



WESTERN WATER SUPPLY AND SANITATION COMPANY

ZAMBIA WATER SUPPLY AND SANITATION IN GROWTH CENTRES PROGRAM FOR RESULTS

PERFORMANCE IMPROVEMENT ACTION PLAN (PIAP)

ZAMBIA WATER SUPPLY AND SANITATION SERVICES IN GROWTH CENTERS PROGRAM

PIAP Implementation Period: 2026 – 2030

Prepared by: Mbaza K. Chivunda | Business Development & Risk Manager

Approved by: Board of Directors, WWSSCL

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Corporate Head Office-Mezi House Along Mongu -Lusaka Road
P.O. Box 910445 | Mongu, Western Province, Zambia

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LIST OF ACRONYMS AND ABBREVIATIONS

Acronym	Meaning
AfDB	African Development Bank
AGM	Annual General Meeting
CAPEX	Capital Expenditure
CEO	Chief Executive Officer
CPI	Consumer Price Index
CSR	Corporate Social Responsibility
DLI	Disbursement Linked Indicator
ERB	Energy Regulation Board
ESG	Environmental, Social and Governance
FM	Financial Management
FMS	Financial Management Specialist
GHG	Greenhouse Gas
GIS	Geographic Information System
GRM	Grievance Redress Mechanism
HR	Human Resources
ICT	Information and Communication Technology
KPI	Key Performance Indicator
M&E	Monitoring and Evaluation
MD	Managing Director
MWDS	Ministry of Water Development and Sanitation
NRW	Non-Revenue Water
NWASCO	National Water Supply and Sanitation Council
OHS	Occupational Health and Safety

Acronym	Meaning
OHSMP	Occupational Health and Safety Management Plan
PAD	Project Appraisal Document
PIAP	Performance Improvement Action Plan
PIU	Project Implementation Unit
PforR	Programme for Results
QA	Quality Assurance
QC	Quality Control
SOP	Standard Operating Procedure
USAID	United States Agency for International Development
VWASH	Village Water Supply, Sanitation and Hygiene
WARMA	Water Resources Management Authority
WB	World Bank
WASH	Water, Sanitation and Hygiene
WWSSC	Western Water Supply and Sanitation Company Limited
ZEMA	Zambia Environmental Management Agency
ZESCO	Zambia Electricity Supply Corporation Limited
ZMW	Zambian Kwacha

DEFINITIONS OF KEY TERMS

Term	Definition
Accountability	The obligation of individuals and institutions to account for their activities, accept responsibility, and disclose results transparently.
Baseline	The initial value of an indicator against which future performance is measured.
Capacity Building	Activities aimed at strengthening the skills, competencies, systems, and resources required to improve organizational performance.
Climate Resilience	The ability of systems, infrastructure, and communities to anticipate, prepare for, respond to, and recover from climate-related shocks and stresses.
Compliance	Adherence to applicable laws, regulations, standards, policies, and contractual obligations.
Corporate Governance	The system of rules, practices, and processes by which an organization is directed and controlled.
Disbursement Linked Indicators (DLIs)	Specific performance indicators that trigger the release of funds under a Programme for Results (PforR) financing arrangement once agreed targets are achieved and verified.
Environmental and Social Risk Management	The process of identifying, assessing, mitigating, monitoring, and reporting environmental and social risks associated with programme activities.
Financial Sustainability	The ability of an organization to generate sufficient revenue and effectively manage resources to meet current and future obligations.
Greenhouse Gas (GHG) Emissions	Gases released into the atmosphere that contribute to climate change, including carbon dioxide, methane, and nitrous oxide.
Grievance Redress Mechanism (GRM)	A formal process for receiving, addressing, and resolving complaints and concerns from stakeholders.
Key Performance Indicator (KPI)	A measurable value used to assess progress towards achieving strategic objectives and targets.
Monitoring and Evaluation (M&E)	A systematic process of collecting, analyzing, and using information to track progress, assess performance, and inform decision-making.
Non-Revenue Water (NRW)	Water that is produced and supplied into the distribution system but is not billed due to physical losses, commercial losses, or unbilled authorized consumption.
Occupational Health and Safety (OHS)	Policies, procedures, and practices aimed at protecting workers and other persons from work-related injuries, illnesses, and hazards.
Performance Improvement Action Plan (PIAP)	A structured plan outlining interventions, targets, resources, timelines, and responsibilities required to improve organizational performance and achieve desired outcomes.
Programme for Results (PforR)	A World Bank financing instrument that links the disbursement of funds directly to the achievement of verified programme results.
Project Implementation Unit (PIU)	A dedicated team responsible for coordinating, managing, monitoring, and reporting on programme implementation activities.
Quality Assurance (QA)	Planned and systematic activities implemented to provide confidence that products, services, or processes meet specified requirements and standards.

Term	Definition
Quality Control (QC)	Operational techniques and activities used to verify that outputs meet required quality standards.
Results Framework	A management tool that links programme objectives, outputs, outcomes, indicators, targets, and means of verification.
Risk Management	The systematic identification, assessment, mitigation, monitoring, and reporting of risks that may affect programme objectives.
Stakeholder	Any individual, group, institution, or organization that can affect or be affected by the programme or its outcomes.
Sustainability	The ability to maintain programme benefits, services, and outcomes over the long term without compromising future needs.
Value for Money (VfM)	The optimal use of resources to achieve intended outcomes efficiently, effectively, economically, and equitably.
Water Security	Reliable access to sufficient quantities of safe water to support livelihoods, human well-being, and socio-economic development.
Water Safety Planning	A comprehensive risk assessment and risk management approach that ensures the safety of drinking water from source to consumer.

1. GENERAL INFORMATION

Table 1: General Information

Field	Details
Utility Name	Western Water Supply and Sanitation Company Limited (WWSSCL)
Date of PIAP Preparation	30 January 2026
PIAP Period	2026 – 2030
Prepared By	Mbaza K. Chivunda
Designation	Business Development & Risk Manager
Department	Business Development & Risk Management
Approved By	Board of Directors, WWSSCL
Regulatory Oversight	National Water Supply and Sanitation Council (NWASCO)
Public Disclosure Date	30 June 2026

2. STRATEGIC OBJECTIVE OF THE PIAP

This Performance Improvement Action Plan (PIAP) has been developed through a systematic, evidence-based, and data-driven process aimed at addressing performance gaps and strengthening Western Water Supply and Sanitation Company Limited's (WWSSCL) ability to deliver sustainable, efficient, and customer-focused water and sanitation services. The PIAP serves as a practical and results-oriented roadmap to improve compliance with regulatory requirements, enhance operational performance, and align the utility with future-ready standards.

Evidence-Based and Data-Driven Approach

The PIAP was prepared using verified operational, financial, and service delivery data drawn from internal records, regulatory submissions, and performance reports. This approach ensured that identified challenges, gaps, and corrective actions are based on actual performance trends rather than assumptions. Quantitative indicators and qualitative assessments were jointly applied to identify root causes of underperformance and to prioritise actions with the highest impact on service delivery, financial sustainability, and regulatory compliance.

Review of Strategic, Operational, and Performance Frameworks

A comprehensive review of WWSSCL's strategic, operational, and performance frameworks was undertaken to assess coherence between planning instruments and actual performance outcomes. This ensured that the PIAP is firmly anchored within the utility's existing institutional and operational context.

Gap Analysis Against Regulatory and Sector Expectations

Current performance was systematically compared against:

- Regulatory requirements and performance standards
- Approved strategic targets
- Sector best practices, including Utility of the Future (UoF) benchmarks

This gap analysis enabled the identification of performance shortfalls, compliance risks, and systemic weaknesses affecting service delivery, financial health, and operational efficiency.

Review of the Impact Theory of Change (IToC)

As part of the PIAP development process, WWSSCL's Impact Theory of Change (IToC) was reviewed to assess the effectiveness of logical linkages between inputs, activities, outputs, outcomes, and intended long-term impacts. The review:

- Assessed intended long-term impacts in relation to service coverage, quality, sustainability, and customer satisfaction
- Examined assumptions underpinning causal pathways linking resources and activities to performance outcomes
- Identified weaknesses in causal linkages that may constrain performance
- Highlighted areas where corrective actions are required to realign implementation with intended impacts

Review of the Utility of the Future (UoF) Framework

The PIAP development process incorporated a structured review of Western Water's performance against the **Utility of the Future (UoF) Framework**, which defines characteristics of resilient, financially sustainable, and customer-centric utilities.

Performance was benchmarked against key UoF pillars:

- Governance and leadership,
- Financial sustainability,
- Service delivery and customer focus, and
- Operational efficiency and resilience.

This benchmarking exercise identified gaps between Western Water's current performance status and future-ready utility standards. UoF-aligned improvement actions were deliberately incorporated into the PIAP to ensure that short- and medium-term interventions contribute to long-term institutional transformation and resilience.

2.1 SWOT Analysis – General Perspective

SWOT Analysis – General Perspective on Western Water Supply and Sanitation in Relation to PIAP

A SWOT Analysis of water supply and sanitation services in Western Province provides a strategic lens through which the Company can understand its current performance and define targeted interventions under the Performance Improvement Action Plans (PIAPs). Given the unique geographical, socio-economic, and climatic conditions of the province, this analysis is essential for ensuring that PIAPs is both context-specific and results-oriented.

From a general perspective, the SWOT analysis assesses internal operational realities alongside external environmental factors that influence service delivery across districts such as Mongu, Kalabo, Nalolo, and surrounding rural schemes. The insights derived form the foundation for identifying Desired Performance Areas and prioritizing investments under the PIAP framework.

i. Strengths (Internal Advantages)

The water utility in Western Province possesses several inherent strengths that support service delivery and provide a strong base for improvement:

- Established institutional framework with a defined rural mandate
- Existing water supply infrastructure in key urban and peri-urban centers
- Ongoing support from Government and cooperating partners (e.g., results-based financing programs)
- Growing experience in managing both urban and rural water schemes
- Availability of baseline data on key performance indicators such as service coverage and customer satisfaction

Link to PIAP:

These strengths provide a platform for scaling up successful interventions, improving operational efficiency, and expanding service coverage. PIAPs can leverage these strengths to accelerate implementation of priority projects and enhance overall performance.

ii. Weaknesses (Internal Challenges)

Despite progress, several internal challenges affect the efficiency and reliability of water supply and sanitation services:

- Intermittent water supply and limited hours of service in some areas
- Aging and inadequate infrastructure, especially in rural schemes
- High levels of non-revenue water (NRW) due to leakages and illegal connections
- Limited financial capacity and cost recovery challenges
- Weak customer complaint management systems in certain service areas
- Inadequate sanitation infrastructure and faecal sludge management systems

Link to PIAP:

These weaknesses directly inform the core focus areas of the PIAPs. Interventions such as infrastructure rehabilitation, NRW reduction programs, improved billing and collection systems, and enhanced customer service mechanisms are prioritized to address these gaps.

iii. Opportunities (External Enablers)

The external environment presents several opportunities that can be harnessed to improve service delivery:

- Increased Government focus on rural water supply and sanitation
- Availability of funding through programs such as World Bank-supported initiatives
- Technological innovations (e.g., digital metering, remote monitoring systems)
- Potential for public-private partnerships and community-based management models
- Growing demand for improved water and sanitation services

Link to PIAP:

Opportunities enable the Company to set ambitious yet achievable targets within the PIAPs. For example, leveraging funding opportunities can support major infrastructure upgrades, while technology adoption can improve efficiency and data management.

iv. Threats (External Risks)

The sector also faces external risks that may hinder progress if not properly managed:

- Climate variability and flooding, particularly in low-lying areas like the Barotse floodplain
- Rapid population growth increasing demand for services
- High poverty levels affecting affordability and revenue collection
- Rising operational costs (energy, chemicals, maintenance)
- Geographic challenges affecting accessibility and infrastructure development

Link to PIAP:

PIAPs must incorporate mitigation strategies to address these threats. This includes designing climate-resilient infrastructure, strengthening financial sustainability measures, and adopting cost-effective technologies suitable for the local context.

v. Strategic Alignment with PIAP

The SWOT analysis provides a comprehensive understanding of the water supply and sanitation landscape in Western Province. It ensures that the PIAPs are:

- **Evidence-based** – grounded in real operational data and field realities
- **Targeted** – focused on critical performance gaps and priority needs
- **Strategic** – aligned with both internal capacities and external opportunities
- **Resilient** – responsive to risks and challenges in the operating environment

By directly linking SWOT findings to Desired Performance Areas, the Company ensures that its Performance Improvement Action Plans are not only well-informed but also practical, impactful, and sustainable. This alignment ultimately supports improved service delivery, enhanced customer satisfaction, and long-term sector development in Western Province.

Table 2: SWOT Analysis (Source :WWSSCL Strategic plan 2024 to 2028)

	STRENGTHS ✓	WEAKNESSES ✗
INTERNAL FACTORS	<ul style="list-style-type: none"> • Good corporate governance • Business monopoly • Qualified and competent workforce • Abundant quality raw water • Large customer and revenue base 	<ul style="list-style-type: none"> • High Non-Revenue Water (51%) • Low economic activity in Western Province • Dilapidated and obsolete infrastructure • Low O&M cost coverage (63.3%) • Outdated customer database • Low gender inclusion (21%)
	OPPORTUNITIES +	THREATS ⚠
EXTERNAL FACTORS	<ul style="list-style-type: none"> • High demand in newly created districts • Extension of operational mandate • Government and partner goodwill • Regulatory framework support • Technological innovations (digital metering, SCADA) 	<ul style="list-style-type: none"> • Climate change and flooding (Barotse floodplain) • Rapid population growth • High poverty affecting revenue collection • Rising operational costs • Political interference • Over-regulation

2.1.1 Relationship Between SWOT Analysis and Desired Performance Areas

The relationship between a SWOT Analysis (Strengths, Weaknesses, Opportunities, and Threats) and Desired Performance Areas is fundamental to strategic planning and the development of effective Performance Improvement Action Plans (PIAPs). A SWOT analysis provides a structured, evidence-based assessment of the institution's current position, while Desired Performance Areas define the specific results the organisation aims to achieve. Together, they ensure that improvement efforts are targeted, relevant, and results-oriented.

SWOT analysis serves as the diagnostic foundation upon which Desired Performance Areas are established. By systematically identifying internal strengths and weaknesses, as well as external

opportunities and threats, the Company gains a clear understanding of its operational environment. Strengths highlight areas where the Company is already performing well such as reliable water production capacity or strong revenue collection systems and these can be leveraged or scaled up within the Desired Performance Areas. Weaknesses, on the other hand, such as high non-revenue water, inadequate infrastructure, or delayed complaint resolution, directly inform priority areas that require urgent improvement.

Desired Performance Areas are therefore derived from the key findings of the SWOT analysis. For instance, if the SWOT analysis reveals poor service reliability and frequent supply interruptions as major weaknesses, then improving hours of supply becomes a defined Desired Performance Area. Similarly, if customer dissatisfaction and weak feedback mechanisms are identified, then enhancing customer engagement and complaint resolution systems becomes a priority performance focus.

Opportunities identified through the SWOT analysis such as availability of funding, technological innovations, or partnerships help shape ambitious yet achievable performance targets. These opportunities enable the Company to expand service coverage, modernise systems, or improve efficiency. Conversely, threats such as climate variability, rising operational costs, or aging infrastructure highlight risks that must be mitigated within the Desired Performance Areas to ensure sustainability and resilience.

In this way, SWOT analysis ensures that Desired Performance Areas are not selected arbitrarily, but are grounded in real operational challenges and strategic opportunities. It creates a logical link between current performance gaps and future targets. This alignment enhances the credibility of the PIAPs and ensures that resources are directed toward interventions with the highest impact.

Furthermore, the relationship between SWOT findings and Desired Performance Areas supports performance monitoring and evaluation. Each Desired Performance Area is linked to specific indicators and targets, which are tracked over time to measure progress. This creates a feedback loop where performance results can be reassessed against the original SWOT analysis, allowing for continuous learning and adjustment of strategies.

SWOT analysis and Desired Performance Areas are interdependent components of a results-based management framework. SWOT provides the analytical basis for identifying priorities, while Desired Performance Areas translate those priorities into actionable and measurable outcomes. This relationship ensures that the Company's improvement efforts are strategic, focused, and aligned with both internal needs and external demands.

Internal Factors vs KPI Performance — Strengths

Table 3: Strengths – KPIs to Sustain and Leverage (Internal Factors)

Strength	Linked KPI Area	Baseline	Strategic Implication
Good corporate governance	Collection Efficiency	100%	Maintain strong financial discipline and accountability systems
Business monopoly	Billing	ZMW23.2 million	Opportunity to expand revenue through increased connections
Qualified and competent workforce	Customer Complaint Resolution	88%	Improve service quality to reach ≥95%
Abundant quality raw water	Water Service Coverage	46%	Expand supply to underserved areas
Large customer & revenue base	Cost Coverage	63.3%	Improve revenue optimisation and cost recovery

Weaknesses → KPIs Requiring Improvement**Table 4: Weaknesses – KPIs Requiring Improvement**

Weakness	Linked KPI Area	Baseline	Desired Performance Focus
High Non-Revenue Water	NRW	51%	Reduce to acceptable levels ($\leq 35\%$) through leak detection and metering
Dilapidated infrastructure	NRW / Energy Use	51% / 1.71	Rehabilitate systems to reduce losses and energy costs
Low O&M cost coverage	Cost Coverage	63.3%	Improve operational efficiency and cost recovery
Low economic activity (Western Province)	Billing	ZMW23.2M	Enhance revenue collection strategies and expand customer base
Outdated customer database	Billing / Collection Efficiency	100% (at risk)	Improve data accuracy to sustain performance
Low gender inclusion	Gender Inclusive	21%	Increase gender representation to $\geq 30\%$

2.1.2 External Factors vs KPI Performance**Table 5: Opportunities – KPIs for Growth and Expansion (External Factors)**

Opportunity	Linked KPI Area	Baseline	Strategic Focus
High demand in new districts	Water Coverage	46%	Expand infrastructure and increase access
Extension of operational mandate	Billing / Coverage	K23.2M	Increase revenue and service footprint
Government & partner goodwill	Infrastructure / NRW	51% NRW	Leverage funding for rehabilitation and expansion
Regulatory framework support	Cost Coverage	63.3%	Improve tariff structures and financial sustainability

Table 6: Threats – KPIs at Risk

Threat	Affected KPI Area	Baseline	Mitigation Focus
Climate change	Water availability / Energy Use	1.71	Invest in resilient and energy-efficient systems
Dilapidated infrastructure	NRW / Service Coverage	51% / 46%	Prioritise rehabilitation programmes
Political interference	Cost Coverage / Efficiency	63.3%	Strengthen governance and autonomy
Over-regulation	Financial performance	63.3%	Improve compliance while advocating for flexibility

2.1.3 Integrated KPI Alignment

Table 7: Integrated KPI Alignment

KPI Area	Baseline	SWOT Insight	Desired Strategic Direction
Non-Revenue Water	51%	Major weakness	Aggressive NRW reduction strategy
Energy Use	1.71 kWh/m ³	Infrastructure inefficiency	Improve energy efficiency
Collection Efficiency	100%	Key strength	Sustain performance
Billing	ZMW23.2M	Growth opportunity	Increase through expansion & metering
Water Coverage	46%	Low but expandable	Increase access in growth areas
Sanitation Coverage	62%	Below target	Expand to 90% by 2030
Gender Inclusion	21%	Weakness	Strengthen inclusion policies
Complaint Resolution	69%	Moderate strength	Improve to excellent levels
Cost Coverage	63.3%	Weak sustainability	Improve revenue vs cost balance

2.1.4 Conclusion

The relationship between SWOT and KPIs shows that:

- **Operational inefficiencies (high NRW, aging infrastructure)** are the biggest constraints to performance.
- **Financial performance (cost coverage)** is directly affected by both internal inefficiencies and external economic conditions.
- **Growth opportunities (new districts, government support)** can significantly improve **coverage, billing, and sustainability**.

Strong areas (collection efficiency, sanitation coverage) should be maintained while scaling improvements in weaker areas.

2.2 Strategic Action

To improve performance, the utility intends to:

- Reduce NRW and rehabilitate infrastructure (highest impact)
- Expand service coverage and customer base
- Improve financial sustainability and cost coverage
- Leverage partnerships and regulatory support
- Strengthen gender inclusion and customer service

2.3 Review of the Strategic Plan

The Strategic Plan was reviewed to assess the extent to which strategic objectives are being translated into operational results. This review:

- Assessed alignment between strategic objectives and actual performance outcomes;
- Reviewed the relevance, clarity, and effectiveness of key performance indicators (KPIs) and targets;
- Identified strategic objectives that are not being met or are at risk; and
- Ensured that all PIAP actions directly support and reinforce approved strategic priorities.

This alignment guarantees that the PIAP functions as an implementation support tool for the Strategic Plan rather than a parallel planning instrument.

Review of Supporting Operational Documents

To ensure operational realism and feasibility, the PIAP was informed by a detailed review of key supporting documents, including:

- Annual work plans and budgets,
- Operations and maintenance procedures,
- Asset management plans and Non-Revenue Water (NRW) reports,
- Billing, revenue collection, and customer service records, and
- Human resource and capacity development plans.

This review helped identify operational inefficiencies, resource constraints, capacity gaps, and systemic issues affecting day-to-day performance.

Stakeholder mapping and institutional arrangements

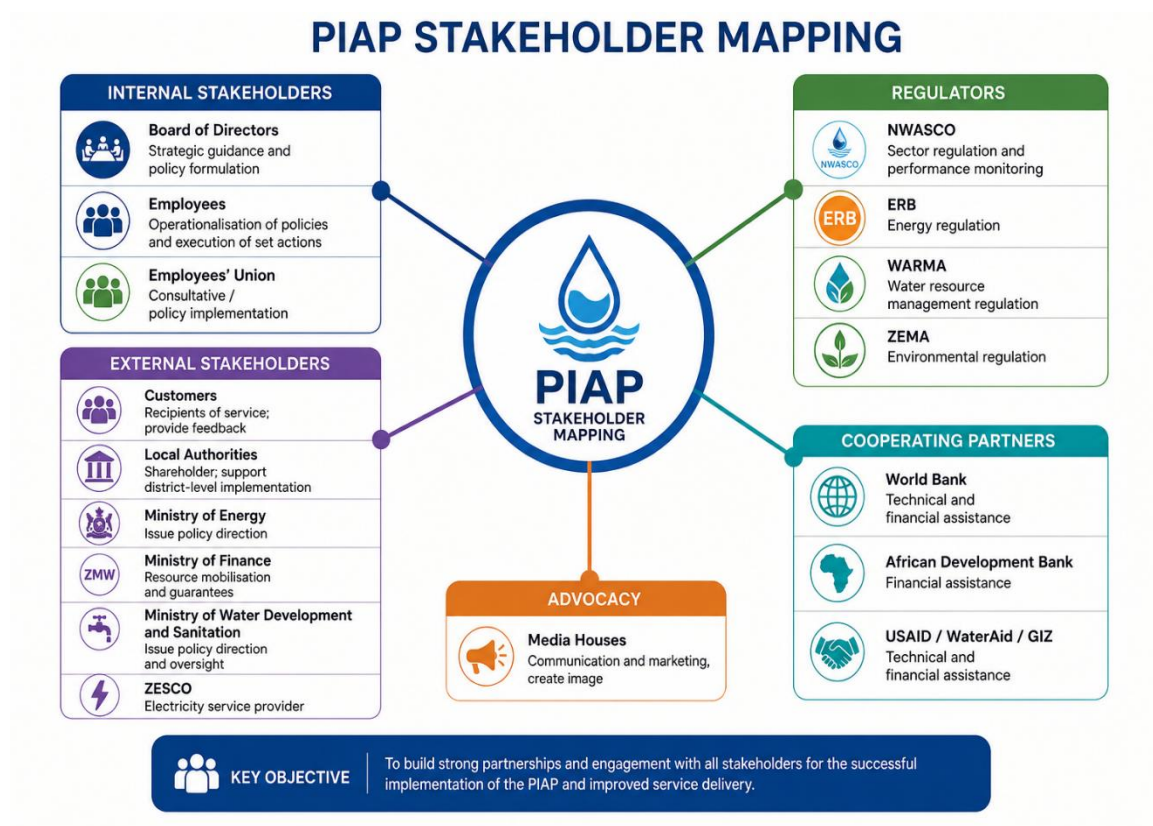
2.4 Stakeholder Framework

Western Water Supply and Sanitation Company Limited (WWSSCL) operates within a multi-stakeholder institutional framework that ensures effective service delivery, regulation, financing, and accountability. This framework is critical for the successful implementation of the Performance Improvement Action Plan (PIAP).

2.4.1 Key Stakeholders and Their Roles

Key stakeholders include:

- **NWASCO (Regulator):** Sets performance standards and KPIs, approves tariffs and Service Level Guarantees, monitors utility performance, publishes benchmarking reports
- **MWDS (Line Ministry):** Develops national policies and sector strategies, provides strategic direction and oversight, facilitates sector financing and investment
- **Local Authorities:** Facilitate local service delivery and community engagement, support land allocation and infrastructure development
- **Community Structures:** Represent community interests, support operation and maintenance in rural schemes, promote ownership and sustainability
- **Private Sector Operators:** Provide technical services, support PPP arrangements and outsourcing, implement infrastructure projects
- **Development Partners:** World Bank, NGOs, Cooperating Partners – provide funding, technical assistance, capacity building, and climate resilience support

Table 8: Stakeholder Analysis and Mapping**Table 9: Stakeholder Link to PIAP Implementation**

Stakeholder	Role in PIAP Implementation
NWASCO	Sets targets; monitors KPI performance
MWDS	Provides policy direction and resource mobilisation
Local Authorities	Facilitate implementation at district level
Community Structures	Support uptake, compliance, and sustainability
Private Operators	Execute technical and infrastructure works
Development Partners	Provide funding and technical support

2.5 Stakeholder Engagement and Validation

The PIAP was developed through an inclusive stakeholder engagement process to ensure ownership, practicality, and institutional buy-in. Consultations were held with:

- Senior management,
- Departmental heads,
- Station managers,
- Operational and technical teams.

- Barotse Royal Establishment

These engagements provided critical insights from frontline implementers, validated identified performance gaps, and refined proposed corrective actions. Consensus was built on priority improvement areas, ensuring that the PIAP reflects shared accountability and collective commitment to performance improvement. Through this structured and participatory process, Western Water's current performance was rigorously assessed against regulatory requirements, strategic objectives, and future utility benchmarks. Root causes of underperformance were identified, and priority gaps were ranked based on impact and urgency.

The resulting PIAP therefore represents a **credible, actionable, and aligned performance improvement roadmap**, designed to strengthen compliance, enhance service delivery, and position Western Water as a resilient and future-ready utility. Overall, this PIAP represents a focused, results-oriented, and accountable framework for performance improvement, providing Western Water Supply and Sanitation with a practical tool to address current challenges, meet regulatory and strategic obligations, and progressively transition towards a resilient and high-performing utility

3. SUMMARY OF KEY INDICATORS AND CONTRIBUTION TO OPERATIONAL COST COVERAGE

Achieving sustainable Operational Cost Coverage requires a balanced approach that strengthens technical efficiency, commercial performance, cost control, governance, and social sustainability. The following indicators are mutually reinforcing and collectively drive improved revenue generation, reduced operational expenditure, and enhanced service reliability.

A. Hydraulic Modelling

Hydraulic modelling enables optimised network design, pressure management, and system balancing. By identifying bottlenecks, leak-prone zones, and inefficiencies, WWSSCL can reduce water losses, energy wastage, and unplanned maintenance costs, directly lowering operating expenses while improving service reliability.

B. Non-Revenue Water (NRW) Reduction

NRW reduction is a cornerstone indicator for OCCR improvement. Lower physical and commercial losses translate into higher billable volumes without additional production costs. Improved metering, leak detection, illegal connection control, and billing accuracy increase revenues and improve cash flow.

C. Energy Efficiency Management Plan

Energy costs constitute approximately 20.8% (ZMW 6M per annum) of total operational expenditure. Implementing energy audits, pump optimisation, demand-based pumping schedules, and energy-efficient equipment reduces power consumption and utility bills, directly improving the O&M cost-to-revenue ratio.

D. Digitalisation of Company Business Processes

Digital systems enhance efficiency in billing, revenue collection, asset management, procurement, inventory control, and reporting. Automation reduces errors, fraud, and delays while improving decision-making, thereby reducing costs and enhancing revenue assurance.

E. Water Supply Service Coverage Extension

Expanding water coverage increases the customer base and billed connections, especially in growth centres. Increased volumes sold spread fixed operational costs over a larger revenue base, improving cost recovery while supporting inclusive service delivery.

F. Operation and Maintenance Cost Coverage

This indicator ensures tariffs, revenues, and efficiency gains are aligned with actual O&M requirements. Cost-reflective budgeting, preventive maintenance, and expenditure controls ensure operational costs are sustainably met from internally generated revenues.

H. Comprehensive Digital Online Staff Performance Management System

Inclusive service planning increases uptake, willingness to pay, and community ownership. Gender-responsive and socially inclusive approaches reduce vandalism, improve customer satisfaction, and enhance revenue sustainability.

I. Climate Adaptation and Resilience

Inclusive service planning increases uptake, willingness to pay, and community ownership. Gender-responsive and socially inclusive approaches reduce vandalism, improve customer satisfaction, and enhance revenue sustainability.

J. Gender Equity and Social Inclusion (GESI)

Inclusive service planning increases uptake, willingness to pay, and community ownership. Gender-responsive and socially inclusive approaches reduce vandalism, improve customer satisfaction, and enhance revenue sustainability.

K. Customer Relations

Effective customer engagement improves billing compliance, complaint resolution, and trust in service provision. High customer satisfaction leads to improved payment behaviours, reduced disputes, and stronger revenue collection efficiency.

E. Sanitation Coverage

Expanding sanitation services creates additional revenue streams through user fees, desludging services, and sanitation tariffs. Integrated water and sanitation service provision improves overall financial viability and cost recovery.

F. Improvement of Commercial Processes

Enhanced customer data management, metering accuracy, billing efficiency, revenue collection, and credit control significantly improve revenue performance. Strong commercial systems ensure that water produced and services rendered are fully and accurately monetized.

G. Increasing Water Production Capacity through Infrastructure Rehabilitation

Rehabilitation of treatment plants, boreholes, pumping stations, and storage infrastructure improves reliability and efficiency. Increased production capacity, when matched with NRW control and commercial efficiency, enables higher sales volumes without proportionate increases in operating costs.

Overall Contribution to Operational Cost Coverage

Collectively, these indicators:

- **Increase revenues** through expanded coverage, improved billing, and enhanced commercial efficiency
- **Reduce operational costs** through energy efficiency, NRW reduction, digitalization, and preventive maintenance
- **Enhance sustainability** through climate resilience, institutional strengthening, and inclusive service delivery

Together, they form a results-oriented pathway for **Western Water Supply and Sanitation** to achieve and sustain **100%+ Operational Cost Coverage Ratio**, in line with **Zambia's PforR framework and NWASCO performance expectations**.

4. KEY PERFORMANCE INDICATORS (KPIs)

Note: The baseline figures below are as at year-end 2025. Year 1 refers to the 2026 financial year. * Water service coverage target shows a temporary adjustment in Year 1 as data reconciliation is completed before expansion resumes.

Table 10: Key Performance Indicators (KPIs) – 2026 to 2030

KPI Area	Baseline (2025)	Year 1 (2026)	Year 2 (2027)	Year 3 (2028)	Year 4 (2029)	Year 5 (2030)	Verification Source
Non-Revenue Water (%)	51%	51%	48%	44%	40%	36%	NRW monthly/quarterly reports
Energy Use (kWh/m ³)	1.71	1.60 (-6%)	1.40 (-18%)	1.20 (-30%)	1.00 (-42%)	0.90 (-47%)	District quarterly reports
Revenue Collection (K'mil)	19.5	25.5	30	34	39	46	Quarterly reports
Billing (K'mil)	19.5	28.1	32	36	40	46	Quarterly reports
Water Service Coverage (%)	46%	40%*	45%	50%	55%	60%	Quarterly reports
Sanitation Coverage (%)	62%	70%	78%	80%	85%	90%	Quarterly reports
Gender Inclusion (%)	21%	22%	24%	26%	28%	30%	Approved action plan
Customer Complaint Resolution (%)	69%	88%	90%	93%	95%	96%	Monthly/annual reports
Cost Coverage – non-tariff (%)	53%	66%	71%	74%	76%	78.5%	Audited Financials
Cost Coverage – tariff-influenced (%)	53%	87.64%	93.47%	97.34%	100.54%	102.80%	Audited Financials

Assumptions

The table below outlines the key assumptions and strategic interventions for achieving the multi-year performance targets for the period 2026 to 2030, using 2025 as the baseline year for Western Water Supply and Sanitation Company Limited. The targets are aligned with the objectives of the Zambia Water Supply and Sanitation Services in Growth Centres Program-for-Results (ZWSSGC-PforR) and are intended to support the utility's transition towards improved operational efficiency, financial sustainability, and enhanced service delivery across its service areas.

Achievement of the projected targets is premised on successful implementation of planned infrastructure rehabilitation and expansion projects, reduction in Non-Revenue Water, improved energy efficiency, strengthened billing and revenue collection systems, increased customer connectivity, digitalisation of utility operations, and implementation of approved tariff adjustments. The assumptions further depend on sustained institutional commitment, adequate financing support, effective stakeholder collaboration, and continuous monitoring of performance indicators to ensure progressive improvement in water supply and sanitation services within the company's operational jurisdiction.

The achievement of the OCCR target is affected by the low tariff as noted from the gap between the average tariff and the cost per cubic meter which for Western WSC is K6.63 and K18.88 respectively. The OCCR is further affected by the low revenue base for the CU which translates into low billing. Therefore, the need to increase the tariffs and also to increase the number of connections is fundamental for the sustainability of the CU.

Table 11. Indicators Assumptions

Table 11: Indicators Assumptions														
KPI Area	Indicator Description	Baseline 2025	Baseline Justification/Assumption	2026 Target	Assumptions for Achieving 2026 Target	2027 Target	Assumptions for Achieving 2027 Target	2028 Target	Assumptions for Achieving 2028 Target	2029 Target	Assumptions for Achieving 2029 Target	2030 Target	KPI Area	Indicator Description
Non-Revenue Water (%)	Percentage of water produced but not generating revenue due to physical losses, illegal connections, and metering inaccuracies.	51%	High NRW attributed to aging infrastructure, leakages, inadequate metering, and weak commercial controls.	51%	Maintain current levels while undertaking NRW assessments, DMA establishment, leak detection, and customer data validation.	48%	Roll out leak repair programs, customer metering improvements, and illegal connection regularization.	44%	Implement pressure management, network rehabilitation, and bulk metering systems.	40%	Strengthen active leakage control and district monitoring systems.	35%	Non-Revenue Water (%)	Percentage of water produced but not generating revenue due to physical losses, illegal connections, and metering inaccuracies.
Energy Use (kWh/m³)	Amount of energy consumed per cubic meter of water produced and distributed.	1.71	High energy intensity caused by inefficient pumping systems, aging equipment, and operational inefficiencies.	1.60	Conduct energy audits, optimize pump scheduling, and improve preventive maintenance.	1.40	Replace inefficient pumps and improve operational efficiency through automation.	1.20	Introduce energy-efficient technologies and renewable energy supplementation where feasible.	1.00	Strengthen energy management systems and infrastructure optimization.	0.90	Energy Use (kWh/m³)	Amount of energy consumed per cubic meter of water produced and distributed.
Revenue Collection & Financial Sustainability	Total Annual Revenue Collection (ZMW)	K19.5 million	Baseline revenue based on existing customer base, current billing efficiency, high non-revenue water levels, limited-service coverage, and operational inefficiencies under existing tariff structure.	K25.5 million	Revenue increase achieved through improved billing and collection efficiency, reduction in illegal connections, increased metering accuracy, customer database clean-up, and expansion of service connections without tariff increment.	K30Million	Growth driven by further NRW reduction, increased water production reliability, improved customer payment compliance, additional customer connections in peri-urban and growth centers, and enhanced debt recovery systems.	K34 Million	Revenue growth supported by expansion of distribution networks, improved operational uptime, strengthened prepaid/postpaid metering systems, reduction in commercial losses, and improved service continuity attracting higher consumption.	K39 Million	Increased revenues achieved through sustained customer growth, improved water availability, enhanced sanitation service billing, digital revenue management systems, and operational efficiencies reducing unbilled water volumes.	K46 Million	Revenue target achieved through full commercialization of new service areas, significant reduction in NRW, improved Revenue collection, increased active customer base, enhanced metering coverage, optimized production efficiency, and improved customer confidence in service delivery.	Revenue Growth & Financial Sustainability
Billing (ZMW)	Total annual billing revenue generated from water and sanitation services.	K19.5M	Revenue base constrained by low connectivity, NRW, and billing inefficiencies.	K28.1M	Improve billing systems, clean customer databases, and implement tariff adjustments.	K32M	Increase customer connections and improve metering accuracy.	K36M	Expand service coverage and reduce commercial losses.	K40M	Strengthen revenue assurance systems and improve operational efficiency.	K46M	Billing (ZMW)	Total annual billing revenue generated from water and sanitation services.
Water Service Coverage (%)	Percentage of population with access to safe and reliable water supply services.	46%	Existing infrastructure limitations and underserved peri-urban/rural areas constrain service coverage.	40%*	Rebasing and verification of actual service coverage may temporarily lower reported coverage levels.	45%	Expand network infrastructure and increase household connections.	50%	Continue rehabilitation and extension of water supply systems.	55%	Increase investment in underserved communities and improve reliability of supply.	60%	Water Service Coverage (%)	Percentage of population with access to safe and reliable water supply services.
Sanitation Coverage (%)	Percentage of population with access to improved sanitation services.	62%	Limited sewer networks and inadequate sanitation facilities in some operational areas.	70%	Completion of ongoing sanitation infrastructure projects and intensified sanitation campaigns.	78%	Increase sanitation access through household connections and improved facilities.	80%	Expand sewer systems and strengthen community sanitation awareness programs.	85%	Improve fecal sludge management systems and sanitation infrastructure investments.	90%	Sanitation Coverage (%)	Percentage of population with access to improved sanitation services.

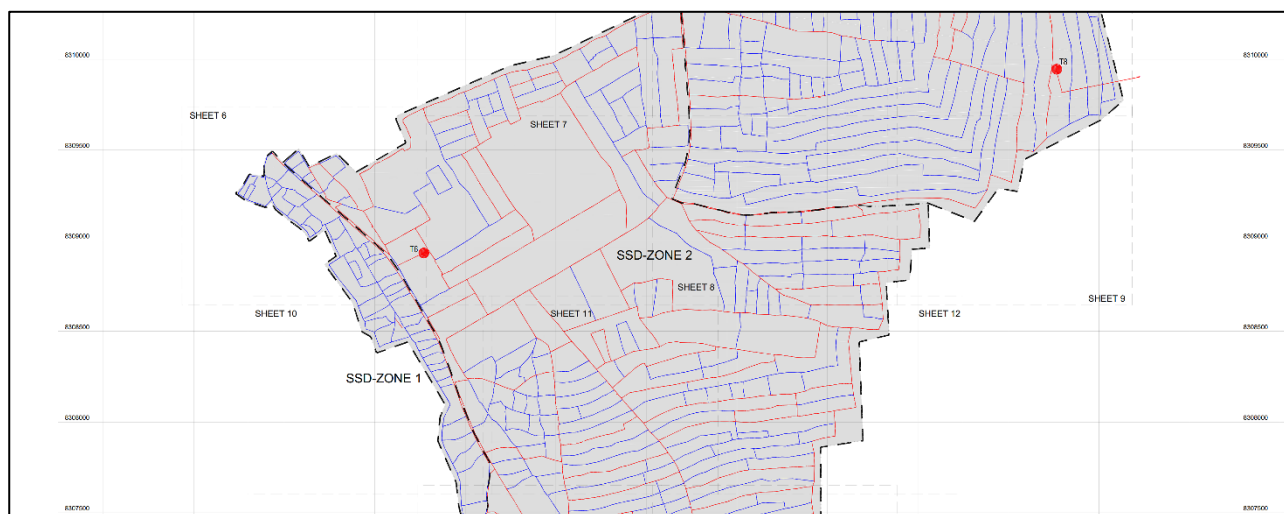
KPI Area	Indicator Description	Baseline 2025	Baseline Justification/Assumption	2026 Target	Assumptions for Achieving 2026 Target	2027 Target	Assumptions for Achieving 2027 Target	2028 Target	Assumptions for Achieving 2028 Target	2029 Target	Assumptions for Achieving 2029 Target	2030 Target	KPI Area	Indicator Description
Gender Inclusion (%)	Percentage of women participating in employment, technical roles, leadership, and decision-making structures.	21%	Gender imbalance exists in technical and leadership positions within the utility.	22%	Implement approved Gender Action Plan and targeted recruitment initiatives.	24%	Promote female participation in technical and supervisory roles through training and mentorship.	26%	Strengthen institutional gender mainstreaming and leadership development programs.	28%	Enhance equal opportunity policies and workplace inclusion initiatives.	30%	Gender Inclusion (%)	Percentage of women participating in employment, technical roles, leadership, and decision-making structures.
Customer Complaint Resolution (%)	Percentage of customer complaints resolved within established service standards.	69%	Existing customer care systems are constrained by delayed response mechanisms and inadequate tracking systems.	88%	Improve customer care coordination and establish complaint tracking mechanisms.	90%	Enhance customer response systems and staff accountability.	93%	Introduce digital customer complaint management platforms.	95%	Strengthen field response teams and service monitoring systems.	97%	Customer Complaint Resolution (%)	Percentage of customer complaints resolved within established service standards.
Cost Coverage – non-tariff (%)	Percentage of operational costs recovered excluding tariff-related interventions.	53%	Operational inefficiencies, high NRW, and elevated energy/staff costs affect sustainability.	66%	Improve operational efficiency through NRW reduction, energy optimization, and staff cost management.	71%	Enhance productivity and operational cost controls.	74%	Reduce inefficiencies through digitalization and process optimization.	76%	Strengthen financial management and cost containment measures.	78.5%	Cost Coverage – non-tariff (%)	Percentage of operational costs recovered excluding tariff-related interventions.
Cost Coverage – tariff-influenced (%)	Percentage of operational costs recovered considering tariff adjustments and efficiency improvements.	53%	Existing tariffs are below cost-reflective levels, limiting financial sustainability.	87.64%	Implement approved tariff adjustments and improve operational efficiency.	93.47%	Strengthen billing, collection, and expenditure management systems.	97.34%	Continue tariff rationalization and efficiency improvement measures.	100.54%	Achieve full operational cost recovery through tariff alignment and cost optimization.	105%	Cost Coverage – tariff-influenced (%)	Percentage of operational costs recovered considering tariff adjustments and efficiency improvements.
KPI Area	Indicator Description	Baseline 2025	Baseline Justification/Assumption	2026 Target	Assumptions for Achieving 2026 Target	2027 Target	Assumptions for Achieving 2027 Target	2028 Target	Assumptions for Achieving 2028 Target	2029 Target	Assumptions for Achieving 2029 Target	2030 Target	KPI Area	Indicator Description
Non-Revenue Water (%)	Percentage of water produced but not generating revenue due to physical losses, illegal connections, and metering inaccuracies.	51%	High NRW attributed to aging infrastructure, leakages, inadequate metering, and weak commercial controls.	51%	Maintain current levels while undertaking NRW assessments, DMA establishment, leak detection, and customer data validation.	48%	Roll out leak repair programs, customer metering improvements, and illegal connection regularization.	44%	Implement pressure management, network rehabilitation, and bulk metering systems.	40%	Strengthen active leakage control and district monitoring systems.	35%	Non-Revenue Water (%)	Percentage of water produced but not generating revenue due to physical losses, illegal connections, and metering inaccuracies.
Energy Use (kWh/m³)	Amount of energy consumed per cubic meter of water produced and distributed.	1.71	High energy intensity caused by inefficient pumping systems, aging equipment, and operational inefficiencies.	1.60	Conduct energy audits, optimize pump scheduling, and improve preventive maintenance.	1.40	Replace inefficient pumps and improve operational efficiency through automation.	1.20	Introduce energy-efficient technologies and renewable energy supplementation where feasible.	1.00	Strengthen energy management systems and infrastructure optimization.	0.90	Energy Use (kWh/m³)	Amount of energy consumed per cubic meter of water produced and distributed.
Billing (ZMW)	Total annual billing revenue generated from water and sanitation services.	K19.5M	Revenue base constrained by low connectivity, NRW, and billing inefficiencies.	K28.1M	Improve billing systems, clean customer databases, and implement tariff adjustments.	K32M	Increase customer connections and improve metering accuracy.	K36M	Expand service coverage and reduce commercial losses.	K40M	Strengthen revenue assurance systems and improve operational efficiency.	K46M	Billing (ZMW)	Total annual billing revenue generated from water and sanitation services.

4. ACTION PLAN COMPONENTS

This section details the specific action plans for each thematic area of the PIAP. Each action plan includes targeted activities, timelines, responsible units, expected outputs, funding sources, and estimated costs.

A. NON-REVENUE WATER REDUCTION

A.1 Hydraulic Modelling



Hydraulic modelling is a critical tool for effective water network management, enabling utilities to simulate, analyze, and optimize water distribution systems. It supports informed decision-making in areas such as pressure management, network design, leak detection, and demand forecasting. Western Water Supply and Sanitation Company (WWSSC) currently operates several unmodelled or partially documented water networks, which limits operational efficiency and planning accuracy.

This work plan aims to develop comprehensive hydraulic models for all WWSSC water networks by 2030 to improve system performance, facilitate future expansion, and strengthen evidence-based decision-making in infrastructure investment and maintenance.

By guiding where and how to intervene, hydraulic modelling ensures that NRW reduction efforts are precise, cost effective and sustainable.

Overall Objective

To develop and implement Hydraulic Modelling for all water networks within Western Water Supply and Sanitation Company (WWSSC) by 2030.

1. Establish accurate baseline data for all existing water supply networks through system mapping and surveys.
2. Develop hydraulic models for all major water systems using specialised modelling software.
3. Build internal capacity for continuous model updating, calibration, and utilisation.
4. Integrate hydraulic modelling outputs into system operation, design, and planning processes.

Enhance decision-making and efficiency in water distribution through digital and data-driven network management.

Table 12: A1 – Hydraulic Modelling Action Plan

PIAP Ref.	Action	Description	Responsible Unit	Timeline	Expected Output / Result	Source of Funding	Cost (ZMW)
A1.1	Procurement of hydraulic modelling software and hardware	Procure licensed hydraulic modelling software (Water GEMS, InfoWater, EPANET; Sewer GEMS/SWMM), GIS/CAD tools, high-performance workstations, and	Technical Dept – Technical Manager	2026	Modelling software and hardware installed and operational	World Bank	1,200,000

PIAP Ref.	Action	Description	Responsible Unit	Timeline	Expected Output / Result	Source of Funding	Cost (ZMW)
		field data collection equipment					
A1.2	Procurement of Consultancy Services for Training & Implementation	Engage specialised consultants to train key staff and support initial model development, including pressure management zone (PMZ) analysis, NRW scenario modelling, energy efficiency analysis, and climate resilience assessment	Technical Dept – Technical Manager	2026	5+ staff trained and certified in hydraulic modelling	World Bank	900,000
A1.2b	Baseline Data Collection & Network Surveys	Comprehensive field surveys of all water and wastewater networks; map pipe materials, diameters, lengths, installation dates; document valve locations; update GIS database with 100% asset coverage (820 km of pipes documented)	Technical Dept	2026	Complete network maps for all 13 districts; updated GIS database	World Bank	480,000
A1.3	Baseline water distribution model development	Build comprehensive hydraulic models for all 8 major water distribution systems; input all physical infrastructure data; allocate demand to nodes based on customer database and population data	Technical Dept – Technical Manager	2026	Baseline hydraulic models for 8 water systems; model documentation report	World Bank	600,000
A1.4	Model calibration and validation	Calibrate and validate hydraulic models using measured field data (flows, pressures, tank levels) to ensure accuracy and reliability	Technical Dept – Technical Manager	2027–2029	Calibrated and validated hydraulic models	World Bank	360,000
A1.5	Wastewater and sewer network modelling	Develop and calibrate wastewater/sewer network models, including pumping stations and treatment works; integrate stormwater where applicable	Technical Dept – Technical Manager	2027–2028	Functional wastewater hydraulic models	World Bank	600,000
A1.6	Pressure modelling	Use hydraulic models to identify priority NRW zones, simulate pressure management	Technical Dept – Technical Manager	2027–2028	Targeted NRW reduction interventions	World Bank	120,000

PIAP Ref.	Action	Description	Responsible Unit	Timeline	Expected Output / Result	Source of Funding	Cost (ZMW)
		scenarios, and support leak detection and rehabilitation planning					
A1.7	Network expansion and future demand scenario modelling	Model future demand scenarios (2027–2035), identify capacity constraints, and design optimal network expansion options for growth centres	Technical Dept – Technical Manager	2027–2029	Optimised expansion plans	World Bank	360,000
A1.8	Basic SCADA and MIS integration	Integrate hydraulic models with SCADA and MIS to enable data-driven operational decision-making and continuous model updating	Technical Dept – Technical Manager	2028–2030	Integrated digital decision-support system	World Bank	480,000
A1.9	Institutionalisation and sustainability	Establish protocols for model updating, data governance, and routine use in operations, planning, and investment appraisal	Technical Dept – Technical Manager	2028–2030	Sustainable in-house modelling capacity	World Bank	350,000

A.2 Non-Revenue Water (NRW) Management



Water is a finite and essential resource underpinning public health, economic development, and environmental sustainability. As urban populations grow and climate variability intensifies, the effective management of water resources has become more critical than ever. A significant challenge facing water utilities worldwide is the high level of Non-Revenue Water (NRW) which is the

portion of water that is produced but not billed due to losses through leaks, theft, meter inaccuracies, or data handling errors.

The recommended benchmark for NRW set by NWASCO stands at 25%, while the current NRW for the Western Water is at 51% as 2025. The gap between the two indicates clearly the need for strategic interventions to be implemented in order to lessen this gap as high NRW levels can lead to increased operational costs, deferred infrastructure investments, and diminished public trust in water service delivery.

Thus, recognising the strategic importance of reducing NRW, this action plan outlines a structured and comprehensive approach to systematically reduce water losses, using data from the hydraulic models. It reflects our commitment to sustainable water management, improved utility performance, and enhanced customer service.

Objective

To systematically reduce Non-Revenue Water (NRW) to 36% by 2030 through improved metering, leak management, data accuracy, and operational efficiency, thereby enhancing financial sustainability and service reliability. And the key areas of focus being:

- i. DMA management
- ii. Physical loss management
- iii. Commercial loss management
- iv. Pressure management
- v. Meter management
- vi. Data management
- vii. Capacity building
- viii. Stakeholder engagement

The table below shows the specific actions that will be implemented in NRW reduction, the areas of implementation, Timelines, expected impact of the actions and the resources needed to achieve said actions

Table 13: – Non-Revenue Water Management Action Plan

Action	Description	Timeline	Responsible	Expected Outcome	Source of Funding	Cost (ZMW)
A2.1.1 Pressure Management (Project Towns)	Installation of 50 control valves and 200 air relief valves in each project town (Mongu, Senanga, Sesheke, Kaoma)	2026–2030	District & HQ Technical Team	Reduced physical losses; damage to network components minimised	MWDS	600,000
A2.1.2 Data Management & Integration	Relocation and mapping of all customers on the new network; reduction of illegal connections	2026–2027	Transition Unit	Reduced commercial NRW; improved billing accuracy	MWDS	21,000,000
A2.2.1 Production Metering Mapping (Non-Project Towns)	Collection of GPS coordinates, operational status and sizes of bulk meters required in 10 non-project towns	2026	WDMTL / WDO	Well-built database on non-project towns' water production equipment	World Bank	74,230
A2.2.3 Procurement of production meters	Procurement of ~10 × 150mm, 14 × 100mm, 2 × 50mm production meters	2026	Procurement Dept	Availability of bulk meters for installation	MWDS	300,000
A2.2.5 Installation of Production meters	Installation of production meters in non-project towns	2026–2027	Contractor	Installed and operational bulk water meters; improved production accuracy	MWDS	180,000

Action	Description	Timeline	Responsible	Expected Outcome	Source of Funding	Cost (ZMW)
A2.3.3 Procurement of domestic meters	Procurement of ~2,270 domestic meters for non-project towns	2026	Procurement Dept	Quality-assured domestic water meters available	World Bank	4,540,000
A2.3.5 Installation of domestic meters	Installation of ~2,270 domestic meters in non-project towns	2026	Contractor	Improved billing accuracy; reduced NRW and illegal connections	World Bank	200,000
A2.4.1 DMA Establishment (Kalabo, Lukulu, Mwandi)	Subdivision of districts into DMAs for easy management	2027–2030	District & HQ Technical	Identified areas for DMA creation; improved network management	World Bank	200,000
A2.4.5 Boundary valve and meter procurement	Procurement of 48 boundary valves and 192 boundary meters for DMA realignment in project towns	2027	Procurement Dept	Availability of meters and valves for installation	MWDS	1,104,000
A2.5.1 Establishing NRW Reduction Team	Establish a dedicated team for leak repair, network mapping and verification, DMA monitoring, and customer metering support	2026	Technical / HR Dept	Skilled NRW reduction team established with clear accountability	WWSSCL	460,000
A2.5.2 Procurement of leakage detection equipment	Procurement of 60 noise loggers, 6 noise correlators, 13 pipe locators, 13 valve locators	2026	Procurement Dept	Modern and reliable leakage detection tools available	World Bank	586,000
A2.5.3 Rehabilitation of old network	Rehabilitation and replacement of old network: Kalabo 2.5km, Lukulu 2.6km, Mwandi 1.4km	2027–2030	District & HQ Technical	Reduced pipe bursts; improved network efficiency and pressure management	World Bank	14,300,000
A2.6.1 Procurement of meter testing bench	Procurement of 1 meter testing bench	2026	Procurement Dept	Improved meter accuracy and reliability; increased revenue assurance	WWSSCL	200,000

B. ENERGY EFFICIENCY MANAGEMENT PLAN (EEMP)



The Utility's energy intensity reduction programme is a strategic operational efficiency intervention aimed at reducing energy consumption per cubic meter of water produced and distributed from the 2025 baseline of 1.71 kWh/m³ to 0.90 kWh/m³ by 2030. This strategy supports the broader objectives of improving Operational Cost Coverage Ratio (OCCR), reducing production costs, enhancing climate resilience, and improving sustainability of water supply services under the Performance Improvement Action Plan (PIAP).

Energy costs constitute one of the largest operational expenditures for the utility, particularly due to long pumping distances, aging electromechanical infrastructure, high levels of Non-Revenue Water (NRW), and reliance on grid electricity in dispersed service areas. The proposed multi-year strategy therefore combines infrastructure modernization, operational optimization, renewable energy adoption, NRW reduction, and digital monitoring systems to progressively improve energy efficiency over the implementation period.

Strategic Justification for the PIAP Indicator

The gradual reduction in energy intensity is justified on the basis of the following operational and investment interventions:

1. Pump and Motor Efficiency Improvements

Existing pumps and motors in several schemes operate below optimal efficiency due to aging equipment, oversizing, poor maintenance, and fluctuating operating conditions. Replacement of inefficient pumps with energy-efficient systems and installation of Variable Frequency Drives (VFDs) will significantly reduce electricity consumption while improving system reliability. Installation of Power factor correction facilities and Voltage regulators.

2. Reduction of Non-Revenue Water (NRW)

High NRW increases unnecessary pumping and treatment costs because water lost through leakages and illegal connections still consumes energy during abstraction, treatment, and distribution. The implementation of leak detection programmes, pressure management, District Metered Areas (DMAs), and pipeline rehabilitation will reduce avoidable energy use.

3. Expansion of Renewable Energy Systems

Solar-powered boreholes and booster stations will progressively reduce dependence on grid electricity, especially in remote operational areas with high diesel or electricity costs. Hybrid energy systems will improve resilience against power outages and reduce long-term operating costs.

4. Automation and Smart Energy Monitoring

Introduction of telemetry systems, automated reservoir controls, and real-time energy monitoring will improve operational efficiency by optimizing pumping schedules, reducing idle running, and enabling rapid identification of abnormal energy consumption patterns.

5. Network Optimization and Gravity Supply Expansion

Hydraulic optimization, replacement of undersized pipelines, and maximizing gravity-fed distribution where feasible will reduce pumping head requirements and associated energy consumption. Rehabilitation and installation of storage systems for gravity supply system and storage of water during optimised pumping schedules.

6. Preventive Maintenance and Capacity Building

Preventive maintenance programmes and operator training will improve asset performance, extend equipment life, reduce downtime and less energy losses caused by inefficient operations and equipment deterioration.

Table 1: Multi-Year Energy Reduction Pathway

Year	Target (kWh/m ³)	Strategic Focus Area	Expected Efficiency Gain
2025	1.71	Baseline energy audits and system assessment	Establishment of verified baseline
2026	1.60	Pump replacement and operational optimization	Initial reduction through equipment efficiency
2027	1.40	VFD installation, DMA implementation, pipeline rehabilitation	Improved pumping efficiency and NRW reduction
2028	1.20	Solarization and automation systems	Reduced grid energy dependency
2029	1.00	Telemetry integration and network optimization	Advanced system-wide energy management
2030	0.90	Full energy optimization and renewable integration. Capacity building to improve maintenance skills	Sustainable low-energy operations. Optimised operations and less downtime.

Key Assumptions Supporting the PIAP Target

The achievement of the energy intensity targets is based on several operational and financial assumptions:

- Continued phased investment in infrastructure rehabilitation and energy-efficient equipment.
- Availability of financing through internally generated resources, Government support, and cooperating partners.
- Stable implementation of NRW reduction programmes.
- Availability of competent technical staff and continued institutional capacity strengthening.
- Gradual expansion of renewable energy systems within operational sites.
- Stable regulatory and energy supply environment.

Risk Management and Mitigation Framework

Potential implementation risks include funding delays, equipment failures, unstable electricity supply, vandalism of solar infrastructure, and delays in procurement processes. These risks will be

mitigated through phased investment planning, preventive maintenance systems, framework procurement arrangements, enhanced security measures, staff training programmes, and integration of hybrid energy systems.

Expected Outcomes by 2030

By achieving the 2030 target of 0.90 kWh/m³, the utility is expected to realize:

- Reduced operational expenditure on electricity;
- Improved Operational Cost Coverage Ratio (OCCR);
- Enhanced financial sustainability;
- Reduced greenhouse gas emissions and improved climate resilience;
- Improved reliability of water supply services;
- Increased operational efficiency across production and distribution systems.

The utility recognizes the importance of integrating climate change mitigation and energy efficiency measures into its operational and infrastructure development agenda. As part of the PIAP implementation framework, a comprehensive Greenhouse Gas (GHG) audit and carbon accounting assessment will be undertaken in year two 2027 to establish the utility's baseline emissions profile. The audit will assess emissions associated with electricity consumption, fuel use, pumping operations, wastewater treatment processes, sludge handling, and fleet operations across all facilities. Based on the findings of the audit, priority emission reduction opportunities will be identified, including reduction of non-revenue water, optimization of pumping systems, adoption of energy-efficient equipment, integration of renewable energy technologies such as solar power, and improved fuel management practices. Pilot low-carbon interventions will progressively be implemented from 2028 onwards, supported by strengthened monitoring systems and operational efficiency improvements. The final 2030 GHG reduction target will therefore be determined and validated after completion of the GHG audit and subsequent evaluation of achievable emission reduction pathways in line with national climate commitments and sector sustainability objectives.

Objective: To improve operational efficiency, reduce energy costs, and minimize greenhouse gas (GHG) emissions through the adoption of energy-efficient technologies and best practices in Western Water Supply and Sanitation operations.

The plan focuses on the following key areas:

- Energy and GHG audits and monitoring.
- Pumping system optimization.
- Equipment upgrading and maintenance.
- Capacity building and awareness.

Integration of renewable energy solutions.

Table 13: B – Energy Efficiency Management Plan (EEMP) Action Plan

Action	Description	Timeline	Impact / Outcome	Responsible	Funding	Cost (ZMW)
B.1 Energy Audit	Procure Energy Audit Consultant for all districts; conduct energy consumption audits for pumping stations in Mwandi, Mulobezi, Sesheke, Katima, Shangombo, Senanga, Nalolo, Limulunga, Mongu, Kalabo, Kaoma, Lukulu, Nkeyema	2026	Establish data for investment decisions and prioritisation	TM / Consultant	World Bank	715,000

Action	Description	Timeline	Impact / Outcome	Responsible	Funding	Cost (ZMW)
B.2.1–B.2.7 Pump & Motor Replacement (7 districts)	Replacement of energy-intensive pumps with premium IE3 standard motors in Mwandi, Sesheke, Senanga, Kalabo, Kaoma, Mongu, Limulunga	2026	Maximise production efficiency; reduce kWh/m³ by 6% per district; expected aggregate reduction to 53% by 2030	TM / Maintenance Engineer	MWDS	6,200,000
B.3.1–B.3.7 VFD Installation (7 districts)	Replacement of star/delta starters with Variable Frequency Drives and Power Factor Correction units in all major pumping stations	2026	Maximise efficiency; reduce kWh/m³; expected aggregate reduction to 53% by 2030	TM / Maintenance Engineer	MWDS	2,590,000
B.4.1–B.4.10 Automatic Voltage Regulators (10 districts)	Installation of AVR to balance/compensate voltage fluctuations in Mwandi, Sesheke, Senanga, Kalabo, Limulunga, Kaoma, Mongu, Lukulu, Nkeyema, Namushakende	2027	Regulate voltage supply; improve production hours by 4–6 hrs/day per district	TM / Maintenance Engineer	World Bank	7,350,000
B.5.1–B.5.11 Solar Hybrid Systems (11 districts)	Procure and install solar hybrid systems at borehole and wellfield sites in Mulobezi-Sichili, Shangombo, Nalolo-Muoyo, Mongu-Namushakende, Mongu-Kasima, Kaoma, Lukulu, and upgrading of solar systems in Nkeyema, Luampa, Kalumwange	2027	Reduce energy consumption by 40%; comparative analysis to be conducted by independent consultant	TM / Maintenance Engineer	MWDS	7,460,000
B.6 Pumping Operations Optimisation	Adjust pumping schedules to off-peak hours, balance flows, and improve pressure management	2026	Improved energy efficiency; reduced breakdown frequency; enhanced service reliability	TM / Maintenance Engineer	WWSSCL	50,000
B.7 Smart Energy Monitoring	Implement telemetry for smart energy monitoring in Mongu, Sesheke, Senanga, and Kaoma	2029	Real-time energy data; improved operational efficiency	TM / Maintenance Engineer	World Bank	500,000
B.8 Staff Training on Energy Efficiency	Regular training for plant operators and technical staff on energy management, audits, monitoring, and maintenance of renewable energy facilities	2027	Improves O&M cost coverage; increases service provision through reliable and cost-effective pumping	Consultant / TM / HRAM	World Bank	500,000
B.9 Energy Efficiency Policy & Framework	Formulate and institutionalise an internal Energy Management Policy aligned with national climate and energy policies	2026	Institutionalises energy efficiency KPIs and annual reporting mechanisms	MD / Consultant / TM	World Bank	180,000

C. DIGITALISATION OF COMPANY BUSINESS PROCESSES

Digital transformation is an essential driver of efficiency, productivity, and sustainability in modern utility management. At present, company processes are manually based, resulting in operational delays, higher costs, and limited data-driven decision-making. This work plan seeks to increase digitalization 2030 through the deployment of advanced ICT infrastructure and integrated management systems. The approach will enhance service delivery, customer satisfaction, and institutional performance in line with the company's strategic objectives and the National Digital Transformation Strategy 2023 - 2027.

Digitalisation will also facilitate real-time monitoring, enhance transparency, reduce operational costs, and promote innovation in managing water supply and sanitation systems.

- Upgrade ICT Equipment and Software to ensure full utilisation of MIS.
- Implement Digitalisation of Core Business Processes through Enterprise Resource Planning (ERP) systems.

Cybersecurity and Technology risk

The PIAP will be strengthened to explicitly incorporate cybersecurity and ICT governance considerations as integral components of the digitalisation program. Specifically, the following actions will be undertaken:

- **Cybersecurity Risk Assessment:** A comprehensive cybersecurity risk assessment will be conducted prior to and during system implementation to identify vulnerabilities, threat vectors, and potential impacts on operations. This will inform the design of appropriate mitigation measures.
- **ICT Governance Framework:** The utility will develop and adopt an ICT governance framework aligned with international best practices (such as ISO/IEC 27001 and COBIT). This framework will define roles, responsibilities, policies, and procedures for managing information systems securely and effectively.
- **Data Governance and Protection:** Clear data governance policies will be established to ensure data integrity, confidentiality, and availability. This will include protocols for data classification, access control, backup, and recovery.
- **Business Continuity and Incident Response Planning:** Contingency measures, including disaster recovery and incident response plans, will be developed to ensure service continuity in the event of system failure, cyber incidents, or other disruptions.
- **Capacity Building and Awareness:** Staff training and awareness programs will be implemented to strengthen internal capacity in cybersecurity management and promote a culture of risk awareness across the organisation.

Objectives:

- To enhance decision-making by providing accurate, timely, and relevant data to support strategic and operational decisions.
- Streamline Operations by enhancing data collection, processing, and reporting to improve efficiency and reduce errors.
- Improve Data accessibility by ensuring stakeholders have secure access to critical information for better collaboration.
- Drive Innovation by adopting emerging technologies (e.g., AI, IoT, cloud).

Improve data utilization by transforming data into actionable insights through analytics and digital platforms.

Table 14: C – Digitalisation of Company Business Processes Action Plan

Action	Description	Timeline	Benefit	Responsible	Source of Funding	Cost (ZMW)
C1. ICT Infrastructure Upgrade	Procurement of 48 desktop computers, 17 laptops, 10 copiers, 10 MFP printers, Cisco router, Sophos firewall, IP phones, anti-virus, Office 365, ERP/Sage/Dove licences, storage solutions, CCTV, biometric system	2026–2027	Enhanced operational efficiency; improved security; strong foundation for digital transformation	Systems Administrator	World Bank	4,472,000
C2.1. ERP Implementation	Full deployment of ERP; data migration and validation; setup of production environment; phased rollout of core modules (Billing, Accounting, HRMS, CRM, Asset Management); expansion from 30 to 200 users	2026–2028	Unified operations; enhanced data accuracy; real-time insights; significant cost savings	Systems Administrator	World Bank	540,000
C2.2. ERP Comparative Analysis	Cost-benefit analysis of ERPNext vs Navision to conform with NWASCO data integration guidelines	2026–2027	Informed transition to unified ERP per NWASCO guidelines	Systems Administrator	World Bank	70,000
C3. Digital Operations Centre (DOC)	Set up centralised hub for real-time monitoring, dashboards, and decision-making using ERP data	2026–2027	Real-time situational awareness; faster proactive decisions; enhanced leadership collaboration	Systems Administrator	World Bank	350,000
C4. Server Room Upgrade	Modernise physical and technical infrastructure of existing server facilities (on-site and off-site) to support ERP, databases, applications, backups, and DOC dashboards	2026–2027	Improved performance and scalability; enhanced security; cost savings through efficient cooling/power	Systems Administrator	World Bank	290,000
C5. ERP Training	Role-based onboarding and intensive end-user training; hands-on workshops targeting 85% system utilisation	2026–2028	High user adoption; reduced errors; faster processing	Systems Administrator	World Bank	90,000
C5.1. Digital Systems & Cybersecurity Training	Train staff in digital tools (CRM, ERP, project management) and cybersecurity awareness (phishing, ransomware, social engineering)	2026–2028	Reduced cyber breach risk; stronger security posture; enhanced incident response culture	Systems Administrator	World Bank	115,000
C7. Transition PMS to Digital	Digitise appraisal tools, performance indicators, reporting processes, staff statistics, and feedback/reward systems; ensure interoperability with HRMIS, payroll, and attendance systems	2026–2030	All staff data and systems digitised and operationalised	Systems Administrator / HRAM	World Bank	280,000

Note: The Comprehensive Digital Online Staff Performance Management System (PMS) has been separated into its own action plan under Section G for logical flow, where training activities are presented before system validation activities, per reviewer guidance.

D. WATER SUPPLY SERVICE COVERAGE EXTENSION PLAN

Access to safe and reliable water supply is a fundamental driver of public health, economic growth, and social well-being. Currently, water supply coverage stands at 48%, leaving a significant portion of the population without adequate access. This work plan outlines a structured roadmap to expand water supply coverage to 86% by the year 2030 through infrastructure development, capacity enhancement, improved management, and stakeholder collaboration. The plan is aligned with the Sustainable Development Goal (SDG) 6 on clean water and sanitation, and national water supply and sanitation policies.

To increase access to safe, reliable, and sustainable water supply services in unserved and underserved communities across the WWSSC service area, while contributing to national targets on universal water coverage and improved public health.

Pro-Poor Services Concept

Western Water Supply and Sanitation Company Limited (WWSSCL) remains firmly committed to delivering **pro-poor water supply and sanitation services**, recognizing that equitable access is essential for public health, social dignity, and inclusive economic development.

The company's pro-poor strategy is designed to ensure that **low-income and vulnerable communities**, particularly in peri-urban areas and emerging growth centres, have access to **affordable, safe, and reliable water and sanitation services**. This is achieved through the implementation of **appropriate, low-cost, and community-oriented service delivery models**.

On the water supply side, the company promotes the use of **water kiosks and communal standpipes**, which provide affordable access points for households that may not yet be connected to the formal network. These facilities are strategically located within underserved communities to minimize walking distances and reduce the burden on women and children, who are often the primary water collectors.

On the sanitation side, the company is investing in **communal septic tanks and ablution blocks**, particularly in high-traffic public areas such as markets, bus stations, and densely populated settlements. These facilities are critical in improving environmental sanitation, reducing open defecation, and enhancing public health outcomes.

Targeted interventions are being implemented in key districts such as Sesheke, Mongu, Senanga, and Kaoma, where demand for improved services remains high, especially in markets and informal settlements.

Under the current project, the company will undertake the **rehabilitation of existing infrastructure as well as the construction of new water supply and sanitation facilities**. These interventions have been carefully prioritized based on **service gaps, population density, and poverty levels**, ensuring that investments are directed toward areas with the greatest need.

Furthermore, the focus on **growth centres and urban poor communities** aligns with national development priorities and supports inclusive urbanization. By extending services to these areas, the company not only improves living conditions but also stimulates **local economic activity**, enhances **public health**, and promotes **social equity**.

In addition, community engagement and participation form a key pillar of the pro-poor approach. Local structures are involved in the management and oversight of facilities, fostering a sense of ownership and ensuring long-term sustainability. The pro-poor services concept adopted by WWSSCL reflects a deliberate shift toward **inclusive service delivery**, where no community is left behind. Through targeted infrastructure investments, appropriate technologies, and strong community involvement, the company is contributing to improved **access, affordability, and sustainability** of water and sanitation services in underserved areas.

2. Strategic Focus Areas

- I. Expansion of water distribution infrastructure
- II. Upgrading and rehabilitation of existing water systems
- III. Extension of water supply network to peri-urban and rural growth centres
- IV. Expand and upgrade water supply infrastructure to improve access and service reliability.

Table 15: D – Water Supply Service Coverage Extension Action Plan

Action	Description	Timeline	Responsible	Expected Output	Resources (ZMW)	Source of Funding
E1. New Network Extension – Major Towns	Procurement of 58 km of new water mains and distribution pipelines: Mongu (15km), Sesheke (17km), Kaoma (10km), Senanga (16km)	2026	HTDM	58 km of water distribution network extended; 2,180 households (10,900 people) served	1,160,000	MWDS
E2. New Network Extension – Other Growth Centres	Procurement of 171 km of pipelines in: Kalabo (30km), Lukulu (30km), Shangombo (30km), Nkeyema (15km), Sichili (30km), Luampa (10km), Natukoma (8km), Sioma (10km), Lipumpu (8km) Sikongo 20km,Mitete 20km and others	2027–2028	HTDM	171 km extended; 3,850 households (19,250 people) served	32,155,845.000	World Bank
E3. Kiosk Rehabilitation	Rehabilitate kiosks across all districts: Mongu (22), Senanga (10), Katima (4), Mwandu (2), Kalumwange (2), Munkuye (3), Lipumpu (3) and others	2026–2028	HTDM	Increased availability of reliable and potable water; reduced distance for fetching water	400,000	World Bank
E4. Procurement of Contractors for Network Extension	Procurement of contractors for construction of 58 km and 171 km networks across all growth centres	2026–2028	HTDM	Cumulative 229 km of new water distribution network completed	2,290,000	CDF& Water Aid Zambia
E5. Meters and Fittings for New Connections	Procurement and installation of water meters and fittings for 6,030 new customer connections in growth centres	2026–2028	HTDM	6,030 water meters installed; approximately 30,150 people provided with metered water services	19,090,000	World Bank& World Vision

F. OPERATION AND MAINTENANCE COST COVERAGE – FROM 63% TO 78.5% BY 2030



The analysis of the 2025 cost structure shows a significant gap between the current tariff level and the actual cost of service provision. The total Operations and Maintenance (O&M) cost is estimated at approximately K2,993,144.40, translating to a unit operating cost of about K11.97 per m³. However, the current effective recovery level remains substantially below the full cost of providing water services, resulting in an Operating Cost Coverage Ratio (OCCR) of only 64.43%. This means that the utility is only recovering about two-thirds of the actual operational costs through existing tariffs and collections.

The largest contributor to the cost–tariff gap is manpower expenditure, which stands at approximately K1,579,000, equivalent to K6.31 per m³, accounting for more than half of total operating costs. Under the 2026 PIAP target, manpower costs are projected at K1,777,140.02, with a targeted reduction in unit cost from K6.31/m³ to K2.52/m³, leaving a current variance of approximately K3.80/m³. This confirms that staffing levels and personnel-related expenses remain the most critical structural cost driver affecting tariff adequacy.

Another major cost pressure is system losses/non-revenue water, valued at approximately K1,414,706.41, equivalent to K5.66/m³. Although the PIAP targets a reduction to about K1.46/m³, the current losses continue to create a substantial hidden subsidy burden, where treated water is produced but not billed or paid for. This directly widens the gap between the tariff charged and the actual cost incurred in production and distribution.

Energy and power costs amount to approximately K513,766.40 or K2.06/m³, while administrative costs contribute another K528,000 or K2.11/m³. Depreciation costs add approximately K1.40/m³, indicating that current tariffs are also insufficient to fully support long-term asset replacement and infrastructure sustainability.

Overall, the actual cost of service provision significantly exceeds the current revenue-generating tariff structure. Even with strong collection efficiency, the utility remains financially constrained because the tariff does not adequately reflect the true cost of production, distribution, staffing, maintenance, and system inefficiencies. The PIAP therefore correctly prioritizes cost reduction measures, particularly in manpower optimization and reduction of water losses, as essential interventions to progressively close the tariff–cost gap and improve financial sustainability toward full cost recovery.

The Utility's Operational Cost Coverage Ratio (OCCR) Improvement Strategy is aimed at progressively strengthening financial sustainability by increasing the proportion of operational and maintenance costs covered through internally generated revenue. The strategy seeks to improve the OCCR from the current baseline of 53% in 2025 to 78.5% by 2030 through a combination of

operational efficiency improvements, revenue enhancement measures, cost containment interventions, Non-Revenue Water (NRW) reduction, energy efficiency initiatives, customer growth, and digital transformation initiatives, without relying on tariff increases.

The proposed approach is anchored on improving the traditional OCCR performance framework, which measures the relationship between total billing revenue and total operational and maintenance expenditure. The strategy therefore focuses simultaneously on increasing billable revenue while reducing avoidable operational costs in a manner that does not compromise service delivery standards, productivity, or system reliability.

On the revenue enhancement side, the Utility will undertake an aggressive customer regularization and expansion programme aimed at improving billing efficiency and increasing the active customer base. This includes the regularization of approximately **1,730** currently unregistered connections and the addition of approximately 11,000 new customer connections over the implementation period. These interventions are expected to significantly improve billed water volumes, reduce commercial losses, enhance revenue collection efficiency, and strengthen customer accountability within the service areas.

The customer expansion programme will be supported by network extensions, intensified metering programmes, improved customer database management systems, and digital billing platforms to improve billing accuracy and revenue assurance. Increased service coverage will also contribute toward improved economies of scale by distributing fixed operational costs across a larger customer base.

In parallel, the Utility will implement comprehensive operational efficiency measures targeted at reducing operational expenditure. These interventions include energy efficiency improvements through optimized pumping systems, installation of energy-efficient equipment, solarization of selected facilities, preventive maintenance programmes, and improved operational planning. Additional measures will include reduction of Non-Revenue Water through leak detection, pressure management, pipeline rehabilitation, illegal connection control, and establishment of District Metered Areas (DMAs).

The strategy further recognizes that high NRW levels and excessive energy consumption remain major contributors to weak cost recovery performance. Consequently, NRW reduction and energy efficiency improvement initiatives will serve as critical drivers for reducing production costs per cubic meter supplied, thereby improving the Utility's operational efficiency and financial performance.

Digital transformation will also form a key pillar of the OCCR improvement pathway through automation of operational monitoring systems, adoption of digital customer management systems, integration of SCADA and smart metering technologies, and strengthening of data-driven decision-making processes. These systems are expected to improve operational visibility, reduce losses, improve billing accuracy, enhance response times, and strengthen financial controls.

The phased OCCR improvement trajectory is projected as follows:

Year	OCCR %
2025	53%
2026	53%
2027	71%
2028	74%
2029	76%
2030	78.5%

The significant improvement anticipated from 2027 onward is expected to arise from the cumulative benefits of customer growth, NRW reduction, improved billing efficiency, energy savings, operational optimization, and gradual stabilization of operating costs.

The successful implementation of this strategy is based on key assumptions including sustained infrastructure investments, availability of financing support, continued implementation of NRW reduction programmes, stable energy supply conditions, effective staff capacity development, and management commitment toward operational reforms. Potential risks such as delayed procurement, funding constraints, high inflation, infrastructure deterioration, and slower-than-anticipated customer uptake will be mitigated through phased implementation planning, strengthened project management systems, preventive maintenance programmes, enhanced stakeholder engagement, and continuous monitoring of PIAP performance indicators.

Overall, the OCCR Improvement Strategy provides a realistic and operationally achievable pathway toward strengthening the Utility's financial sustainability while maintaining affordability for customers through efficiency-driven improvements rather than tariff adjustments.

Increasing Operation and Maintenance (O&M) Cost Coverage (2025–2030)

F.1 **Grow Customer Base** from 17,000 to 32,000 connections by 2030.

F.2 **Increase Billing Revenue** from K19 million to K46 million by 2030.

F.3 **Improve Billing Efficiency** from 85% to 98%.

F.4 **Upgrade and Integrate Energy Efficiency Measures** in 80% of equipment and machinery.

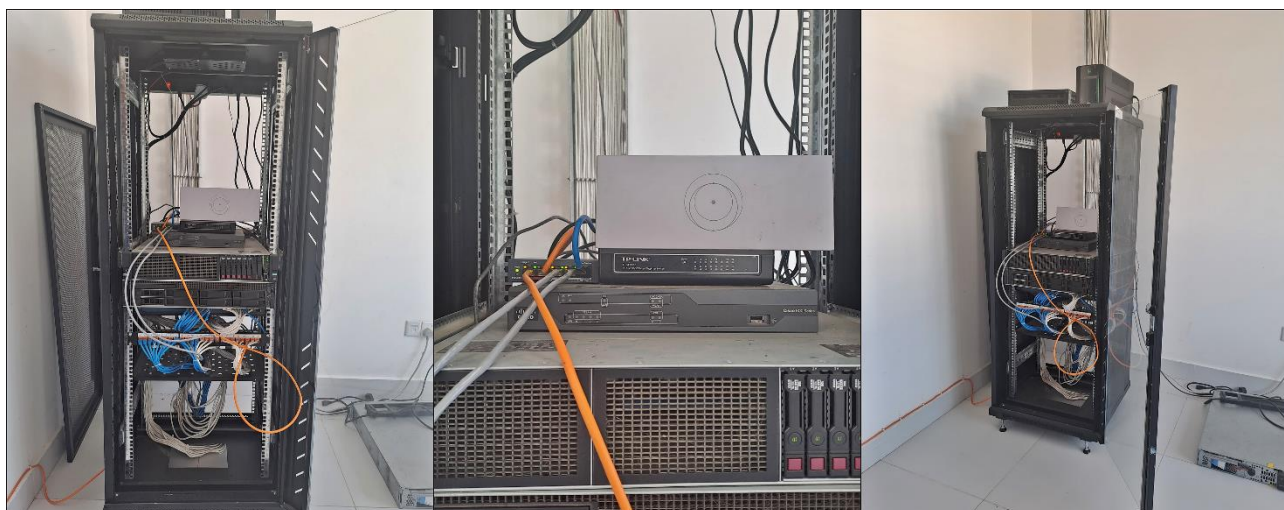
F.5 **Reduce Staff Efficiency Ratio** from 1.3 to 0.9.

Table 16: F – Operation and Maintenance Cost Coverage Action Plan

Action	Description	Timeline	Responsible	Expected Output	Funding	Cost (ZMW)
F.1 Revenue Monitoring	Establish monthly tracking of billed revenue, collections, arrears, and O&M cost coverage; produce variance analysis reports for management	2026–2030	FM	Timely financial reports; progressive improvement in OCCR	World Bank	25,000
F.2 Improve Billing & Collection	Ensure metering accuracy, reduce illegal connections, enforce credit control, implement automated reminders, support disconnection policy, structured payment plans for large debtors	2026–2029	FM / CSM	Increased collection rate; reduced outstanding arrears	World Bank	200,000
F.3 Debt Reduction Programme	Comprehensive arrears analysis; prioritise high-value customers (government, institutions, commercial); implement targeted recovery campaigns and debt settlement agreements	2026–2027	FM	Significant reduction in accounts receivable; improved cash flow	WWSSCL	Included –
F.4 Strengthen Budgetary Control	Develop realistic O&M budgets based on cash-flow models; enforce monthly expenditure controls; require departmental accountability for budget variances	2026–2030	FM	Controlled operational spending and reduced wastage	WWSSCL	Included –
F.5 Customer Base &	Provide financial analysis for connection investments, payment	2026–2030	FM	Financially viable customer expansion	WWSSCL	Included –

Action	Description	Timeline	Responsible	Expected Output	Funding	Cost (ZMW)
Commercial Expansion	plans, and pro-poor connection financing; monitor ROI for customer growth initiatives			contributing to increased revenue		
F.6 Cash Flow Management	Prepare rolling cash-flow forecasts; prioritise payment of critical O&M expenses (power, chemicals, fuel, maintenance)	2026–2030	FM	Stable operations and improved financial liquidity	WWSSCL	Included –
F.7 Cost Optimisation	Conduct periodic expenditure reviews to identify cost-saving opportunities (energy, chemicals, transport, procurement); implement cost containment measures	2026–2030	FM	Reduced O&M costs without compromising service quality	World Bank	20,000
F.8 Financial Systems Integration	Integrate billing, collection, and accounting systems (ERP/IFMIS); ensure real-time reconciliation between banked revenues and collections	2026–2028	FM	Accurate financial data and reduced revenue leakages	WWSSCL	Included –
F.9 Escrow Account	Establishment of an escrow account to ring-fence revenues for investment and service extension; improve financial discipline, accountability, and creditworthiness	2026	FM / Board	Improved financial discipline; guaranteed allocation of funds for capital investment	WWSSCL	Included –

G. ESTABLISHMENT OF A COMPREHENSIVE DIGITAL ONLINE STAFF PERFORMANCE MANAGEMENT SYSTEM (2026–2030)



Effective staff performance management is critical to achieving organisational efficiency, accountability, and service delivery excellence. Currently, staff performance management processes within Western Water Supply and Sanitation Company Limited (WWSSCL) are largely manual, limiting timely performance tracking, data-driven decision-making, and objective evaluation.

This plan outlines a structured approach to establishing a comprehensive digital online staff performance management system that will enable real-time performance monitoring, transparent appraisal processes, automated reporting, and alignment of individual performance with institutional strategic objectives. The system will support productivity improvement, enhance staff accountability, and strengthen human resource management in line with modern public utility best practices.

Skills Gap and Workforce Assessment

The skills gap and workforce assessment for Western Water Supply and Sanitation Company Limited (WWSSCL) was conducted through a systematic review of existing institutional documents and internal human resource management tools. This approach ensured that the identification of capacity gaps and training needs was evidence-based, structured, and aligned with the company's operational priorities and strategic objectives.

A key source of information was the Performance Management Appraisal System (PMAS), which requires supervisors (appraisers) to annually identify and document specific training and development needs for each employee. This component of the appraisal process provides valuable insights into both individual and departmental capacity gaps, capturing real-time performance challenges, emerging skill requirements, and areas needing improvement. By aggregating this data across the organisation, the company is able to identify recurring skill deficiencies and priority areas for capacity building.

In addition, the assessment drew from the Staff Qualification and Competence Audit Report, which was initially conducted in 2023 and subsequently reviewed in 2025. This audit provided a comprehensive evaluation of the workforce in terms of academic qualifications, professional certifications, technical competencies, and practical experience. It also assessed the alignment between staff competencies and the functional requirements of their respective roles within the organisation.

The 2025 review of the competence audit was particularly instrumental in refining the training needs, as it incorporated updated staffing data, evolving operational demands, and new regulatory and technological requirements within the water and sanitation sector. The review highlighted critical gaps in areas such as technical operations (e.g., NRW management, energy efficiency), customer service, data management, financial management, and gender mainstreaming.

By triangulating findings from the performance appraisal system and the competence audit, the company ensured a holistic and forward-looking assessment of workforce capacity. This integrated approach enabled the identification of both:

- Immediate training needs (to address current performance gaps), and

- Strategic capacity requirements (to support future growth, infrastructure expansion, and compliance with regulatory frameworks).

Furthermore, the assessment considered the company's Performance Improvement Action Plan (PIAP) and key performance indicators (KPIs), ensuring that proposed capacity building interventions are directly linked to improving organisational performance in areas such as Non-Revenue Water reduction, service coverage expansion, financial sustainability, and customer service delivery.

Overall, the skills gap and workforce assessment provide a robust foundation for targeted capacity building interventions, ensuring that training investments are relevant, data-driven, and aligned with both individual development needs and institutional performance goals. This approach strengthens the company's ability to deliver efficient, sustainable, and inclusive water and sanitation services

Overall Objective

To establish and operationalise a comprehensive digital online staff performance management system within Western Water Supply and Sanitation Company Limited by 2030.

Sub-Objectives

1. Digitise staff performance appraisal and monitoring processes across all departments.
2. Align individual and departmental performance indicators with corporate strategic and operational objectives.
3. Enhance transparency, accountability, and fairness in staff performance evaluation.
4. Enhance management decision-making through real-time performance data and analytics.
5. Build institutional capacity to sustainably manage and utilise digital performance systems.

Table 17: G – Digital Staff Performance Management System Action Plan

Action	Description	Timeline	Expected Output	Responsible	Funding	Cost (ZMW)
G1. Transition Analogue PMS to Digital	Digitise appraisal tools, performance indicators, reporting processes, and Performance-Based Feedback and Reward System; digitise historical and current staff statistics; ensure interoperability with HRMIS, payroll, and attendance systems; upload role-based KPIs	2026–2030	All staff data and systems digitised and operationalised; computers allocated to each department	HRAM	World Bank	69,000
G2. Develop Online Performance Management System	Acquire or develop a secure web-based system to manage staff KPIs, appraisals, and performance reviews; integrate with HR and Payroll Systems	2026–2030	Functional digital performance management system	HRAM	–	–
G3. Train Staff and Management on System Use	Conduct training for staff, supervisors, and HR teams on system operation, appraisal processes, and reporting	2026–2030	Staff and managers competent in using the digital performance system	HRAM	World Bank	276,000
G4. Validate Digital Performance Management System	Pilot and standardise framework defining KPIs, appraisal cycles, reporting structures, and performance scoring methodologies; roll out across all departments	2026–2030	Approved digital performance management framework aligned to corporate objectives	HRAM	World Bank	138,000
G5. Staff Incubation & Professional Development Centre	Build a leadership and technical talent pipeline through structured coaching, mentorship, and professional development	2026–2030	Enhanced leadership capacity; technical excellence; improved retention and succession	HRO	World Bank	276,000

Action	Description	Timeline	Expected Output	Responsible	Funding	Cost (ZMW)
			planning; improved service quality			

H. CLIMATE ADAPTATION AND RESILIENCE



The water utility recognises the increasing impacts of climate variability and change on water resources, infrastructure, and service delivery. Rising temperatures, erratic rainfall patterns, floods, and droughts pose significant risks to sustainable water supply and sanitation services. In response, the utility is committed to strengthening climate resilience through adaptive infrastructure, sustainable resource management, and integration of climate considerations into all aspects of planning and operations.

Focus Areas

- i. Climate-resilient water supply infrastructure
- ii. Sustainable water resource management and protection
- iii. Disaster risk reduction and emergency preparedness
- iv. Integration of climate risk assessment in planning and operations
- v. Institutional strengthening and awareness creation

Table 18: H – Climate Adaptation and Resilience Action Plan

Action	Description	Timeline	Link to NAP	Responsible	Funding	Cost (ZMW)
H1. Climate Risk Assessment	Assess vulnerability of WWSSCL infrastructure, water sources, and operations to floods, droughts, and temperature extremes with reference to climate risk screening guidelines	2026	NAP Priority 1: Climate Risk Assessment and Early Warning Systems	SHE	World Bank	50,000
H2. Climate-Resilient Infrastructure Designs	Integrate adaptation measures (elevated pump houses, flood barriers, drought-resilient boreholes, flood-resilient septic tanks) in infrastructure planning for Mwandi, Lukulu, Katima, Kalabo, and Shangombo	2026–2028	NAP Priority 2: Infrastructure Resilience; NAP Priority 5: Climate-Resilient WASH	SHE	World Bank	150,000
H3. Watershed Protection	Implement tree planting, buffer zones, pollution control around major water sources in Mongu,	2026–2029	NAP Priority 3: Ecosystem-Based Adaptation	SHE	MWDS	920,000

Action	Description	Timeline	Link to NAP	Responsible	Funding	Cost (ZMW)
	Sesheke, Katima, Mwand, Kaoma, Senanga, Kalabo					
H4. Undertake baseline study on Carbon Emission	Determine the level of GHG emissions from different sources within the operations of the CU	2027	Climate Change Mitigation / GHG Inventory and Reporting	SHE	World Bank	1,300,000,
H5. Develop and implement the action plan for Carbon Emissions	Implement interventions in the Carbon emissions Action plan	2028-2030	Climate Change Mitigation / Emissions Reduction	SHE		700,000
H6. Water Storage Improvement	Rehabilitation of storage tanks and reservoirs to buffer against seasonal fluctuations in Mwand, Lukulu, Katima, Kalabo, Shangombo	2026–2029	NAP Priority 4: Water Security and Sustainable Water Management	SHE	CDF	2,000,000
H7. Drought & Flood Response Plan	Align and implement emergency response protocols according to Climate Risks Screening Guidelines	2026	NAP Priority 6: Disaster Risk Reduction	SHE	MWDS	50,000
H8. Staff Training on Climate Adaptation	Train staff on climate change adaptation, water conservation, and environmental stewardship	2026	NAP Priority 8: Climate Education and Capacity Building	SHE	Water Aid	50,000
H9. Community Awareness Campaigns	Sensitise communities on climate change adaptation, water conservation, and environmental stewardship	2026–2028	NAP Priority 8: Climate Education and Capacity Building	SHE	Water Aid Zambia	50,000
H10. Mainstream Climate Risks into Corporate Planning	Integrate climate adaptation considerations into corporate strategies, budgets, and annual plans	2026–2028	NAP Priority 9: Institutional Strengthening and Policy Integration	SHE	WWSSCL	20,000

I. GENDER AND SOCIAL INCLUSION (GESI)



The Gender and Social Inclusion (GESI) Plan is an integral component of the Performance Improvement Action Plan (PIAP) designed to promote equality, inclusivity, and equitable access to services across all operational areas. It recognises that sustainable water supply and sanitation services can only be achieved when the needs, perspectives, and participation of all segments of society especially women, youth, and vulnerable groups are fully integrated into planning, implementation, and decision-making processes. Gender equality and inclusivity in leadership are essential for promoting balanced decision-making, innovation, and organisational excellence. Current data shows that women constitute only **21% of corporate employees**, highlighting significant institutional gender gaps that require targeted intervention. This plan outlines strategic interventions aimed at increasing female representation to **30% by 2030** through capacity development, targeted recruitment, mentorship, and gender-sensitive policies

This plan aims to strengthen institutional capacity to mainstream gender and inclusion principles in all programs and activities of the utility. It emphasises the empowerment of women in leadership roles, equitable employment opportunities, and fair participation in community engagement initiatives. Through deliberate actions, the GESI Plan seeks to remove barriers that limit access to services and participation, ensuring that all stakeholders benefit equally from development interventions under the PIAP.

Objective

To mainstream gender and social inclusion across all institutional systems and service delivery functions of Western Water Supply and Sanitation Company in order to promote equitable employment, inclusive decision-making, and fair access to safe and affordable water and sanitation services. **Sub-Objectives**

- a) **To strengthen women's representation and participation in the utility's workforce and leadership**, by addressing structural and procedural barriers to recruitment, retention, and promotion, from the current baseline of 21% to 30% female corporate employees.
- b) **To establish a reliable evidence, based on gender and social inclusion gaps** by conducting a comprehensive internal and external gender diagnostic covering workforce composition, leadership participation, recruitment and promotion practices, access to services, affordability, safety, and stakeholder participation in selected growth centres.
- c) **To institutionalise gender-responsive planning and accountability mechanisms** through the development and World Bank approval of a costed Gender and Social Inclusion Action Plan.
- d) **To ensure sustainable financing and effective implementation of gender-responsive interventions** by integrating a dedicated budget line for the Gender Action Plan into the

annual corporate budget and achieving a minimum annual implementation rate of 75% of planned activities.

Table 19: I – Gender and Social Inclusion (GESI) Action Plan

Action	Description	Timeline	Responsible	KPI	Funding	Cost (ZMW)
I1. Gender Diagnostic (Internal & External)	(a) Comprehensive internal gender diagnostic assessing employment, career progression, workplace conditions, and institutional policies; (b) Gender assessment in Nkeyema, Munkuye, Mwandi, Katima, Shangombo, and Lukulu — identifying gaps in access to water and sanitation services, affordability, and safety	2026	HRO	Gender Diagnostic report completed and approved by NWASCO and World Bank	World Bank	1,261,092
I2. Develop Gender Action Plan (GAP)	Prepare a costed Gender Action Plan based on diagnostic findings, aligned with World Bank requirements; submit for World Bank review and approval	2026	HRO	GAP developed and approved by World Bank	World Bank	198,267
I3. Integrate & Implement GAP Budget (≥75% execution)	Create a dedicated budget line for GAP activities; ensure ≥75% annual implementation rate; track progress against gender targets (women in technical/management positions, recruitment, retention, promotion, female-headed households with access to safely managed water)	2027–2030	FM / HRO	≥75% GAP budget utilised annually; ≥10% positive change in two gender indicators by Year 5	WWSSCL	985,592

J. CUSTOMER RELATIONS

Company interaction and building relationships with customers through variance channels such as community engagement, social media, person to personal, phone and email.

Objective

Create a positive relationship with customers in order for them to stay loyal and continue getting the services.

The plan is focusing on the following:

- i. Full implementation of Mywatsan
- ii. Call Centre

Customer Satisfaction Baseline Data

The Company has established a structured and data-driven system for collecting and analysing customer satisfaction information to inform performance improvement and service delivery. To ensure wide coverage, efficiency, and real-time feedback, the Company utilises digital platforms such as Microsoft Forms, mWater, and WhatsApp to periodically gather customer insights across its service areas.

These tools enable the Company to collect both quantitative and qualitative data directly from customers in a timely and cost-effective manner. The surveys are designed to capture key service delivery indicators that directly impact customer experience, including:

- **Hours of Water Supply** – assessing reliability and consistency of service
- **Water Quality** – capturing customer perception of safety, taste, and cleanliness
- **Customer Complaint Resolution** – evaluating responsiveness and effectiveness in handling reported issues

Using these core variables, the Company has scientifically established baseline values that reflect the current level of service performance. The baseline data serves as a reference point against which future improvements are measured.

Data collection is conducted on a quarterly basis, allowing the Company to track trends, identify emerging issues, and assess the impact of ongoing interventions under the Performance Improvement Action Plans (PIAPs). The use of digital tools enhances data accuracy, minimizes manual errors, and supports efficient aggregation and analysis.

Furthermore, the collected data is analysed to generate actionable insights that inform management decisions, resource allocation, and targeted service improvements. The results are also used to strengthen accountability by providing measurable indicators of progress in customer service delivery.

Overall, this systematic approach to customer satisfaction measurement ensures that the Company remains responsive to customer needs while continuously improving service quality in line with regulatory expectations and institutional performance targets.

Table 20: J – Customer Relations Action Plan

Action	Description	Timeline	Outcome	Source of Funding	Cost (ZMW)
J1. Customer Relations Policy & Framework	Procure a consultant to develop a well-structured customer policy with a clear and consistent approach to customer relations, stakeholder engagement, and media communication	2026	Customer relations policy and framework with clear, consistent approach to customers, stakeholders, and media	World Bank	480,000
J2. Full Implementation of Mywatsan	Fully implement the electronic complaint management platform (Mywatsan) across all districts to resolve customer complaints and reach 100% resolution rate	2026–2028	Fully implemented complaint management platform	WWSSCL	50,000
J3. Call Centre Establishment	Ensure establishment of a Call Centre where customers can interact with the Company for complaint management	2026–2027	Enhanced accessibility and faster resolution of customer issues	WWSSCL	552,000

K. SANITATION COVERAGE



The Commercial Utility (CU) recognizes that sanitation service delivery within its service area is predominantly dependent on onsite sanitation systems, which account for approximately 90% of existing sanitation infrastructure. These systems mainly comprise septic tanks, Ventilated Improved Pit (VIP) latrines, conventional pit latrines, and institutional onsite sanitation facilities serving households, public institutions, and commercial establishments. Given the limited sewer network coverage and the dispersed settlement patterns within many service areas, the Utility acknowledges that the attainment of universal sanitation access will largely depend on strengthening decentralized onsite sanitation management systems.

The current sanitation coverage within the Utility's operational area is estimated at 62% in 2025. In line with national development objectives, public health priorities, environmental protection requirements, and Sustainable Development Goal (SDG) 6 commitments, the Utility intends to progressively increase safely managed sanitation coverage to approximately 90% by 2030 through a structured and phased sanitation improvement programme anchored on decentralized sanitation service delivery.

The proposed sanitation improvement approach is based on strengthening the entire sanitation service chain, including containment, collection, transportation, treatment, disposal, reuse where feasible, monitoring, and regulation of onsite sanitation facilities. The strategy recognizes that improved sanitation outcomes can only be achieved through integrated management systems that combine infrastructure development, institutional strengthening, public awareness, environmental safeguards, and improved service regulation.

A key component of the strategy will involve comprehensive sanitation mapping and registration of onsite sanitation facilities across all service areas. The Utility will progressively establish a sanitation database and Geographic Information System (GIS)-based sanitation inventory to improve visibility of existing sanitation infrastructure, identify underserved areas, support planning processes, and facilitate evidence-based investment prioritization. The registration programme will also improve monitoring of sanitation facilities, sludge emptying schedules, and environmental compliance requirements.

To improve public health outcomes and environmental protection, the Utility will strengthen faecal sludge management (FSM) systems through the establishment and regulation of safe sludge collection, transportation, treatment, and disposal mechanisms. This will include support for licensed emptying service providers, development of faecal sludge discharge points, rehabilitation and expansion of sludge treatment infrastructure, and promotion of environmentally safe disposal and reuse practices where technically feasible.

The Utility will further intensify routine monitoring and inspection of onsite sanitation systems to minimize risks associated with groundwater contamination, illegal sludge disposal, overflowing sanitation facilities, and public exposure to unsafe sanitation conditions. Special attention will be given to high-density settlements, peri-urban areas, institutions, markets, schools, and healthcare facilities where sanitation-related public health risks are often highest.

In order to accelerate sanitation coverage improvements, the Utility will undertake targeted sanitation expansion programmes focusing on:

- Promotion of improved household sanitation facilities;
- Upgrading of unimproved pit latrines to safer sanitation technologies;
- Construction and rehabilitation of institutional sanitation facilities;
- Strengthening sanitation service delivery in peri-urban and low-income areas;
- Community-led sanitation sensitization and hygiene promotion initiatives.

The Utility will also enhance stakeholder engagement and partnerships with local authorities, public health institutions, cooperating partners, private sector sanitation operators, and community structures to strengthen sanitation governance and improve sustainability of sanitation interventions.

Digital transformation and data-driven sanitation management systems will further support implementation of the sanitation improvement strategy. The Utility intends to progressively introduce digital sanitation monitoring systems, customer sanitation databases, GIS mapping tools, and sanitation reporting mechanisms to improve planning, compliance monitoring, operational efficiency, and accountability.

The sanitation coverage improvement pathway is projected to progressively increase from 62% in 2025 toward approximately 90% safely managed sanitation coverage by 2030 through phased investments and operational interventions. The anticipated improvements will be driven by cumulative gains in onsite sanitation upgrading, improved faecal sludge management services, sanitation infrastructure expansion, increased community participation, and strengthened environmental health enforcement mechanisms.

The successful implementation of this strategy is based on several key assumptions, including availability of investment financing, community willingness to adopt improved sanitation technologies, supportive regulatory frameworks, institutional coordination among stakeholders, and sustained public awareness campaigns. Potential risks such as inadequate funding, rapid urbanization, weak enforcement of sanitation regulations, illegal sludge disposal, and affordability constraints among vulnerable households will be mitigated through phased implementation, strategic partnerships, targeted subsidies for vulnerable communities, strengthened regulatory enforcement, and continuous stakeholder engagement.

By 2030, the Utility expects that the implementation of this decentralized sanitation management approach will result in significantly improved public health outcomes, reduced environmental pollution, enhanced groundwater protection, improved dignity and hygiene standards, and increased resilience of sanitation services within the service area. The strategy therefore provides a practical, realistic, and sustainable framework for achieving safely managed sanitation targets within predominantly onsite sanitation environments while supporting broader national water and sanitation sector objectives.

Western Water Supply and Sanitation Company Limited (WWSSCL) has adopted an aggressive and structured strategy to significantly increase sanitation coverage, with a strong emphasis on sustainability, inclusivity, and alignment with national and international standards.

At the core of this approach is the recognition that a large proportion of the population, particularly in urban, peri-urban, and rural areas, relies on on-site sanitation systems such as septic tanks and pit latrines. To effectively plan and manage these systems, the company will undertake a comprehensive sanitation survey aimed at mapping all customers with on-site sanitation facilities within its service areas.

This survey will be guided by the WHO/UNICEF Joint Monitoring Programme (JMP) sanitation service ladder, particularly focusing on the classification of Safely Managed Sanitation Services. By leveraging JMP variables, the company will ensure that data collected is standardised, internationally comparable, and aligned with Sustainable Development Goals (SDG 6).

The mapping exercise will generate a geo-referenced database of sanitation facilities, including the location, type, condition, and usage patterns of septic tanks and other on-site systems. This data will form the basis for developing a scheduled desludging (emptying) program, whereby septic tanks are emptied at regular intervals rather than on an emergency basis.

A key innovation in this approach is the development of planned “walk routes” or service routes for desludging operations. These routes will optimise logistics, reduce operational costs, and improve efficiency, while ensuring that even low-income households are included in the service chain. This

directly supports the company's pro-poor sanitation model, making services more predictable, accessible, and affordable.

In parallel, the company will invest in the construction of modern ablution blocks in public places, particularly in high-traffic areas such as markets, bus stations, and growth centres. These facilities are expected to:

- Improve access to safe sanitation for transient and underserved populations
- Enhance public health and hygiene
- Reduce environmental contamination and open defecation

Furthermore, the company will prioritise the rehabilitation of existing dilapidated communal septic tanks, many of which are currently underperforming or non-functional due to poor maintenance and aging infrastructure. Rehabilitation works will include structural repairs, desludging, and upgrading to meet current operational standards.

In addition to rehabilitation, new communal septic tanks will be constructed in strategic locations to meet growing demand, particularly in densely populated and underserved areas. These investments will be guided by the findings of the sanitation mapping exercise to ensure equitable distribution and maximum impact.

The overall strategy is anchored on transitioning from reactive sanitation service provision to a planned, data-driven, and lifecycle approach, covering containment, emptying, transportation, treatment, and safe disposal or reuse of sludge

Through this integrated approach—combining data-driven planning, infrastructure development, and pro-poor service delivery models—WWSSCL aims to achieve substantial improvements in sanitation coverage and service quality. The strategy not only enhances operational efficiency but also contributes to public health, environmental protection, and social equity, positioning the company to meet both national targets and global sanitation standards.

K1. Resource recovery

Resource Recovery and Carbon Reduction Strategy

Western Water Supply and Sanitation Company Limited (WWSSCL) is committed to advancing sustainable sanitation and climate-resilient service delivery through the adoption of resource recovery models and proactive carbon management strategies. This approach recognises wastewater and faecal sludge not as waste, but as valuable resources that can be harnessed to generate economic, environmental, and social benefits.

As a foundational step, the company will undertake a comprehensive baseline assessment of its carbon footprint, covering key emission sources such as:

- Energy consumption in water abstraction, treatment, and distribution
- Wastewater and sludge management processes
- Transportation and desludging operations

The findings from this baseline will inform the development of a long-term carbon reduction strategy, aimed at improving energy efficiency, promoting renewable energy use, and reducing greenhouse gas emissions across operations. This aligns with global climate commitments and enhances the utility's resilience to climate-related risks.

Resource Recovery Models

WWSSCL will implement an integrated resource recovery framework that promotes the circular economy within the water and sanitation sector. Key models include:

1. Sludge-to-Fertilizer (Biosolids Reuse)

Treated faecal sludge will be processed and converted into safe organic fertilizer (biosolids) for use in agriculture. This intervention will:

- Improve soil fertility and agricultural productivity
- Provide a low-cost alternative to chemical fertilizers
- Create entrepreneurship opportunities for local communities

The company will ensure that all reuse practices comply with public health and environmental safety standards.

2. Treated Wastewater Reuse

Treated wastewater will be reused for non-potable applications, including:

- Irrigation in agriculture
- Aquaculture (fish farming)
- Landscaping and green space maintenance

This model is particularly relevant in water-scarce areas and contributes to:

- Reduced pressure on freshwater sources
- Enhanced food security and livelihoods
- Efficient water resource utilization

3. Biogas Production from Bio-Digesters

In districts such as Lukulu, Shangombo, and Kalabo, the company will construct integrated communal septic systems designed as bio-digesters.

These systems will:

- Treat waste through anaerobic digestion
- Generate biogas (methane) as a by-product

The biogas produced will be harnessed and supplied to nearby households for cooking, offering:

- A clean and affordable alternative to firewood and charcoal
- Reduced deforestation and environmental degradation
- Improved indoor air quality and health outcomes

4. Entrepreneurship and Private Sector Participation

The resource recovery model will actively promote private sector and community participation, creating opportunities in:

- Sludge collection and transport services
- Production and sale of organic fertilizers
- Operation of fish ponds using treated water
- Biogas distribution and utilization

This approach supports local economic development and job creation, particularly within pro-poor communities.

Integration with Sanitation Infrastructure

The planned communal septic tanks and sanitation systems will be designed with resource recovery in mind, ensuring that:

- Waste streams are efficiently captured and treated
- By-products (biogas, biosolids, treated water) are safely reused
- Systems are financially and environmentally sustainable

This integrated design transforms sanitation infrastructure into productive assets, rather than cost centres.

Environmental and Social Benefits

The implementation of resource recovery models will deliver multiple benefits:

- Environmental Protection: Reduced pollution and greenhouse gas emissions
- Climate Change Mitigation: Lower carbon footprint and renewable energy generation
- Public Health Improvement: Safe management and reuse of waste
- Economic Opportunities: Job creation and income generation
- Social Inclusion: Affordable energy and agricultural inputs for low-income communities

Through the integration of carbon management and resource recovery models, WWSSCL is positioning itself as a forward-looking and environmentally responsible utility. By transforming waste into valuable resources, the company not only enhances operational sustainability but also contributes to climate resilience, circular economy development, and improved livelihoods in the communities it serves.

Objective

To increase sanitation coverage from **65.48 % to 90 % by 2030**.

- Sanitation mapping of all existing and uncaptured facilities
- Construction of new sanitation infrastructure
- Rehabilitation of sanitation infrastructure.

Table 21: K – Sanitation Coverage Action Plan

PIAP Ref.	Action	Description	Responsible Unit	Timeline	Expected Output / Result	Source of Funding	Cost (ZMW)
K1	Sanitation mapping in all districts	Comprehensive GIS-based mapping of all existing onsite sanitation facilities (pit latrines, VIP latrines, septic tanks, pour-flush systems) across WWSSCL service areas to establish baseline and identify gaps	Technical Dept – TM	2026	Complete sanitation database for 13 operational districts; GIS-mapped infrastructure; gap analysis report	WWSSCL	600,000
K2	Standardisation through design	Development, validation, and approval of standardised designs for various onsite sanitation facilities, including variations for flood-prone and high-water-table areas; compliant with national standards and WHO guidelines	Technical Dept – TM	2026	Approved standard designs for 7+ facility types; design catalogue for community selection; validated by MWDS and NWASCO	World Bank	600,000
K3	Dissemination of standardised designs	Strategic engagement with all 13 Local Councils to disseminate approved designs, build partnerships, secure WWSSCL representation on works committees, and establish joint sanitation promotion frameworks	Technical Dept – TM	2027–2030	Design dissemination workshops in all 13 councils; WWSSCL representation on ≥12 councils' works committees; joint implementation frameworks signed	WWSSCL	300,000

PIAP Ref.	Action	Description	Responsible Unit	Timeline	Expected Output / Result	Source of Funding	Cost (ZMW)
K4	Rehabilitation of existing sanitation infrastructure	Priority rehabilitation of deteriorated facilities in Mboo Stage 1–3 (Mongu) and Junior Compound (Senanga); restoration of functionality and improved public health conditions	Technical Dept – TM	2026–2027	420 household facilities rehabilitated; 10,500 people regain access to improved sanitation; 120 temporary jobs created	MWDS & CDF	46,580,000
K5	Feasibility Studies & Detailed Designs	Feasibility studies and engineering designs for expansion in Shangombo, Lukulu, Kalabo, Mwand, Sioma, Luampa, Namushakende, Katima, Sichili; include environmental and social impact assessments	Technical Dept – TM	2026	Completed feasibility studies for 9 districts; approved designs; ≥1,200 household consultations completed	World Bank	500,000
K6	Construction of new on-site sanitation facilities	Construction of new decentralised on-site and clustered septic tank systems in Kalabo, Shangombo, Lukulu, Mongu Main Station, Weinberg–Limulunga–Lamasholi	Technical Dept – TM	2027	New decentralised/clustered septic tank facilities constructed and operational	World Bank	12,000,000
K7	Corporate Sanitation Strategic Framework	Development of a corporate sanitation strategy for WWSSCL aligned with SDG 6, national policies, and organisational transformation objectives, guiding all sanitation interventions through 2035	Technical Dept – TM	2028–2029	Corporate Sanitation Strategy 2027–2035 approved by Board; district-specific plans for all 16 districts; CLTS framework; FSM strategy; M&E framework; resource mobilisation strategy (targeting K150M for 2027–2035)	World Bank	500,000

L. IMPROVEMENT OF COMMERCIAL PROCESSES

Commercial activities and processes are a critical determinant of financial sustainability and operational performance for the water utility. Commercial activities begin the moment water is pumped in the distribution network. Hence the efficiency and effectiveness of the commercial processes and activities are cardinal to the survival and viability of the CU. This plan outlines strategic interventions to enhance billing and revenue collection through improved commercial activities and processes such as billing accuracy, customer complaints resolution, digital payment systems, data base clean-up and enforcement of debt recovery mechanisms. By 2030, the company aims to achieve an annual billing of K46 million and 100% collection efficiency, ensuring a stronger financial base and improved service delivery.

Objective:

To strengthen commercial processes in commercial activities such as billing, revenue collection, customer complaints resolution and digital payment systems to ensure increased billing and 100% collection efficiency to ensure financial sustainability of operations.

Table 22: L – Improvement of Commercial Processes Action Plan

Action	Description	Timeline	Expected Output	Responsible	Cost (ZMW)	Source
L1. Billing Improvement	Increase annual corporate billing from K19.5M (2025) to K46M (2030) by doubling the customer base through Integrated Small Towns Project and P4R interventions; improve billing efficiency through database clean-up and Commercial NRW reduction	2026–2030	Billing targets: 2026: K28.1M 2027: K32M 2028: K36M 2029: K40M 2030: K46M	CSM	4,050,000	WWSSCL
L2. Database Clean-Up	Visit all households in the province to verify connections; confirm dormant/disconnected accounts; validate debtors; clean up illegal connections; improve billing efficiency	2026	Verified customer base; increased billing; improved billing efficiency; reduction in commercial NRW	CSM	Included	WWSSCL
L3. Debt Management	Customer debt stood at K14M (December 2025). Reduce to K9M by 2030 through mass disconnections, demand letters, and litigation	2026–2030	2026: K13M 2027: K12M 2028: K11M 2029: K10M 2030: K9M	CSM	1,200,000	World Bank
L4. Staff Training – Commercial	Zone management training for CSAs and CSOs; training of District Managers and Customer Service Officers in effective leadership and business processes	2026–2030	Trained and enlightened workforce	CSM	400,000	World Bank
L5. Procurement of Leadership Training Consultant	Procurement of a consultant to carry out training of District Managers and CSOs in business processes	2026	Services of training consultant procured	CSM	350,000	World Bank
L6. Vendor Training – Peri-Urban	Conduct in-house training for vendors managing active kiosks across the province	2026	Trained and enlightened vendors	CSM	200,000	MWDS

M. INCREASING WATER PRODUCTION CAPACITY THROUGH INFRASTRUCTURE REHABILITATION AND UPGRADES (2026–2030)

Reliable and adequate water production is the foundation of sustainable water supply service delivery. Currently, aging infrastructure, inefficient systems, and inadequate production capacity limit the ability to meet growing demand and extend coverage beyond the current 46%. This rehabilitation and upgrade plan provide a strategic framework to increase water production capacity and system efficiency, enabling the expansion of water supply coverage to 86% by 2030. The plan focuses on modernizing existing infrastructure, optimizing production facilities, and reducing non-revenue water through systematic rehabilitation interventions. This approach is aligned with Sustainable Development Goal (SDG) 6 on clean water and sanitation, and supports national water supply and sanitation policy objectives.

Primary Goal: To increase water production capacity and system reliability through comprehensive rehabilitation and upgrading of existing water supply infrastructure, thereby supporting the extension of water coverage to unserved and underserved communities across the WWSSC service area.

1. Strategic Focus Areas

- I Rehabilitation of Water Treatment Plants and Production Facilities.
- II Upgrading and Replacement of Aging Water Infrastructure
- III Enhancement of Raw Water Abstraction and Conveyance Systems
- IV Optimization of Production and Distribution System Efficiency

Table 23: M – Water Production Capacity Rehabilitation Action Plan

PIAP Ref.	Action	Description	Responsible Unit	Timeline	Expected Output / Result	Funding	Cost (ZMW)
W1	Inhouse development of detailed designs	Preparation of feasibility studies and detailed engineering designs for new water production, treatment, storage, and distribution systems in Shangombo, Lukulu, Kalabo	Technical Dept – TM	2026	Approved detailed designs ready for implementation	World Bank	152,566
W2	Expansion of water production capacity	Development of new water abstraction systems: Lukulu (4.7 MI/day – Zambezi River floating pontoon), Kalabo (5.9 MI/day – Luangwa River floating pontoon + conventional treatment), Shangombo (0.96 MI/day – borehole wellfield) Sioma (4.7 MI/day – Zambezi River floating pontoon)	Technical Dept – TM	2026–2027	Increased water production capacity meeting demand projections	World Bank	600,000
W4	Upgrading and rehabilitation of existing systems	Rehabilitation of existing treatment units, pumping stations, storage tanks, and critical network components in Shangombo, Lukulu, Kalabo, Katima, to improve	Technical Dept – TM	2026–2028	Improved system efficiency and service reliability	World Bank	18,000,000

PIAP Ref.	Action	Description	Responsible Unit	Timeline	Expected Output / Result	Funding	Cost (ZMW)
		reliability and reduce losses					
W5	Integrated infrastructure upgrade	Integrated upgrading of production, storage, and distribution systems, including energy efficiency improvements in Shangombo, Lukulu, Kalabo	Technical Dept – TM	2027–2029	Reliable, sustainable water supply services supporting coverage expansion	MWDS	24,000,000

PIAP IMPLEMENTATION COST AND FINANCING (2026–2030)

The total estimated cost of the Performance Improvement Action Plan (PIAP) is **Zambian Kwacha Two Hundred and Twelve Million, Fifty-Five Thousand, Five Hundred and Ninety-Two Only. ZMW 212,055,592.00**, which will be financed through contributions from multiple cooperating partners and stakeholders. The **World Bank** is the largest contributor, providing **ZMW 112,404,000.00**, representing **53%** of the total project cost. The **Ministry of Water Development and Sanitation (MWDS)** will contribute **ZMW 42,364,000.00**, accounting for **20%** of the total funding requirement.

The **Western Water Supply and Sanitation Company Limited (WWSSCL)** will provide **ZMW 6,717,592.00**, equivalent to **3%** of the total budget. Development partners will also play a significant role, with **WaterAid Zambia** contributing **ZMW 1,390,000.00 (1%)** and **World Vision Zambia** contributing **ZMW 600,000.00 (0.3%)**. In addition, the **Constituency Development Fund (CDF)** is expected to finance **ZMW 48,580,000.00**, representing **23%** of the overall project cost.

This diversified funding structure demonstrates strong collaboration between government institutions, cooperating partners, local authorities, and the utility company, thereby enhancing the financial sustainability and successful implementation of the PIAP interventions.

The proposed investment framework is designed to support the Commercial Utility's strategic objectives of improving operational efficiency, financial sustainability, service coverage, climate resilience, sanitation management, customer service delivery, and institutional performance.

The PIAP investment portfolio covers critical operational and infrastructure improvement areas including hydraulics optimization, Non-Revenue Water (NRW) reduction, energy efficiency interventions, digital transformation, network expansion, production enhancement, sanitation improvements, climate resilience, customer relations strengthening, commercial process improvements, and performance management systems. These investments are intended to collectively improve service delivery performance, increase operational cost recovery, strengthen environmental sustainability, and support long-term institutional viability.

The financing of the PIAP activities will be implemented through a blended financing approach utilizing both internal and external funding sources. The primary sources of financing are expected to include support from the World Bank, WaterAid, World Vision Zambia, Zambezi Water Commission, the Ministry of Water Development and Sanitation (MWDS), the Constituency Development Fund (CDF), and internally generated Commercial Utility (CU) revenues.

The World Bank is expected to primarily support strategic infrastructure investments, institutional strengthening, climate resilience interventions, NRW reduction programmes, sanitation improvements, and operational efficiency enhancement initiatives under sector reform and performance improvement programmes. WaterAid support is anticipated to complement sanitation,

hygiene promotion, community engagement, and climate-resilient service delivery interventions, particularly within underserved and vulnerable communities.

The Ministry of Water Development and Sanitation (MWDS) will continue to provide policy support, sector financing, and strategic infrastructure investment support aligned with national water supply and sanitation development priorities. The Constituency Development Fund (CDF) is expected to support localized water supply and sanitation infrastructure expansion projects, particularly within peri-urban and underserved communities.

In addition, the Commercial Utility will contribute internally generated revenues toward operational improvements, counterpart financing requirements, maintenance programmes, customer service improvements, energy efficiency interventions, and other priority operational activities necessary for successful implementation of the PIAP.

The phased implementation of the PIAP investments over the 2026–2030 period will enable the Utility to progressively address operational inefficiencies, expand service coverage, improve sanitation management, strengthen climate resilience, and enhance financial sustainability while ensuring affordability and continuity of essential water and sanitation services. The diversified financing approach is intended to minimize implementation risks, improve investment sustainability, and strengthen institutional ownership of the planned interventions.

Table 24: Estimated cost of PIAP implementation

Hydraulic Modelling	World Bank	5,450,000.000
Non-Revenue Water Management	World Bank	19,900,230.000
Non-Revenue Water Management	MWDS	23,184,000.000
Non-Revenue Water Management	WWSSCL	460,000.000
Energy Efficiency Management Plan (EEMP)	World Bank	9,245,000.000
Energy Efficiency Management Plan (EEMP)	MWDS	16,250,000.000
Digitalisation of Company Business Processes	World Bank	6,207,000.000
Water Supply Service Coverage Extension	MWDS	1,160,000.000
Water Supply Service Coverage Extension	Water Aid Zambia	1,290,000.000
Water Supply Service Coverage Extension	World Vision Zambia	600,000.000
Water Supply Service Coverage Extension	World Bank	32,155,845.000
Operation and Maintenance Cost Coverage	World Bank	245,000.000
Climate Adaptation and Resilience Action	World Bank	2,200,000.000
Climate Adaptation and Resilience Action	MWDS	970,000.000
Climate Adaptation and Resilience Action	Water Aid	100,000.000
Climate Adaptation and Resilience Action	WWSSCL	20,000.000
Climate Adaptation and Resilience Action	CDF	2,000,000.000
Digital Staff Performance Management System	World Bank	759,000.000
Gender and Social Inclusion (GESI)	World Bank	1,459,359.000
Gender and Social Inclusion (GESI)	WWSSCL	985,592.000

Customer Relations	World Bank	480,000.000
Customer Relations	WWSSCL	602,000.000
Sanitation Coverage Action	WWSSCL	600,000.000
Sanitation Coverage Action	World Bank	13,600,000.000
Sanitation Coverage Action	CDF	46,580,000.000
Sanitation Coverage Action	MWDS	600,000.000
Improvement of Commercial Processes	WWSSCL	4,050,000.000
Improvement of Commercial Processes	World Bank	1,950,000.000
Improvement of Commercial Processes	MWDS	200,000.000
Water Production Capacity Rehabilitation	World Bank	18,752,566.000
Water Production Capacity Rehabilitation	MWDS	24,000,000.000
	TOTAL ACTIVITY COST	212,055,592.000

Table 34.1 : Source of Funds

World Bank	112,404,000.000	53%
MWDS	42,364,000.000	20%
WWSSCL	6,717,592.000	3%
Water Aid Zambia	1,390,000.000	1%
World Vision Zambia	600,000.000	0.3%
CDF	48,580,000.000	23%
TOTAL PIAP COST	212,055,592.000	100%

RISK MANAGEMENT FRAMEWORK FOR PIAP IMPLEMENTATION

1. Purpose of the Risk Management Framework

This framework provides a **structured approach to identifying, assessing, mitigating, and monitoring risks** that may affect the successful implementation of the **Performance Improvement Action Plan (PIAP)**. It ensures that risks are proactively managed to safeguard **service delivery, financial sustainability, regulatory compliance, and stakeholder confidence**.

2. Risk Management Approach

The framework is based on four key steps:

1. **Risk Identification** – Recognising potential internal and external risks
2. **Risk Assessment** – Evaluating likelihood and impact
3. **Risk Mitigation** – Defining control measures
4. **Monitoring & Reporting** – Continuous tracking and review

3. Risk Management Approach

The PIAP implementation is exposed to the following major risk categories:

- Strategic Risks
- Operational Risks
- Financial Risks
- Regulatory & Policy Risks
- Political Risks
- Environmental & Climate Risks
- Technological & Cybersecurity Risks
- Social & Stakeholder Risks

4.1 Strategic and Governance Risk Register

Table 24: 4.1 – Strategic and Governance Risk Register

Risk	Impact	Mitigation Measures
Weak implementation of PIAP	Failure to achieve KPIs	Establish PIAP steering committee; regular performance reviews
Poor corporate governance	Reduced accountability	Strengthen internal controls and board oversight
Inadequate stakeholder coordination	Delays and duplication	Develop stakeholder engagement plan and MOUs

4.2 Operational Risk Register

Table 25: 4.2 – Operational Risk Register

Risk	Impact	Mitigation Measures
High Non-Revenue Water (NRW)	Revenue loss; inefficiency	Implement NRW reduction programme (metering, leak detection)
Aging and dilapidated infrastructure	Service interruptions	Prioritise rehabilitation and asset management plans

Risk	Impact	Mitigation Measures
Inadequate technical capacity	Poor service delivery	Implement targeted capacity building programmes
Inefficient sanitation systems	Public health risks	Introduce scheduled desludging and improved systems

4.3 Financial Risk Register

Table 26: 4.3 – Financial Risk Register

Risk	Impact	Mitigation Measures
Low-cost recovery (63.3%)	Unsustainable operations	Improve billing, expand customer base, cost control
Tariff constraints	Limited revenue growth	Engage regulator for periodic tariff reviews
Funding shortfalls	Delayed projects	Diversify funding (government, partners, PPPs)

4.4 Regulatory and Sector Reform Risk Register

Table 27: 4.4 – Regulatory and Sector Reform Risk Register

Risk	Impact	Mitigation Measures
Changes in sector policies/reforms	Disruption of operations	Align PIAP with national policies and maintain flexibility
Over-regulation	Reduced operational autonomy	Strengthen compliance and engage regulator proactively
Non-compliance with standards	Penalties and reputational risk	Regular audits and compliance monitoring

4.5 Political Risk Register

Table 28: 4.5 – Political Risk Register

Risk	Impact	Mitigation Measures
Political interference in operations	Inefficiency and decision delays	Strengthen governance structures and transparency
Changes in government priorities	Project disruption	Align projects with national development agendas
Pressure on tariffs and service delivery	Financial strain	Stakeholder engagement and advocacy

4.6 Environmental and Climate Risk Register

Table 29: 4.6 – Environmental and Climate Risk Register

Risk	Impact	Mitigation Measures
Climate change (droughts/floods)	Reduced water availability	Invest in climate-resilient infrastructure
Environmental degradation	Increased treatment costs	Promote watershed protection programmes
High energy consumption	Increased operational costs	Improve energy efficiency and adopt renewables

4.7 Technological and Cybersecurity Risk Register

Table 30: 4.7 – Technological and Cybersecurity Risk Register

Risk	Impact	Mitigation Measures
Cybersecurity breaches (billing systems, SCADA)	Data loss; financial fraud	Implement firewalls, encryption, regular system audits
Outdated ICT systems	Operational inefficiency	Upgrade digital systems and automate processes
Data inaccuracies in customer database	Revenue loss	Conduct database cleaning and verification

4.8 Social and Stakeholder Risk Register

Table 31: 4.8 – Social and Stakeholder Risk Register

Risk	Impact	Mitigation Measures
Community resistance to projects	Delays in implementation	Strengthen community engagement and sensitisation
Low affordability of services	Reduced uptake	Implement pro-poor tariffs and service models
Vandalism and illegal connections	Increased NRW	Community awareness and enforcement measures

Risk Monitoring and Reporting

- Establish a Risk Management Committee
- Integrate risk tracking into PIAP monitoring framework
- Conduct quarterly risk reviews
- Maintain a risk register with updates
- Report risks to management and the Board regularly

Table 32: Risk Management Roles and Responsibilities

Stakeholder	Role in Risk Management
Management	Overall risk oversight and implementation
Board of Directors	Governance and accountability
Departments	Identify and manage operational risks
Regulator (NWASCO)	Ensure compliance and oversight
Development Partners	Support risk mitigation through funding and technical assistance

Conclusion

A robust risk management framework is essential for the successful implementation of the PIAP. By proactively identifying and mitigating risks—including cybersecurity, political, regulatory, financial, and environmental risks—WWSSCL can ensure sustainable service delivery, improved performance, and resilience in a dynamic operating environment.

5. MONITORING AND EVALUATION FRAMEWORK

The Monitoring and Evaluation (M&E) framework provides a structured approach to track the implementation and performance of the Performance Improvement Action Plan (PIAP) over a five-year period. It outlines key performance indicators (KPIs), tools, responsibilities, and reporting frequencies across all thematic areas to ensure accountability, transparency, and continuous improvement. The framework enables evidence-based decision-making and supports alignment of operational activities with corporate and program goals.

Thematic areas covered include: Collection Efficiency, Customer Engagement and Feedback, Gender and Social Inclusion (GESI), Climate Adaptation and Resilience, Financial Management and Accountability, Water Service Extension, MIS/Digitalization/SCADA, Energy Efficiency Management Plan (EEMP), Non-Revenue Water (NRW) Reduction, and Hydraulic Modelling.

Table 33: Monitoring and Evaluation Framework

Thematic Area	Monitoring/Evaluation Tool	Frequency	Responsible Unit	Key Performance Indicators (KPIs)	Expected 5-Year Output
5.1 Progress Reports	Logical Framework	Quarterly	M&E Unit	2 M&E logical frameworks completed/approved	20 completed/approved logical frameworks
5.2 Internal PIAP Review	Logical Framework	Biannual	PIU	Updated/approved PIAP (Board)	10 updated/approved PIAPs by the Board
5.3 Hydraulic Modelling	Model reports, network simulations	Annually	Technical Dept	Model updated annually; used for investment & network optimization	Data-driven planning and improved network performance
5.4 NRW Reduction	Water balance, leakage reports, metering data	Monthly/Quarterly	Technical Dept (NRW Unit)	NRW $\leq$ 35%; metering ratio $\geq$ 85%	Improved water loss control and system efficiency
5.5 Energy Efficiency (EEMP)	Energy audit, power consumption reports	Bi-Annually	Technical Dept (Operations Unit)	$\geq$ 15% energy cost reduction; improved pump efficiency	Optimized energy use and reduced operational costs
5.6 MIS/Digitalisation/SCADA	IT reports, SCADA logs, system audit	Quarterly/Annually	IT/MIS Unit	Functional MIS & SCADA; real-time operational data	Enhanced operational efficiency and digital monitoring
5.7 Water Service Extension	Project reports, GIS maps, inspection checklists	Quarterly	Transition Unit	$\geq$ 10% increase in service coverage; new connections annually	Improved access to safe water supply

Thematic Area	Monitoring/Evaluation Tool	Frequency	Responsible Unit	Key Performance Indicators (KPIs)	Expected 5-Year Output
5.8 Financial Management	Audit reports, expenditure tracking	Quarterly/Annually	Finance Department	Clean audit reports; budget utilisation ≥90%	Transparent and accountable financial system
5.9 Climate Adaptation	Climate risk assessment, environmental audits	Annually	Technical & Environment	Climate-resilient infrastructure; adaptation measures integrated	Increased resilience of infrastructure and communities
5.10 Gender & Social Inclusion	GESI reports, HR data, community records	Semi-Annually	HR & Social Safeguards	≥40% women participation; inclusion of vulnerable groups	Gender equity and inclusive participation mainstreamed
5.11 Customer Engagement	Satisfaction surveys, feedback logs, hotline reports	Quarterly/Annually	PR & Customer Service	≥85% customer satisfaction; ≥80% complaints resolved in 5 days	Strengthened customer trust and transparency
5.12 Sanitation Coverage	GIS database and maps, Enumeration reports, Gap analysis report, Design drawings and specifications, Cost estimates and BOQs, Progress Reports	Quadrimester	Technical Dept	Sanitation coverage ≥90% by 2030; GIS-mapped facilities in all 16 districts	Improved sanitation access; reduced open defecation; sustainable FSM systems
5.13 Improvement of Commercial Processes	Billing reports, revenue collection records, customer database audits, debt management reports	Monthly/Quarterly	Commercial Dept	Billing ≥K46M by 2030; customer debt reduced to K9M; 100% collection efficiency	Improved financial sustainability and revenue assurance
5.14 Increasing Water Production Capacity through Infrastructure Rehabilitation	Gap analysis report, Design drawings and specifications, Cost estimates and BOQs, Progress Reports	Monthly/Quarterly	Technical Dept	Expanded production capacity in Shangombo, Lukulu, Kalabo; improved system reliability	Reliable, sustainable water supply supporting 60% service coverage by 2030
5.12 Collection Efficiency	Revenue reports, billing database, financial audits	Monthly/Quarterly	Finance & Commercial	Collection efficiency ≥90%; arrears <10%	Sustainable revenue base and improved cost recovery

6. DISCLOSURE AND ACCOUNTABILITY MEASURES

PIAP Disclosure Date: 30 June 2026

Disclosure Commitment

WWSSCL is committed to transparency, accountability, and stakeholder engagement in the implementation of its PIAP. This commitment ensures that all relevant stakeholders are informed, involved, and able to provide feedback throughout the lifecycle of the PIAP.

1. Approval and Validation

- The PIAP will be formally submitted to the Board of Directors for review and approval prior to implementation.
- The Board's validation ensures alignment with the company's strategic objectives, regulatory requirements, and sector priorities.
- The approved PIAP will outline targets, timelines, responsible parties, and KPIs to guide implementation and monitoring.

2. Public Disclosure

WWSSCL will ensure the PIAP is accessible to all stakeholders through:

- **Company Website:** The approved PIAP will be published for public access.
- **Digital Communication Platforms:** Key stakeholders will receive updates via WhatsApp groups and other digital channels.
- **Stakeholder Meetings:** WWSSCL will conduct public meetings in each of the 16 districts to present the PIAP and receive feedback.

3. Stakeholder Engagement

- Stakeholders include government agencies, regulators, local authorities, community structures, development partners, private operators, and civil society organisations.
- Community feedback, especially from urban poor and marginalised populations, will be considered in PIAP implementation.
- Feedback collected will be documented, reviewed, and incorporated into PIAP activities where appropriate.

4. Principles of Disclosure

- **Transparency:** Make PIAP documents, progress reports, and updates publicly accessible.
- **Timeliness:** Provide regular updates on PIAP implementation, milestones, and changes.
- **Responsiveness:** Address stakeholder questions, concerns, and suggestions promptly.
- **Compliance:** Ensure disclosure practices meet World Bank standards, national regulations, and sector guidelines.

5. Monitoring and Reporting

- A PIAP Disclosure Unit will coordinate all disclosure activities.
- Quarterly and annual PIAP progress reports will be published and shared with: Board of Directors; Regulators (NWASCO); Development Partners; and Community Stakeholders.
- Reports will include status of interventions, achievements, challenges, and corrective measures.

Annual Report Publishing for the PIAP

WWSSCL is committed to **transparent, timely, and accurate reporting** on the implementation of the Performance Improvement Action Plan (PIAP). The company shall prepare and publish **Annual PIAP Reports** to provide stakeholders with a comprehensive account of progress, performance, and financial utilization.

1. Purpose of the Annual PIAP Report

The Annual PIAP Report will:

- Provide a **detailed assessment of progress** against PIAP targets and Key Performance Indicators (KPIs)
- Enhance **accountability and transparency** to stakeholders
- Support **evidence-based decision-making and corrective actions**
- Meet reporting requirements of regulators, government, and development partners

2. Reporting Process

The preparation of the Annual PIAP Report will follow a structured process:

1. **Data Collection:**
 - Departments will compile performance data on KPIs, project implementation, and financial utilization
 - Data will be verified through internal monitoring systems
2. **Consolidation and Analysis:**
 - The Planning/Strategy Unit will consolidate inputs and analyze performance against targets
 - Variances, challenges, and lessons learned will be documented
3. **Internal Review:**
 - The draft report will be reviewed by Senior Management for accuracy and completeness
4. **Board Approval:**
 - The final report will be submitted to the **Board of Directors for review and approval**

3. Content of the Annual PIAP Report

The report will include, but not be limited to:

- Overview of PIAP objectives and implementation status
- Performance against **KPIs** (e.g., NRW, coverage, cost recovery, customer service)
- Summary of key projects and interventions implemented
- Financial performance, including **fund utilization and cost coverage**
- Achievements, challenges, and mitigation measures
- Stakeholder engagement and feedback
- Environmental and social performance (including pro-poor interventions)
- Planned actions for the following year

4. Publication and Disclosure

Upon approval, the Annual PIAP Report will be **publicly disclosed** through the following channels:

- **Company Website:** Full report published for public access
- **Digital Platforms:** Summary highlights shared via **WhatsApp groups and other communication channels**
- **Stakeholder Meetings:** Findings presented during **annual stakeholder engagement forums across the 16 districts**
- **Hard Copies:** Made available at company offices and key public institutions where feasible

5. Timing

- The Annual PIAP Report will be prepared **within three (3) months after the end of each financial year**
- Publication and public disclosure will take place **immediately after Board approval**
- Stakeholder dissemination meetings will be conducted **within the first half of the following year**

6. Responsibility

- The **Planning/Strategy Unit** will lead the preparation and coordination of the report
- Departmental Heads will be responsible for providing accurate and timely data
- Senior Management will oversee quality assurance

The Board of Directors will provide final approval.

7. Compliance and Standards

The Annual PIAP Report will be prepared in line with:

- Company reporting policies
- National regulatory requirements
- International best practices, including **World Bank reporting and disclosure standards**

The publication of Annual PIAP Reports demonstrates WWSSCL's commitment to **openness, accountability, and continuous improvement**. By regularly informing stakeholders of progress and performance, the company strengthens **trust, transparency, and effective implementation** of the PIAP.

6.1 Leadership Accountability Framework

The successful implementation of the Performance Improvement Action Plan (PIAP) at Western Water Supply and Sanitation Company Limited (WWSSCL) is anchored on a **robust leadership accountability framework** that ensures clear roles, performance ownership, and measurable results at all levels of the organization.

At the apex of this framework is the **Board of Directors**, which provides **strategic oversight, governance, and policy direction** for the implementation of the PIAP. The Board is responsible for **validating and approving the PIAP**, ensuring that it is aligned with the company's strategic objectives, regulatory requirements, and national sector priorities. To reinforce accountability, the Board enters into a **Performance Improvement Contract** with the Managing Director (MD), clearly outlining expected deliverables, key performance indicators (KPIs), and timelines.

The **Managing Director** serves as the **chief accountable officer** for PIAP implementation and is responsible for translating the Board's strategic directives into **operational actions and results**. The MD ensures that the PIAP is effectively cascaded across the organization and that adequate resources, systems, and institutional support are in place to drive implementation.

To institutionalise accountability, all **Heads of Departments (HoDs)** sign **performance contracts with the Managing Director**. These contracts are aligned with PIAP targets and departmental responsibilities, ensuring that each functional area contributes directly to the achievement of key performance indicators such as **Non-Revenue Water reduction, service coverage expansion, financial sustainability, and customer service improvement**.

At the operational level, **individual staff members** enter into **performance agreements with their respective Heads of Departments and Supervisors**. This cascading of performance contracts ensures that accountability is embedded throughout the organization, creating a **clear line of sight between individual performance and overall corporate objectives**.

Performance management is further strengthened through a structured **Performance Appraisal System**, with **bi-annual performance reviews** conducted to assess progress against agreed targets. These appraisals serve multiple purposes:

- Tracking progress on PIAP implementation
- Identifying performance gaps and corrective actions
- Informing training and capacity building needs
- Supporting reward and sanction mechanisms

In addition, periodic **management review meetings** are held to evaluate departmental and organizational performance, enabling leadership to make **data-driven decisions** and implement timely interventions where necessary.

To enhance transparency and accountability, the leadership framework also promotes:

- **Regular reporting to the Board of Directors** on PIAP progress
- **Internal performance monitoring dashboards**
- Alignment with regulatory reporting requirements to bodies such as the National Water Supply and Sanitation Council

Furthermore, the framework fosters a culture of **results-based management**, where leadership at all levels is accountable not only for activities but also for **measurable outcomes and impact**.

The leadership accountability framework for PIAP implementation ensures that:

- **Responsibility is clearly defined and cascaded across all levels**
- **Performance is continuously monitored and evaluated**
- **Decision-making is evidence-based and responsive**
- **Organizational efforts are aligned toward achieving strategic goals**

By strengthening leadership accountability through performance contracts, structured appraisals, and strong governance oversight, WWSSCL is well-positioned to deliver on its PIAP objectives and improve overall service delivery, efficiency, and sustainability.

6.2 Disclosure Commitment for the Performance Improvement Action Plan (PIAP)

Western Water Supply and Sanitation Company Limited (WWSSCL) is committed to **transparency, accountability, and stakeholder engagement** in the implementation of its **Performance Improvement Action Plan (PIAP)**. This commitment ensures that all relevant stakeholders are **informed, involved, and able to provide feedback** throughout the lifecycle of the PIAP.

1. Approval and Validation

- The PIAP will be formally **submitted to the Board of Directors for review and approval** prior to implementation.
- The Board's validation ensures that the PIAP is aligned with the **company's strategic objectives, regulatory requirements, and sector priorities**.
- The approved PIAP will outline **targets, timelines, responsible parties, and performance indicators (KPIs)** to guide implementation and monitoring.

2. Public Disclosure

WWSSCL will ensure that the PIAP is **accessible to all stakeholders** through multiple channels:

1. **Company Website:** The approved PIAP will be published for public access.
2. **Digital Communication Platforms:** Key stakeholders and community representatives will receive updates via **WhatsApp groups** and other digital channels.
3. **Stakeholder Meetings:** WWSSCL will conduct **public meetings in each of the 16 districts** to present the PIAP, explain objectives and interventions, and receive stakeholder feedback.

3. Stakeholder Engagement

- Stakeholders include **government agencies, regulators, local authorities, community structures, development partners, private operators, and civil society organizations**.
- WWSSCL will ensure that **community feedback, especially from urban poor and marginalized populations, is considered** in PIAP implementation.
- Feedback collected from meetings and digital channels will be **documented, reviewed, and incorporated** into PIAP activities where appropriate.

4. Principles of Disclosure

WWSSCL commits to:

- **Transparency:** Make PIAP documents, progress reports, and updates publicly accessible.
- **Timeliness:** Provide regular updates on PIAP implementation, milestones, and changes.
- **Responsiveness:** Address stakeholder questions, concerns, and suggestions promptly.
- **Compliance:** Ensure disclosure practices meet **World Bank standards, national regulations, and sector guidelines**.

5. Monitoring and Reporting

- A **PIAP Disclosure Unit** will coordinate all disclosure activities and ensure stakeholder communications are consistent and timely.
- Quarterly and annual **PIAP progress reports** will be published and shared with:
 - Board of Directors
 - Regulators (e.g., NWASCO)
 - Development partners
 - Community stakeholders
- The reporting will include **status of interventions, achievements, challenges, and corrective measures**

WWSSCL recognizes that **effective disclosure and stakeholder engagement** are essential for the success of the PIAP. By publicly sharing the plan, engaging communities, and maintaining accountability, the company ensures:

- **Inclusive, equitable, and pro-poor service delivery**
- **Enhanced public trust and stakeholder confidence**
- **Alignment with World Bank disclosure and accountability standards**

This Disclosure Commitment demonstrates WWSSCL's dedication to **transparent, participatory, and accountable implementation of the PIAP**.

MANAGEMENT PROTOCOLS AND ACCOUNTABILITY FRAMEWORK FOR THE ESCROW ACCOUNT

1. PURPOSE

The Escrow Account has been established to ensure transparent, accountable, and ring-fenced management of funds under the Zambia Water Supply and Sanitation Services in Growth Centres (ZWSSGC) Program for Results (PforR).

The account shall support:

- Efficient utilization of Program funds
- Strengthening financial accountability
- Protection of Program resources
- Timely implementation of approved activities
- Compliance with World Bank and Government financial management requirements

2. OBJECTIVES OF THE ESCROW ACCOUNT

The escrow account shall:

1. Safeguard Program funds from diversion.
2. Ensure funds are utilized strictly for approved PforR activities.
3. Enhance financial transparency and accountability.
4. Facilitate monitoring of expenditures and results achievement.
5. Improve predictability and timeliness of project financing.

3. ACCOUNT MANAGEMENT PROTOCOLS

3.1 Establishment of the Escrow Account

- The escrow account shall be opened in a reputable commercial bank acceptable to the Ministry of Finance and cooperating partners.
- The account shall be maintained separately from the utility's operational accounts.
- The account shall operate strictly for PforR-related transactions.
- The account currency shall be determined in accordance with financing agreement provisions.

3.2 Authorized Signatories

The escrow account shall operate under a minimum of three authorized signatories:

- Managing Director
- Director Finance
- Program Coordinator/Project Manager

Signing Arrangement

- Any two signatories shall jointly authorize payments.
- Mandatory inclusion of the Finance Directorate in all payment approvals.

3.3 Access Control

- Access to online banking platforms shall be restricted to authorized personnel only.
- User access rights shall be segregated between:
 - Transaction initiation
 - Verification
 - Approval
 - Reconciliation
- Password sharing shall be prohibited.
- Access logs shall be maintained and reviewed periodically.

3.4 Eligible Expenditures

Funds from the escrow account shall only finance:

- Approved procurement activities
- Program implementation costs
- Approved operational expenditures under the PIAP
- Activities linked to achievement of Program Results Indicators (PRIs/DLIs)

Non-Eligible Expenditures

The following shall not be financed:

- Personal expenses
- Unapproved operational costs
- Political activities
- Unbudgeted expenditures
- Salary arrears unrelated to the Program

4. FUND DISBURSEMENT PROTOCOLS

4.1 Approval Procedures

All payments shall:

- Be supported by approved budgets/workplans.
- Have adequate supporting documentation.
- Be verified by Finance and Procurement units.
- Receive prior approval from the designated approving authority.

4.2 Payment Documentation

Required documentation shall include:

- Approved requisition
- Purchase order/contract
- Invoice
- Delivery note/completion certificate
- Payment voucher
- Evidence of approval

4.3 Procurement Compliance

All expenditures shall comply with:

- World Bank Procurement Regulations
- Public Procurement Act
- Internal procurement procedures
- Approved procurement plan

5. FINANCIAL ACCOUNTABILITY MEASURES

5.1 Monthly Reconciliation

- Monthly bank reconciliations shall be prepared within five working days after month-end.
- Reconciliations shall be reviewed and approved by the Director Finance.
- Any unreconciled balances shall be investigated immediately.

5.2 Financial Reporting

The utility shall prepare:

- Monthly financial reports
- Quarterly Interim Financial Reports (IFRs)
- Annual financial statements

Reports shall include:

- Funds received
- Expenditure by category
- Account balances
- Commitments
- Variances against budget

5.3 Internal Controls

The following controls shall apply:

- Segregation of duties
- Independent payment verification
- Budget controls
- Commitment controls
- Supporting documentation verification
- Periodic management review

6. AUDIT ARRANGEMENTS

6.1 Internal Audit

- Internal audits shall be conducted quarterly.
- Audit findings shall be presented to Management and the Audit Committee.
- Corrective actions shall be implemented within agreed timelines.

6.2 External Audit

- The escrow account shall be subject to annual external audit.
- Audit shall be conducted by the Office of the Auditor General or an independent auditor acceptable to the World Bank.
- Audit reports shall be submitted within prescribed timelines.

6. ACCOUNTABILITY RESPONSIBILITIES

Position	Responsibility
Managing Director	Overall oversight and accountability
Director Finance	Financial management and reporting
Program Coordinator	Program implementation oversight
Procurement Unit	Procurement compliance
Internal Audit	Independent assurance and compliance review
Board/Audit Committee	Governance oversight

8. FRAUD AND CORRUPTION PREVENTION

The utility shall enforce:

- Zero tolerance to fraud and corruption
- Whistle-blower protection mechanisms
- Mandatory reporting of suspected irregularities
- Investigation of financial misconduct
- Recovery procedures for misapplied funds

Any suspected fraud shall immediately be reported to:

- Management
- Board Audit Committee
- Ministry of Finance
- World Bank, where applicable

9. PERFORMANCE MONITORING

The escrow account performance shall be monitored using:

- Timeliness of disbursements
- Budget absorption rates
- Compliance levels
- Audit findings resolution
- Achievement of Program indicators

10. ESCROW ACCOUNT CLOSURE

Upon Program completion:

- Final reconciliation shall be conducted.
- Outstanding obligations shall be settled.
- Unutilized balances shall be returned in accordance with financing agreements.
- Final audited financial statements shall be prepared.

11. CONCLUSION

The establishment of the escrow account under the PforR Program is intended to strengthen financial governance, improve accountability, and ensure efficient utilization of Program resources.

Strict adherence to these management protocols and accountability measures shall enhance transparency, fiduciary compliance, and achievement of Program objectives within the water utility sector.

ESCROW ACCOUNT DETAILS:

ACCOUNT NAME	WESTERN WATER SUPPLY AND SANITATION COMPANY LIMITED
ACCOUNT NUMBER	0438447500726
BRANCH CODE	051
BRANCH SORT CODE	0131 51
BRANCH NAME	MONGU
BANK SWIFT CODE	ZNCOZMLU
BANK NAME	ZAMBIA NATIONAL COMMERCIAL BANK

7. APPROVAL AND SIGN-OFF

The following signatories confirm their approval of this Performance Improvement Action Plan for the period 2026–2030:

Table 34: Approval and Sign-Off

Name	Title	Signature	Date
Mr. Mbaza Chivunda	PIU Coordinator		12/06/26
Dr. Eng Mufalo Nanyama	Managing Director		12/06/26
Ms. Hannah Namasiku Mututwa	Board Chairperson		12/06/26
Ms. Chola Mbilima	NWASCO Focal Point Person		

ANNEX

- Annex 1: Cost of Activities for PIAP Implementation
- Annex 2: Gantt Chart (Calculate critical path based on incentivised indicators)
- Annex 3. OCCR Achievement Implementation strategy.