Creation and
Bushkoppies Primary Refurbishment	Operational efficiency Improvement	50,000	65,000	35,000	SMME’s support
Ennerdale	8 Ml Upgrade	20,000	0	9,000	Additional 16 000 h/h equivalent
Goudkoppies Refurbishment	Operational efficiency Improvement	25,000	25,000	34,000	Environmental protection
Northern Works Expansion and Refurbishment (Unit 5 Module 2) – 50 Ml/d	50 Ml/d	150,000	225,500	274,000	Additional 50 000 h/h equivalent
					Attract Investment, Create Jobs and Support SMME’s

Project	Additional Capacity	2021/22 Budget (R'000)	2022/23 Budget (R'000)	2023/24 Budget (R'000)	Output
Driefontein Refurbishment Works	Operational efficiency Improvement	5,000	10,000	2,000	Operational efficiency Improvement ,Job Creation, SMME's support and Environmental protection
Lanseria WWTW (50 Ml/d)	50 Ml/d	65,000	100,000	87,000	Additional 50 000 h/h equivalent Attract Investment, Create Jobs and Support SMME's
WWTW Replacement General	General upgrade/ refurbishment	0	0	4,000	Operational efficiency Improvement , Job Creation, SMME's support and Environmental protection
Total	**108 Ml/d**	**351,000**	**470,500**	**465,000**	**100 000 h/h**

The outcomes of the wastewater infrastructure renewal and replacement are to reduce sewer blockages, improved response time and reduce sewer spills at WWTW and improved effluent or sludge quality. Tables 19-20 below indicate the critical projects linked to the Northern WWTW as well as the sludge plan for the other works that need to be implemented to improve on effluent compliance, limiting spills and improve sludge treatment.

Table 19: Northern Wastewater Treatment Works – Critical Projects

No.	Project Name	Project Objectives	Est. Project Cost (R'000)	Status
1.	BWW1506: Infrastructure Renewal Plan	Renewal of electromechanical (Pump stations-Phase 2) and Electrical infrastructure upgrade (Phase 1).	162,000	At design stage now, procurement of contractors anticipated in the second half of 2021/22 Financial Year
2.	BWW1402: Unit 4 Liquor Plant	Design and construction of liquor plant that will treat all the filtrates created during the sludge dewatering process to improve effluent quality for compliance.	95,000	Tender expected to be awarded in first half 2021/22 Financial Year
3.	BWW1403: Belt Presses #4	Design and installation of four new belt presses and associated infrastructure.	52,000	Tender expected to be awarded in first half of 2021/22 Financial Year
4.	BWW1506: De-sludge and line Dam 02	Removal and disposal of sludge and the lining of Dam 02 with an impermeable layer to prevent groundwater pollution as stated in the Northern Works Licence Terms 03/A21C/EFG/2804.	88,000	Preliminary Design Report has been completed. Environmental Authorisation was obtained. Awaiting WULA approval. Procurement expected to be completed towards the end of 2021/22 Financial Year
5.	BWW1407: Unit 5 Module 2	Design and construction of a 50 Ml/day expansion of Unit 5 and upgrade of the Head of Works.	632,000	Civil works tender closed and was a non-award. Procurement process to be re-initiated and award expected in first half of 2021/22 Financial Year
6.	BWW1507: Digester New (including Preconditioning)	Design and construction of new digesters including pre-thickening and pre-conditioning.	570,000	Procurement expected to be completed in 2022/23 Financial Year
7.	BWW1508: Unit 4: Replacement of Electromechanical	Refurbishment of Unit 4 Modules 1 to 4 electro-mechanical infrastructure to improve wastewater treatment capacity.	130,000	Preparation of PDR and tender documents are in progress. Procurement of contractor to be completed in second half of 2021/22 Financial Year.

Table 20: Sludge Plan

Project Name	**Description**	**Project Stage**	**Estimated Cost (R'000)**
Northern Works: Belt Press	This project is for the design and installation of four new belt presses and associated infrastructure	Detail Design and Tender - Awaiting Budget Allocation	115,000
Northern Works: Digesters	The project is for the design and construction of new digesters including pre-thickening and pre-conditioning and other associated infrastructure as outline in the 2015 report title Northern WWTW Digestion Capacity Investigation	Preliminary Design - Awaiting Budget Allocation	570,000
Northern Works: Unit 4 Liquor Plant	The scope for this project is for the design and construction of Liquor plant that will treat all the liquors created from the belt presses	Tender - Ready for implementation	70,000
Olifantsvlei: Belt Press #1	This project is for the design and installation of a new belt presses and associated infrastructure	Detail Design - Awaiting Budget Allocation	25,000
DF: Sludge Pre-thickening and Pre-conditioning	The scope for this project is the design and construction of pre-thickening and pre-conditioning for sludge handling at Driefontein	Identification - Awaiting Budget Allocation	100,000
Goudkoppies: Infrastructure Renewal Plan	Phase 2b: Digester Heating and Mixing, Gasholder replacement	Detail Design and Tender - Awaiting Budget Allocation	120,000
Grand Total			**1,000,000**

Digester Biogas to Electrical Energy

A major by-product of the heated digestion process is biogas, consisting mainly of carbon dioxide and methane. The excess biogas is presently flared and only carbon dioxide is emitted to the atmosphere. This is a recognised practice for the destruction of methane, a greenhouse gas that is detrimental to the environment. The biogas produced in the sludge digestion process can be more beneficially utilised as a source of energy to generate electricity for internal consumption at the various wastewater treatment works, resulting in considerable electricity cost savings.

Johannesburg Water initiated a Biogas to energy project at Northern Works with the aim of generating electricity from the methane gas generated as a by-product of wastewater treatment process which was a test case. The project performed however did not reach the intended power output due to low biogas generation. The entity intends to refurbish 4 additional digesters and re-commission the plant in order to increase the biogas generation which will optimise the performance of the biogas plant at Northern WWTW.

Johannesburg Water and CSIR entered into a partnership to investigate the options to improve the efficiencies with the Biogas production at the Driefontein and Northern WWTW. Council for Science and Industrial Research (CSIR) initiated a pilot and laboratory studies on various substrates which could be considered as additives to improve the production. CSIR will finalise the pilot and laboratory studies and present the final report in 2021/22 FY.

The electrical power cost in South Africa is set to increase dramatically over the next three years as a result of recent announcements made by Eskom. This will have a very marked effect on the treatment cost of wastewater in Johannesburg. The impact of the increase can be substantially mitigated by the installation of biogas to electrical energy facilities at five of the WWTW in Johannesburg.

Water conservation and demand management

Water demand is projected to outweigh supply in the coming years. Thus, it is important for Johannesburg Water to reduce its demand. Although water demand reduced over the past few years from 309 litres per capita per day (l/c/d) to 275 l/c/d, efforts need to be intensified to progressively reduce it to the norm of 175 l/c/d, as stipulated in the National Water and Sanitation Master Plan. In support of this reduction, Johannesburg Water have reviewed its current WC/WDM Strategy which came to an end in June 2021 and will implement its new five-year WC/WDM Strategy, which comprises the following initiatives:

Bulk metering

A review of bulk meter status was undertaken. The results indicated that only 54% of Johannesburg's internal bulk meters are operational. Johannesburg Water is in the process of procuring service providers to assist with the repair and maintenance of bulk management meters, as well as the supply and delivery of spare parts for these meters. This initiative will focus on getting all internal bulk meters 100% operational in the next year so that these zones can be reduced to adequate sizes, which will assist considerably in leak detection. The installation of check meters downstream of Rand Water's meters will also assist in monitoring the accuracy of the bulk water supply from Rand Water. By 2021/22, the aim is to have all

management meters operational and to check all installed meters where there are no management meters closer to the big Rand Water bulk meters, which supply 90% of the water into the CoJ.

Active leak detection and minimum night flow analysis

Active and passive leak detection has a potential to reduce water demand by huge quantities. In the 2019/20 FY, a total of 734 483 water leaks were identified and reported. The length of water pipe mains inspected was 10 478 km. This intervention provided an estimated water demand reduction of 10 021 479 kl per annum. Minimum Night Flows reduction through advanced pressure management systems has a potential been identified to have a potential savings of 5 918 000 kl per annum. These intervention combined have a potential savings of 15 939 479 kl per annum. It is suggested that all activities related to active and passive leak detection be supported and implemented.

Establishing new pressure management zones

A total of 177 potential new Pressure Reducing Valves (PRV) zones have been identified within the CoJ. In light of the high number of proposed PRV zones that have been defined, a considerable amount of work was done in prioritizing these PRV zones to ensure that the most beneficial projects are implemented as indicated in the business plan but eventually the entire 170 zones will be covered in the next 10 years. Once all there new PRV zones have been established in all of the three categories, an annual water demand reduction of 7 066 000 kl per annum is expected.

Retrofitting and removal of wasteful devices

The Soweto Infrastructure Upgrade and Rehabilitation Project (SIURP) is also approaching completion, with Orlando East, Orlando West and Diepkloof as the only suburbs still outstanding. Other Deemed areas like Orange Farm, Alexander, just been initiated and are in progress with completion of the project planned for the 2021/22 FY. The initial phases of the implementation of the SIURP achieved savings of approximately 40 Ml and there is adequate data to support this fact. There is no doubt that this intervention is effective in reducing demand, it is for that reason that it is currently being rolled out in Orange Farm and Alexander. The following are areas, which have been targeted for the roll out of this intervention over the next three years. Ivory Park, Eldorado Park, Westbury and Noordgesig. It is anticipated that a total saving of 30 446 Ml/annum will be realised from areas mentioned above.

Orange Farm

The project commenced in the 2019/20 Financial year with discretisation works, while retrofitting and meter installation works commenced in the 2020/21 financial year. The project is planned to be completed by June 2023 to a total cost of R434 million. R254 million of the cost has been committed to appointed contractors, whilst the balance is for the supply of customer meters.

The Orange Farm project has a potential of saving 8 865 Ml per annum which is equivalent to R53.2 million per annum on completion of the project thus the projected payback period will be between 8 - 10 years post the completion of the project.

Alexandra

Construction has commenced in 2020/21 FY with contractors appointed for secondary upgrade and discretisation. The scope entails replacement and upgrade of secondary mains, creation of water zones, retrofitting of leaks and metering. The projects is planned for completion in 2023.

It is estimated that the project will reduce the NRW level to an acceptable level of 18% with 9 415 Ml of water saved per Annum.

Ivory Park

Feasibility studies have been completed in Ivory Park whereby it is envisaged that 3 912 Ml per annum will be saved post implementation of the project. The total funding required to implement the project is estimated at R210 million. The project is planned to commence with creation of water zones in the 2021/22 FY. The programme will create job opportunities and development of local SMMES

While there is adequate evidence that this intervention reduce water demand, there is evidence that poor by-law enforcement erode the savings achieved through this intervention. All the savings achieved before the CoJ vs Mazibuko case were lost due to the lack of by-law enforcement after the case. This increase in demand has pushed up the 2019/20 FY projection by 7% as projected in 2014. In order to sustain the water demand savings, By-law enforcement activities have to be enhanced from the inception of the Project.

Kliptown

Bulk Services in which this area falls are Power Park Reservoir and Olifansvlei Waste Water Treatment Works which both have adequate capacity. Since Kliptown is an informal township planning and upgrading of infrastructure for this area will link up with formalisation of the informal township. CoJ housing department drives this process.

The area is currently serviced by communal chemical toilets as well as standpipes located at strategic points within the settlement. The toilets are serviced 3 times a week. The number of chemical toilets is 859 making the service ratio which is less than the 1 toilet per 7 households Johannesburg water strives for. Investigations are ongoing on increasing number of toilets to reduce the ratio to within the norm from June 2021. Standpipes are maintained as and when required.

Riverlea

Water Plans

Riverlea will be rezoned from Avon Meter direct feed into a proposed 1.4Ml Crosby Tower and associated pipeline at a cost of R28 688 000 by 2033.

Sewer Plans:

- Upgrade of 200m of existing 250mm diameter collector sewer to 315mm in Riverlea Ext1 at a cost of R723 700 by 2025.
- Upgrade of 170m of existing 150mm diameter sewer line to 200mm at a cost of R501 000 by 2025.

By-Law enforcement (Illegal connections cut-off and reconnections)

Throughout the CoJ, there are 157 716 prepayment meters installed as of the end of 2019/20 FY. On average, there are 14 390 prepayment customers buying water credits for water they consume. This figure includes those customers that are on the CoJ Expanded Social Programme that get a free allocation of water as per their level of poverty.

The bulk of the balance of approximately 143 326 customer are not buying water credits thus illegally consuming water. The amount of water lost through illegal connections is estimated at 68 437 400 kl per annum. This water contributes to the NRW within the CoJ. Huge reduction in water demand were observed at the initial phase of the implementation of the SUIRP, this is mainly because consumers reduce water demand if they pay for the water and they waste if they are not paying. It is therefore that this initiative is increased throughout the CoJ.

The construction of two major dams in the Integrated Vaal River System (IVRS) ensured that there was sufficient water despite the latest droughts. The historical inherent resilience in the IVRS is now under threat due to emerging issues such as climate change, high water losses and – to some extent – the delay in the construction of Lesotho Highlands Water Phase 2 in the Polihali Dam. The Water Security Plan for the Gauteng City Region re-emphasised the immediate challenge facing Gauteng, which is to keep water consumption at sustainable limits until the Lesotho Highlands Water Project Phase 2 is complete. The CoJ's WC/WDM Strategy is aimed at addressing the immediate challenge within the CoJ.

Drought Management Plan

Drought Management Plan (DMP) was drafted in the context of the recent droughts that occurred between 2015 and 2017, which exacerbated issues of water scarcity and equitable water allocation. Johannesburg Water drafted the DMP, which focusses on possible drought scenarios, within the CoJ, as well as the possible ways of managing and distributing the available water resources equally to all citizens. The National Water Act, No.36 of 1998, makes provision for municipalities as Water Management Institutions to have certain information relating to droughts and potential risks to be made available to the public. The act further makes provision for the municipality to use the most appropriate means to inform the public about anticipated droughts or risks posed by water quality, or any other related matter.

The DMP will follow due processes to the City and undergo the public participation to inform the public about plans and actions Johannesburg Water will take if it enters into a drought as described for the Integrated Vaal River System. The process will include approval by Council to take the DMP for public participation for input and comments. This process is estimated to take about 8-12 months at the City until the DMP is concluded as a final plan.

Alternative water resources

As part of the broader water resilience strategy for the CoJ, investigations are underway on alternative water resources. Johannesburg Water has started a close working partnership with Rand Water and the entities have identified additional programmes (acid mine drainage, ground water, effluent reuse, etc.) as a strategic intervention to manage the resilience of the system, as shown in Table21.

Table 21: Alternative resource opportunities identified in partnership with Rand Water (within the City of Johannesburg)

Description	Additional estimated capacity once completed
Return treatment: Olifantsfontein and Waterval	95 Ml per day
Return treatment: Northern Works	100 Ml per day
Return treatment: Bushkoppies and Goudkoppies	100 Ml per day
Boreholes with five minor yield sites each <27 Ml/d	135 Ml per day
Borehole with 10 major yield sites each >27 Ml/d	270 Ml per day
Dewatering water: Gautrain – Emergency Shaft 2	15 Ml per day
Dewatering water: Gautrain – Emergency Shaft 3	
Dewatering water: Gautrain – Emergency Shaft 4	
WWTW to potable water: Lanseria	100 Ml per day

Return treatment: Northern Works

Johannesburg Water and Rand Water entered into a partnership to explore alternative sources of water. The business case is to be completed by the two entities, which will include alternative financing options for Johannesburg Water. The alternative funding options will be presented for approval by the CoJ.

Return treatment: Bushkoppies and Goudkoppies

Johannesburg Water completed a business case in 2011, which identified two demand centres, namely the Soweto-Roodepoort supply zone and the Turfontein - Glen Vista supply zone to be supplied with treated effluent for landscape irrigation purposes. Johannesburg Water is investigating alternative funding for the capital costs and infrastructure requirements for the identified projects. This alternative sources of funding includes Public Private Partnership (PPP), with other public entities such as Rand Water.

Boreholes

The CoJ has drilled a number of boreholes, which are supplying various swimming pools it owns and selected few schools. Further, Johannesburg Water intends investigating further exploitation of the groundwater in partnership with Rand Water under the memorandum of understanding between the two entities.

Dewatering Water (Gautrain)

Johannesburg Water has identified the groundwater discharged from the Bombela Operations to address the key strategic priorities on water security. Johannesburg Water has started discussions with the Gauteng Management Agency and Bombela Concession Company to define a partnership and framework for collaboration. The objective is to establish a long-term partnership and collaboration on the groundwater discharged between Rosebank and Sandton Gautrain stations, which is under the operational responsibility of Bombela Concession Company.

Strategic Goal 4	Improve customer and stakeholder satisfaction
Strategic objective	Enhance internal and external communication, stakeholder engagement which will lead to improved customer satisfaction.
Strategic Priorities	Priority 7: Active and engaged citizenry
Priority programmes:	• Accelerated and visible service delivery and reintroduce co-production in the delivery of basic services • Community-based planning and enhanced community engagement, including Mayoral Imbizos

The purpose of this goal is to enhance internal and external communication, stakeholder engagement to improve customer satisfaction. Stakeholder and communication objectives are to develop, nurture and maintain relationships with all stakeholders in order to;

- Inform and educate stakeholders
- Keep all stakeholders informed of the Johannesburg Water initiatives and plans/projects
- Ensure stakeholder participation in the Johannesburg Water activities
- Reputation and issue management
- Establish and maintain a healthy rapport with stakeholders
- Increase the reputation and image of the Entity
- Provide relevant and credible information continuously
- Create a basic level of understanding of the services provided to stakeholders by Johannesburg Water
- Provide a communication network for open and transparent communication

Stakeholder and Customer Satisfaction

Johannesburg Water working with the various affected internal stakeholders will implement the interventions as identified through the key drivers derived from the Customer Satisfaction Survey findings, to improve the current stakeholder satisfaction levels to 74% and above. The Company will also conduct targeted interventions with customers from specific Regions who have expressed specific issues of concern from them, i.e. there may be a need to conduct targeted engagement with domestic customers in one region and big business in another region.

Furthermore, Johannesburg Water will maintain daily consultations with Councillors using the Regional WhatsApp Councillor Communications Groups application as this platform helps to enhance the two-way communication between the Company and the Councillors. Through this channel, Councillors are informed of planned and unplanned daily service disruptions and they get an opportunity to report any service delivery disruption in their area that we may not be aware of. The Company will continue to identify key stakeholders from various institutions and establish a healthy working relationship with them. These initiatives are aimed at improving stakeholder relations; communications build and retain the rapport with all new and existing stakeholders.

Stakeholder Engagement

The Company will further revive the Stakeholder Forum sessions to ensure that stakeholders are informed of various activities taking place in their locality. These include the Faith-Based Organisations, Trade Effluent Customers etc. Regional Stakeholder Forums with Local Small Medium and Micro Enterprise's (SMME's) will be revived to share the Johannesburg Water Supply Chain Management Policy and encourage them to register on our Centralised Supplier Database to help avoid problems with sub-contracting when implementing projects in their areas.

The *Meet and Greet* communication sessions will be conducted with newly appointed Councillors to inform them about projects taking place in their regions and introduce various Johannesburg Water officials that they will be interacting with them on regular basis. Corporate gifts will be procured for the newly appointed Councillors to enhance the rapport with the Councillors and to ensure that they become the companies brand ambassadors.

Project Support

The Company will continue to provide project support to ensure that maximum community buy-in with the aim of ensuring smooth implementation of projects with minimal project stoppages. Key stakeholders will be identified within each community or project area and through a stakeholder matrix determine their level of influence in the community and therefore engage with them intending to acquire buy-in from them first as it will be easy to use their influence to acquire the broader community buy-in.

Public Education

The Company will continue to conduct various public education and awareness campaigns aimed at influencing behavioural change towards the overall WC/WDM Strategy, which will include influencing behavioural change towards water conservation and proper use of sewer infrastructure. In-house public education unit will be established to ensure that Johannesburg Water can conduct planned public education on time and reach a maximum number of stakeholders per annum. Through the use of the in-house public education unit the Company will conduct public education and awareness focusing among others on the following issues:

- Water conservation.
- Proper use of sewer infrastructure.
- Encroachment.
- By-law enforcement.
- Payment of services.
- Registration for the extended social package.

Furthermore, various media platforms, including print, electronic and social media will be used to disseminate the different educational messages to our stakeholders.

Johannesburg Water will also work closely with the communities to derive suggestions and possible interventions for influencing behavioural change towards the proper use of sewer infrastructure and this may include conducting community-based Focus Group Discussions.

Corporate and Social Responsibility

Johannesburg Water will endeavour to position itself as responsible corporate company to citizens by conducting a number of projects that are of corporate and social responsibility in nature.

Internal Communication

To maintain and enhance internal communication the following activities will be conducted:

- Publication of the internal monthly Newsletter aimed at telling our own stories, achievements and challenges for informed internal stakeholders.
- Conduct staff broadcast/communication sessions: This platform enables the Managing Director and his Executives to engage on regular intervals with employees. Through the use of a live two-way audio-visual communication aimed at ensuring that employees are kept informed of the Company's performance quarterly and which also allows employees to pose questions to the executive management of Johannesburg Water who will, in turn, respond live to those questions.

To ensure that this becomes a success the company will procure sufficient audio-visual screens that will be placed in strategic places in our various depots and offices. The purpose of these screens is to ensure that there is social distancing while people are gathered for the staff broadcasts. These audio-visual screens will also be used to disseminate any other information in between the staff broadcast intervals to ensure that employees are kept informed of the developments within the Company. Johannesburg Water will also endeavour to keep employees informed of organisational changes and strategy for their buy-in and implementation. Johannesburg Water will also update the employee contact details to ensure that there is communication with them through the use of the bulk Short Message Service (SMS) that will be sent to employees as and when there is urgent information that needs to be communicated to all employees at short notice.

Media Relations and External Communications

To improve media relations and help position Johannesburg Water as a media-friendly company, the Company will look at opportunities of sponsoring media events and hosting at least two media briefings and share with the media Johannesburg Water's plans and achievements. Media networking opportunities will be maintained and enhanced and on regular intervals corporate gifts will be provided to members of the media looking at municipal services.

To elevate Johannesburg Water brand there will be concerted engagements on the rebranding of all Reservoirs and Towers to improve customer perception and company image. Update the company logo and contact details on all sites with aim of ensuring that it becomes easy for our walk-in customers and service providers to locate our premises. Through the use of the Audio Visual Screens that we are in the process of procuring we will continuously proactively create awareness of Johannesburg Water Vision, Mission and Values. We will also procure and place updated posters about the new company strategy and goals and utilising various mediums (intranet, social media, notice boards, public relations, media engagements, advertising, etc.).

The contact details for the Call Centre will be publicised through all the channels with details of contacting the Call Centre which is mainly telephonically and by email, website and through the various social media platforms. Johannesburg Water will also endeavour to increase the social media following and encourage our customers to utilise that platform for reporting of queries.

The Company will endeavour to improve the performance of the Call Centre by capacitating the team with the necessarily training to ensure that they perform at their best at any given time. Furthermore, Johannesburg Water will continue to issue daily notices informing customers of planned and unplanned service disruptions. The Company will also increase the customer SMS database by 20% to ensure that we reach a much wider section our customers from month-to-month to help minimise the volume of calls going to the Call Centre due to service disruptions in their areas of residents.

Strategic Goal 5	Enhance sound financial management, sustainability and good governance
Strategic Objectives	Enhance the way the company is doing business, with a focus on sound financial management, financial sustainability and good governance
Strategic Priorities	Priority 2: Financial sustainability
Priority Programme:	Combat corruption, fraud and maladministration

The purpose of this goal is to enhance the way the company is doing business, with a focus on sound financial management, financial sustainability and good governance.

Financial Management and Sustainability

Revenue enhancement and protection

Revenue accuracy and completeness is an integral part of financial sustainability. As part of revenue enhancement, a stand audit will be conducted to verify metering data and improve billing. A follow-up process to ensure metering and the subsequent billing of the identified stands will be improved and closely monitored.

By-law enforcement will be intensified to ensure revenue protection and a reduction of non-revenue losses. Tariffs to manage illegal water consumption due to construction activities will be developed and the Municipal Court system will be used to manage regular illegal connection offenders.

The 95% meter reading ratio will be aimed at to ensure revenue realisation and improved payment levels. Revenue forecasting will be conducted to monitor revenue trends and movement in comparison to the budget and to monitor bulk purchases.

Reducing Non-revenue Water

The percentage NRW was at 34.5% (2019/20) in the CoJ, commercial losses at 5.7%, unbilled authorised consumption at 14.0% and physical losses at 14.8%. The unbilled authorised consumption and apparent (non-technical) losses pose major challenges to NRW.

This can be attributed to the following:

- Consumers that are not on the billing database (e.g. formal stands, not deemed stands)
- Unbilled, unmetered stands – formal stands where the individual water consumption is not metered (large areas)
- Deemed customers (flat rate customers)
- Illegal connections (both conventional and prepaid areas)
- Meter inaccuracies

The deemed customers category is unique to the CoJ. There are currently 106 681 customers within this category. These customers are being billed at a flat rate of 20 kl, 10 kl or 6 kl. However, investigations have indicated that the actual consumption to these deemed customers ranges between 50 kl and 60 kl. The difference between the flat rate being billed and the actual consumption is therefore NRW and is catered for under unbilled, authorised

consumption as the deemed shortfall. The areas benefitting in this category are Soweto, Orange Farm and Alexandra.

In order to bridge the gap in the commercial aspects of the business, Johannesburg Water will focus on the implementation of the following initiatives:

- The Metering and Revenue Project is in progress with the intention to target and deal with the apparent (commercial) losses by ensuring that all water consumers are on the billing database and are billed correctly.
- Converting all deemed areas into metered areas – Phase 2 starting with Orange Farm.
- Rolling out of Standards Transfer Specification (STS)-type metering (smart metering) – Cosmo City has been identified as the pilot area.
- Improving meter reading ratio.

For the 2020/21 FY it is estimated that the year will end with a bulk supply of 601 941 357 kl. (This is using the actual demand for the first 7 months and an estimated demand based on the actual demand for the last five months of this year). Historically (Before the drought and restrictions of the 2016/17 FY) growth in water demand was 2.69% year on year. The current growth year on year is 2.42%. Thus going forward growth in demand is assumed to be 2.56%. Taking the baseline (estimated bulk supply for 2020/21) of 601 941 357 kl and an annual estimated growth of 2.56% bulk supply for the 2021/22 financial year is estimated at 617 351 056 kl. This would be the bulk supply if work is carried on as now and not implement any new demand reduction interventions.

Going into the 2021/22 financial year the following major projects will be implemented: Soweto Infrastructure Renewal, Orange Farm Infrastructure Renewal as well as Pressure Management. Pipe replacement will be done but the impact on water demand reduction is limited and rather service delivery orientated. Pressure Management includes the installation of smart controlled PRV's (Aim is to move from the current 23 to 40 smart PRV's). The tender is currently at BSC for approval and the aim is to start implementing from July 2021. The estimated impact of this project is 2 300 Ml/annum when 100% operational for a year. Taking into account the roll out we would achieve a 50% saving of the 2 300Ml in 2021/22 year. The impact for 2021/22 would be 1 150 Ml.

The Orange Farm project estimated savings is 11 231 Ml/annum. This is when the project is 100% completed. Currently it seems it will take us 3 years to implement. We would then achieve 3 740 Ml/annum while the project is implemented once the covered areas is operational for a year. The project which includes renewal of the reticulation infrastructure as well as the retrofitting of plumbing fittings already commenced in the second halve of the 2020/21 FY. The impact for 2021/22 would be 2 805Ml which is 75% of the annual impact.

In Soweto the water demand increased drastically over the past year or so. The average demand was 10 000 Ml/month and it increased to an average of 12 000 Ml/month. Various interventions is being initiated which includes fixing leaking reservoirs, replacement of certain bulk infrastructure and the implementation of the Soweto Infrastructure Renewal Project. The repair of reservoirs will only be implemented physically towards the end of the 2020/21 financial year starting with the Jabulani Reservoir and the rest of the reservoirs commencing in the second half of the 2021/22 financial year. The replacement of critical bulk valves is

nearing completion and should be done in the 2020/21 financial year. The Soweto Infrastructure renewal commence again in the second half of the 2020/21 financial year. The aim is thus to reduce the demand from 12 000 Ml/month to 11 000 Ml/month as a matter of urgency. The impact of this interventions would be 12 000Ml.

The Alexandra project estimated savings is 9 415ml/annum. This is when the project is 100% completed. It is estimated that the project will take us 2 year to implement. The Entity would then achieve 4 707 ml/annum while the project is implemented once covered areas is operational for a year. The project commenced with the replacement of reticulation mains in the 2020/21 financial year already. The retrofitting of plumbing fittings tender is at BSC stage and it is anticipated that work will commenced towards the end of the 2021 calendar year. The impact for 2021/22 would be 1 176 Ml which is 25% of the annual impact.

Based on the above the bulk water supply for 2021/22 should reduce from the anticipated 617 351 056 kl to 600 220 056 kl.

The entity has embarked on the roll-out of STS meters with the first project being implemented in Cosmo City since 2018 with a total of 5 786 STS meters installed which are still to be activated to operate in prepaid mode. The other areas includes Riverside View which is planned for 2 000 upgrades to STS in 2020/21. The Orange Farm project plans to install of 50 000 meters over 3 years commencing in 2020/21 with 6 167 meters in 2020/21, 27 216 in 2021/22 and 16 608 in 2022/23 whilst in Soweto (Orlando, Diepkloof, Mofolo, Protea Glen and Meadowlands), 33 339 STS meters are planned for the completion of the last phase of the project with 10 875 in 2020/21, 16 608 in 2021/22 and 5 804 in 2022/23.

Johannesburg Water will accelerate by-law enforcement especially in prepaid areas to reduce commercial losses due to water theft. This will be achieved with a contract currently being procured to expand on resources to effectively carry out by-law enforcement. This will be supported by a Memorandum of Understanding (MoU) that is being signed between Johannesburg Water and Johannesburg Metropolitan Police Department (JMPD) for law enforcement backup once the cut-offs are accelerated. The company will also put more emphasis on its roll out of STS meter installation especially in areas like Cosmo City, Riverside View and Orange Farm. This will ensure that all consumers of water are properly metered and pay for the water consumption.

Embracing technology

The Company will continue to introduce the latest technology to measure and monitor consumption. The focus will be primarily on the implementation of the Advanced Metering Infrastructure (AMI) for large water users to improve billing and improve payment levels.
Improved technology will also be employed to enhance the surveying and auditing of meters for revenue enhancement, the reduction of NRW losses and by-law enforcement.

The implementation of the STS prepaid technology in designated areas will continue in order to improve the customer experience, increase revenue and reduce NRW losses.

Johannesburg Water has a substantial number of customers considered as Large Water Users, and this customer base requires dedicated attention from a water demand and water conversation and AMI is considered for this category of customers. With AMI, Johannesburg Water will obtain automatic readings and consumption data in real-time, detecting water use inefficiencies, improved billing, real-time leak detection, two way communications and monitoring of night flows.

In addition, the system will have Meter Data Management (MDM) capability included in the package. The system should assist in the efforts of Johannesburg Water to manage water demand and conservation. AMI system should enhance metering, monitoring and control of Johannesburg Water Large Water users. As such, it is expected that, through the implementation of this system, organisational challenges such as accessibility of certain meters, inaccurate meter readings, high levels of water losses, inefficient water use, water wastage and NRW will be reduced and offer improved customer support. The AMI system should offer customer the ability to monitor their daily consumptions.

Improving customer experience and support

In improving the customer experience and making it easier for customers to do business with the company, a customer portal will be developed and implemented, where metering data, meter readings, billing and query-related information will be accessible for customers to view and submit certain information for billing and account correction. This portal will also be used to communicate crucial messages that impact on the customer's bill.

Furthermore, a customer support section will be created to improve query resolution and to provide support to key customers, as well as to reduce delays in responding to customer queries. Increasing customer awareness on tariff implementation, meter reading and query management processes will also form part of improving the customer experience and support.

Integration and monitoring

Systems and process integration for effective revenue management will form an integral part of revenue improvement.

This will include the following:

- Maintaining a metering database for tracking new, changed and removed meters
- Automating the creation of work orders and monitoring the resolution of technical queries before the next meter reading order is created
- Improving the prepayment database to accurately monitor consumption patterns
- Developing the systematic monitoring of revenue movements through improved technology and innovative analytical methods

Enhancement of Payment level

The lasting result of COVID-19 remains with Johannesburg Water in the form of low payment levels. The impact was directly visible during the first quarter of the 2020/21 financial year when the cash collected reflected a level of 61%. This was considerably below the budgeted target

of 80%. The payment level subsequently stabilised to 76% by the end of the second quarter of the financial year, however it is still out of reach of the budget levels. The risks associated with low payment level remains and the entity will have to review the funds it has available for own capital expenditure funding as well as the impact on fixed operational expenses if payment levels decline below the current levels and continues to be below the targeted 80% collection.

The collection of outstanding debtors is the responsibility of the CoJ Revenue and Shared Services Centre (RSSC); however Johannesburg Water operates closely with RSSC in this regard to assist with debt collection and credit management where possible. The following strategies are prioritised by RSCC to improve revenue and the collection level:

- Debt rehabilitation programme - phase 2.
- Revenue collection portfolio management by creating categories of debtors and managing the portfolios accordingly.
- Regionalisation of Billing Back Office to improve query resolution management.
- Make revenue walk-in centres more accessible to residents by ensuring that their location is well positioned.
- Use of Credit Bureaus.
- Call Centre Consolidation and new telephony system.
- Implementation of Billing Open Days.
- Stand by Stand audit.
- Ensure that proclaimed townships are billed for all five CoJ services.

Reviewing of the Supply Chain Process

In the 2019/2020 financial year, the company experienced a very high number of tenders that could not be finalised/awarded on time due to variety of reasons. An overview of the challenges in the performance of Supply Chain Management, in view of this dilemma, urgent interventions are being made to address this problem including monitoring and reporting on the matter on an ongoing basis and ensure that measures are put in place to prevent and reduce such occurrence

The following issues were identified as being the main interventions in the value chain;

- Re-structuring and capacitating the department with adequate and skilled resources
- Appointment of Bid Evaluation Committee (BEC) members by User departments must be rotational
- User department to review specifications prior to submission to Bid Specifications Committee (BSC)
- Reducing the turnaround time for bid process (Tender and Request for Quotation - RFQ)
- Addendums must be an exception rather than a norm as is the case currently
- The establishment of Demand Management Section in Supply Chain Management Unit
- Systems Applications and Products (SAP) to be enhance to improve the RFQ process

- Risk task team to review the risk associated with Bid Adjudication Committee (BAC) recommendations
- Legal and Governance department to provide Supply Chain Management (SCM) with current case studies
- Establish a tender Library for proper storage of tender documents after closing
- Validity extension must be only exercised in exceptional circumstances.
- Introduction of an electronic tender document whereby the tender document is converted such that a bidder is only allowed to complete selected fields without tampering with the tender document wording and conditions.
- Capacitate BEC's with a finance resource

Embedment of Good Governance

Johannesburg Water has a unitary Board, which consists of a minority of executives and a majority of non-executive directors. The Board is chaired by a non-executive director. The Board meets regularly (at least quarterly) and retains full control of Johannesburg Water. It remains accountable to CoJ as its single shareholder, through the Company, its stakeholders, and the citizens of Johannesburg.

The Board of Directors and Executive Management recognise and are committed to the principles of openness, integrity and accountability advocated by the King IV Code on Corporate Governance. Through this process, the shareholder and other stakeholders will derive assurance that Johannesburg Water is being ethically managed according to prudently determined risk parameters in compliance with generally accepted corporate practices.

Johannesburg Water has entrenched its risk management reviews and reporting. Compliance assessments are conducted in accordance with the relevant statutory requirements. Annual Board assessments and evaluations are conducted and an annual report for the previous year completed in accordance with the terms of Section 121 of the MFMA. All of the above seeks to affirm Johannesburg Water's commitment to upholding good governance and sound ethical practices.

Furthermore, the CoJ's Governance Framework assists the City as a group to better understand the governance structure and principles required to ensure transparency and accountability. The framework also aims to improve the capacity and capability of the Board of Directors and Executive Management to effectively manage Johannesburg Water and efficiently account to the CoJ as sole shareholder.

The Board and Management recognise that Johannesburg Water has a mandate to deliver services in alignment to the CoJ strategy and priorities.

Johannesburg Water received unqualified audit opinions from 2014/15 to 2018/19 financial years and it continues to take the findings in the Auditor General of South Africa (AGSA) management letter seriously by continuously implementing mitigating controls to reduce the levels of recurring findings and to improve the resolution rate of the audit findings. The resolution of findings is as a matter of course overseen by the Audit and Risk Committee on a quarterly basis.

The Board provides effective leadership based on a principled foundation and Johannesburg Water subscribes to high ethical standards. Responsible leadership, characterised by the values of responsibility, accountability, fairness and transparency, has been a defining characteristic of Johannesburg Water since the Company's establishment in November 2000.

The fundamental principle of Johannesburg Water is to conduct business ethically while building a sustainable company that recognises the short- and long-term impact of its activities on the economy, society and the environment. In its deliberations, decisions and actions, the Board is sensitive to the legitimate interests and expectations of Johannesburg Water's stakeholders.

The Board provides quarterly and annual reports on its performance and service delivery to the parent municipality (i.e. CoJ) as prescribed by the SDA, the MFMA and the Municipal Systems Act, No. 32 of 2000 (MSA).

System of Internal Controls

Johannesburg Water has employed the services of Internal Auditing as per the MFMA Section 165 (1, 2) requirements. The Internal Audit Department (IAD) is an independent, objective assurance and consulting activity designed to add value and improve Johannesburg Water's operations. The IAD assists Johannesburg Water accomplish its objectives by bringing a systematic, disciplined approach to evaluate and improve the effectiveness of risk management, control and governance processes. IAD adds value in ensuring that the Johannesburg Water accomplishes its objectives by:

- Developing and implementing a risk-based three-years rolling strategic audit plan ending 30 June 2021 which is approved by the Board.
- Annually preparing an assessment report expressing an opinion (Statement of Internal Control) on the adequacy and effectiveness of the system of internal controls on issues of deficiencies not addressed or resolved by management on a quarterly basis. The report will form the basis of the Audit and Risk Committee Report.
- Applying the principles of Combined Assurance by integrating and aligning assurance processes within Johannesburg Water to maximise risk and governance oversight and control efficiencies, and optimise overall assurance to the Board, considering the Company's Risk Appetite.
- Providing and ensuring that both the unresolved IAD and the AGSA findings are prioritised as part of the plan and through a finding register. This will assist management in improving on the finding resolution rate.
- Conducting investigations into Unauthorised, Irregular, Fruitless and Wasteful (UIFW) expenditure and other non-compliance transgressions not requiring forensic investigation.
- Pro-active assurance on tender process by conducting probity audits on tenders above R5 million and other specific requests for probity such as SCM deviation requests.

The resolution rate for IAD findings for the 2019/20 financial year was at 93% and AGSA was at 94%. IAD will continue to follow up on unresolved findings to ensure management resolution rate improves with specific emphasis on addressing the root causes to reduce the instances of repeat findings.

Anti-Fraud and Corruption

Johannesburg Water has prioritized Fraud Risk Management as per the MFMA. This environment is zero tolerant to acts of fraud and corrupt activities. This means that Johannesburg Water will investigate any individual, a group, or a company from internal or

external, committing or trying to commit fraud or corrupt activities through its systems, officials or clients with everything it has even to the court of law.

Internal Audit, Risk Management, Internal Controls and Tip-offs Anonymous Hotline assist in detecting fraudulent and corrupt activities. All reported cases internally and externally are registered, monitored and investigated by Group Forensic Investigation Services (GFIS) to ensure that they are resolved and people are held accountable. Johannesburg Water's IAD is mandated by the Board to investigate cases which are of administrative compliance nature and not requiring forensic investigations, including UIFW expenditure and internal investigations for disciplinary matters.

Strategic Goal 6	Harness the use of technology for effective and efficient operations
Strategic Objective	Maximise the use of technology to be effective and efficient in processes company-wide
Strategic Priority	Smart City

The purpose of this goal is to maximise the use of all applicable technology for effective and efficient operations company-wide.

Information and Communication Technology

The Information and Communication Technology (ICT) programmes in this plan represent important steps forward to support the entity in its delivery of public services to the citizens of the CoJ. Aligned with the ICT Strategy Plan, the initiatives speak to strategic and technology projects that underpin the following four programmes:

- Digital Transformation
- ICT Governance
- Sustainable ICT
- ICT Security

Digital transformation

Under the Digital Transformation programme, the key objective is to drive the adoption of new technologies and improve services by replacing manual processes with digital processes to deliver greater efficiencies.

Fifth Generation (5G)
Fifth generation wireless technology (5G) is the latest iteration for cellular data network. Offering faster speed and more reliable connections on smartphones and other devices than ever before, it will allow each person, object and device to be connected virtually. With an average download speeds of around 1 Gbps, 5G can enable new services and transform the water industry with reliable, available, low latency connectivity like remote control of critical infrastructure.

5G is meant to seamlessly connect a massive number of embedded sensors in virtually everything through the ability to scale down in data rates, power, and mobility—providing extremely lean and low-cost connectivity solutions. Johannesburg Water has in the region 1500 devices in the Telemetry network. The 5G cellular network can provide the connectivity for Remote Terminal Units (RTUs) and the SCADA system. Johannesburg water will engage telecoms service providers to pilot 5G connectivity for connectivity between RTUs and the SCADA system.

Cloud Computing
Cloud computing enables innovation, dramatically reduce capital and operating costs, increase agility, and significantly reduce the time to deploy new applications and systems. It delivers benefits to both the business, through enablement, and Information Technology (IT) via operational improvements. The Company spends around 30% of its IT operating budget on infrastructure (primarily data centres hardware), shifting some or all this work to the cloud can save anywhere from 10-20% of the annual IT budget.

The cloud computing economic advantage comes from two primary cost drivers: higher utilisation rates as a result of a significant drop in "capacity hoarding" and lower unit costs from the increased scale, newer technologies, best practices, and improved operational efficiency of cloud service providers.

Johannesburg Water will adopt a cloud first approach to host applications in the cloud, where technically viable and have proven economic benefits. Two projects whose applications will be hosted in a cloud environment; Workforce Optimisation and Advanced Metering Infrastructure.

The goal is to migrate the entity's metering applications to cloud platforms and benefit from cloud computing services. With cloud computing technology, the entity can better service its prepaid customer base; meet elasticity in demand, deliver greater performance and higher availability and meet transactional volumes.
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Office 365 - The Company has begun piloting Microsoft Office 365 with a view to have its entire user base operating on the platform in the 2021/22 financial year. Office 365 will provide improved collaboration and greater integration with existing applications such as Microsoft Teams and Microsoft SharePoint.

Digital Forms - Using Microsoft SharePoint as the entity's new Document Management platform, the objective of the digital form initiative is to inculcate and drive a paperless working environment through the digitisation of paper forms. In addition to reducing operating costs, embedded workflow will improve and streamline business processes and deliver greater efficiencies.

Inventory Management - Bar Code Labelling and Scanning - Utilising bar code labelling and scanning technology, the aim of the initiative is to improve controls in inventory management including improved inventory tracking to deliver greater consistency in stock counts and reconciliations.

Business Analytics - Now running in its second year, the project has to date delivered six business unit dashboards and work is in progress to deliver an additional three dashboards. Using the ICT capacitation as an enabler, dashboards will continue to be developed and refined as a tool to provide greater visibility into the entity's operations and qualitative data for improved decision making.

Workforce Optimisation and Customer Mobile Application - The Workforce optimisation and Customer mobile App are designed to support the entity's commitment to improve

communications to its stakeholders and the residents of the City of Johannesburg. The workforce optimisation project is a technology solution to improve the entity's works management system from a manual to a semi-automated business process with real-time information. The customer mobile app, will provide residents with the ability to log requests for water and sewer services and receive information, including notifications, on service requests and queries.

Internet of Things-enabled devices - Incorrect meter reading, revenue recovery, reactive leak detection and illegal connections could be very costly. Smart devices that are Internet of Things (IoT)-enabled have the ability to give a normal meter smart characteristics at a fraction of the cost. A study is planned to generate empirical evidence for such claims. Smart meters normally come with the ability to take automated meter readings, detect leaks and perform analytics on illegal connections. A comparative study approach is required for informed decision-making and risk reduction.

ICT Governance

Under the ICT Governance programme, the following two initiatives are planned:

Enterprise Architecture - Development of ICT Strategy for departments within the South African Government are regulated in accordance with the Public Service Act and Regulations, the State Information Technology Agency Act and Regulations, and governed by relevant governing bodies. The Government Wide Enterprise Architecture (GWEA) is a framework that delivers value by assessing the current state and the relationship of business, information, data, applications and technology in an organisation; mapping out a future desired state and road map based on defined principles, standards and guidelines. The objective is to develop an Enterprise Architecture incorporating Information and Operations technology and to steer the implementation of the activities to achieve the future desired state.

Enterprise Resource Planning - The City of Johannesburg has embarked on a project to implement a single Enterprise Resource Planning system (SAP) with one of the key objectives to meet Municipal Standard Chart of Accounts (mSCOA) compliance. Johannesburg Water will support its Shareholder with the aid of skilled resources to ensure the entity migrates to the new system with minimal disruption to business. Promulgated by National Treasury, mSCOA is a standardised accounting system that aims to change how municipalities transact by standardising financial management processes through policy formulation, budgeting, in-year reporting frameworks and statements.

Sustainable ICT

The sustainable ICT programme will focus on three key deliverables to ensure the continued reliability of ICT infrastructure and resources to support the operations of Johannesburg Water.

Data Network Hardware Upgrade - The Wide and Local Area Network represent one of the most important ICT infrastructure components supporting approximately 1 100 users across 22 sites. Last upgraded in 2010, the project seeks to upgrade the entity's entire network

hardware to deliver newer technology, improved security and greater performance. The upgrade will also target wireless services to provide greater coverage and increased performance.

ICT Capacitation - Over the last few years, the ICT organisation has undergone minor refinements to meet growth in applications but unsustainable to meet long-term business demands and changes in ICT. Approved in June 2020, the ICT Department arrangement has been revised to address gaps in existing functional areas and build new capacity with a focus on application support and information services. To be achieved over two phases, the plan is to have resources for phase one appointed beginning July 2021. In addition to addressing the highlighted gaps and challenges, the ICT capacitation will also contribute towards building a more self-sufficient, skilled department and thus reduce reliance on external service providers

Technology Refresh - Running outdated hardware technology can potentially become a risk in respect of running applications on reliable hardware or paying a high premium to operate hardware that has reached end of life support. The technology refresh initiative targets the replacement of old hardware equipment, specifically, data servers, to ensure the ICT department is delivering services through reliable hardware infrastructure with maintenance and support.

ICT Security

Among the major cyber threats, malware remains a significant danger. Phishing has also seen a resurgence in the last few years, with many new scams being invented to take advantage of unsuspecting individuals and companies. While technical solutions like firewalls, web and email content filters are important for protecting end-users, with the number of threats and the multitude of systems and communications through which staff perform work, the one unifying risk factor that has to be addressed to improve fundamentally, security is the role of human error. Johannesburg Water has initiated a process to address the human factor element though a versatile cybersecurity training program focusing on key cyber security threats. Employees must know why security matters, so they understand the importance of not ignoring security procedures and are aware of the potential implications of a breach.

In FY2019/20, Johannesburg Water implemented systems to elevate its security posture against the treat of cyberattacks. However, studies show that the human factor is just as important as the systems in place to protect companies against cyberattacks. To this end, two initiatives are planned:
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Cyber-security Awareness Campaign - The ICT department will be providing a cyber-security awareness campaign to heighten awareness and equip users with basic knowledge on the importance of cybersecurity across different areas including, phishing attacks, email attachments and hyperlinks, ransomware, safe web browsing and weak passwords.

ICT Security Assessment - The entity will be enlisting the services of an independent service provider to conduct an assessment of the security controls of its applications and systems against malware and cyberattacks. Combining vulnerability assessments and penetration

tests, the assessment will incorporate both Information and Operations Technology. The results of the assessments and tests will then be used to inform operational plans to address identified areas of weaknesses.

Innovation and Technology

Research, Development and Innovation (RDI) seeks to address major operational challenges, exploit opportunities and solve problems. It enhances performance, efficiency and productivity, while improving quality of service, minimising risk prior to full-scale implementation and benefitting the organisation's competitiveness. For RDI to be impactful within organisations like Johannesburg Water, it becomes imperative to collaborate through partnerships, twinning agreements, benchmarking initiatives and becoming part of the RDI ecosystem. The following activities are underway:

Development of guidelines to identify suitable bio-remediation agents and service providers for dams and streams

The aim of this project is the development, preliminary testing and finalisation of a guideline document for the identification, appointment and management of bio-remediation products and services to facilitate effective reaction to sewage spills for the remediation of dams and streams.

Evacuation and treatment of grey water nuisance in informal settlements

The aim of this project is the development, testing and demonstration of grey water (polluted run-off water) collection, conveyancing, treatment and beneficial usage or safe reuse in informal settlements. Other objectives are to develop or identify an ecologically friendly system that could improve biodiversity in a specific area and turn it into a socially acceptable system with beautification benefits.

Access Controlled chambers (Smart- Lock)

Johannesburg Water will be testing and demonstrating the intelligent specialized access controlled chambers for both above and below ground fire hydrants to prevent and deter vandalism. The solution is expected to provide superior security and control in authorising access to the fire hydrants to both Johannesburg Water maintenance teams.

There has been a phenomenon in the city whereby, fire hydrants both below and aboveground are being vandalised for cleaning and car washing purposes. The impact of this phenomenon is that it contributes to the number of pipe bursts per 100 km of network length, the percentage non-revenue water and general surface water nuisance

Non-sewered sanitation

Johannesburg Water and the Water Research Commission (WRC) have entered into a partnership on the demonstration and field testing of next generation sanitation in households and communities within the CoJ. The aim is to develop a demonstration platform with Johannesburg Water to field-test and demonstrate innovative next generation sanitation technologies. A pilot site has been identified in Soweto (Mofolo North) to test the technology.

The sanitation technology proposed for demonstration is a close-loop full recycle toilet system called the Clear water recirculation toilet system. It is a modular and containerized system

designed as a multi-seat unit. The technology is a 4-seater front-end toilet with the back-end treatment unit. It is designed to accommodate an average of 600 uses a day. It is a containerized and modular unit that easy to transport, install and commission. It requires no connection to an existing sewer system and can be energy self-sufficient if connected to solar panels. It offers an off-grid solution and will work in areas will little water supply.

Higher Education Institutions (HEI)

The environment urgently became a learning space where academics and technocrats seeking solutions engaged on service delivery bottlenecks and possible solutions. The environment was characterised by transparency, fairness, and competitiveness. Areas of collaboration that emanated from the discussions with the HEI are captured as follows:

- Blue Sky – Any new research area but relevant to Johannesburg Water (Blind spot to Johannesburg Water);
- Library Collaboration (2 sites and virtual integration);
- Joint conferencing/Symposia/Workshops
- Innovation and Technology Section/Unit/Department Support and Capacitation;
- International Relations (RDI selection, Programme management and funding sourcing);
- Water Conservation and Water Demand Management – 3rd Party Funding Sourcing and project execution;
- Governance – Data analytics etc.;
- Capacity Building within Johannesburg Water;
- Sludge Handling and Disposal;
- Smart out-sewers; and
- Smart Regional wastewater diversion in relation to plant capacity and performance.

Cathodic Protection

Cathodic protection is a technique used to control the corrosion of a metal surface making it the cathode of an electrochemical cell. The aim of this project if for Johannesburg Water to use this technique to protect its bulk steel infrastructure against rapid deterioration due to corrosion happening when these bulk steel lines are running in close proximity of electrical infrastructure like ESKOM pylon's or railway lines. Johannesburg Water will therefore procure the services of a specialised service provider to assist the bulk steel infrastructure and implement mitigation measures as deemed fit.

Strategic Goal 7	Invest in our staff to sustain optimal performance and service-focused culture
Strategic Objective	To attract, develop and retain competent and skilled talent in order to enable high performance. The focus is also to create and promote an environment that enables diversity, inclusiveness and a conducive organisational culture.
Strategic Priority	Priority 4 : Sustainable service delivery Priority 12: Eradicating Gender based Violence and violence against children
Priority Programme	Accelerated and visible service delivery and reintroduce co-production in the delivery of basic services

The purpose of this goal is to attract, develop and retain talent in order to drive high performance, as well as to create and promote an environment that enables diversity, inclusiveness and a conducive organisational culture.

Skills development

Johannesburg Water set aside a training budget equal to an average of 1.7% of its total annual payroll. This is significantly more than what is prescribed in the Skills Development Levies Act, No. 9 of 1999, which is 1% of the annual payroll. At present, Johannesburg Water is planning and implementing a number of initiatives for internal staff, unemployed youth and people with disabilities. These programmes include and are mainly focused on skills programmes, learnerships, apprenticeships, and management and development programmes, some of which culminate in full qualifications.

The Company intends to recruit eight unemployed youth from PWDs as apprentices in the 2021/22 FY, the programme will run for a period of 3 years. This project is in line with the approved Talent Management Strategy and is in support of the company's employment equity targets. Learnerships for water reticulation and water and WWTW will be implemented and are planned on various National Qualifications Framework (NQF) levels. The company is currently training 94 Apprentices in various trades on behalf of the CoJ. These unemployed youth will be absorbed as employees in the CoJ after they have qualified. The company will also train 10 more Apprentices in Trades that will be required by the business in 3 years. This is a continuous process to ensure that scares and critical skills requirements are met and available in the Company.

There are currently 81 employees actively enrolled for Adult Basic Education and Training (ABET) levels 1 to 4 in numeracy and literacy. This is a continuous programme with new learners enrolling each year. This opportunity is available for interested employees to voluntarily enrol on an annual basis.

The Company has a Subsidised Education Scheme and is currently funding 106 Employees for various qualifications. The Training and Development Department is also actively assisting the Company to increase productivity and will be implementing a Productivity Training initiative for Foreman and Supervisors in the Operations Department. The aim is to equip these employees with the necessary skills and tools to increase productivity in their areas of responsibility.

Johannesburg Water is committed to and focused on developing the current and future skills of employees, but also to providing learning opportunities to learners from previously disadvantaged communities. These interventions increase their portability within the company and marketability for jobs in industries outside the company.

The company adopts a holistic approach towards skills development initiatives. Training interventions planned from 2021/22 are categorised as follows:

- Technical training programmes, which include apprenticeships, technical learnerships, technical skills programmes and Acquired Recognition of Prior Learning (ARPL) programmes.
- Occupational Health and Safety (OHS) and compliance training.
- Non-technical training programmes, which include Adult Education and Training (AET) programmes, learnerships (non-technical-related programmes), soft skills programmes, management development programmes and recognition of prior learning.

Workshops and courses are specially arranged, based on specific requests to ensure that technicians, technologists and engineers are equipped with relevant and current knowledge and skills in different engineering fields. The accumulation of continuous professional development points ensures that employees are able to perform optimally in their professions and retain their professional registration.

As part of Johannesburg Water's capacity development initiatives, two programmes are in place to develop students and graduates: internships and bursary schemes. The aim of these programmes is to develop skilled human resources in predominantly scarce skills to assist Johannesburg Water in achieving its core mandate of service delivery.

The bursary programme focuses predominantly on the field of civil engineering, where students join Johannesburg Water as trainees after completion of their studies. The programme not only contributes to youth empowerment and poverty alleviation, but also ensures that a pipeline of scarce skills is developed within Johannesburg Water. The programme has been running since 2002, with all successful graduates having been employed in permanent positions. The bursary programme is a valuable source and pipeline for skills. There were 13 bursars in 2020/21, of which five will be joining Johannesburg Water as trainees in 2021. This will result in the recruitment of additional four bursars to maintain the original number that can be accommodated. With the extension of the current academic year advertising of the bursary opportunities will be left until the end of the academic year which is sometime in early 2021. The bursary programme is ongoing, and it is estimated that there will be an average of 16 bursars at any given time over the long term, contributing to a skilled and capable workforce.

The internship programme is an enabling platform where unemployed graduates are provided with the opportunity to gain practical workplace experience and enhance their skills. While the intention of this programme is social responsibility, the unintended consequence is an additional pool of suitably qualified and experienced potential employees. The internship programme provides for at least 15 interns per year and has been running since 2003, with interns appointed on one-year internships for interns is all other departments except Internal Audit, which appoints interns for a period of two years. To date, over 100 internships have been successfully completed. While it is not the intention of the programme to create a skills pipeline for Johannesburg Water, many interns are, in fact, appointed on a permanent basis within the company. While the interns complete their internships at various times, depending on when they

were recruited, it is the intention to have at least 19 interns across the various disciplines in 2021/22. The targeted number is based on available budget and capacity to accommodate.

Johannesburg Water also partners with the National Research Foundation (NRF) and the Department of Science and Technology (DST) to accommodate at least four interns annually in the field of science.

Talent management

Johannesburg Water manages and retains talent through the development and implementation of programmes such as succession planning, specialist career grading for engineers and scientists, as well as through the Engineering Capacitation Programme, which is aimed at developing engineers by providing the necessary exposure to enable engineers to register professionally with the Engineering Council of South Africa (ECSA). The focus will also be to develop talent pools for leadership and management in order to create leadership continuity in the business.

Retention of scarce skills

Johannesburg Water has an active retention strategy, which aims to improve retention rates, particularly of scarce skills, while at the same time decreasing the associated costs of a high turnover. Since the implementation of this strategy, turnover has decreased significantly, with the retention for both scarce skills and all staff being consistently maintained at 97% over the past few years.

A number of programmes are in place that cement the low turnover rate and encourage retention. These include the availability of career counselling, proper on-boarding and induction programmes, as well as regular analysis of exits. In addition, a management coaching programme has been in place since 2012, and group of 15 senior and middle managers attended the programme in 2020 and a new group of 15 Managers will attend the programme in 2021/22 FY. In terms of scarce skills, two specific programmes have been implemented: the Engineering Capacitation Programme and the Specialist Career Grade. Both programmes promote the professional development of engineers and scientists. Johannesburg Water has managed to build up its engineering capacity to 37 professionally registered engineers, technologists and technicians with ECSA. The long-term output of this programme is 50 registered professionals by 2022/23. The target for 2020/21 is 42 and 46 for 2021/22 professionally registered engineers.

As part of retaining talent within Johannesburg Water, the Board approved a succession plan/policy in line with the company's talent management strategy. The overall objective of the talent management and succession planning process is to facilitate the structured identification and growth of employees, as well as to aid the retention of talent and, in the process, create and strengthen the company's talent pool.

Succession planning is carried out through functional talent forums. The talent forums identify key positions at all levels for which succession planning is considered important. Succession plans, which identify individuals, as well as their competency gaps, are drawn up and the identified individuals sign a succession planning agreement whereby they acknowledge their responsibilities as part of the succession planning process.

Health and safety

Johannesburg Water continues to be committed to protecting its employees, customers and the public from risks arising from work-related activities as mandated by the Constitution of the Republic to provide a healthy and safe working environment for all.

One of Johannesburg Water's basic tenets on continual improvement in OHS management and performance is to prevent injuries and promote good health.

Johannesburg Water has since resolved to move from National Occupational Safety Organisation (NOSA) certification and adopted the International Organisation for Standardisation (ISO) 45001: Safety Management System and 14001: Environmental Management System in an integrated manner. Johannesburg Water intends to be certified for the integrated management system during 2020/21. The company will opt for corporate certification, which includes all activities within the company's value chain. The first certification will be piloted at Head Office, Driefontein WWTW, the Avalon Prepayment Depot, the Ffennel Road Depot and Cydna Laboratory. Once the system is certified at these sites, certification will be rolled out to the rest of the Johannesburg Water sites in phases.

A number of initiatives were implemented in 2020/21 year to support the management of the COVID-19 pandemic in the business. This health measures which includes, Covid risk assessments, temperature readings at access points, issuing and wearing of masks, implementation of touch-less attendance monitoring devices will be prioritised in 2021/22.

The focus will also include overall drive in safety and health compliance by service providers through conducting of SHE workshops and periodic safety audits and inspections internally and at project sites.

Recruitment

In an increasing competitive national and global market for limited skills, it is critical that Johannesburg Water provides a comprehensive working environment that will attract, retain and motivate the right calibre of employees. Its recruitment process serves as the first stage in ensuring that Johannesburg Water provides quality service and sustainable optimal performance. Identifying and attracting suitable applicants depends on the effectiveness of its sourcing strategies. The job design system ensures that job profiles, which are utilised to draw advertisements, are able to attract the right candidates for the job. Optimising its talent sourcing and recruitment is therefore one of the company's top priorities.

Reducing the time taken to fill vacancies has also been prioritised, and a target of 10 weeks has been set for the filling of a vacancy for 2020/21. Johannesburg Water has, thus far, operated at an average 12 weeks' turnaround time for recruitment based on the 2019/20 assessment. Following the challenges experienced the target will remain at 10 weeks in 2021/22 and ultimately maintained at 10 weeks going forward until such time that automations of some of the processes are in place. Based on the assessment of the past three years, it is envisaged that the transition from traditional recruitment to an automated system will assist in improving the turnaround time. However, its change management process may take longer than anticipated. To further assist in accelerating the filling of positions, the standard operating procedure for recruitment was developed to ensure that the timelines are specified and adhered to. Furthermore, a process-reengineering project will be implemented to introduce efficiency and effectiveness measures, which could improve the turnaround times.

Johannesburg Water's economic and financial circumstances and ability to fund the filling of vacancies continue to be the biggest threat to filling vacancies. To date, the company has managed to fill funded vacancies within the requisite time period, and even in the scarce skills categories – although taking longer – it has been possible to attract the appropriate talent.

Employee wellness

Emanating from the 2019 wellness campaign results (where employees were tested on lifestyle diseases), the company – through the Employee Wellness Section – commenced with a healthy lifestyle awareness campaign in conjunction with the introduction of the newly appointed employee wellness company to all Johannesburg Water's work sites.

The results of lifestyle diseases tests conducted in 2019 indicate that of the participants, the majority display symptoms of high blood pressure, a high glucose level, obesity and cholesterol.

The healthy lifestyle awareness campaign is aimed at empowering individuals with skills, which will help them enjoy healthier lives. As a result, productivity, together with staff morale, will be positively influenced and absenteeism will be negatively influenced.

For the company to experience a noticeable outcome, the campaign has to be repeated over a particular period before behaviour change can be noticeable among employees. Due to the Impact of COVID-19 the campaign could not repeated in 2020/21as focus was on Covid related wellness initiatives.

The Employee Wellness Unit will embark on the healthy lifestyle campaign in 2021/22, with focus areas determined by the imminent employee wellness event results, which take place in the month of February each year. The results will indicate if the healthy lifestyle awareness campaign made an impact or not.

All employee wellness interventions and campaigns are aimed at preventing or reducing absenteeism, but for absenteeism to be negatively influenced, an integrated approach is needed, which requires line management's involvement in managing absenteeism.

Security Management Services

To curb the criminal incidences experienced by the depot employees and meter readers while on site the security department with assistance of external stakeholders conducted Threat and Risk Assessment in order to find the long-term solution. The outcome of the assessment suggested a need to outsource the services of Specialised Security Tactical Team. This services will addresses the Meter Reader's security threats, violent crimes within the Wastewater Treatment Works, Illegal Connections challenges and performs armed response to all Johannesburg Water Non-Specialised sites where Johannesburg Water has deployed Insourced guards.

A tender process of Specialised Security Tactical Team has been initiated and it is envisaged to be in place in the 2021/2022 FY.

With regard to security of the company infrastructure a market research was conducted to determine the suitability of effective electronic and technical security equipment to ensure pro-

activeness and early deterrent. The research was based on two aspects, Online Security Intelligence and Integrated Security System for CCTV & Alarm System. The systems/ technologies will be piloted in five Johannesburg Water Sites in 2021/2022 financial year after which an assessment will be done to determine the need to expand to other workplaces and sites.

Facilities Management Services

Facilities management is a management discipline of the company focused on the efficient and effective delivery of support services. The work stream daily responsibilities focuses on:

- Overseeing building lease contracts / agreements and providers of services including security, cleaning, parking, office space planning, and maintenance for the Head Office Building.
- Ensures that basic facilities such as water and heating are well maintained.
- Ensuring that facilities meet government regulations and environmental, health and security standards.

The current Head Office lease was extended to June 2021, a process to initiate a tender process to acquire a new Head office building is underway however the process will not be finalised before June 2021 as a result a process to extend the lease further will be initiated. The new building is envisaged to be acquired before end of 2021/22 financial year.

Fleet Management Services

The Company organises and co-ordinate its fleet of vehicles to improve efficiency, reduce costs and provide compliance with government regulations. The achievement of above objectives involves combination of vehicle tracking, reporting on fuel consumption, monitoring of driver behaviour and management of vehicle maintenance. The tender for the fleet contract is administered by the CoJ having taken into consideration fleet needs for the City's other entities.

Eradicating Gender Based Violence and Violence against children.

Gender-Based Violence (GBV) is a profound and widespread problem in South Africa including the CoJ, impacting on almost every aspect of life. To address this priority Johannesburg Water will focus on the following:

- Counselling – Offered internally and externally through the appointed service provider – these caters for the employees and their immediate family members.
- Education and Awareness – Awareness workshops will be held at the regions to bring awareness on GBV and the available services offered by the company to assist in this regard. The awareness will be created through different medium of communication on a quarterly basis.
- Dedicated 24-hour support line for GBV- the company will be exploring a possibility to have a dedicated line dealing with matters of GBV- the current service provider will be

engaged to consider immediate implementation. Long-term arrangement will be investigated for implementation during the 2021/22 year.

- Women's forum- the company intend resurrecting the functioning of the women's forum which can be used to bring about awareness and share information regarding available support and resources internally and externally. To ensure there is alignment and that the focus areas of the forum are made clear a guideline document will be developed.

4.2 Past performance

Table 22 assesses the past performance in terms of service delivery, which is mainly encapsulated in the previous strategic goals 1 to 3.

Table 22: Past performance in terms of service delivery

Strategic goals or objectives	Achievements 2019/20	Achievements 2018/19	Achievements 2017/18	Achievements 2016/17
Strategic Goal 1	▪ 554 sewer blockages per 100 km of pipe length ▪ 453 pipe bursts per 100 km of pipe length ▪ 1.27% renewal rate on the network and WWTW ▪ 153 SMMEs supported ▪ 129% broad-based black economic empowerment (B-BBEE) procurement spend ▪ 99.7% capital expenditure spent ▪ 1 868 EPWP job opportunities created	▪ 529 sewer blockages per 100 km of pipe length ▪ 350 pipe bursts per 100 km of pipe length ▪ 1.23% renewal rate on the network and WWTW ▪ 120 SMMEs supported ▪ 126% broad-based black economic empowerment (B-BBEE) procurement spend ▪ 99.7% capital expenditure spent ▪ 2 630 EPWP job opportunities created	▪ 539.39 sewer blockages per 100 km of pipe length ▪ 358.09 pipe bursts per 100 km of pipe length ▪ 0.87% renewal rate on the network and WWTW ▪ 81 SMMEs supported ▪ 126% B-BBEE procurement spend ▪ 84.33% capital expenditure spent ▪ 995 EPWP job opportunities created	▪ 488sewer blockages per 100 km of pipe length ▪ 378 pipe bursts per 100 km of pipe length ▪ 1.10% renewal rate on the network and WWTW ▪ 128% B-BBEE procurement spend ▪ 87% capital expenditure spent ▪ 1 114 EPWP job opportunities created
Strategic Goal 2	▪ 99.43% water quality compliance ▪ 10 393 households provided with access to basic water ▪ 3838 households provided with basic sanitation	▪ 99.7% water quality compliance ▪ 87.18% households provided with access to basic water ▪ 41.61% households provided with basic sanitation	▪ 99.9% water quality compliance ▪ 82.68% households provided with access to basic water ▪ 38.06% households provided with basic sanitation	▪ 99.8% water quality compliance ▪ 98% households provided with access to basic water ▪ 47% households provided with basic sanitation
Strategic Goal 3	▪ 275 water consumption per capita (l/c/d) ▪ 95.3% response time to sewer blockages	▪ 286 water consumption per capita (l/c/d) ▪ 96% response time to sewer blockages	▪ 285 water consumption per capita (l/c/d) ▪ 96% response time to sewer blockages	▪ 288 water consumption per capita (l/c/d) ▪ 95% response time to sewer blockages

Strategic goals or objectives	Achievements 2019/20	Achievements 2018/19	Achievements 2017/18	Achievements 2016/17
	▪ 91.08% response time to water bursts ▪ 89.95% of accounts billed on actual consumption	▪ 91% response time to water bursts ▪ 90% of accounts billed on actual consumption	▪ 90% response time to water bursts ▪ 83% of accounts billed on actual consumption	▪ 90% response time to water bursts ▪ 84% of accounts billed on actual consumption

4.3 Corporate scorecard

The company is required to report on performance information to various stakeholders in various forms and, as such, three scorecards are included in the business plan to satisfy this requirement.

4.3.1 Institutional SDBIP and UISP indicators

Table 23 tabulates the two key performance indicators that the company supports in the institutional SDBIP. The UISP indicators are the same as those contained in the institutional SDBIP

Table 23: Institutional SDBIP

IDP programme	KPI No	Key performance indicator (KPI)/predictive outcome indicator	Baseline 2019/20	Target 2021/22	Target 2022/23	Target 2023/24	Target 2024/25	Target 2025/26	Key interventions	2021/22 budget (per programme)		2021/22 quarterly targets				Means of verification
										Capex R'000	Opex R'000	Q1	Q2 Q3		Q4	
	1.	Number of additional households provided access to basic water at minimum LoS 1 in informal Settlements	10 393	3 325	0	0	0	0	Standpipes	50,000		0	500	1 028	3 325	Contractor's completion certificate
	2.	Number of additional households provided access to basic sanitation at minimum LoS 1 in informal Settlements	3 838	5 720	3 253	3 448	3 656	3 875	VIP latrines and ablution bloks		35,000	500	2 100	4 000	5 720	Contractor's completion certificate

*Coverage would have reached 100%

4.3.2 Entity scorecard

Table 24 represents the draft balanced scorecard for the entity.

Table 24: Entity's balanced scorecard

City Priorities	Strategic goals	KPI	Weight	Baseline 2019/20	2021/22 Target	Q1 Target	Q2 Target	Q3 Target	Q4 Target	2022/23 Target	2023/24 Target	2024/25 Target	2025/26 Target	KPI owner	Ref
Priority 4: Sustainable service delivery **Priority 5: Economic development** **Priority 7: Job opportunity and creation**	**Strategic Goal 1:** Utilise infra-structure delivery to create jobs, support SMMEs and attract investment Weight: 20%	Number of sewer blockages per 100 km of network length	20%	554.32 sewer blockages per 100 km of network length	599 sewer blockages per 100 km of network length	146 sewer blockages per 100 km of network length	292 sewer blockages per 100 km of network length	438 sewer blockages per 100 km of network length	599 sewer blockages per 100 km of network length	613 sewer blockages per 100 km of network length	600 sewer blockages per 100 km of network length	585 sewer blockages per 100 km of network length	560 sewer blockages per 100 km of network length	COO	1.
		Number of water pipe bursts per 100 km of network length	20%	453.83 water pipe bursts per 100 km of network length	464 water pipe bursts per 100 km of network length	113 water pipe bursts per 100 km of network length	226 water pipe bursts per 100 km of network length	339 water pipe bursts per 100 km of network length	464 water pipe bursts per 100 km of net-work length	476 water pipe bursts per 100 km of net-work length	469 water pipe bursts per 100 km of net-work length	462 water pipe bursts per 100 km of net-work length	454 water pipe bursts per 100 km of net-work length	COO	2.
		Renewal rate of water and	20%	1.0% renewal rate of water and	1.0% renewal rate of water and	0.10% renewal rate of water	0.35% renewal rate of water and	0.58% renewal rate of water and	1.0% renewal rate of water	0.9% renewal rate of water and	0.8% renewal rate of water	1.3% renewal rate of water	1.4% renewal rate of water and	COO	3.

City Priorities	Strategic goals	KPI	Weight	Baseline 2019/20	2021/22 Target	Q1 Target	Q2 Target	Q3 Target	Q4 Target	2022/23 Target	2023/24 Target	2024/25 Target	2025/26 Target	KPI owner	Ref
		sewer networks and WWTW based on value		sewer networks and WWTW based on value	sewer networks and WWTW based on value	and sewer networks and WWTW based on value	sewer networks and WWTW based on value	sewer networks and WWTW based on value	and sewer networks and WWTW based on value	sewer networks and WWTW based on value	and sewer networks and WWTW based on value	and sewer networks and WWTW based on value	sewer networks and WWTW based on value		
		Percentage capex spend	10%	94%	95% capex spend	10% capex spend	35% capex spend	60% capex spend	95% capex spend	95% capex spend	95% capex spend	95% capex spend	95% capex spend	COO	4.
		Percentage total B-BBEE procure-ment spent on qualifying SMMEs	10%	129% B-BBEE procure-ment spent on qualifying SMMEs	125% B-BBEE procure-ment spent on qualifying SMMEs	125% B-BBEE procurement spent on qualifying SMMEs	125% B-BBEE procure-ment spent on qualifying SMMEs	125% B-BBEE procure-ment spent on qualifying SMMEs	125% B-BBEE procure-ment spent on qualifying SMMEs	125% B-BBEE procure-ment spent on qualifying SMMEs	125% B-BBEE procure-ment spent on qualifying SMMEs	125% B-BBEE procure-ment spent on qualifying SMMEs	125% B-BBEE procure-ment spent on qualifying SMMEs	FD	5.
		Number of job opportunities created based	10%	1 896 job opportunities created based on EPWP	860 job opportunities created based on EPWP	91 job opportunities created based on	318 job opportunities created based on EPWP	546 job oppor-tunities created based on EPWP	860 job oppor-tunities created based on	1 001 job oppor-tunities created based on EPWP	1 101 job oppor-tunities created based on EPWP	1 620 job oppor-tunities created based on EPWP	1 665 Job opportunities created based on EPWP	COO	6.

City Priorities	Strategic goals	KPI	Weight	Baseline 2019/20	2021/22 Target	Q1 Target	Q2 Target	Q3 Target	Q4 Target	2022/23 Target	2023/24 Target	2024/25 Target	2025/26 Target	KPI owner	Ref
		on EPWP				EPWP			EPWP						
		Number of SMMEs supported through community upliftment projects	10%	153 SMMEs supported through community upliftment projects	91 SMMEs supported through community upliftment projects	10 SMMEs supported through community upliftment projects	30 SMMEs supported through community upliftment projects	55 SMMEs supported through community upliftment projects	91 SMMEs sup-ported through commu-nity uplift-ment project	84 SMMEs sup-ported through commu-nity uplift-ment projects	96 SMMEs sup-ported through commu-nity uplift-ment projects	107 SMMEs sup-ported through commu-nity uplift-ment projects	112 SMMEs sup-ported through commu-nity uplift-ment projects	COO	7.
Priority 3: Integrated Sustainable human settlements **Priority 11: Mitigation against COVID-19**	**Strategic Goal 2:** Deliver water and sanitation services of good quality that is accessible, reliable and efficient Weight: 10%	Percentage compliance with drinking water quality standard on E. Coli (SANS 241)	20%	99.43% compliance with drinking water quality standard on E. Coli (SANS 241)	99% compliance with drinking water quality standard on E. Coli (SANS 241)	99% compliance with drinking water quality standard on E. Coli (SANS 241)	99% compliance with drinking water quality standard on E. Coli (SANS 241)	99% compliance with drinking water quality standard on E. Coli (SANS 241)	99% compliance with drinking water quality standard on E. Coli (SANS 241)	99% compliance with drinking water quality standard on E. Coli (SANS 241)	99% compliance with drinking water quality standard on E. Coli (SANS 241)	99% compliance with drinking water quality standard on E. Coli (SANS 241)	99% compliance with drinking water quality standard on E. Coli (SANS 241)	COO	8.
		Number of additional	40%	10 393 additional households	2 570 additional households	0 additional households	0 additional households	1 000 additional households	2 570 additional house-holds	0 additional house-holds	0 additional house-holds	0 additional house-holds	0 additional house-holds	COO	9.

City Priorities	Strategic goals	KPI	Weight	Baseline 2019/20	2021/22 Target	Q1 Target	Q2 Target	Q3 Target	Q4 Target	2022/23 Target	2023/24 Target	2024/25 Target	2025/26 Target	KPI owner	Ref
		households provided access to basic water at minimum LoS 1 in informal settlements.		provided access to basic water at minimum LoS 1 in informal settlements	provided access to basic water at minimum LoS 1 in informal settlements	provided access to basic water at minimum LoS 1 in informal settlements	provided access to basic water at minimum LoS 1 in informal settlements	provided access to basic water at minimum LoS 1 in informal settlements	provided access to basic water at minimum LoS 1 in informal settle-ments	provided access to basic water at minimum Lo S1 in informal settle-ments	provided access to basic water at minimum Lo S1 in informal settle-ments	provided access to basic water at minimum Lo S1 in informal settle-ments	provided access to basic water at minimum Lo S1 in informal settle-ments		
		Number of additional households provided access to basic sanitation at minimum LoS 1 in informal	40%	3 838 additional households provided access to basic sanitation at minimum LoS 1 in informal settlements	5 720 additional households provided access to basic sanitation at minimum LoS 1 in informal settlements	500 additional households provided access to basic sanitation at minimum LoS 1 in informal	2 100 additional households provided access to basic sanitation at minimum LoS 1 in informal settlements	4 000 additional households provided access to basic sanitation at minimum LoS 1 in informal settlements	5 720 additional house-holds provided access to basic sanitation at minimum LoS 1 in informal	5 434 additional house-holds provided access to basic sanitation at minimum LoS 1 in informal settle-ments	3 448 additional house-holds provided access to basic sanita-tion at minimum LoS 1 in informal	3 656 additional house-holds provided access to basic sanita-tion at minimum LoS 1 in informal settle-ments	3 875 additional house-holds provided access to basic sanita-tion at minimum LoS 1 in informal settle-ments	COO	10.

City Priorities	Strategic goals	KPI	Weight	Baseline 2019/20	2021/22 Target	Q1 Target	Q2 Target	Q3 Target	Q4 Target	2022/23 Target	2023/24 Target	2024/25 Target	2025/26 Target	KPI owner	Ref
		settlements.				settlements			settle-ments						
Priority 9: Sustainable environmental development	**Strategic Goal 3:** Operate in a manner that promotes environmental conservation and sustainability Weight 10%	Percentage final effluent compliance in all WWTW	40%	79.90% final effluent compliance in all WWTW	90% final effluent compliance in all WWTW	90% final effluent compliance in all WWTW	90% final effluent compliance in all WWTW	90% final effluent compliance in all WWTW	90% final effluent compliance in all WWTW	90% final effluent compliance in all WWTW	90% final effluent compliance in all WWTW	90% final effluent compliance in all WWTW	90% final effluent compliance in all WWTW	COO	11.
		Tons CO_2 offset in greenhouse gas emissions from WWTW from Biogas Projects	40%	New	4 285 Tons CO_2 offset in greenhouse gas emissions from WWTW from Biogas Projects	0 Tons CO_2 offset in greenhouse gas emissions from WWTW from Biogas Projects	0 Tons CO_2 offset in greenhouse gas emissions from WWTW from Biogas Projects	2 000 Tons CO_2 offset in greenhouse gas emissions from WWTW from Biogas Projects	4 285 Tons CO_2 offset in greenhouse gas emissions from WWTW from Biogas Projects	4 285 Tons CO_2 offset in greenhouse gas emissions from WWTW from Biogas Projects	4 285 Tons CO_2 offset in greenhouse gas emissions from WWTW from Biogas Projects	4 285 Tons CO_2 offset in greenhouse gas emissions from WWTW from Biogas Projects	4 285 Tons CO_2 offset in greenhouse gas emissions from WWTW from Biogas Projects	COO	12
		Number of WWTW plants spillage	10%	New	700	175	350	525	700	600	500	400	300	COO	13
		Water consum	30%	275.36 l/c/d	275 l/c/d	275 l/c/d	275 l/c/d	275 l/c/d	275 l/c/d	273 l/c/d	271 l/c/d	269 l/c/d	267 l/c/d water	COO	14.

City Priorities	Strategic goals	KPI	Weight	Baseline 2019/20	2021/22 Target	Q1 Target	Q2 Target	Q3 Target	Q4 Target	2022/23 Target	2023/24 Target	2024/25 Target	2025/26 Target	KPI owner	Ref
Priority 8: Active and engaged citizenry	**Strategic Goal 4:** Improve customer and stake-holder satis-faction Weight: 20%	ption per capita		water consumption per capita	water consumption per capita	water consumption per capita	water consumption per capita	water consumption per capita	water consumption per capita	water consumption per capita	water consumption per capita	water consumption per capita	consumption per capita		
		Percentage water bursts restored within 48 hours of notification	30%	91.08% water bursts restored within 48 hours of notification	95% water bursts restored within 48 hours of notification	95% water bursts restored within 48 hours of notification	95% water bursts restored within 48 hours of notification	95% water bursts restored within 48 hours of notification	95% water bursts restored within 48 hours of notification	95% water bursts restored within 48 hours of notification	95% water bursts restored within 48 hours of notification	95% water bursts restored within 48 hours of notification	95% water bursts restored within 48 hours of notification	COO	15.
		Percentage sewer blockage cleared within 24 hours of notification	30%	95.30% sewer blockage cleared within 24 hours of notification	95% sewer blockage cleared within 24 hours of notification	95% sewer blockage cleared within 24 hours of notification	95% sewer blockage cleared within 24 hours of notification	95% sewer blockage cleared within 24 hours of notification	95% sewer blockage cleared within 24 hours of notification	95% sewer blockage cleared within 24 hours of notification	97% sewer blockage cleared within 24 hours of notification	97% sewer blockage cleared within 24 hours of notification	97% sewer blockage cleared within 24 hours of notification	COO	16.
		Percentage actual water meter reading	10%	89.95% actual water meter readings	92% actual water meter readings	92% actual water meter readings	92% actual water meter readings	92% actual water meter readings	92% actual water meter readings	92% actual water meter readings	92% actual water meter readings	92% actual water meter readings	92% actual water meter readings	FD	17.

City Priorities	Strategic goals	KPI	Weight	Baseline 2019/20	2021/22 Target	Q1 Target	Q2 Target	Q3 Target	Q4 Target	2022/23 Target	2023/24 Target	2024/25 Target	2025/26 Target	KPI owner	Ref
		s submitted to bill		submitted to bill	submitted to bill	submitted to bill	submitted to bill	submitted to bill	submitted to bill	submitted to bill	submitted to bill	submitted to bill	submitted to bill		
Priority 1: Financial sustainability **Priority 2: Good governance**	**Strategic Goal 5:** Enhance sound financial management, sustainability and clean governance Weight: 20%	Percentage NRW	40%	34.53% NRW	30% NRW (physical = 14.8; commercial = 17.2)	Annual target	Annual target	Annual target	30% NRW (physical = 14.8; comercial = 17.2)	28% NRW (physical = 14; comercial = 14)	27% NRW (physical = 13; commercial = 14)	26% NRW (physical = 13; commercial = 13)	25% NRW (physical = 13; commercial = 12)	COO	18.
		Rand net profit before bad debt provision	40%	R4,222 million net profit before bad debt provision	R3,694 million net profit before bad debt provision	R943 million net profit before bad debt provision	R1,885 million net profit before bad debt provision	R2,828 million net profit before bad debt provision	R3,694 million net profit before bad debt provision	R4,929 million net profit before bad debt provision	R4,929 million net profit before bad debt provision	TBC	TBC	FD	19.
		Audit opinion	10%	Clean audit opinion	Clean audit opinion	Annual target	Annual target	Annual target	Clean audit opinion	Clean audit opinion	Clean audit opinion	Clean audit opinion	Clean audit opinion	FD	20.
		Percentage of AGSA findings contributing to non-achiev	10%	New	0% AGSA findings contributing to non-achievement of	Annual target	Annual target	Annual target	0% AGSA findings contributing to	0% AGSA findings contributing to non-achievement of	0% AGSA findings contributing to non-achievement	0% AGSA findings contributing to non-achievement	0% AGSA findings contributing to non-achievement of	FD	21.

City Priorities	Strategic goals	KPI	Weight	Baseline 2019/20	2021/22 Target	Q1 Target	Q2 Target	Q3 Target	Q4 Target	2022/23 Target	2023/24 Target	2024/25 Target	2025/26 Target	KPI owner	Ref
		ement of clean audit			clean audit				non-achievement of clean audit	clean audit	of clean audit	of clean audit	clean audit		
Priority 10: Smart City	**Strategic Goal 6:** Use of technology for effective and efficient opera-tions Weight: 10%	Number of business units fully deployed with business analytics dashboard	25%	0 business units fully deployed with business analytics dashboard	3 business units (FI, IT and HR) fully deployed with business analytics dashboard	0 business units fully deployed with business analytics dash board	1 business unit fully deployed with business analytics dashboard	2 business units fully deployed with business analytics dashboard	3 busi-ness unit dash-boards to be deployed	N/A	N/A	N/A	N/A	FD	22.
		Percentage deployment of service failure reporting application	50%	New	100% deployment of service failure reporting application	25% deployment of service failure reporting application	50% deployment of service failure reporting application	75% deployment of service failure reporting application	100% deployment of service failure reporting application	N/A	N/A	N/A	N/A	FD	23.

City Priorities	Strategic goals	KPI	Weight	Baseline 2019/20	2021/22 Target	Q1 Target	Q2 Target	Q3 Target	Q4 Target	2022/23 Target	2023/24 Target	2024/25 Target	2025/26 Target	KPI owner	Ref
		Percentage deployment of workforce optimisation system	25%	New	100% deployment of workforce optimisation system	0% deployment of workforce optimisation system	25% deployment of workforce optimisation system	75% deployment of workforce optimisation system	100% deployment of workforce optimisation system	N/A	N/A	N/A	N/A	FD	24.
Priority 4: Sustainable service delivery	**Strategic Goal 7:** Invest in our staff to sustain optimal performance and a service focused culture Weight: 10%	Percentage female employees	25%	30.85%	33.11% female employees	32.12% female employees	32.45% female employees	32.78% female employees	33.11% female employees	34.43% female employees	TBC	TBC	TBC	HR&CS	25.
		Percentage staff designated as PWDs	25%	3.77%	3.98 % staff designated as PWDs	3.94% staff designated as PWDs	3.95% staff designated as PWDs	3.96% staff designated as PWDs	3.98% staff designated as PWDs	3.98% staff designated as PWDs	3.98% staff designated as PWDs	3.98% staff designated as PWDs	3.98% staff designated as PWDs	HR&CS	26.
		Percentage implement-ation of internal	10%	72.99%	85% implementation	Annually calculated target of 85% implementatio	Annually calculated target of 85% implementation of the plan	Annually calculated target of 85% implementation of the plan	Annually calculated target of 85% implementation	85% implementation of the plan	85% implementation of the plan	85% implementation of the plan	85% implementation of the plan	HR&CS	27.

City Priorities	Strategic goals	KPI	Weight	Baseline 2019/20	2021/22 Target	Q1 Target	Q2 Target	Q3 Target	Q4 Target	2022/23 Target	2023/24 Target	2024/25 Target	2025/26 Target	KPI owner	Ref
		training plan				n of the plan			of the plan						
		Disabling injury frequency rate	25%	0.87%	1	1	1	1	1	1	1	1	1	HR&CS	28.

Table 25: Entity day to day

Key performance indicator	Ref	Baseline 2019/20	2021/22 Target	Quarterly performance targets				2021/22 budget per project R 000						Means of verification
				Q1	Q2	Q3	Q4	Total budget		Quarterly budget target capex and op				
								Capex R'000	Opex R'000	Q1	Q2	Q3	Q4	
Number of sewer blockages per 100 km of network length	1	554.32 sewer blockages per 100 km of network length	599 sewer blockages per 100 km of network length	146 sewer blockages per 100 km of network length	292 sewer block-ages per 100 km of network length	438 sewer Block-ages per 100 km of network length	599 sewer Block-ages per 100 km of network length	168,000	0	42,000	84,000	125,000	168,000	System-generated Operational indicator report, IMQS infra-structur

Key performance indicator	Ref	Baseline 2019/20	2021/22 Target	Quarterly performance targets				2021/22 budget per project R 000						Means of verification
				Q1	Q2	Q3	Q4	Total budget		Quarterly budget target capex and op				
								Capex R'000	Opex R'000	Q1	Q2	Q3	Q4	
														e lengths and Excel calculation sheet
Number of water pipe bursts per 100 km of network length	2.	453.83 water pipe bursts per 100 km of network length	464 water pipe bursts per 100 km of network length	113 water pipe bursts per 100 km of network length	226 water pipe bursts per 100 km of network length	339 water pipe bursts per 100 km of network length	464 water pipe bursts per 100 km of network length	252,000	0	63,000	126,000	189,000	252,000	System-generated Operational indicator report, IMQS infrastructure lengths and Excel calculation sheet
Renewal rate of water and sewer networks; and WWTW based on value	3.	1.27% renewal rate of water and sewer networks and WWTW	1.0% renewal rate of water and sewer networks and WWTW based on value	0.1% renewal rate of water and sewer networks	0..35% renewal rate of water and sewer	0.58% renewal rate of water and sewer network	1.0% renewal rate of water and sewer net-	676,000		67,000	236,000	405,000	676,000	Excel calculation sheet on renewal rate based on asset value

Key performance indicator	Ref	Baseline 2019/20	2021/22 Target	Quarterly performance targets				2021/22 budget per project R 000						Means of verification
				Q1	Q2	Q3	Q4	Total budget		Quarterly budget target capex and op				
								Capex R'000	Opex R'000	Q1	Q2	Q3	Q4	
		based on value		and WWTW based on value	networks and WWTW based on value	s and WWTW based on value	works and WWTW based on value							
Percentage capex Spend	4.	94.53%	95%	10% capex spend	35% capex spend	60% capex spend	95% capex spend	1,419		141,000	496,000	851,000	1,419	Reports drawn from SAP syster
Percentage total B-BBEE procurement spent on qualifying SMMEs	5.	129% B-BBEE procure-ment spent on qualifying SMMEs	125% B-BBEE procurement spent on qualifying SMMEs	125% B-BBEE procurement spent on qualifying SMMEs	125% B-BBEE procure-ment spent on qualifying SMMEs	125% B-BBEE procure-ment spent on qualifying SMMEs	125% B-BBEE procure-ment spent on qualifying SMMEs	See note						Reports drawn from SAP and down-loaded onto Excel spread-sheet
Number of job opportunities created based on EPWP	6.	1 896 job opportunities created based on EPWP	860 job opportunities created based on EPWP	91 job opportunities created based on EPWP	318 job opportunities created based on	546 job opportunities created based on	860 job opportunities created based on	25,000		2,500	8,750	15,000	25,000	IDs, contracts, time-sheets, proof of payment, UIF

Key performance indicator	Ref	Baseline 2019/20	2021/22 Target	Quarterly performance targets				2021/22 budget per project R 000						Means of verification
				Q1	Q2	Q3	Q4	Total budget		Quarterly budget target capex and op				
								Capex R'000	Opex R'000	Q1	Q2	Q3	Q4	
					EPWP	EPWP	EPWP							
Number of SMMEs supported through community upliftment projects	7.	153 SMMEs supported through community upliftment projects	91 SMMEs supported through community upliftment projects	10 SMMEs supported through community upliftment projects	30 SMMEs supported through community upliftment projects	55 SMMEs supported through community upliftment projects	91 SMMEs supported through community upliftment project	61,000	4,800	6,100	21,300	36,600	65,800	Contracts, proof of payment, CSD, CIPC
Percentage compliance with drinking water quality standard on E. Coli (SANS 241)	8.	99.43% compliance with drinking water quality standard on E. Coli (SANS 241)	99.9% compliance with drinking water quality standard on E. Coli (SANS 241)	99.5% compliance with drinking water quality standard on E. Coli (SANS 241)	99% compliance with drinking water quality standard on E. Coli (SANS 241)	99% compliance with drinking water quality standard on E. Coli (SANS 241)	99% compliance with drinking water quality standard on E. Coli (SANS 241)	0	17,600	4,400	8,800	13,200	17,600	System-generated drinking water quality report on Laboratory Information Management System (LIMS)

Key performance indicator	Ref	Baseline 2019/20	2021/22 Target	Quarterly performance targets				2021/22 budget per project R 000						Means of verification
				Q1	Q2	Q3	Q4	Total budget		Quarterly budget target capex and op				
								Capex R'000	Opex R'000	Q1	Q2	Q3	Q4	
Number of additional households provided access to basic water at minimum LoS 1 in informal Settlements	9.	10 393 additional households provided access to basic water at minimum LoS 1 in informal settlements	2 570 additional households provided access to basic water at minimum LoS 1 in informal settlements	0 additional households provided access to basic water at minimum LoS 1 in informal settlements	500 additional households provided access to basic water at minimum LoS 1 in informal settlements	1028 additional households provided access to basic water at minimum LoS 1 in informal settlements	2 570 additional households provided access to basic water at minimum LoS 1 in informal settlements	50,000	-	5,000	20,000	35,000	50,000	Completion certificates
Number of additional households provided access to basic sanitation at minimum LoS 1 in informal settlements.	10.	3 838 additional households provided access to basic sanitation at minimum LoS 1 in informal settlements	5 720 additional households provided access to basic sanitation at minimum LoS 1 in informal settlements	500 additional households provided access to basic sanitation at minimum	2 100 additional households provided access to basic sanitation	4 000 additional households provided access to basic sanitation	5 720 additional households provided access to basic sanitation	-	75,000	8,000	20,000	45,000	75,000	Completion certificates

Key performance indicator	Ref	Baseline 2019/20	2021/22 Target	Quarterly performance targets				2021/22 budget per project R 000						Means of verification
				Q1	Q2	Q3	Q4	Total budget		Quarterly budget target capex and op				
								Capex R'000	Opex R'000	Q1	Q2	Q3	Q4	
				LoS 1 in informal settlements	at minimum LoS 1 in informal settle-ments	at minimum LoS 1 in informal settle-ments	at minimum LoS 1 in informal settle-ments							
Percentage final effluent compliance in all WWTW	11.	79.90% final effluent compliance in all WWTW	90% final effluent compliance in all WWTW	90% final effluent compliance in all WWTW	92% final effluent compliance in all WWTW	90% final effluent compliance in all WWTW	90% final effluent compliance in all WWTW	392,000	728,000	280,000	560,000	840,000	1,120,000	System-generated effluent quality LIMS reports and Excel calcula-tion sheets.
Tons CO_2 offset in greenhouse gas emissions from WWTW from Biogas Projects	12	New	4 285 Tons CO_2 offset in greenhouse gas emissions from WWTW from Biogas Projects	0 Tons CO_2 offset in greenhouse gas emissions from WWTW from Biogas Projects	0 Tons CO_2 offset in greenhouse gas emissions from WWTW from Biogas	2 000 Tons CO_2 offset in greenhouse gas emissions from WWTW from Biogas	4 285 Tons CO_2 offset in greenhouse gas emissions from WWTW from	TBC	TBC					

Key performance indicator	Ref	Baseline 2019/20	2021/22 Target	Quarterly performance targets				2021/22 budget per project R 000						Means of verification
				Q1	Q2	Q3	Q4	Total budget		Quarterly budget target capex and op				
								Capex R'000	Opex R'000	Q1	Q2	Q3	Q4	
					Projects	Projects	Biogas Projects							
Number of WWTW plants spillage	13	New	700	175	350	525	700	351,000	500,325	212,831	425,662	638,493	851,325	Monthly Spills report
Water consumption per capita	14.	275.36 l/c/d water consumption per capita	275 l/c/d water consumption per capita	275 l/c/d water consumption per capita	275 l/c/d water consumption per capita	275 l/c/d water consumption per capita	275 l/c/d water consumption per capita	165,000	-	25,000	50,000	100,000	165,000	Bulk system input volumes. Excel sheet based on Rand Water and cross-boundary invoices and Excel Calculation sheet.
Percentage water bursts restored within 48 hours of notification	15.	91.08% water bursts restored within 48 hours of notification	95% water bursts restored within 48 hours of notification	95% water bursts restored within 48 hours of notification	95% water bursts restored within 48 hours of	95% water bursts restored within 48 hours of	95% water bursts restored within 48 hours of	0	476,500	119,100	238,250	357,350	476,500	System-generated regional response-time report

Key performance indicator	Ref	Baseline 2019/20	2021/22 Target	Quarterly performance targets				2021/22 budget per project R 000						Means of verification
				Q1	Q2	Q3	Q4	Total budget		Quarterly budget target capex and op				
								Capex R'000	Opex R'000	Q1	Q2	Q3	Q4	
					notifi-cation	notifi-cation	notifi-cation							
Percentage sewer blockage cleared within 24 hours of notification	16.	95.30% sewer blockage cleared5within 24 hours of notification	95% sewer blockage cleared within 24 hours of notification	95% sewer blockage cleared within 24 hours of notification	95% sewer block-age cleared within 24 hours of notifi-cation	95% sewer block-age cleared within 24 hours of notifi-cation	95% sewer block-age cleared within 24 hours of notifi-cation	0	317,600	79,400	158,800	238,200	317,600	System-generated regional response-time report
Percentage of actual water meter readings submitted to bill	17.	89.95% accounts billed on actual reading on a monthly basis	92% accounts billed on actual reading on a monthly basis	92% accounts billed on actual reading	92% actual water meter readings submitted to bill	92% actual water meter readings submit-ted to bill	92% actual water meter readings submit-ted to bill	77,600	54,000	25,800	64,500	90,300	131,600	
Percentage NRW	18.	34.53% NRW	30% NRW	Annual target	Annual target	Annual target	30% NRW (physical = 14, comer-cial = 16)Annual target	238,000	36,000	68,500	137,000	205,500	274,000	CoJ zonal water balance. Excel calculation sheet.

Key performance indicator	Ref	Baseline 2019/20	2021/22 Target	Quarterly performance targets				2021/22 budget per project R 000						Means of verification
				Q1	Q2	Q3	Q4	Total budget		Quarterly budget target capex and op				
								Capex R'000	Opex R'000	Q1	Q2	Q3	Q4	
Rand net profit before bad debt provision	19.	R4,222 million net profit before bad debt provision	R3,684 million net profit before bad debt provision	R943 million net profit before bad debt provision	R1,885 million net profit before bad debt provision	R2,828 million net profit before bad debt provision	R3,684 million net profit before bad debt provision	See note						Annual financial state-ments
Audit opinion	20.	Clean audit opinion	Clean audit opinion	Annual target	Clean audit opinion	Annual target	Annual target	See note						AGSA Audit Report
Percentage of AGSA findings contributing to non-achievement of clean audit	21.	New	New	New	0% AGSA finding contributing to non-achieve-ment of clean audit	Annual target	Annual target	See note						AGSA Manag ement Report
Number of business units fully deployed with business analytics dashboard	22.	3 business units fully deployed with business	3 business units fully deployed with business analytics dashboard	0 business units fully deployed with business	1 busi-ness units (FI, IT and	2 busi-ness units fully de-ployed	3busi-ness unit fully de-ployed	2,000,000	-	604,500	60,272	928,563	400,000	A dash-board for the busi-ness unit targeted. There will

Key performance indicator	Ref	Baseline 2019/20	2021/22 Target	Quarterly performance targets				2021/22 budget per project R 000						Means of verification
				Q1	Q2	Q3	Q4	Total budget		Quarterly budget target capex and op				
								Capex R'000	Opex R'000	Q1	Q2	Q3	Q4	
		analytics dashboard		analytics dashboard	HR) fully de-ployed with busi-ness analytics dash-board	with busi-ness analytics dash-board	with busi-ness analytics dash-board							be a specifi cation document and a project plan The specifi-cation document will consist of KPIs for each business unit.
Percentage deployment of service failure reporting application	23.	New	100% deployment of service failure reporting application	25% deployment of service failure reporting application	50% deploy-ment of service failure reporting appli-cation	75% deploy-ment of service failure reporting appli-cation	100% deploy-ment of service failure reporting appli-cation	1,300	0	0	0	0	1,300	Project scope
Percentage deployment of workforce optimisation system	24.	New	100% deployment of workforce optimisation system	25% deployment of workforce optimisation system	50% deploy-ment of work-force optimis	75% deploy-ment of work-force optimisation system	100% deploy-ment of work-force optimis	20, 000	0	0	0	0	20,000	Project scope

Key performance indicator	Ref	Baseline 2019/20	2021/22 Target	Quarterly performance targets				2021/22 budget per project R 000						Means of verification
				Q1	Q2	Q3	Q4	Total budget		Quarterly budget target capex and op				
								Capex R'000	Opex R'000	Q1	Q2	Q3	Q4	
					ation system		ation system							
Percentage female employees	25.	30.85%	33.11%	32.12% female employees	32.45 % female employ-ees	32.78% female employ-ees	33.11 % female employ-ees	See note						SAP Human Resources Information Management (HRIM) system reports
Percentage staff designated as PWDs	26.	3.77%	3.98%	3.94 % staff designated as PWDs	3.95 % staff designated as PWDs	3.96% staff designated as PWDs	3.98% staff designated as PWDs	See note						SAP Human Resources Information Management (HRIM) system reports
Percentage implementation of Internal Training Plan	27.	72.99%	85%	15% implementation of the plan	40% implementation of the plan	60% implementation of the plan	85% implementation of the plan		11,000	2,750	5.500	8250	11,000	Verified Internal Training Plan.
Disabling injury frequency rate	28.	0.87%	1	1	1	1	1	See note						Excel spreadsheet

Note 1: Not project-based, but day-to-day multifaceted activities, impractical to ring-fence shared budget

4.3.3 Circular 88 indicators

Table 26 indicates National Treasury's Circular 88 key performance indicators and targets

Table 26: Circular 88 indicators

No	Key perform-ance indicator	Ref	2019/20 Baseline	2021/22 Target	2022/23 Target	Quarterly targets				Quarterly performance targets		2021/22 budget per project R 000				Means of verifi-cation
										Total budget		Quarterly budget target capex and opex				
						Q1	Q2	Q3	Q4	Capex	Opex	Q1	Q2	Q3	Q4	
1.	Number of additional house-holds with access to basic sanitation	WS1.1	3 838 new house-holds provided access to basic sanitation minimum LoS 1 in informal settle-ments	5 720 additional house-holds provided access to basic sanitation mini-mum LoS 1 in informal settle-ments	5 720 additional households provided access to basic sanitation minimum LoS 1 in informal settlements	500 additional house-holds provided access to basic sanitation minimum LoS 1 in informal settle-ments	2 100 additional house-holds provided access to basic sanitation minimum LoS 1 in informal settle-ments	4 000 additional house-holds provided access to basic sanitation minimum LoS 1 in informal settle-ments	5 720 additional house-holds provided access to basic sanitation minimum LoS 1 in informal settle-ments.	-	35,000	500	2,100	4,000	5,720	Completion certificates
2.	Number of new sewer connections meeting minimum standards	WS1.11	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	Number of households with	WS2.1	10 393 new house-holds	2 570 new house-holds	0 new households provided	0 new house-holds provide	500 new house-holds	1 028 new house-holds	2 570 new house-holds	50,000	-	5,000	20,000	35,000	50,000	Completion certifi-cates

No	Key perform-ance indicator	Ref	2019/20 Baseline	2021/22 Target	2022/23 Target	Quarterly targets				Quarterly performance targets		2021/22 budget per project R 000				Means of verifi-cation
										Total budget		Quarterly budget target capex and opex				
						Q1	Q2	Q3	Q4	Capex	Opex	Q1	Q2	Q3	Q4	
	access to basic water supply		provided access to basic water at minimum LoS 1 in informal settle-ments	provided access to basic water at minimum LoS 1 in informal settle-ments	access to basic water at minimum LoS 1 in informal settlements	d access to basic water at minimum LoS 1 in informal settle-ments	provided access to basic water at minimum LoS 1 in informal settle-ments	provided access to basic water at minimum LoS 1 in informal settle-ments	provided access to basic water at minimum LoS 1 in informal settle-ments							
3.	Frequency of sewer blockages	WS3.1	554 sewer blockages per 100 km of network length	599 sewer blockages per 100 km of network length	613 sewer blockages per 100 km of network length	146 sewer blockages per 100 km of network length	292 sewer blockages per 100 km of network length	438 sewer blockages per 100 km of network length	599 sewer blockages per 100 km of network length	168,000	0	42,000	84,000	125,000	168,000	System-generated operational indicator report, IMQS infra-structure lengths and Excel calculation sheet

No	Key perform-ance indicator	Ref	2019/20 Baseline	2021/22 Target	2022/23 Target	Quarterly targets				Quarterly performance targets		2021/22 budget per project R 000				Means of verifi-cation
										Total budget		Quarterly budget target capex and opex				
						Q1	Q2	Q3	Q4	Capex	Opex	Q1	Q2	Q3	Q4	
4.	Percentage of complaints and callouts responded to within 24 hours (sanitation/ wastewater)	WS3.11	94.94% sewer blockage cleared within 24 hours of notifi-cation	95% sewer blockage cleared within 24 hours of notifi-cation	95% sewer blockage cleared within 24 hours of notification	95% sewer blockage cleared within 24 hours of notifi-cation	95% sewer blockage cleared within 24 hours of notifi-cation	95% sewer blockage cleared within 24 hours of notifi-cation	95% sewer blockage cleared within 24 hours of notifi-cation	0	317,600	79,400	158,800	238,200	317,600	System-generated regional response-time report
5.	Percentage frequency of mains failures	WS3.2	454 water pipe bursts per 100 km of network length	464 water pipe bursts per 100 km of network length	476 water pipe bursts per 100 km of network length	113 water pipe bursts per 100 km of network length	226 water pipe bursts per 100 km of network length	337 water pipe bursts per 100 km of network length	464 water pipe bursts per 100 km of network length	252,000	0	63,000	126,000	189,000	252,000	System-generated operational indicator report, IMQS infra-structure lengths and Excel calculation sheet
6.	Percentage of complaints and callouts responded to within	WS3.21	89.09 % of water bursts restored within 24	95% of water bursts restored within 24	95% of water bursts restored within 24 hours of	95% of water bursts restored within 24 hours	95% of water bursts restored within 24 hours	95% of water bursts restored within 24 hours	95% of water bursts restored within 24	0	476,500	119,100	238,250	357,350	476,500	System-generated regional response-time report

No	Key perform-ance indicator	Ref	2019/20 Baseline	2021/22 Target	2022/23 Target	Quarterly targets				Quarterly performance targets		2021/22 budget per project R 000				Means of verifi-cation
										Total budget		Quarterly budget target capex and opex				
						Q1	Q2	Q3	Q4	Capex	Opex	Q1	Q2	Q3	Q4	
	24 hours (water)		24 hours of notifi-cation	hours of notifi-cation	notificatio n	of notificatio n	of notifi-cation	of notifi-cation	hours of notifi-cation							
7.	Percentage frequency of unplanned water service interruption	WS3.3	TBC	TBC	TBC	TBC	TBC	TBC	TBC	252,000	0	63,000	126,000	189,000	252,000	System-generated operational indicator report, IMQS infra-structure lengths and Excel calculation sheet
8.	Percentage of drinking water compliance to SANS 241	WS4.1	99.9% compliance with drinking water quality standard on E. Coli (SANS 241)	99% compliance with drinking water quality standard on E. Coli	99% compliance with drinking water quality standard on E. Coli (SANS 241)	99% compliance with drinking water quality standard on E. Coli	99% compliance with drinking water quality standard on E. Coli (SANS 241)	99% compliance with drinking water quality standard on E. Coli (SANS 241)	99% compliance with drinking water quality standard on E. Coli	0	17,600	4,400	8,800	13,200	17,600	System-generated drinking water quality report on LIMS

No	Key perform-ance indicator	Ref	2019/20 Baseline	2021/22 Target	2022/23 Target	Quarterly targets				Quarterly performance targets		2021/22 budget per project R 000				Means of verifi-cation
										Total budget		Quarterly budget target capex and opex				
						Q1	Q2	Q3	Q4	Capex	Opex	Q1	Q2	Q3	Q4	
				(SANS 241)		(SANS 241)			(SANS 241)							
9.	Percentage of wastewater samples compliant to water use license conditions	WS4.2	72% final effluent compliance in all WWTW.	90% final effluent compliance in all WWTW	90% final effluent compliance in all WWTW	90% final effluent compliance in all WWTW	90% final effluent compliance in all WWTW	90% final effluent compliance in all WWTW	90% final effluent compliance in all WWTW	392,000	728,000	280,000	560,000	840,000	1,120,000	System-generated effluent quality LIMS reports and Excel calculation sheets
10.	Percentage of industries with trade effluent inspected for compliance	WS4.21	New	95% of industries with trade effluent inspected for compliance	95% of industries with trade effluent inspected for compliance	95% of industries with trade effluent inspected for compliance	95% of industries with trade effluent inspected for compliance	95% of industries with trade effluent inspected for compliance	95% of industries with trade effluent inspected for compliance	See Note 1						
11.	Percentage of wastewater safely treated	WS4.22	72% of final effluent compliance in all WWTW.	90% of final effluent compliance in all WWTW	90% of final effluent compliance in all WWTW	90% of final effluent compliance in all WWTW	90% of final effluent compliance in all WWTW	90% of final effluent compliance in all WWTW	90% of final effluent compliance in all WWTW	392,000	728,000	280,000	560,000	840,000	1,120,000	System-generated effluent quality LIMS reports and Excel

No	Key perform-ance indicator	Ref	2019/20 Baseline	2021/22 Target	2022/23 Target	Quarterly targets				Quarterly performance targets		2021/22 budget per project R 000				Means of verifi-cation
										Total budget		Quarterly budget target capex and opex				
						Q1	Q2	Q3	Q4	Capex	Opex	Q1	Q2	Q3	Q4	
																calculation sheets
12.	Percentage of NRW	WS5.1	38.6%	30% NRW (physical = 14.8%, comer-cial = 17.2%)	28% NRW (physical = 13%, commercial =15%)	Annual target	Annual target	Annual target	30% NRW (physical = 14%, comer-cial = 16%)	238,000	36,000	68,500	137,000	205,500	274,000	CoJ zonal water balance. Excel calculation sheet
13.	Total water losses	WS5.2	24.8%	21%	21%	Annual Target	Annual Target	Annual Target	21%	Same as above	Same as above	Same as above	Same as above	Same as above	Same as above	Same as above
14.	Total per capita consumption of water	WS5.3	284.92 l/c/d water consumption per capita	275 l/c/d water consumption per capita	273 l/c/d water consumption per capita	275 l/c/d water consumption per capita	275 l/c/d water consumption per capita	275 l/c/d water consumption per capita	275 l/c/d water consumption per capita	Same as above	Same as above	Same as above	Same as above	Same as above	Same as above	Bulk system input volumes. Excel sheet based on Rand Water and cross-boundary invoices and Excel

No	Key perform-ance indicator	Ref	2019/20 Baseline	2021/22 Target	2022/23 Target	Quarterly targets				Quarterly performance targets		2021/22 budget per project R 000				Means of verifi-cation
										Total budget		Quarterly budget target capex and opex				
						Q1	Q2	Q3	Q4	Capex	Opex	Q1	Q2	Q3	Q4	
																calculation sheet
15.	Water connections metered as a percentage of total connections	WS5.31	TBC	TBC	TBC	TBC	TBC	TBC	TBC	165,000	-	25,000	50,000	100,000	165,000	System-generated regional response-time report
16.	Percentage of water reused	WS5.4	New	60%	60%	54.8%	56%	58%	60%	See Note 1						System-generated regional response-time report

4.3.4 KPI definition

Table 27 indicates the KPI definition, calculation formula and the means of verification.

Table 27: KPI definitions

KPI	Indicator title	Short definition	Purpose or importance	Source or collection of data	Method of calculation	Data limitation	Type of indicator	Calculation type	Reporting cycle	New indicator	Desired performance	Indicator responsibility
1.	Number of sewer blockages per 100 km of network length	Frequency of sewer blockages being experienced as an indication of the sewer infrastructure performance and condition	Indicates the deterioration of the sewer infrastructure due to age. Assist in identifying and motivating sewer pipe replacement activities.	System-generated operational indicator report, IMQS infrastructure lengths and Excel calculation sheet	(A) Number of work orders received on sewer main blockages (B) Total length of sewer mains/100 (C) A/B = number of blockages per 100 km (monthly)	No limitation	The indicator indicates the efficiency of the sewer network.	Performance is cumulative	Reported quarterly	Continue without change from the previous financial year	Performance should be lower than the target set.	COO
2.	Number of water pipe bursts per 100 km of network length.	Frequency of water bursts being experienced as an indication of water infrastructure performance and condition	Indicates the deterioration of the water infrastructure due to age. Assist in identifying and motivating water pipe	System-generated operational indicator report, IMQS infrastructure lengths and Excel calculation sheet.	(A) Number of works orders received R&M mains + number of work orders received R&M valves and hydrants (B) Total length of	No limitation	The indicator indicates the efficiency of the water network.	Performance is cumulative	Reported quarterly	Continue without change from the previous financial year.	Performance should be lower than the target set.	COO

KPI	Indicator title	Short definition	Purpose or importance	Source or collection of data	Method of calculation	Data limitation	Type of indicator	Calculation type	Reporting cycle	New indicator	Desired performance	Indicator responsibility
			replacement activities.		water mains/100 C) A/B = number of bursts per 100 km (monthly)							
3.	Renewal rate of water and sewer networks and WWTW based on value	Renewal rate of water and sewer networks and WWTW electro-mechanical components based on value	Measure-ment of renewal of the asset base to prevent failure and ensure efficient service delivery	Excel calculation sheet on renewal rate based on asset value	Percentage renewal rate = total cost of infra-structure renewal expenditure divided by (network replacement cost + WWTW electro-mechanical replacement cost) x 100%	N/A	N/A	N/A	Monthly	N/A	1% renewal rate	COO
4.	Percentage capex spend	The rand value expressed as a percentage of capital budget spend against the		Reports drawn from SAP system	A = capex spend. B = capex allocated percentage of capex spend = (A/B)*100	N/A	N/A	N/A	Monthly	N/A	95% capex Spent	COO

KPI	Indicator title	Short definition	Purpose or importance	Source or collection of data	Method of calculation	Data limitation	Type of indicator	Calculation type	Reporting cycle	New indicator	Desired performance	Indicator responsibility
		allocated budget										
5.	Percentage of total B-BBEE procurement spent on qualifying SMMEs.	The definition of the formula is to calculate the B-BBEE procurement spend percentage for qualifying SMMEs (i.e. EMEs and QSEs) in the said category. It is the B-BBEE procurement spend value recognised for qualifying SMMEs, which comprises the total measured procurement spend for each supplier in this category with a valid B-BBEE	The purpose is to determine the B-BBEE procurement spend percentage within this SMME group and an achieve-ment of at least 125%. It also indicates that most of the SMME suppliers used by the entity are Level 2, which equates to 125% B-BBEE recognition.	Reports drawn from SAP and downloaded onto Excel spreadsheet	A = B/C x 100% (A) = The percentage total of B-BBEE procurement spend on qualifying SMMEs (B) = Sum total of individual SMMEs procurement spend for the reporting period multiplied by the applicable B-BBEE recognition level per qualifying SMME (C) = Total procurement spend for all qualifying	If ERP (SAP) has a down-time, information cannot be extracted from SAP	KPI measures equity	Cumulative	Monthly, quarterly and annual	Continuing	Higher performance is desirable	Financial Director

KPI	Indicator title	Short definition	Purpose or importance	Source or collection of data	Method of calculation	Data limitation	Type of indicator	Calculation type	Reporting cycle	New indicator	Desired performance	Indicator responsibility
		scorecard/ certificate or affidavit divided by the overall value of goods and services procured within the relevant financial year, comprising operational and capital expenditure. EMEs are all exempted micro enterprises with a turnover of less than R10 million and QSEs are qualifying small enterprises with a turnover of between R10 and R50 million.			SMMEs for the reporting period. Total B-BBEE procurement spend							

KPI	Indicator title	Short definition	Purpose or importance	Source or collection of data	Method of calculation	Data limitation	Type of indicator	Calculation type	Reporting cycle	New indicator	Desired performance	Indicator responsibility
6.	Number of job opportunities created, based on EPWP.	The EPWP was initiated by the South African government and is aimed at creating 4.5 million work opportunities by employing labour-intensive methods.	Promote economic development and attract investment towards achieving 5% economic growth	IDs, contracts, timesheets, proof of payment, UIF	Excel database sheet with number of jobs created.	N/A	N/A	N/A	Monthly	N/A	100% job opportunities created based on EPWP	COO
7.	Number of SMMEs supported through community upliftment projects	SMME support through community upliftment projects will assist with economic development, job creation and poverty alleviation.	Promote economic development and attract investment towards achieving 5% economic growth	Contracts, proof of payment, CSD, CIPC,	Excel database sheet with number of SMMEs supported	N/A	N/A	N/A	Monthly	N/A	100% SMMEs supported through community upliftment projects	COO
8.	Percentage compliance with drinking water quality standard on E. Coli (SANS 241).	Percentage of drinking water samples complying with the SANS 241	Indicator is intended to show compliance with public safety with drinking	System-generated drinking water quality report on LIMS	(A) Number of tests complying (B) Number of tests (C) A/B x 100% = %	Strikes and service delivery protests. No access to	Measuring outcome or output i.e. if water is suitable for drinking	Cumulative	Monthly, quarterly and annually	Continues without change from the previous year.	Targeted performance or higher is desirable	COO

KPI	Indicator title	Short definition	Purpose or importance	Source or collection of data	Method of calculation	Data limitation	Type of indicator	Calculation type	Reporting cycle	New indicator	Desired performance	Indicator responsibility
		E. Coli standard to the number of drinking water samples taken.	water that is piped to households		compliance (monthly)	sampling points						
9	Number of new households provided access to basic water at minimum LoS 1 in informal settlements.	A basic water service refers to the provision of water in informal settlements through the installation of communal standpipes.	Number of households provided access to basic water service	Completion certificates	N/A	None	Outcomes and impact on service delivery	The numbers reported are cumulative only for monthly, quarterly and annual reporting.	Quarterly reporting	N/A	Actual performance to be determined during implementation	COO
10	Number of new households provided access to basic sanitation at minimum LoS 1 in informal settlements.	A basic sanitation service refers to the provision of sanitation in informal settlements through the installation of VIP latrines and ablution blocks.	Service delivery providing the right to access water in line with the Constitution.	Completion certificates	N/A	None	Outcomes and impact on service delivery	The numbers reported are cumulative only for monthly, quarterly and annual reporting.	Quarterly reporting	N/A	Actual performance to be determined during implementation	COO

KPI	Indicator title	Short definition	Purpose or importance	Source or collection of data	Method of calculation	Data limitation	Type of indicator	Calculation type	Reporting cycle	New indicator	Desired performance	Indicator responsibility
11	Percentage final effluent compliance in all WWTW.	The overall percentage compliance of the wastewater treatment plants to the compliance parameters as stipulated in their individual water use licences.	Indicator is intended to show if the WWTW are not discharging water containing waste in a manner that may detrimentally impact on a water resource	The information comes from a system-generated effluent quality LIMS reports and Excel calculation sheets. It is collected through sampling, analysis and reporting of results for effluent samples	(Total number of daily samples per works per indicator per month complying with the limit in the water use licence) / (total number of daily samples per works per indicator per month) x 100% = percentage monthly compliance per works per indicator in the water use licence	Strikes and service delivery protests. No access to sampling points.	Measuring Impact	Cumulative	Monthly, quarterly and annually	Continues without change from the previous year.	Targeted performance or higher is desirable	COO
12.	Tons Co2 offset in greenhouse gas emissions	A reduction in CO_2 or HG emission made in the	Indicator shows the reduction in greenhouse gas	Biogas SCADA dashboard on power generation.	Power generation multiply by conversion factor.	No Limitations	Indicator measures greenhouse gas offset.	Performance is cumulative	Reported quarterly	New	Performance should be higher than target set	COO

KPI	Indicator title	Short definition	Purpose or importance	Source or collection of data	Method of calculation	Data limitation	Type of indicator	Calculation type	Reporting cycle	New indicator	Desired performance	Indicator responsibility
	from WWTW from Biogas Projects	wastewater treatment plant										
13	Number of WWTW spills	Number of spills from all the treatment works	Indicator is intended to show if the WWTW are spilling raw sewer into the water resource.	Monthly spills records Excel sheet	Total number of spills added to the previous months spills.	No Limitation	Indicator shows the number of raw sewer spills from WWTW	Performance is cumulative	Reported quarterly	New	Performance should be lower than target set	COO
14.	Water consumption per capita per day.	Volume of water supplied to each person per day, including losses being experienced on the reticulation system.	Indicator shows the water demand of the CoJ per person per day.	Bulk system input volumes Excel sheet based on Rand Water and cross-boundary invoices and Excel calculation sheet. Population based on Census 2011 including growth.	(A) System input volume in the period under review, (B) population as per Census 2011 with 3, 5% growth per year and (C) the number of days of the period under review. (D) Household water consumptio	No limitation	The indicator indicates the water demand of the CoJ.	Performance is cumulative.	Reported quarterly	Continue without change from the previous financial year.	Performance should be lower than the target set.	COO

KPI	Indicator title	Short definition	Purpose or importance	Source or collection of data	Method of calculation	Data limitation	Type of indicator	Calculation type	Reporting cycle	New indicator	Desired performance	Indicator responsibility
					n per capita per day = A/B/C							
15.	Percentage water bursts restored within 48 hours of notification	The percentage of water bursts repaired within 48 hours to the number of water bursts reported as one of the service delivery functions linked to customer satisfaction.	Indicator shows how fast water infrastructure failures are addressed	System-generated regional response-time report	(A) Number of work orders completed (major and minor bursts) in time (B) Number of work orders received (major and minor bursts) A/B x 100% = percentage response time (monthly)	No limitation	The indicator indicates the efficiency/ outputs of the water teams	Performance is cumulative.	Reported monthly	Continue without change from the previous financial year.	Performance should be higher than the target set.	COO
16.	Percentage of sewer blockages cleared within 24 hours of notification.	The percentage of sewer blockages cleared within 24 hours to the number of sewer blockages	Indicator shows how fast sewer infrastructure failures are addressed.	System-generated regional response-time report	Number of work orders completed (sewer main blockages) in time (B) Number of work	No limitation	The indicator indicates the efficiency/ outputs of the sewer teams.	Performance is cumulative.	Reported monthly	Continue without change from the previous financial year.	Performance should be higher than the target set.	COO

KPI	Indicator title	Short definition	Purpose or importance	Source or collection of data	Method of calculation	Data limitation	Type of indicator	Calculation type	Reporting cycle	New indicator	Desired performance	Indicator responsibility
		reported as one of the service delivery functions linked to customer satisfaction.			orders received (sewer main blockages) A/B x 100% = percentage response time (monthly)							
17.	Percentage of actual water meter readings submitted to bill	Percentage of actual water meter readings submitted to bill	Percentage of actual water meter readings submitted to CoJ to bill by CoJ. Intended to show that meters have been read and actual readings have been submitted for billing	Meter Reading System Export	Number of actual water meter readings submitted to CoJ to bill / Number of water meters downloaded from the CoJ's billing system x 100% = percentage	Inability to submit a reading on some technical faults where a reading could be obtained and used (e.g. meter covered, meter inside the property)	Input	Non-cumulative	Annually	KPI definition changed	To meet target	FD
18.	Percentage of NRW.	Percentage reduction of the three components of NRW, including	Indicator indicates the difference between water	CoJ's zonal water balance. Excel calculation sheet.	Using sum of prior 12 months moving data (A), total	No limitation	The indicator indicates the efficiency or outputs of	Performance is cumulative.	Reported quarterly	Continue without change from the previous	Performance should be lower that the target set.	COO

KPI	Indicator title	Short definition	Purpose or importance	Source or collection of data	Method of calculation	Data limitation	Type of indicator	Calculation type	Reporting cycle	New indicator	Desired performance	Indicator responsibility
		physical (real) losses, commercial (apparent) losses and authorised, unbilled metered and non-metered consumption.	procured and put into the system and actual water supplied and billed to the customer.		system input volume (B), billed metered consumption(C), billed unmetered consumption (D), unbilled unmetered consumption (E), (A – B – C)/A*100 = percentage NRW (F), (A – B –C – D/ A*100 = percentage water losses (G), (28%* F)/A*100 = percentage apparent losses (commercial losses)(H), F – G = percentage real losses		the water infrastructure, as well as billing systems.			financial year.		

KPI	Indicator title	Short definition	Purpose or importance	Source or collection of data	Method of calculation	Data limitation	Type of indicator	Calculation type	Reporting cycle	New indicator	Desired performance	Indicator responsibility
					(physical losses) (I) D/A*100% = percentage unbilled unmetered consumption (commercial losses) (J), G + I = percentage commercial losses							
19.	Rand net profit before bad debt provision.	Bad debts are accounts receivable that a business cannot collect. The provision is used to estimate bad debts, which businesses incur because customers sometimes cannot pay	The indicator intends to show the amount of profit from business activities after expenses, which are under the control of Johannesburg Water, have been deducted.	Annual financial statements	Net profit + bad debt provision (Statement of Financial Performance element)	The calculation of the bad debt figure is based on the debtors aging, which is received from CoJ. Johannes-burg Water is thus dependent on CoJ for debtors aging.	The indicator is an output measurement being indicative of financial economy and efficiency.	The indicator is cumulative.	The indicator is reported monthly, quarterly and annually.	No changes to the indicator.	A performance higher than the targeted performance is desirable.	FD

KPI	Indicator title	Short definition	Purpose or importance	Source or collection of data	Method of calculation	Data limitation	Type of indicator	Calculation type	Reporting cycle	New indicator	Desired performance	Indicator responsibility
		their bills on time, or at all. Bad debt provisions are recorded as an expense on the Income Statement; reduce the net profit as an allowance for doubtful debts, which, in turn, reduce accounts receivable on the balance sheet.										
20.	Audit opinion.	The financial statements are free from material misstatements (in other words, a financially unqualified audit opinion) and there are no	The indicator is indicative of the organisation's financial governance in terms of audit standards.	AGSA Audit Report.	An audit opinion is issued by the AGSA by means of a final audit report.	There are no data limitations.	The indicator measures outcomes and is indicative of financial and governance efficiency.	It is a report received on an annual basis.	It is reported annually.	No significant changes to the indicator.	An outcome, which has improved from the prior year or better than the targeted outcome, is desirable.	FD

KPI	Indicator title	Short definition	Purpose or importance	Source or collection of data	Method of calculation	Data limitation	Type of indicator	Calculation type	Reporting cycle	New indicator	Desired performance	Indicator responsibility
		material findings on reporting on performance objectives or non-compliance with legislation.										
21	Percentage of AGSA finding contributing to non-achievement of clean audit	The financial statements are free from material misstatements (in other words, a financially unqualified audit opinion) and there are no material findings on reporting on performance objectives or non-compliance with legislation.	The indicator is indicative of the organisation's financial governance in terms of audit standards	AGSA Management Report.	Number of AGSA findings contributing to non-achievement of clean audit/total number of findings x 100%	There might be instances of findings where the finding stems from circum-stances beyond the control of Johannes-burg Water.	The indicator measures outputs in the form of the number of audit findings.	It is a report received on an annual basis.	It is reported annually.	New target	An outcome lower than the targeted performance is required	FD
22.	Number of business units fully deployed	Develop digital dashboards	Provides information on key operational	A dashboard for the business	There is no KPI calculation formula.	Dashboards are dependent on data	Dashboards provide insight, based on	Cumulative	Reported on a quarterly basis,	Not a new target. Similar to	Meet target.	FD

KPI	Indicator title	Short definition	Purpose or importance	Source or collection of data	Method of calculation	Data limitation	Type of indicator	Calculation type	Reporting cycle	New indicator	Desired performance	Indicator responsibility
	with business analytics dashboard.	for business units.	indicators for a department and function for an operation. Information is readily accessible.	unit targeted. There will be a specification document and a project plan. The specification document will consist of KPIs for each business unit.		from information systems to feed the EDW.	metrics, into operation and functions to translate into meaningful information, e.g. trends, performance, etc.		but based on an annual target.	the previous year's target.		
23.	Percentage deployment of service failure reporting application	Full deployment of service failure reporting application as per project scope		Project scope	Achieved project scope activities/ Total project scope activities x 100%	None	Output	Once-off	Annual	Yes	Meet target	FD
24.	Percentage deployment of workforce optimisation system	Full deployment of workforce optimisation system as per project scope		Project scope	Achieved project scope activities/ Total project scope activities x 100%	None	Output	Once-off	Annual	Yes	Meet target	FD

KPI	Indicator title	Short definition	Purpose or importance	Source or collection of data	Method of calculation	Data limitation	Type of indicator	Calculation type	Reporting cycle	New indicator	Desired performance	Indicator responsibility
25.	Percentage of female employees	Total female employees as a percentage of the total staff complement as at the end of the year		SAP HRIM system reports	Number of female employees/ total staff complement x 100%	None	Output	Cumulative	Annual	No	Yes	EM: HR and CS
26.	Percentage of staff designated as PWDs	The total number of people living with disabilities employed by the company as a percentage of the total staff complement of the company as at the end of the year and every quarter.		SAP HRIM system reports.	Number of people living with disabilities employed/ Total staff complement x 100%	None	Output	Cumulative	Annual	No	Yes	EM: HR and CS
27.	Percentage implementation of Internal Training Plan	Percentage implementation of Internal Training Plan		Verified Internal Training Plan.	= (actual training events/ planned training events x	None	Number of training events implemented as per SAP report	Average percentage of training events implemente	Annual target, monthly reporting cycle	85% implementation	100% implement-ation	EM: HR &CS

KPI	Indicator title	Short definition	Purpose or importance	Source or collection of data	Method of calculation	Data limitation	Type of indicator	Calculation type	Reporting cycle	New indicator	Desired performance	Indicator responsibility
					100% = percentage implementation		and attendance registers	d/ training events planned x 100% = percentage (211/211 x 100% = 100%)				
28	Disabling injury frequency rate (DIFR)	Disabling injury frequency rate intends to calculate the rate at which employees are injured while executing their duties. The target is ≤ 1.	Data comes from the work-related injuries (injury on duty) and the company's man-hours	Excel spreadsheet.	DIFR = number of disabling injuries x 200 000/ Total hours man-hours worked	Criminal elements, community unrest, and accidents that may result in employee injuries	The indicator measures the activities and impacts thereof from a health and safety perspective	The performance of the indicator is non-cumulative	The perform-ance is reported quarterly	The indicator continues from the previous financial year.	A performance that is less than or equal to 1 is desirable. A performance that is greater than 1 is not desirable	Manager: Occupational Health and Safety, Environment & Disaster Management

4.3.5 Service Standards Charter

Table 28 depicts the service standards indicators and targets**.**

Table 28: Service standards

No	Key performance indicator	Baseline 2019/20	2021/22 Target	2022/23 Target	Quarterly performance targets				2021/22budget per projects R 000						Means of verification
					Q1	Q2	Q3	Q4	Total budget		Quarterly budget target capex and opex				
									Capex	Opex	Q1	Q2	Q3	Q4	
1.	Percentage of water supply interruptions concluded within 12 hours of notification	99%	95%	95%	95 %	95 %	95 %	95 %	N/A	N/A	N/A	N/A	N/A	N/A	Planned interruption notices and monthly planned interruption matrix
2.	Percentage of fire hydrants repaired within 48 hours of notification	81%	85%	85%	85 %	85 %	85 %	85 %	0	476,500	119,100	238,250	357,350	476,500	System-generated regional response-time report
3.	Percentage of stolen meters replaced within 24 hours of notification	96%	95%	95%	95 %	95 %	95 %	95 %	Included in no 2 above	Included in no 2 above	Included in no 2 above	Included in no 2 above	Included in no 2 above	Included in no 2 above	System-generated regional response-time report
4	Percentage of defective meters	92%	95%	95%	95 %	95 %	95 %	95 %	Included in no	Included in no	Included in no	Included in no	Included in no	Included in no	System-generated regional

No	Key performance indicator	Baseline 2019/20	2021/22 Target	2022/23 Target	Quarterly performance targets				2021/22budget per projects R 000						Means of verification
					Q1	Q2	Q3	Q4	Total budget		Quarterly budget target capex and opex				
									Capex	Opex	Q1	Q2	Q3	Q4	
	repaired within 3 days of notification								2 above	2 above	2 above	2 above	2 above	2 above	response-time report.
5.	Percentage of leaking valves repaired within 48 hours of notification	91%	95%	95%	95 %	95 %	95 %	95 %	Included in no 2 above	Included in no 2 above	Included in no 2 above	Included in no 2 above	Included in no 2 above	Included in no 2 above	System-generated regional response-time report
6	Percentage of missing manhole covers replaced within 24 hours of notification	93%	95%	95%	95 %	95 %	95 %	95 %	Included in no 2 above	Included in no 2 above	Included in no 2 above	Included in no 2 above	Included in no 2 above	Included in no 2 above	System-generated regional response-time report
7	Percentage repair of water pipe burst within 48 hours of notification	91%	92%	92%	92 %	92 %	92 %	92 %	Included in no 2 above	Included in no 2 above	Included in no 2 above	Included in no 2 above	Included in no 2 above	Included in no 2 above	System-generated regional response-time report
8	Percentage sewer blockages cleared within 24 hours of notification	96%	95%	95%	95 %	95 %	95 %	95 %	0	317,600	79,400	158,800	238,200	317,600	System-generated regional response-time report

No	Key performance indicator	Baseline 2019/20	2021/22 Target	2022/23 Target	Quarterly performance targets				2021/22budget per projects R 000						Means of verification
					Q1	Q2	Q3	Q4	Total budget		Quarterly budget target capex and opex				
									Capex	Opex	Q1	Q2	Q3	Q4	
9	Percentage of new water connections completed within 15 days of receiving request from customer	75%	90%	90%	90 %	90 %	90 %	95 %	Included in no 2 above	Included in no 2 above	Included in no 2 above	Included in no 2 above	Included in no 2 above	Included in no 2 above	System-generated regional response-time report
10	Percentage of actual accounts billed on actual meter readings	90%	90%	90%	90 %	90 %	90 %	90 %		165,000	41,000	82,000	123,000	165,000	Monthly meter reading report
11	Percentage of planned service interruption communiqués sent within seven days.	100%	95%	95%	95 %	95 %	95 %	95 %	N/A	N/A	N/A	N/A	N/A	N/A	Daily supply system status update report
12	Percentage unplanned interruption communiqués sent immediately	100%	95%	95%	95 %	95 %	95 %	95 %	N/A	N/A	N/A	N/A	N/A	N/A	Daily supply system status update report
13	Percentage coverage of households with access to basic	New	93%	93%	93 %	93 %	93 %	93 %	TBC	TBC	TBC	TBC	TBC	TBC	

No	Key performance indicator	Baseline 2019/20	2021/22 Target	2022/23 Target	Quarterly performance targets				2021/22budget per projects R 000						Means of verification
					Q1	Q2	Q3	Q4	Total budget		Quarterly budget target capex and opex				
									Capex	Opex	Q1	Q2	Q3	Q4	
	water in informal settlements														
14	Percentage coverage of households with access to basic sanitation in informal settlements	New	45%	45%	45 %	45 %	45 %	45 %	TBC	TBC	TBC	TBC	TBC	TBC	
15	Percentage coverage of households with access to water city-wide	New	99%	99%	99 %	99 %	99 %	99 %	TBC	TBC	TBC	TBC	TBC	TBC	
15	Percentage coverage of households with access to sanitation city-wide	New	93%	93%	93 %	93 %	93 %	93 %	TBC	TBC	TBC	TBC	TBC	TBC	
17	Ratio of households per chemical toilet	New	7:1	7:1	7:1	7:1	7:1	7:1	TBC	TBC	TBC	TBC	TBC	TBC	

Chapter 5:
Financial Impact

5.1 Economic Outlook

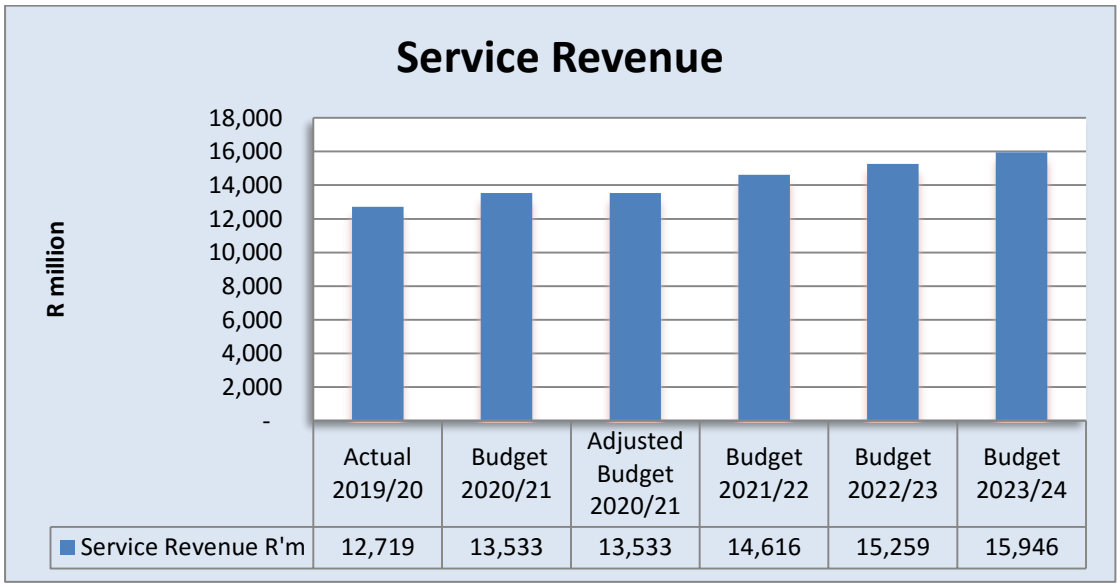
The country and the world were confronted with the COVID-19 pandemic during the last quarter of 2019/20. This has resulted in negative economic growth, increasing unemployment and rising national debt which informed the assumptions supporting the future outlook and budget in the short to medium term. The COVID-19 pandemic placed additional strain on Johannesburg Water by way of declining payment levels as well as the increased provision of services in marginalized areas where there is an ever-increasing demand for additional water and sanitation services. The provision of these services is expected to continue.

The economy is expected to grow in the medium term and a consumer price index (CPI) of 2.2 % has been estimated for the 2021/22 financial year. Payment levels are anticipated to increase to 80% by 2023/24 in light of economic recovery and stronger credit control measures being implemented

5.2 Financial indicators

Revenue is budgeted to increase to R14.6 Billion in the 2021/22 financial year as per Figure 10, which is an increase of 7.8% on the budget of R13.5 Billion in 2020/21.

Figure 10: Revenue trends



The average proposed tariff increase for 2021/22 is projected at 7.8%. This is based on Rand Water's proposed tariff increase of 5.8% plus a 2% margin. The increase is both above the inflation rate and above the inflation target set by the South African Reserve Bank and may have a negative impact on consumer payment levels. However, the increase does not adequately cover funding of the capital expenditure required to replace infrastructure that is

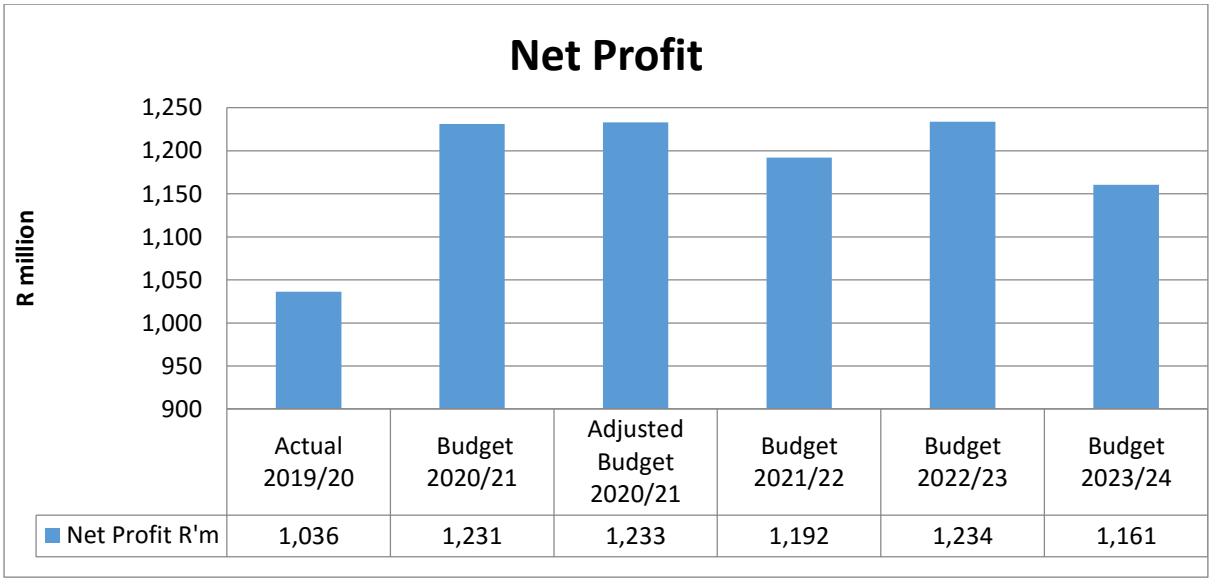
reaching the end of its useful life over the next few years. Therefore, additional loans will be required to fund a portion of the capital expenditure.

Bulk purchases consist of the purchase of potable water from Rand Water. The price is determined by a combination of a government pricing strategy, which is determined by operating costs and loan repayments for capital infrastructure for raw water, as well as the costs incurred by Rand Water for the treatment of water.

The bulk water volume purchases budget has been based on current consumption patterns adjusted by the proposed tariff increase of 5.8%.

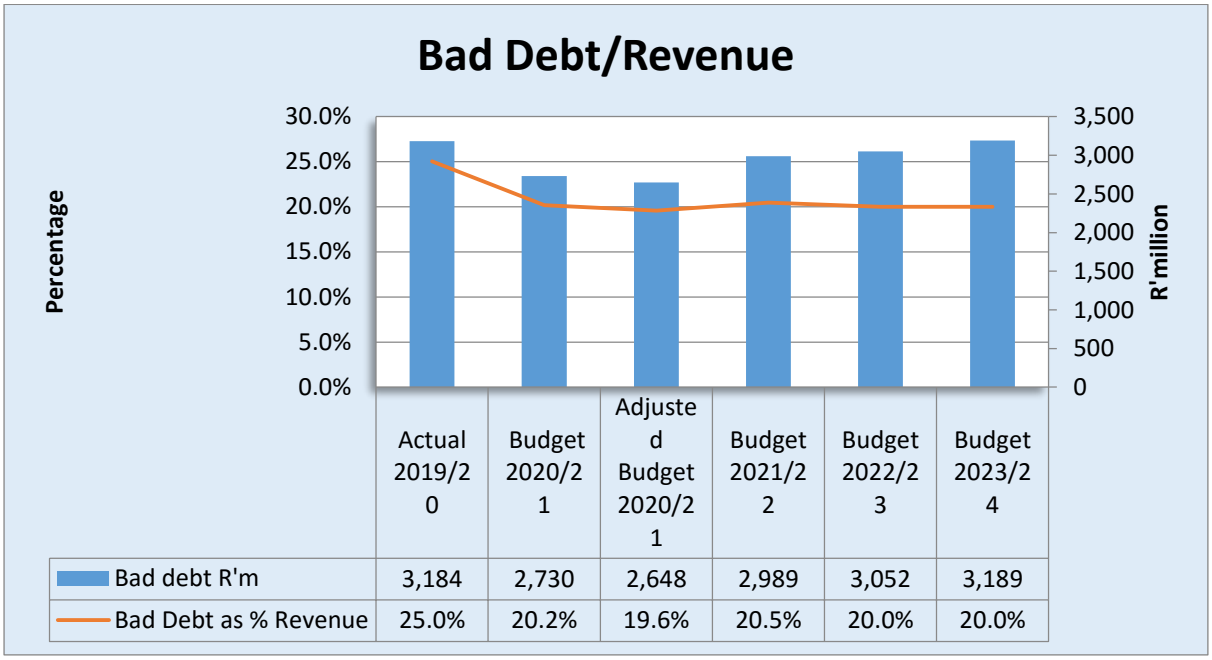
The net profit of the company in 2020/21 as per the adjustment budget is R1.233 billion. It is forecasted to decrease to R1.192 billion and R1.161 as shown in Figure 11 below:

Figure 11: Net profit



Debt impairment has been increasing steadily over a number of years, as reflected in Figure 12.

Figure 12: Debt impairment

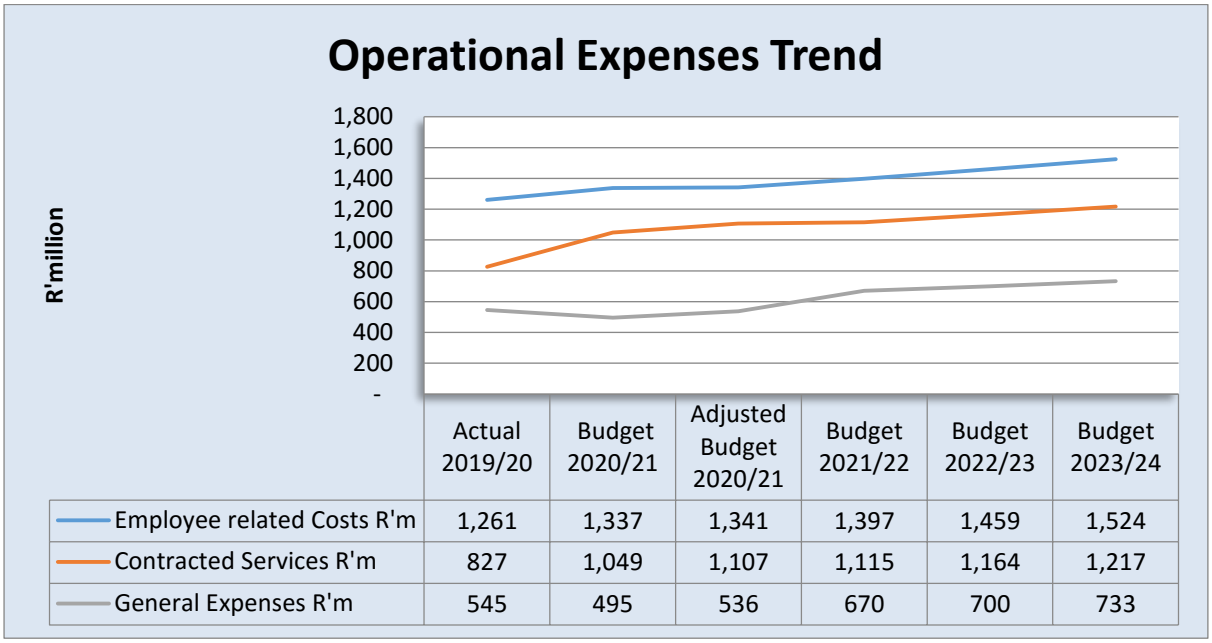


Debt impairment for 2021/22 is projected at R3 billion, as compared to the adjusted budget of R2.6 billion for 2020/21. The debt impairment budget is based on the collection rate of 79.5% which is anticipated to increase to 80% in 2023/24 financial year. The non-payment by consumers is of concern since it has a direct negative impact on availability of funds for service delivery and capital expenditure. To improve the situation, enforcement of the credit control policy will continue by disconnecting all non-paying customers and regular reviews to ensure that customers are not illegally reconnected. Additionally, credit control efforts will increase to ensure monies are collected from all residents for services rendered. The credit control team at Johannesburg Water will continue to work with the credit control team at Revenue Shared Services Centre (RSSC) in order to improve collection

5.3 Controls over operating costs

General expenses increased from the adjusted budget of R536 million in 2020/21 to R670 million for 2021/22. The budget for contracted services increased from R1.107 million in the 2020/21 to R1.115 million for 2021/22. Employee related costs increased from the adjusted budget of R1.341 billion in 2020/21 to R1.397 billion for 2021/22. The operating costs per major category are reflected in figure 13 below.

Figure 13: Operational expenses



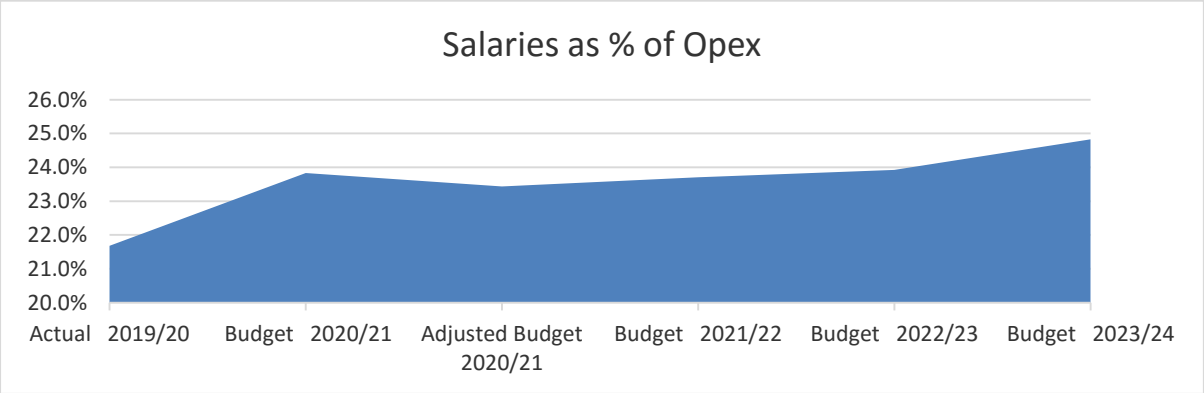
	Actual 2019/20	Budget 2020/21	Adjusted Budget 2020/21	Budget 2021/22	Budget 2022/23	Budget 2023/24
Employee related Costs R'm	1,261	1,337	1,341	1,397	1,459	1,524
Contracted Services R'm	827	1,049	1,107	1,115	1,164	1,217
General Expenses R'm	545	495	536	670	700	733

Table 29 below outlines the proposed increased in employee related cost for 2021/22.

Table 29: Employee-related costs

Revised Budget 2020/21 (R'000)	**1,341,358**
Salary increases at 4.3% less 0.5% attrition	56,005
Proposed Budget 2021/22	**1,397,363**

Figure 14: Salary trends



Johannesburg Water ended 2019/20 on 20.5% salaries to operating expenses. The budget for 2021/22 is set at 21.4%. The ratio is within National Treasury's benchmark of 30%.

5.4 Contracted services

Contracted services constitute the services procured relating to the provision of water and sanitation and include critical repairs and water conservation projects. Table 30 illustrates the proposed changes on contracted services.

Table 30: Proposed changes on contracted services (excluding COJ service fee)

2020/21 budget (R'000)	**1,106,806**
Inflation adjustment at 0.7%	8,507
Proposed budget for 2021/22	**1,115,313**

The increase in general expenditure on Table 31 largely relates to the electricity.

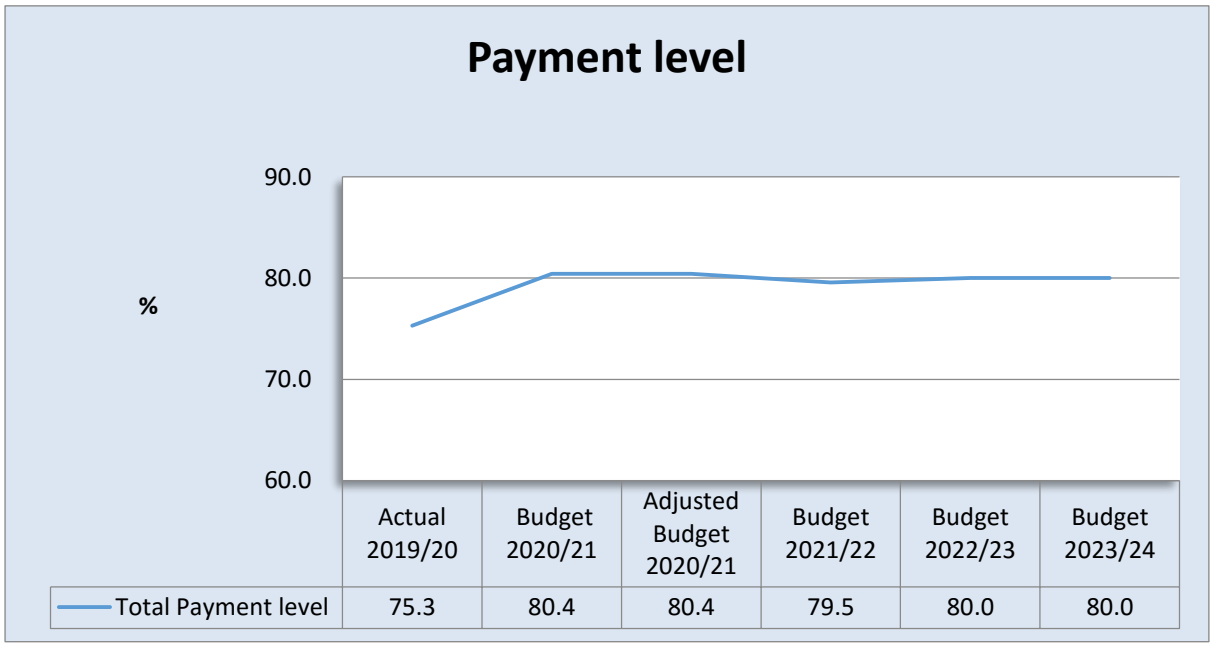
Table 31: General expense

2020/21 budget (R'000)	**536,310**
Inflation adjustment at 24.8%	133,190
Proposed budget for 2021/22	**669,500**

5.5 Cash generated from operations

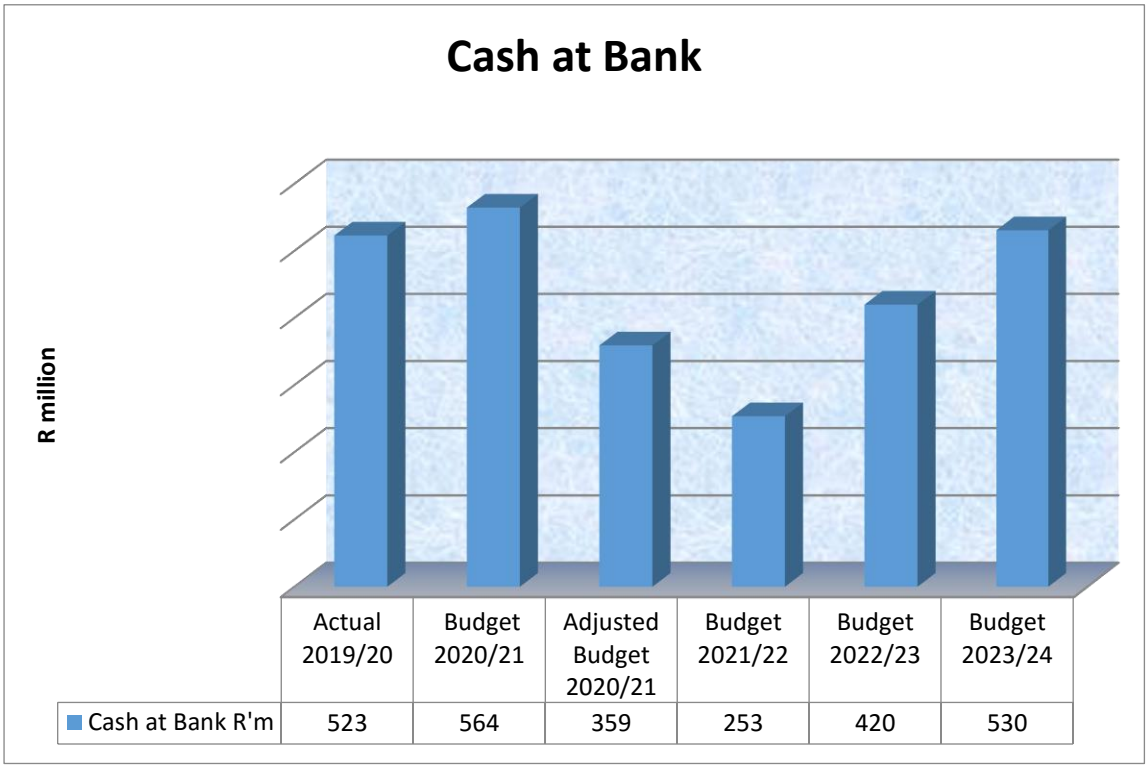
The low payment level from customers remains a cause of concern. During 2019/20, the payment level was 75.3% and the forecast for 2020/21 is 79.8%. The budgeted payment level in 2021/22 is at 79.5%, as indicated in Figure 15. This will require strict implementation of CoJ's credit control policy and increased law enforcement to effectively deal with illegal connections.

Figure 15: Payment levels



The cash balance is swept to CoJ in terms of the treasury management arrangement. At the end of 2019/20, Johannesburg Water had cash reserves of R523 million. The projected cash reserve for the Medium-Term Revenue Expenditure Framework (MTREF) is reflected in figure 16.

Figure 16: Projected cash reserve

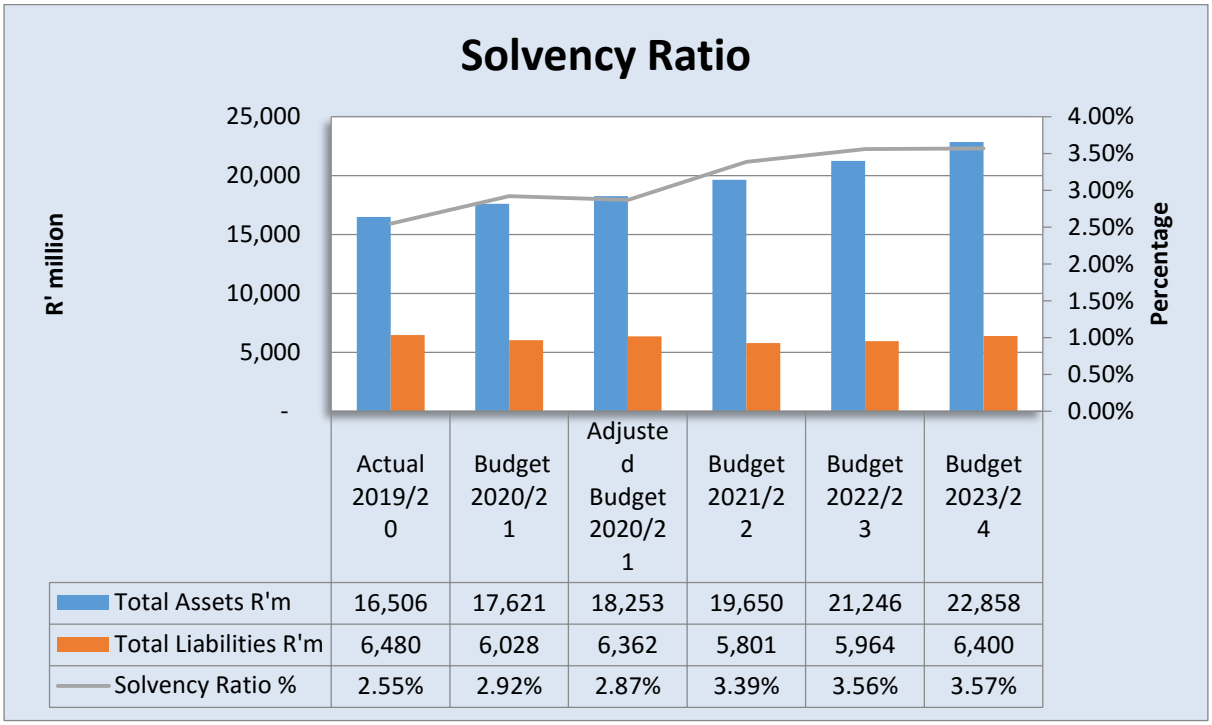


The cash position for 30 June 2022 is budgeted at R253 million (forecast 2020/21: R359 million). The Cash at Bank in 2021/22 and 2022/23 is increasing due to the increase in forecasted revenue collected at 79.5% and 80% respectively. Every percentage not met in Payment level collections will result in a R135 million forgone and failure to collect funds at forecasted rates will have an impact on the solvency of Johannesburg Water.

5.6 Solvency

Johannesburg Water budgeted to be in a strong solvency position, with its total assets exceeding the total liabilities by R13.8 billion in 2021/22 financial year. The solvency ratio as at 30 June 22 is budgeted at 1:2.87 as illustrated in Figure 17.

Figure 17: Solvency ratio



	Actual 2019/20	Budget 2020/21	Adjusted Budget 2020/21	Budget 2021/22	Budget 2022/23	Budget 2023/24
Total Assets R'm	16,506	17,621	18,253	19,650	21,246	22,858
Total Liabilities R'm	6,480	6,028	6,362	5,801	5,964	6,400
Solvency Ratio %	2.55%	2.92%	2.87%	3.39%	3.56%	3.57%

5.7 Capital projects

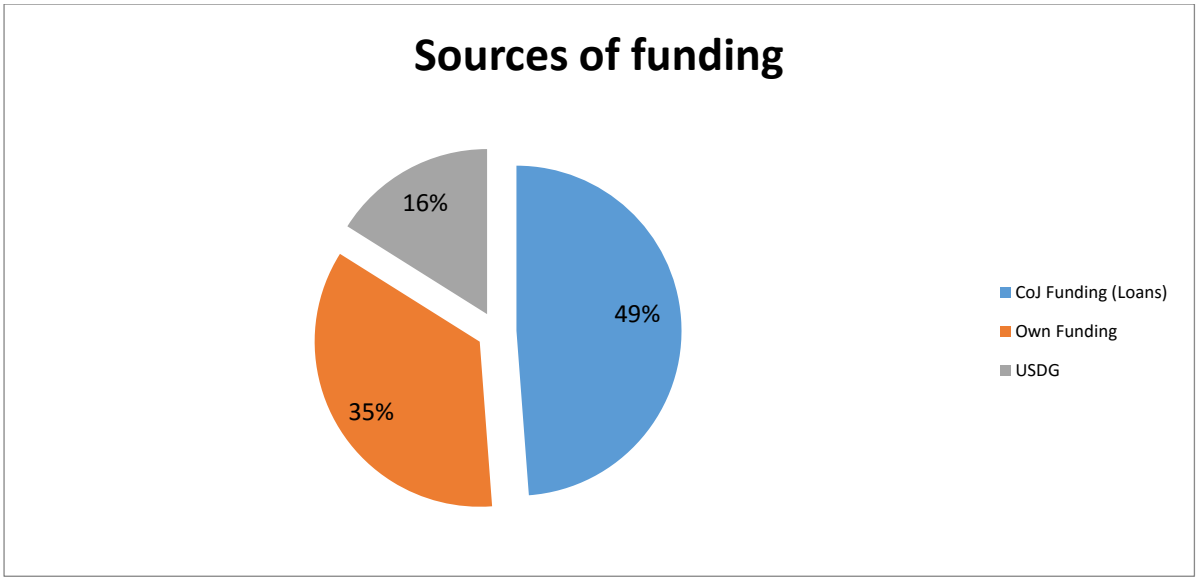
The capital expenditure is budgeted as follows:

- 2021/22 R1.135 billion
- 2022/23 R1.280 billion
- 2023/24 R1.261 billion

The capital budget has increased from that previously approved by CoJ to address backlogs, upgrading and the renewal of ageing infrastructure, as well as new infrastructure requirements.

The source of funding for capital expenditure is reflected in Figure 18. Own funding depends largely on improved payment levels. The affordability of funding for infrastructure remains a challenge, especially if payment levels do not improve or deteriorate due to prevalent economic conditions.

Figure 18: Sources of funding



Johannesburg Water intends to investigate options for alternative sources of funding with local and international development agencies at interest rates that are beneficial to the Entity as well as the CoJ. The funding, if obtained will be utilised for budgeted programmes that meets the specific developmental parameters and will be governed through the CoJ Treasury Department. The Entity will also consider options for Public and Private Partnerships in instances where it is feasible and applicable to relevant long term capital infrastructure projects.

5.8 Revenue and tariff analysis

Johannesburg Water is providing 6 kl of free water to all customers. Indigent citizens, through the Expanded Social Package, continued to receive up to 15 kl of water per month per household. It is proposed that the differential tariff increases continue to be applied to different tariff bands for domestic water and prepaid water and sanitation tariffs.

The anticipated increase in water tariffs is 7.8%, which is above Rand Water's tariff increase of 5.8%. The cost of water purchased from Rand Water will be R10.74per kl in 2021/22.

An increase of 9.9% and 12.9% is applied to institutional consumption up to 200 kl per customer and for consumption exceeding 200 kl respectively. The tariff for all other services provided is to be increased by 7.8% for 2021/22. The total average tariff increase for all services provided would be 7.8%.

The intention of Johannesburg Water is to roll out pre-paid meters to other areas commencing in the new financial year. There is however, a large discrepancy in the tariff for pre-paid water. An attempt was made to narrow the gap to avoid further losses when prepaid is rolled out to other areas.

Proposed Tariff Increase

Domestic water and prepaid water and sanitation tariffs will be increased as per Tables 30 and 31.

Table 30: Residential Conventional/post paid

Consumption	2020/21	2021/22	2022/23	2023/24
6kl	-	-	-	-
10kl	18.99	20.47	22.07	23.79
15kl	19.82	21.37	23.03	24.83
20kl	27.79	29.96	32.29	34.81
30kl	38.40	41.40	44.62	48.10
40kl	42.00	45.28	48.81	52.61
50kl	52.99	57.12	61.58	66.38
60kl	56.79	61.22	65.99	71.14

Table 31: Residential Pre-paid

Consumption	2020/21	2021/22	2022/23	2023/24
6kl	-	-	-	-
10kl	16.36	17.64	19.01	20.49
15kl	16.87	18.19	19.60	21.13
20kl	20.16	21.73	23.43	25.25
30kl	36.50	39.35	42.42	45.72
40kl	39.29	42.35	45.66	49.22
50kl	49.10	52.93	57.06	61.51
60kl	53.69	57.88	62.39	67.26

Industrial and commercial tariffs are to be increased as follows:

- Consumption up to 200 kℓ at 7.8%
- Consumption exceeding 200 kℓ at 7.8%
- All other tariffs increased by 7.8%.
- Demand levy increased by 7.8%

Proposed water restriction tariff

The water restriction tariff was introduced in 2016/17. The aim of these tariffs is to encourage residents to save water during water restrictions. The tariff is applicable for consumption over 20 kl per month. Table 42 depicts the water restriction tariffs per band (consumption levels).

Table 32: Proposed water restriction tariff – domestic

CONVENTIONAL WATER RESTRICTIONS									
Band	**Normal Tariff**	**Level 1 15%**	**Level 2 20%**	**Level 3 25%**	**Level 4 30%**	**Level 5 35%**	**Level 6 40%**	**Level 7 45%**	**Level 8 50%**
0-6	-	-	-	-	-	-	-	-	-
> 6-10	20.47	24.08	25.59	27.29	29.25	31.49	34.12	37.22	40.94
>10-15	21.37	25.14	26.71	28.49	30.52	32.87	35.61	38.85	42.73
>15-20	29.96	35.24	37.45	39.94	42.80	46.08	49.93	54.47	59.92
>20-30	41.40	48.70	51.74	55.19	59.14	63.69	68.99	75.27	82.79
>30-40	45.28	53.26	56.60	60.37	64.68	69.65	75.46	82.32	90.55
>40-50	57.12	67.20	71.41	76.17	81.60	87.89	95.21	103.87	114.26
>50	61.22	72.02	76.53	81.63	87.46	194.18	102.03	211.30	282.44

Table 33: Proposed water restriction tariff – domestic

PREPAID WATER RESTRICTIONS									
Band	**Normal Tariff**	**Level 1 15%**	**Level 2 20%**	**Level 3 25%**	**Level 4 30%**	**Level 5 35%**	**Level 6 40%**	**Level 7 45%**	**Level 8 50%**
0-6	-	-	-	-	-	-	-	-	-
> 6-10	17.64	20.75	22.05	23.51	25.20	27.13	29.39	32.07	35.27
>10-15	18.19	21.40	22.74	24.25	25.98	27.98	30.31	33.07	36.37
>15-20	21.73	25.56	27.17	28.97	31.05	33.43	36.22	39.52	43.46
>20-30	39.35	46.29	49.18	52.46	56.21	60.54	65.58	71.54	78.69

>30-40	42.35	49.83	52.94	56.47	60.51	65.16	70.59	77.00	84.71
>40-50	52.93	62.27	66.16	70.58	75.61	81.44	88.22	96.24	105.87
>50	57.88	68.09	72.35	77.17	82.68	89.04	96.46	205.23	285.76

Table 34: Proposed private dwelling – domestic sanitation

ERF Size (m²)	2020/21		2021/22	2022/23	2023/24
	Tariff (6.6%) (R/erf/month)	% increase	Tariff (7.8%) (R/erf/month)	Tariff (7.8%) (R/erf/month)	Tariff (7.8%) (R/erf/month)
Up to and including 300m²	228.06	7.80%	245.85	265.02	285.70
Larger than 300m² to 1000m²	443.96	7.80%	478.59	515.92	556.16
Larger than 1000m² to 2000m²	671.63	7.80%	724.02	780.49	841.37
Larger than 2000m²	967.71	7.80%	1 043.19	1 124.56	1 212.28

Table 35: Proposed private dwelling – prepaid sanitation

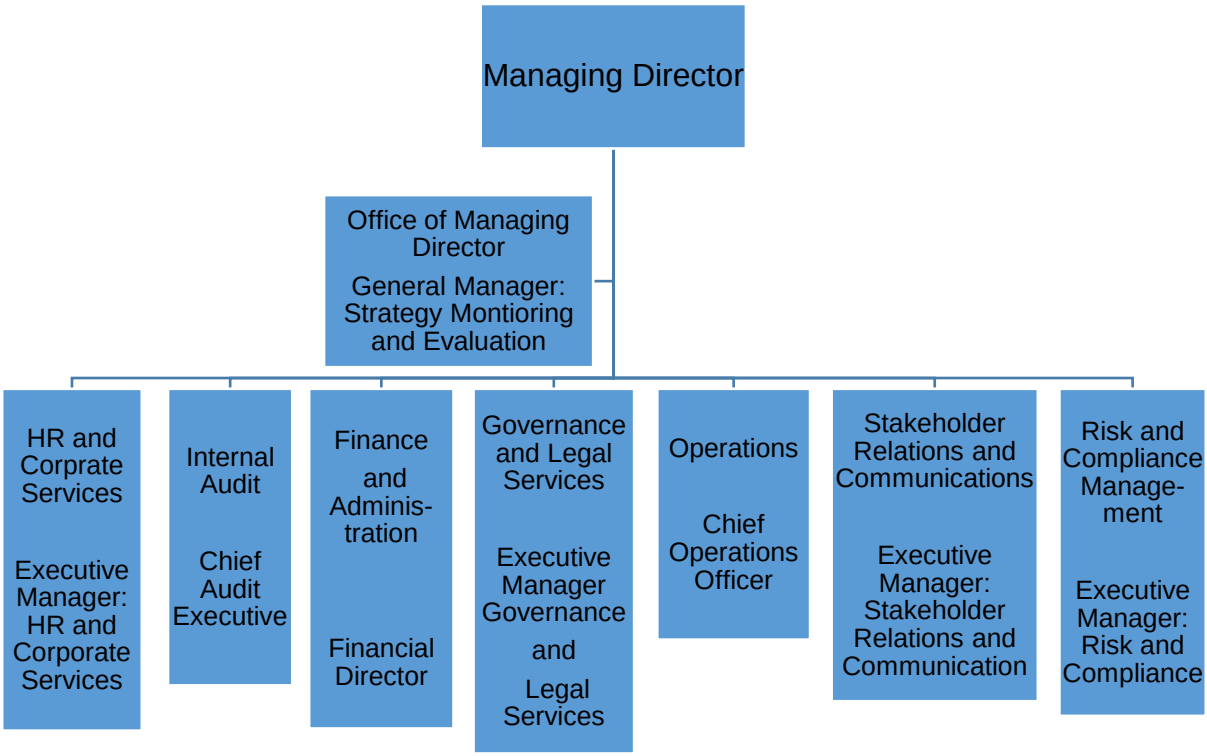
Pre-paid Domestic Sanitation					
Kilolitres per connection per month	2020/21		2021/22	2022/23	2023/24
	Tariff Subsidised measured	% Increase	Tariff Subsidised measured	Tariff Subsidised measured	Tariff Subsidised measured
6kl	-		-	-	-
10kl	35.01	7.80%	37.74	40.68	43.86
15kl	90.39	7.80%	97.44	105.04	113.23
20kl	157.22	7.80%	169.48	182.70	196.95
30kl	355.61	7.80%	383.35	413.25	445.48
40kl	553.99	7.80%	597.20	643.78	694.00
50kl	752.37	7.80%	811.05	874.32	942.51
60kl	950.75	7.80%	1 024.91	1 104.85	1 191.03

Chapter 6: Management and organisational structures

Organisational structure

The organisational structure is depicted in Figure 19.

Figure 19: Organisational structure



Management team

The management team consists of eight executive managers with one vacancy as depicted in Table 46. There is an acting incumbent in the vacant position of Executive Manager: Stakeholder Relations and Communication, while the recruitment process has commenced.

Table 36: Executive Management

Name	Position	Qualifications	Skills and expertise
Ntshavheni Mukwevho	Managing Director	▪ BTech: Eng (Civil) ▪ Master of Business Leadership (MBL) ▪ Pr Tech Eng ▪ Certificate in Municipal Finance Management	▪ Engineering and operations management ▪ Construction management ▪ Project management ▪ Water purification and distribution system ▪ Sewerage collection systems
Derrick	Chief Operations	▪ BTech: Eng (Civil)	▪ Engineering and operations

Name	Position	Qualifications	Skills and expertise
Kgwale	Officer	▪ Master of Business Leadership (MBL) ▪ Project Management Diploma ▪ Programme in Asset and Maintenance Management ▪ Project Management Programme (PMP) Certificate	▪ Project management ▪ Construction management
Johan Koekemoer	Financial Director	▪ BCom Honours ▪ CA(SA) ▪ Certificate in Municipal Finance Management	▪ Financial and management accounting ▪ Meter reading ▪ Supply chain management ▪ Debt counselling ▪ IT and telecommunications sector
Shaniseka Mathebula	Chief Audit Executive	▪ BCompt ▪ Postgraduate Diploma: Internal Auditing ▪ Certified Internal Auditor (CIA) ▪ Associate General Accountant (AGA) SAICA ▪ Certificate in Municipal Finance Management	▪ Internal audit ▪ Financial management ▪ Governance, risk management and internal control
Thokozile Hlakoane	Executive Manager: Risk and Compliance	▪ BCom degree ▪ Certificate Programme in Management & Development (Municipal Finance) ▪ Member of Institute of Risk Management SA (IRMSA), Association of Certified Forensic Examiners SA (ACFE), The Ethics Institute SA (TEI)	▪ Risk Management ▪ Insurance ▪ Forensic Investigation ▪ Occupational Health & Safety ▪ Ethics Champion
Raisebe Gavine	Executive Manager: Human Resources and Corporate Services	▪ Honours Degree (Industrial Psychology) ▪ Masters of Science in Human Resources ▪ Registered Master professional (SABPP) ▪ Member of the Institute for People Management	▪ Recruitment & Selection ▪ Performance Management ▪ Talent & Succession Management ▪ Organizational culture & Change Management ▪ Employee Health & Wellness ▪ Transformation ▪ Leadership development & Knowledge Management ▪ Employee Relations ▪ Corporate Social Investment
Kethabile Mabe	Executive Manager:	▪ LLB ▪ Management	▪ Legal Services ▪ Human Resources

Name	Position	Qualifications	Skills and expertise
	Governance and Legal Services	Advancement Programme ▪ Admitted attorney of the High Court of SA	Management ▪ Customer Relation Management ▪ Legislative Compliance ▪ Strategic Communication ▪ Facility Management ▪ Secretariat services
Vacant	Executive Manager: Stakeholder Relations and Communication		

Capacity analysis

Johannesburg Water's capacity analysis requirements take cognisance of training needs, attrition due to resignations, the retention of scarce skills, retirements, employee wellbeing and addressing the changing needs of the staff complement due to growth and restructuring. In an endeavour to achieve optimal performance and remain service focused, the company also addresses culture. Regular assessments of job satisfaction levels are carried out. The last assessment was conducted in 2016/17 and the implementation plans for the improvement areas were rolled out in 2017/18, continued in 2018/2019 and will be concluded in 2019/2020. The organisational diagnosis (survey) will be conducted in 2021/22 with a specific focus on a cultural/engagement survey that is aimed to diagnose the impact of culture on Johannesburg Water's performance and commitment to retain valued employees and top talent, preceded by the formulation of the implementation plan, clearly defining the programmes, i.e. Performance Management Moderation, Reward and Recognition, Performance Management Improvement Training for Supervisors and Managers, Team Building for Team Functioning, and Performance Training for Employees.

Employees agree to and sign annual performance plans. These are aligned to the company's balanced scorecard. Johannesburg Water established departmental committees, as well as a Corporate Moderation Committee, tasked with the responsibility of aligning and improving individual, team, department and company performance to enable the sustained achievement of the company's strategic objectives. The success of the Moderation Committee will be measured in 2020/21. The Company will be embarking on automation of performance management process, the configuration of the system is concluded. In 200/21 the focus will be on training employees with access to Employee self-service system on how to utilize the system, the system is expected to be fully functional in the 2021/2022 financial year.

The company will also embark on the salary benchmarking survey in line with the prescript of the Remunerations policy in 2021/2022 to determine the alignment of the company salary structure to the market.

Employment equity

Johannesburg Water acknowledges the need to develop a culture of diversity that goes beyond achieving numbers through workforce representation. The society it services is very diverse and, as such, it is important to develop a diverse workforce to serve the community. An Employment Equity (EE) Plan has been put in place, effective from 1 January 2018, for the next five years until 31 December 2022. The current targets set for 2020/21 for PWD and female representation are 3.98% and 33.11% respectively. In terms of the plan these targets should increase to 4.02% and 34.43 by 2021/22. The representation of females is at 30.83% to date, and it is envisaged that, by 30 June 2021, the actual representation will be above 32%. The targets are in line with the company's EE Plan. There are programmes in place such as the Coaching and Mentoring and Mentee Programme, which targets female employees, and will build a capable pool of female employees who will be able to participate in appointment opportunities at all occupational levels. There is also an initiative to put together an apprenticeship programme for PWD that can be trained in line with identified entry-level positions. These opportunities will be advertised before end of this financial year, with the first leaners anticipated to commence training in February March 2021.

The EE Plan for the period January 2018 to December 2022 provides a target of 34.43% female employees by December 2022 and 4.02% PWD by December 2022. To be noted is the stretched target for people with disabilities which is way above the national target of 2 percent. Over the past year or so it has proven to be difficult to go beyond 3.9% representation of people with disabilities as a result it is the intention to sought the necessary approval to vary the 5th year target as per the Employment Equity plan for people with disabilities with a recommendation to keep the target at 3.98 and target to maintain at that percentage going forward. In support of the above, Johannesburg Water will be rolling out a structured approach for the employment of PWDs to support its current recruitment efforts. As Johannesburg Water continues to employ more PWDs, it is imperative to sensitise employees and managers about disability awareness in order to ensure that the working environment is supportive and non-discriminatory for all employees. Members of the EE Committee have been trained on disability awareness and they will be continue conducting awareness sessions in their respective workplaces. Johannesburg Water places importance on ensuring that all our workplaces are accessible. To achieve this, an audit is conducted from time to time to identify barriers and put mechanisms in place to mitigate them. In order to ensure that Johannesburg Water is transformed, targets are cascaded to departments as well. This will ensure that all departments are diversified. The EE Committee will continue to monitor employment equity and equitable employment practices within Johannesburg Water and advice departments accordingly.

Chapter 7: Communications and stakeholder management

7.1 Stakeholder matrix

Table 37 depicts the stakeholder matrix and communication channels for different stakeholders

Table 37: Stakeholder matrix

Stakeholder	What matters to them?	What concerns them? (Risks)	How does Johannesburg Water respond to their concerns?	How does Johannesburg Water communicate with them?
Customers	• Recognition/affirmation/valued • Dignity • 24/7 access • Quality services – access, safety, reliability, affordability • Responsive Johannesburg Water (seen to be) • Batho Pele • Company excellence – correct statements, effective customer service and problem resolved first time.	• Cost of services • Perceived lack of quality of water • Sanitation/ health • Customer experience – service interruptions, lack of consultation, lack of information, smart meters imposed, lack of professionalism of frontline staff	• Frontline staff training • Education and awareness campaigns • Improve alerts of interruptions • Correct meter readings • Proper reinstate-ment	• Unmediated engagement • Social media • SMS gateway • Out-of-home media • Own media • Electronic media • Broadcast media • Multi-channel distribution • Councillors
Employees and trade unions	• Job security • Clear vision and direction • Conditions of service • Recognition/affirmation/valued • Fairness	• Gap between executive management and junior levels • Information gatekeeping • New technology • Increased cost of living	• Communicate decisions of top manage-ment • Quarterly MD engage-ment with staff	• Unmediated engagement • Internal social media network • Incentives/ recognition • Electronic and print media

Stakeholder	What matters to them?	What concerns them? (Risks)	How does Johannesburg Water respond to their concerns?	How does Johannesburg Water communicate with them?
	• Opinions count • Two-way communication • Responsive Johannesburg Water	• Inconsistent application of performance assessments	• Mandatory quarterly business unit and staff meetings • Scheduled meetings with unions • Information on intranet • Include unions on intranet	• Push notifications
Suppliers and service providers	• Realistic terms of reference/specifications • Fair competition • Transparent procurement procedures • Cash flow	• Delayed payment • Non-payment • Changes in contract price • Variance orders • Ineffective dispute resolution • Termination of contracts • B-BBEE compliance	• Communicate track record • Strengthen dispute unlocking mechanism • Company procedures and policies	• Unmediated engagement • Correspondence • Project update meetings • Emails • Website
Communities and community leaders	• Recognition • Equality • Batho Pele • Agenda must be accommodated • Responsive Johannesburg Water	• Lack of Batho Pele • Safety • Employment opportunities	• Action list • Safety protocol • Complaints procedure and access • Feedback results of above • Emails	• Unmediated engagement • Online media • Traditional methods e.g. public meetings • Weekly telephone calls to ward councillors • Electronic and social media • Broadcast media • SMS notifications

Stakeholder	What matters to them?	What concerns them? (Risks)	How does Johannesburg Water respond to their concerns?	How does Johannesburg Water communicate with them?
				• Push notifications
Government and regulatory bodies	• Provision of services • Compliance • Consultation • Information sharing • Disaster/crisis management plan • Policy compliance	• Non-compliance to standards • Non-compliance in finance and administration legislation and policy • Lack of information sharing	• Interventions • Success of interventions • Access to information	• Compliance reports • Traditional methods • Presentations
Media	• Reliable source • Information integrity • Effective media liaison • Sufficient data • Human angle	• Access • Content Integrity • Lack of information	• Timeous news alerts • Check/ verify • Newsroom visits • Incidental media briefings • Educational tours	• Unmediated engagement • Online media • Social media • Email updates
Special interest and peer groups	• Access to information • Information sharing • Recognition • Brand ambassadors	• Lack of credible information • Partnerships	• Access channels • Johannes-burg Water's agenda/ opportunities for partnership	• Unmediated engagement • Online media • Traditional methods

Chapter 8:
Audit resolution

The resolution rate for IAD findings for the 2019/20 financial year was at 93% and AGSA was at 94%. IAD will continue to follow up on unresolved findings to ensure management resolution rate improves with specific emphasis on addressing the root causes to reduce the instances of repeat findings.

8.2 Comparisons of the previous audit opinions

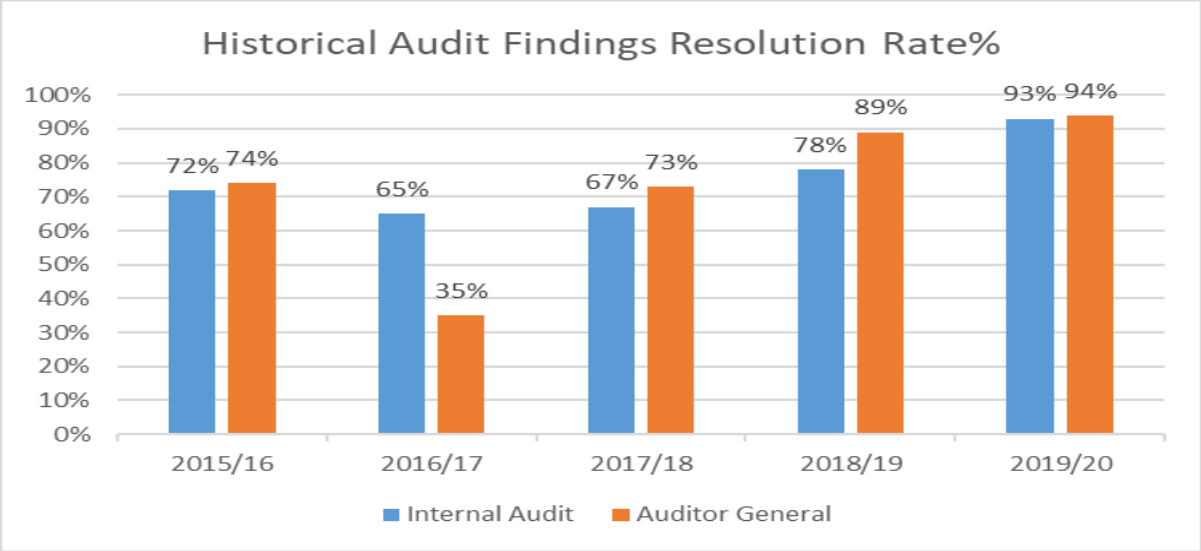
Johannesburg Water has achieved a constant audit outcome/opinion for the past five financial years, i.e. an "unqualified audit opinion," as depicted in Table 38.

Table 38: Comparative audit opinions

	2015/16	2016/17	2017/18	2018/19	2019/20
Audit opinion	Unqualified	Unqualified	Unqualified	Unqualified	Unqualified

The CoJ established the Operation Clean Audit task team to implement a coordinated effort across the board to improve the audit outcome, aiming for a clean audit in the near future. At an entity level, Johannesburg Water has implemented a dashboard process, overseen by the Managing Director, to monitor the implementation of remedial actions. There has been a significant improvement in the resolution rate, which is illustrated by the upward trend experienced in the past four financial years as indicated in Figure 20.

Figure 20: Audit findings resolution rate



Remedial action taken to address prior-year issues and preventative measures

Most of the findings that were on the AGSA's Management Letter related to SCM issues. Management established a Dashboard Committee, chaired by the Accounting Officer, to address all prior-year findings. In order to address the recurring procurement issues reflected by AGSA audit findings, management has implemented the following as key remedial actions:

- Reviewed the SCM Policy and the standard operating procedure,

- Enhanced the quality assurance procedures in the SCM value chain,
- Motivation for deviation are subject to BEC and BAC before approval by the Accounting Officer, and
- Tenders above R5 million are submitted to Internal Audit for probity audit.

Management have also devised long-term intervention plans which will be implemented during 2021 - 2022 to address the recurring audit findings as indicated by both the Internal Audit and AGSA in the following processes:

- Issues of by-laws enforcement, illegal connections and update of meter database – service providers to conduct “stand-by-stand” surveys, implementing cut-offs and conversions to Smart meters.
- Infrastructure and Asset Database – Fixed asset verification and Data Cleansing, develop interface between IMQS and SAP.
- Fixed Asset Componentisation, Fixed Asset Useful Life and Fixed Asset Policy alignment to mSCOA dependent on City of Johannesburg Busyness Transformation project.
- Implementation of Enterprise-Wide Business Continuity Policy and Disaster Management Procedures.
- Review of water licenses with Department of Water and Sanitation (DWS).
- Installation of SCADA on existing PRV’s installations.

ANNEXURES

Annexure A: Summary of capital programmes

Name of Program	Project Name	(R'000) 2021/22	(R'000) 2022/23	(R'000) 2023/24	Return on Investment	COJ Regions
Water Demand Management	Infrastructure Upgrade and Renewal (Retrofitting & leaks repair)	236,864	154,216	85,000	Total water savings of 36 000 Ml per annum (R 245 Million water saving per annum at a current rate of R 6.81/ kl)	City Wide
	Pipe Replacement	60,000	319,500	271,000	Potential Water savings of 1 296 Ml/annum on completion of programme equivalent to R 8.8 Million/year).	City Wide
	O & M Category (including pressure management)	66,000	47,000	60,000	Potential Water savings of 1 296 Ml/annum on completion of programme equivalent to R 8.8 Million/year).	City Wide
Bulk Wastewater Expansion and Upgrades	Olifantsvlei heating and mixing / refurbishment	20,000	45,000	20,000	Treatment service continuity	D & F
	Bushkoppies balancing tank / refurbishment	35,000	65,000	35,000	Treatment service continuity	D
	Goudkoppies (Refurbishment)	25,000	25,000	34,000	Treatment service continuity	D & F
	Northern Works Upgrade & Refurbishment) 460 Ml/d	111,587	225,500	214,000	Treatment service continuity	A, B,C & E

Name of Program	Project Name	(R'000) 2021/22	(R'000) 2022/23	(R'000) 2023/24	Return on Investment	COJ Regions
	Driefontein concrete lining over-flow / refurbishment	5,000	10,000	2,000	Treatment service continuity	C
	Lanseria 50Ml/d	40,000	100,000	60,000	Treatment capacity for 50 000 HH equivalent	A & C
	Ennerdale (refurbishment)	10,000	0	9,000	Treatment service continuity	G
	WWTW General (Biogas)	0	0	4,000	Treatment service continuity	City
Reservoirs	Erand Tower 0.75	20,000	0	0	Storage capacity 500 HH equivalent	A
	Blue Hills Tower 1.8 Ml	5,000	0	0	Storage capacity for 1 800 HH equivalent	A
	Robertville Tower 2.25Ml	10,000	0	0	Storage capacity for 2250 HH equivalent	C
	Woodmead Reservoir 20Ml	20,000	0	0	Storage capacity for 20 000 HH equivalent	E
	Halfway House Reservoir 20Ml	25,000	0	0	Storage capacity for 20 000 HH equivalent	A
	Aeroton Tower 1.4 Ml	0	0	0	Storage capacity 1 000 HH equivalent	F
	Crown Gardens Tower 1.1 Ml	0	0	0	Storage capacity upgrade for 1 100 HH equivalent	F
	Lenasia High Level Reservoir 10 Ml	2,350	0	0	Storage capacity 10,000 HH equivalent	G

Name of Program	Project Name	(R'000) 2021/22	(R'000) 2022/23	(R'000) 2023/24	Return on Investment	COJ Regions
	President Park Reservoir 80 Ml	0	5,000	40,000	Storage capacity for 80 000 HH equivalent	A
	President Park Tower Reservoir 2.25 Ml	0	5,000	25,000	Storage capacity for 2 250 HH equivalent	A
	Diepsloot Reservoir 40 Ml	0	5,000	20,000	Storage capacity upgrade for 40 000 HH equivalent	A
	Diepsloot Tower 1.6 Ml	0	5,000	15,000	Storage capacity upgrade for 1 600 HH equivalent	A
	Kensington B Reservoir 22Ml	0	0	18,000	Storage capacity upgrade for 22 000 HH equivalent	B
	Kensington B Tower 0.5Ml	0	0	10,000	Storage capacity upgrade for 500 HH equivalent	B
	Winchester Hills Reservoir 12 Ml	0	0	20,000	Storage capacity for 12 000 HH equivalent	F
	Kensington booster 4.2 Ml	0	5,000	15,000	Storage capacity 1,400 HH equivalent	F
	Dobsonville Reservoir 15 Ml	0	5,000	20,000	Storage capacity 15,000 HH equivalent	D
	Linbro Park Tower 3.9 Ml	5,000	10,000	0	Storage capacity 3,900 HH equivalent	E
	Bryanston Tower 1.5 Ml	0	0	21,000	Storage capacity 1 500 HH equivalent	

Name of Program	Project Name	(R'000) 2021/22	(R'000) 2022/23	(R'000) 2023/24	Return on Investment	COJ Regions
	Carswald Resevoir 20 Ml	15,000	0	0	Storage capacity 20 000 HH equivalent	
	Doornkop West Reservoir 85 Ml	0	5,000	20,000	Storage capacity 1,500 HH equivalent	C
Sewer Upgrade	Sewer Pipe Replacement (City Wide)	145,000	85,000	92,000	Reduced number of blockages per 100 meters.	City Wide
Water Upgrade	Water Pipe Upgrade (Networks)	97,500	73,000	63,000	To maintain capacity for current demand and create capacity for future demand to support developments	City Wide
Other	Small projects, IT, engineering studies and operational capital	156,500	86,000	88,000	Water supply continuity	City Wide
TOTAL		**1,134,801**	**1,280,216**	**1,261,000**		

Annexure B: Infrastructure backlog
Pipe Replacement Programme

Water Pipe Replacements				Sewer Pipe Replacements		
Township	**Length (km)**	**Estimate Cost R'000**		**Township**	**Length (km)**	**Estimate Cost R'000**
SPRINGFIELD	1.07	585		WOLHUTER	1.879	2,197
MORNINGSIDE EXT.53	0.97	1,049		BERTRAMS	5.600	6,546
DOORNFONTEIN	4.87	5,389		FORDSBURG	7.121	8,317
MARLBORO	8.36	10,641		BOOYSENS RESERVE	4.861	5,682
NORTHWOLD EXT.2	1.44	1,600		ROSETTENVILLE	12.799	14,961
SANDOWN	11.62	13,585		NORTHCLIFF EXT.19	5.260	6,149
DUNKELD WEST	6.70	7,070		TROYEVILLE	8.471	9,902
ATHOLHURST	1.52	1,662		ROODEKRANS EXT.9	1.000	1,099
BOSKRUIN EXT.1	1.27	1,367		ROODEKRANS EXT.5	2.645	3,092
LAKE VIEW ESTATE	1.23	720		ZAKARIYYA PARK	1.115	1,303
SALISBURY CLAIMS	1.03	1,143		JEPPESTOWN	23.316	27,248
DUNKELD	5.85	6,204		STRUBENSVALLEI EXT.1	4.826	5,641
ROBIN ACRES	1.23	1,303		LA ROCHELLE	4.988	5,831
GLENADRIENNE	4.19	4,437		STORMILL EXT.2	1.494	1,747
MODDERFONTEIN A.H.	5.72	6,170		DISCOVERY EXT.6	2.710	3,163
MORNINGSIDE EXT.1	1.59	1,679		BELLE-VUE	5.978	6,988
KLEVEHILL PARK	4.04	4,279		FAIRVIEW	2.689	3,143
MALANSHOF	6.14	6,466		DOORNFONTEIN	4.555	5,324
PAULSHOF EXT.1	1.56	1,712		ALLEN'S NEK EXT.3	4.846	5,665
BRYANSTON EXT.34	1.42	1,742		LORENTZVILLE	4.710	5,481
MALANSHOF EXT.5	3.71	4,042		SOUTH KENSINGTON	3.512	4,106
RANDPARKRIF EXT.16	1.06	1,117		WELTEVREDENPARK EXT.29	3.419	3,996
CITY DEEP EXT.4	1.28	861		WELTEVREDENPARK EXT.31	1.789	2,091
WEMMER	1.58	1,967		BELLEVUE EAST	3.180	3,717
VILLAGE MAIN	2.38	2,692		FLORIDA PARK EXT.6	1.000	944
JUKSKEI PARK	16.12	17,441		NOORDWYK EXT.9	1.698	1,985
NORTHCLIFF EXT.3	2.16	2,289		BEREA	9.317	10,806
WOLHUTER	1.48	1,681		JUDITH'S PAARL	2.728	3,188
SAXONWOLD	12.04	12,797		JEPPESTOWN SOUTH	1.562	1,825
ARMADALE	1.62	811		PARKWOOD	17.223	20,084
BRYANSTON EXT.13	0.94	996		MALVERN	20.693	24,181
FONTAINEBLEAU	16.58	18,149		BEZUIDENHOUT VALLEY	17.598	20,562
SELBY	9.24	11,578		TURFFONTEIN	16.055	18,748

Water Pipe Replacements				Sewer Pipe Replacements		
Township	**Length (km)**	**Estimate Cost R'000**		**Township**	**Length (km)**	**Estimate Cost R'000**
LENASIA EXT.7	7.91	3,972		NOORDWYK EXT.10	2.513	2,937
RANDPARK	1.41	1,535		TURF CLUB	3.345	3,910
NORTHCLIFF EXT.10	1.48	1,625		DAVIDSONVILLE EXT.2	3.893	4,550
RANDPARK EXT.4	5.47	5,882		HONEYDEW EXT.5	1.056	1,235
MORNINGSIDE MANOR EXT.2	3.04	3,325		FAIRWOOD	1.474	1,723
LONGDALE EXT.2	1.33	1,705		BLACKHEATH EXT.1	1.628	1,903
RANDPARKRIF EXT.5	1.36	1,452		CLEVELAND	1.662	1,943
RANDPARKRIF EXT.4	1.08	1,094		NEW DOORNFONTEIN	6.357	7,430
WENDYWOOD EXT.3	1.03	1,150		KENILWORTH	8.098	9,466
RIVER CLUB	5.83	6,612		DENVER	4.825	5,640
GALLO MANOR EXT.1	1.37	1,451		NORWOOD	11.741	13,703
REUVEN	2.26	1,416		FELLSIDE	1.590	1,859
MORNINGSIDE EXT.7	1.07	1,175		MELROSE	7.217	8,408
NORTHCLIFF EXT.23	1.24	1,410		MARLBORO	10.920	12,764
VALERIEDENE	2.04	2,225		BOOYSENS	7.067	8,248
KELVIN	17.36	18,428		PARKTOWN	24.442	28,496
GALLO MANOR EXT.2	10.08	10,814		CULEMBEECK A.H. EXT.1	6.308	7,374
RANDPARKRIF EXT.3	1.94	2,093		PARKVIEW	18.192	21,089
INDUSTRIA WEST	5.06	6,411		MOUNTAIN VIEW	2.027	2,309
LINBRO PARK A.H.	14.36	15,210		MAYFAIR	20.200	23,612
RANDPARKRIF EXT.11	1.65	1,995		QUELLERINA EXT.1	4.358	5,094
SANDHURST EXT.4	1.34	1,419		PARKTOWN NORTH	15.423	18,028
ABBOTSFORD	2.46	2,605		FLORIDA EXT.3	7.962	9,306
RIVONIA EXT.7	1.59	1,679		ORANGE GROVE	21.144	24,715
MORNINGSIDE EXT.40	6.14	6,711		THE HILL	9.137	10,670
EASTGATE	2.51	2,877		WEST CLIFF	10.314	11,911
RIVER CLUB EXT.2	1.52	1,853		CONSTANTIA KLOOF EXT.9	2.742	3,205
DUXBERRY	3.06	3,286		FLEURHOF	8.858	10,354
WENDYWOOD	12.74	13,376		VILLAGE MAIN	2.015	2,355
KENGIES A.H.	5.77	6,255		REGENTS PARK ESTATE	8.022	9,376
RIVONIA EXT.1	1.50	1,583		ROODEKRANS EXT.6	2.719	3,119
FERNDALE EXT.3	4.73	5,592		RUIMSIG EXT.46	1.277	1,492
STRIJDOMPARK	0.86	964		LITTLE FALLS EXT.2	6.090	7,119
PARKWOOD	16.27	17,361		RADIOKOP EXT.10	1.942	2,270
EASTGATE EXT.3	0.98	1,261		DUXBERRY	4.589	5,364
RANDPARKRIF	3.80	4,361		ORCHARDS	6.227	7,222

Water Pipe Replacements				Sewer Pipe Replacements		
Township	**Length (km)**	**Estimate Cost R'000**		**Township**	**Length (km)**	**Estimate Cost R'000**
WENDYWOOD EXT.4	2.94	3,214		HIGHLANDS	1.003	1,173
GALLO MANOR	6.57	7,158		PARKHURST	20.266	23,689
SONNEGLANS EXT.1	1.25	1,351		ALLEN'S NEK EXT.2	2.130	2,490
LYME PARK	1.95	2,245		ROODEKRANS EXT.13	1.839	2,149
INDUSTRIA EXT.1	0.96	1,229		WELTEVREDENPARK EXT.5	7.060	8,252
NORTHWOLD EXT.4	2.35	2,545		RUIMSIG EXT.47	1.110	1,297
FOREST TOWN	7.04	7,547		MELVILLE	15.184	17,749
JUKSKEI PARK EXT.1	2.22	2,351		WITPOORTJIE	15.271	17,641
RANDPARK EXT.2	3.62	3,986		WYNBERG	16.082	18,798
ENNERDALE SOUTH	12.72	6,386		HALFWAY HOUSE EXT.13	2.047	2,393
RANDPARKRIF EXT.9	2.68	3,142		VICTORIA	1.095	1,280
NOORDWYK EXT.9	1.00	1,054		WILGEHEUWEL EXT.6	2.036	2,380
BRAMLEY MANOR	1.31	1,387		COTTESLOE	3.418	3,995
KELLAND	1.22	1,287		SAXONWOLD	13.105	15,126
MORNINGSIDE MANOR	7.61	8,245		OAKLANDS	7.675	8,972
REMBRANDT RIDGE	1.33	1,547		PARKMORE	26.367	30,821
STRATHAVON A.H.	7.69	8,712		NOORDWYK EXT.16	2.226	2,602
MANUFACTA	3.60	2,032		HOUGHTON ESTATE	44.820	52,171
VILLAGE DEEP	3.18	2,334		QUELLERINA	9.412	11,002
HAMBERG	7.83	4,185		EMDENI	15.350	17,950
ALAN MANOR	8.61	5,040		HELDERKRUIN EXT.26	1.214	1,419
MORNINGSIDE MANOR EXT.1	4.94	5,563		JABAVU EXT.3	4.988	5,831
COTTESLOE	3.79	4,471		ALLEN'S NEK EXT.4	2.460	2,876
BRAMLEY VIEW	2.08	2,203		MELROSE ESTATE	4.860	5,618
BRYANSTON EXT.45	0.99	1,043		OBSERVATORY	13.074	15,127
HALFWAY HOUSE EXT.2	1.46	1,541		DUNKELD	4.064	4,751
BOSKRUIN EXT.5	1.20	1,271		FLORIDA EXT.11	2.006	2,287
MORNINGSIDE EXT.106	2.48	2,650		MOFOLO NORTH	13.287	15,531
NORTHCLIFF EXT.6	8.49	8,833		BRIXTON	10.033	11,694
GLENANDA	15.57	8,013		OPHIRTON	5.340	6,198
ELDORADO PARK EXT.5	2.99	3,700		DARRENWOOD	5.027	5,810
NEW DOORNFONTEIN	11.49	14,261		ALEXANDRA EXT.65	2.067	2,416
LITTLEFILLAN A.H.	1.34	1,423		ORANGE FARM EXT.1	23.068	23,907
RANDPARK EXT.5	4.12	4,358		WENDYWOOD	12.567	14,689
MELROSE ESTATE	5.30	5,461		HYDE PARK	5.364	6,270
WILLOWILD	0.91	964		EMDENI EXT.1	9.451	11,047

Water Pipe Replacements				Sewer Pipe Replacements		
Township	**Length (km)**	**Estimate Cost R'000**		**Township**	**Length (km)**	**Estimate Cost R'000**
RIVONIA EXT.12	3.96	4,628		ALEXANDRA EXT.60	1.796	2,100
LINKSFIELD NORTH EXT.1	0.94	469		ROSETTENVILLE EXT	8.657	10,048
MELROSE	9.21	10,201		FLORIDA EXT.9	1.000	1,147
INDUSTRIA	7.10	9,132		JOHANNESBURG	43.304	50,607
PARKMORE	26.65	28,443		PAARLSHOOP	3.242	3,790
GALLO MANOR EXT.3	0.97	1,042		VREDEDORP	6.030	7,048
MELROSE NORTH EXT.2	1.28	1,469		BLACKHEATH	8.129	9,503
RANDPARKRIF EXT.1	7.04	7,704		ALEXANDRA EXT.53	1.843	2,154
SUNDOWNER	2.25	2,448		WELTEVREDENPARK EXT.26	6.509	7,609
JOHANNESBURG-NORTH	7.78	8,648		ZONDI	13.330	15,582
NORTHCLIFF EXT.13	1.33	1,542		AUCKLAND PARK	16.915	19,750
GREENSIDE	10.20	10,881		HURL PARK	1.122	1,311
ROBINDALE EXT.1	9.42	10,322		DELAREY	7.408	8,613
FLEURHOF	10.88	5,634		JABAVU EXT.1	4.333	5,065
NORTHCLIFF EXT.12	6.60	7,416		TOWNSVIEW	3.635	4,137
HYDE PARK	2.73	2,944		SENAOANE	13.218	15,451
PARKTOWN NORTH	14.22	15,693		ROSEBANK	6.972	8,150
MOFFAT VIEW	1.31	658		ARENA	1.622	1,743
GLENVISTA EXT.4	5.12	2,784		HELDERKRUIN EXT.14	1.541	1,801
SUNSET ACRES EXT.1	1.20	1,243		GREENSIDE EAST	1.328	1,553
ELDORADO PARK EXT.1	7.88	8,736		JABAVU CENTRAL WESTERN	7.812	9,132
WENDYWOOD EXT.1	1.00	1,054		JABAVU EXT.2	8.432	9,821
SANDOWN EXT.24	11.70	11,963		NORTHCLIFF EXT.2	16.627	19,378
LENASIA EXT.5	14.05	7,191		GREENSIDE	7.915	9,229
NORTHCLIFF EXT.22	3.32	3,533		HIGHLANDS NORTH	12.694	14,839
FLORIDA PARK EXT.6	0.99	497		SELBY	7.314	8,549
HURLINGHAM	13.35	14,175		NEW CENTRE	1.631	1,907
PAULSHOF EXT.9	1.98	2,272		REWLATCH EXT.4	1.785	2,086
NORTHCLIFF EXT.15	6.92	8,125		CITY AND SUBURBAN	8.604	10,020
RANDPARKRIF EXT.23	1.80	1,901		ABBOTSFORD	1.734	2,027
BRYANSTON EXT.3	9.98	10,438		RIVIERA	1.555	1,817
WITPOORTJIE EXT.5	9.15	4,591		STAFFORD	1.852	2,164
RISANA	3.42	1,738		ROBINDALE	5.842	6,701
DOUGLASDALE EXT.4	0.81	853		RANDPARKRIF EXT.22	1.271	1,485
MORNINGSIDE EXT.32	0.88	994		ELECTRON	1.813	2,119
LOMBARDY WEST	6.19	6,925		OBSERVATORY EXT	9.566	11,089

Water Pipe Replacements				Sewer Pipe Replacements		
Township	**Length (km)**	**Estimate Cost R'000**		**Township**	**Length (km)**	**Estimate Cost R'000**
EASTGATE EXT.13	0.75	965		INDUSTRIA NORTH	3.760	4,353
NEW BRIGHTON	0.97	919		ALEXANDRA EXT.54	1.000	1,096
DISCOVERY EXT.2	12.46	7,271		VICTORY PARK EXT.1	1.562	1,825
RANDPARKRIF EXT.14	3.64	4,167		LITTLEFILLAN A.H.	1.000	1,131
RANDPARK EXT.3	1.48	1,632		BIRNAM	1.964	2,295
TROJAN	1.20	792		VILLAGE DEEP	2.392	2,796
WITPOORTJIE EXT.1	9.02	4,879		WATERVAL ESTATE	3.973	4,644
SUNNINGHILL PARK A.H.	9.51	11,702		NORTHCLIFF EXT.4	10.382	12,136
RANDPARKRIF EXT.7	2.78	3,130		LYNDHURST	11.372	13,260
BOOYSENS RESERVE	6.18	3,995		VICTORY PARK EXT.8	1.878	2,019
DISCOVERY EXT.9	2.40	1,202		BERARIO	14.386	16,816
LONGDALE	1.68	2,107		REMBRANDT PARK	7.127	8,331
FAIRWOOD	2.08	2,309		KENSINGTON	53.957	62,764
LYNDHURST	10.83	11,582		ALEXANDRA EXT.38	1.106	1,290
BOSKRUIN EXT.4	1.19	1,329		LAKE VIEW ESTATE	1.389	1,624
PARKTOWN	22.02	25,189		FLORIDA	27.203	31,794
HURST HILL	5.21	5,676		MOLAPO	9.078	10,611
ERAND GARDENS EXT.70	0.91	2,025		FLORIDA NORTH	6.502	7,273
WINDSOR GLEN	3.04	3,214		DUNKELD WEST	5.550	6,480
BOOYSENS	9.71	5,550		SILVAMONTE	2.066	2,406
LENASIA EXT.6	4.32	2,239		BENROSE	1.844	2,155
FLORIDA GLEN EXT.1	5.19	5,521		TECHNIKON	2.885	3,352
SELWYN	4.57	2,441		ALEXANDRA EXT.66	2.571	3,005
PETERVALE	3.89	4,232		MEADOWLANDS EXT.13	1.000	1,156
NOORDWYK	3.69	3,933		ALEXANDRA EXT.9	1.278	1,423
DOUGLASDALE A.H.	10.42	12,267		ALEXANDRA EXT.62	1.926	2,252
VORNA VALLEY	17.03	18,346		WILROPARK EXT.16	1.111	1,299
STEELEDALE	2.19	1,474		PARKTOWN EXT	2.711	3,159
VREDEDORP	7.90	8,812		JAN HOFMEYR	1.864	2,175
CRESWELL PARK	3.97	2,097		GRESSWOLD	4.748	5,550
LINKSFIELD	8.07	8,955		VICTORY PARK EXT.18	3.290	3,836
MARLBORO GARDENS EXT.1	6.80	7,326		GREENSIDE EXT	10.106	11,778
CROSBY	16.46	17,439		THE GARDENS	3.418	3,996
EDENBURG	29.11	31,523		ROUXVILLE	1.955	2,285
ELDORADO ESTATE	1.81	2,017		KEW	33.639	39,299
THE WOODLANDS	1.73	2,049		RISIDALE	5.069	5,926
NORTHCLIFF EXT.9	4.46	4,748		ATHOLHURST	1.899	2,220

Water Pipe Replacements				Sewer Pipe Replacements		
Township	**Length (km)**	**Estimate Cost R'000**		**Township**	**Length (km)**	**Estimate Cost R'000**
HONEY HILL	2.07	1,037		PINE PARK EXT.1	1.991	2,274
KLIPSPRUIT EXT.5	1.80	952		ZOLA	36.040	42,128
OLIVEDALE EXT.2	6.74	7,655		ALEXANDRA EXT.52	1.072	1,253
ENNERDALE EXT.1	15.59	9,057		STEELEDALE	1.571	1,836
LENASIA EXT.9	9.20	4,926		GLENESK	2.622	3,042
LINMEYER	13.80	7,709		FLORIDA PARK	23.530	27,467
LONE HILL EXT.7	1.03	1,091		BRAMLEY	9.482	11,073
LENASIA EXT.10	13.81	7,264		ALEXANDRA EXT.3	1.487	1,703
BRYANBRINK	1.84	2,013		NEWTOWN	6.723	7,827
ROBINDALE	6.51	7,100		INDUSTRIA WEST	3.982	4,654
BEVERLEY GARDENS	3.39	3,590		DISCOVERY EXT.2	7.464	8,724
SHARONLEA EXT.1	1.38	1,470		MAPETLA	15.873	18,554
WIERDA VALLEY	0.77	810		PRINCESS A.H. EXT.1	1.518	1,775
ROODEKRANS EXT.4	1.15	632		WELTEVREDENPARK EXT.19	1.000	801
MAYFAIR	21.52	23,685		EMMARENTIA EXT.1	21.064	24,376
EMMARENTIA	5.32	5,741		SANDOWN EXT.9	1.544	1,805
NORTHWOLD EXT.15	2.00	2,378		ALBERTSKROON	2.722	3,181
RANDPARKRIF EXT.24	3.90	4,361		HADDON	2.716	3,175
DARRENWOOD	5.36	5,912		ALEXANDRA EXT.63	1.000	1,142
MORET	2.27	2,422		SANDRINGHAM	11.884	13,481
BRYANSTON EXT.8	7.44	8,044		WHITERIDGE	1.064	1,238
FOURWAYS EXT.12	2.74	3,125		GREENSIDE EXT.2	3.357	3,924
RANDPARKRIF EXT.13	7.03	7,546		ALEXANDRA EXT.68	1.129	1,319
ROBIN HILLS	5.71	6,208		LINDEN	29.206	34,123
JUKSKEI PARK EXT.3	1.69	1,823		ALEXANDRA EXT.47	1.000	1,143
KLIPRIVIERSOOG	1.64	823		WEST TURFFONTEIN	8.189	9,564
RIVER CLUB EXT.1	3.92	4,408		ALEXANDRA EXT.35	1.549	1,810
MAYFAIR WEST	11.36	12,339		DISCOVERY	14.791	17,289
KENSINGTON B	15.26	17,130		ROBERTSHAM EXT.1	3.363	3,931
OLIVEDALE EXT.1	0.95	1,006		EMMARENTIA	5.826	6,811
LENASIA EXT.11	14.27	7,391		DRIEZIEK EXT.2	2.528	2,616
VANDIA GROVE	1.16	1,228		JABULANI	22.451	26,244
MARTINDALE	3.43	3,798		ALEXANDRA EXT.34	1.372	1,593
WOODMEAD EXT.4	1.39	1,500		LINKSFIELD NORTH	4.988	5,647
BERARIO	14.44	15,385		HIGHLANDS NORTH EXT	5.923	6,924
DISCOVERY EXT.10	2.75	1,519		HORISON	22.887	26,753
WENDYWOOD EXT.5	0.79	837		EAST TOWN	1.836	2,146

Water Pipe Replacements				Sewer Pipe Replacements		
Township	**Length (km)**	**Estimate Cost R'000**		**Township**	**Length (km)**	**Estimate Cost R'000**
LA ROCHELLE	9.77	5,138		ALEXANDRA EXT.40	1.758	2,055
TREVALLYN A.H.	2.02	2,558		WELTEVREDENPARK EXT.4	8.901	10,405
WILLOWILD EXT.2	0.88	927		MONTGOMERY PARK	8.523	9,936
FORDSBURG	7.81	9,656		BRAMLEY NORTH	1.104	1,290
HORISON PARK	6.42	3,523		PIERNEEF PARK	1.000	1,004
STRIJDOMPARK EXT.3	0.92	983		CRAIGHALL PARK	28.113	32,862
MORNINGSIDE EXT.10	1.00	1,153		ATHOLL EXT.12	1.035	1,209
ROODEPOORT WEST EXT.2	2.31	1,235		ALEXANDRA EXT.61	2.527	2,953
FLORIDA EXT.2	3.61	1,812		EVANS PARK	2.957	3,457
LANGLAAGTE NORTH	2.98	3,203		FOREST TOWN	7.408	8,659
DANIEL BRINKPARK	1.65	1,860		HERIOTDALE	1.867	2,182
RUITERHOF EXT.1	1.43	1,561		ROSEACRE EXT.3	1.622	1,896
ALDARAPARK	1.85	1,979		FRANKLIN ROOSEVELT PARK	9.447	11,022
SANDOWN EXT.18	1.69	1,900		ALEXANDRA EXT.21	1.051	1,123
NORSCOT	1.96	2,161		RIDGEWAY EXT.1	2.533	2,961
STRIJDOMPARK EXT.16	0.76	960		GLENHAZEL	11.239	13,092
HIGHLANDS NORTH EXT.9	0.96	1,235		DE WETSHOF EXT.1	3.939	4,604
BRAMLEY PARK	2.01	2,150		NOORDGESIG	11.511	13,455
SANDRINGHAM	8.76	9,964		SELWYN	4.708	5,503
ELDORADO PARK EXT.6	7.38	8,232		LINKSFIELD	10.085	11,644
NOORDWYK EXT.7	3.00	3,347		MARAISBURG	10.044	11,740
NEW CENTRE	1.61	2,065		CHELTONDALE	1.523	1,757
WINSTON RIDGE	2.48	2,678		FLORIDA EXT.5	1.000	999
LENASIA EXT.4	2.17	1,087		ILLOVO	14.482	16,928
LENASIA	3.69	2,255		FAIRMOUNT	2.055	2,402
REMBRANDT PARK	6.72	7,124		SYDENHAM	17.552	20,498
THE HILL	6.85	3,632		FRANKLIN ROOSEVELT PARK EXT.1	4.622	5,380
WOODMEAD	7.13	7,437		THE HILL EXT.1	5.493	6,421
STAFFORD	1.54	848		RICHMOND	3.054	3,570
LONE HILL EXT.10	4.68	5,770		VICTORY PARK ESTATE S.H.	1.318	1,540
RIVER CLUB EXT.4	0.82	863		REUVEN	1.840	2,151
SONNEGLANS EXT.4	1.42	1,504		ROBERTSHAM	18.380	21,485
BEVERLEY A.H.	5.17	5,831		NEWLANDS	25.942	30,298
ELLADOONE	2.89	1,514		ORANGE FARM	9.151	9,485

Water Pipe Replacements				Sewer Pipe Replacements		
Township	**Length (km)**	**Estimate Cost R'000**		**Township**	**Length (km)**	**Estimate Cost R'000**
LINDHAVEN EXT.1	1.05	591		WINSTON RIDGE	2.101	2,456
MID-ENNERDALE	26.82	13,492		WESTDENE	20.425	23,864
ENNERDALE EXT.3	6.73	3,856		FLORIDA LAKE	7.976	9,275
DISCOVERY EXT.6	2.21	1,117		SOUTH HILLS EXT.1	7.303	8,530
REMBRANDT PARK EXT.5	1.41	1,493		PERCELIA ESTATE	2.088	2,441
BRYANSTON EXT.7	12.50	14,305		WELTEVREDENPARK EXT.6	2.409	2,815
NORTHWOLD EXT.8	0.95	1,099		TALBOTON	1.022	1,195
ZONNEHOEVE A.H.	3.66	1,835		LINBRO PARK A.H.	3.134	3,664
FOURWAYS	17.48	18,965		PINE PARK	1.218	1,424
CRAIGAVON A.H.	5.19	6,123		SAVOY ESTATE	5.635	6,532
FLORIDA GLEN	5.21	4,879		WAVERLEY	12.270	14,332
MARLBORO GARDENS	7.82	8,933		LINDBERG PARK	1.357	1,587
GLENVISTA EXT.3	7.19	4,045		DISCOVERY EXT.3	1.860	2,174
GLEN ATHOLL	0.74	784		HURST HILL	4.127	4,824
FLORIDA EXT.11	1.92	1,032		MONTROUX	1.351	1,580
MAGALIESSIG EXT.26	1.15	1,226		GLENHAZEL EXT.4	1.000	1,142
LONE HILL EXT.13	1.48	1,567		CHRISVILLE	5.060	5,915
NEWTOWN	8.88	10,750		SANDOWN	12.332	14,410
DISCOVERY EXT.7	2.35	1,239		BOSMONT	19.055	22,273
HADDON	3.68	1,848		BAGLEYSTON	1.216	1,413
PAULSHOF	5.54	5,910		NORTHCLIFF EXT.3	2.340	2,735
WYNBERG	16.00	18,131		SOUTH HILLS	7.600	8,873
LONE HILL EXT.18	1.77	1,875		WEST CLIFF EXT	1.661	1,935
LYME PARK EXT.4	1.94	2,274		DUBE	20.189	23,583
THE HILL EXT.9	0.96	479		ALBERTVILLE	7.852	9,154
PAULSHOF EXT.10	3.06	3,235		RANDPARK	2.201	2,573
WITPOORTJIE EXT.16	0.88	442		MOFFAT VIEW	1.522	1,729
ROSEACRE EXT.3	1.76	884		JABAVU CENTRAL WESTERN EXT.1	4.563	5,334
ROSETTENVILLE EXT	10.69	5,697		KAALFONTEIN EXT.9	1.201	1,403
SOLRIDGE	1.01	925		CYRILDENE	16.440	19,217
WAVERLEY	11.57	12,088		ROSSMORE	4.032	4,714
KENILWORTH	12.19	6,288		UNIGRAY	1.742	2,036
SUNDOWNER EXT.7	4.62	5,275		BRAAMFONTEIN WERF	3.162	3,643
THE HILL EXT.1	5.70	2,862		BRYANSTON EXT.45	1.182	1,382
STRIJDOMPARK EXT.1	0.85	930		MOLETSANE	14.383	16,813
ROODEPOORT NORTH	10.09	5,116		HELDERKRUIN EXT.20	1.000	1,009

Water Pipe Replacements				Sewer Pipe Replacements		
Township	**Length (km)**	**Estimate Cost R'000**		**Township**	**Length (km)**	**Estimate Cost R'000**
SELBY EXT.14	0.99	1,104		DE WETSHOF	3.904	4,564
TURFFONTEIN	22.28	11,990		EASTGATE	2.123	2,482
THE GARDENS	4.58	5,000		IVORY PARK EXT.5	9.503	11,109
Grand Total		1,405,203		PROTEA GLEN EXT.2	11.507	13,410
				BROMHOF	5.859	6,849
				PAULSHOF EXT.1	2.576	3,011
				ATHOLL	11.193	13,072
				CHIAWELO	8.713	10,185
				RIVERLEA EXT.1	5.979	6,540
				IVORY PARK EXT.6	11.262	13,164
				FERREIRAS DORP	2.896	3,385
				MARISE A.H.	1.286	1,503
				KELVIN	27.560	32,084
				BLOUBOSRAND EXT.9	1.772	2,072
				WENDYWOOD EXT.5	1.070	1,251
				JABULANI EXT.1	4.602	5,316
				DIEPSLOOT WES EXT.5	6.854	7,960
				PROTEA GLEN EXT.1	9.839	11,462
				WESTBURY	1.501	1,755
				CHIAWELO EXT.2	20.041	23,426
				RAUMARAIS PARK	2.782	3,252
				STORMILL EXT.9	1.252	1,454
				WENDYWOOD EXT.3	1.182	1,382
				PRESIDENT RIDGE	3.729	4,328
				FLORIDA PARK EXT.3	4.359	5,095
				BRYANSTON EXT.5	4.399	5,123
				LENASIA EXT.10	17.644	20,625
				GALLO MANOR EXT.1	2.452	2,867
				PRINCESS A.H. EXT.3	3.211	3,753
				DALECROSS	1.665	1,946
				DOUGLASDALE EXT.52	2.069	2,419
				LONGDALE EXT.2	2.089	2,420
				KAALFONTEIN EXT.7	6.916	8,047
				CULEMBEECK A.H.	2.657	3,106
				ALEXANDRA EXT.1	2.262	2,630
				LINDEN EXT	8.958	10,303
				MEADOWLANDS EXT.12	3.674	4,294
				RANDPARKRIF EXT.1	13.342	15,595

Water Pipe Replacements				Sewer Pipe Replacements		
Township	**Length (km)**	**Estimate Cost R'000**		**Township**	**Length (km)**	**Estimate Cost R'000**
				PAULSHOF EXT.9	2.868	3,353
				NALEDI	27.331	31,941
				MORNINGSIDE EXT.53	2.027	2,369
				ORMONDE EXT.9	1.811	2,116
				FOURWAYS EXT.12	3.922	4,585
				BRYANSTON EXT.8	11.950	13,968
				ELDORADO ESTATE	2.559	2,817
				ALEXANDRA EXT.20	1.069	1,246
				WOODMEAD EXT.14	1.228	1,435
				LENASIA EXT.2	10.101	11,807
				BEVERLEY GARDENS	5.795	6,773
				ALEXANDRA EXT.31	2.298	2,685
				SUNNINGHILL	8.922	10,422
				WESTBURY EXT.2	1.695	1,965
				CHISLEHURSTON	1.648	1,926
				DHLAMINI	13.954	16,311
				DOUGLASDALE EXT.4	1.726	2,017
				KLEVEHILL PARK	4.546	5,314
				KLIPSPRUIT EXT.2	5.984	6,992
				BOSKRUIN EXT.4	2.419	2,828
				RUIMSIG EXT.8	1.000	958
				WOODMEAD EXT.1	3.575	4,179
				BENMORE GARDENS EXT.3	5.462	6,385
				VORNA VALLEY	20.785	24,296
				ROODEPOORT WEST EXT.1	2.450	2,864
				LENASIA	2.514	2,939
				RANDPARKRIF EXT.14	4.178	4,883
				GROBLERPARK EXT.28	1.000	939
				ELDORADO PARK EXT.6	7.935	9,164
				RANDPARK EXT.3	1.306	1,526
				ALEXANDRA EXT.57	1.037	1,210
				ORLANDO EAST	62.758	73,285
				Grand total		3,405,791

Water Upgrading

Project Name	Description	Current Stage	Budget Requirement R'000
AEROTON DIRECT / TOWER	Required to meet the RW Water Supply Conditions (Optional)	Planning complete, Preliminary and detailed Design required	87,177
ALAN MANOR RESERVOIR - PRV 1	To reduce high static pressures in Mondeor	Planning complete, Preliminary and detailed Design required	340
ALEXANDER PARK RESERVOIR MONTAGUE PRV	Required to improve pressure	Planning complete, Preliminary and detailed Design required	1,525
BEREA RESERVOIR PRV1 - PRV2	Required to establish PRV sub-zone	Planning complete, Preliminary and detailed Design required	3,638
BOSCHKOP/HONEYDEW RES - PUTTICK/TAURUS RD PRV	Reduce static pressures in Boschkop/Honeydew system	Planning complete, Preliminary and detailed Design required	17,920
BRAM FISCHERVILLE DIRECT FEED-SB13.5	Required to reduce peak flow velocities	Planning complete, Preliminary and detailed Design required	49,119
BRIXTON BULK	To allow for abstraction from the outlet of Crosby Reservoir (not the inlet)	Planning complete, Preliminary and detailed Design required	7,544
BRYANSTON RESERVOIR	To supply new developments in Broadacres and Kengies	Planning complete, Preliminary and detailed Design required	113,434
CARLSWALD RES-KYALAMI ESTATES PRV4	Required to implement the Kyalami Estates PRV1 water sub-district.	Planning complete, Preliminary and detailed Design required	1,057
CHIAWELO RESERVOIR	Required to improve residual pressures	Planning complete, Preliminary and detailed Design required	1,675
CONSTANTIA KLOOF TOWER	Rezone to reduce static pressures	Planning complete, Preliminary and detailed Design required	328
CORRIEMOOR RESERVOIR - PRV 3	To improve supply/pressures and to create proposed Corriemoor - PRV 2 zone	Planning complete, Preliminary and detailed Design required	1,514

Project Name	Description	Current Stage	Budget Requirement R'000
COSMO CITY RESERVOIR	To implement Cosmo City Reservoir sub-district east of Boundary Rd.	Planning complete, Preliminary and detailed Design required	952
COUNTRY VIEW RESERVOIR	Establish new water sub-districts	Planning complete, Preliminary and detailed Design required	680
CROSBY BULK	To dedicate/improve supply to Crosby/Hursthill Reservoirs	Planning complete, Preliminary and detailed Design required	124,477
CROWN GARDENS RESERVOIR	To improve supply and alleviate low residual pressures	Planning complete, Preliminary and detailed Design required	34,715
DIEPKLOOF RESERVOIR	To establish SB7B.1	Planning complete, Preliminary and detailed Design required	12,600
DIEPSLOOT R/PRV - DIEPSLOOT X8 PRV	Required to improve supply	Planning complete, Preliminary and detailed Design required	59,789
DOBSONVILLE BULK	Required in order to supply the proposed Dobsonville Reservoir	Planning complete, Preliminary and detailed Design required	107,983
DOORNKOP WEST RES	Construct additional reservoir	Planning complete, Preliminary and detailed Design required	383,807
DUNKELD RESERVOIR	To improve residual pressures.	Planning complete, Preliminary and detailed Design required	46,600
EAGLES NEST RESERVOIR	To establish dedicated supply to Naturena Reservoir	Planning complete, Preliminary and detailed Design required	11,374
ENNERDALE RESERVOIR - DRIEZIEK PRV	To reinstate the supply to Drieziek and allow the Western Direct Feed to be made discrete	Planning complete, Preliminary and detailed Design required	13,060
ERAND RESERVOIR	To improve supply and reduce high flow velocities	Planning complete, Preliminary and detailed Design required	240,900

Project Name	Description	Current Stage	Budget Requirement R'000
FAIRLANDS RESERVOIR	To improve pressures and rezone in Corriemoor - PRV 1	Planning complete, Preliminary and detailed Design required	91
FLORIDA NORTH TOWER	To improve supply and reduce high flow velocities	Planning complete, Preliminary and detailed Design required	4,816
FOREST HILL TOWER	Required to improve storage capacity	Planning complete, Preliminary and detailed Design required	103,976
FOUNDERS HILL RES AND TOWER	To implement Founders Hill reservoir zone	Planning complete, Preliminary and detailed Design required	170,968
GLENVISTA DIRECT FEED	Required to improve flow velocity	Planning complete, Preliminary and detailed Design required	38,262
GRAND CENTRAL RESERVOIR	Required to improve hydraulic flow and pressure	Planning complete, Preliminary and detailed Design required	5,809
HALFWAY HOUSE RES	Rezoning to ensure sufficient pressure	Planning complete, Preliminary and detailed Design required	45,188
HELDERKRUIN RESERVOIR - CR SWART PRV	Required to supply future developments/When RW Weltevreden Res is implemented	Planning complete, Preliminary and detailed Design required	4,041
HONEYDEW TOWER	To improve pressure in tower district/implement new district boundaries	Planning complete, Preliminary and detailed Design required	3,695
HURSTHILL RESERVOIR AND DIRECT	To improve residual pressures	Planning complete, Preliminary and detailed Design required	87,824
ILLOVO RESERVOIR	Creation of a PRV zone to reduce high static pressures	Planning complete, Preliminary and detailed Design required	80,604
JABULANI RESERVOIR	Required to connect developments MR01, MR02, MR03, MR05, MR06, MR07, JW_IP_18, MR12, MR13 and BK3 to Jabulani tower	Planning complete, Preliminary and detailed Design required	73,110

Project Name	Description	Current Stage	Budget Requirement R'000
JHB CBD PRV EAST	Splitting of zones	Planning complete, Preliminary and detailed Design required	12,703
KENSINGTON B RESERVOIR AND TOWER	Required to increase reservoir capacity	Planning complete, Preliminary and detailed Design required	158,156
KIBLER PARK RESERVOIR PRV	To implement proposed PRV sub-zone to reduce static pressures.	Planning complete, Preliminary and detailed Design required	2,835
KLIPRIVIERSOOG DIRECT	Investigate more secure location/chamber options to stop vandalism	Planning complete, Preliminary and detailed Design required	381
LAWLEY HIGH LEVEL RESERVOIR	To implement the proposed Lawley High level reservoir sub-district.	Planning complete, Preliminary and detailed Design required	32,815
LEHAE_RESERVOIR_PRV_L2	Required to implement Lehae Reservoir zone when Southern Farms develops	Planning complete, Preliminary and detailed Design required	29,913
LENASIA _LOW_LEVEL_RESERVOIR_PRV6	To reduce high static pressures	Planning complete, Preliminary and detailed Design required	730,876
LINBRO PARK RESERVOIRS	To establish sub-block	Planning complete, Preliminary and detailed Design required	17,223
LINDEN_BLAIRGOWRIE RESERVOIRS AND TOWER	To reduce pipe velocities	Planning complete, Preliminary and detailed Design required	21,003
MAIN REEF RESERVOIR	To supply Main Reef Reservoir, Main Reef Reservoir 2 and Main Reef Tower	Planning complete, Preliminary and detailed Design required	15,615
MARLBORO DIRECT PRV1	Pipe upgrades to improve low pressures in Marlboro Gardens	Planning complete, Preliminary and detailed Design required	29,629
MEADOWLANDS RESERVOIR	To establish SB7B-5	Planning complete, Preliminary and detailed Design required	21,556
MODDERHILL RES	Create new Modder Hill reservoir PRV zone 3, to	Planning complete, Preliminary and	3,085

Project Name	Description	Current Stage	Budget Requirement R'000
	improve static pressures in Antwerp.	detailed Design required	
MORNINGSIDE RESERVOIR	To prevent high flow velocities and manage pressures in Morningside Reservoir PRV1 sub-district	Planning complete, Preliminary and detailed Design required	4,369
NASREC DIRECT	Required to decrease flow velocity and headloss.	Planning complete, Preliminary and detailed Design required	1,851
NATURENA RESERVOIR NO.2	Required to supply Devland and to increase storage capacity in Naturena Reservoir	Planning complete, Preliminary and detailed Design required	21,768
NORTHCLIFF RESERVOIR - FRANKLIN ROOSEVELDT PARK PRV	To improve low residual pressure and decrease velocities	Planning complete, Preliminary and detailed Design required	13,935
OLIEVENHOUTPOORT RES - PRV1B	To optimise supply to North Riding / Create PRV sub-district to reduce static pressure	Planning complete, Preliminary and detailed Design required	1,629
OLIVEDALE RES - STEYN CITY PRV	To reduce static pressures in Olivedale Reservoir zone	Planning complete, Preliminary and detailed Design required	15,609
ORANGE FARM CRECHE METER DIRECT FEED	Create new Orange Farm Eastern Direct Feed water district	Planning complete, Preliminary and detailed Design required	22,179
ORLANDO EAST RESERVOIR	To establish SB7B.3	Planning complete, Preliminary and detailed Design required	5,569
PARKTOWN 1 & 2 RESERVOIR	Reset/insure correct flow setting for Parktown 1 reservoir and assess meter conditions	Planning complete, Preliminary and detailed Design required	160,027
POWER PARK (EP_SB1)	To establish POWER PARK (EP_SB1)	Planning complete, Preliminary and detailed Design required	120,111
PRESP RES	Required only if existing pressures are insufficient in the Dane Street area.	Planning complete, Preliminary and detailed Design required	13,663
PRETORIUSRAND RESERVOIR	Required to improve low residual pressures	Planning complete, Preliminary and	4,191

Project Name	Description	Current Stage	Budget Requirement R'000
		detailed Design required	
PROTEA GLEN RES-SB12.7	To establish SB12.6	Planning complete, Preliminary and detailed Design required	25,534
QUELLERINA PRV	To reduce static pressures	Planning complete, Preliminary and detailed Design required	434
RABIER RES	To establish Rabie Ridge Reservoir sub-block	Planning complete, Preliminary and detailed Design required	510
RANDJESLAAGTE RESERVOIR - PRV 4	Required to rezone Alex Zone 2 into Randjeslaagte reservoir zone	Planning complete, Preliminary and detailed Design required	345,643
ROBERTVILLE RESERVOIR	To improve residual pressures in Noordgesig	Planning complete, Preliminary and detailed Design required	141,142
ROODEPOORT RESERVOIR	Required to connect RW Roodepoort Reservoir	Planning complete, Preliminary and detailed Design required	62,657
RW ROODEPOORT - FINCH/KITE BULK	To reduce high pipe velocities/improve supply	Planning complete, Preliminary and detailed Design required	2,660
RW WELTEVREDEN RES CONN 4	To switch supply to RW Weltevreden Reservoir	Planning complete, Preliminary and detailed Design required	26,982
RW1617 NORTH EAST AREAS	To ensure a minimum flow through the new Illovo bulk supply pipeline to avoid water quality problems.	Planning complete, Preliminary and detailed Design required	223
RW1663_ABATTOIR_MARKET - PRV1	Required to reduce high static pressures	Planning complete, Preliminary and detailed Design required	2,120
RW1963 DIRECT	Create new Lomeadow PRV zone 1, to improve static pressures	Planning complete, Preliminary and detailed Design required	501
RW3548	To establish SB13.1	Planning complete, Preliminary and detailed Design required	6,449

Project Name	Description	Current Stage	Budget Requirement R'000
RW3909/RW3911_FOREST HILL RESERVOIR/MOFFAT VIEW	Required to decrease flow velocity and headloss	Planning complete, Preliminary and detailed Design required	15,434
RW4079 DIRECT	To establish SB12.7	Planning complete, Preliminary and detailed Design required	7,072
SANDTON BULK SUPPLY	Required to implement the proposed Woodmead Reservoir water district	Planning complete, Preliminary and detailed Design required	483,683
SOUTH HILLS TOWER	Required to improve network redundancy	Planning complete, Preliminary and detailed Design required	1,469
SOUTHERN FARMS HL BULK	Required to implement Southern Farms HL Reservoir zone and bulk supply	Planning complete, Preliminary and detailed Design required	426,649
TSHEPISONG PRV4-SB13.2	To reduce high static pressures	Planning complete, Preliminary and detailed Design required	1,002
WATERVAL PUMP STATION/TOWER	To investigate if valve is open/closed	Planning complete, Preliminary and detailed Design required	1,326
WELTEVREDEN RW2169 - DIRECT - WELTEVREDEN PARK PRV8	Establish new water sub-districts when implementing the RW Weltevreden Res	Planning complete, Preliminary and detailed Design required	68,436
WINCHESTER HILLS BULK	To amalgamate surrounding direct feeds and implement proposed WH Reservoir & PRV zones	Planning complete, Preliminary and detailed Design required	146,764
WITPOORTJIE RESERVOIR	To reduce static pressures	Planning complete, Preliminary and detailed Design required	4,308
WOODMEAD RES	Required to implement the proposed Woodmead reservoir water district	Planning complete, Preliminary and detailed Design required	151,550
YEOVILLE RESERVOIR	Required to establish the New Doornfontein PRV sub-district	Planning complete, Preliminary and detailed Design required	162,512

Project Name	Description	Current Stage	Budget Requirement R'000
ZONDI BULK SUPPLY	Required to improve residual pressures	Planning complete, Preliminary and detailed Design required	24,099
Total			**5,510,443**

Sewer Upgrading

Project Name	Description	Current Stage	Budget Requirement R'000
Bushkoppies Consolidated drainage basin sewer upgrades	Various projects required to reinforce and extend bulk, collector and reticulation sewer infrastructure to maintain service levels and cater for growth.	Planning complete, Preliminary and detailed Design required	682,351
Bruma drainage basin sewer upgrades	Various projects required to reinforce and extend bulk, collector and reticulation sewer infrastructure to maintain service levels and cater for growth.	Planning complete, Preliminary and detailed Design required	217,147
Centurion drainage basin sewer upgrades	Various projects required to reinforce and extend bulk, collector and reticulation sewer infrastructure to maintain service levels and cater for growth.	Planning complete, Preliminary and detailed Design required	92,391
Cydna drainage basin sewer upgrades	Various projects required to reinforce and extend bulk, collector and reticulation sewer infrastructure to maintain service levels and cater for growth.	Planning complete, Preliminary and detailed Design required	349,768
Delta drainage basin sewer upgrades	Various projects required to reinforce and extend bulk, collector and reticulation sewer infrastructure to maintain service levels and cater for growth.	Planning complete, Preliminary and detailed Design required	96,652
Diepsloot Consolidated drainage basin sewer upgrades	Various projects required to reinforce and extend bulk, collector and reticulation sewer infrastructure to maintain service levels and cater for growth.	Planning complete, Preliminary and detailed Design required	1,652,108
Diepsloot West drainage basin sewer upgrades	Various projects required to reinforce and extend bulk, collector and reticulation sewer infrastructure to maintain service levels and cater for growth.	Planning complete, Preliminary and detailed Design required	35,108

Project Name	Description	Current Stage	Budget Requirement R'000
Driefontein drainage basin sewer upgrades	Various projects required to reinforce and extend bulk, collector and reticulation sewer infrastructure to maintain service levels and cater for growth.	Planning complete, Preliminary and detailed Design required	49,965
Ennerdale, Lenasia and Poortjie drainage basin sewer upgrades	Various projects required to reinforce and extend bulk, collector and reticulation sewer infrastructure to maintain service levels and cater for growth.	Planning complete, Preliminary and detailed Design required	729,887
Klipspruit drainage basin sewer upgrades	Various projects required to reinforce and extend bulk, collector and reticulation sewer infrastructure to maintain service levels and cater for growth.	Planning complete, Preliminary and detailed Design required	189,181
Lanseria drainage basin sewer upgrades	Various projects required to reinforce and extend bulk, collector and reticulation sewer infrastructure to maintain service levels and cater for growth.	Planning complete, Preliminary and detailed Design required	639,438
MEADOWLANDS_CONS drainage basin sewer upgrades	Various projects required to reinforce and extend bulk, collector and reticulation sewer infrastructure to maintain service levels and cater for growth.	Planning complete, Preliminary and detailed Design required	550,863
OLIFANTSFONTEIN drainage basin sewer upgrades	Various projects required to reinforce and extend bulk, collector and reticulation sewer infrastructure to maintain service levels and cater for growth.	Planning complete, Preliminary and detailed Design required	401,621
OLIFANTSVLEI drainage basin sewer upgrades	Various projects required to reinforce and extend bulk, collector and reticulation sewer infrastructure to maintain service levels and cater for growth.	Planning complete, Preliminary and detailed Design required	64,678
SOUTH WESTERN drainage basin sewer upgrades	Various projects required to reinforce and extend bulk, collector and reticulation sewer infrastructure to maintain service levels and cater for growth.	Planning complete, Preliminary and detailed Design required	673,198
SOUTH_EASTERN drainage basin sewer upgrades	Various projects required to reinforce and extend bulk, collector and reticulation sewer infrastructure to maintain service levels and cater for growth.	Planning complete, Preliminary and detailed Design required	201,048
Western Klien Jukskei drainage basin sewer upgrades	Various projects required to reinforce and extend bulk, collector and reticulation sewer infrastructure to maintain service levels and cater for growth.	Planning complete, Preliminary and detailed Design required	463,133
Total			**7,088,536**

Wastewater Treatment Projects

Project Name	Description	Status	Budget Requirement R'000
Northern Works: Infrastructure Renewal Plan	The project is for the renewal of electromechanical equipment at Northern Works. Phase 1 is the replacement of the Medium Voltage Infrastructure at Northern Waste Water Treatment Works. Phase 2 will be predominately the upgrading of electro-mechanical equipment in the various pump stations and valve chambers. All remaining items for general renewal will be included in phase 3.	Detail Design and Tender - Partially Funded	130,000
Northern Works: Unit 4: Replacement of Electromechanical	The refurbishment of Unit 4 Modules 1 to 4 electromechanical infrastructure	Detail Design and Tender - Partially Funded	125,000
Northern Works: Unit 5 Module 2	The project is for the design and construction a 50 Ml/day expansion of Unit 5 including a delectated Unit 5 head of works. The scope of the project includes a new Head of Works, Two primary sedimentation tanks, balance tank, a 50 Ml/day biological nutrient removal reactor, three final clarifiers and a disinfection facility.	Detail Design and Tender - Partially Funded, ready for implementation	670,000
Northern Works: Belt Press	This project is for the design and installation of ten new belt presses, and associated infrastructure	Detail Design and Tender - Partially Funded	115,000

Project Name	Description	Status	Budget Requirement R'000
Northern Works: Digesters	The project is for the design and construction of new digesters including pre-thickening and pre-conditioning and other associated infrastructure as outline in the 2015 Knight Piesold report title Northern WWWTW Digestion Capacity Investigation.	Preliminary Design - Awaiting Budget Allocation	570,000
Northern Works: Unit 4 Liquor Plant	The scope of this project is for the design and construction of Liquor plant that will treat all the liquors created from the belt presses	Detail Design and Tender - Ready for implementation	90,000
Goudkoppies: Infrastructure Renewal Plan	The project is for the renewal of electromechanical equipment's at Goudkoppies WWTW. Phase 2a: Clarifier refurbishment; Module 3 mechanical refurbishment, Reactor outlet channel gate valves, Automate lime plant and primary Settling Tanks, Bushkoppies by-pass channel screen installation, Balancing tank repairs, Replace GTL pipe to balancing tank, Road repair Phase 2b: Digester Heating and Mixing, Gasholder replacement	Detail Design and Tender - Partially Funded	319,000
Bushkoppies: Infrastructure Renewal Plan	The project is for the renewal of electromechanical equipment at Bushkoppies WWTW. The scope of work for the project electromechanical equipment at the Unit 1's Head of Works, Fermenters, bio-reactor, secondary clarifiers, MV switchgear, and minor work at the belt press building	Detail Design and Tender - Partially Funded	119,000
Bushkoppies: Upgrading main Blowers and Pipework	The scope of this project is for the design and installation of the Main Blowers and their associated pipework for the four Biological Reactors at Bushkoppies WWTW	Preliminary Design - Partially Funded	115,000
Olifantsvlei: Infrastructure Renewal Plan	Renewal of electromechanical equipment's at Olifantsvlei WWTW, items included: Replace HT Cables and switchgear, Regional Sludge Handling Facility Stacker, Replace screens Van Wyk Pump Station, ET (elutriation) pump station screw press; Repair beaching erosion maturation dams, Unit 3 electromechanical, Combined W.A.S pump station, Emergency Dam pump station rising main	Detailed Design and Tender - Partially Funded	80,000
Olifantsvlei: Refurbish Unit 2	The scope of the Refurbishment of Unit 2 is for the design and installation of new electro-mechanical equipment and the repair to civil infrastructure	Detail Design and Tender - Partially Funded	47,000
Olifantsvlei: Belt Press #1	This project is for the design and installation of a new belt presses and associated infrastructure	Detail Design and Tender - Partially Funded	25,000
Driefontein: Infrastructure Renewal Plan	The project is for the renewal of electromechanical equipment's at Driefontein WWTW. Items included: Removal of fire damaged MCC and buildings, Installation and commissioning of the damaged Unit 2, BNR's MCC	Preliminary Design - Design not started	10,000
EN: Upgrading of Southern Treatment Capacity	The project is for the design and construction a 8 Ml/day expansion	Identification - Awaiting appoint of Professional Team	60,000

Project Name	Description	Status	Budget Requirement R'000
Total			**2,475,000**

Annexure C: Strategic Risk Register 2021/22

Risk #	Mayoral Priority	Strategic Goal	JW Strategic Goals	Risk Category	Joburg Water - Risk Description	Risk Owner	Root Causes	Consequences	Likelihood		Impact		Inherent Risk		Risk Treatment Actions	Targeted completio n date	Action Owner/s
1	Good Governance- Conduct public affairs with utmost responsibility and accountability, whilst combating corruption, fraud and maladministration. *Financial Sustainability- Improve and strengthen the City's financial position by following prescribed governance practices.*	Utilise infrastructure delivery to create jobs, support SMMEs and attract investments	4	Governance	Non-Award of Tenders	Chief Operations Officer	1. Inefficient supply chain management processes.	1. Delays in appointing service providers. 2. Delayed service delivery.	Likely	5	Critical	5	Very High	25	upgrade to improve device (meter) management and meter reading validation (Insourcing of device management to improve reading ratio) 2. Promotion of expanded social package (ESP) for customers that cannot afford water 3. Progressive review of implementation of cost reflective water tariffs (Tariff modelling) 4. Engagement	1. 30 Jun 2021 2. 30 Jun 2022 3. 30 Jun 2021 4. 31 Dec 2021 5. 30 Jun 2023 6. 30 Jun 2021 7. 30 Jun 2021 8. 30 Jun 2021	1. CIO 2. GM: Finance & aEM: SRC 3. FD 4. GM: Finance 5. GM: Finance 6. SM: FRD 7. CIO & GM: OPS 8. SM: TS
2					Inadequate Funding of Infrastructure (Mega/ Expansion projects)	Financial Director	1. Inaccurate financial modelling supporting investments in infrastructure 2. Failure to capitalise on long-term funding opportunities e.g. infrastructure fund	1. Loss of investment opportunities.	Almost Certain	5	Major	4	Very High	20			
3		Deliver water and sanitation services of good quality that is accessible, reliable and efficient			Security of Water Supply	Chief Operations Officer	1. Climate Change - Drought/severe weather conditions 2. Contamination of surface water (Industrial Activities- i.e. acid mine drainage) 3. Environmental pollution due to sewerage overflows and grey water from informal settlements 4. Higher than projected demand growth 5. Inadequate security of assets 6. Inefficient use of water 7. Infrastructure renewal and maintenance backlogs 8. Infrastructure supply constraints 9. Interrupted power supply *10.* Resource constraints *(drought conditions, extraction from resource point, unaccounted water & imposed water restrictions)*	1. Water restrictions. 2. Impaired reputation. 3. Service delivery protests.	Likely	4	Critical	5	Very High	20	1. Engage CoJ on building JW Internal Forensics capacity 2. Board to perform Self Evaluations per annum before AGM 3. Engage CoJ on Annual Board Evaluations 4. Development of a Board Annual Training Plan	1. 30 Jun 2021 2. 30 Jun 2021 3. 30 Jun 2021 4. 30 Jun 2021	1. MD 2. EM: GLS 3. EM: GLS 4. SM: GLS
4					Vandalism and theft of Infrastructure.	Chief Operations Officer	1. Culture of vandalism of public infrastructure 2 . Non-payment 3. Community Unrest	Supply disruptions	Almost Certain	5	Moderate	3	High	15			

Risk #	Mayoral Priority	Strategic Goal	JW Strategic Goals	Risk Category	Joburg Water - Risk Description	Risk Owner	Root Causes	Consequences	Likelihood		Impact		Inherent Risk		Risk Treatment Actions	Targeted completio n date	Action Owner/s
5					**Public health and safety.**	Chief Operations Officer	1. Contamination of potable water 2. Delays in rehabilitation of excavations (reinstatements) 3. Encroachment into JW servitudes 4. Inadequate safety measures during repair and maintenance 5. Inadequate sanitation provision 6. Infrastructure failure 7. Pollution of water from Informal settlements 8. Poor drinking water quality 9. Solid waste andillegal disposals 10. Blockages on the sewer networks 11. Defused Spillages (pumpstations at	1. Civil claims 2. Negative impacton company reputation. 3. Deteriorating riverwater quality. 4. Non-compliance: Directives & possible imprisonment of the Accounting Officer 5. Spread of diseases 6. Financial losses: Penalties & rehabilation costs (Polluter pays principle) and penalties	Almost Certain	5	Major	4	Very High	20			
6					**Failure of Infrastructure**	Chief Operations Officer	Under investment in infrastructure	Supply disruptions	Almost Certain	5	Major	4	Very High	20			
7		Deliver services in a manner that promotes environmental conservation and sustainability			**Waste water treatment works spillages and blockages.**	Chief Operations Officer	Overflooding as a result of Climate change	Increased water losses	Almost Certain	5	Critical	5	Very High	25	1. Develop and implement Records Managementtool 2. Establish Executive Management	1. 30 Jun 2021 2. 30 Jun 2021 3. 30 Jun 2021 4. 30 Jun	1. EM: G &LS 2. EM:HR &CS 3. EM: G &LS 4. EM:HR &
8		Improve customer and stakeholder satisfaction	**4 & 6**		**Stakeholder Dissastifaction**	Act. EM: Stakeholder Relations & Communications	1. Inadequate community and stakeholder liaison engagement and advocacy programs 2. Cost of water and sanitation 3. Incorrect meter readings 4. Inefficient entry points 5. Infrastructure back-log 6.Perceived biased procurement process 7.Slow pace of adopting new communication technology 8. Billing issues(fragmentation of device management value chain)	Negative publicity	Almost Certain	5	Major	4	Very High	20	1. Conduct an ethics and anti- fraud & corruption awareness campaign 2. Conduct anethics risk sssessment 3. Develop an ethics policy and management	1. 30 Jun 2021 2.31 Dec 2020 3. 30 Jun 2020 4. 31 Dec 2020 5. 31 Dec 2020 6. 30 Jun	1. EM: G &LS 2. EM: RC &BCP 3. EM: G &LS 4. EM: RC &BCP 5. EM: RC &BCP 6. SM: SCM
9	**Integrated Human Settlements**- Build integrated human settlements with access to social and	Enhance sound financial management, sustainability and good governance	**2**	**Service Delivery**	**Inadequate infrastructure and operational funding**	Financial Director	Lack of long term infrastructure funding plans.	1. Failure to meet financial obligations. 2. Increased financial dependency onshareholder (CoJ) 3. Business Rescue	Almost Certain	5	Critical	5	Very High	25	1.Ongoing monitoring	1. Ongoing	1. SM: OPS
10		Enhance sound financial management, sustainability and good governance			**Unsustainable water losses**	Chief Operations Officer	1. Water theft 2. Spillages	Loss of revenue	Almost Certain	5	Critical	5	Very High	25			

Risk #	Mayoral Priority	Strategic Goal	JW Strategic Goals	Risk Category	Joburg Water - Risk Description	Risk Owner	Root Causes	Consequences	Likelihood		Impact	Inherent Risk			Risk Treatment Actions	Targeted completio n date	Action Owner/s
11		Enhance sound financial management, sustainability and good governance			**Unethical Behaviour**	EM: Governance & Legal Services	1. Fraud, bribery and corruption incidents 2. Ineffective oversight and poor internal controls 3. Non-adherence with Legislation and statutes 4. Non-compliance with policies and procedures 5. Poor organisational culture	1. Impaired organisational reputation. 2.Financial losses 3. Irregular, Fruitless and Wasteful expenditure 4. Compromised service delivery	Almost Certain	5	Major	4	Very High	20			
12		Enhance sound financial management, sustainability and good governance			**Declining Payment Levels**	Financial Director	Poor economic environment	Reduced revenue	Almost Certain	5	Critical	5	Very High	25			
13	**Sustainable Service Delivery-** Accelerate visible service delivery and re–introduce co–production in the delivery of basic services.	Use technology for effective and efficient operations	**2**	**Service Delivery**	**Slow Adoption of Technologies**	Chief Operations Officer	1. Dependence on City of Johannesburg/ centralised systems 2. Inadequate business continuity management 3. Inadequate governance of ICT 4. Inadequate ICT infrastructure management 5. Inadequate information security 6. Ineffective information technology and Operations Technology continuity 7. Insufficient management systems 8. Lack of integration of systems 9. Lack of IT specialised skills and resources 10. Inadequate Cyber Security	Missed revenue opportunities / costs reduction opportunities	Almost Certain	5	Moderate	3	High	15			
14	**Safer City-** Reintroduce ward based policing (Joburg 10+) and effective law enforcement.	Invest in our staff to sustain optimal performance and service focused culture	**2**	**Socio Economic**	**Loss of Critical Kkills.**	EM: Human Resources & Corporate Services	Poor staff engagement.	High employee turnover	Possible	3	Major	4	High	12	1. Implementation of the WWTW capacity expansion projects and renewal of electro-mechanical equipment	1. 30 Jun 2026 2. 30 Jun 2026 3. 30 Jun 2021	1. COO 2. SM: Support Services 3. SM: Bulk Wastewater

EGEND:		
	1 - 5	Low
	6 - 11	Medium
	12 - 19	High
	20 - 25	Very High

Annexure D: Financials

INCOME STATEMENT

R '000	Actual	Proposed Adjustment Budget	Proposed budget	Indicative Years	
	2019/20	2020/21	2021/22	2022/23	2023/24
Revenues		Yr (1)	Yr (2)	Yr (3)	Yr (4)
Revenue	**12,719,037**	13,533,308	**14,616,056**	**15,259,162**	**15,945,824**
Water	7,703,635	8,341,594	8,852,617	9,242,131	9,658,027
Sewer	5,015,402	5,191,714	5,763,439	6,017,031	6,287,797
Cost of Sales	**(6,017,735)**	**(6,531,536)**	**(6,910,365)**	**(7,311,166)**	**(7,735,214)**
Bulk Purchases - Water	(6,017,735)	(6,531,536)	(6,910,365)	(7,311,166)	(7,735,214)
Gross margin	**6,701,302**	**7,001,772**	**7,705,690**	**7,947,996**	**8,210,610**
Gross Profit Margin %	**52.7%**	**51.7%**	**52.7%**	**52.1%**	**51.5%**
Other Income	**578,939**	**336,142**	**182,368**	**241,900**	**220,000**
Other revenue	256,947				
Deferred income release - USDG	321,992	336,142	182,368	241,900	220,000
Expenditure	**(6,160,627)**	**(5,985,626)**	**(6,544,646)**	**(6,764,996)**	**(7,070,333)**
Employee Related Costs	(1,261,036)	(1,341,358)	(1,397,363)	(1,458,847)	(1,524,496)
Contracted Services	(826,546)	(1,106,806)	(1,115,313)	(1,164,408)	(1,216,758)

R '000	Actual	Proposed Adjustment Budget	Proposed budget	Indicative Years	
General Expenses	(545,146)	(536,310)	(669,500)	(700,227)	(732,697)
Depreciation	(344,388)	(352,674)	(373,259)	(389,682)	(407,218)
Contributions - Bad debts	(3,183,511)	(2,648,478)	(2,989,211)	(3,051,832)	(3,189,164)
Profit/(Loss) before interest	**1,119,613**	**1,352,288**	**1,343,412**	**1,424,899**	**1,360,277**
Net interest & sundry items	**(83,140)**	**(119,252)**	**(151,359)**	**(190,974)**	**(199,567)**
Interest income - Internal (CoJ)	65,318	20,000	20,000	21,841	22,824
Interest Debtor Arrear	134,905	166,563	173,922	181,575	189,746
Interest on Mirror conduit loans	(257,622)	(288,314)	(330,823)	(379,296)	(396,364)
Commercial interest payable	(25,741)	(17,500)	(14,458)	(15,094)	(15,773)
Profit/(Loss) after finance costs	**1,036,474**	**1,233,037**	**1,192,054**	**1,233,925**	**1,160,710**

DASHBOARD

	2019/20 Actual	2020/21 Budget	2021/22 Workings	2022/23 Forecast	2023/224 Forecast
	Actual	Yr (1)	Yr (2)	Yr (3)	Yr (4)
CPIX	5.5%	4.3%	4.3%	4.4%	4.5%
TARIFF RATE	9.9%	7.8%	7.8%	7.8%	7.8%
REVENUE	5,015,402	13,533,308	14,616,056	15,259,162	15,945,824
CAPEX - FUNDING SOURCES	**1,012,409**	**1,091,567**	**1,134,801**	**1,030,850**	**1,280,216**
Grant Funded Capex (USDG)	321,992	375,913	182,368	347,286	218,316
External (COJ)	508,476	510,332	553,795	552,564	820,000
Own funding	181,941	205,322	398,638	131,000	241,900
PROFIT	**1,036,474**	**1,231,333**	**1,192,054**	**1,233,925**	**1,160,710**
CASH POSITION	**522,681**	**672,360**	**253,281**	**419,690**	**530,374**
PAYMENT LEVEL AND COLLECTION RATE	**75.3%**	**80.4%**	**79.5%**	**80.0%**	**80.0%**
PROFIT BEFORE BAD DEBT PROVISION	4,219,985	3,961,011	4,181,265	4,285,757	4,349,874

Balance Sheet

R '000	Actual	Adjusted Budget	Proposed Budget	Indicative Years	
	2019/20	2020/21 Yr (1)	2021/22 Yr (2)	2022/23 Yr (3)	2023/24 Yr (4)
ASSETS					
NON CURRENT ASSETS	**12,198,324**	**12,891,737**	**13,620,427**	**14,241,412**	**15,090,075**
Fixed assets (net book values)	**12,196,630**	**12,891,737**	**13,620,427**	**14,241,412**	**15,090,075**
Other fixed assets					
Current assets	**4,307,573**	**4,729,519**	**4,632,074**	**5,408,177**	**6,156,020**
Service Debtors	15,947,135	16,181,596	16,104,806	16,767,005	17,594,002
Less: Provision for Bad Debts	(12,965,912)	(12,614,390)	(12,603,601)	(12,655,433)	(12,844,597)
Sundry Debtors	61,055	61,055	62,276	62,276	62,276
Inventory	63,752	63,752	67,258	67,258	67,258
Cash & equivalents (CoJ Sweeping Account)	**522,681**	**358,856**	**253,281**	**419,690**	**530,374**
Cash & equivalents (Petty Cash)	30	30	30	30	30
CoJ (Loans to Shareholder)	678,621	678,621	748,024	747,351	746,677
Other current assets (Trade Receivables with Group Companies)	211				
Total Employment of Capital	**16,505,897**	**17,621,256**	**18,252,502**	**19,649,589**	**21,246,095**
EQUITY AND LIABILITIES					
Capital and Reserves	**10,026,133**	**11,259,170**	**12,451,223**	**13,685,149**	**14,845,859**
Share capital & premium	1	1	1	1	1
Retained income	**10,026,132**	**11,259,169**	**12,451,222**	**13,685,148**	**14,845,858**
Non-Current Liabilities	**2,793,919**	**2,676,240**	**2,542,445**	**2,671,130**	**3,067,531**
Mirror Conduit External loans (Loans From Shareholder)	2,105,214	1,989,475	2,051,618	2,180,303	2,576,425

R '000	Actual	Adjusted Budget	Proposed Budget	Indicative Years	
Other External loans (Loans From Shareholder)	207,548	207,548	-	-	-
Consumer Deposits	412,895	412,895	412,895	412,895	412,895
Deferred Income	1,940		-	-	-
Fleet lease obligation (Shareholder)	6,225	6,225	6,493	6,493	6,772
Employee benefit obligations	60,096	60,096	71,439	71,439	71,439
Current liabilities	**3,685,847**	**3,685,847**	**3,258,834**	**3,293,310**	**3,332,705**
Trade creditors	1,702,754	1,702,754	1,422,847	1,457,323	1,493,523
Accruals and provisions	35,538	35,538	87,768	87,768	87,768
CoJ (Loans form Shareholder)	1,384,655	1,384,655	1,250,029	1,250,029	1,250,029
Other UAC's of CoJ (Trade Payables with group companies)	63,962	63,962	66,712	66,712	69,581
Current portion of non-current liabilities	491,652	491,652	423,878	423,878	423,878
Finance lease obligation	7,286	7,286	7,599	7,599	7,926
Total equity and liabilities	**16,505,899**	**17,621,256**	**18,252,502**	**19,649,589**	**21,246,095**