Olifants Management Model (OMM) Programme

Programme Early Business Case – High Value

Integrated Potable and Bulk Raw Water Solution

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IMPROVING LIVES THROUGH WATER

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Abbreviations

AACE	Association for the Advancement of Cost Engineering
AADD	Average Annual Daily Demand
AAP	Anglo American Platinum
AFDB	African Development Bank
ARM	African Rainbow Minerals
BOOT	Build-Own-Operate-Transfer
BOQ	Bill of Quantities
CAPEX	Capital Expenditure
CEO	Chief Executive Officer
CFO	Chief Financial Officer
CMA	Catchment Management Agency
COC	Centre of Competence
COE	Centre of Excellence
COO	Chief Operations Officer
CPI	Consumer Price Index
CSI	Corporate Social Investment
CSO	Chief Socio-Economic Development Officer
CSR	Concept Study Report
CUC	Commercial Users Consortium
DBSA	Development Bank of South Africa
DFI	Development Finance Institution
DG	Director General
DHS	Department of Human Settlements
DORA	Division of Revenue Act
DRDLR	Department of Rural Development and Land Reform
DSCR	Debt Services Cover Ratio
DWAF	Department of Water Affairs and Forestry
DWS	Department of Water and Sanitation
ECA	Export Credit Agency
ED	Enterprise Development
EPC	Engineering Procurement and Construction
EW	Early Works
FID	Financial Investment Decision
FTE	Full-time Equivalent
GDP	Gross Domestic Product
GN	Government Notice
GRC&L	Governance, Risk, Compliance and Legal
HoT	Heads of Terms
HR	Human Resource
IB	Irrigation Board

IDC	International Development Corporation
IM	Information Management
IFC	International Finance Corporation
IRR	Institutional Reform and Realignment
ISA	Infrastructure South Africa
IT	Information Technology
ITA	Income Tax Act
JWF	Joint Water Forum
LLCR	Loan Life Cover Ratio
LNW	Lepelle Northern Water
LWUA	Lebalelo Water User Association
MIGA	Multilateral International Guarantee Agency
MISA	Municipal Infrastructure Support Agent
MLA	Multilateral Lending Agencies
MLM	Mogalakwena Local Municipality
MOU	Memorandum of Understanding
MPRDA	Minerals and Petroleum Resources Development Act, 2002
MPRRA	Minerals and Petroleum Royalty Act, 2008
MTEF	Medium Term Expenditure Funding
MW	Main Works
ND	Nominal Diameter
NEMA	National Environmental Management Act, 1998
NGO	Non-Government Organisation
NT	National Treasury
NWA	National Water Act, 1998
NWIB	National Water Infrastructure Branch
NWRS2	National Water Resources Strategy 2 Reference to Master Plan
O&M	Operations and Maintenance
OMM	Olifants Management Model
OMM WUA	Olifants Management Model Water User Association (the transformed and rebranded LWUA)
OPEX	Operating Expenditure
ORP	Operational Readiness Plan
ORS	Olifants River System
ORWRDP	Olifants River Water Resources Development Project
PAJA	Promotion of Administrative Justice Act, 2000
PEGAC	Premier's Employment Growth Advisory Council
PEP	Project Execution Plan
PFMA	Public Finance Management Act
P&Gs	Preliminary and General costs
PIC	Public Investment Corporation
PIM	Project Investment Plan
POs	Purchase Orders
POP	Procurement Operating Plan
PPGI	Public-Private Growth Initiative
PPP	Public-Private Partnership

PR	Public Relations
RBIG	Regional Bulk Infrastructure Grant
RFI	Request for Information
RFP	Request for Proposal
RID	Record of Implementation Decisions
RoA	Return on Asset
RoI	Return on Investment
SADC	Southern African Development Communities
SANS	South African National Standards
SARS	South African Revenue Services
SCM	Supply Chain Management
SDG	Sustainable Development Goal
SDM	Sekhukhune District Municipality
SED	Socio-Economic Development
SEIA	Socio-Economic Impact Assessment
SEIFSA	Steel and Engineering Industries Federation of Southern Africa
SIB	Stay-in-business
SLP	Social Labour Plan
SPV	Special Purpose Vehicle
SWAM	System Water Availability Model
TCTA	Trans-Caledon Tunnel Authority
TGP	Total Guaranteed Package
TOM	Target Operating Model
VAT	Value Added Tax
WBS	Work Breakdown Structure
WSA	Water Services Authority
WS Act	Water Service Act, 1997
WTW	Water Treatment Works
WUA	Water User Association
WUL	Water Use License

Key Definitions

Commercial Users:	Means the mines who have confirmed their interest in becoming members of the OMM WUA and may also include other users such as industrial users that require water which is not provided by a Water Service Authority and can be provided with water through the OMM Programme;
LWUA:	Lebalelo Water User Association, a Water User Association established in terms of Chapter 8 of the National Water Act, 1998.
OMM Programme:	The scope of the OMM Programme is to: 1. Abstract the current WUA scheme water primarily from De Hoop dam instead of the Olifants river to relieve pressure on the already over-allocated Flag Boshielo dam; 2. Re-sequence the construction of ORWRDP bulk raw water infrastructure to meet revised water needs: ▪ commence construction with Phase 2B, 2B+ and 2F whilst deferring Phase 2D and 2E until needed; ▪ construct a new pump station between Steelpoort pump station and Mooihoek reservoir; and ▪ construct potable water infrastructure for defined areas in the Northern and Eastern Limb with construction to be fast tracked where existing bulk water infrastructure is already in place. 3. Establish a resourcing partnership through the OMM WUA to: ▪ construct, operate and maintain the defined bulk water infrastructure (including the Flag Boshielo and De Hoop dams); ▪ construct potable water infrastructure in the defined areas in the Northern and Eastern Limb; and ▪ provide operational support to WS Authorities (where required); 4. Implement a socio-economic development (**SED**) plan to prepare communities to participate in the OMM Programme spend to develop skills, create jobs and change behaviour. The SED programme is to focus on potable water, sanitation services, connectivity, education and enterprise development.
OMM WUA:	A transformed Water User Association to be established pursuant to the rebranding of the current LWUA. The Government, currently represented by DWS, and the CUC will form the members of the OMM WUA on a 50:50 basis.
ORWRDP:	The Olifants River Water Resource Development Project, a DWS project conceptualised in the late 1990's aimed to address the raw water needs of the middle Olifants river catchment area in the Limpopo Province.

Foreword

Developing a business case is vital to any infrastructure project and ultimately to the prosperity and well-being of any business, country and its citizens. The business case is a planning and development tool for projects and an aid to effective decision-making.

The Five Case Model (5CM)[1] for business cases looks at a project from five perspectives (each of which forms an individual 'case') asking:

- Is the project strategically necessary? **(Strategic Case)**
- Is the project economically and socially desirable? **(Economic Case)**
- Is the project commercially viable? **(Commercial Case)**
- Is it affordable? **(Financial Case)**
- Can it be practically delivered? **(Management Case)**

The above ensures a flexible and structured approach which enables thorough assessment of proposals, helps justify the expenditure of public money and promotes communication with stakeholders, lenders and investors.

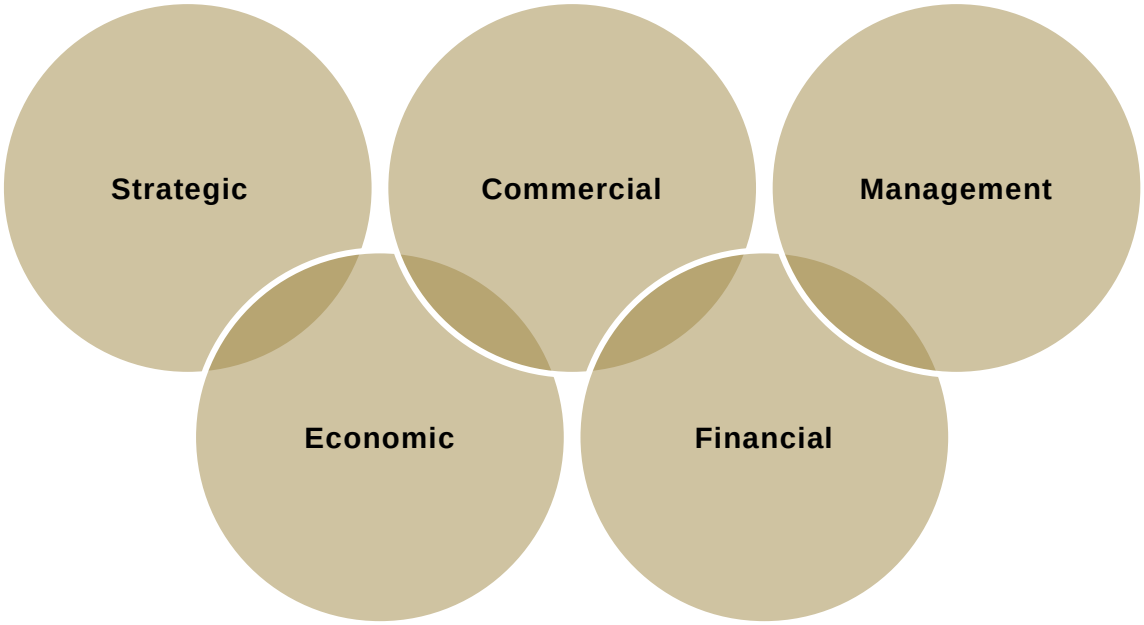
National Treasury (NT), Infrastructure South Africa (ISA) and other key stakeholders are adopting the 5CM as a standard for Business Cases. The Department of Water and Sanitation (DWS) and other key infrastructure departments are currently aligning to this standard and due to involvement of DWS in this programme key stakeholders have agreed to also conform to the 5CM format principles as part of the OMM WUA stage gate project implementation model methodology and reports. This alignment will also provide CUC members further comfort that best practice is applied to the overall programme without impacting their governance requirements.

The 5CM consists of the following five cases:

- **Strategic Case:** Providing the rationale for the project, describes its fit with wider policy/strategy, sets the project's scope and boundaries, describes clear project objectives, summarises all applicable risks (environmental, legislative and social risks) and opportunities and identifies the outcomes expected. In other words, it should clearly express the 'strategic need' for the project.
- **Economic Case:** Demonstrates that a wide range of options for developing the project have been considered and refined to a shortlist, and eventually a 'preferred option' using the cost-benefit analysis.
- **Commercial Case:** Demonstrates that the project is commercially viable. It sets out the proposed contractual structure, allocation of risk and the procurement strategy.
- **Financial Case:** Demonstrates that capital investment and operating costs are affordable from public resources and that sufficient allowance has been made for risk management, monitoring and unexpected events. This also includes any expected income which the parties may earn from the project.
- **Management Case:** Describes the project delivery team and demonstrates it has the right skills and experience, appropriate governance and a realistic project delivery plan. This should include plans for stakeholder engagement, risk management and benefit realisation.

[1] *Infrastructure Business Case: International Guidance, July 2020*

Figure 1 – Five Case Model

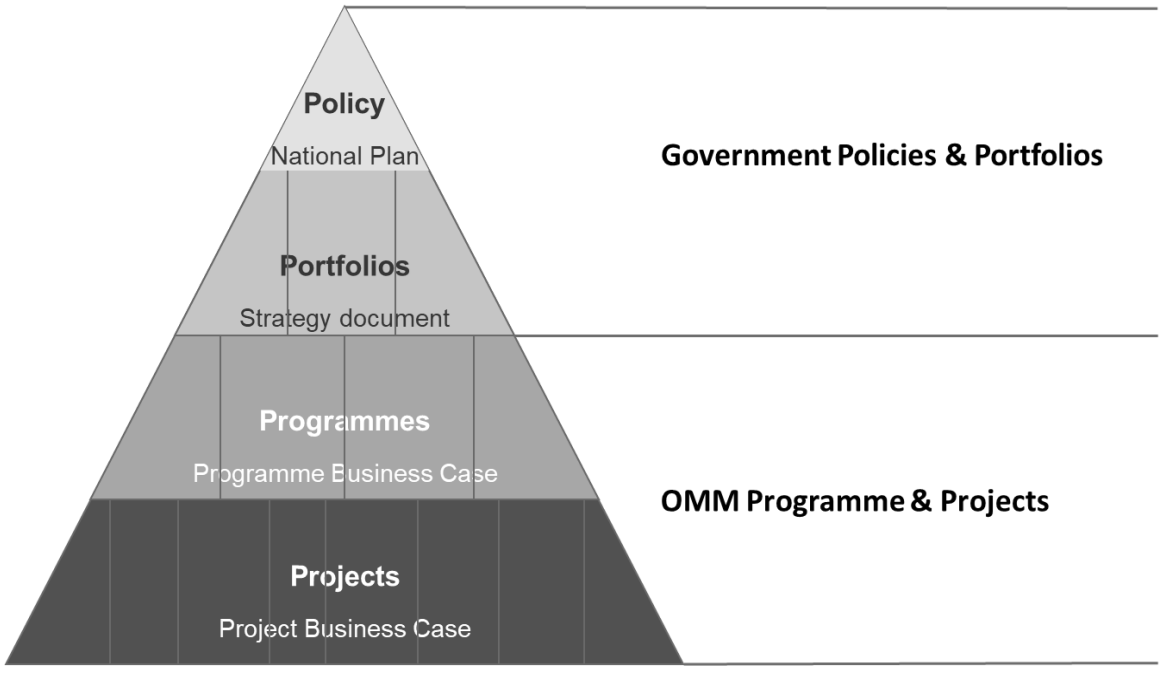


The individual cases are all interconnected, therefore when a change is made to one case, those other cases should be reviewed and their content updated, as required. The business cases are developed through three stages:

- Early Business Case
- Intermediate Business Case
- Full Business Case.

At each stage, each component case is revisited to check its conclusions and decisions in light of new information and analysis as the project develops.

Figure 2 – The Delivery Pyramid

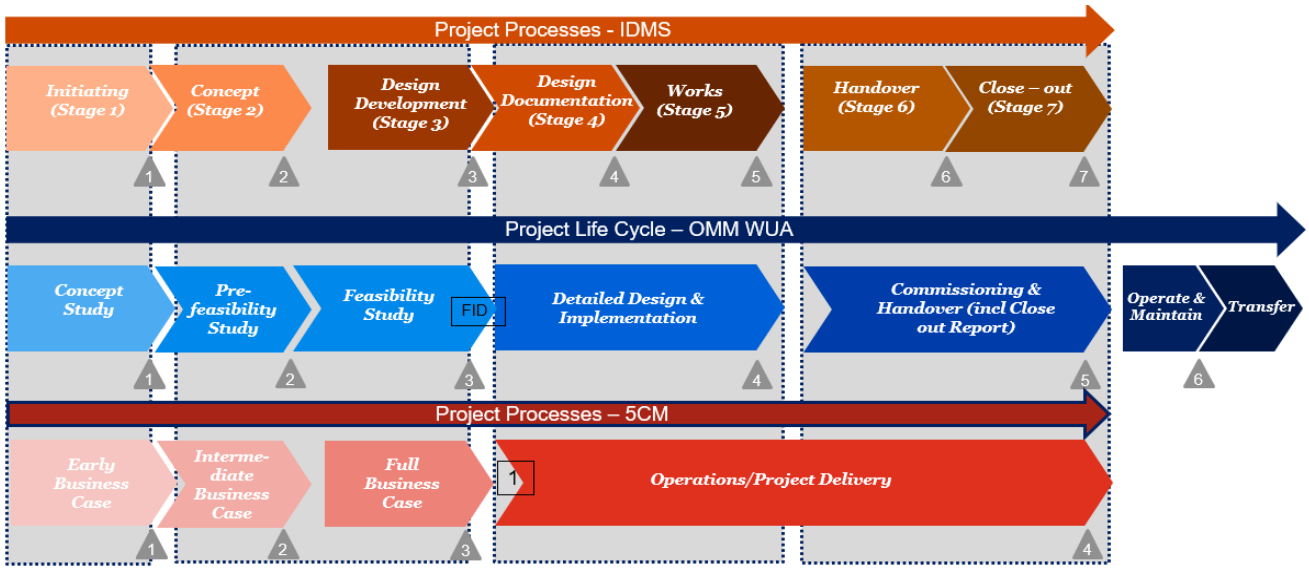


It is good practice for a project to agree a scoping, assurance and approval plan with the approving authority at the outset, mapping the project's journey through the assurance and approval process. This should be a progressive process, involving a number of stages and reviews, to ensure any issues are dealt with early and that there are 'no surprises' at the final approval point. The following steps are an example of the type of approach that could be agreed:

- **Early Business Case stage:** Approving that there is a strategic need to develop a project, that the shortlist of options identified represents a sensible response to the strategic need and the commitment of resources to prepare the Intermediate Business Case
- **Intermediate Business Case stage:** Approving the 'preferred option' as the option which offers the best solution from an economic, social and financial perspective and the commencement of procurement
- **Full Business Case stage:** Approving the results of the procurement process, signing of a formal contract with the 'preferred bidder' and releasing of funding to deliver the project.

The OMM WUA, the implementing entity for the OMM Programme, proposes to adopt a stage gate project implementation model based on international good practices for the Programme, which if compared to the IDMS project gates and the 5CM process flow, as illustrated below.

Figure 3 – Mapping of OMM WUA to IDMS and 5CM



1 Full Business Case report will align with FID (Final Investment Decision) requirements, linked to the commercial strategies for the specific project

The Programme consists of new projects as well as the continuation of some existing projects, that is in different stages of development, as defined in the stage gate project implementation model and therefor have already passed through certain approval gates. Those justifications and approval aspects of the individual projects are not repeated in this report but will be tested through due diligence investigations before the OMM Programme will proceed with its implementation.

Executive Summary

From the 5 key aspects of this early business case solution, it can be seen that together with the agreements between Government and CUC the conceptual frame for the OMM Programme demonstrated a viable solution that meets the objectives of the OMM WUA and its members, and is aligned to the required accuracy level for a Concept Study. Based on the details contained in this Early Business Case Report, the OMM Programme will be recommended for approval to proceed into the next implementation phase.

Strategic Case

Problem Statement

The Department of Water and Sanitation (DWS) conceptualised in the late 1990's the Olifants River Water Resource Development Project (ORWRDP) to address the water needs of the middle Olifants river catchment area in the Limpopo Province. The aim of the project was to release pressure off Flag Boshielo dam, the key regional source of water in the area, to provide water to the water-stressed city of Polokwane, and, in doing so, free up water for the water-stressed Mogalakwena municipal area.

The ORWRDP has only partially been implemented over the past two decades placing increasing pressure on DWS to meet social and industry expansion water needs. Additionally, potable water infrastructure development has been very slow in the Eastern Limb despite bulk raw water having been available since 2002 through the Lebalelo Water User Association (LWUA) Scheme. The delivery of potable water services in the Northern Limb area of Mogalakwena has also been hindered due to delays in the ORWRDP implementation.

Levels of social unrest and incidences of asset destruction have increased due to the slow progress in delivery of water services to communities together with unmet expectations of job creation from mines. This has resulted in vandalism of water infrastructure and mining operations being disrupted, particularly in the Eastern Limb.

Government has also had funding constraints with competing priorities for water and other infrastructure services. The outbreak of the Covid-19 pandemic has placed additional financial and organisational pressure on DWS to fast track water supply to communities to prevent the spread of the disease.

There is also currently a regional economic expansion opportunity to take advantage of a favourable commodity cycle.

The current ORWRDP plan, from a technical, financial and socio-economic perspective, is also no longer optimal nor fit-for-purpose requiring amendment for the following reasons:

1. The ORWRDP plan does not include the construction of a raw water pipeline from Pruissen to Mokopane and Sekuruwe which is required to meet social and commercial users' requirements;
2. Flag Boshielo dam is already over allocated and Northern Limb water supply phases would place additional pressure on the system. This pressure could be released through augmentation strategies and the abstraction of water from De Hoop dam to meet Eastern Limb requirements allowing water from Flag Boshielo dam to support the Northern Limb requirements;
3. The current plan to construct Phase 2D and 2E in the Eastern Limb, will provide no additional water to water stressed Polokwane. The construction of Phase 2F, before these two phases, would however significantly accelerate the provision of additional water to Polokwane;
4. The LWUA scheme infrastructure remains under-utilised and, with some minor modifications, can be used to link the De Hoop dam to Polokwane;

5. Technical specifications have not been revised to account for the reduced dam yields (De Hoop dam and Flag Boshielo dam) highlighting concerns over estimated cost; and
6. The synchronisation of bulk raw water infrastructure development with potable water infrastructure development has not occurred. This is a critical consideration to deliver potable water and requires an integrated approach.

To address the pressing social and commercial needs Government and a consortium of commercial water users (CUC) agreed to collaborate by entering into a joint venture arrangement. This arrangement termed the Olifants Management Model Water User Association (OMM WUA), has been tasked with financing, building, operating, maintaining and managing the development of a defined Programme for the accelerated delivery of bulk raw and potable water services in the region. The implementing entity for this OMM Programme is Lebalelo Water User Association (LWUA) which is in the process of being transformed and rebranded as the OMM WUA.

The Government consisting of the National Department of Water and Sanitation as well as affected municipalities are currently represented by the Department of Water and Sanitation (DWS). The CUC and Government will be 50:50 members of the OMM WUA.

Programme alignment with the Water Master Plan

The future OMM WUA comprise various stakeholders within Government and the CUC, and are best placed to respond to the Water Master Plan and easily bring together all the stakeholders to work together with Government to confront the challenges facing the water and sanitation sector within the Bushveld Igneous Complex.

The Water Master Plan unequivocally admits that South Africa is facing a water crisis caused by insufficient water infrastructure maintenance and investment, recurrent droughts driven by climatic variation, inequities in access to water and sanitation, deteriorating water quality, and a lack of skilled water engineers. This crisis is already having significant impacts on economic growth and on the well-being of everyone in South Africa. The proposed OMM Programme would address the water crisis caused by insufficient water infrastructure maintenance and investment identified in the Water Master Plan. If the OMM Programme is completed and becomes operational, it would go a long way to address inequities in access to water in the Limpopo Province and assisting Government in meeting the goals and key drivers identified in the Water Master Plan.

Programme Fit With Wider Policies and Strategies

The OMM Programme envisages a collaborative treatment of the relevant water acts to give effect to section 27 of the Constitution of the Republic of South Africa, 1996 (which addresses access to water) in managing water within a circular economy. The development of the proposed Programme is required to be socially, environmentally, and economically sustainable. The OMM Programme aims to provide for co-operative, environmental governance by establishing principles for decision-making on matters affecting the environment. Sustainable development requires the integration of social, economic, and environmental factors in the planning, implementation and evaluation of decisions to ensure that development serves present and future generations.

Programme Objectives

Considering water resource availability and the regional water needs, as agreed between the members of the OMM WUA, the proposed Programme aims to achieve the following key objectives:

1. Accelerate the implementation of the ORWRDP and social water supply to water stressed areas;
2. Optimise the utilisation of existing dams and infrastructure;
3. Improve potable water service delivery through supporting existing potable Water Services Authorities;

4. Develop skills in the water sector through establishing a resourcing partnership between Government and CUC members;
5. Improve social harmony in the region through the provisioning of social water, the creation of jobs and socio-economic development;
6. Sustainability of the Programme by fully mandating and equipping the OMM WUA to implement, manage, operate and maintain the Programme;
7. Strict adherence to regulatory requirements; and
8. Be a model water infrastructure pilot Programme for the country through collaboration and the provision of strong governance over the Programme by implementing the Programme based on internationally proven project execution principles and standards.

Proposed Scope

The proposed scope of the Programme is to:

1. Abstract the LWUA scheme water primarily from De Hoop dam instead of the Olifants river to relieve pressure on the already over-allocated Flag Boshielo dam;
2. Re-sequence the construction of ORWRDP bulk raw water infrastructure to meet revised water needs:
    a. commence construction with ORWRDP Phases 2B, 2B+ and 2F (revised and updated to meet current requirements) whilst deferring Phase 2D and 2E until needed
    b. construct a new pump station between Steelpoort pump station and Mooihoek reservoir
    c. construct potable water infrastructure for defined areas in the Northern and Eastern Limb with construction to be fast tracked where existing bulk water infrastructure is already in place;
3. Establish a resourcing partnership through the OMM WUA to:
    a. construct, operate and maintain the defined bulk water infrastructure (including the De Hoop and Flag Boshielo dams)
    b. provide operational support to Water Services Authorities,where required;
4. Implement a socio-economic development (SED) plan to prepare communities to participate in Programme spend to develop skills, create jobs and change behaviour. The SED programme will primarily focus on potable water, sanitation services, connectivity, education and enterprise development.

Risks and Opportunities

Potential key risks surrounding the Programme include:

1. Political and institutional alignment across all spheres of Government
2. Changes in key stakeholder leadership
3. Communities' willingness to allow construction activities to commence;
4. Ramping up of Construction Industry given the scale of the OMM Programme;
5. The impact on affordability of tariffs given the escalating cost of power sourced from Eskom;
6. Long lead times to address environmental and other regulations
7. A culture of non-payment for services
8. An increase in water usage against planned availability

The OMM Programme also has the opportunity of realising some significant opportunities not only regionally but also at a National level. These include:

1. Social harmony in the region through the provisioning of potable water, job creation and socio-economic development;

2. Behavioural change to water conservation and payment for services;
3. Increased collaboration between stakeholders to develop high impact socio-economic projects;
4. Development of skills in the water sector;
5. Establishment of a predictable cost-effective water tariff to assist large scale economic investment; and
6. Provision of water infrastructure to assist the industrialisation of the region.

Outcomes Expected

Three strategic outcomes are expected with the outcomes structured under three horizons. These outcomes will be monitored through the baselining and measurement of specific Sustainable Development Goals.

- **Horizon 1:** Stabilisation of operations and the provision of a social license to operate through a series of impactful initiatives to prepare communities for participation in the OMM Programme;
- **Horizon 2:** Successful implementation of the defined Programme to provide much needed water and in doing so building a trusted platform for socio-economic development (SED) in the region. This to be done through the expansion of the OMM's role to build, operate and maintain, bulk water infrastructure as well as building potable water infrastructure. This will include the establishment of a sustainable SED collaboration forum to align members around common socio-economic development initiatives and infrastructure to foster social harmony; and
- **Horizon 3:** Catalyse the creation of game changing businesses / initiatives to drive exponential socio-economic growth in the region through the identification and development of high socio-economic impact opportunities in the region.

Economic Case

A wide range of technical and execution options for developing the Programme have been considered and refined to concept level of detail, and a 'preferred option' selected that delivers best economic and social value to society, including wider social and environmental effects. This Programme scope development included an AACE level 5 capital cost estimate and financial model as part of the evaluation of this proposed solution. The evaluation results clearly showed the potential of an accelerated approach, addressing the revised water needs in the region and the viability of providing an equitable solution to all members.

The proposed solution offers a more effective use of the water resource through reducing the allocated demand on the over utilised Flag Boshielo Dam and transferring this demand to the De Hoop Dam which will allow for future expansion of the networks and associated economic growth in the region.

The integrated bulk raw water and potable water solution also caters for an alternative approach to the ORWRDP-2 that allows for the ORWRDP Phase D & E to be postponed, resulting in a lower capital requirement for the integrated scheme and therefore will lead to a lower water costs.

The proposed Programme solution will assist in alleviating socio-economic challenges in the region where up to 48% or more of people do not have access to piped (tap) water inside a yard. Since the integrated solution also caters for the supply of potable water to more than 350 000 people, the available capital saved through the optimisation of the Eastern Limb bulk raw water supply can be effectively applied to the overdue potable water supply to communities in the region. Furthermore, up to 43% of people in the Limpopo Province, and even higher in the areas targeted by the Programme, are unemployed. The socio-economic development aspects of this Programme will greatly alleviate this problem in the region. The economic impact assessment revealed that the Programme would likely result in 14,750 jobs being created in Limpopo Province linked to the construction spend with a further 9,580 jobs linked to the ongoing operational spend. Low-income groups would receive approximately 30% of the annual capital spend (over a 6 year period) and 39% of the annual operational spend (over a 27 year period) in the Province.

The execution of the Programme will be setup with a focus on the execution approach of the implementation phase that will ultimately follow the studies. This is centred around the execution phases of engineering, contracting and procurement, construction and commissioning. These core phases will be supported by the ten key project services required for execution while an independent project control function will provide information to the execution while at the same time ensure appropriate governance over the execution.

Commercial Case

The focus of this business case evaluation is on the technical solution that will best suit the business objectives and critical success factors and therefore only preliminary work was done on the possible delivery model for execution and the associated contracting strategy. Based on common contracting strategies typically used in the construction works, the view from the Early Business Case Report is to employ “Design and Build by Contractor” contracts on either a ‘target cost’, ‘lump sum’ or ‘activity schedules’ pricing strategy. The execution and contract strategies will be developed during the Pre-feasibility phase and finalised in the Feasibility phase.

The need to participate meaningfully in the socio-economic transformation of South Africa, OMM WUA has identified specific Procurement Principles that will address business and wealth creation imperatives with its dedicated procurement philosophy.

In developing procurement and contracting strategies the risk associated with the prospective scope will be evaluated and on the basis of good risk management practices, the execution party in the best position to manage a particular risk should be allocated the management responsibility.

Financial Case

It is envisaged that the OMM WUA will be financed using a combination of external debt and annual contributions from CUC and Government members.

The existing raw water infrastructure in place will be incorporated into the Programme in the form of initial capital contributions, and recognition will be provided to those members that contributed towards the capital expenditure of that existing infrastructure historically through a capital credit mechanism which effectively reduces their annual contributions towards the OMM Programme.

All new infrastructure (for both bulk raw and potable water), estimated at c. R25 bn for the immediate phases of the OMM Programme (including upfront costs for capitalisation and SED spent), is expected to be financed using external debt, with the debt being serviced equally by the CUC and Government (i.e. 50:50 split). Each CUC member will service their respective portion of the CUC’s 50% contribution based on their required capacity in the Programme. The same will apply for each Government member, servicing their respective portion of the Government’s 50% contribution.

Contributions towards operating expenses will be based on two elements namely a fixed cost component (take or pay based on capacity required) and a variable component based on usage. As agreed between Government and CUC the CUC in the HoT members are expected to contribute towards the operating expenses for bulk raw water only, while Government users will contribute towards bulk raw water operating expenses as well as cover the full operating cost related to the potable water service. This implies a 50:50 (on fixed cost component) and a 0:100 split between CUC and Government for bulk raw water operating expenses and potable water operating expenses respectively.

The annual contributions was reviewed and accepted by the OMM WUA members as the best alternative to the previous proposals, by spreading the up-front burden of extensive capital expenditure over the envisaged life of the OMM Programme. The funding model will also be refined to accommodate for funding flexibility as there may be instances where certain members may wish to contribute upfront lump sum payments or partial lump sum payments.

The funding structure will be further developed and affordability further assessed during the Studies Phase, giving due consideration to (i) the appropriate allocation and/or mitigation of various risks, (ii) the initial feedback to be obtained through a soft market sounding process, (iii) further refinement of the financial model and funding overlay, and (iv) continued refinement of the technical inputs.

The analysis performed under the Financial Case provides an initial indication that the OMM Programme can be funded externally and illustrates the estimated contributions required by each member on an annual basis to cover the anticipated financing and other operating costs over the programme period.

Tax Impact Evaluation

Income Tax

LWUA, which was established by Law, is approved by SARS for the purposes of section 10(1)(cA)(i) of the Income Tax Act (ITA). All its receipts and accruals are thus exempt from Income Tax. LWUA is also exempt from paying dividends tax, capital gains tax and donations tax.

LWUA is currently primarily funded by its members, i.e. water users licensed to receive a water allocation from the water scheme. Members pay water tariffs, calculated with reference to its water allocation per the licence granted. The income tax exemption granted to LWUA applies to all income stearms irrespective of the nature of the receipt.

LWUA will be transformed into the OMM WUA, extending its existing mandate and activities to include the building of potable water infrastructure. The concept furthermore envisages that the OMM Programme will be funded by members' contributions raised in the form of water tariff and once-off or annual capital contribution; loan funding as well as funding from Government in the form of grant funding and service payments.

The potential reclassification of the WUA for income tax purposes and the appropriate notifications and or application to SARS, will be considered once the mandate, function and powers of the OMM WUA has been finalised by the Minister of Water & Sanitation.

Value Added Tax

LWUA is a registered vendor for Value Added Tax (VAT) purposes, and is not currently for VAT purposes regarded as either a "welfare organisation" that conducts welfae activities or a "designated entity" in respect of grant funding

The capacity in which the OMM WUA is engaged by the Government in the OMM Programme will determine whether the standard or zero rate will for VAT purposes apply to the supply or deemed supply of services.

Management Case

The OMM WUA will be capacitated with sufficient capabilities to effect the design, build, financing, operation and maintenance of the OMM Programme. The core project team which developed the integrated solution will be expanded through a resourcing partnership between Government and the CUC members with appropriate levels of skills transferred / seconded to the OMM WUA to complement its existing resource base. The strategic intent is to use the skills capacitation of the OMM WUA to assist the development of skills in the wider water sector.

The established OMM WUA's Programme Steering Committee will guide the development of the OMM Programme and will be incorporated into the well-established and functioning Governance structures of the LWUA (to be transferred into the OMM WUA). The Governance structures will include processes to monitor OMM Programme risks including stakeholder management and engagement. The OMM WUA will, as far as possible, mitigate identified risks through strategies, plans and designs that will be developed during the pre-feasibility stage and remaining residual risk profiles will be transferred to the project risk register for management.

A project plan has been developed and will be refined as the remaining study phases are completed. The OMM Programme implementation methodology will be based on the application of internationally proven and accepted good project practices aligned to the OMM WUA members' capital investment governance processes. To this extent a stage gate project implementation model is utilised and each phase will be developed to demonstrate progressive elaboration of the details associated with scope, schedule and costs. This will include a comprehensive benefits realisation methodology and process.

The effects or outcomes of the OMM Programme implementation strategy and tracking of benefit realisation will be quantified through KPIs which can be assessed by OMM WUA through a number of economic and other tracking variables.

The planning process for each project phase is critical to align consultants, contractors and team members to drive common goals through a single execution approach. To this extent the preparation work for the Study Phase will amongst others, include the following:

1. OMM Programme Charter
2. Compilation of engineering consultant vendor lists of companies able to deliver on project scopes for the applicable next phases;
3. Prepare Request for Proposal (RFP) commercial documents for the applicable scopes
4. Prepare tender evaluation documents and tools for the respective RFPs
5. Appoint the respective consultants
6. Project Execution Plan (PEP) inclusive of detailed project management plans matching the Programme Charter Mandate
7. Establishment of the PMU with the required personnel, offices and system & tools infrastructure

The OMM Programme is a viable integrated potable and bulk raw water solution that meets the objectives of the OMM WUA and its members and meets the requirements and level of accuracy to complete the Early Business Case. The OMM Programme is ready to move to the next stages of development and will enable the OMM WUA to deliver against its purpose to **'Improve Lives Through Water'**.

1. Strategic Case

The purpose of the strategic dimension of the business case is to make the case for change and to demonstrate how it provides strategic fit. A clear understanding of the rationale, drivers and objectives for the spending proposal must be provided, including the existing arrangements, business needs, potential scope, benefits, risks, constraints and associated dependencies

1.1 Strategic Context

1.1.1 Lebalelo Water User Association Organisational Overview

In the 1990s, discussions began between mining companies and various governmental departments at national and provincial level to source raw water for mining activities along the Eastern Limb Bushveld Igneous Complex in Limpopo Province as well as water supply points for conversion to potable water for surrounding communities.

The position at the time was that there was no water available for industrial/mining ventures. The then Department of Water Affairs and Forestry (DWAF) considered the building of a new dam (Rooipoort Dam) on the Olifants river but eventually built the De Hoop Dam on the Steelpoort river. However, as an interim solution the unutilised portion of the water allocation of the Arabie Irrigation Scheme (a water infrastructure scheme drawing water from the Arabie dam, later re-named the Flag Boshielo dam) was temporarily allocated for the mining industry for seven years conditional on LWUA constructing infrastructure to support the irrigation scheme.

Around 2007, the dam wall of the Flag Boshielo Dam was raised by 5m to increase the yield of the dam (ORWRDP Phase 1). The members of the LWUA agreed to fund the project on a loan basis as per the agreement between DWAF and LWUA. Once the project had been completed the temporary licence for irrigation water reverted back to the Department of Agriculture and LWUA acquired a new water use licence from DWAF (now DWS).

LWUA was established in February 2002 in terms of Chapter 8 of the National Water Act, 1998 (NWA) as a water user association. LWUA's Constitution and the Member's Agreement were gazetted in Government Notice no. 89 of 1 February 2002 which provided LWUA with a mandate to provide raw water to its members. LWUA constructed the original scheme in 2002 and the Southern Extension in 2007. LWUA supplies water directly to the mining industry who uses raw water for their operations whilst also providing off-take points for the appointed Water Services Authority to take and treat water to potable water standard and supply to its constituency.

Sekhukhune District Municipality (SDM) is mandated in terms of the WS Act as the Water Services Authority (WSA) responsible for the supply of potable water in its area of jurisdiction. SDM appointed Lepelle Northern Water (LNW) Board as its service provider.

LWUA current membership consist of the following:

1. African Rainbow Minerals (ARM);
2. Anglo American Platinum (AAP);
3. Corridor Resources;
4. Department of Water and Sanitation (DWS);
5. Impala Platinum;
6. Northam Platinum;
7. Samancor including Tubatse Alloys; and

8. Samrec.

1.1.2 DWS Organisational Overview Including ORWRDP

The Department of Water and Sanitation (DWS) is a national government department that acts as the custodian of South Africa's water resources. It is primarily responsible for the formulation and implementation of policy governing this sector. DWS is mandated to promote effective and efficient water resources management to ensure sustainable economic and social development. DWS also needs to ensure that all South Africans have access to potable water and dignified sanitation services.

The Vision and Mission of DWS[2] are as follow:

Vision

Equitable and sustainable water and sanitation that support socio-economic growth and development of the well-being of current and future generations.

Mission

To ensure the universal access of all South Africans to equitable water resources and sustainable water and sanitation services, by:

- Protecting, developing, conserving, managing and regulating water resources;
- Managing, regulating and providing efficient and effective water and sanitation services;
- Providing strategic leadership and evidence based policy direction to a coordinated water and sanitation sector for improved sector performance and service delivery;
- Building the skills and capabilities of the sector and enhancing information management to inform decision making; and
- Enhancing communication and stakeholder partnerships with communities and sector constituencies to advance the national development agenda

The Department draws its mandate from the following legislation:

The National Water Act, 1998 (NWA)

The NWA seeks to ensure that the country's water resources are protected, used, developed, conserved, managed and controlled in a sustainable and equitable manner for the benefit of all people. The NWA assigns the national government as the public trustee of the water resources. Acting through the Minister of Water and Sanitation, it has the power to regulate the allocation, use, flow and control of all water in the Republic. It also identifies the need to establish suitable institutions in order to achieve its purpose. In addition, it provides for the development of the National Water Resources Strategy (NWRS) which must be regularly reviewed and the requirement of each Catchment Management Agency (CMA) to develop a catchment management strategy for the water resources within its jurisdiction.

The Water Service Act, 1997 (WS Act)

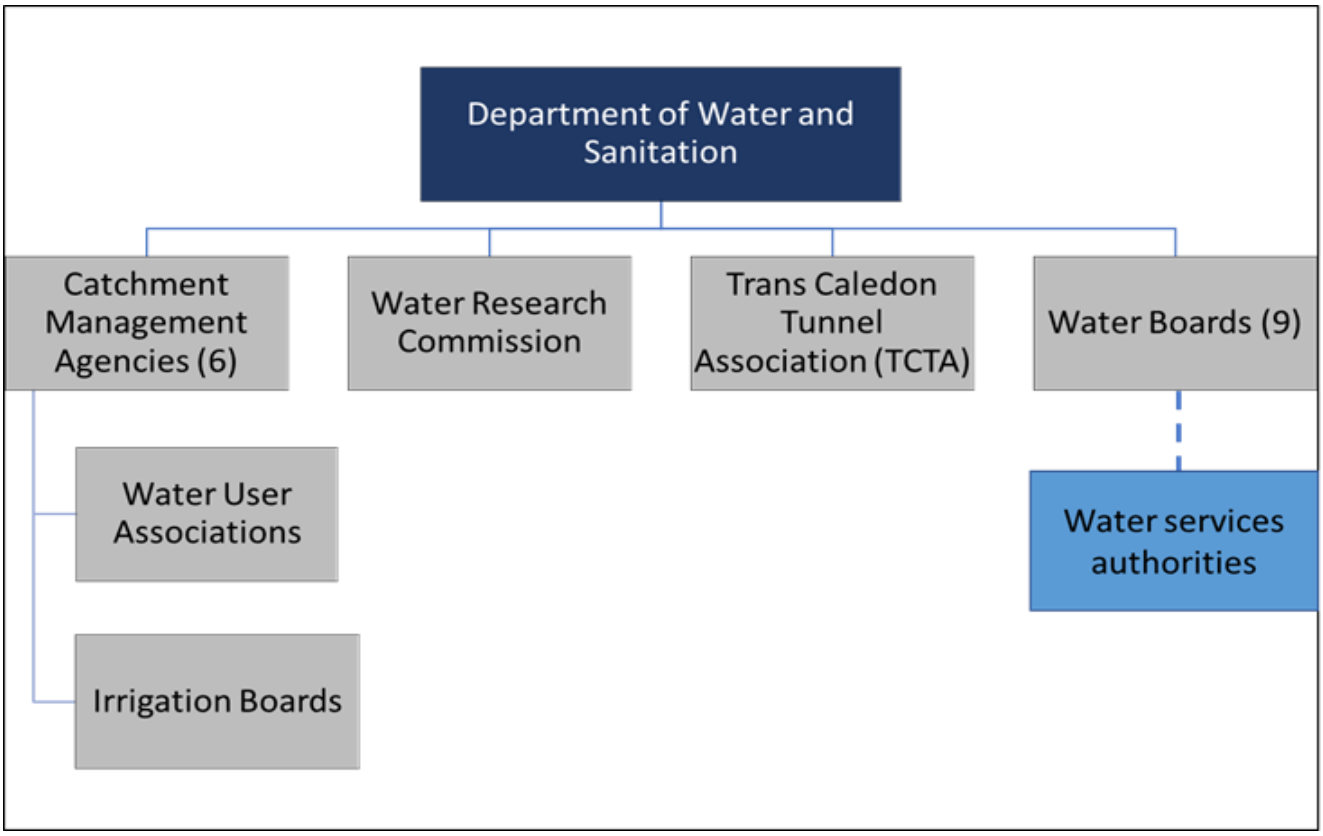
The overall objective of the WS Act is to provide a framework regarding municipalities' role as Water Services Authorities (WSA), and to look after the interests of consumers. It also provide clarity regarding the role of other water services institutions, especially water services providers and water boards. The WS Act prescribes the legislative duty of municipalities as WSA to supply water and sanitation according to national norms and standards. In addition, it regulates Water boards as important water service providers. It acknowledges that

[2] *Source - Revised Strategic Plan for the fiscal years 2020/21 to 2024/25 for the Department of Water and Sanitation*

although municipalities have authority to administer water supply services and sanitation services, all government spheres are required to works towards this objective, within the limits of physical and financial feasibility.

The institutional arrangement governing water consists of several complex institutional arrangements between DWS and its local institutions. The figure below shows the institutions reporting directly to DWS and those linked to DWS through the water services provision function.

Figure 4 – Structure of DWS and Local Institutions



The DWS is currently restructuring its entities. Catchment Management Agencies (CMA's) will be reduced to 6 and the National Water Resources Infrastructure Agency will be set up and see TCTA and the Water Resources Infrastructure Branch amalgamated. DWS is also busy with the transformation of irrigation boards and water user associations. This will have an impact on the OMM WUA, especially in terms of water equity and transformation of the organisation. In terms of water boards, there are currently nine water boards reporting to DWS. The main function of the Water Boards is to provide bulk water services to municipalities or other entities. However, the WS Act allows for it to provide potable water and operate wastewater treatment works on behalf of municipalities. Out of the nine Water Boards only three can generate enough funding to sustain their business. The rest rely heavily on DWS to sustain their business due to non-payment for services from some of its municipal customers. LNW is situated in the Limpopo region and is currently supporting the municipalities with wastewater treatment services as well as supporting DWS with the operations of some of its bulk water resource infrastructure. A requirement of the OMM Programme will be for the DWS to second or assign capable staff to the implementation of the OMM Programme. This can be staff of DWS or its related entities (LNW and TCTA) depending on the requirements of the specific role.

Currently DWS is struggling to fulfil their mandate due to various constraints including funding, capacity, under recovery of revenue, etc. Overcoming these challenges will require a turnaround strategy including identifying strategic partners that can assist them with funding of strategic water resources projects. The OMM Programme is a perfect example of such a project.

1.1.3 ORWRDP Water Scheme

Parallel to LWUA getting on with its work of putting pipes in the ground and delivering raw water to its members, the DWS also commenced discussions in 1999 with all interested and affected parties for the establishment of the Olifants River Water Resource Development Project (ORWRDP).

This project envisaged Phase 1 (which was the raising of Flag Boshielo Dam – which LWUA funded, and some water infrastructure for Polokwane) and Phase 2A (which was the building of the De Hoop Dam) built by DWS. Thereafter Phases 2B, C, D, E, F, G, H were also proposed. These various phases envisage the balancing of water utilisation in the Middle Olifants catchment and transferring of certain water use licences out of the Flag Boshielo Dam and transferring such licenced use into the De Hoop Dam for industrial, agriculture and community/social users.

The scheme was premised on the basis that the commercial users would pay a systems tariff based on a Capital Unit Charge whilst community/social users would pay a Return on Investment (ROI) charge partly funded from the fiscus.

The various phases of the ORWRDP (i.e. B, C, D, E, F) are pipeline projects delivering raw water to different areas where after the raw water would be treated for potable water and reticulated to the communities, funded by loans and other contributions backed by off take agreements from the commercial users, namely the mines. Within the ORWRDP it is envisaged that Phase 2H proposes the incorporation of LWUA's infrastructure into the ORWRDP.

DWS has to date completed the construction of the De Hoop dam (ORWRDP Phase 2A) and the bulk water pipeline from De Hoop dam to Steelpoort (ORWRDP Phase 2C) including the Steelpoort pump station.

1.1.4 Potable Water Service Delivery

The mandate of Water Services Authorities (WSAs) such as Sekhukhune District Municipality (SDM) and Mogalakwena Local Municipalities (MLM) is potable water services delivery. Potable water infrastructure development in the Eastern Limb has been very slow despite the availability of LWUA bulk raw water scheme supply connections since 2002. There are three areas currently being serviced with potable water in the Eastern Limb, one being Burgersfort from the Mooihoek Water Treatment Works (WTW), a second potable line running west from the Mooihoek WTW and the Jane Furse potable line from the Ga-Malekane WTW.

Potable water service delivery in the Northern Limb area of Mogalakwena is being limited as the Doorndraai dam is the only resource. Water supply is hampered as there is currently no bulk raw water infrastructure in place from Flag Boshielo dam to these areas.

1.2 Strategic Background

The Olifants River Water Resources Development Project (ORWRDP) was conceptualised by DWS to address the bulk water needs of the Limpopo Province to facilitate economic development in the region and the delivery of bulk raw water to the Water Services Authorities to treat and supply potable water to their respective communities. The LWUA bulk raw water supply scheme was the first pipeline infrastructure built in the area and needed to be supported and eventually incorporated into a larger ORWRDP supply scheme.

In September 2004, the National Water Resource Strategy (NWRS) recognised the need of the Government to manage water resources in an integrated way, and in co-operation with all relevant government institutions, the private sector, water users and other interested and affected persons, and of the contribution that integrated water resources management can make to eradicating poverty and addressing gender issues. The NWRS also recognised that successful water resources management would therefore depend on co-operation amongst all spheres of government, and the active involvement of water users and other organisations and stakeholders.

On 31 October 2018, DWS published the National Water and Sanitation Master Plan (Master Plan) which dovetails the top priority issues confronting the water and sanitation sector and sought to rally all water sector stakeholders in South Africa to work together in order to ensure that the country gets ahead of the curve of both current and future challenges. The Master Plan was officially launched by the then Minister of Water and Sanitation on 28 November 2019. The Master Plan also makes a commitment that DWS will work in conjunction with other government departments and agencies, the private sector and civil society to ensure that the crisis in the water and sanitation sector is addressed with the aim of attaining a water secure future with reliable and safe water and sanitation services for all, and that these contribute towards meeting the national development objectives.

Pursuant to the current economic challenges in the country, it is recognised that the government has budgetary constraints which impact on DWS's ability to execute on its mandate to supply bulk raw water and for the Water Services Authorities, to supply potable water. The particular concerned areas are in the Eastern Limb, where the lack of water services to communities together with unmet expectations of job creation from mines resulted in incidences of social unrest which have impacted on communities' access to potable water and mines and other commercial operations' ability to safely operate. There have also been increasing levels of vandalism on DWS and the LWUA pipelines as well as municipal infrastructure.

The DWS ORWRDP Phase 2 Project has been designated a strategic integrated project in terms of Section 7(1) of the Infrastructure Development Act, 2014 and therefore is of significant importance to South Africa.

The ORWRDP Phase 2 has only partially been implemented over the past two decades placing increasing pressure on DWS to meet social and industry expansion water needs. Additionally, potable water infrastructure development has been very slow in the Eastern limb despite bulk raw water having been available since 2002 through the Lebalelo Water User Association (LWUA) Scheme. The delivery of potable water services in the Northern limb area of Mogalakwena has also been hindered due to delays in the ORWRDP implementation. The current ORWRDP plan, from a technical, financial and socio-economic perspective, is also no longer optimal nor fit-for-purpose.

There is also currently a regional economic expansion opportunity to take advantage of a favourable commodity cycle.

In order to address the issues relating to the supply of water in the region, DWS and a Consortium of Commercial Users (CUC), facilitated and managed by LWUA have had numerous engagements on how they could collaborate and cooperate to assist accelerating:

1. Bulk raw water delivery in the region;
2. Potable water service delivery in the region; and
3. Socio-economic development in the region.

To deliver on these targets and with a general objective to “Improve Lives Through Water”, a Memorandum of Intent (MOI) was signed between CUC and DWS to establish a Olifants Management Model joint venture initiative in June 2021. DWS and the CUC agreed that the best vehicle for the OMM joint venture initiative would be a water user association. The parties have considered whether to establish the water user association through renaming and transforming the LWUA or establishing a new water user association all together. The OMM WUA, as a transformed WUA, will be tasked with financing, building, operating, maintaining and managing the development of a defined programme for the accelerated delivery of bulk raw and potable water services to address pressing social and commercial needs in identified areas of the Middle Olifants River Catchment, namely the Northern and Eastern Limb of the Bushveld Igneous Complex.

In October 2021, agreement was reached on the way forward, between Government and the CUC in a ministerial meeting it was decided that the current LWUA would be transformed and renamed as it is best positioned to meet the intent of the MOI. The Olifants Management Model Water User Association (OMM WUA) with a 50/50 representation between Government and CUC, will implement the potable and raw water infrastructure of the defined programme on the back of the negotiated agreement between the parties.

The next step in this transformation process was to finalise the agreement between DWS and the CUC detailing the operating methodologies and sphere of influence as well as the steps required and timelines for implementation.

Between November 2021 and January 2022, the DWS and the CUC held various negotiations as to the way forward in relation to the OMM WUA, the governance of the OMM WUA and the implementation of the proposed OMM Programme. The negotiations culminated in the conclusion of the Heads of Terms (HoT). The objective of the HoT was to provide a summary of the key positions taken by the parties in relation to these various negotiations in order to establish the terms of engagement for the proposed OMM Programme and the transformation of LWUA. The HoT highlights the following key principles:

1. Each Party is to contribute equally (50:50) towards the capital expenditure of the bulk raw water and potable water infrastructure defined in the OMM Programme. Each party is to be responsible for the operational expenditure associated with its offtake of the water (both bulk raw water and potable water);
2. Funding is based on an equitable and fair basis recognizing all bulk infrastructure already constructed;
3. The governance structure is unique in it protects both parties' interest in a collaborative structure with strong governance principles; and
4. The socio-economic development principles are designed to maximize the benefit of the local communities, develop skills and enterprises with the objective to grow the local economy.

A HoT between the CUC and DWS was jointly prepared by the Parties. The intention being that this document will encapsulate the principles agreed through the negotiations.

The HoT set out how the parties could collaborate and cooperate to accelerate the regional bulk raw water delivery, potable water service delivery, socio-economic development (SED) and develop a collaborative integrated water services model to address technical, financial, SED and institutional arrangements.

In this regard engagements between the Parties have culminated with the execution of the MOI, in terms of which the Parties indicated their intention to collaborate on an integrated water service model for the Olifants River raw and potable water management. The HoT is complimentary to the MOI and to the extent of any conflict between the HoT and the MOI, the provisions of HoT shall prevail.

1.3 Establishment of the Olifants Management Model Water User Association

The OMM WUA which will be a transformed WUA from the current LWUA will be tasked with financing, building, operating, maintaining and managing the development of a defined programme for the accelerated delivery of bulk raw water services and potable water infrastructure to address pressing social and commercial needs in defined areas in the Middle Olifants River Catchment, namely the Northern and Eastern Limb of the Bushveld Igneous Complex.

The mission of the OMM WUA will be that it shall, within the legal framework of the National Water Act, 1998 (NWA) and the Water Services Act, 1997 (WS Act) and taking cognisance of the prescribed health standards, strive towards making bulk raw water and potable water infrastructure available to all members and other stakeholders in a cost effective, efficient, sustainable and responsible manner.

The OMM WUA main priority will be to implement the water resource projects in the region underpinned by compliance of good governance and agreements using engineering principles, philosophies, procedures and standards reasonably employed by the private sector and water utilities in accordance with prevailing international standards under comparable circumstances. The main OMM WUA activities will include the full business case development up to Final Investment Decision (FID), procurement of financing, design, construction supervision, construction, operation and maintenance of this defined programme delivering bulk raw and potable water infrastructure in the Eastern Limb and the Northern Limb of the middle Olifants River catchment area (further referred to in this document as the OMM Programme).

The OMM WUA shall also assume responsibility for the preparation of all relevant applications and amendments to documents for the obtaining of all necessary permits/authorisations/relevant legislative approvals as well as the relevant funding to implement the OMM Programme.

The Government, represented by DWS, and CUC will form the OMM WUA membership as 50% partners. The DWS 50% membership will be represented in the governance bodies by different Government departments (DWS, Human Settlement, Treasury as well as DWS entities such as TCTA and LNW) and Government spheres (Provincial and Local Municipal) to cover all the involved groupings within government. The CUC comprise of the following entities (as at December 2021):

1. Anglo American Platinum;
2. African Rainbow Minerals;
3. Assore;
4. Bushveld Minerals;
5. Corridor Resources;
6. Cheetah Chrome;
7. Glencore-Merafe;
8. Impala Platinum;
9. Ivan Plats;
10. Modikwa Mine;
11. Northern Platinum;
12. Samancor;
13. Tameng;
14. Tubatse Alloys;
15. Two Rivers Mine; and
16. others in the region can be added or removed from time to time.

To deliver its purpose to 'Improve Lives Through Water' the OMM WUA will target strategic objective horizons, with the goal of becoming a key strategic water management partner for both the public and private sector whilst simultaneously catalysing the creation of sustainable socio-economic development in the region in which it operates.

Horizon 1

Create a stabile operating base and social license to operate by:

1. Transforming and rebranding LWUA;
2. Integrating new members and employees into the OMM WUA;
3. Deploying open and transparent internationally acceptable good governance practices;
4. Creating a trusted brand with restored trust in communities; and
5. Achieving operational excellence on existing transferred infrastructure.

Horizon 2

Successfully implement the OMM Programme and in the process build a trusted platform for socio-economic development (SED) in the region through the expansion of the OMM WUA's role to build, operate and maintain, bulk infrastructure and building potable water infrastructure. Establish a sustainable SED collaboration forum to align members around common socio-economic development initiatives and infrastructure to foster social harmony.

Horizon 3

Catalyse the creation of game changing businesses and initiatives to drive exponential socio-economic growth in the region through the identification and development of high socio-economic impact opportunities in the region.

The establishment of the OMM WUA in terms of the HoT will be executed in parallel with the water infrastructure programme study phases, with the LWUA legally representing the OMM WUA during this period. Also, during this interim phase (that is, prior to the establishment of the OMM WUA), the LWUA Management Committee would establish an appropriate governance sub-committee under LWUA named the Programme Steering Committee with Terms of Reference and Charter with relevant delegations of authority through the LWUA Management Committee to facilitate efficient management of the OMM Programme. The Programme Steering Committee with its associated support committees will provide dedicated steer and governance support to the OMM Programme through a delegation of authority that will be aligned with the principles as agreed in the MOI.

Although the Programme Steering Committee will be under LWUA, the Programme Steering Committee and associated supporting specialist panels are to have 50:50 representation between Government and CUC with decisions made on consensus basis. For the sake of clarity, the Programme Steering Committee is to only last for as long as the LWUA is in existence. Once the OMM WUA is established, the Programme Steering Committee is to cease to exist and the OMM WUA governance processes take effect, including but not limited to the setting up of a Programme Steering Committee under the OMM WUA.

To ensure continuity, there will be a sharing of members between the LWUA Management Committee and the Programme Steering Committee and members of the Programme Steering Committee are to form part of the Programme Steering Committee once the OMM WUA is established.

1.4 The Case for Change

The OMM Programme aims to develop an alternative solution to enable accelerated delivery of bulk raw and potable water services to address pressing social and commercial needs to the agreed areas in the Northern and Eastern Limb of the Bushveld Igneous Complex, i.e. the OMM Programme.

1.4.1 Existing Projects and Water Supply Activities

1.4.1.1 DWS and WSAs

The current ORWRDP phase 2 is located in the Olifants River catchment area, incorporating the Steelpoort River catchment area and extends into the Mogalakwena and Sand River catchments (sub-phase B). Sub-phases C, D, E and F cover a bulk distribution system from the De Hoop Dam that will ultimately link with the existing Olifants-Sand Transfer Scheme at Olifantspoort.

The status[3] of the ORWRDP and the existing plan for the outstanding phases before the acceptance of the OMM Programme, are set out below:

Phase 1	Raising of Flag Boshielo dam – completed.
Phase 2A	Construction of De Hoop dam – completed.
Phase 2B	Construction of pipeline from Flag Boshielo to Pruissen – design and planning completed with funding being sourced.

[3] *Source: Overview of the ORWRDP, SIP-18 Program Technical Committee, 11 November 2019*

Phase 2C	Construction of pipeline from De Hoop dam to Steelpoort, including pump station – construction completed.
Phase 2D	Construction of pipeline from Steelpoort to Mooihoek – construction was scheduled for FY 20/21, but not achieved.
Phase 2E	Construction of pipeline from Mooihoek to Clapham – design and planning was scheduled to commence in FY 20/21, but not achieved.
Phase 2F	Construction of pipeline from Clapham to Olifantspoort – design and planning was scheduled to commence in FY 20/21, but not achieved.
Phase 2G	Decision taken that Phase 2G, a parallel pipeline to Phase 2B, may no longer be required within the timeframe of the OMM Programme.
Phase 2H	Incorporation of the LWUA scheme into the ORWRDP scheme upon completion of Phase 2C, 2D and 2E.

The OMM Programme impacted the above status to the extent that the 2D and 2E pipelines will be deffered until it is required. Utilising the bulk raw water infrastructure as basis, the WSAs are enabled to provide potable water to communities surrounding the pipeline through the existing and new infrastructure to be developed in the OMM Programme.

The Eastern Limb potable water reticulation needs mostly falls within the boundaries of the Sekhukhune District Municipality (SDM) and its associated Local Municipalities (LM's) with smaller sections in the Capricorn District and Lepelle-Nkumpi Local Municipalities.

SDM is also the Water Services Authority (WSA) for their district and are the custodians for most plans and projects that contribute towards the provision of bulk and reticulation potable water services to communities in the area.

The water and sanitation projects within the SDM form part of the SDM Bulk Water Services Masterplan. This Masterplan is akin to the Water Services Development Plan (WSDP) as mandated for all Municipalities by DWS.

Records indicate an initial SDM Water Services Masterplan of 2007 – 2010. This was then updated and issued under the auspices of SDM and DWS (the funder) in September 2014, referred in this report as "The Masterplan".

The Masterplan sets out to depict the engineering and technical networks, and aligns the systems, schemes, and associated infrastructure, comprising the entire water supply network in the area. The Masterplan is consistent with the strategic direction of SDM, which in turn aligns with the strategic direction of DWS.

The Masterplan sets out a list of current and future projects that give effect to the delivery of potable water and sanitation services within the SDM. This project list also references comprehensive data on, amongst others, the status of each project, water demand horizon, design horizon, estimated costs, status of feasibility reports, how many households are served, and the like. This project list was updated in 2018 with a total of 352 projects within SDM.

Most of the water services' capital projects are unfunded, and therefore have not been implemented within the intended timeframes as set out in the Masterplan and its project list update in 2018.

At the time of writing this report, detail data from WSAs in the Eastern Limb and WSAs in the Northern Limb were not available.

1.4.1.2 LWUA Bulk Raw Water Scheme

LWUA was established in terms of chapter 8 of the National Water Act, 1998 (NWA) to provide a vehicle to abstract raw water from the Olifants River and to supply such water to the different categories of water users.

For purposes of the raw water resources a licence was issued to the LWUA to abstract water from the Olifants River. Licence B191/2/250/1 was issued to LWUA for a total volume of 16,000,000 m³ per annum was issued on 6 January 2004. In addition to this aforementioned quantity, LWUA is also authorised to supply 3,880,000 m³ per annum via its scheme on behalf of the DWS to local communities for domestic use. Because LWUA financed the

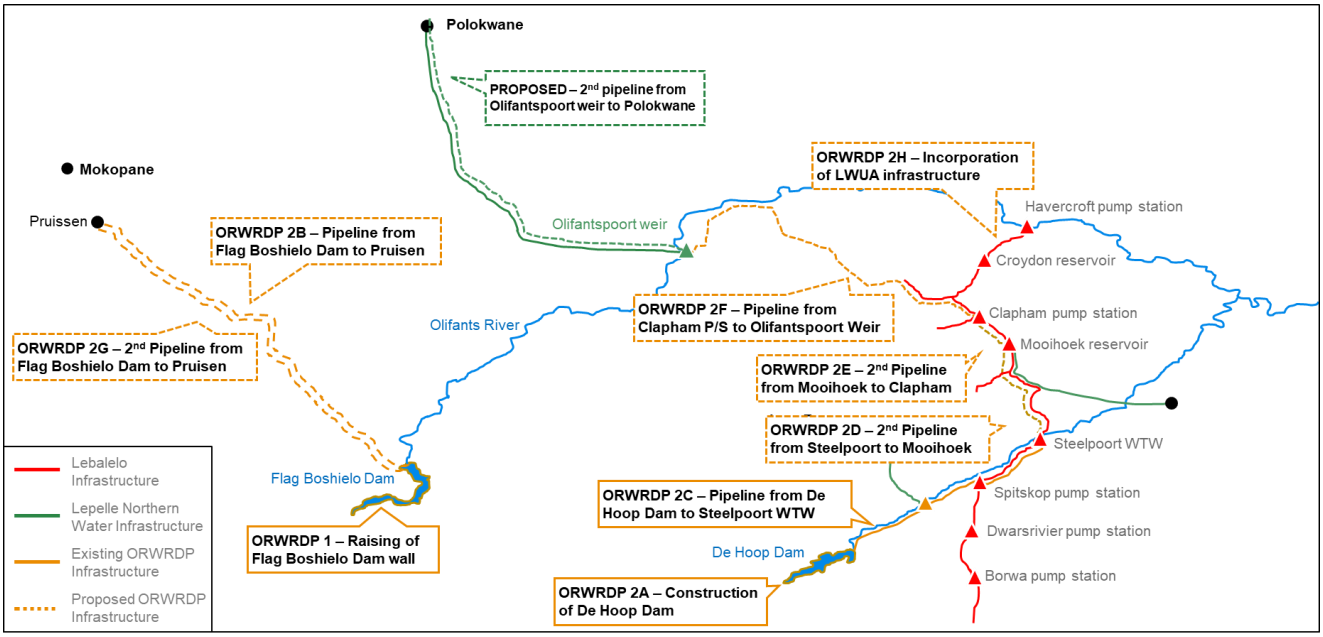
raising of the Flag Boshielo Dam, an additional licence numbered B191/2/250/1 for a total volume of 1,015,000 m³ per annum was issued to LWUA which represents the lawful water use entitlements for properties inundated through the raising of the dam.

The LWUA scheme currently comprises a 110 km pipeline from the Havercroft weir in the Olifants river as well as a desiltation plant, pump stations and storage reservoirs passing along the various mines to Mototolo in the south supplying bulk raw water to LWUA members. The scheme intersects with over 105 separate communities along the pipeline network.

With the recent expansion of mines in the Southern end of the Eastern Limb, LWUA is in the process of building a second pipeline alongside the existing Southern Extension to increase capacity. The Southern Extension 2 (SE2) capital project (from Spitskop to Mototolo) is currently in the Stage Gate Execution phase, ready to place construction tenders.

'Figure 5' below, illustrates the completed infrastructure in the area to date, with the LWUA assets indicated in red and the DWS assets indicated in orange. The expansion plans are indicated in the dotted orange. The pipeline is now some 20 years old of its 50 years average useful life.

Figure 5: Current LWUA assets and the current ORWRDP plan



1.4.2 Identifying Business and Social Needs

Stakeholder discussions have identified the key issues that require consideration in developing an alternative solution:

1. Communities around the mines and pipelines are water-stressed with limited or no access to potable water with socio-economic conditions continuing to deteriorate as communities grow. Polokwane is also water-stressed, having a current water shortage of approximately 30Mℓ/d, whilst Mogalakwena is severely water-stressed with a current shortage of approximately 20Mℓ/d and growing;
2. Levels of social unrest and incidences of asset destruction have increased due to the slow progress in delivery of water services to communities together with unmet expectations of job creation from mines. This has resulted in vandalism of water infrastructure and mining operations being disrupted;
3. Socio-economic development opportunities have also not been unlocked due to the lack of access to potable water. Studies have shown that access to water has positive effects on health, early childhood development, education and workforce productivity;

4. Commercial users require bulk water at a transparent, predictable, cost-effective tariff to maintain and expand operations;
5. Government has funding constraints and competing priorities for water and other infrastructure services. Government wishes to leverage constrained funding by combining private sector funding e.g. co-funding and financing mechanisms are required to access Regional Bulk Infrastructure Grants (RBIG) for municipalities to fund potable water infrastructure;
6. Government is not earning a return on assets with regards to Phase 2A and Phase 2C. Any solution would need to ensure that Government earns a fair return on investments made to date; and
7. The outbreak of Covid-19 has placed additional financial and organisational pressure on DWS to fast-track water supply to communities to prevent the spread of the disease.

The current ORWRDP plan is no longer optimal and fit-for-purpose requiring amendment for the following reasons:

1. The ORWRDP plan does not include the construction of a pipeline from Pruissen to Mokopane town and Sekuruwe which is required to meet social and commercial users' requirements;
2. Flag Boshielo dam is already over allocated and a pipeline to Mokopane town and Sekuruwe would place additional pressure on the system. This pressure could be released through augmentation strategies and the abstraction of water from De Hoop dam to meet Eastern Limb requirements allowing water from Flag Boshielo dam to support the Northern Limb requirements;
3. The plan to construct phases 2D and 2E of the ORWRDP will provide no additional water to water stressed Polokwane. The construction of phase 2F, before these two phases, would however significantly accelerate the provision of additional water to Polokwane;
4. The LWUA scheme infrastructure remains under-utilised and, with some minor modifications, can be used to link the De Hoop dam to Polokwane;
5. Technical specifications have not been revised to account for the reduced dam yields (De Hoop dam and Flag Boshielo dam) highlighting concerns over estimated cost; and
6. The synchronisation of bulk raw water infrastructure development with potable water infrastructure development has not occurred. This is critical to deliver potable water and requires an integrated approach.

1.4.3 Spending Objectives

Considering water resource availability, the already described aspects, the regional water needs, as agreed between the members of the OMM WUA and issues, SMART (Specific, Measurable, Achievable, Relevant, Time-bound) spending objectives were formulated for the OMM Programme as part of an alternative solution for the current ORWRDP:

1. Accelerate the implementation of the ORWRDP and social water supply to water stressed areas;
2. Utilise the available infrastructure to its maximum for a cost-effective water supply solution;
    a. Pooling existing Government and LWUA bulk raw water infrastructure assets with OMM WUA to manage and operate these assets;
    b. These assets would earn a prescribed return on asset (RoA) with Government and contributing commercial members receiving recognition for their previous capital contributions through a capital credit mechanism to reduce their water tariffs;
3. Resequence the technical design to optimise spend and community water provision impact through deferral of Phase 2D and 2E and investigation into renewable energy options to reduce electricity cost;
4. Improve potable water service delivery through supporting existing potable Water Services Authorities;
5. Bulk and Potable water infrastructure capex to be shared on a 50/50 basis between Government and Commercial Users with a target effective repayment tenure (including possible refinancing) of 25 years to minimise cash flow impact on members;
6. Develop skills in the Water Sector through establishing a resourcing partnership between Government and CUC members

7. Improve social harmony in the region through the provisioning of social water, the creation of jobs and socio-economic development;
8. Procurement policy and a SED Collaboration Forum (by way of the existing LWUA Social and Ethics Committee) to be used to self-fund SED programmes;
9. Social Labour Plans could be utilised by Commercial Users to fund their portion of the Capex and SED contributions; and
10. Mining royalties could be utilised by Government to fund their portion of CAPEX, OPEX and SED contributions
11. Be a model water infrastructure pilot programme for the country through collaboration and the provision of strong governance over the programme by implementing the OMM Programme based on internationally proven project execution principles and standards.

1.5 Main Anticipated Benefits

The benefits associated with the proposed OMM Programme targets are:

1. Provide a holistic integrated solution to the ORWRDP inclusive of potable water service;
2. Relieve pressure on the already over-allocated Flag Boshielo dam;
3. Accelerate provisioning of water to distressed areas and communities;
4. Assist in addressing social unrest, unlock economic potential and create jobs in the region;
5. Accelerate the provisioning of bulk raw water for economic expansion to take advantage of a favourable commodity cycle and industrialisation of the region;
6. Use capital more efficiently by fully utilising existing infrastructure (the LWUA scheme is currently operating at 30% of its capacity) and the revised specifications will be a better fit for the purpose (i.e. the primary objective of the OMM Programme and the ORWRDP);
7. Cost control and funding leverage through the deployment of a Build-Own-Operate-Transfer (BOOT) funding model with private sector participation, robust programme management and cost containment;
8. Reallocation of Social Labour Plans (SLP) spending to include potable water; and
9. Align with and support the DWS Master Plan.

Besides providing much needed potable water to communities, this would also assist in unlocking the enormous strategic mineral and industrialisation potential of the region to capitalise on the global transition to cleaner energy opportunity. This is in line with the President's call for 'a new social compact among all role-players to restructure the economy and achieve inclusive growth'. The development of this much needed water infrastructure would align with the development of the region into a Renewable Energy technology manufacturing hub.

Given the country's and the region's endowment of critical raw materials to develop this emerging market sector, the water infrastructure development is a key enabler to create regional employment through the infrastructure programmes, mining expansion and manufacturing of renewable energy technology. This aligns with the industrialisation objectives of the country.

1.6 Main Risks and Opportunities

Potential key risks surrounding the OMM Programme include:

1. Political and institutional alignment across all spheres of Government;
2. Changes in key stakeholder leadership;
3. Communities willingness to allow construction activities to commence;
4. Ramping up of Construction Industry given the scale of the OMM Programme;

5. The impact on affordability of tariffs given the escalating cost of power sourced from Eskom;
6. Long lead times to address environmental and other regulations;
7. A culture of non-payment for services; and
8. An increase in water usage against planned availability.

Major construction, financing and operational risks would be borne by the OMM WUA in terms of water supply agreements signed with commercial users and DWS. A Risk Workshop was conducted and the following are the most prominent risks of the new venture identified:

Table 1: Programme Risk Summary

	Risk	Consequence
1	**Business:** Government and/or Commercial Users are constrained to fund or fully fund the project and ability to raise funds globally i.e. due to the impact of a ratings downgrade or sharp downturn in the commodity markets	1. Commercial Users or Government shortfall to be funded by the other party 2. Higher financing costs and compliance requirements due to sovereign risk and source of funding 3. Liquidity constraints
2	**Business:** COVID-19 impacts and concerns	1. OMM Programme may not be fundable due to insufficient off-takers 2. Delays in getting water to distressed areas may result in existing mines being unable to operate due to social unrest 3. Reduced economic activity will impact GDP, fiscus and related stakeholders 4. Where funding is secured, the cost of water will increase given smaller commercial user base to absorb capital costs
3	**External:** Increased community unrest due to unmet expectations	1. Unrest incidents could threaten the safety of contractors and community members 2. Social unrest which could further delay completion of the OMM Programme 3. Disaffected communities may threaten the safety of, or prevent service providers from 4. surveying the site to demarcate area battery limits (farm boundaries, community boundaries, mines spheres of influence and municipal boundaries)
4	**Business:** ESKOM unable to deliver a reliable power supply at a cost-efficient tariff	1. Disruption of water service delivery 2. Significant escalation in OPEX costs
5	**External:** Alignment with multiple national regulators with competing mandates	Compromise the OMM Programme's ability to maintain alignment with regulators, leading to ineffective decisions, delays in the OMM Programme and/or compromising the OMM Programme's support from the private sector / CUC
6	**External:** Certain constituents in Government may not support the OMM WUA solution	1. Delays in getting water to distressed areas 2. Mines unable to expand and take advantage of a favourable economic cycle 3. Cost of water will escalate due to construction and operational inefficiencies 4. Disestablishment of LWUA 5. Increase in social unrest

	Risk	Consequence
7	**Service:** Service provider capacity limitations and local vendor demands	1. OMM Programme will not be viable due to high CAPEX costs 2. Unable to realise execution of the OMM Programme to the current timeframe 3. Local contractors/ vendors demand specific procurement levels and cause disruptions through vandalisation
8	**Service:** Long lead times to address environmental and other regulations	1. OMM Programme may not be able to meet potable water expectations in the current timeframe 2. Delays to the OMM Programme while foundational work for environmental authorisation issues and other regulations are resolved
9	**External:** Multiple stakeholders and representation on management structures complicates and impacts the execution	1. Decision making is delayed resulting in delays and overruns 2. Focus is detracted from the execution 3. Goodwill and collaboration is lost between stakeholders
10	**Business:** Insufficient water available to justify development of the OMM Programme	1. Concerns over adequate water availability may result in the feasibility study not being Bankable 2. Infrastructure design specifications may be misaligned to resource availability which will adversely impact on build cost 3. Social and commercial water commitments not being met
11	**External:** Changes in key stakeholder leadership (public & private)	1. Programme may lose support or be delayed as new stakeholders need to be aligned 2. Inability to secure critical authorisations, including revocation of existing s74 NWA directives and gazetting of new directives, or reaching agreement on the constitution and members' agreement for the Transformed WUA, leading to delays 3. Additional costs to pursue expropriation
12	**External:** The current debt requirement is a substantial funding commitment for the local debt market	1. A single commercial lender is unlikely to be able to finance the Programme on its own 2. Should mezzanine / subordinated debt be required, the cost of funding may increase 3. Grant or donor funding may be required
13	**External:** Insufficient appetite from lenders to provide 25 year funding tenors	1. Shorter funding tenors will increase the annual debt service requirements, increasing annual contribution requirements from the OMM WUA members 2. A level of refinancing risk may need to be accepted by the OMM Programme stakeholders
14	**Business:** Water supply agreements from the users cannot be obtained for extended periods (25 years+), cannot be obtained on a take-or-pay basis, or are not seen to be sufficiently robust in terms of guarantees	1. Without offtake agreements covering at least the proposed funding tenors, external financiers are unlikely to provide funding over those tenors (at most, tenors typically cover a period 2-3 years shorter than committed offtake agreements) 2. Additional guarantees may be required to provide sufficient comfort to external financiers

The Programme also has the opportunity of realising some significant opportunities not only regionally but also at a National level. These include:

1. Social harmony in the region through the provisioning of potable water, job creation and socio-economic development;
2. Behavioural change to water conservation and payment for services;
3. Increased collaboration between stakeholders to develop high impact socio-economic projects;
4. Development of skills in the water sector;
5. Establishment of a predictable cost effective water tariff to assist large scale economic investment; and
6. Provision of water infrastructure to assist the industrialisation of the region.

1.7 Constraints and Dependencies

1.7.1 OMM Programme Agreements and Approvals

The OMM Programme is based on the following key agreements, approvals and stage gates:

1. A Memorandum of Intent (MoI) was signed between the Department of Water and Sanitation (DWS) and LWUA and its current and intended new commercial members to give intent to the OMM Programme;

2. Ministerial agreement was reached to establish the OMM WUA to build and manage the OMM Programme;
3. LWUA was appointed as legal entity to represent the OMM WUA during the establishment period;
4. LWUA current and intended new commercial members signed letters of commitment for capacity to be acquired in the infrastructure and to fund the OMM Programme development studies (Early Business Case, Pre-feasibility and Feasibility Studies)
5. Approval of the OMM Programme stage gates of :
    a. Concept Study / 5 Case Model Early Business Case;
    b. Pre-feasibility Study / 5 Case Model Intermediate Business Case;
    c. Feasibility Study/ 5 Case Model Full Business Case; and
    d. Financial Investment Decision (FID).
6. LWUA Constitution and Members' Agreement will be amended to incorporate:
    a. potable water infrastructure implementation and support;
    b. expand its geographical area to include all areas of the OMM Programme scope;
    c. change the primary abstraction point from Havercroft weir to De Hoop dam; and
    d. add an abstraction point from Flag Boshielo dam to provide water for the ORWRDP in the Northern Limb.

1.7.2 Alignment With Existing National Policies, Regulations and Strategies

As the public trustee of South Africa's water resources, the National Government, acting through the Minister of Water and Sanitation, must ensure that water is protected, used, developed, conserved, managed and controlled in a sustainable and equitable manner, for the benefit of all persons and in accordance with its constitutional mandate.

Chapter 7 of the National Water Act, 1998 (NWA) deals with catchment management agencies. The preamble to this chapter provides for the progressive establishment by the Minister of Water and Sanitation of catchment management agencies. The purpose of establishing these agencies is to delegate water resource management to the regional or catchment level and to involve local communities, within the framework of the NWRS.

The proposed OMM Programme largely falls within the Olifants water management area. The Olifants water management area was established in terms of the NWA and constitutes a management unit in the NWRS within which a catchment management agency will conduct the protection, use, development, conservation, management and control of water resources. The Olifants catchment management agency was established by the Minister of Water and Sanitation on 27 February 2015 and its area of operation is the Olifants water management area. The Minister of Water and Sanitation is, however, yet to assign specific powers and duties to the Olifants catchment management agency.

The NWA defines a "water management institution" to include a catchment management agency as well as a water user association. In this regard, although water user associations are water management institutions, their primary purpose, unlike catchment management agencies, is not water management. They operate at a restricted and localised level. A water user association may exercise management powers and duties only if and to the extent that these have been assigned or delegated to it by the Minister of Water and Sanitation.

The Minister of Water and Saniation establishes and disestablishes water user associations according to procedures set out in chapter 8 of the NWA. A water user association would usually be established following a proposal to the Minister of Water and Sanitation by an interested person. However, such an association may also be established on the Minister of Water and Sanitation's initiative. The functions of a water user association depend on its approved constitution, which can be expected to conform to a large extent to the model constitution in schedule 5 of the NWA, which also makes detailed provisions for the management and operation thereof. Although water user associations must operate within the framework of national policy and standards, particularly the NWRS, the Minister of Water and Sanitation may exercise control over them by giving them directives or by temporarily taking over their functions under particular circumstances.

In addition to the NWA, the Water Services Act, 1997 (WS Act) provides for the rights of access to basic water supply and basic sanitation; the setting of national standards and of norms and standards for tariffs; the provision for water services development plans and a regulatory framework for water services institutions and water services intermediaries as well as provision for the establishment and disestablishment of water boards and water services committees and their powers and duties. The WS Act also provides for the monitoring of water services and intervention by the Minister of Water and Sanitation, or by the relevant province; the provision of financial assistance to water services institutions; the provision of certain general powers of the Minister of Water and Sanitation; the gathering of information in a national information system and the distribution of that information.

The proposed OMM Programme envisages a collaborative treatment of the abovementioned acts to give effect to section 27 of the Constitution of the Republic of South Africa, 1996 (which addresses access to water) in managing water within a circular economy. The development of the proposed OMM Programme is required to be socially, environmentally, and economically sustainable. The proposed OMM Programme aims to provide for co-operative, environmental governance by establishing principles for decision-making on matters affecting the environment. Sustainable development requires the integration of social, economic, and environmental factors in the planning, implementation and evaluation of decisions to ensure that development serves present and future generations.

Against this background, during the Early Business Case development phase for the proposed OMM Programme, various activities have been undertaken to consider the proposed structure to transform the current LWUA into the OMM WUA. The legal viability of the proposed structure thereof has also been assessed. This, amongst others, included the formulation of commitment letters and memoranda of understanding with key stakeholders to elucidate the strategy and ensure buy-in from these critical stakeholders at inception.

A Regulatory Report has been undertaken to confirm that:

1. the transformed LWUA can be used as vehicle to establish the OMM WUA;
2. the current LWUA's mandate can be extended to cater for the WUA, by amendment of the LWUA's Constitution and Members' Agreement through the approval of 80% of the LWUA's association members and the approval and gazetting by the Minister of Water and Sanitation of the amended Constitution;
3. various authorisations need to be obtained and/or amended to implement the proposed OMM Programme;
4. a Water User Association, through its objectives, may be considered a water services provider (subject to approval from the relevant Water Services Authorities) having jurisdiction in the area in question. In terms of the WS Act, a municipality may enter into an agreement (which may be the same or distinct from the

BOOT Contract) or form a joint venture arrangement with a water services provider for the supply of water. Although the WSA is not clear on whether a public procurement process is required for the entry of such agreements, the provisions of the Municipal Systems Act, 2000 strongly indicate that such a process is required. The OMM will not be a water services provider as it will only provide water infrastructure;

5. it is also apparent that the proposed OMM Programme does not fall within the meaning of a PPP, at either a national or municipal level; and
6. the acquisition of any DWS property by the OMM WUA will require parliamentary approval if the value of the assets under consideration exceeds R100 million.

1.7.2.1 Alignment with the National Infrastructure Plan 2050, Phase I

The National Infrastructure Plan 2050 (NIP 2050) Phase I, was published in the Government Gazette of 11 March 2022. The goal of the NIP 2050 is to create a foundation for achieving the National Development Plan's (NDP) vision of inclusive growth. Prepared by Infrastructure South Africa (ISA), the NIP 2050 offers a strategic vision and plan that link top NDP objectives to actionable steps and intermediate outcomes.

In the NIP 2050, Government highlights that: "Infrastructure development is critical to attaining South Africa's long-term economic and social goals. In the context of a developing country seeking significant structural change, the public sector must lead this effort. Infrastructure delivery will be one of the most significant contributors to South Africa's transition from a historically closed minerals economy to one that is globally and regionally integrated, low carbon, inclusive and promoting of dynamism in the industries of the future."

It is further envisaged that infrastructure development projects will contribute significantly to the goals of the NDP. The NDP anticipates, amongst others, universal and reliable access to water of an acceptable quality and quantity in support of a strong, inclusive economy and a healthy environment by 2030, a commitment that must be sustained thereafter. This will be supported by an efficient, resilient, well-managed, and sustainable integrated national bulk water supply system that responds to the economic needs of the country.

Strategic elements and conditions, as referenced in the NIP 2050, in relation to water infrastructure, targeting to ensure that the water sector delivers on South Africa's 2050 vision were considered in the development of the OMM Programme proposal and included in the strategic way forward as reflected in the table below:

	NIP 2050	OMM Programme
1. The institutions involved in managing water are effective	• Executive leadership in DWS, the water boards and other institutions managing water will be stabilised and appointed based on capability. • The National Water Resources Infrastructure Agency will be operational and robust. • There will be an infusion of management capability into the sector, resulting in the turnaround of municipal water businesses (financial and technical performance), financial viability (revenues matches expenses), reduction in non-revenue water and water losses, and management of demand. There will be a particular focus	• LWUA, a successful and well-established operating and project implementation entity, will be transformed into the OMM Water Users Association (WUA) to implement the integrated Programme. • The established OMM WUA's Programme Steering Committee with representation from both Institutional and Commercial members, will guide the development of the OMM Programme and will be incorporated into the well-established and functioning governance structures of LWUA (to be transferred into the OMM WUA). • The governance structures will include processes to monitor the

	NIP 2050	OMM Programme
	on the top 12 municipalities accounting for 65% of urban water demand. • Irrigation systems will be rehabilitated and maintained and water use efficiencies improved.	OMM Programme risks including stakeholder management and engagement. • As part of the infusion of management capability into the water sector, the OMM WUA will provide guidance and support to Water Service Authorities (WSAs) as and when requested in support of the effective supply of potable water to the defined communities.
2. Water resource planning capacity must be proactive, robust and responsive.	• Water resources planning must be proactive, programmatic and well-resourced, informing strategy and implementation. • Data informing planning must be comprehensive and up to date. • Planning must be done with recognition of the local characteristics, complexity and interconnectedness of major water systems. • There should be cross-sectoral cooperation to optimise national water use.	• With support from the mines and in close cooperation with DWS and LWUA, analyses of the capabilities and behaviour of the Olifants River System (additional to what the DWS had done), were performed by the Joint Water Forum (JWF). This was done in close liaison with the DWS, with the full outcomes also shared with the DWS. • The analyses indicated that the proposed Programme solution would enable sufficient water to be made available at an acceptable assurance to meet all existing and future water requirements from the Olifants River System together with growth in the Mogalakwena and Polokwane areas until 2040.
3. Decision-making must be accountable and institutions effective.	• Institutional accountabilities and mandates must be aligned for effective decision-making. • There must be accountability for building water security and resilience in each major water system and at the municipal level. • Decision-making must be transparent and water users should be able to provide inputs into the decision-making processes. • Institutional mandates and roles and responsibilities should be clearly defined. • Leadership in key institutions – government (national,	• The OMM Programme implementation methodology will be based on the application of international proven and accepted good project practices aligned to the OMM WUA members' capital investment governance processes. • To this extent the OMM WUA will adopt an industry acceptable gated framework to execute each indicated phase with its associated purpose, technical details, project management outputs, business and stakeholder key outputs, and outcomes. • An integrated and independent project controls environment will

	NIP 2050	OMM Programme
	provincial, municipal), regulators, Trans-Caledon Tunnel Authority (TCTA), water infrastructure agency, water boards, water service providers, water user associations and other irrigation institutions – must be capable and stable. • Management must be effective, and human resources capability must match roles and responsibilities. • Revenue sources must be sufficient and sustainable. • Institutions must become soundly governed, open and transparent. • Institutions must regularly achieve clean audits.	be established during the Study phases to ensure transparency of information, promote good governance, reduce risk and facilitate integration of information during the studies. • The populating of the organisational structures will maximise the utilisation of the experience on offer from the OMM WUA members. • The effects or outcomes of the OMM Programme implementation strategy and tracking of benefit realisation will be quantified through KPIs which can be assessed by OMM WUA through a number of economic and other tracking variables. • Also refer to item 1: **The institutions involved in managing water are effective.**
4. Capacity to finance and deliver water projects must be robust, with the private sector being used effectively, and the water sector must become financially sustainable.	• Financing and implementation arrangements must be clear for all priority projects and execution capacity must be robust. • Privates sector capacity must be effectively used to contribute skills and financing and to improve sector efficiencies. • Revenues from tariffs, together with secure and predictable government budgets, must be sufficient to finance and fund the necessary capital expenditure and meet efficient operating costs. • Robust procedures must be in place to review, set and approve tariffs in the water sector through the full value chain. • Conditions must be created for the increased use of commercial finance in the sector.	• Establishment of the OMM WUA will result in the joint funding of the integrated Programme on a 50/50 basis between Government and the commercial sector, specifically relating to capital expenditure. • It is envisaged that the OMM Programme capital requirements will be financed using a combination of external debt and annual contributions from Institutional and Commercial members. • Contributions towards operating expenses will be based on two elements namely a fixed cost component (take or pay based on capacity required) and a variable component based on usage. • The funding structure will be further developed and affordability further assessed during the Studies Phase.
5. Existing water infrastructure	• Institutions involved in managing water infrastructure	• The OMM Programme will ○ optimise the utilisation of existing dams (i.e. Flag

	NIP 2050	OMM Programme
must be rehabilitated and maintained and water use efficiencies improved.	must pay as much attention to the maintenance and rehabilitation of existing infrastructure as to the creation of new infrastructure. • Water leakages must be addressed. • Asset management best practices must be implemented. • Effective use must be made of the private sector to increase institutional capacity to operate and maintain infrastructure. • Non-revenue water must be significantly reduced and overall water use efficiency improved. • Irrigation water use efficiencies must be improved where appropriate, especially in water-stressed systems	Boshielo and De Hoop) and infrastructure in the defined areaImprove potable water service delivery through support to existing Water Services Authorities;Develop skills in the water sector through establishing a resourcing partnership between Institutional and Commercial members; ○ SED programmes are aimed at behavioural change towards water conservation and payment for services; ○ Opportunity exists to use treated sanitation water for agricultural use (second use of water)
6. Ecological infrastructure must be protected.	• Institutional responsibilities must be clarified for the protection of key natural ecosystems supplying the major share of South Africa's water. • Reserve requirements should be enforced and resource quality objectives implemented. • Financing mechanisms to support ecosystem protection and rehabilitation must be established.	• The development of the OMM Programme will be socially, environmentally, and economically sustainable. • The OMM Programme aims to provide for co-operative, environmental governance by establishing principles for decision-making on matters affecting the environment. • The integration of social, economic, and environmental factors in the planning, implementation and evaluation of decisions will ensure that the OMM Programme serves present and future generations.
7. Regulatory oversight and licensing regime must become robust.	• Local government and national legislation should be aligned. • The water allocation and licensing processes must become just, equitable, predictable and stable. • Sufficient professional and administrative capacity must be created and maintained for the sector's important	• This will not be directly influenced by the OMM Programme, but effective regulatory oversight and licensing regime will be required in support of effective implementation.

	NIP 2050	OMM Programme
	economic regulation and licensing functions. • Regulatory and licensing administrative processes must be effective and efficient.	
8. Roles and responsibilities must be aligned and consultation meaningful.	• Roles and responsibilities of all role players should be well aligned, from the line department, catchment management agencies (CMAs), regulator, TCTA, National Water Infrastructure Agency, water boards, water user associations, water services providers, private sector and social partners. • The consultative processes must be deep and meaningful.	• The OMM WUA Management Committee will establish appropriate governance sub-committees with Terms of Reference and Charters with relevant delegations of authority to facilitate efficient management of the OMM Programme. • The OMM Programme Steering Committee and associated supporting specialist panels will have equal representation between Institutional and Commercial members, with decisions made on consensus basis. • A Project Management Unit (PMU) will be established as a department within the OMM WUA's operational and management structures to act as the Owner's Team Representatives and will be responsible, via the OMM WUA management and governance structures, to develop and execute the OMM Programme. • Detailed job profiles with roles and responsibilities will be developed for all organisational structures and approved by the appropriate governance structures. • The Social Economic Development (SED) programme is directed to ensure structured consultative processes with all stakeholders.

The NIP 2050 and the NDP should be read in conjunction with the National Water and Sanitation Master Plan. The National Water and Sanitation Master Plan identified key elements necessary to achieve the NDP vision: resilient and fit-for-use water supply; universal water and sanitation provision; equitable sharing and allocation of water resources; effective infrastructure management, operation and maintenance; and a reduction in future water demand, protecting and restoring ecological infrastructure, and addressing declining water quality.

The manner in which the OMM Programme is expected to address the key considerations from the National Water and Sanitation Master Plan is addressed in the next section in this report. However, please note that it is recognised that the National Water and Sanitation Master Plan are currently being updated, but in support of

timely issue of the OMM Programme Early Business Case Report, the 31 October 2018 Water Master Plan (as published by the Departments of Human Settlement and Water and Sanitation) will be referenced. Any updates that influence the OMM Programme will be considered and addressed in the OMM Programme Intermediate Business Case Report that will be issued after the Pre-Feasibility Phase of the programme.

1.7.2.2 Alignment with the Water Master Plan

On 31 October 2018, the Departments of Human Settlement and Water and Sanitation published the Water Master Plan which dovetails the top priority issues confronting the water and sanitation sector and seeks to rally all water sector stakeholders in South Africa to work together in order to ensure that the country gets ahead of the curve in relation to both current and future challenges (*please note that Cabinet recently approved a new Water Resource Strategy, which will be incorporated*). LWUA and the future OMM WUA comprise various stakeholders, and are best placed to respond to the Water Master Plan and easily bring together all the stakeholders to work together with Government to confront the challenges facing the water and sanitation sector within the Bushveld Igneous Complex.

The Water Master Plan unequivocally admits that South Africa is facing a water crisis caused by insufficient water infrastructure maintenance and investment, recurrent droughts driven by climatic variation, inequities in access to water and sanitation, deteriorating water quality, and a lack of skilled water engineers. This crisis is already having significant impacts on economic growth and on the well-being of everyone in South Africa. The proposed OMM Programme intends to build, operate and maintain bulk and potable water infrastructure in the Eastern and Northern Limb of the Limpopo Province. Without placing more emphasis on what the OMM Programme seeks to achieve, it is clear from the on-set that OMM Programme would address the water crisis caused by insufficient water infrastructure maintenance and investment identified in the Water Master Plan. If the OMM Programme is completed and becomes operational, it would go a long way to address inequities in access to water in the Limpopo Province and assisting Government in meeting the goals and key drivers identified in the Water Master Plan. The manner in which the OMM Programme is expected to address the key considerations from the Water Master Plan is illustrated in the table below:

Water Master Plan page	Water Master Plan description	OMM WUA ties with the Water Master Plan
Volume 1, Page 7	The Water Master Plan is based on five key objectives that define a 'new normal' for water and sanitation management in South Africa: • resilient and fit-for-use water supply; • universal water and sanitation provision; • equitable sharing and allocation of water resources; • effective infrastructure management, operation and maintenance; and • reduction in future water demand.	These five objectives enable the achievement of the National Development Plan's (NDP) Vision for 2030, of affordable and reliable access to sufficient and safe water and hygienic sanitation for socio-economic growth and well-being, with due regard to the environment. The OMM WUA has identified that those communities surrounding mines have increased in Limpopo Province and do not have reliable access to potable water and other basic services. This simply means that some of the five key objectives of the Water Master Plan are yet to be achieved in Limpopo Province. It further means than there is no resilient and fit-for-use water supply; equitable sharing and allocation of water resources; effective infrastructure management, operation and maintenance and there is high water demand. The proposed OMM Programme, targeting an integrated potable and bulk raw water solution, strongly linked to

Water Master Plan page	Water Master Plan description	OMM WUA ties with the Water Master Plan
		SED in the region is an ideal vehicle for Government to achieve these objectives in the middle Olifants river area of the Limpopo Province. The OMM WUA has done all the necessary foundational studies as reflected in this report, and it has the necessary experience required to get the project of this magnitude right and help Government achieve the objectives set out in the Water Master Plan. As agreed between Government and CUC, the a transformed LWUA (future OMM WUA) is best placed to assist Government as it has operated in the Limpopo Province for many years and it already has an existing infrastructure on the ground and all that needs to be done is to expand the infrastructure.
Volume 1, page 12	According to the Water Master Plan, to balance requirements and supply, South Africa will need to reduce water demand, as well as increase supply for a growing population and economy. On the supply side, there is a need to optimise the water mix which is currently strongly dominated by surface water, with some groundwater and return flows to a water mix that includes increased groundwater use, re-use of effluent from waste water treatment plants, water reclamation, as well as desalination and treated acid mine drainage.	The proposed OMM Programme would accelerate potable and raw water delivery to stressed communities in the Northern and Eastern Limb by maximising the utilisation of available water studies, data and existing under-utilised infrastructure. Although the OMM WUA is primarily reliant on surface water, it would immediately release pressure on the already over-allocated Flag Boshielo Dam as it would abstract water primarily from De Hoop Dam. Furthermore, OMM WUA might consider abstracting groundwater from boreholes (borehole bridging in Eastern Limb as interim strategy) and this is in line with the need to optimize the water mix on the supply side. As part of the OMM Programme SED activities, low maintenance sanitation works, localised in the communities will be considered. The water will be treated to irrigation standard for agricultural use. This secondary use of water will reduce overall water demand and create the opportunity for agricultural enterprise development close to the communities.
Volume 1, Page 20	According to the Water Master Plan, the failure of some municipalities to provide reliable water and sanitation services is largely due to the lack of technical skills, institutional capacity and funding to operate, maintain and manage water and waste water infrastructure assets properly. Further	The objectives of the proposed OMM Programme include providing a reliable supply of water delivered safely, cost effectively and at the right quality. To address some of the failures identified in page 20 of the Water Master Plan, OMM WUA will conduct investigations and evaluations of available

Water Master Plan page	Water Master Plan description	OMM WUA ties with the Water Master Plan
	contributors towards the poor reliability of water and sanitation services are the limited budget allocated by some municipalities for operations and maintenance relative to that allocated to new capital works, poor revenue management, and the failure of municipalities to employ appropriately qualified technical staff. In addition, the national infrastructure grant funding mechanisms incentivise the building of new infrastructure, rather than the maintenance of existing infrastructure.	data and infrastructure in the targeted areas and develop integrated solutions to enable accelerated supply to communities and users through proper operations, maintenance and governance structures. Included in the agreement between Government and CUC is a Resourcing Agreement in which members of the OMM WUA will make available infrastructure and resources to the OMM WUA of which one key aspect is training and development targeting not only OMM WUA direct employees, but also municipality and water service provider employees to enable effective operation, maintenance and management water and waste water infrastructure. Furthermore, the OMM WUA could support the capacity building within the relevant municipalities and Water Service Providers. The OMM Programme will also seek to leverage the national infrastructure grant funding mechanisms by requesting NT to ring-fence grants specifically for the operations and maintenance of the OMM WUA funded water infrastructure. This will help to reduce the overall funding requirement for the Programme.
Volume 1, Page 22 and 23	The Water Master Plan acknowledges that the national capacity to operate, maintain and manage water supply and sanitation services requires urgent attention. Some of the key actions it identifies are to deliver services to achieve (100%) universal water services provision (Municipal Water Supply Projects by 2030) and operation and maintenance of water resources and services infrastructure by 2050. According to the Water Master Plan Government needs to consider investigating and promoting alternative service delivery models such as BOTT (build**,** operate**,** train and transfer), management contracts and concessions.	The proposed OMM Programme will be a suitable vehicle to be used as a steppingstone towards delivery of services to achieve (100%) universal water services provision. This cannot be achieved overnight and the proposed OMM Programme will assist to expedite the achievement of this goal in Limpopo Province. Furthermore, as the intention is to fund bulk and potable water infrastructure through a Build-Own-Operate-Transfer (BOOT) model, this would ensure that Government operates and maintains the water resources and services infrastructure by 2050 as required by the Water Master Plan.

Water Master Plan page	Water Master Plan description	OMM WUA ties with the Water Master Plan
Volume 1, Page 41	The Water Master Plan seeks to create effective water sector institutions, DWS as the leader of the water and sanitation sector, will lead a process, with other sector partners, to simplify and streamline the currently complex institutional arrangements in the sector. This includes developing and implementing long-term plan for the turn-around of water supply and sanitation services in the country based on a sector-wide approach, that recognise DWS as the regulator of water and sanitation provision that includes the development of centralised programmes to obtain economies of scale and to ensure impact (e.g. driving municipal non-revenue-water improvements, and assessing the cost-effectiveness and appropriated systems for desalination).	The integrated potable and bulk raw water supply proposed in the OMM Programme offers a simplified institutional arrangement and a long term water supply plan with economies of scale and the required resource development commitments that supports Government's objective for the turn-around of water supply as envisaged in the Water Master Plan. As part of the OMM Programme SED activities, low maintenance sanitation works, situated in the communities, will be considered.
Volume 1, Page 47	One of the key challenges to financial health in water and sanitation was that the private sector participation is not optimized.	The OMM WUA is the vehicle that enables partnership between the Government and the private sector in the region. The proposed OMM Programme will allow for Government and the commercial users in the region to contribute towards the capital expenditure and bulk raw water operating expenditure on a 50:50 basis, developing the culture of collaboration between Government and the private sector in resolving these key issues faced by the country.
The role of Private Sector and Public Private Partnership Structures		
Volume 1, Page 50 and 51	The Water Master Plan identifies the need to achieve financial sustainability, the need for costs to decrease and that revenue needs to increase. According to the Water Master Plan, Water and sanitation infrastructure is capital intensive and the sector is faced with increasing funding needs whilst fiscal funding is limited. The Water Master Plan further identifies the need to assess appropriate funding options from	The proposed OMM Programme is expected to deliver financial sustainability by: • seeking to optimise the cost associated with water supply in the region; • establish behavioural changes in the surrounding communities to encourage a payment culture for services provided; • obtaining long-term funding commitments from private sector players in the region;

Water Master Plan page	Water Master Plan description	OMM WUA ties with the Water Master Plan
	Transfers – Public Sector Focus, Revenue – User Focus, Loans – Private Sector Focus or a combined approach / Blended funding. Furthermore the Water Master Plan seeks to increase loan funding. It identifies this aspect as one of the drivers that will play a key role to maintain positive cash flows and affordable service. Most importantly, it states that the loan funding can be increased through the private sector and simplified Public Private Partnership Structures (**PPP Structures**).	• obtaining long-term, limited recourse debt financing that better matches the cash generating profile of the Programme to improve overall affordability; and • incorporating a joint contribution mechanism by both Government and the commercial users which is directly determined with reference to the underlying cost base of the Programme.
Volume 1, Page 59	Again, according to the Water Master Plan, of critical importance is the issue of financial sustainability. Currently the sector is not financially sustainable and increases more than inflationary targets will be required to address the historic undervaluation of water and sanitation services. High levels of debt at municipal level reverberate up the value chain, impacting on the financial sustainability of all institutions in the water sector, exacerbated by poor revenue collection by Government itself. There are five legs to the financial sustainability issue that must be addressed and one of the five is: roll out of ring-fenced institutional models to increase private sector investment.	The proposed BOOT model leverages private sector funding to reduce the funding burden on the local municipalities and Government, while ensuring that Government still acquires the underlying assets in the long-term. The model applied for the OMM Programme will be used as a pilot in the industry and is expected to be a model which can be replicated in other regions in South Africa. The contributions by Government and the commercial users will be based on a 20-year forecast of ongoing operating and maintenance costs, and debt service, allowing for upfront planning and reserving which will help to smooth the anticipated profile of major maintenance expenditure over the life of the Programme. This in turn will allow the annual contributions to increase in line with inflation annually and reduce the risk of excessive ad hoc tariff adjustments.
Volume 2, Page 1-2	The Water Master Plan, makes a commitment that DWS will work in conjunction with other government departments and agencies, the private sector and civil society to ensure that the crisis in the water and sanitation sector is addressed with the aim of attaining a water secure future with reliable and safe water and sanitation services for all, and	The establishment of the OMM WUA and proposed OMM Programme is a step to achieve Government objectives as articulated in the Water Master Plan. The Water Master Plan further more commits to support similar projects like the OMM Programme as the proposed OMM Programme seeks to bring reliable water supply services to the mines and communities surrounding the mines in the Eatern and

Water Master Plan page	Water Master Plan description	OMM WUA ties with the Water Master Plan
	that these contribute towards meeting national development objectives.	Northern Limb of the Bushveld Igneous Complex.
Role of private sector in addressing water quality challenges		
Volume 2, Page 7-2; 7-3 and 11-1.	Most of the country's water resources are negatively impacted by a combination of wastewater discharges and run-off from land-based activities. Major impacting sources include agricultural drainage and wash-off (irrigation return-flows, fertilisers, pesticides and runoff from feedlots); urban wash-off and effluent return-flows (bacteriological contamination, salts and nutrients); industries (chemical substances); mining (acids, salts, metals and radioactivity); and areas with insufficient sanitation services (microbial contamination). The quality of groundwater is impacted on by mining activities, leachate from landfills, human settlements and intrusion of sea water. As the economy and technologies develop, the pressures to stay abreast of new forms of pollution increase, and monitoring and /or further investigation to improve our understanding of these pollutants and their impacts will be critical. There are five priority water quality issues that will be addressed through a strategic, adaptive and action-oriented water quality management programme. These five priority issues are: eutrophication; salinisation; acid mine drainage and acidification; sedimentation; and urban runoff pollution. These priority water quality challenges all have multi-sectoral characteristics and will need strategic regulatory collaboration and partnerships between DWS and	The OMM Programme will provide an integrated solution for potable and bulk raw water supply. Through the WUA, the provate sector wll therefor contribute towards the provisioning of potable water and sanitation. The OMM WUA will build infrastructure to abstract and treat water to potable standards, thus improving the water quality. The OMM further tagets the secobdary use of water through the development of low maintenance, sanitation works within the communities. The water will be treated to irrigation standard for agricultural use. The water sector is inter-sectoral and multi-disciplinary in nature. At an inter-sectoral level, it links with agriculture, health, education, local government, mining, forestry, industry and environment. Its multi-disciplinary nature covers a range of responsibilities, including policy and regulation, planning and management, capital works design, construction, operation and maintenance, ecological, water quality and social analysis, financial management, all across both urban and rural environments. These responsibilities are allocated to a number of water sector institutions, mostly within the public sector such as water services authorities, water services providers, water boards, catchment management agencies and water user associations, but the private sector and civil society also play a role. The drafters of the Water Master Plan clearly had projects like the proposed OMM Programme in mind when they kept on making reference to the role of the private sector. Through DWS, the blue and green drop standard will require municipalities / WSA to monitor, maintain and report the water quality on a continuous basis. The OMM WUA,

Water Master Plan page	Water Master Plan description	OMM WUA ties with the Water Master Plan
	various other state institutions across all three spheres of government, the private sector and organised civil society. From these, although it is not directly related or link to what the proposed OMM Programme seeks to achieve, the Water Master Plan acknowledges the private sector's role to resolve water challenges in South Africa. Historically, water quality management has been the sole mandate of the then DWS. However, there are other government departments whose mandates have a profound impact on water quality, most critically, the then Departments of Environmental Affairs, the then Mineral Resources, the then Agriculture, Forestry and Fisheries, Health, the then Human Settlements, Education, Cooperative Government and Traditional Affairs, National Treasury (**NT**), Trade and Industry, together with provincial counterparts where relevant, and municipalities/WSAs. Water quality management is, therefore, a government-wide task, to be implemented under strong leadership of the DWS, with both the private sector and civil society playing a role.	through the resourcing agreement, will support this initiative through skill transfer and training initiatives.
Volume 2, Page 11-5 and 11-6	The South African water sector has experienced major sectoral, regulatory and institutional reform since 1994. These have had significant impact on the governance, operations and management of water sector institutions and engagement with water users, and on the capabilities and expertise required. The capacity gaps are present at various levels – environmental, institutional and human skills. Environmental and institutional capacity gaps are a result of a multiple factors beyond the control of the water sector. One of the human skills capacity gaps that were noted are that the experienced professionals are leaving public institutions to work in the private	The establishment of the OMM WUA and associated Resourcing Agreement will guarantee access to experienced professionals within the private sector for management, operations and maintainance of the OMM WUA infrastructure. SED is an integral part of the OMM Programme. Through the SED initiatives, the required education programmes will be identified to address critical skill shortages in the defined Programme areas

Water Master Plan page	Water Master Plan description	OMM WUA ties with the Water Master Plan
	sector and in foreign countries due partly to the inability of public sector institutions to attract and retain such staff.	
Volume 2, Page 11-7 and 11-8	The Water Master Plan makes a commitment that a detailed assessment of sector skills and capacity building needs will be concluded after approval of the plan which includes establishing partnerships with private sector and international development partners for skills development and institutional capacity building. Assess opportunities for private public partnerships throughout the water and sanitation business value chain.	Part of the establishment of the OMM WUA is a Resourcing Agreement in which members will share available infrastructure and resources to the OMM WUA. A key aspect within the reourcing agreement is the training and development of OMM WUA employees, municipality and water service provider employees to enable effective operation, maintenance and management water and waste water infrastructure. One of the SED intitiatives will focus on enterprise development within the Programme area.
Volume 2, Page 12-11	The ability to raise capital funding from the open market is constrained due to limited capacity in the water and sanitation sector to access funding. The capacity constraint is underpinned by lack of resources, low credit ratings, non-ring fencing of revenues at municipal level and current structures which generally does not create an enabling environment to mobilise private sector funding.	The OMM WUA will be a ring-fenced vehicle that is expected to unlock funding on a project finance / limited recourse basis. The commitment from the commercial users supplements Government's ability to service debt and provides additional security in the form of committed offtake backed by substantial balance sheets.
Funding (PPP Structures)		
Volume 2, Page 12-12	The concept of private sector participation (PSP) is largely applied in the sector e.g. where private funding is mobilised to fund public infrastructure, private contractors are appointed to implement public infrastructure or operate and maintain infrastructure on behalf of Government etc. However, limited cases of formal PPPs have been implemented in the sector where the private sector assumes more risk and payment is performance based. PPP's have proven to provide successful funding and	The agreement reached between Government and CUC to establish the OMM WUA is evidence of the willingness of the private sector to work with Government and commit to the development of water infrastructure in the region. The proposed BOOT model takes advantage of the benefits of traditional PPPs, leveraging the private sector's ability to provide financing and technical expertise, while allowing Government to retain long-term control of its core assets. The ring-fenced nature of the Programme, combined with committed long-term offtake

Water Master Plan page	Water Master Plan description	OMM WUA ties with the Water Master Plan
	implementation structures, but expensive and overly cumbersome to setup and in certain cases, the public sector lacks the expertise to structure PPPs. According to the Water Master Plan, two large water concessions have been implemented successfully, one at Nelspruit (the Mbombela Concession) and one at Ballito (the Dolphin Coast Concession). Private sector indicates clear appetite for large scale investment in the sector, but bankable projects are not clearly identifiable for increased participation. Lack of ring-fencing at municipal level reduces bankability and the sector's institutional structure review needs to consider funders' needs to identify bankable projects.	backed by large commercial users and substantial contributions in the form of previous capital projects and development spend, is expected to encourage investment by external funders.
Volume 2, Page 12-17	The Water Master Plan agrees that an inclusive approach between all spheres of the public sector and private sector is pivotal to address the funding gap. It requires disciplined and intentional action from the entire water supply chain, individual end-users and role-players such as funders, contractors and service providers. The funding gap does not indicate the shortfall in funding but quantifies the extent to which expectations exceed current financial capacity.	The OMM WUA institutional model addresses the need for an inclusive approach. The OMM Programme will develop Bankable Feasibility Studies for all proposed projects , taking into consideration the views from technical experts, the local commercial users and Government. During this process various funding mechanisms will be considered to ensure that value for money is achieved.
Volume 2, Page 12-19	The Water Master Plan further acknowledges that the loan funding will be unlocked if cost efficiencies and revenue challenges are addressed as creditworthy entities within the sector will increase. It states that this can be done by creating an enabling environment and investment friendly sector for private sector participation and also combining implementation, service provision, management contract, operation and maintenance and building on existing fund models known to funders.	As the OMM WUA is intended to fund bulk and potable water infrastructure through a Build-Own-Operate-Transfer (BOOT) model, this would ensure that Government operates and maintains the water resources and services infrastructure by 2050 as required by the Water Master Plan. Please refer to Page 12-12 for addional detail.

Water Master Plan page	Water Master Plan description	OMM WUA ties with the Water Master Plan
Volume 2, Page 12-32 and Page 12-34	The Water Master Plan also acknowledges that one of the key drivers to financial sustainability is to increase fiscal transfers and Government support for funding structures. The Water Master Plan also identifies loan funding as one of the key drivers and states that loans form an integral part of the funding solution to address cash flow mismatches between timing of infrastructure development needs or management interventions required versus revenue which is received over a longer-term. The need for loan funding creates an opportunity to mobilise sizable private sector participation. There are many degrees of private sector participation in the water sector from something as simple as outsourcing meter readings through to letting a long-term concession involving capital investment and direct contact with customers. Some of these are true partnerships where risk is shared, typically called PPP. The Water Master Plan goes further to list a number of funding structure options that could be considered in addition to typical loans. According to the Water Master Plan, PPPs have been viewed with suspicion in the past, largely on ideological grounds, but the growing crisis in the sector is beginning to encourage decision-makers to see private sector participation as a pragmatic and beneficial response. However, PPP contracts need to be carefully designed, competitively procured and diligently supervised, with suitable sanctions if agreed service levels are not maintained. The longer the contract period, and the larger the private sector investment, the longer they take to prepare, the greater the need for good advice and skills (technical,	As indicated above (Volume 1, Page 50 and 51), The proposed OMM Programme is expected to deliver financial sustainability by: • seeking to optimise the cost associated with water supply in the region; • establish behavioural changes in the surrounding communities to encourage a payment culture of for services provided; • obtaining long-term funding commitments from private sector players in the region; • obtaining long-term, limited recourse debt financing that better matches the cash generating profile of the Programme to improve overall affordability; incorporating a joint contribution mechanism by both Government and the commercial users which is directly determined with reference to the underlying cost base of the Programme.

Water Master Plan page	Water Master Plan description	OMM WUA ties with the Water Master Plan
	financial and legal), and the thicker the contract document becomes to be managed. PPPs are overly cumbersome and expensive to enter into and NT needs to consider a simplified PPP approach on smaller scale which is specific the sector's guidelines and rules. The sector needs funding solutions for large mega projects but also a renewed focus on smaller projects which could even be structured as a community involvement project	

1.7.3 Other Dependencies

In addition to the Regulatory Report, various memoranda were considered dealing with:

1. Water User Licenses (WULs): the abstraction points and the new and amended WULs required (including the surrender and amendment and consolidation of the Havercroft WUL);
2. Claiming Servitudes under the NWA: this is necessary in light of the multitude of pipeline infrastructure and securing the right to own, operate and maintain this for the term of the proposed OMM Programme;
3. Disestablishment: the importance of engaging with the Minister of Water and Sanitation on whether he would be amenable to issuing a letter of revocation of the then Minister of Water and Sanitation's 2016 Notice of Intention to Disestablish Lebalelo Water User Association (LWUA) and incorporate it into Lepelle Northern Water (LNW) in terms of Section 96(2) of the National Water Act, 1998 (NWA);
4. Asset Identification and Treatment: the list of existing assets affected or new assets to be developed to carry out the proposed OMM Programme and how the legal issues arising in respect thereof (both generally and for the purpose of the BOOT Contract);
5. The use of Mining Royalties to fund the proposed OMM Programme: to determine whether it would be possible to redirect the mineral royalties that are payable by the mining companies, who would be members of the CUC (and therefore of the Transformed WUA), from SARS to the project. This is not currently possible within the framework of existing legislation but may be achieved with amendments to the Mineral and Petroleum Resources Royalty Act, 2008 (MPRRA);
6. The use of municipal CAPEX and OPEX to fund the proposed OMM Programme: the application of funds earmarked by NT for municipal CAPEX and OPEX for water and redirecting same to the project is limited. The confirmation by Senior Counsel that, the designated municipalities may authorise a water user association to charge the commercial consumers directly for the water supplied to them; OMM WUA's claims against the designated municipalities may not be secured by an agreement that national Government pay their allocations directly to the OMM WUA; and the allocations the municipalities receive from national Government may however be used in a variety of ways to secure the OMM WUA's claims against the designated municipalities. This is also discussed in the Financial Business Case as it impacts the financial model; and
7. Tax implications: to determine whether the OMM WUA will qualify as a "water services provider" as defined in the IT Act and if so, whether Section 10(1)(cA) should cease applying to the OMM WUA, with the exemption in Section 10(1)(t)(ix) then automatically applying to the OMM WUA. The implication of this is that any donations to the OMM WUA should then be subject to donations tax at 20%. Further considerations in respect of the Value-Added Tax Act, 1991 (VAT Act) in light of the fact that the OMM WUA is not exempt from VAT.

Over and above the legal and regulatory dependencies, the following key schedule dependencies were identified:

1. Public consultation;
2. Environmental impact assessment;
3. Environmental applications / authorisations;
4. Asset condition assessment of current infrastructure;
5. Land acquisition;
6. Water use license approval;
7. Long lead times of special materials such as steel pipes; and
8. Availability of required services – power.

1.8 Strategic Case Conclusion

The content from the strategic case clearly describes the rationale for the OMM Programme and that it fits with wider government and commercial water user policies, strategies and needs. The case for change to execute an accelerated OMM Programme, as an alternative to the ORWRDP including the addition of potable water supply infrastructure for identified communities into the scope together with the establishment of the OMM WUA as implementation vehicle was clearly defined. The OMM WUA operating boundaries, including the high priority drive for socio-economic development in the region is also included into the OMM Programme objectives and final agreement reached with all members of the OMM WUA.

Three strategic outcomes are expected, with the outcomes structured under three horizons. These outcomes will be monitored through the baselining and measurement of specific Sustainable Development Goals.

- **Horizon 1:** Stabilisation of operations and the provision of a social license to operate through a series of impactful initiatives to prepare communities for meaningful participation in the OMM Programme;
- **Horizon 2:** Successful implementation of the defined OMM Programme to provide much needed water and in doing so building a trusted platform for SED in the region. This to be done through the expansion of the OMM WUA's role to build, operate and maintain, bulk infrastructure and build potable water infrastructure. This will include the establishment of a sustainable SED collaboration forum to align members around common socio-economic development initiatives and infrastructure to foster social harmony; and
- **Horizon 3:** Catalyse the creation of game changing businesses and initiatives to drive exponential socio-economic growth in the region through the identification and development of high socio-economic impact opportunities in the region.

2. Economic Case

The purpose of the economic dimension of the business case is to identify the proposal that delivers best social value to society, including wider social and environmental effects. The way forward as described in the Strategic Business Case dimension were considered as basis to define critical success factors, linked to the spending objectives, to appraise potential OMM Programme implementation options and identify the optimal concept solution framework. This concept framework was further developed to concept level detail in support of the estimate, schedule and economic modelling.

2.1 Introduction

The mission of the OMM WUA will be that it shall, within the legal framework of the National Water Act, 1998 (NWA) and Water Services Act, 1997 (WS Act), consider the prescribed health standards, strive towards making bulk raw water and potable water available to all members and other stakeholders in a cost effective, efficient, sustainable and responsible manner.

2.2 Water Resources

The most critical factor in designing a water solution for the region is the availability of water resource for distribution. The availability of water from the Flag Boshielo dam for supply to social and commercial users in the Mokopane/ Sekuruwe area is of serious concern to the mining companies. The latest information that was presented by the TCTA/DWS showed that, even with augmentation from De Hoop dam, there was no surplus yield available for allocation from the Flag Boshielo dam. Without the assurance that water would be made available for additional licencing, financing could not be secured for the Phase 2B and 2B+ pipelines.

With support from the mines and in close cooperation with DWS and LWUA, further analyses of the capabilities and behaviour of the Olifants River System (additional to what the DWS had done), were performed by the Joint Water Forum (JWF). This was done in close liaison with the DWS, with the full outcomes also shared with the DWS.

From the analyses some management options and interventions were identified that, if applied, would enable sufficient water to be made available at an acceptable assurance to meet all existing water requirements from the Olifants River System together with growth in the Mogalakwena and Polokwane areas until 2040. Still further analyses are currently underway to dynamically assess the system performance and timing of augmentation requirements over a 20-year planning horizon, which should further improve the confidence that sufficient water at an acceptable assurance can be supplied to all users over this period. The outcomes again are to be shared with the DWS.

The key interventions and management options considered are concisely mentioned below. It is well recognised, however, that the actual decisions on how the system is to be managed, augmented and operated fully resides with the DWS.

Underlying all is acceptance that the ORWRDP be completed. Other interventions/options are:

- Operation of the Witbank, Middelburg, Flag Boshielo and De Hoop dams as one system, with the same assurance of supply criteria to the respective user groups to be applied throughout the system.

- The Olifants River System to be augmented with surplus water to become available from the Komati River as some of the Eskom power stations are decommissioned. This to be triggered by a reduction in excess mine water flows from the coal mines as these are to be decommissioned and the mine workings to be re-filled and/or by the growth in water requirements from the Olifants River System.
- Postponing or cancelling the release of Environmental Water Requirements from Flag Boshielo dam. The Environmental Water Requirements at the Kruger National Park will be met under all scenarios.

2.3 Critical Success Factors

The long term success of the OMM Programme will be underpinned by a number of critical factors including:

1. Political support and approval for the OMM Programme;
2. Political and institutional alignment;
3. Effective and timely community consultation processes and red zone analysis;
4. Timely and appropriate stakeholder management and communication;
5. Compliance with all relevant regulatory requirements;
6. Transformation and rebranding of LWUA as the OMM Programme implementing entity;
7. Fully mandating and equipping the OMM WUA to implement, manage, operate and maintain the defined OMM Programme scope;
8. Successful integration of new members and employees into the organisation;
9. Adherence to open and transparent internationally acceptable governance processes;
10. Timely decision making;
11. Adoption of internationally acceptable project execution policy, principles, standards and procedures;
12. Study information to be shared between OMM WUA members to optimise technical design and cost;
13. Development of a solution to reduce electricity cost escalation;
14. Allocation of risk to members best able to mitigate the risk;
15. Timely preparation of communities to participate in opportunities arising from the OMM Programme spend;
16. Ability of the construction sector to ramp up for the OMM Programme;
17. Timely payment by members of their funding commitments;
18. Skills development programmes in the water services sector;
19. Provision of support to WSA to ensure water services delivered in line with required regulatory standards;
20. Alignment of Government SED and water services plan and programme with the OMM SED Programme.

2.3.1 OMM Programme Objectives

Considering water resource availability and the regional water needs, as agreed between the members of the OMM WUA, the proposed OMM Programme, from an overview perspective aims to address the following key issues:

1. Abstract the LWUA scheme water primarily from De Hoop dam instead of the Olifants river to relieve pressure on the already over-allocated Flag Boshielo dam;
2. Re-sequence the construction of ORWRDP bulk raw water infrastructure to meet revised water needs;
3. Support existing potable Water Services Authorities (WSAs) and develop potable water infrastructure in defined areas in the Northern and Eastern Limb to address immediate and long-term social water needs of the WSAs;

4. Implement the OMM Programme based on international proven project execution principles and standards with an integrated, open, transparent and independent project controls environment meeting the OMM WUA member's governance requirements.

Based on the above aims and as part of an alternative scope solution for the current ORWRDP detail SMART objectives for the OMM Programme were formulated:

1. Accelerate the implementation of the ORWRDP and social water supply to water stressed areas;
2. Utilise the available infrastructure to its maximum for a cost-effective water supply solution;
   a. Pooling existing Government and LWUA bulk raw water infrastructure assets with OMM WUA to manage and operate these assets; and
   b. These assets would earn a prescribed return on asset (RoA) with Government and contributing commercial members receiving recognition for their previous capital contributions through a capital credit mechanism to reduce their water tariffs;
3. Resequence the technical design to optimise spend and community water provision impact through deferral of Phase 2D and 2E and investigation into renewable energy options to reduce electricity cost;
4. Improve potable water service delivery through supporting existing WSAs;
5. Bulk and Potable water infrastructure capex to be shared on a 50/50 basis between Government and Commercial Users with capex repaid over a 25 year period to minimise cash flow impact on members;
6. Develop skills in the water sector through establishing a resourcing partnership between Government and CUC members
7. Improve social harmony in the region through the provisioning of social water, the creation of jobs and socio-economic development;
8. Procurement policy and a SED Collaboration Forum (by way of the transformation of the existing OMM Social and Ethics Committee) to be used to self-fund SED programmes;
9. Social Labour Plans could be utilised by Commercial Users to fund their portion of the Capex and SED contributions;
10. Mining royalties could be utilised by Government to fund their portion of CAPEX, OPEX and SED contributions; and
11. Be a model water infrastructure pilot programme for the country through collaboration and the provision of strong governance over the programme by implementing the OMM Programme based on internationally proven project execution principles and standards with an integrated, open, transparent and independent project controls environment that meet the OMM WUA member's governance requirements.

2.4 OMM Programme Option Framework

2.4.1 Long List Options

The optimal scope solution, service delivery, implementation framework and funding methodologies were identified for the OMM Programme from different potential solutions summarised below. These 'Long List' options were evaluated against the critical success factors to determine the preferred OMM Programme approach for further development.

Table 2: Long List Evaluation Table

LONG LIST	Business as Usual	Minimum Change	Intermediate Option	Intermediate Option	Maximum Scope
1. Technical Scope	1. Implement the ORWRDP; 2. WSAs provide potable water.	1. Implement ORWRDP with Phase 2B extended to Sekuruwe to support the Northern Limb; 2. WSAs provide potable water.	1. Adjust ORWRDP to match water availability and revised needs; 2. Extend Phase 2B to Sekuruwe to support the Northern Limb; 3. Integrate with potable water supply in the vicinity of the raw water network.	1. Adjust ORWRDP to match water availability and revised needs; 2. Extend Phase 2B to Sekuruwe to support the Northern Limb; 3. Integrate with potable water supply to all municipal areas in the region.	1. Adjust ORWRDP to match water availability and revised needs; 2. Extend Phase 2B to Aganang to support the Northern Limb and beyond; 3. Integrate with potable water supply to all municipal areas in the region; 4. Augment water in the region with cross connections from Mpumalanga Komati River.
	Carry Forward as Baseline	**Carry Forward**	**Preferred approach**	**Carry Forward**	**Discount**
2. Service Solution	1. Existing arrangements with DWS/TCTA responsible for bulk raw water supply; 2. Lepele Northern Water and municipalities responsible for potable water; 3. LWUA supply raw water to the association members.	1. TCTA responsible for bulk raw water supply in Northern Limb; 2. LWUA appointed as implementation agent for the Eastern Limb; 3. LNW and municipali-ties responsible for potable water.	1. LWUA appointed as implementation agent for the Eastern Limb and Northern Limb as an integrated raw water solution; 2. LNW and municipalities responsible for potable water.	1. LWUA appointed as implementation agent to provide the Eastern Limb and Northern Limb with an integrated bulk raw water solution; 2. LNW and municipalities responsible for potable water.	1. Transform LWUA into OMM WUA to provide an integrated potable and raw water solution.
	Carry Forward as Baseline	**Carry Forward**	**Carry Forward**	**Carry Forward**	**Preferred approach**

LONG LIST	Business as Usual	Minimum Change	Intermediate Option	Intermediate Option	Maximum Scope
3. Service Delivery	1. Continue with current contracts as deployed by DWS/TCTA and Lepele Northern Water through contractual sessions. 2. O&M remain as per current agreements	1. RFP process for the total integrated scope to a single service provider. 2. O&M remain as per current agreements	1. Continue with current contracts where scopes are ready for implementation through contractual cessions or sole sources agreements; 2. RFP Process for remainder of scopes 3. O&M of raw water resides with OMM WUA and potable water with WSAs	1. Split the OMM Programme scope into separate projects and deploy RFP process to appoint multiple services provides matching the current level of development of the project. 2. O&M of raw water resides with OMM WUA and potable water with WSAs	1. Split the OMM Programme scope into separate projects and deploy RFP process to appoint multiple services provides matching the current level of development of the project. 2. O&M for total raw and potable water transferring the resides with the OMM WUA.
	Carry Forward as Baseline	**Carry Forward**	**Carry Forward**	**Preferred approach**	**Discount**
4. Project Implementation	As per current project plans	Total restart of all project phases, targeting an integrated solution	All projects to meet FID before execution phases commence	N/A	Accelerated Implementation, progressing on current status of development of current projects
	Carry Forward as Baseline	**Discount**	**Carry Forward as Possible**		**Preferred approach**
5. Project Funding and Financing	Government secure funding for all infrastructure projects	1. Raw water infrastructure capital split 50/50 between Government and CUC 2. Potable water infrastructure capital covered by Government; 3. O&M cost recovered through water tariffs based on actual use.	1. Bulk raw water capital expenditure and fixed O&M split 50/50 between Government and CUC; 2. Bulk raw water O&M variable tariff based on actual use; 3. Potable water capital expenditure split 75/25 between Government and CUC	1. Bulk raw water capital expenditure and fixed O&M split 50/50 between Government and CUC; 2. Bulk raw water O&M variable tariff based on actual use; 3. Potable water capital expenditure split 50/50 between Government and CUC 4. Government responsible for	1. Commercial Users provide Capital funding for the proposed OMM Programme; 2. O&M cost recovered through tariff based on actual use

LONG LIST	Business as Usual	Minimum Change	Intermediate Option	Intermediate Option	Maximum Scope
			4. Government responsible for potable water O&M	potable water O&M	
	Carry Forward as Baseline	**Carry Forward**	**Carry Forward**	**Preferred approach**	**Discount**

2.4.2 Option Selection Motivation

For OMM Programme scoping purposes, the critical success factors and programme SMART objectives, listed in section 2.3, directly applicable, were selected and abridged into the following 5 items:

1. Fastest supply of water to communities
2. Lowest investment capital
3. Maximum use of available infrastructure and data
4. Optimal use of available water resource
5. Open and transparent commercial and governance processes

The already approved and partially implemented ORWRDP remained the starting point and reference for the evaluation of the different alternatives and modifications considered. With specific reference to the above scoping success factors, the long list of options was evaluated and the case complying with most of the critical success factors selected as basis for the development of the concept solution and testing the viability of the OMM Programme. Should the concept phase of the OMM Programme be successful, all options as reflected in the long list will be re-evaluated during the scoping phase of the OMM Programme, the Pre-Feasibility Phase. The outcome of the concept evaluation process was as follows:

- Project funding and financing is a negotiated outcome and not evaluated against specific criteria;
- Considering specifically the slow progress associated with social water delivery in the region, agreement was reached to target an accelerated project implementation approach;
- To best manage risks associated with such a programme and learning lessons from the past, it was concluded to have a single integrated implementation approach. To enable this approach LWUA, with a successful track record of project execution in the region as well as effective operations of the current LWUA water scheme, will be transformed into the OMM WUA that will implement the OMM Programme, operate and maintain the raw water assets and have an overview responsibility with regard to the operations associated with potable water supply that will be operated and maintained by the WSAs / Municipalities;
- To support the approach for an accelerated implementation methodology the OMM Programme scope will be split into separate area-based projects. In line with the agreed open and transparent commercial and governance processes and to limit contractual legacy problems, it was concluded to deploy RFP processes for each project, appointing multiple services providers matching the current project level of development. Sole sourcing and cession of current contracts can still be considered to further accelerate the process, but only if the potential market impact, especially from a reputational perspective, are fully understood and mitigated to acceptable levels;
- In terms of the technical scope, the ORWRDP will be adjusted to match water availability and revised water needs, splitting supplies from the Flag Boshielo and De Hoop Dams. Sufficient water is available to match forecasts up to 2040 and augmentation from Mpumalanga is not immediately required. The ORWRDP scope will be further extended to include the supply of raw water up to Sekuruwe in the Northern Limb and ensure sufficient bulk raw water is available to support the Polokwane potable water supply from the Olifantspoort weir via the Lepelle Northern Water treatment plant and pipeline. Matching the funding

agreement and social needs in the vicinity of the mines, the OMM Programme's potable water supply will be limited to areas adjacent to the mines with water volumes approximately equivalent to the commercial users' demand, excluding the raw water supply for Polokwane; and

- Additional bulk raw water capacity, based on water availability can be added to the OMM Programme on a selective basis, with incremental cost carried by Government. The potable water networks associated with this additional capacity will be implemented and managed as separate projects by Government.

2.4.3 OMM Programme Preferred Long List Solution

From the long list evaluation process, matching the success criteria, an alternative Integrated Water Services Model solution ("the OMM Programme") has been conceptualised to address the technical, financial and socio-economic concerns. The solution comprises:

1. Abstracting the current LWUA scheme water primarily from De Hoop dam instead of the Olifants river to relieve pressure on the already over-allocated Flag Boshielo dam;
2. Re-sequencing the construction of ORWRDP, commencing with Phase 2B and 2B+, in parallel with Phase 2F, while deferring Phases 2D and 2E to optimise capital expenditure. Constructing a gravitational potable pipeline from Steelpoort Water Treatment Works (WTW) to Burgersfort will enable deferring the construction of Phase 2D and to reduce operating expenditure (OPEX) costs. Phase 2D and 2E can be deferred until needed when the full capacity of the current LWUA infrastructure is reached;
3. Supporting WSAs by developing potable water infrastructure in defined areas in the Northern and Eastern Limb to address immediate and long-term social water needs;
4. Constructing five new infrastructure projects as part of the OMM Programme, namely
    a. Bulk raw water: ORWRDP phase 2F – steel pipeline from Clapham pump station to Olifantspoort weir;
    b. Bulk raw water: ORWRDP phase 2B & 2B+ – steel pipeline from Flag Boshielo dam to Sekuruwe Water Treatment Works (WTW) in the Northern Limb;
    c. Bulk raw water: new pump station between Steelpoort pump station and Mooihoek reservoir;
    d. Potable water Eastern Limb: potable pipelines, reservoirs, water treatment works, pump stations and associated infrastructure, reticulation network and yard connections in defined areas surrounding the CUC mines in the Eastern Limb; and
    e. Potable water Northern Limb: potable pipelines, reservoirs, water treatment works, pump stations and associated infrastructure, reticulation network and yard connections in defined areas surrounding the CUC mines the Northern Limb.
5. Pooling existing Government and LWUA water infrastructure assets by reaching agreement on the management and operation of these assets. These assets would earn a prescribed return on asset (RoA) with Government and contributing commercial members receiving recognition for their previous capital contributions through a capital credit mechanism to reduce their water tariffs;
6. Establish the OMM WUA to implement on behalf its members and operate agreed assets of DWS on an arms-length basis as part of the OMM Programme. All existing raw water infrastructure (including dams) will earn a RoA for the entities that invested and developed it. New assets would be incorporated into OMM WUA.
7. LWUA's member base would be enlarged to incorporate other commercial members as well as the increased membership of DWS while establishing the OMM WUA;
8. All the members of OMM WUA including the DWS would be required to enter into a 25-year contract with OMM WUA to finance, build, operate, maintain, manage and transfer the development of the OMM Programme. The assets should be transferred to DWS or the applicable WSA after 25 years in the condition defined in the proposed Agreements or as agreed between the parties;
9. OMM WUA will be a non-profit institution with tax exemptions status and benefits. Hence, OMM WUA will recoup the investment, financing and operating costs through a cost recovery user charge with no profit included;
10. OMM WUA would apply in principle the ORWRDP financing and water allocation principles agreed in 2008 between Government and commercial users for the bulk raw water component of the project;
11. In respect of bulk raw water:

a. The repayment of capital expenditure would be split 50:50 between DWS and the CUC and charged on a take or pay basis. The same 50:50 principle will be applied to the fixed operational and maintenance expenditure; and
b. Variable operational and maintenance expenditure has been allocated based on members' actual usage in any given period.

12. In respect of potable water in terms of the identified areas:
    a. The repayment of capital expenditure, would be split 50:50 between DWS and the CUC; and
    b. The WSAs will operate and maintain the potable infrastructure for their costs and recover through tariffs based on actual use.
13. Part of the resourcing partnership between Government and CUC is to support the OMM WUA, the WS Authorities and other aspects of the OMM Programme. In this sense and to secure a fully integrated water solution and management system, the OMM WUA will support and manage the De Hoop and Flag Boshielo dam operations.
14. OMM WUA would establish a predictable and efficient raw water tariff over the prescribed contract period for DWS and CUC, in the defined areas of collaboration;
15. OMM WUA to obtain timely access to funding at an efficient financing cost based on the quality of Government and Commercial off-take agreements and the availability of in-house construction and operational capability; and
16. A socio-economic development plan will be implemented as part of the OMM Programme to focus on three outcomes namely the acceleration of:
    a. Potable water to communities to address the pressing water needs in the region;
    b. Creation of jobs, skills development and use of local skills (including within LWUA) through the associated OMM Programme spend; and
    c. Enterprise development.

    The combination of these three outcomes will establish a platform for enhancing stability and sustained socio-economic development in the region. Timely community engagement and community readiness programmes are to be planned to ensure inclusive participation in the OMM Programme.

2.5 Concept Design of the Preferred Way Forward

The technical and implementation concepts for the preferred OMM Programme solution have been further developed up to concept level of detail. This includes the associated AACE Class 5 capital cost estimates[4], and the basis of schedule, to facilitate the business viability evaluation of the concept.

The final technical concept deliverables for the OMM Programme and individual projects are the following:

- Concept design
- Basis of schedule
- Class 5 capital cost estimates
- OMM Programme contingencies / accuracy assessment
- Procurement, contracting and other key OMM Programme implementation strategies
- High level management implementation framework

Each of the above deliverables indicate the issues to be further investigated, further work to be performed, and documents to be developed during the Pre-feasibility study and Feasibility study phases.

During the Concept phase several steps were followed to achieve the concept design and costs for the proposed projects. Each step required certain inputs, with resultant outputs, as indicated in 'Table 3' below.

[4] *Association for the Advancement of Cost Engineering, Level 5 is used for purposes of Concept Screening*

Table 3: Design process followed to develop technical concept design deliverables

No.	Step	Input	Output
1	Define the potable water volume required per area	• Level of service per household to be delivered	• Confirmed volume demand at the associated water treatment works
2	Define the potable water infrastructure required to deliver the defined (assumed) volume of water for the area/potable project	• Demand from 1. Above • Basis for assumed potable water demand/ volumes • Work breakdown structure (WBS) • CAPEX assumptions	• High level design potable water infrastructure drawings • Water supply agreement quantities • CAPEX costs
3	Define the supporting infrastructure for the potable water infrastructure defined above	• High level design potable water infrastructure • Work breakdown structure (WBS) • Cost assumptions	• High level design of supporting infrastructure • Water supply agreement quantities • CAPEX costs
4	Define the OPEX costs	• High level design • Cost assumptions • Work breakdown structure (WBS) • Maintenance strategy	• OPEX costs, incl maintenance (O&M)
5	Define the raw water volume required per project	• Potable off take from the areas above • Commercial users off take volume • Current capacity available	• Confirmed volume demand and or additional requirement
6	Define the raw water infrastructure required to deliver the defined volume of water for the area/potable project	• Demand from above • Work breakdown structure (WBS) • CAPEX assumptions	• High level design raw water infrastructure drawings • Water supply agreement quantities • CAPEX costs
7	Define the supporting infrastructure to the raw water infrastructure defined above	• High level design raw water infrastructure • Work breakdown structure (WBS) • Cost assumptions	• High level design of supporting infrastructure • Water supply agreement quantities • CAPEX costs
8	Define the OPEX costs	• High level design • Work breakdown structure (WBS) • Cost assumptions • Maintenance strategy	• OPEX costs, incl maintenance (O&M)

No.	Step	Input	Output
9	Model raw water system options available to confirm the required projects (scope, timing, costs, benefit)	• Information from above	• Concept study water balance model • Financial model • Risk model
10	Superimpose non-financial non-technical parameters in the model	• Non-financial non-infrastructure studies and reports • Work breakdown structure (WBS)	• Quantified non-financial impacts on the financial and risk models • Social impact
11	Write the Early Business Case Report	• Information from all the above	• Early Business Case Report • Plan for the Pre-feasibility and Feasibility study • Procurement plan for the Pre-feasibility and Feasibility study services

2.5.1 Technical Concept Design Summary

The OMM Programme, from a technical perspective, is a series of design and construction activities of several capital projects in such a way as to maximise the use of current DWS and LWUA assets, as well as to deliver new assets in the most efficient manner. Together these component projects make up the infrastructure OMM Programme. The individual projects are not technically overly complex in themselves, but the large footprint, diversity of contractors that will be utilised, and the construction coordination activities result in a large and complex programme.

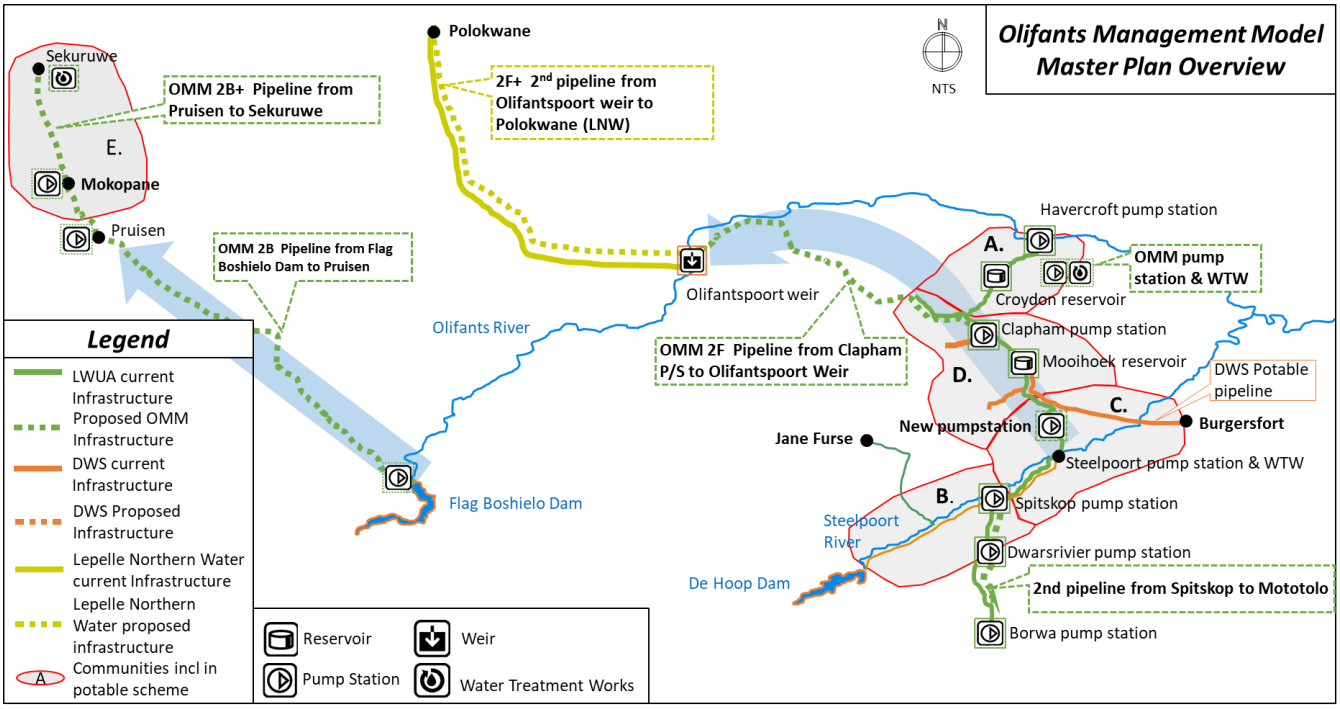
The technical deliverables developed for the concept phase for the proposed overall programme and individual projects were concept designs, basis of schedule, capital cost estimates, programme contingencies / accuracy assessment and implementation strategies. These were all developed and aligned to the required accuracy level for a concept study, i.e. AACE Class 5.

The following five infrastructure projects were identified and included in the concept design:

1. Bulk raw water ORWRDP phase 2F: new steel pipeline from Clapham pump station to Olifantspoort weir;
2. Bulk raw water ORWRDP phase 2B and 2B+: steel pipeline from Flag Boshielo dam to Pruisen (2B), and from Pruisen to Sekuruwe (2B+) in the northern limb. This will include three new pump stations;
3. Bulk raw water: new pump station between Steelpoort pump station and Mooihoek reservoir;
4. Potable water reticulation to the Eastern Limb: potable water pipelines, reservoirs, one new and two expansions of existing water treatment works, pump stations and associated infrastructure, reticulation network and yard connections in defined areas surrounding the CUC mines in the Eastern Limb; and
5. Potable water reticulation to the Northern Limb: potable water pipelines, reservoirs, one new water treatment works at Sekuruwe, pump stations and associated infrastructure, reticulation network and yard connections in defined areas surrounding the CUC mines in the Northern Limb. Two further WTWs will be required to be developed by others, in a synchronised fashion, at Mokopane and near Platreef respectively, in order to deliver potable water to the communities in these areas.

Figure 6 Below provides a schematic overview of the proposed OMM Programme Master Plan, showing the relative positions of the proposed new infrastructure to be delivered under the OMM WUA mandate, as well as key existing infrastructure pertinent to the OMM Programme.

Figure 6 – OMM Programme Master Plan: schematic overview



The OMM Programme Master Plan overview above demonstrates the following key elements of the OMM WUA delivery:

1. The transfer of raw water from the Steelpoort river from the De Hoop dam in the south to the Olifants river in the north via **new OMM steel pipeline 2F**. This project is also key to enable raw water to be delivered to Polokwane via a new potable water pipeline to be implemented by Lepelle Northern Water (LNW). The OMM Programme and the LNW delivery will be synchronised to ensure efficiency of timing;

2. This northwards delivery is primarily enabled via the current DWS pump station at Steelpoort, and **new OMM pump station** between Steelpoort and Mooihoek reservoir;
3. The transfer of raw water from the Flag Boshielo dam on the Olifants river northwards to Sekuruwe via **new OMM steel pipelines ORWRDP phases 2B and 2B+** as well as three intermediary pump stations;
4. All raw water phases will make provision for 10% extra capacity for emerging industrial users for empowerment and social water expansion in future.
5. Provision of **potable water reticulation to communities in the Eastern Limb**, including its associated seven new intermediary pump stations and new Water Treatment Works (WTW) near Havercroft as well as the upgrading of the Steelpoort and Ga-Malekane WTWs, and community yard connections' reticulation;
6. Provision of **potable water reticulation to communities in the Northern Limb**, new Water Treatment Works near Sekuruwe, and yard connections' reticulation. Two new WTW will be delivered by others at Mokopane and near Platreef respectively in a synchronised fashion, both of which will utilise raw water from OMM 2B and 2B+.

Figure 7 and Figure 8 provide more detail of the bulk raw water projects and the community areas to be included in the potable water projects in the Eastern Limb and Northern Limb areas respectively. Further technical detail of the individual projects and integrated programme technical details are described in Attachment A. Refer to Attachment D for the basis of the schedule and key planning assumptions, and Attachment D for the Class 5 Capital Cost Estimate Report used for evaluation of the OMM Programme Early Business Case.

The Eastern and Northern Limb OMM Programme Master Plans overleaf also illustrate the community villages to be included into the programme, indicated in red. These villages are the current human settlement patterns within Areas A, B, C, D and E as per Figure 6. A complete list of the village names is included in Attachment A.

The basis for proposing these villages was as follows:

1. Villages that are in relatively close proximity to the OMM Programme assets, mines participating in the programme, as well DWS infrastructure close to the De Hoop dam;
2. Villages that would benefit from bulk raw water provided via the OMM Programme;
3. Villages that are contained within the Sekhukhune District Municipality (SDM) Bulk Water Services Master Plan (BWSMP[5]) scheme areas. The boundaries of these scheme areas were in turn informed by their hydraulic accessibility, i.e. where villages are within elevations and proximity to water resources that can be reasonably reached within technical constraints; and by the District and Local Municipal boundaries. Importantly, the DWS were also signatories to the BWSMP, where water resources and water services data was included into the overall DWS water resources data.

[5] *Refer to the SDM BULK WATER SERVICES MASTER PLAN DRAFT 2.1: September 2014*

Figure 7: OMM Programme Master Plan: Eastern Limb overview

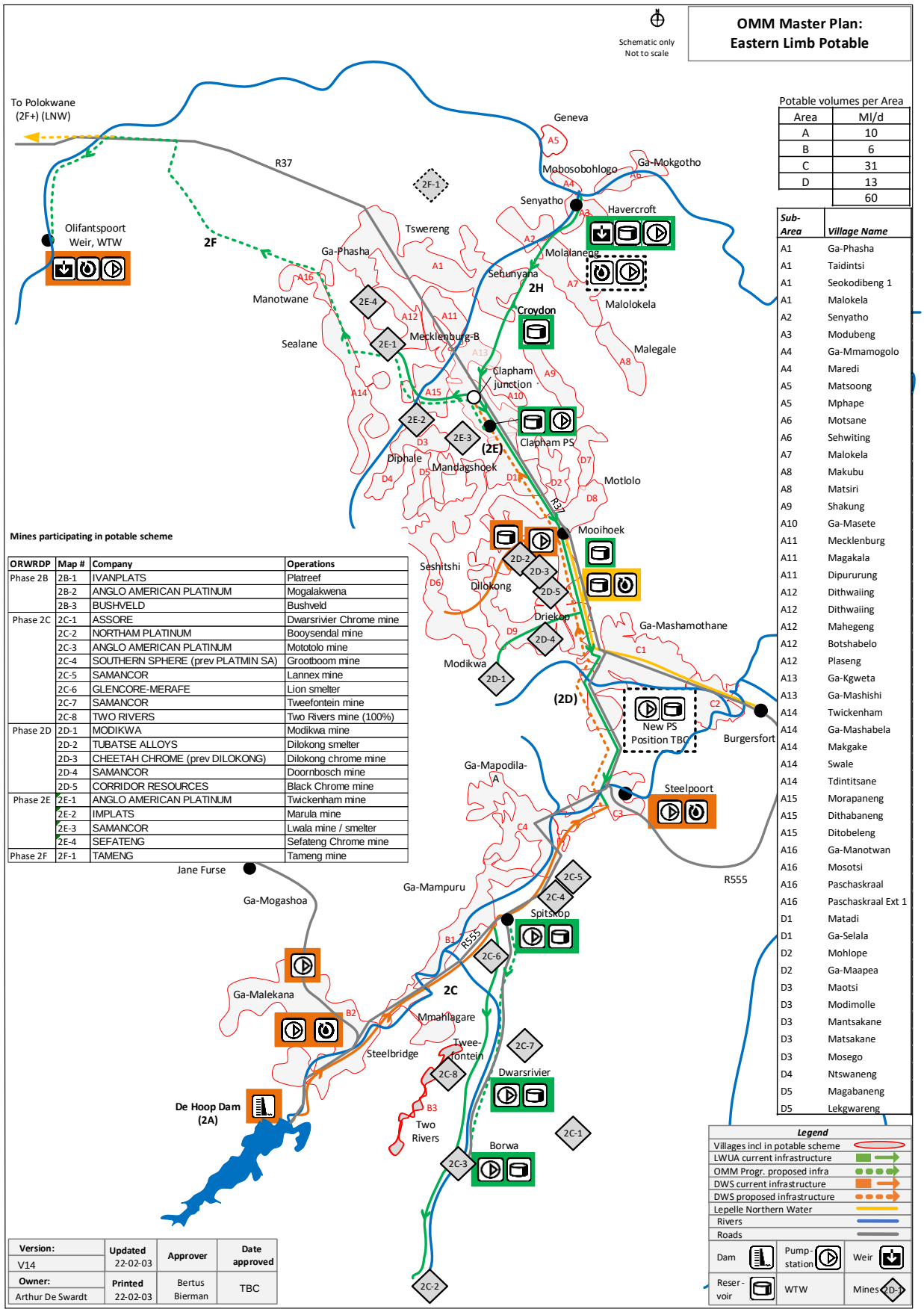
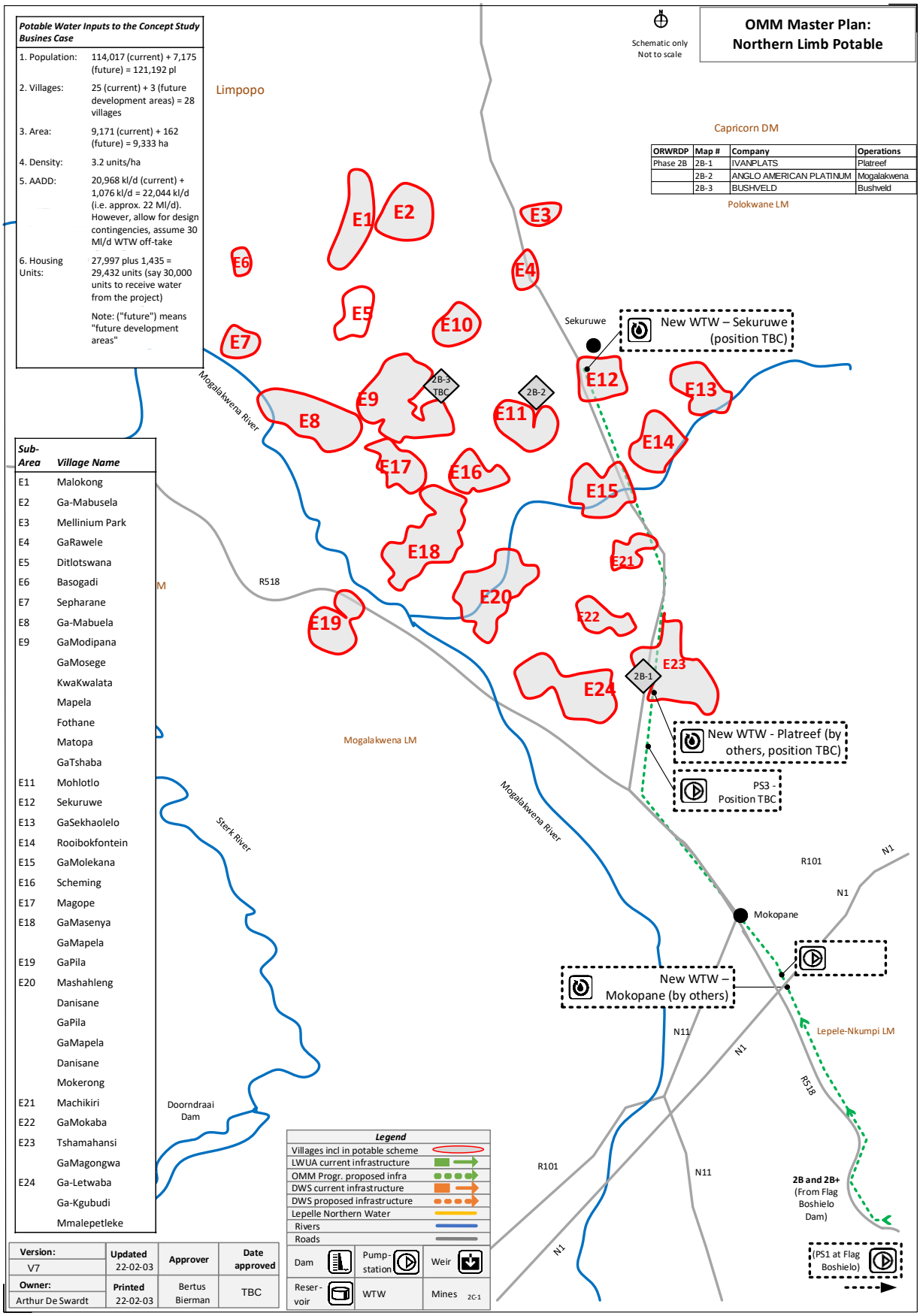


Figure 8: OMM Programme Master Plan: Northern Limb overview



2.5.1.1 Project 1: Bulk Raw Water Project ORWRDP Phase 2F

Benefits:

The proposed bulk raw water ORWRDP phase 2F project provides for the delivery of bulk raw water from the current DWS Steelpoort pump station to the Olifantspoort weir.

The project will utilise the current LWUA pipeline from Steelpoort to Mooihoek reservoir (i.e. reverse the current water flow in a south to north direction), and then gravity feed from the Mooihoek reservoir to the Olifantspoort weir, mostly via a new pipeline. The new pipeline will commence at Clapham pump station, allowing gravity fed water from Mooihoek to bypass Clapham pump station, and continue to Olifantspoort weir. A link to the Clapham pump station will be maintained, however, for purposes of linking to the Twickenham aquifer and Motse river.

This project is a key link in relieving capacity constraints on the Olifants river by pumping water that originated in the Steelpoort river from the De Hoop dam northwards, in order to eventually supply Polokwane via the new potable water pipeline to be delivered by Lepelle Northern Water (LNW) in a synchronised fashion.

The project assumes that ORWRDP phases 2D and 2E will not be required in the medium term.

Scope:

The project scope includes 58km of new steel pipeline, with varying diameters of 700mm to 1,200 mm, and with a design capacity of 85 Ml/d.

Phase 2F will include the construction of a new 5.5 km line from the Clapham pump station towards Clapham junction, and construction of further new pipeline from the Clapham junction to the Olifantspoort weir (52 km), i.e. a total length of new pipeline of 58 km.

In order for the raw water to reach the Mooihoek reservoir, the current DWS pumps at the Steelpoort pump station will need to be re-commissioned since they have been out of use for a number of years, and a new pump station constructed under the OMM Programme between Steelpoort and Mooihoek (refer to OMM bulk project three in the paragraphs below).

2.5.1.2 Project 2: Bulk Raw Water Project ORWRDP Phase 2B and 2B+

Benefits:

The proposed bulk raw water ORWRDP phases 2B and 2B+ project provides for the delivery of raw water from Flag Boshielo dam (on the Olifants river) northwards. Delivery is via a new steel pipeline from Flag Boshielo to Pruisen (2B), and from Pruisen to Sekuruwe (2B+), and three associated new pump stations.

The primary objective of the project is to feed bulk raw water northwards from the Flag Boshielo dam to three Water Treatment Works (from which potable water can be provided to communities), and four mines in the Northern Limb. This project is key to providing water to Mokopane and a number of water stressed communities in the Northern Limb.

Scope:

The project scope includes 121km of new steel pipeline, with varying diameters of 750mm to 1,400 mm, with a design capacity of 95 Ml/d (potentially 120 Ml/d – to be confirmed during Pre-feasibility); and three new associated pump stations at Flag Boshielo dam, Mokopane and Pruisen respectively.

Three new WTW will be constructed under separate projects to deliver potable water to communities from the new pipeline, one each at Mokopane and Platreef (by others), and one at Sekuruwe under the OMM Potable Northern Limb project (refer to OMM project 5 in the paragraphs below). The delivery of these projects will be synchronised with OMM project 2B and 2B+.

It is assumed that the project will utilise Eskom bulk power supply (i.e. not renewables at this stage) for purposes of providing electrical power to the three new pump stations. However, it is known that there is little to no energy infrastructure in the area currently. Consequently, renewable power will be investigated at the pre-feasibility design stage.

2.5.1.3 Project 3: New Pump Station Between Steelpoort and Mooihoek

Benefits:

The proposed project provides for a new pump station and re-commissioning of pumps at the DWS Steelpoort pump station to facilitate the pumping of raw water from the Steelpoort river (from the De Hoop dam) northwards up to the existing Mooihoek reservoir. This then facilitates gravity feed of raw water to Olifantspoort weir under phase 2F by OMM WUA (refer to project 1 above), and onwards to Polokwane via the new potable water pipeline by Lepelle Northern Water.

The new pump station will be situated between Steelpoort and the current Mooihoek reservoir (three alternative positions will be investigated during pre-feasibility). The primary objective of the project is to augment the supply of bulk raw water to Mooihoek reservoir through reverse pumping water in a northerly direction from Steelpoort utilising the current LWUA pipeline. This project is key to increasing the supply of bulk raw water to the proposed new 2F pipeline and thus deferring ORWRDP phases 2D and 2E.

Scope:

The project scope includes a new pump station between Steelpoort and Mooihoek reservoir, the pump station's associated reservoir, electrical supply, and re-commissioning of the relevant current DWS Steelpoort pumps, with a combined system capacity to supply 85 Ml/d to phase 2F.

The ultimate required capacity of the pump station itself will depend on whether to include capacity for the possible future ORWRDP phases 2D and 2E or not. This will be confirmed during the pre-feasibility stage.

The DWS pumps at Steelpoort pump station have been out of commission for a number of years, hence a condition assessment will be included in the pre-feasibility stage to assess what refurbishment, if any, may be required. Depending on the condition of the DWS pumps and the current LWUA pipeline, the capacity of the new pump station will be adjusted accordingly to augment the DWS pumps to ensure at least 85 Ml/d to phase 2F. Current capacity of the LWUA pipeline to flow in a northerly direction is assumed to be between 22 Ml/d and 26 Ml/d. Depending on the available water from the Flag Boshielo Dam, the Havercroft Pump station and pipeline to Clapham can be utilized to augment the supply to Polokwane through the 2F pipeline. This will defer the building of phase 2D and 2E further.

2.5.1.4 Project 4: Potable Water – Eastern Limb

Benefits:

The proposed potable water eastern limb project is a bulk and internal network reticulation project for the supply of potable water to communities along the Eastern Limb of the Bushveld Igneous Complex, designated as Areas A, B, C and D in the OMM Programme Master Plan.

The primary objective of the project is to provide 59 Ml/d of potable water to approximately 233,000 people, as well as the routing of an additional 4 Ml/d water towards the town of Burgersfort. Note that the provision of the additional water to Burgersfort is regarded as out of scope to the OMM Programme.

This project sets out to serve communities generally along the pipeline routes of current LWUA infrastructure, participating mines and DWS infrastructure around the De Hoop dam.

This constitutes a significant investment into the communities by augmenting the supply of potable water ordinarily to be delivered by the relevant Water Services Authorities (WSA).

Scope:

The level of service provided will be yard connections with a demand of 63 l/person/day (AADD[6]).

The project includes the construction of new bulk potable pipelines of 513 km, reticulation potable pipelines of 1,326 km, seven new pump stations, one new water treatment works at Havercroft of 9.5 Ml/d, upgrading two existing water treatment works at Ga-Malekane near Steelbridge and Steelpoort respectively, 100 reservoirs, one water tower and yard connections to approximately 52 000 households (233,000 people).

The scope assumes the refurbishment of some infrastructure assumed to be in acceptable condition (35% of bulk and 15% of reticulation infrastructure). The condition of this infrastructure will however be verified in future phases to validate the assumption.

2.5.1.5 Project 5: Potable Water – Northern Limb

Benefits:

The proposed potable water northern limb project is a bulk and internal network reticulation project for the supply of potable water to community areas along the Northern Limb of the Bushveld Igneous Complex, designated as Area E in the OMM Programme Master Plan.

The primary objective of the project is to provide 30 Ml/d of potable water to approximately 121,000 people. Consequently, this project sets out to serve the communities generally situated along the route of the proposed 2B+ pipeline project and the communities surrounding the commercial users in the area between Mokopane and Sekuruwe.

This constitutes a significant investment into the communities by augmenting the supply of potable water ordinarily to be delivered by the relevant Water Services Authorities (WSA).

Scope:

The level of service provided will be yard connections with a demand of 63 l/person/day (AADD).

The project includes the construction of new bulk potable pipelines of 163 km, reticulation potable pipelines of 664 km, three new pump stations, a new water treatment works at Sekuruwe of 30 Ml/d, 45 reservoirs, 36 water towers and yard connections to approximately 26 700 households (121,000 people).

Currently the proposed project does not allow for the utilisation of existing potable infrastructure, as the current sizes, condition and maintenance are unknown.

The scope excludes the delivery of two new WTW at Mokopane and Platreef respectively as these will be delivered by the relevant WSA. Delivery of these works be conducted in a synchronised fashion.

2.5.2 Further Technical Studies

Following the RFP tender process the newly appointed consultants will be required to do an independent report to confirm optimal technical solutions for the respective projects. The level of development of all previous studies (made available by OMM WUA members) will be considered and gaps identified that needs to be addressed during the Pre-feasibility study phase. However, as a minimum and if applicable to the project scope, the consultants will make provision for the following special studies:

1. Evaluation of pipe-line routings and alternatives
2. Optimised location of water treatment works

[6] *Annual Average Daily Demand plus accounting for real losses*

3. Optimised location of pump stations and reservoirs
4. Renewable energy electricity supply as an alternative to Eskom.

More detail about specific further studies for each project are described in Attachment A.

2.5.3 Opportunity for Socio-Economic Development

The extent of this proposed infrastructure development across the Limpopo Province and its associated capital and operational spend represents a significant opportunity for socio-economic development in the region. The expected socio-economic development outcomes linked to the infrastructure development are:

1. Provision of basic water services;
2. Timely preparation of communities to participate in SED opportunities;
3. Job and opportunity creation;
4. Revisioning of communities;
5. Youth leadership development;
6. Behavioural change towards conservation and payment for services;
7. Improved relationship with Government and Business; and
8. Safe environment and peaceful and thriving communities.

Based on the OMM WUA revised strategy, greater focus will be placed on ensuring close collaboration with the communities residing in the Eastern and Northern Limb and to research, measure and monitor socio-economic development impacts of OMM WUA's activities.

To inform the SED strategy two baseline studies were initiated during the concept design. One a study of the socio-economic conditions in the Northern and Eastern Limbs, the other the potential economic impact of the OMM Programme in the region. These studies revealed the dire need for potable water, jobs and socio-economic improvement as the areas impacted are amongst the poorest areas in the Limpopo Province. Fetagkomo Tubatse generally fares worse than both Limpopo Province on average and Mogalakwena Municipality on the majority of indicators with an unemployment rate of 60%.

Socio-economic development opportunities have also not been unlocked due to the lack of access to potable water. The studies have shown that access to water has positive effects on health, early childhood development, education and workforce productivity.

The economic impact assessment revealed that the Programme would likely result in 14,750 jobs being created in Limpopo Province linked to the construction spend with a further 9,580 jobs linked to the ongoing operational spend. Low income groups would receive approximately 30% of the annual capital spend (over a 6 year period) and 39% of the annual operational spend (over a 27 year period) in the Province. This is without any specific SED intervention on the part of the OMM Programme. It is the intention of the OMM WUA to fully maximise the SED opportunities arising from the OMM Programme.

Five priority themes have been identified to steer SED activities and maximise impact, namely:

- Potable water provision, in line with the core mandate of the provision of potable water to communities in the defined areas;
- Sanitation and reuse addressing wastewater treatment and usage;
- Connectivity which focuses on broadband installation and provisioning;
- Education focusing on all aspects of skills development, youth leadership and behavioural change programmes; and
- Enterprise development targeting the establishment and expansion of businesses focused on regional agriculture (5Ml water allocation), Tourism (dam development) and renewable energy.

Community engagement and regular dialogue will be essential for the OMM Programme to succeed as well as implementing timely community readiness programmes to allow for inclusive participation. To maximise the socio-economic impact on the region a set of guiding principles, key performance indicators and a community engagement / implementation approach and plan was developed during the Concept Phase of the OMM Programme. The plan involves a number of aspects to be further developed and/or implemented during the Study Phase; including:

1. Establishing a strong governance structure over the SED activities, budget and spend;
2. Recruitment of organisational SED capability;
3. Continued development of baseline studies, surveys and community risk assessments;
4. Regular and timely engagement with communities across a number of levels;
5. Development of school and community level behavioural programmes;
6. Identification and creation of jobs during the various phases of the OMM Programme through procurement policy and other strategies;
7. Establishment of self-funding skills and enterprise development structures using procurement policy;
8. Formation of a SED Collaboration Forum to explore ways in which members and others can collaborate around common themes to accelerate SED in the region; and
9. Regular tracking of progress and refinement of the plan.

The detailed SED approach and baseline studies conducted on behalf of LWUA are described in Attachment B.

2.6 Indicative High-level Integrated Programme Implementation Approach

Considering the critical success factors related to the OMM Programme schedule and the selected technical design options a high level implementation approach was developed:

1. Implement bulk raw water phases 2B & 2B+, Flag Boshielo Dam to Sekuruwe, with maximum use of available design data;
2. Implement Northern Limb potable water as per the HoT;
3. Implement Eastern Limb potable water along the current LWUA network utilising available network capacity and WSA designs (Eastern Limb potable water phase 1);
4. Implement bulk raw water phases 2F, a pipeline directly from Clapham pump station to Olifantspoort weir;
5. Implement the reverse flow of the current LWUA network feeding the system from De Hoop Dam ;
6. Implement the remainder of the agreed potable water scope in the Eastern Limb (Eastern Limb potable water phase 2).

Northern Limb "Early Win": Flag Boshielo Dam to Sekuruwe (bulk raw water and potable water)

Based on the assumption that the extended phase 2B is ready for execution:

1. Start RFP process for the Execution Phase of phases 2B & 2B+, bulk raw water supply, based on available TCTA data;
2. At kick-off, the selected Consultant will perform a review and gap analysis of the TCTA ORWRDP Phase 2B contract, inclusive of all approved scope modifications:
   a. Specific focus on final scope and signed off deliverables;
   b. Comparison with OMM WUA requirements (system water availability, raw water up to the Mokopane area and Sekuruwe in the Mogalakwena Municipal area, and potable water in villages surrounding the mines) and define the scope deltas;

3. The selected consultant's contract scope will be updated based on the gap analysis and aligned with the final scope and capacity agreements between OMM WUA members:
    a. Update required deliverable details, to match adjusted scope, for a Financial Investment Decision (FID);
    b. In parallel with FID time frame, update design deliverables, and be ready to appoint sub-contractors for the Execution Phase of the scope (money at risk to secure fast track approach);
4. Finalise potable water battery limits and scope to enable parallel start of the associated study phase RFP process;
5. Parallel start of RFP process for SED scope associated with both raw water execution and potable water study phases.

Eastern Limb "Early Win": Potable water supply to defined communities along current LWUA network

1. Utilise available raw water in the current LWUA Network for accelerated potable water supply in the region;
2. Based on the existing LWUA network, develop a model to determine available capacity and optimal extraction points;
3. Start study phase RFP process for potable water supply to agreed villages in the region along the current network linked to available WSA design data (Eastern Limb potable water Phase 1);
4. Pre-approvals and dedicated fast track processes up to FID;
5. Parallel start of RFP process for SED scope associated with potential total Eastern Limb scope (raw and potable water).

Scope remainder of the OMM Programme: Increase current network capacity and supply water to Polokwane

1. As part of pre-feasibility phase (scope development phase) evaluate available study materials from ORWRDP project and CUC Concept Study Report for:
    a. Compliance to agreed water availability and system capacity requirements;
    b. In order of priority, lowest capital cost and fastest execution;
2. It is anticipated that reverse flow of the current LWUA network will be more cost effective than immediate construction of ORWRDP phases D and E;
3. Phases D and E will not be cancelled, but postponed to a date when demand require implementation
4. Focus will be placed on Phase 2F and new pumpstation to enable the reverse flow;
5. Agree final potable water battery limits in the region and scope (Eastern Limb potable water Phase 2);
6. Start study phase RFP process for the above raw and potable water.

2.6.1 OMM Programme Indicative Schedule

Based on a OMM Programme study phase kick-off between 1 May 2022 and 1 August 2022 the following completion targets are estimated:

1.	Eastern Limb Phase 1 potable water	Q1 2028 to Q3 2028
2.	Bulk raw water phases 2B & 2B+	Q3 2026 to Q1 2027
3.	Northern Limb potable water	Q1 2030 to Q3 2030
4.	Reverse flow of LWUA network	Q4 2026 to Q2 2027
5.	Bulk raw water phases 2F	Q2 2028 to Q4 2028
6.	Eastern Limb Phase 2 Potable water	Q4 2029 to Q2 2030

Note: *Above dates are indicative only and will be updated prior to the study phase kick-off. Although overall completion date targets are indicated for the potable water supply in the respective regions, it is important to understand that subsections within villages will be completed and handed over on an ongoing basis during the construction period.*

Attachment C contains basis for the schedule and key planning assumptions.

2.7 Economic Viability of the Proposed Solution

The more effective use of the water resource through reducing the water demand on the over utilised Flag Boshielo Dam and transferring this water demand to the De Hoop Dam will allow for future expansion of the water networks with associated economic development and growth in the region.

The integrated bulk raw water and potable water solution also caters for a new pump station and associated reservoir project situated between Steelpoort and the current Mooihoek reservoir. The primary objective of this part of the solution is to augment the supply of bulk raw water to Mooihoek reservoir through reverse pumping water in a northerly direction from Steelpoort utilising the current LWUA pipeline. This design approach allows for the ORWRDP Phase D & E to be postponed, resulting in a lower capital requirement for the integrated scheme and therefore will lead to a lower raw water costs.

In the Pre-feasibility phase additional studies will be conducted to further optimise and reduce the water costs with studies such as energy use optimisation and the use of renewable energy in an attempt to address the expected high escalation of electricity tariffs from Eskom.

Up to 48% of people in the Limpopo Province do not have access to piped (tap) water inside a yard. Since the integrated solution also caters for the supply of potable water to more than 350 000 people, the available capital saved through the optimisation of the Eastern Limb bulk raw water supply can be effectively applied to the overdue potable water supply to communities in the region.

Up to 43% of people in the Limpopo Province, and an even higher percentage in the areas targeted by the OMM Programme, are unemployed. The socio-economic development aspects of this OMM Programme will greatly alleviate this problem in the region. The economic impact assessment revealed that the OMM Programme would likely result in 14,750 jobs being created in Limpopo Province linked to the construction spend with a further 9,580 jobs linked to the ongoing operational spend. Low income groups would receive approximately 30% of the annual capital spend (over a 6 year period) and 39% of the annual operational spend (over a 27 year period) in the Province.

Sustainable development is one of the key underlying concepts that forms part of the OMM WUA mission, vision and strategy. The United Nation adopted 17 Sustainable Development Goals in 2015 as a universal call to action to end poverty, protect the planet, and ensure that by 2030 all people enjoy peace and prosperity. The 17 goals are integrated, and it is recognised that action in one area will affect outcomes in others, and that development must balance social, economic and environmental sustainability. The defined OMM Programme targets will directly or indirectly impact on all these sustainable development goals as shown in the table below:

No.	United Nations Sustainable Development Goals	High level OMM Programme targets*
1	No Poverty	• Direct job creation • Enterprise development • Support economic growth in the region through commercial and social water supply • Traning and education

No.	United Nations Sustainable Development Goals	High level OMM Programme targets*
2	Zero Hunger	• Deliver fresh water to communities (drinking and small scale food production) • Job creation (direct and indirect) • Treated sanitation water for agricultural use (second use of water) • Feeding schemes at schools
3	Good Health and Well-being	• Potable water on yard connection basis in the agreed communities • Hygiene at schools
4	Quality Education	• ECD programme • Schools development programme • Youth entrepreneurship and development programme • WiFi and interconnectivity at communities • Educator training
5	Gender Equality	• OMM WUA HR Policy
6	Clean Water and Sanitation	• Commercial and social water supply • Low maintenance small scale sanitation works located close to communities • Treated sanitation water for agricultural use (second use of water)
7	Affordable and Clean Energy	• Replace Eskom electricity supply to OMM WUA with renewable energy
8	Decent Work and Economic Growth	• R25 billion infrastructure project with associated economic growth in the region
9	Industry Innovation and Infrastructure	• R25 billion infrastructure project with associated economic growth in the region • Commercial and social water supply • Enterprise development and regional collaboration to advance new business and use of technology
10	Reduce Inequalities	• Potable water supply and SED programme to uplift communities, e.g. education level improvement and job creation
11	Sustainable Cities and Communities	• Potable water supply and SED programme to uplift communities • Job opportunities • Responsible handling of resources and infrastructure • Reduction of social discontent
12	Responsible Consumption and Production	• SED behaviour programmes (water conservation and payment for services)
13	Climate Action	• Renewable energy supply to the OMM WUA • Increase water availability in a water scarce region • Education programmes

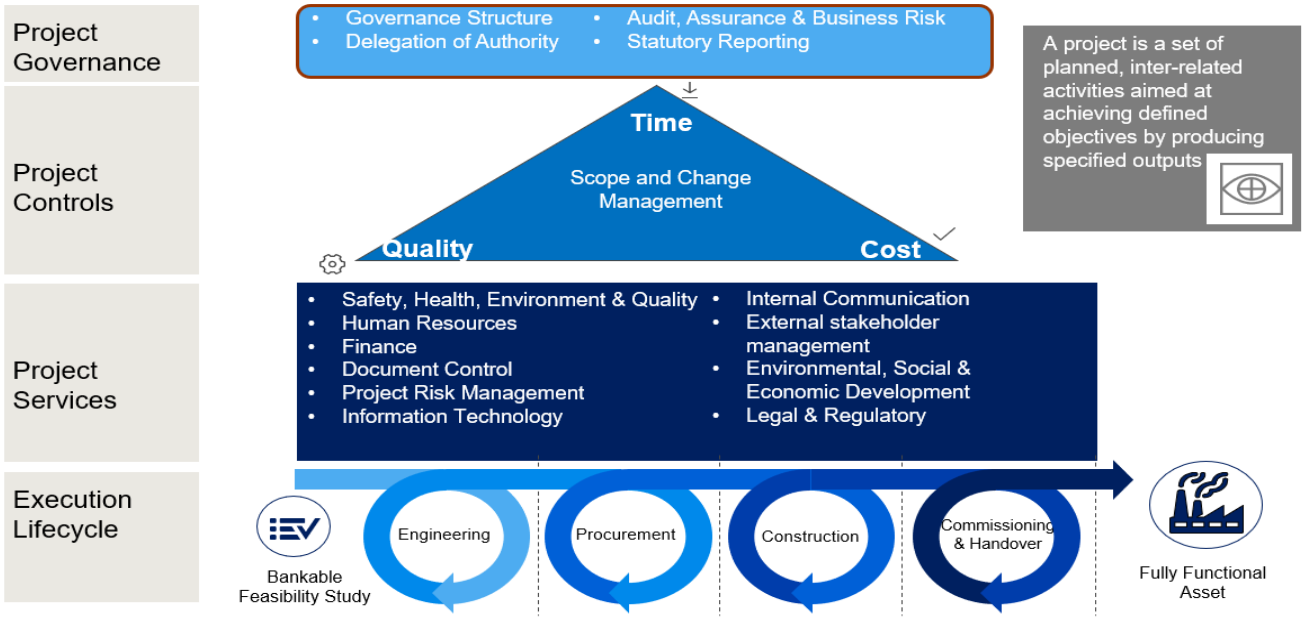
No.	United Nations Sustainable Development Goals	High level OMM Programme targets*
14	Life below water	• Effective management of the De Hoop and Flag Boshielo dams
15	Life on Land	• Effective management of the land surrounding De Hoop and Flag Boshielo dams • Potable water to communities
16	Peace Justice and Strong Institutions	• OMM WUA governance structure, policies and procedures • Open and transparent commercial processes • Project implementation based on successful employed international best practises
17	Partnership for the Goals	• OMM WUA is a 50/50 partnership between Government and a commercial water user consortium in the defined OMM Programme region • Community engagement is key to the SED programme • Appreciation of traditional leadership

* The programme targets will be developed and quantified in line with the proof of concepts

2.8 OMM Programme Execution Strategy

The execution of the OMM Programme will be setup with a focus on the execution approach of the implementation phase that will ultimately follow the studies. This is centred around the execution phases of engineering, contracting and procurement, construction and commissioning. These core phases will be supported by the ten key project services required for execution while an independent project controls function will provide information to the execution while at the same time ensure appropriate governance over the execution. This is illustrated in the figure below.

Figure 9 – OMM Programme execution model for technical implementation



2.8.1 OMM Programme Work Breakdown Structure

A high-level OMM Programme work breakdown structure (WBS) was developed and will be further developed for the OMM Programme and was set up from the outset with a common configuration taxonomy. 'Table 4' below sets out the key elements of the work breakdown structure.

Table 4 – Work breakdown structure

#	Element	Details
1	Elements to be included in the WBS	1. Existing assets 2. Assets under design or construction 3. Bulk raw water programme 4. Potable water programme 5. PMO
2	Levels of breakdown	1. Assets: identify assets at each owner level. LWUA WBS to align with the Asset Register and Chart of Account levels 2. Programmes: identify to project and sub-project levels 3. Projects: identify to SABS 1200 levels, and activity level 4. PMO: identify workstreams, activities per workstream

2.8.2 Procurement and Contracting Strategy

The focus of this business case evaluation is on the technical solution that will best suit the business objectives and critical success factors and therefore only preliminary work was done on the possible delivery model for execution and the associated contracting strategy. Based on common contracting strategies typically used in the construction works, the view from the Early Business Case Report is to employ "Design and Build by Contractor" contracts on either a 'target cost', 'lump sum' or 'activity schedules' pricing strategy. The execution and contract strategies will be developed during the Pre-feasibility phase and finalised in the Feasibility phase. Indicative strategies that will be defined further are captured below.

Pre-Feasibility &Feasibility phase

1. Main consultants responsible for all required due diligence investigations, engineering and project management aspects associated with industrial plant and pipeline components of the programme, including integration with existing operating plants as well as integration & coordination with OMM WUA appointed Specialist Consultants and project specific consultants (if different from the main consultants). Due to the study integration with existing design work and already constructed infrastructure the scoping phase will be performed under a time reimbursable contract but, as part of the risk management strategy (also considering Covid constraints) the design work will be converted to be performed under a professional services contract based on a fixed price contract with an activity schedule pricing strategy under direct supervision of the PMU.
2. Project specific consultants for all required due diligence investigations, engineering and project management aspects associated with industrial plant and pipeline components of each specific project that run on an accelerated schedule relative to the main OMM Programme, integration with existing operating plants as well as integration with the OMM Programme main consultant. This work, utilising available design work for the specific projects from OMM WUA members, will also be targeted to be performed under a professional services contract based on a fixed price contract with an activity schedule pricing strategy under direct supervision of the PMU, supported by the main OMM Programme consultant. However, based on specific details associated with the projects this proposed pricing strategy can be varied to minimise risk.

3. Specialist consultants managing and performing Environmental & Community studies (including topographical and cadastral scope), SED scope, Land acquisition and independent estimating and audit functions. This work will be performed under a professional services contract based on a time reimbursable price contract due to the larger uncertainty associated with these scopes. However, based on specific details associated with the projects this proposed pricing strategy can be varied to minimise risk.

Execution Phase

The programme type and technical complexity lend itself ideally to a lump sum unit execution approach. This will be executed in combination with local community participation with regard to local labour sourcing and skills development.

1. Development of unit lump sum packages will enable standalone execution when ready for implementation (fast track areas that are ready for execution).
2. The Pre-Feasibility and Feasibility phase consultants should ideally be suited to roll over into a services role focusing on general contractor management and program integration which will enable a four-level governance and quality approach. However an agreed Key Performance Indicator (KPI) matrix will be included in the Pre-Feasibility and Feasibility phase consultants contracts and if met above mentioned roll over process could be implemented.

2.8.3 Socio-Economic Development Strategy

The Socio-Economic Development (SED) implementation plans during the Study phase involves:

1. Establishing a strong governance structure over the SED activities, budget and spend;
2. Recruitment of organisational SED capability;
3. Continued development of baseline studies, surveys and community risk assessments;
4. Regular and timely engagement with communities across a number of levels;
5. Development of school and community level behavioural programmes;
6. Creation of jobs during the various phases of the OMM Programme through procurement policy and other strategies;
7. Establishment of self-funding skills and enterprise development structures using procurement policy; and
8. Formation of a SED Collaboration Forum (or transformation of the existing OMM WUA Social and Ethics Committee) to explore ways in which members and others can collaborate around common themes to accelerate SED in the region.

Funding for the implementation of the SED strategy was allocated in the cost estimates.

2.8.4 Land Management Strategy

In developing the OMM Programme for the Pre-Feasibility &Feasibility phase, there are several permitting requirements in terms of land-related laws that need to be considered for obtaining rights and access to the required land sections. Security of tenure is fundamentally important for any large-scale infrastructure project. Accordingly, the OMM WUA would need to obtain or provide proof:

1. that it owns the land required for the OMM Programme through registered title deeds; or
2. that it has obtained notarial leases together with evidence that the leases have been registered or are capable of registration against the title deed(s); or
3. that it has obtained servitudes together with evidence that the servitudes have been registered or are capable of registration against the title deed(s); or

4. that it has secured an option to lease, buy or enter into a servitude agreement exercisable at the OMM WUA instance and unconditional in all significant respects, to acquire such secure real rights.

In case of municipal land to be utilised for the OMM Programme, the OMM WUA needs to obtain the relevant agreements in terms of municipal related laws for:

1. a municipal public private partnership; or
2. a grant by a municipality or a municipal entity of rights to use, control or manage capital assets.

The OMM WUA may also need to obtain additional land use consents for spatial planning and land use management, including rezoning and alterations of land use control rules or consent use, in terms of Limpopo Provincial land use planning and control legislation and the relevant municipalities' zoning schemes.

Amongst others, key legislation to consider during the planning and acquisition process include:

1. National Water Act, 1998 (NWA) in relation to the registration of servitudes;
2. Deeds Registries Act, 1937;
3. Public Finance Management Act, 1999 (PFMA);
4. Local Government Municipal Finance Management Act, 2003 (MFMA);
5. Municipal Asset Transfer Regulations published in terms of the MFMA (GNR. 878 of 22 August 2008, Government Gazette No. 31346);
6. Spatial Planning and Land Use Management Act, 2013 (SPLUMA); and
7. Minerals and Petroleum Resources Development Act No.28 of 2002 (MPRDA) if the pipeline passes through a mining area.

As part of the Pre-feasibility stage the land management strategy needs to be in place together with a plan to obtain the required land use rights which will be developed for implementation during the Feasibility stage of the OMM Programme.

No.	Step	Input
1	Define the potable water volume required per area	• Level of service per household to be delivered
2	Define the potable water infrastructure required to deliver the defined (assumed) volume of water for the area/potable project	• Demand from 1. Above • Basis for assumed potable water demand/ volumes • Work breakdown structure (WBS) • CAPEX assumptions
3	Define the supporting infrastructure for the potable water infrastructure defined above	• High level design potable water infrastructure • Work breakdown structure (WBS) • Cost assumptions
4	Define the OPEX costs	• High level design • Cost assumptions • Work breakdown structure (WBS) • Maintenance strategy

No.	Step	Input
5	Define the raw water volume required per project	• Potable off take from the areas above • Commercial users off take volume • Current capacity available
6	Define the raw water infrastructure required to deliver the defined volume of water for the area/potable project	• Demand from above • Work breakdown structure (WBS) • CAPEX assumptions
7	Define the supporting infrastructure to the raw water infrastructure defined above	• High level design raw water infrastructure • Work breakdown structure (WBS) • Cost assumptions
8	Define the OPEX costs	• High level design • Work breakdown structure (WBS) • Cost assumptions • Maintenance strategy
9	Model raw water system options available to confirm the required projects (scope, timing, costs, benefit)	• Information from above
10	Superimpose non-financial non-technical parameters in the model	• Non-financial non-infrastructure studies and reports • Work breakdown structure (WBS)
11	Write the Early Business Case Report	• Information from all the above

2.9 Economic Case Conclusion

From details presented in this Economic Case it is clear that a wide range of options for developing the OMM Programme have been considered and refined to concept level of detail, and a 'preferred option' selected that delivers best social value to society, including wider social and environmental effects. These project options will be taken forward as basis into the OMM Programme, project scoping phases for further evaluation against other alternatives and options within each project, which will determine the final scope for implementation. High level next phase execution strategies (to be read in conjunction with the Management Case) linked to the OMM WUA implementation model indicating how the OMM Programme will proceed into the next phase were also defined as an indication of the way forward.

3. Commercial Case

The purpose of the commercial dimension of the business case is to demonstrate that the preferred option will result in a viable procurement and a well-structured deal for the parties. A clear understanding of the services, outputs, milestones and potential risks in the design, build, funding and operational phases of the project needs to be provided to assess the best risk allocation between the public and private sectors reflected in the charging mechanism and contractual arrangements.

3.1 Procurement Strategy and Route

The focus of this report is on the technical solution that will best suit the business objectives. Only preliminary work was done on the possible delivery model for execution and the associated contracting strategy. The delivery model must optimise the risk allocation, certainty of outcome and the current status of the South African construction industry.

The execution and contract strategies will be developed during the Pre-feasibility phase and finalised in the Feasibility phase. This will define the execution through the allocation of risk and reward to the various contracting parties in the project. From this then drive the selection of the organisational and contractual policies required for the execution of the individual projects.

A number of risks were already identified, however further implementation risks will have to be identified by the Owner's team during the Pre-feasibility/ Feasibility stage to ensure that the most suitable method of approach with the identified risk be applied within the procurement strategy by allocating the responsibility for managing the risk to the appropriate party. The principle has been established that risks should be allocated to the party best able to deal with the risk.

The key factors that will be considered when developing / refining the procurement strategy include:

- The OMM WUA objectives and how this relates to the execution model and socio-economic expenditure through the construction phase;
- The specific legislation and regulatory environment that will apply to the project;
- Political environment and level of Government intervention e.g. policy, tariffs, labour laws;
- Transport and logistics operations across the vast footprint of the project;
- The technical landscape of the works e.g. location, ground conditions, technology requirements, automation and interface requirements etc;
- Timelines for practical completion and sequencing of the projects against the expectations of commercial and community-based users;
- Management capacity and capabilities of the PMU;
- Internal and external stakeholders that will be affecting the construction of the project e.g. current operations, trade unions, communities and the construction mafia;
- Contractor, consultant and supplier capacity and capabilities in the country and the province given the state of the construction industry;
- Training requirements that will be imposed on the consultants and contractors;
- Preferential procurement requirements e.g. local content, supplier development etc;
- Risks and equitable apportionment amongst the various parties; and
- Health and safety requirements.

3.2 Contract Strategy

Based on common contracting strategies typically used in the construction works per 'Table 5' below, the initial view in the Concept phase is thus to employ a "Design and Build by contractor". This is further discussed per project below. In the context of construction law and contracts the OMM WUA will be designated as the 'Employer' and all parties providing services will be designated as the 'Contractor'.

Table 5 – Common Contracting Strategies

Strategy	Description	Typical Use	Risk Allocation
Design and Build by contractor	The contractor is responsible for the design (engineering) and construction based on the employer's requirements. This contract is not re-measurable	All types of construction excluding building works	Contractor carries risks for design and construction of design as well as changes in quantities
Develop and Build by contractor	The contractor designs and builds based on a programme design prepared by the employer. This contract is not re-measurable	Water treatment plants, pump stations, effluent and process plants, block housing	Contractor carries risks for design and construction of design as well as changes in quantities
Design by the Employer	The employer designs and the contractor constructs based on the employer's designs. This contract is re-measurable, and the quantities are provisional until agreed at final account stage	All types of construction	Employer carries risks for design and construction of design as well as changes in quantities
Lump Sum Turnkey	The contractor is responsible for the designs, construction and execution of the project. This contract is not re-measurable	Process and power plants	Contractor carries risks for design, construction and complete execution of works including changes in quantities
Maintenance contract / Term Service contract	The contractor maintains an asset owned by the employer and is appointed for a period of time	Water treatment plants, roads, dams, pipelines, pump stations, office blocks, shopping centres	Contractor carries all risks to maintaining the asset
Management contract	The contractor consults during the design stage and is responsible for planning and managing all post-contract activities and for the performance of the whole of the contract	All types of construction	
Construction management	A 3rd party professional service provider consults during the design stage and is responsible for planning and managing agreed post-contract activities on behalf of the employer	All types of construction	

The pricing strategy for each project will be decided on during the pre-feasibility and feasibility study based on common pricing strategies as contained in 'Table 6' overleaf:

Table 6 – Common Pricing Strategies

Strategy	Description	Typical Use	Risk Allocation
Cost reimbursable	The contractor is paid for actual expenditure plus a percentage or fee	• An early construction start is required and design is incomplete • It is impossible to define the quantity of work and the duration • Innovative complex work where productivities are unknown • A contractor is required to rescue or complete a project which has been subject to extensive disruption from sources outside the control of the parties	Employer takes on all the risks pertaining to the scope, quantities and time of execution
Target cost	A target cost is estimated during the tender stage. On completion of the works, the difference between the target cost and the actual cost is apportioned between the employer and contractor on an agreed basis	• Inadequate definition of the work during tender stage • if there may be substantial variation due of work during execution • The work is technically and/or organisationally complex • The work involves major unquantifiable risks	Risks are shared between the Contractor and the Employer re costs
Lump sum & Activity schedules	Single lump sum price is quoted for completion of the works to the satisfaction of the employer. Includes activity schedules as the total of the activity prices is the lump sum price for the work.	• Complete design • Subcontracts well defined • High level of competition or well-defined contract package • Employer wishes to place all or most of the risks with the contractor • Level of risk is low and quantifiable • Employer wishes to minimise resources involved in in contract administration	The Contractor carries the risk pertaining to changes in quantities and only gets paid once the activity is fully completed which places a cashflow risk on him
Bill of Quantities (BOQ)	For work where the nature and extent of work can be assessed fairly accurately. The total contract sum is the tender sum as set out in the BOQ	• Complete design but changes in quantity are expected • Design and construction must be overlapped but sufficient design has been completed to prepare an adequately detailed BOQ • Little or no change to the programme is expected • The level of risk is low and quantifiable • Sometimes used on high risk projects where considerable change and disruption is expected but the employer's procedures and regulations prevent the use of cost-based contracts.	The Employer carries the risk pertaining to changes in quantities

Strategy	Description	Typical Use	Risk Allocation
Price list	The price list contains the lump sum prices for each required service and quantities and rates for repeated services to enable contractors to be paid for services provided	• Complete design but changes in quantity are expected • Little or no change to the programme is expected • The level of risk is low and quantifiable	The Employer carries the risk pertaining to changes in quantities

Taking the indicated contracting and pricing strategies into consideration, as well as OMM WUA's commitment to provide both raw and potable water to mines and communities including OMM WUA's commitment to engage and involve local communities into consideration, the following initial strategies are currently being considered. This will be further researched and finalised in the pre-/feasibility phase.

3.2.1 Bulk Water Pipelines, ORWRDP Phase 2F and ORWRDP Phase 2B & 2B+

The 2F and 2B & 2B+ pipelines consist of steel pipes with a certain specification and lining. The current routes run partially through existing populated areas/ villages with mining activities along the pipeline routes. The steel pipelines' diameters ranges from 700 mm to 1400 mm which needs specific trucks and equipment to deliver and install as well as the right type of skills to join the pipes. Due to the size, location and complexity of the two projects the current expectation is to appoint one to three major pipe construction companies with proven track records to install the pipelines. This can either be done under a 'Design and Build', a 'Design by the Employer' or 'Lump Sum Turnkey' type contract.

Utilising the 'Design and Build' type contracting strategy places the design and related time risks on the contractor. This is a widely used type of contracting strategy within the South African construction industry and most of the type and size of contractors that have constructed similar pipeline projects are familiar with it and should be able to provide competitive prices given current market conditions. It is of the utmost importance to ensure that the appointed contractors have the in-house capability to design the full scope required for these projects.

If the OMM WUA elects a 'Design by the Employer' contract strategy the risk associated with the design now transfers to OMM WUA. This is also a widely used type of contracting strategy within South Africa. With this strategy OMM WUA needs to ensure that they employ the right engineering companies to design the projects correctly, as mistakes due to design errors cause additional costs to OMM WUA and it cannot always be covered by the engineering company's professional indemnity insurance.

Utilising the 'Lump Sum Turnkey' type contracting strategy places all the risks onto the contractor for design and construction. However, there is an increased contract price to cover said risks. There have been a number of contracts executed in South Africa on this basis and this type of contracting structure appears to be the most favoured approach where external project financing is envisaged.

Pricing strategies for all three of the above-mentioned contracting strategies could either be a 'target cost', 'lump sum & activity schedules' or 'BOQ'.

To ensure enhancement of local skills and utilising local suppliers, special conditions as well as KPIs (measurement of minimum requirements) will have to be included in the contracts with the appointed contractors for these two projects. Requirements will then be measured during construction to ensure compliance. A penalty for non-compliance can also be included in the contract.

3.2.2 Pump-Station – Between Steelpoort WTW and Mooihoek Reservoir

This project can be a stand-alone project with one appointed contractor. Once the land is secured this project could be almost seen as a green fields project. The 'Design and Build' type contracting strategy could be a very good strategy for this project, or if OMM WUA wants to rather do the design in-house the 'Design by the Employer' contract strategy could also be applied. Both contracting strategies can be based on either a 'target cost', 'lump sum & activity schedules' or 'BOQ' pricing strategy.

Again, utilising local suppliers and upliftment of local skills will have to be included in the contract as stated before.

3.2.3 Potable Water Pipelines and Reticulation Systems, Northern Limb and Eastern Limb

These projects consist of bulk water pipelines ranging from 75 mm to 700 mm diameter pipes, and a network of reticulation water systems consisting of small diameter pipes. Due to LWUA's commitment to enhance local communities these projects provide the perfect scenario to appoint local contractors to construct parts of the projects. Therefore, two or more main contractors can be appointed for the installation of the large diameter water pipelines and various local, smaller contractors can be appointed either as stand alone contracts or as sub-contractors to the main contractor/s for the installation of the reticulation system pipes.

For the bulk water pipelines either the 'Design and Build' type contracting strategy or 'Design by the Employer' contract strategy can be applied based on either a 'target cost', 'lump sum & activity schedules' or 'BOQ' pricing strategy.

For the reticulation water system, a different contracting strategy will be applied to incorporate local small contractors. These contractors can either be appointed as sub-contractors to main contractors or as separate small contracts appointed on a 'Design by the Employer' contracting strategy and on a 'BOQ' pricing strategy. If they are appointed as sub-contractors, the responsibility for their performances becomes the main contractor's responsibility, however the main contractor will price for management of the increased number of sub-contractors in its price. If they are appointed as separate contracts, they are OMM WUA's responsibility and therefore OMM WUA should appoint an appropriate management consultant to manage all the small contracts. It is also recommended that a realistic model for risk management be developed with regards to labour productivity, material wastage and financial exposure.

Where different contractors are used or where a 'Lump Sum Turnkey' type contract is not used for the construction phase, thought will need to be given as to how any additional risks relating to (e.g. design and integration of the infrastructure) will be mitigated by the OMM WUA and whether such contracting strategy is in fact acceptable to external financiers (if any).

3.3 Preferential Procurement Goals

The need to participate meaningfully in the socio-economic transformation of South Africa, OMM WUA has identified specific Procurement Principles that will address business and wealth creation imperatives with its dedicated procurement philosophy.

To this end, the OMM WUA is committed to achieving its B-BBEE objectives, it is therefore requested that all tenderers demonstrate its full compliance to the Pre-Qualification (Eligibility Criteria) requirements by supplying a valid B-BBEE Certificate: The minimum Broad-Based Black Economic Empowerment (B-BBEE or BEE) Criteria) requirement is a level 4 and above contributor. Furthermore, a entity awarded a contract may not subcontract more than 25% of the value of the contract to any other enterprise that does not have equal or higher

B-BBEE status level of contributor than the person concerned, unless the contract is subcontracted to an Exempted Micro Enterprise (EME) that has the capability and ability to execute the subcontract.

The OMM WUA recognises the critical importance of local skills development and enterprise development in the region in which it operates. To assist in the achievement of these goals the OMM WUA is in the process of establishing accredited local skills and enterprise supplier databases for use by successful tenderers to the sourcing process for implementation. The OMM WUA will set its Preferential Procurement targets, and these are intended to be included in contracts following analysis of registrants to these databases. The intent is for a Skills Development Fund and Enterprise Development Fund to be established to assist in giving effect to developing local skills and enterprises in the area. Successful tenderer(s) to this sourcing process will be required to pay a contribution of 1% of awarded contract value to the establishment of these Funds.

The OMM WUA will also welcome initiatives the tenderers may have on any additional successful skills, enterprise and socio-economic development models and these should be included in the tenderer's RFP submission for consideration.

3.4 Risk Allocation

In developing procurement and contracting strategies the risk associated with the prospective scope will be evaluated and on the basis of good risk management practices, the execution party in the best position to manage a particular risk should be allocated the management responsibility. Over and above the scope specific pricing strategy to minimise risk as described in previous sections, the tenderers will also be requested in the RFP to provide, as part of the tender documentation, a fully detailed and priced risk profile associated with their bid. This information will put the OMM WUA in a position to evaluate each component of the risk profile and decide between the OMM WUA and Consultant/Contractor who is in the best position to manage the specific risk item and allocate the required responsibility and funding to the identified risk owner.

3.5 Commercial Case Conclusion

Commercial and procurement strategies were evaluated during this phase of the OMM Programme setting out the contractual structure options and potential risk allocation within the procurement strategies. Following final scope definition for each project within the OMM Programme during the Pre-feasibility phase a commercial strategies matching each project will be selected and developed into a detailed procurement plans and will include the following project specific documents:

- Execution strategy and Project Execution Plans;
- Procurement strategy;
- Contracting strategy;
- Procurement Operating Plan (POP);
- Development of all appropriate contracting and procurement policies and procedures;
- Contracting documentation.

Furthermore, to expedite the whole contracting process during the Pre-feasibility phase a master contract will be developed, which will include all standard and special/particular conditions that will apply to all the different projects as a minimum. It will also include an index and specific layout which will have to be followed for all OMM WUA construction contracts. The moment the OMM WUA needs to develop a Request for Proposal (RFP) for a specific project they only need to add project specific information and conditions to the master contract. This should shorten the period for compiling RFPs.

A master vendor list for contractors must also be developed during the Pre-feasibility phase to ensure that only approved vendors are used during the construction and maintenance periods of the assets.

During the latter part of the Pre-feasibility phase RFPs will be developed for all identified construction projects to ensure that the level of estimate aligns to a feasibility study.

The execution strategy will contemplate how OMM WUA attempts to define the main components of the project into sequence logical work packages. This will also contemplate and address the scope and risk apportionment during execution. This is all described within the Project Execution Plan (PEP) which provides clarity to the role of the stakeholders and helps in overcoming project challenges. The (PEP) is the primary governing document that defines how the project will be executed, monitored and controlled and as a minimum the following needs to be covered in the (PEP):

- Mission and objectives;
- Project description;
- Organization and responsibilities;
- Resource requirements;
- Project baselines;
- Project management control and reporting;
- Risk management;
- Environment, Safety and Health; and
- Technical analyses.

Once the OMM WUA completes the project execution strategy and PEP they will have to develop a procurement strategy by firstly identifying factors that will determine the most suitable procurement strategy for the project. These factors are:

- Key objectives and constraints of the project;
- Risks that may arise during delivery of the project and how those risks might best be dealt with; and
- Level of complexity of the project.

4. Financial Case

The purpose of the financial dimension of the business case is to demonstrate the affordability and funding of the preferred option, including the support of stakeholders and customers, as required. A complete understanding of the capital, revenue and whole life costs of the project and how the deal will impact upon the balance sheet, income and expenditure and pricing arrangements (if any) of the organisation.

4.1 Introduction

The proposed OMM Programme encompasses the pooling of a considerable amount of new infrastructure alongside existing bulk raw water and potable water infrastructure. In addition to this, there are a significant number of upfront costs, such as the feasibility study and upfront labour that need to be capitalised into the programme going forward and ultimately funded. The funding process for a programme of this nature will need to be bespoke and dynamic and may require multiple iterations with the prospective financing partners in order to finalise the ultimate funding structure. Effective preparation and marketing of the OMM Programme should be considered from the early development stages in anticipation of the future requirements of the fund-raising process. Due consideration will need to be given to the anticipated capital requirements of the OMM Programme, affordability, taxation implications of the OMM Programme structure, and target funding tenures and gearing ratios.

4.2 Capital Requirements

4.2.1 Indicative OMM Programme Costs

The capital cost estimate summarised in the Early Business Case Report per facility level with a base date of 1 October 2021 and are in South African Rands (ZAR) is included below. The total capital cost estimate is summarised in the 'Table 7' below in real and nominal terms with standard accuracy ranges applicable.

Table 7 - Total capital cost estimate summary as at 1 October 2021 (ZAR, m)

Area	Description	Total Estimate	Contingency	Total CAPEX Real	Escalation	Total CAPEX Nominal
1.1	Bulk raw water projects					
1.2	Potable water projects					
1	SUB-TOTAL CAPITAL ESTIMATE					

2.1	Operational readiness					
2.2	Owners team cost (Draft)					
2	SUB-TOTAL OWNER'S COST					
3	1% SED allowance					
4	Project development cost					
	TOTAL					

Note: *The above estimates will be updated to real cost at implementation*

The above capital cost estimate excludes the following:

1. Operating costs beyond the handover after commissioning
2. Value Added Tax (VAT)
3. Customs duties and import taxes
4. Interest on capital loans
5. Currency fluctuation after 1 October 2021

4.2.2 Pre-Feasibility and Feasibility Study Costs

The budget for the study phases were developed during the Concept Study. These indicative study costs will be confirmed by the Programme Steering Committee.

Table 8 – Study phase cost estimate as at 1 October 2021 (ZAR, m)

Description	Pre-Feasibility study	Feasibility study	Total study cost estimate
Study Consultants			
SUB-TOTAL – PRE-FEASIBILITY & FEASIBILITY STUDY COSTS			
LWUA WUA PMU (additional 44 positions)			
Operational Team (additional 108 positions)			
Owner's Team Consultant Support			
Facilities, Systems & Incidental Costs for Operational Team			
SUB-TOTAL OWNER'S TEAM COSTS			

SUB-TOTAL			
Contingencies			
Escalation Provision			
GRAND TOTAL			

The above study phase cost estimate excludes the following:

1. Value Added Tax (VAT)
2. Interest on loans
3. Currency fluctuation after 1 October 2021.

4.2.3 OMM Programme Contingencies / Accuracy Assessment

Within the cost estimate for each project a construction contingency of 10% was included by the technical consultants and is assumed to be fully drawn. A further programme contingency was determined relative to the level of development on the project and is an allowance for the uncertainty and risk that the owners of the project must accept. The proposed Concept Study is based on an accuracy assessment benchmarked to the AACE International (Association for the Advancement of Cost Engineering International) Class 5 Estimate Classification Matrix, and therefore the accuracy of the estimate is assessed as being -50% to +100%. Given practical considerations, this was assessed by applying a widely accepted industry practice contingency range of between 25% and 40% to each project. All contingencies are included in indicated cost estimate totals for each project.

Attachment D contains the Class 5 Capital Cost Estimate Report used for evaluation of the OMM Programme Early Business Case.

4.3 Financial Model Setup

The OMM Programme encompasses a highly complex collection of new infrastructure projects and existing bulk raw and potable water assets. Each one of these proposed and existing assets comes with its own unique set of variables and require a case-by-case approach to calculating the funding requirements of them separately.

The initial step taken as part of the Concept Phase in the financing workstream was to collate all information on the proposed infrastructure, existing infrastructure and upfront costs for capitalisation into a consolidated view. An initial programme financial model was designed to not only calculate the illustrative repayments and internal capital credits due against new and previous capital expenditure, but also to model the estimated ongoing operational expenditure of the entire OMM Programme. The final output of the financial model calculates the annual contributions due by each member in the OMM Programme from the first ‘early-works’ capital payment in 2022 until the year 2050.

4.3.1 Scope Description

- Calculate the annual contributions due on the following proposed infrastructure assets:

  Bulk Raw Water
  - New Pump Station (on the line between Steelpoort and Mooihoek);
  - ORWRDP Phase 2B & 2B+ (Flag Boshielo to Sekuruwe) ;
  - ORWRDP Phase 2D (Steelpoort to Mooihoek);
  - ORWRDP Phase 2E (Mooihoek to Clapham); and
  - ORWRDP Phase 2F (Clapham to Olifantspoort Weir).

  Potable Water
  - Eastern Limb Potable Water Infrastructure; and
  - Northern Limb Potable Water Infrastructure.
- Calculate the annual contrbutions due on the following existing infrastructure assets and programme specific upfront costs that are eligible to be capitalised into the model:

  Infrastructure
  - Southern Extension 2 (New pipeline from Spitskop to Mototolo);
  - ORWRDP Phase 1A (Raising of the Flag Boshielo dam wall);
  - ORWRDP Phase 2A (De Hoop dam)
  - ORWRDP Phase 2C (Pipeline from De Hoop dam to Steelpoort); and
  - ORWRDP Phase 2H (Incorporation of LWUA assets - for the purpose of the Concept Study Phase 2H refers to all current LWUA infrastructure as of 2020).

  Upfront Costs for Capitalisation
  - OMM Programme feasibility study; and
  - Upfront labour, operational systems and facilities.
- Calculate the ‘Capital Credits’ due to members who made contributions to both the existing infrastructure assets and upfront costs eligible for capitalisation;
- Calculate the total funding requirements of the proposed infrastructure in nominal terms i.e. calculating the year-on-year capital drawdowns required inclusive of multi-year inflation;
- Calculate the total water requirements of both the commercial and Government users across each of the phases;
- Utilising the total water requirements of all members, calculate the five-year maximum system usages in order to estimate the license requirements for the proposed programme;
- Calculate the operational costs required to run the proposed programme, given the water requirements of both the commercial and Government user groups; and
- Calculate the ‘net’ member annual payments. i.e. the total contribution per member for all proposed, existing and upfront costs less the ‘Capital Credit’ due to them, if they made previous contributions. This “net” payment represents the required contribution per member per annum, taking into consideration their share of the pipeline capacity, water usage and recognition for contributions towards previous capital expenditure.

4.3.2 Guiding Principles applied in the Financial Model

The OMM Programme incorporates several guiding principles that are core to the computation of each member’s final contribution structure. These principles have been arrived at through extensive negotiations between the various stakeholders. The guiding principles are as follows:

Take-or-pay methodology – Take or pay/offtake agreements to be entered into by the OMM WUA with Commercial Users and Government for repayment of their respective portions of the capital expenditure and the operations and maintenance of the infrastructure contemplated under the OMM Programme.

This means that members' contributions are calculated based on their agreed upon water requirements (in this instance, predominantly sourced from the Joint Water Forum data) and not on their actual usage of water in any given year. The notable exception to this principle is in the case of variable operational costs, which are only charged on actual usage. For the purpose of the financial model, it is assumed that all members fully utilise their water requirements, and therefore capital expenditure and operating costs are allocated using each member's full water requirement.

Contributions towards repayment of capital and operating expenses – the CUC and Government will contribute equally (50:50) towards the capital expenditure of the bulk raw water and potable water infrastructure defined in the OMM Programme. Each Party will be responsible for the operational expenditure associated with its measured use of water (both bulk raw water and potable water). For the sake of clarity, the Government is to be responsible for the full operating expenditure associated with the potable water.

The CUC contribution is to be limited to the agreed funding for the defined OMM Programme although all raw water phases are to make provision for 10% extra capacity for emerging industrial users for empowerment and social water expansion to be allocated to new entrants subject to the funding allocation requirements. This is to be dependent on the determination of available reserve margin and system yield study. Government is to however be liable for any other incremental costs associated with increasing the size in the pipelines in order to cater for areas outside of the OMM Programme boundaries.

Purchasing of 'capacity' in the pipeline – one of the key principles applied to both the technical design and the financial model workstreams was that the infrastructure will be designed in alignment with two core input variables:

- the agreed upon offtakes from the commercial and Government users; and
- the required water balancing volumes as calculated by the Joint Water Forum.

Importantly, the infrastructure is sized mainly based on these inputs, with an allowance for additional volumes. This design principle is critical in order to incentivise 'opting-in-early' by all users. If additional capacity is designed into the system upfront, then some users may choose to only request water once the infrastructure is built, and although they could face additional surcharges for this late adoption, it would make the initial payments for the foundational members unaffordable. The preference is to get all members on board early to disincentivise late joiners. This does not rule out the ability of commercial users to re-allocate some of their pre-determined capacity acquired to new users, but this becomes a commercial decision between the two parties, outside of the OMM Programme (although still within the LWUA governance framework). The original off-taking member will still be required to make the annual payments in accordance with their agreed upon water requirement, regardless of where their water finally ends up.

Capacity in the OMM Programme for future entrants is to be allocated subject to a consideration being paid by the entrants determined on a fair and equitable basis as determined by the OMM WUA advised by a time-based assessment of the cost/value of the system at the time of entry i.e. a third-party capital charge.

Across the OMM Programme, many members, both public and private have water requirements that vary through time. Many commercial offtakes are expected to ramp-up in the coming years and almost all community water offtakes are expected to grow through time. The sizing of the proposed infrastructure has been designed based on the maximum water usages estimated at this time, and not the year-on-year volume usages because, the infrastructure must be built to provide adequate capacity for the maximum usages. Through these initial contributions, members are not purchasing water in the system, but are purchasing capacity in the OMM Programme. Therefore, each member's annual contribution for bulk raw water capital and fixed operational costs is calculated based on their maximum water requirement across the entire OMM Programme and not their actual water requirement in any given year.

Fair treatment of all assets / contributions – one of the key principles in the financial model was that of equitability. This applied to both the individual members that make up the commercial user group, but also towards the treatment of the commercial users as a group compared to the Government users in the programme. An example of this principle can be seen in the treatment of the existing infrastructure assets, where some are owned by Government users, others by the commercial users and some through a combination of both. The equitable principle applied in the financial model is that all assets, from a valuation methodology, return of asset

and contribution structure perspective are treated the same, regardless of who previously contributed towards them.

Previous capital contributions from contributing parties are to be recognised by reducing their payment obligations by a credit over a 25-year payment term (or such other payment term as agreed). The specific capital investments are defined as phase 1 (Flag Boshielo dam loan), 2A (De Hoop dam), 2C and 2H (including the Southern Extension 2) and excludes all existing potable water infrastructure.

Previous capital contributions to be fairly valued by an independent service provider. In the case of phase 2A (De Hoop dam), 67% of the fair value capped at R2 billion as a capital credit to Government. The rationale being that it is a national asset / scheme and for the wider benefit than the current commercial members.

DWS is to utilise the revenue received from the 4% return on asset (ROA) for the operations and maintenance of the dams within the OMM Programme area and inter-related system.

Defined boundaries – in the case of bulk raw water the boundaries of where the water will be supplied to is clearly defined as the use of the water is restricted to the farms associated with the mining sites. With potable water there are some additional nuances to consider. Across both the Eastern and Northern Limb there are numerous offtakes to community areas. Some of these community areas are in close proximity to either member mines or the LWUA infrastructure. It is these clearly defined community areas that are the in-scope areas for the Northern and Eastern Limb potable water projects. There are however additional areas outside of these 'in-scope' areas that the proposed infrastructure will be supplying with water. Most notably these are the towns of Polokwane, Mokopane, Jane Furse and Burgersfort. Through the consultations between CUC and the key stakeholders, it has been agreed that these out-of-scope community offtakes will not be included in the OMM Programme. The rational for this was threefold:

- these areas are not close to either the commercial users' mines or the existing LWUA infrastructure;
- these areas generally already have significant potable water infrastructure (managed by DWS or an appointed WSA) and are not in need of potable water development in the same way that the more rural communities are;
- there is a need to strictly ring-fence the scope of the potable water programme for the CUC's 50% contribution towards the capital expenditure of the potable programme for affordability purposes.

The additional water requirement to supply these out-of-scope areas is included in the financial model in order to calculate complete water balances and ensure the bulk raw water infrastructure is correctly sized. Critically, the associated operating expenses related to the potable water offtake included in the model will be solely for Government's account (i.e. 0:100 split between CUC and Government for the potable water operating expenses).

All new capital expenditure is 100% externally financed – the assumption used in the financial model is that all new projects built would be 100% externally financed. This means each member (both CUC and Government members) contributes towards the repayment of the external financing for new capital expenditure over a 25-year horizon as opposed to an upfront payment.

OMM Programme study costs – From 31 January 2022, the Government and CUC are to be jointly responsible for any future study costs required in support of the OMM Programme's financial investment decisions. Study costs incurred by the parties before this date would be for their own account and should not be capitalised.

Government's contribution to the OMM Programme – The Government should secure ring-fenced allocations for Government's capital expenditure contributions. The DWS is to act as the custodian of these contributions and is to collect and make payment of the Government's contributions to the OMM WUA.

National Treasury should confirm that mining royalties could be utilised to fund Government's contribution towards the operations and maintenance of the OMM Programme to ensure long-term sustainability.

Recognition to CUC members for their contribution to potable water infrastructure – DWS to support the cause of the CUC to utilise the social labour plans (SLPs) of the Commercial Users to fund their portion of the capital contribution of the potable water infrastructure of the OMM Programme.

4.3.3 Real vs. Nominal Infrastructure Summary

The following table summarises the real and nominal costs for all existing infrastructure, proposed infrastructure and upfront costs for capitalization:

Table 9 – Real vs. Nominal Infrastructure Summary

Project Area	Project	Real Cost Estimate (ZAR, m)	Nominal Value* (ZAR, m)
Proposed Bulk Raw Water (immediate construction)	New Pump Station		
	ORWRDP 2B & 2B+		
	ORWRDP 2F		
Proposed Potable Water (immediate construction)	Eastern Limb		
	Northern Limb		
Proposed Bulk Raw Water (deferred construction)	ORWRDP 2D		
	ORWRDP 2E		
	ORWRDP 2G		
Existing Infrastructure	Southern Extension 2		
	ORWRDP 1A		
	ORWRDP 2A		
	ORWRDP 2C		
	ORWRDP 2H		
Upfront Costs for Capitalisation	Feasibility Study		
	Upfront labour, operational systems and facilities		
Socio-economic development contribution	**1% SED cost**		

**Nominal value at inflation adjusted initiation value in the model or inflation adjusted cumulative drawdown amount*

Attachment E contains a more detailed description of the model inputs, outputs and result analysis.

4.4 Tax Considerations

In this section the potential tax impact of the OMM Programme including, the extension of the current LWUA's mandates and activities as part of the transformation process to establish the OMM WUA, and the funding thereof with reference to LWUA.

Income Tax

LWUA, which was established by Law, is approved by SARS for the purposes of section 10(1)(cA)(i) of the Income Tax Act (ITA). All its receipts and accruals are thus exempt from Income Tax. LWUA is also exempt from paying dividends tax, capital gains tax and donations tax.

LWUA is currently primarily funded by its members, i.e. water users licensed to receive a water allocation from the water scheme. Members pay water tariffs, calculated with reference to its water allocation per the licence granted. The income tax exemption granted to LWUA applies to all income stearms irrespective of the nature of the receipt.

LWUA will be transformed into the OMM WUA, extending its existing mandate and activities to include the building of potable water infrastructure. The concept furthermore envisages that the OMM Programme will be funded by members' contributions raised in the form of water tariff and once-off or annual capital contribution; loan funding as well as funding from Government in the form of grant funding and service payments.

The Minister of Water and Sanitation has recently issued a Regulation that provides that Water User Associations may be directed to perform certain tasks, which may include the emergency provision of water services through the manufacture, supply, delivery and procurement of water tanks, and related goods and services as a response to the COVID-19 pandemic.

The extension of the current Water User Association's mandate, function and activities may affect its income tax-exempt status if the WUA is reclassified as a water services provider for the purposes of the Income Tax Act. This will only happen if the additional powers granted to OMM WUA are regarded as similar to that of a Water Board (established in terms of the Water Services Act) or if it would have fallen within the ambit of a "local authority" prior to the coming in operation of section 3(1)(h) of the Revenue Laws Amendment Act, 2006).

Although OMM WUA will, as a water services provider as defined in the ITA, still qualify for exemption from income tax, dividends' tax and capital gains tax, it will no longer be exempt from donations' tax.

The potential reclassification of the WUA for income tax purposes and the appropriate notifications and or application to SARS, will be considered once the mandate, function and powers of the OMM WUA has been finalised by the Minister of Water & Sanitation.

Value Added Tax

LWUA is a registered vendor for Value Added Tax (VAT) purposes, and is not currently for VAT purposes regarded as either a "welfare organisation" that conducts welfae activities or a "designated entity" in respect of grant funding.

The capacity in which the OMM WUA is engaged by the Government in the OMM Programme will determine whether the standard or zero rate will for VAT purposes apply to the supply or deemed supply of services.

Should OMM WUA due to an extension of its powers, be reclassified for tax purposes as a water service provider, the Association will likely constitute a "designated entity" whose services and deemed services to Government will be subject to 15% of VAT.

Further details of the potential tax consequences noted above as well as the methodology applied in determining these potential consequences is included in Attachment E.

4.5 Potential Sources of Funding

It is anticipated that, in order to meet the estimated funding requirement for the OMM Programme, a consortium of financiers will be required. It will be important to establish quickly, through soft market sounding during the pre-feasibility phase, how deep the market is likely to be for this specific programme and tailor the funding plans accordingly.

Consideration was given to the potential sources of debt, various funding considerations and an overview of the anticipated debt raising process to follow. The debt raising process for a programme of this nature will need to

be bespoke as well as dynamic and may require multiple iterations with the prospective debt funding partners in order to finalise the ultimate funding structure.

The ultimate financing structure of the OMM Programme will be dependent on the commercial metrics, the strength of the proposed Water Supply arrangements with the various private and public parties and the proposed risk allocation and available mitigation strategies. The allocation of risk will be at the heart of the successful development and financing of the OMM Programme and the risk profile will ultimately drive the appetite from prospective financiers to support the OMM Programme and influence the financing terms and ultimate capital structure.

One of the key objectives of the studies phase will be to further refine the commercial viability of the OMM Programme by conducting a financial analysis based on further-refined assumptions of technical, engineering, operating, economic and other relevant factors. The financial model developed during the Concept Phase will be leveraged to develop a more robust financial model during the studies phase which incorporated relevant funding overlays typically required by financiers of projects of this nature, which can then be utilised and updated on an ongoing basis through to bankability.

In addition, the level of funding support / interest needs to be confirmed early on with prospective financiers through soft market sounding. The feedback obtained during the soft market testing will be used in order to consider and tailor the OMM Programme structure and risk profile if required.

As part of the development lifecycle of the OMM Programme, the various development work streams (technical, commercial, environmental, governance, compliance, legal and regulatory) will need to be progressed through the Studies in order to arrive at bankability and initiate the formal fund-raising process. It is important to consider the bankability of the OMM Programme from the perspective of prospective financiers throughout the upfront phases and to ensure that the requirements of the financiers are incorporated into the project development activities. Once the OMM Programme development is at a mature stage and the funding strategy has been developed, the debt market can be formally approached.

4.5.1 Potential Debt Providers

It is anticipated that for this programme the Multilateral Lending Agencies (“MLAs”), Development Finance Institutions (“DFIs”) and the Government will play a key role in setting up the framework for the funding structure, followed by commercial banks assuming the OMM Programme will be sufficiently de-risked to facilitate their participation. Specific consideration will also be given to the potential roles of foreign development lenders such as the African Development Bank (“AFDB”), International Finance Corporation (“IFC”), KfW (German state owned development bank), FMO (Dutch development bank) or Proparco (French Development agency), particularly as these entities are active in South Africa and may have sector interests to promote water infrastructure developments due to the underlying economic and social upliftment potential. Bilateral donors often pool their funding with local and international development banks in order to leverage the impact of their contributions. Through engaging with the DFIs and MLAs, indirect donor support could potentially be obtained for the OMM Programme. As a minimum, support from at least one of the DFIs or MLAs is expected through the provision of debt financing and/or political risk guarantees which may be advantageous given the current macro-economic outlook and Government budget constraints in South Africa.

The level of imported machinery or equipment should be considered as we anticipate that an Export Credit Agency (“ECA”) could also play a role in the financial structure to either provide direct funding or loan guarantees to other lenders in order to expand funding options for the OMM Programme.

Please refer to the initial list of prospective debt providers for the OMM Programme in ‘Table 10’. Please note this is not intended to be an exhaustive list of all the potential funding partners. As the OMM Programme is developed further the list will be developed and refined.

The initial list of prospective debt providers has been divided into different categories:

1. DFIs;

2. MLAs;
3. Government
4. Commercial lenders; and
5. ECAs.

In addition, some commercial members may have an interest to provide upfront debt funding support to the OMM Programme. The potential funding support from commercial members should also be considered when evaluating the available sources of debt funding for the OMM Programme.

Table 10 – Prospective debt providers for the OMM Programme

DFIs	MLAs	Government	Commercial Lenders	ECAs
• IDC • DBSA • PIC	• AFDB • IFC • FMO • Proparco • EIB • KFW • AFD • DEG • DFID	• Treasury • DWS	• ABSA • Standard Bank • Nedbank • RMB • Investec	ECA list to be developed, subject to country of imported equipment origin

Other innovative funding mechanisms e.g. crowdsourcing and bond raises etc. will be investigated during the studies phase.

4.5.2 Soft Market Testing

There have been very few privately financed water scheme developments like this programme in South Africa and it therefore will be important to undertake a soft market sounding exercise prior to approaching the market formally with a fully developed commercial solution. This soft marketing exercise will be designed to warm the debt market up to the OMM Programme and get feedback on some of the critical commercial issues that go to the heart of the programme's bankability. This feedback will help in the development of bankable programme contracts and associated security arrangements. The market testing will be best undertaken in two phases with an initial approach to DFIs and MLAs and key mining members, followed by a second phase of discussion with commercial banks taking account of responses from these parties. A cross section of commercial banks will be selected in order to gain an initial view on appetite for senior and/or mezzanine lending, (if applicable) together with preliminary views on tenure, gearing and other key terms.

4.5.3 Funding Considerations

A list of the various funding considerations that need to be evaluated within the context of the OMM Programme, together with potential risk mitigants as well as potential next steps, is further outlined in Attachment E. The areas addressed are:

1. Water Supply agreements and existing infrastructure value;
2. Underwriting of guarantees and Water Supply commitments by Governments/ treasury;
3. Concentration risk;
4. Contractual risk;
5. Equity requirement;

6. Planning consents risk;
7. Construction completion timing risk;
8. Resource risk;
9. Infrastructure maintenance risk;
10. Cost recovery pass through mechanism;
11. Force majeure risks;
12. Regulatory risk;
13. Foreign exchange rate risk;
14. Financing risk;
15. Repayment period;
16. Reserve accounts & contingencies;
17. Credit ratios;
18. Interest rate risk; and
19. Debt product mix.

4.6 Overview of the proposed debt raising process (approach)

The table below outlines the anticipated activities of the debt raising process going forward:

Table 11 – Debt raising process

Phase	Key Tasks
Preparation	• Concept study; • Pre-feasibility study; • Feasibility study; • Consider related regulations and Government policy; • Finalisation of technical solution and proposed implementation; • Commercial negotiations and agreements with Commercial Users; and • Preparing for funder due diligence.

Initial structuring	• Develop and refine the initial commercial structure for the transaction;
	• Develop a detailed programme risk matrix;
	• Evaluate funding markets and identify potential funding sources including:
	  ○ ECAs;
	  ○ MLAs;
	  ○ DFIs;
	  ○ Government;
	  ○ Grant funding;
	  ○ Mining Members (“Members”); and
	  ○ Commercial Banks.

Financial modelling	• Continue to refine and build out the Financial Model; • Develop an initial capital/funding structure; and • Refine sensitivity analysis.
Soft market testing	• Test prospective funders views on key aspects of the Program structure.

Phase	Key Tasks
Refine structure	• Review the commercial and capital structure, based on feedback from the soft market testing process; • Progress risk mitigation strategies; • Confirm preferred financing plan; and • Develop associated high-level timetable.
Seek Funders commitment	• Draft the Project Investment Memorandum ("PIM"); • Establish funders interest; • Issue the PIM & financial model to potential funders; and • Review responses received.
Appoint lead arranger	• If appropriate, appoint lead debt arrangers or coordinating bank and negotiate common terms.
Make formal approach	• Appoint core funder group to have responsibility for finalisation of due diligence; • Appoint further funders to ensure that the consortium can ultimately provide the debt capacity required; and • Agree common term sheet with the selected bank club.
Due diligence process and refinement of the OMM Programme	• Establish data room; • Manage due diligence process for the funders; and • Resolve issues arising from the due diligence process, amending OMM Programme structure as necessary.
Secure Funder Support	• Obtain credit/investment approvals from the various funders.
Develop funding documentation	• Execute finance documents and hedging strategies.
Financial Close	• First funding drawdown.

4.7 Financial Case Conclusion

The analysis performed under the Financial Case provides an initial indication that the OMM Programme can be funded externally and illustrates the estimated contributions required by each member on an annual basis to cover the anticipated financing and other operating costs over the programme period.

During Pre-Feasibility it will be important to further develop the risk allocation framework for the OMM Programme and engage with prospective financiers through a soft market sounding process to better understand how the funding market will perceive a project of this nature, so that these views can be incorporated into the strategic planning for the OMM Programme.

The Financial Model will also be further developed to include a more robust funding overlay to allow for more detailed scenarios and sensitivities to be run on key drivers of value and/or risk, as technical assumptions are further refined.

5. Management Case

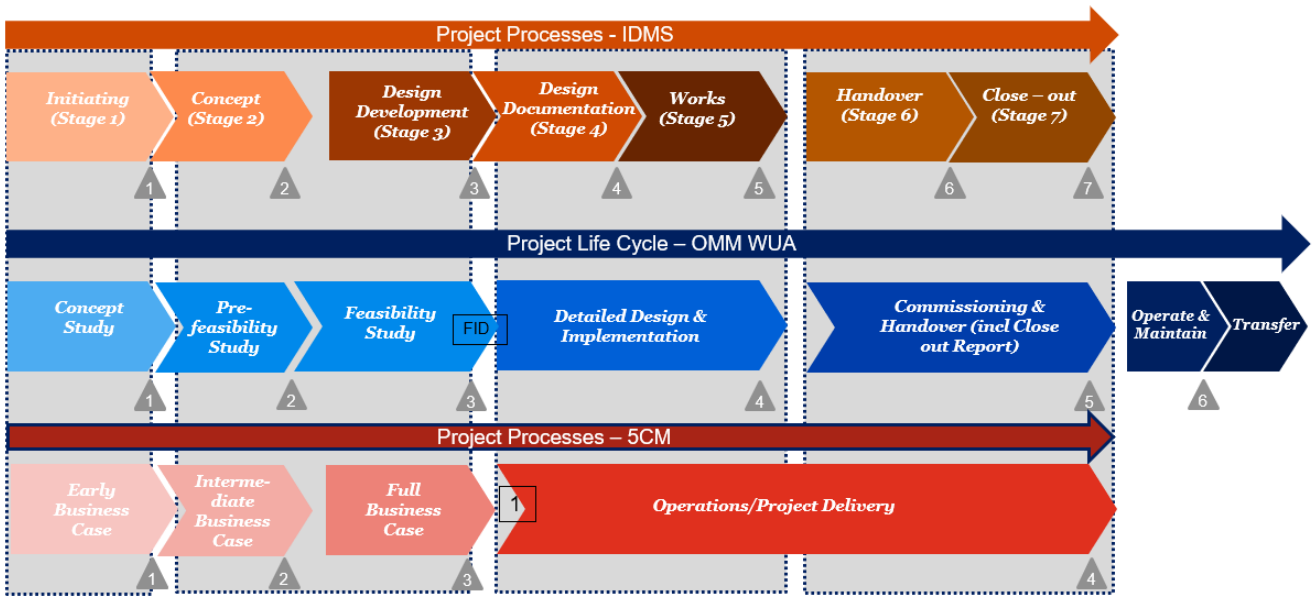
The purpose of the management dimension of the business case is to demonstrate that robust arrangements are in place for the delivery, monitoring and evaluation of the scheme, including feedback into the organisation's strategic planning cycle. Evidence must be provided that the programme will be managed in accordance with best practice, subjected to independent assurance and that the necessary arrangements are in place for change and contract management, benefits realisation and risk management.

5.1 OMM Programme Implementation Methodology

The OMM Programme implementation methodology will be based on the application of international proven and accepted good project practices aligned to the OMM WUA members' capital investment governance processes. To this extent the OMM WUA will adopt an industry acceptable gated framework to execute each indicated phase with its associated purpose, technical details, project management outputs, business and stakeholder key outputs, and outcomes.

For the public sector execution of infrastructure, the Infrastructure Delivery Management System (IDMS) is generally recommended as an execution framework. It forms part of the Framework for Infrastructure Delivery and Procurement Management (FIPDM). Whilst the OMM Programme will not comply with the IDMS, the aim of the set framework is similar with the successful execution of the programme and projects as the key objective. The following comparison between the processes indicated that there is - alignment between the OMM WUA Stage Gate Model, the IDMS and the Infrastructure South Africa's adopted Five Case Model.

Figure 10 – Mapping of OMM WUA to IDMS and 5CM



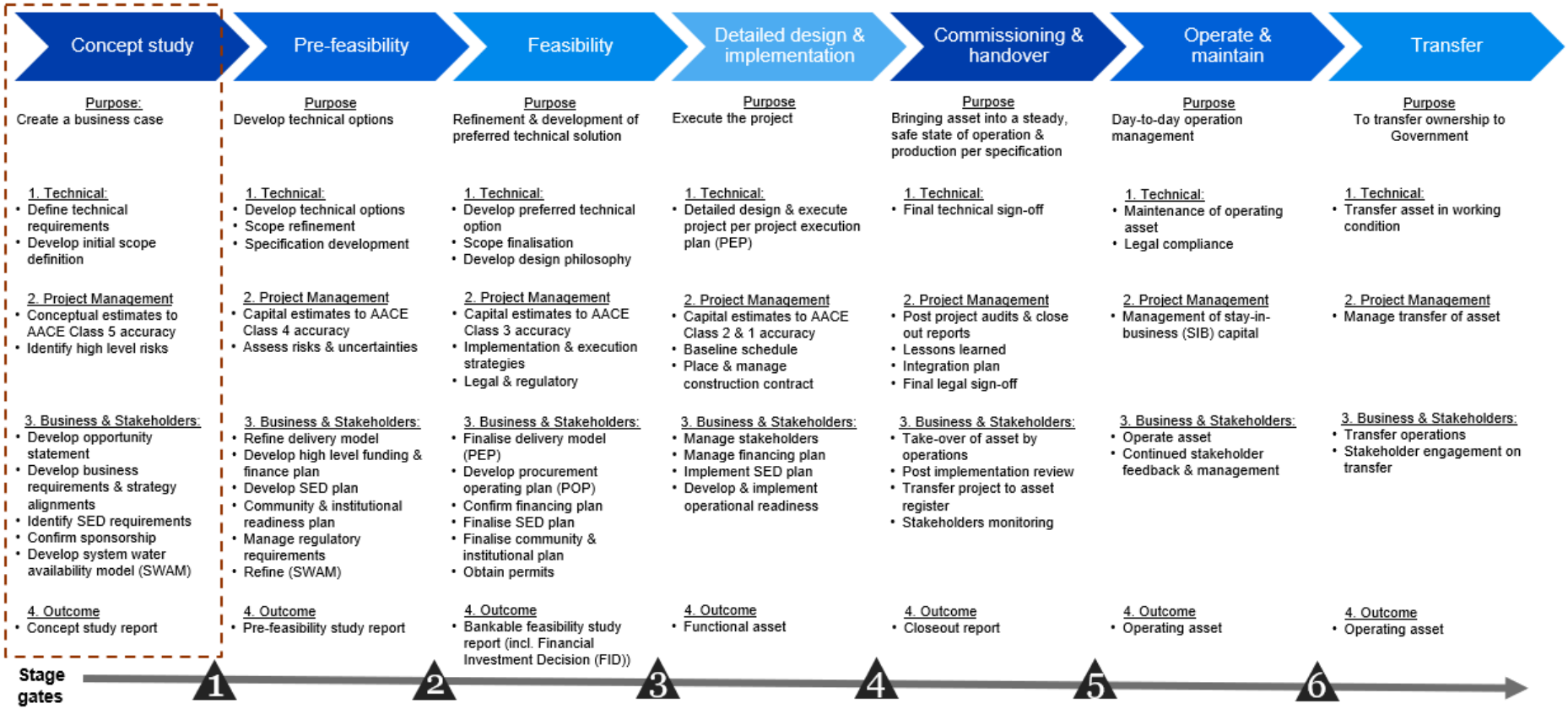
1 Full Business Case report will align with FID (Final Investment Decision) requirements, linked to the commercial strategies for the specific project

The proposed OMM Programme will consist of the following seven key phases:

1. Concept study / 5CM Early Business Case (which culminates in this report);
2. Pre-feasibility and feasibility study / 5CM Intermediate as well as a financial investment decision (FID);
3. Detail design and tender and completion of 5CM Final Business Case;
4. Implementation;
5. Commissioning and handover;
6. Operate and maintain; and
7. Transfer.

Each phase of the OMM Programme will demonstrate progressive elaboration of the details of the projects and programme and the resultant scope, schedule and costs will be refined with each progressive phase. ‘Figure 11’ overleaf summarises the OMM WUA Stage Gate Model phases.

Figure 11 – OMM WUA Stage Gate Project Implementation Phases



5.1.1 Phased OMM Programme Development and Roll-Over Strategy Between Pre-Feasibility and Feasibility

Details associated with the purpose, technical, project management, business and stakeholder key outputs and outcomes within the execution gated framework, will be executed within each phase. Each project phase will progressively elaborate the technical options, capital estimates, risks, timelines and stakeholder and business plans. It will further develop the technical options that will serve the programme objectives and financial business case to underpin the viability of the commercial model by expanding both high level technical and business requirements of the intended revised programme. It will set out the scope, business, financial, operational, organisational, institutional, stakeholder, infrastructure and asset management responses to deliver the requirements. Table 12 below indicates the overall deliverables within each study phase.

Table 12 – Stage gate requirements: Overview

Stage	Concept Study	Pre-feasibility	Bankable Feasibility
Business Establishment		**Final Investment Decision**	
Purpose and key activities	• Business justification • Identify the strategic needs • Identify the concept to meet the requirements • Identify programme concept scope • Identify potential technical options • Reject obvious non-viable options • Prove potential business case and strategic fit • Identify benefits (SMART) • Develop strategic business case	• Procure professional and managing contractor team • Develop technical options • Determine required levels of service • Select most viable option • Demonstrate viability • Project implementation strategy • Scope the project execution plan • Check validity of the business case • Identify and quantify benefits	• Detail and optimise selected option • Detail quantification of benefits • Basis for implementation schedule and Control Budget for funding approval • Technical development to enable implementation of contractor appointments • Finalise the project execution plan • Check validity of the business case
Outcome	Concept Study: Early Business Case Report	Pre-feasibility Study: Intermediate Business Case Report	Bankable Feasibility Study: Full Business Case Report

Within each study phase certain minimum typical deliverables are essential as indicated in Table 13 below.

Table 13 – Typical stage gate criteria

Stage	Concept Study	Pre-feasibility	Bankable Feasibility
Technical and Engineering	• Concept • Scope discovery and development and WBS update • Scope and battery limits definition	• Option identification • Option selection • Construction strategy • Basic design • General construction arrangements • Initial horizontal routing • Initial vertical profiling • Basic hydraulic design • Basic geotechnical and topographical assessment	• Preliminary design • Confirm horizontal routing • Confirm vertical profiling • Hydraulic design • Preliminary specification • Completed geotechnical and topographical mapping
1. Engineering Deliverables			
Project Scope Description	Start	Preliminary integrated programme and individual project descriptions	Final programme and project descriptions
Water Balance Model and Capacities	Start	Prelim	Complete
Scheme Layout Location Plans	Start	Prelim	Prelim
Block Flow Diagrams and General Arrangement Drawings		Plant Location: Site selection for treatment plants and routing for pipelines	Confirmation of sites based on final geotechnical data
Specifications and Datasheets		Start	Prelim
Discipline engineering designs and drawings		Prelim	Complete
Material Offtakes		Preliminary to support estimating process	Sufficient level of definition to support estimating and EPC Lumpsum bidding processes
2. Procurement and Contracting			
Commercial and Contracting	Contract strategy	• Procure Engineering consultant(s)	Contract documents

Stage	Concept Study	Pre-feasibility	Bankable Feasibility
		• Procurement strategy	
Contracting Strategy	Start	Defined with next phase plan ready for implementation	Completed and market tested for key areas
3. Construction			
Construction Strategy		Defined	Completed
4. Commissioning and Handover			
Commissioning and Handover Plan			Commissioning and Handover Plan
5. Operational Readiness			
Operational Readiness Plan		• Plan pre-feasibility and feasibility activities for operational readiness plan • Hazops Studies	• Develop Operational Readiness Plan, user requirements for construction phase • Develop Hazops Plan
6. Project controls			
6.1 Integration management		Defined with next phase plan ready for implementation	Completed
6.2 Scope and change managements processes		Prelim	Complete
6.3 Cost management	• Capital cost estimate (Concept) • Operating cost estimate (Concept)	• Develop Cost Controls Environment for the Project • Capital cost estimate (Pre-feasibility) • Operating cost estimate (Pre-feasibility)	• Develop Cost Controls Environment for the Project • Capital cost estimate (BFS) • Operating cost estimate (BFS)
6.4 Schedule management	Programme level schedule	• Master schedule: Projects level schedule to level 2 • Develop Scheduling Procedure	Develop Baseline Schedule for execution
6.5 Quality management		Defined with next phase plan ready for implementation	Completed

Stage		Concept Study	Pre-feasibility	Bankable Feasibility
7.	**Services**			
7.1	**Safety and Health**			• Develop Project S&H plan for construction • Develop S&H system and reporting
7.2	**Human Resources**	Develop Target Operating Model (TOM)	Finalised TOM	• Develop and Implement job descriptions, grading and recruitment plan • Develop site labour plan
7.3	**Finances**		Develop Delegation of Authority	• Define vendor payment process and master data details • Final Investment Decision and Funding
7.4	**Document Control**		Preliminary Document Mgt Plan	Finalised Document Mgt Plan
7.5	**Risk Management**	Risk Register (Concept Stage)	Preliminary Risk Mgt Plan	Finalised Risk Mgt Plan
7.6	**Information Technology**		Preliminary IT Mgt Plan	Finalised IT Mgt Plan
7.7	**Internal Communication**		Communications Plan	
7.8	**External Stakeholder management**	• Identify stakeholders • Develop concept Stakeholder Management Plan	Preliminary Stakeholder Management Plan (SMP)	Final Stakeholder Management Plan (SMP)
7.9	**Environmental, Social and Economic Development (ESED)**	• Identify environmental, social and economic stakeholders • Identify ESED opportunities	Specialist studies, field work and reporting	Conduct Environmental and Social Impact Studies

Stage	Concept Study	Pre-feasibility	Bankable Feasibility
7.10 Governance, Compliance, Legal and Regulatory	Assumed	• Legal appointment structure • High level regulatory due diligence on proposed options to identify any fatal flaws • Servitudes, property rights, access, contracts identified	• Land acquisitions plan • Regulatory due diligence on selected option • Review proposed structure from a bankability perspective • Draft/review the proposed agreements from a bankability perspective

The next phases of the OMM Programme will be delivered within three primary workstreams, namely:

1. Technical and Development:
   a. Engineering
   b. Contracting and Procurement
   c. Construction Planning
   d. Commissioning Planning
2. Project Services:
   a. Health and Safety
   b. Human resources
   c. Finances
   d. Document control
   e. Risk management
   f. Information technology
   g. Internal communication
   h. External stakeholder management
   i. Environmental, Social and Economic Development
   j. Governance, Compliance, Legal and regulatory
3. Project Controls:
   a. Integration management
   b. Scope and change managements processes
   c. Cost management
   d. Schedule management
   e. Quality management
   f. Quality

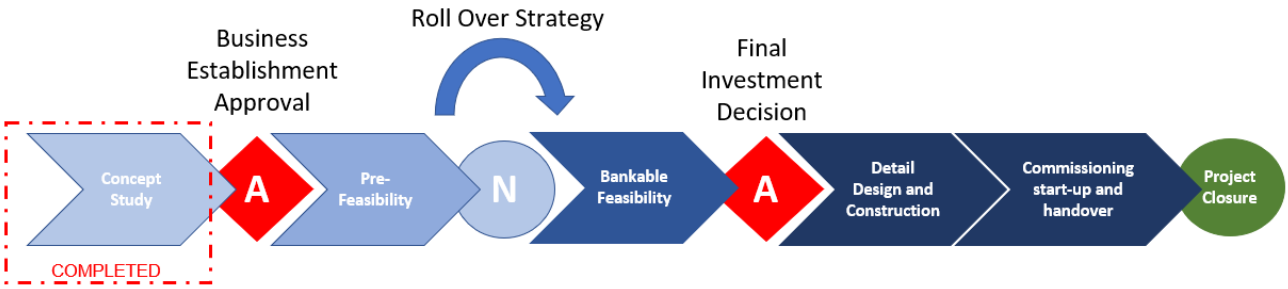
Technical options captured in this report will be further developed and the feasibility thereof confirmed, ultimately preparing the appropriate option for detail design leading into procurement and construction.

A roll over strategy will be applied between the Pre-feasibility and Feasibility phases which provides the project team the right to carry on with Feasibility study work if the following criteria are fulfilled after the Pre-feasibility phase:

1. The target date milestones for implementation of the OMM Programme as defined in this Report does not move by more than 6 months taking into account any delays experienced up to the start of the Pre-feasibility study
2. The Feasibility phase costs remain within 10% of the budget excluding the impact of escalation into account (R250m with R25m range)

3. The total budget for the OMM Programme is within the accuracy ranges contained in the Concept Study Report, excluding any additional scope instructed by the OMM WUA Programme Steering Committee that was not included in this report. (R21.6bn).

Figure 12 – Stage gate and roll over strategy



5.2 OMM Programme Management Governance Arrangements

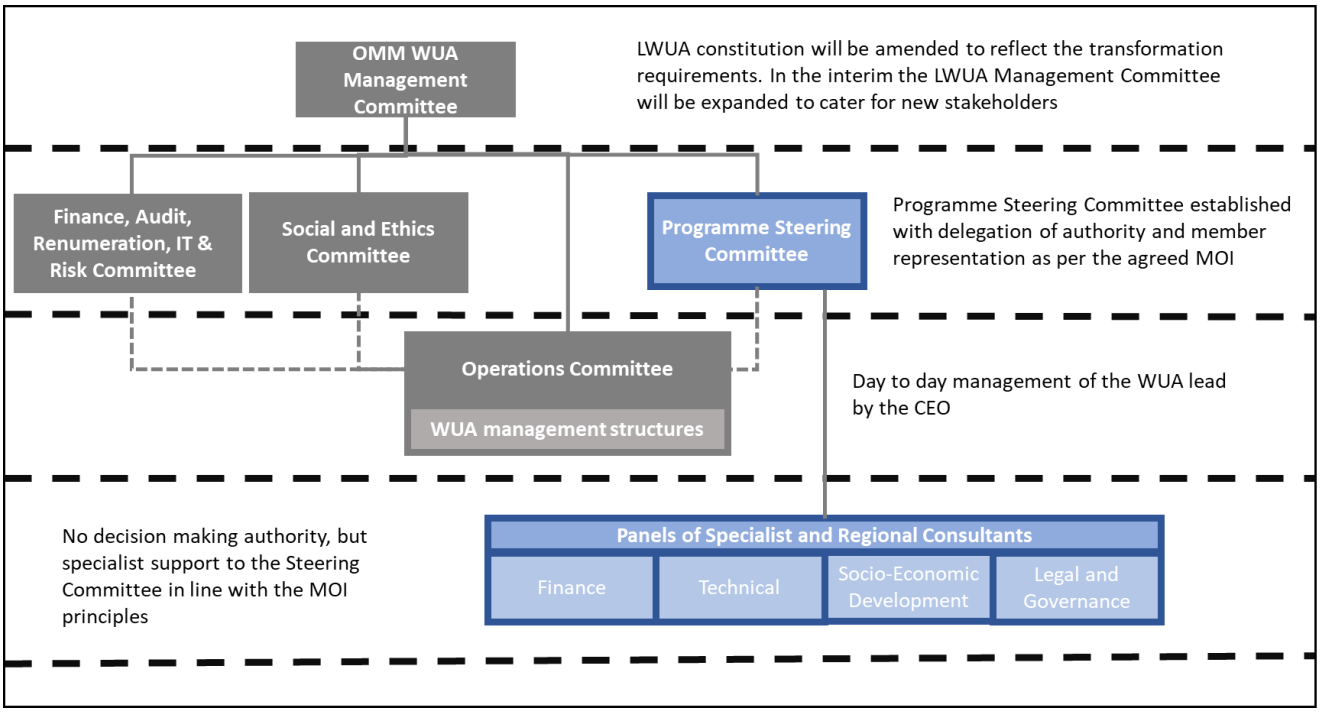
5.2.1 Governance Structure

As part of the transformation of LWUA into the OMM WUA the LWUA Constitution will be amended to take into consideration the OMM WUA with a widening of membership and a larger LWUA Management Committee, reflecting the revised stakeholders. The LWUA Management Committee is empowered to appoint sub-committees to assist with its work. The LWUA Management Committee is assisted through a Finance Committee and a Social and Ethics Committee. These committees also have charters that may be amended to increase size, objectives and mandates. Given the size of the OMM Programme (value and complexity), and to keep the focus of the current two subcommittees on the day-to-day operating business of LWUA, the Management Committee will establish a Programme Steering Committee within LWUA to provide dedicated steer and governance support to the OMM Programme. The committee will be established prior to the kick-off of the OMM Programme study phases, with its own charter comprising of a blend of parties drawn from the current operating OMM Joint Interim Steering Committee and associated sub-committees (as per the MOI) as well as other interested members. The LWUA Management Committee will then delegate certain powers to the OMM Programme Steering Committee for ease of decision making subject to governance oversight of the Management Committee. To ensure continuity, certain members of the Programme Steering Committee will also sit on the LWUA Management Committee. Further, once the OMM WUA is established, the OMM Programme Steering Committee is to cease to exist and the OMM WUA governance processes take effect, including but not limited to the setting up of a Programme Steering Committee under the OMM WUA.

The OMM WUA Operations Committee ensures that the management team are sufficiently informed and involved in the decision-making processes of the water user association from a day-to-day perspective. The management team through the managers, report to the Operations Committee on various issues pertaining to their responsibilities.

The figure below documents the proposed high-level management structure for the OMM WUA.

Figure 13 – Proposed OMM WUA governance structure at establishment



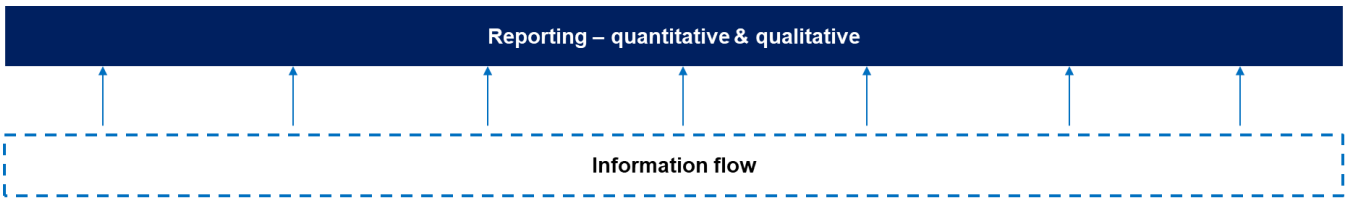
A resourcing partnership was agreed as part of the HoT between Government and the CUC to support the OMM Programme, the PMU, the Water Services Authorities and other aspects of the OMM Programme. In this regard the PMU is to be staffed from within the OMM WUA with seconded representatives from the Government and the CUC.

The PMU will be established as a department within the OMM WUA operational and management structures to act as an Owner's Team Representatives and will be responsible, via the OMM WUA management and governance structures to develop and execute the OMM Programme within the mandate defined in the MOI and HoT.

5.2.2 Project Controls

An integrated and independent project controls environment will be established during the Study phases to ensure transparency of information, promote good governance, reduce risk and facilitate integration of information during the studies. The figure overleaf defines the parameters for the project controls framework.

Figure 14 – Project controls framework



Schedule	Cost information	Registers	Commercial	Quality control	Safety, health and environment	Manpower information
• WBS • P6MSP • Resource and quantify loading • Critical path	• Estimate • Control base • Actual costs • Forecasted costs	• Change register • Risk register • EW register • Legal compliance register • Policy register	• Contracting & pricing strategies • POs & contracts • BOQs/Activity Schedules	• Quality standards • Quality plans	• Onboarding and induction • Medicals • Safety statistics	• Clock cards • Time sheets • Productivity

The execution of the project controls will be part of the scope of the consultants, but the owner's team will have ownership of the control environment and it will be managed and reported on centrally through the use of transparent information defined from an integrated control environment. Project controls are put in place with the focus on time, cost and quality and should cover primary supporting processes such as Safety, Health, Environment & Quality, Human Resources, Finance, Document Control, Risk Management, Information Technology, Internal Communication, External Stakeholder Management, Environmental, Social & Economic Development and Governance, Compliance, Legal & Regulatory.

For the integration and configuration management of the OMM Programme from the outset, a common configuration taxonomy and a high-level Work Breakdown Structure (WBS) was developed in the Concept Stage. The WBS framework will be expanded and incorporated into the Study Phases.

5.3 Operating Model and Operational Readiness Plan

The objective of the operating model and operational readiness planning was to create a vehicle for the creation of the OMM WUA and implementation and operation of the proposed OMM Programme. In order to achieve this an as-is evaluation was conducted to understand the current LWUA operating model. This involved an analysis of the current value chain – this showed that LWUA is in line with its initial mandate which was to build and distribute bulk raw water infrastructure to develop the Eastern Limb through a collaboration between the DWS and the mining industry. However, the value chain suggests that it will need to be transformed in order to cater for the future OMM WUA's social licence to operate, allow mines to take advantage of a favourable commodity cycle and make provisions for potable water. The evaluation of the current functional structures and organisational structures show that the association is fit for its current purpose. With a staff complement of around 40, key functional roles exist in the business such as: Administration, Project Management, Core Operations (bulk water reticulation), Finance, SED / PR / CC and Governance, Risk, Compliance and Legal (GRC&L).

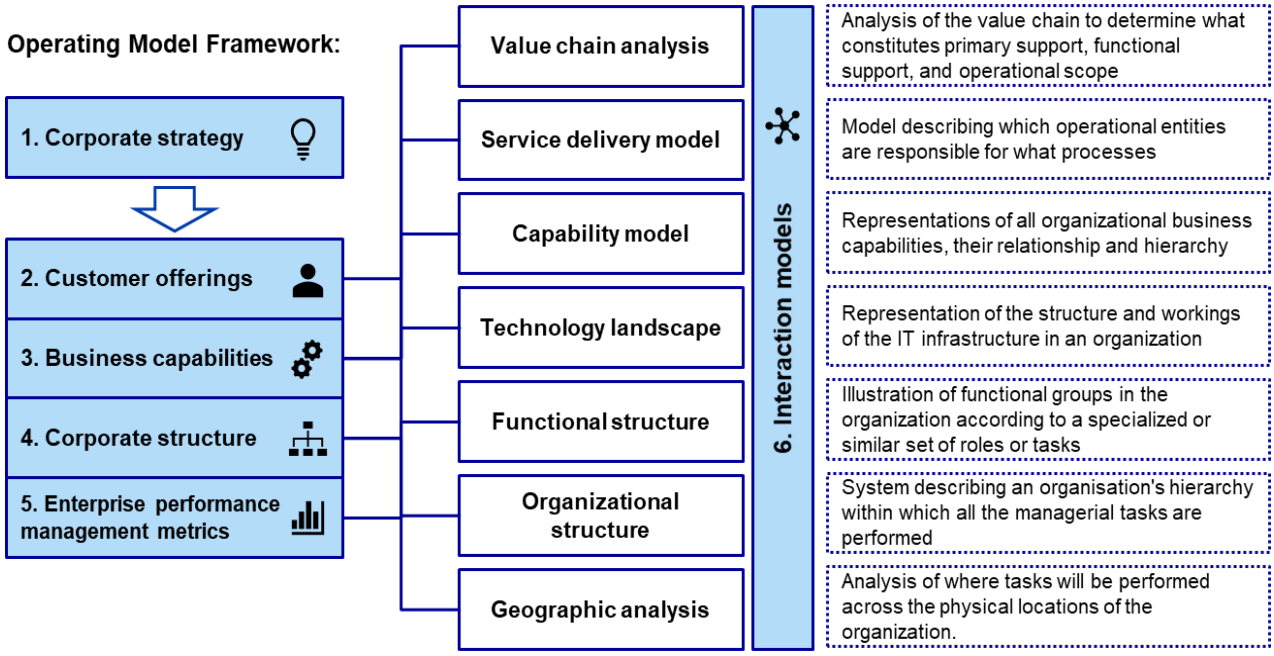
The framework deployed to develop the OMM WUA target operating model (TOM) is geared to transforming LWUA's business strategy into tactical operations through four main lenses – customer offerings, business capabilities, organisational structures and enterprise performance management. The approach adopted focussed on the following elements:

1. Development of design principles – The design principles for the operating model is aimed at achieving the strategic objectives of horizon 1 and 2 which is to "Improve lives through water" and "transform into a Smart Water Utility". The model structure would be designed through the following elements:

- Value chain analysis – Analysis of the value chain to determine what constitutes primary support, functional support and operational scope.
- Service delivery model – Model describing which operational entities are responsible for the strategy, tactical planning and execution of business processes.
- Capability model – Representations of all organisational business capabilities, their relationship, geography and hierarchy.
- Functional structure – Illustration of functional groups in the organisation according to a specialised or similar set of roles or tasks.
- Organisational structure – System describing an organisation's hierarchy within which all the managerial tasks are performed.
- Technology landscape – Functional representation of the structure and workings of the IT infrastructure in an organisation. This will be addressed as part of the pre-feasibility study.

2. To-be value chain analysis – The new proposed mandate means that OMM WUA will maintain the current LWUA bulk water value chain and will cater for management support and oversight of installed infrastructure in the Eastern and Northern Limb. There will also be further emphasis on the SED structures to bolster the organisation's impact on the communities it services.
3. Service delivery model – This model describes the functional centres where work will be performed. This model is essentially the context in which OMM WUA's new capabilities will be arranged into services. The model consists of executive leadership, Centre of Expertise (CoE), Centres of Competence (CoC), outsourced services (which is split into construction sourcing and outsourced functional and operational service), On Site and Functional Centres.
4. Capability model and key process matrix – Based on the requirements for the future state of the association's value chain, key processes were established and linked to functional owners. Furthermore, a capability model was developed to demonstrate the sub-functions for each function. Then processes were established and linked to the service delivery model and geographic location (so that there is an understanding of who and where processes will be performed).
5. LWUA functional structure and organisational structures – In order to operationalise the envisaged capabilities of the OMM WUA, LWUA will need to grow significantly during the transformation process. The business will be organised under four functional heads that will all report into the CEO – these five roles will make up the executive structure of the association. The Programme Director will manage and control the project management of the mega projects. The COO will be responsible for core operations, these include raw water management inclusive of dam management and potable water support, SHEQ and asset management. The CFO role will manage all support functions including; finance, supply chain, HR, IM and GRC&L. Lastly, the Chief Socio-Economic Development Officer (CSO), who will ultimately manage the SED platform the association is aiming to create through the development and support for the WSA's in the distribution of potable water. The staff complement is expected to grow from 40 FTE to 192 FTE at the end of FY29.
6. The WSAs functional structure and organisational structures – Part of the OMM WUA's mandate (as per the HoT) is the management support and overview of the WSAs with regard to the potable water scope that will be implemented by the OMM Programme. To fulfil this obligation, the OMM Programme, in conjunction with the WSAs, will perform operational readiness reviews of the impacted functional and structural areas and assist the WSAs with the required alterations to their functional and organisational structures to cater for the additional future infrastructure, inclusive of management systems and tools. The assessment will commence during the OMM Programme study phase once the potable water scopes in the affected regions are finalised.

Figure 15 – Target Operating Model Framework



5.3.1 Operational Readiness Planning

Operational readiness planning was not started during the Concept Phase; however, the following elements of operational readiness will be addressed in the next phases

Pre-feasibility phase

Once the scope has been confirmed, the framework for an end state operating user requirements and specifications document will be drafted, this will define the elements required during the basic engineering phase for the following:

1. Operability and maintainability specifications and requirements of facilities.
2. Operability and maintainability specifications and requirements for systems.
3. Interoperability requirements and specifications for control and organisational systems (such as PLC/SCADA systems and ERP/ SCM systems).

Feasibility phase

During the feasibility phase, the basic engineering function needs to be provided with input regarding the operability and maintainability specifications and requirements to ensure reliable, fit-for-purpose, safe and efficient operational and maintenance processes. To this end, the operational readiness team will liaise with the engineering design team and provide input into the Hazard and Operability Studies (HAZOPS). Input for operating and maintenance requirements will be provided at a sub-system level.

The End State Operating Requirements document and Operational Readiness Plan (ORP) will be a primary deliverable for Operational Readiness Planning in the feasibility phase. The plan will detail interoperability requirements and specifications for facility, system and sub-system controls with enterprise management systems such as ERP/ SCM systems. The ORP plan will also detail the requirements for commissioning, ramp-up and handover processes between project and operational resources.

Attachment F contains a detailed description of LWUA Operational Readiness Analysis to transform into the OMM WUA.

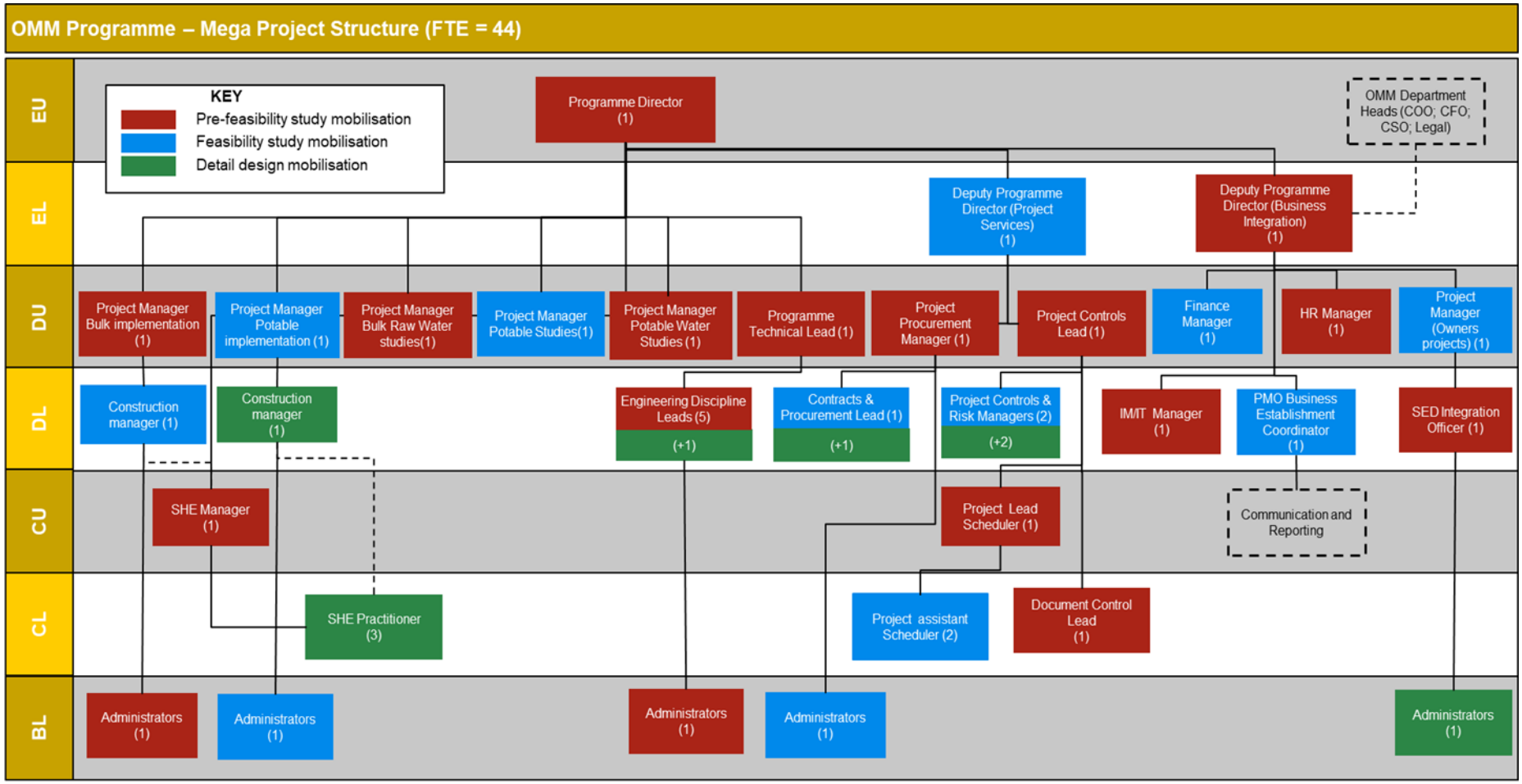
5.3.2 OMM Programme Management Unit

The OMM Programme Management Unit (PMU) will be appointed to act as an Owner's Team and will be responsible to develop and execute the OMM Programme as envisaged under the HoT.

The OMM WUA and its Project Management Unit (PMU) structures will be phased in as the OMM Programme moves through the development phases of the stage gate project implementation model. The intent of populating these organisational structures is to maximise the utilisation of the experience on offer from the OMM WUA members as well as securing inclusiveness of these members through continued direct involvement in the OMM Programme. Detailed job profiles with roles and responsibilities will be developed for the organisational structures and issued to all Government and CUC members to provide CVs of potential candidates. These CVs will then be evaluated by a Interview Panel and recommendations made to the Programme Steering Committee for approval. Successful candidates will be seconded as members of the OMM Programme into the PMU. Remaining positions will then be advertised in the labour market for appointment directly into the OMM WUA.

The PMU will be set up according to the proposed organogram below which is aligned to the execution approach of the program. This is anticipated to be completed as soon as the mandate is obtained from the Programme Steering Committee.

Figure 16 – PMU structure



Although not reflected in the organogram, the PMU will make provision for training and development positions for 3 young professionals during the Study phase of the OMM Programme and up to 5 during the execution phase. The training and development will take the form of rotating the young professionals through the different parts of the OMM Programme applicable to their profession. During the rotation they will be given direct responsibility for a portion of the work, reporting to the manager or lead of the area. Each young professional will also be allocated a sponsor from senior members of the PMU. The sponsor will be responsible to agree to the development program and ensure the effective implementation thereof. The young professionals can be nominated from OMM WUA members who will also have to bear the costs associated with the individual during the secondment period to the OMM Programme. The minimum secondment period will be 6 months.

5.4 Stakeholder Identification and Assessment

The stakeholders required for the successful implementation of the OMM Programme have been identified. A stakeholder assessment was done to establish which stakeholders are critical to the OMM Programme and how engagement will happen with them. Stakeholders in the following groups were identified:

Table 15 – Stakeholders

Stakeholders	Relevance
National Government	
Department of Water and Sanitation (DWS)	• The DWS is leading the negotiations on the OMM Programme. As the water sector leader they will be responsible to ensure alignment and buy-in with other government departments • Water User Associations are established under the National Water Act (NWA). DWS will need to approve and support the establishment of the Transformed WUA • Without their buy-in and participation the OMM Programme will not happen
Trans Caledon Tunnel Authority (TCTA)	• TCTA is an implementation and funding agent of DWS and was involved in the development of the ORWRDP planning. • TCTA's staff might be used to support the OMM WUA PMU structure.
National Treasury (NT)	• NT is responsible for the fiscus and understands the financial status the country presents itself • The proposed funding model needs NT buy-in and approval • Agreement on how the OPEX will be funded is required. • Reprioritisation and allocations of CAPEX funding needs to be done for Government's contribution for bulk raw and potable
Infrastructure SA (ISA)	• The mandate of ISA is to coordinate large Infrastructure projects in terms of the relevant legislation • The mandate includes facilitation between Government and Private Sector to co-fund infrastructure development. • The OMM Programme is supporting the 5CM which has been adopted by ISA • The OMM Programme is one of the priority projects for ISA
Cooperative Governance and Traditional Affairs (CoGTA)	• CoGTA is responsible for municipalities. Any discussion about the potable water provision, funding options for the municipalities and institutional arrangements need to be agreed with CoGTA

Stakeholders	Relevance
Department of Human Settlements	• The OMM Programme promotes the provision of water in conjunction with the upliftment of human settlements
Public-Private Growth Initiative (PPGI)	• Is a supporter to OMM WUA in aligning Government with the growth objectives of the country with those of this programme
Department of Mineral Resources (DMR)	• Responsible for approval of mining activities and social and labour plans (SLPs)
Lepelle Northern Water (LNW)	• LNW is an entity of DWS and is responsible for supplying bulk water in the Limpopo province and supporting municipalities with the implementation of water services • LNW's role in the OMM Programme needs to be determined. • Staff from LNW will be considered for staffing of the OMM Programme structure • LNW has been mandated to construct phase 2F+
Municipal Infrastructure Support Agent (MISA)	• MISA is responsible for supporting municipalities with asset management and operations and maintenance. • MISA is critical in supporting the SED programme with skills development of municipal staff and technical staff with training
Provincial Government	
DWS Limpopo	• Representative of DWS in the Province • Responsible for ensuring water supply to communities • Regulate and support water services authorities
Limpopo - Office of the Premier	• Responsible for economic development in the Province • The OMM Programme will stimulate economic development in the Olifants River Catchment area in the Limpopo Province • Provide leadership and coordination with local municipalities in the Province
Premier's office / Premier's Employment Growth Advisory Council (PEGAC)	• The OMM Programme is supported by the Premier of the Limpopo Province • The Premier has set up a committee (PEGAC) that looks at economic growth and development in Limpopo. It is important that this project is integrated with what is planned for the Province
Local Government – About 380 000 people will be provided with access to water supply	
Sekhukhune District Municipality (SDM) (Water Services Authority (WSA))	• Most of the communities in the Eastern Limb fall under the jurisdiction of SDM. The WSA is in control of potable water provision in its area of jurisdiction. • It is important that municipalities engage with communities and traditional leaders about the OMM Programme
Capricorn District Municipality	• Engage in terms of the District Development Model (DDM) model
Mogalakwena Local Municipality (MLM) (Water Services Authority)	• Same applies as above for the communities in the Northern Limb
Commercial Stakeholders to be part of the OMM Programme	

Stakeholders	Relevance
Anglo American Platinum	• Ensuring water security for their operations • Social licence to operate • This project will set up a collaboration platform for the implementation of SED Projects. • Alignment of SLP's to support the SED programme • Tariff impact • These mines have committed to contributing to the funding of prefeas and feasibility studies
African Rainbow Minerals	
Samancor Chrome Ltd. (Tubatse Alloys falls under Samancor)	
Impala Platinum	
Booysendal Platinum (Pty) Ltd (Northern Platinum)	
Corridor Resources Inc.	
Cheetah Chrome South Africa Proprietary Limited	
IvanPlats Proprietary Limited	
Bushveld Minerals	
Glencore-Merafe Venture (Lion Smelter)	
Steelpoort Industrial Park	
Assore	
Two Rivers	
Tameng Mining and Exploration Proprietary Ltd	
Nkwe Platinum Limited	
BCR Holdings (Pty) Limited	
Vanadium Resources Pty Ltd	
Southern Palladium Limited	
Marula Platinum (Pty) Limited	

During the stakeholder consultation process, a few of the mines decided not to participate in the OMM Programme. These mines are:

- Chromex Mining Limited;
- Samancor Chrome
- Samrec Proprietary Limited;
- Sefateng Chrome Mine Proprietary Limited;
- Sibanye-Stillwater;
- Southern Sphere Platinum; and
- Sylvania Platinum Limited.

Regular meetings are also held with the Government and CUC members to provide them progress updates. A formal Communications and Engagement plan is developed and will be continuously reviewed as new stakeholders are onboarded and as the engagement progresses.

Attachment G contains a detailed description of the OMM WUA stakeholder management approach.

5.5 Benefits Realisation Strategy

The effects or outcomes of the OMM Programme implementation strategy and tracking of benefit realisation will be quantified through KPIs which can be assessed by OMM WUA through a number of economic and other tracking variables. Targets are to be set at the beginning of each implementation phase and associated KPIs developed, assessed, validated, and reported on, on a regular basis to assist in refining and optimizing the implementation plans and services. Where possible KPIs will be set at the service department level to assist in focusing the strategy and interventions with the department head taking responsibility for performance against the KPI. The first set of KPIs will be developed for approval and implementation prior to kick-off of the Pre-feasibility Study Phase and will cover the following OMM WUA areas of responsibility:

1. Strategic Management
2. Health, Safety and Environment
3. OMM Programme Delivery
    a. Engineering
    b. Commercial and Procurement
    c. Project Management and Construction
4. OMM Programme Enablement Services
    a. Human resources
    b. Finance
    c. Document control
    d. Risk management
    e. Information technology
    f. Internal communication and reporting
5. External stakeholder management
6. Socio-economic development
7. Governance, compliance, legal and regulatory

Target and benefit realisation management will be monitored through a Benefits Register that will clearly provide a description of the target, what aspect or activities associated with the target will give rise to the benefit and facilitate monitoring, activities required to secure the benefits from the target, the Key Performance Indicator (KPI) that will be used to monitor progress against the target and a timeline for updating KPI measurements.

5.6 Management Case Conclusion

The management dimension of the business case demonstrated arrangements that are put in place for the delivery, monitoring and evaluation of the OMM Programme, including feedback into the organisation's strategic and governance bodies. It is also clearly indicated that the OMM Programme will be managed in accordance with best international and local good practice, subjected to independent assurance and that the necessary arrangements are in place for change and contract management, benefits realisation and risk management.

6. Conclusion and Salient Issues for Further Consideration

From the 5 key aspects of the early business case solution, it can be seen that together with the agreement between Government and CUC the conceptual frame for the OMM Programme demonstrated a viable solution that meets the objectives of the OMM WUA and its members and is aligned to the required accuracy level for a Concept Study.

Considering the past and revised water needs, the strategic joint venture approach to create the OMM WUA will enhance the possibility to address pressing social and commercial needs in defined areas in the Middle Olifants River Catchment, namely the Northern and Eastern Limb of the Bushveld Igneous Complex.

Considering the OMM Programme critical success factors, a “Long List” of options were evaluated and a concept solution selected. This solution was further developed to concept level of technical detail, an associated implementation approach, a Class 5 capital cost estimate and financial model to evaluate this proposed solution. The evaluation results clearly showed the potential of an accelerated approach, addressing the revised water needs in the region and the viability of providing equitable solution to all members.

The proposed solution offers a more effective use of the water resource through reducing the water requirements on the over utilised Flag Boshielo Dam and transferring it to the De Hoop Dam which will allow for future expansion of the networks and associated economic growth in the region.

The integrated bulk raw water and potable water solution also caters for an alternative approach to the ORWRDP-2 that allows for the ORWRDP Phase D & E to be postponed, resulting in a lower capital requirement for the integrated scheme and therefore will lead to a lower raw water tariff.

The proposed solution will assist in alleviating socio-economic challenges in the region where up to 48% or more of people do not have access to piped (tap) water inside a yard. Since the integrated solution also caters for the supply of potable water to more than 350 000 people, the available capital saved through the optimisation of the Eastern Limb bulk raw water supply can be effectively applied to the overdue potable water supply to communities in the region. Furthermore, up to 43% of people in the Limpopo Province, and even higher in the areas targeted by the OMM Programme, are unemployed. The socio-economic development aspects of this programme will greatly alleviate this problem in the region. The economic impact assessment revealed that the OMM Programme would likely result in 14,750 jobs being created in Limpopo Province linked to the construction spend with a further 9,580 jobs linked to the ongoing operational spend. Low income groups would receive approximately 30% of the annual capital spend and 39% of the annual operational spend in the Province.

The OMM Programme implementation methodology will be based on the application of international proven and accepted project practices aligned to the OMM WUA members’ capital investment governance processes. To this extent a stage gate project implementation model is utilised and each phase will be developed to demonstrate progressive elaboration of the details associated with scope, schedule and costs.

The OMM WUA will capacitate an organisation with sufficient capabilities to affect the design, build, financing, operation and maintenance of the OMM Programme and will as far as possible, mitigate identified risks through strategies, plans and designs that will be developed during the pre-feasibility stage and remaining residual risk profiles will be transferred to the project risk register for management.

The OMM WUA will be enabled to deliver against its purpose to ‘**Improve Lives Through Water**’

This Early Business Case Report sets out the OMM Programme framework and concepts and the elements of the OMM Programme to be further investigated, costed and scheduled in the Pre-Feasibility and Feasibility study phases.

6.1 Next Phase Readiness

As described earlier, the OMM Programme implementation methodology is based on the application of international proven and accepted good project practices aligned to the OMM WUA members' capital investment governance processes. To this extent a stage gate project implementation model is utilised and each phase will be developed to demonstrate progressive elaboration of the details associated with scope, schedule and costs. The planning process for each project phase is critical to align contractors, consultants and team members to drive common goals through a single execution approach. To this extend the preparation work for the Pre-Feasibility Study and Bankable Feasibility Study Phase will include the following:

1. OMM Programme Charter
2. Compilation of engineering consultant vendor lists of companies able to deliver on project scopes for the applicable next phases;
3. Prepare Request for Proposal (RFP) commercial documents for the applicable scopes
4. Prepare tender evaluation documents and tools for the respective RFPs
5. Appoint the respective consultants
6. Project Execution Plan (PEP) inclusive of detailed project management plans matching the OMM Programme Charter Mandate
7. Establishment of the PMU with the required personnel, offices and system & tools infrastructure

6.1.1 Study Phase Budget

As described earlier, the OMM Programme implementation methodology is based on the application of international proven and accepted good project practices aligned to the OMM WUA members' capital investment governance processes. To this extent a stage gate project implementation model is utilised and each phase will be developed to demonstrate progressive elaboration of the details associated with scope, schedule and costs.

The Study phase costs is estimated at R430 million and is detailed in section 4.2.2 of the Financial Case. It is important to note that the Study phase costs do not make any allowance for early procurement, long lead items or implementation of quick win projects.

Since the OMM Programme's respective project scopes will only be finalised as part of the initial study phases (based on due diligence work on existing project data, optimisation studies and reviews), schedule durations for all projects, for costing purposes, allowed for:

- Pre-feasibility study phase of 6 months; and
- Feasibility study phase of 12 months

The estimating methodology applied for study consultants costs included:

- Development of a typical list of deliverables required during both study phases for consultant support to the PMU as well as main technical consultants;
- Level of effort calculated in man days required to deliver each identified deliverable;
- Applied market related consultant daily rates (average rate of R2,000/hour applied);
- Study consultant estimate costs (total cost and applicable rates) were benchmarked for applicability through a market intelligence survey where scope specific budget quotations were obtained from the market.

The estimating methodology applied for PMU and Operational Team costs included:

- Developed diagram of positions required from the PWC Target Operating Model (TOM);
- Phasing in of positions identified during the study phase period (pre-feasibility and/or feasibility phase); and
- Applied market related salaries to positions as per LWUA policies.

A study fee (consultants, PMU and Operational Team fees) contingency of 14% was applied following an estimate review process. A further allowance of 15% was included for facilities, systems and incidental costs calculated on the total cost estimated for the PMU and Operation team.

As a benchmark, the Study phase cost was compared against the Engineering Council of South Africa's "Guideline Scope of Services and Tariff of Fees for Persons Registered in terms of the Engineering Profession Act, 2000". Taking the estimated OMM Programme setup and preparation phase costs into consideration, the total study fees equate to between 89% to 96% of ECSA applied Tariff of Fees for similar projects.

Linked to the above basis of estimates, several opportunities were identified to improve the accuracy and value of the Study phase estimates:

1. As part of the maximum utilisation of study data obtained from the OMM members, early spending of some of the Study phase budget will be required to do due diligence studies on the data and firm-up project scopes which may reduce the budgets for the specific scopes significantly. Specific areas of opportunity that needs to be confirmed are:
   a. Phase 2B that is assumed to be "Tender Ready"; and
   b. SDM Potable water studies of which many are documented as Feasibility Level Complete – awaiting funds.

   These early required study funds are included into the proposed OMM Programme preparation and setup phase budget as detailed in the next section, covering the period 1 February 2022 to 30 June 2022.

2. Prior to the kick-off of the Study phases for each project in the OMM Programme, all Study phase estimates will be updated based on actual consultant quotes and final PMU appointments.

Based on current Programme planning, the above actions will enable the PMU to update all current aspect of the Study phase estimate for inclusion into the budget for 1 July 2022 to 30 June 2023 as well as a forecast up to completion of the Study phase.

6.1.2 Preparation and Setup Phase Budget

The planning process for each project phase is critical to align contractors, consultants and team members to drive common goals through a single execution approach. To this extend the preparation and setup work for the Pre-feasibility Study and Bankable Feasibility Study Phase will include the following:

1. Close-out of the Concept Phase (i.e. this Early Business Case Report);
2. OMM Programme Pre-feasibility and Feasibility Phase Charter;
3. Compilation of engineering consultant vendor lists of companies able to deliver on project scopes for the applicable next phases;
4. Prepare Request for Proposal (RFP) commercial documents for the applicable scopes;
5. Prepare tender evaluation documents and tools for the respective RFPs;
6. Vetting and appoint the respective consultants;
7. Project Execution Plan (PEP) inclusive of detailed project management plans matching the OMM Programme Charter Mandate and strategies as defined in this report;
8. Setup of the OMM Programme policies and procedures (quality management and governance) with associated project specific systems and tools;

9. Establishment of the PMU with the required personnel, offices and infrastructure;
10. Programme and stakeholder management support;
11. Legal and Governance support which amongst other activities include the initial stages of the legal and regulatory transformation of LWUA into the OMM WUA (mandate, constitution and member agreement amendments) and setup of OMM Programme specific governance policies and procedures;
12. Financial and funding support which amongst other activities include update of the financial model in order to accommodate scenario planning and to conduct a soft debt market sounding.
13. Conduct a full due diligence in terms of the two potable water quick wins projects and prepare the projects for fast-track implementation;
14. Socio-economic development (SED) support which amongst other activities include the development a collaboration forum framework and formalise the OMM SED implementation plan.

The budget breakdown associated with the above scopes of work are split into 3 distinct areas namely Preparation Work (consultant support costs, Early Study Phase Work), consultant support costs and the initial PMU costs:

1. The Consultant Preparation Work costs (based on quotations) are estimated at approximately **R14.1 million,** broken down as follow:
    - Project Management Office & stakeholder management support – R2.4 million
    - Legal & governance support – R3.05 million
    - Finance & funding support – R0.95 million
    - Technical support – R5.5 million
    - SED support – R0.9 million
    - Contingency (10%) – R1.3 million

2. The Early Study Phase Work costs (based on quotations) are estimated at approximately **R4.8 million** and forms part of the overall Study Phase budget of R430 million. This budget comprises of the following:
    - PMO & stakeholder management support – R1.6 million
    - Finance & funding support – R1.4 million
    - Technical support – R1.35 million
    - Contingency (10%) – R0.45 million

3. The early PMU appointments costs are estimated at approximately R7 million for the preparation and setup phase.

The PMU costs are based on the Pre-feasibility Study phase positions as indicated in sections of the Management Case and salaries were calculated using the LWUA internal Paterson Level Salary Scales. One additional month's salary is allowed for recruitment cost and candidate vetting as per the HR policy. Appointment of the PMU members as per the strategy described in the Management Case, will commence on approval of the budgets.

6.1.3 Next Phase Schedules

The OMM Programme preparation and setup phase is anticipated to be completed between 1 May and 1 August 2022 (30 June 2022 for budget purposes) based on a detailed plan for the period starting 1 February 2022. The critical path for this period is the appointment of the Main Consultants associated with the study work. The range for completion of the phase is linked to typical schedule risks associated with factors outside the control of the PMU. This detail plan together with standard project management tools will be used to control the preparation and setup phase while establishing the next phase systems and tools.

Based on a OMM Programme Study phase kick-off between 1 May 2022 and 1 August 2022 and a roll over strategy applied between the Pre-feasibility and Feasibility phases, the following Financial Investment Decisions (FID) associated with the close-out of the respective Study phases are anticipated:

1.	Eastern Limb Phase 1 potable water	July 2023 to January 2024
2.	Bulk raw water phases 2B & 2B+	November 2022 to April 2023
3.	Northern Limb potable water	March 2024 to September 2024
4.	Reverse flow of LWUA network	March 2024 to September 2024
5.	Bulk raw water phases 2F	May 2024 to November 2024
6.	Eastern Limb Phase 2 Potable water	May 2024 to November 2024

Based on the review of available project study data, due diligence outcomes and binding bids from the Main Consultants during the preparation and setup phase, the above Study phase target dates for the OMM Programme will be firmed up for control during the Pre-feasibility and Bankable Feasibility phases of the Programme.

6.1.4 Next Phase OMM Programme Risks

Major construction, financing and operational risks would be borne by the OMM WUA in terms of water supply agreements signed with commercial users and DWS.

The OMM WUA will capacitate an organisation with sufficient capabilities to affect the design, build, financing, operations and maintenance of the OMM Programme or components thereof.

The OMM WUA will, as far as possible, mitigate identified risks through strategies, plans and designs that will be developed during the Pre-feasibility stage and remaining residual risk profiles will be transferred to the project risk register for management. The risks below were identified as key to the execution of the Pre-feasibility and Feasibility studies. The initial risk register of the studies will be updated through workshops with the Programme Steering Committee and mitigation plans developed. These risks do not address the risks associated with the establishment of the OMM WUA.

The following are the most prominent risks directly associated to the study phase execution of the OMM Programme:

1. The LWUA (OMM WUA) is not yet fully mandated and financially equipped to fund the OMM Programme study phase as per the anticipated schedule;
2. Governance and approval delays between Pre-feasibility and Feasibility study phases that will impact overall schedule, cost and continuity of manpower resources;
3. The integrated OMM Programme is negatively impacted by delays in the potable water projects caused by a lack of involvement by and approval processes at municipal and local government levels;
4. Extended timelines to appoint OMM WUA PMU and Operational Team resources (linked to OMM Programme funding approval) may impact effective Engineering Consultant management and quality of work;
5. Remote teams working in Covid-19 era will limit direct access to the workforce of both the owner teams and consultants;
6. Baseline studies for environmental approvals and SED may be very long which dictate the timeline for the OMM Programme up to FID, negatively impacting water supply target dates; and
7. Current assumption for water volumes is based on a single tap on a stand and a specific stand metrics as per the Concept Study, which may grow, resulting in new scope and volume demands from source.

The key risks will be further assessed and a risk register will be developed during the Pre-feasibility Study Phase and updated during the Feasibility Study Phase. Risks will be assessed on the likelihood of occurrence as well the impact if they do occur. A typical industry established 5 x 5 risk matrix will be utilised to assess each identified risk. Mitigation plans will be developed and post-mitigated impact will be provided for as contingency on time and cost.

6.2 Approval

This Early Business Case Report is recommended for approval by the OMM Programme Steering Committee confirming that it meets all the Concept Study Stage Gate and 5 Case Model requirements and that the OMM Programme can proceed into the next implementation phase.

Approved by OMM Programme Steering Committee:

Name …….. Date …….. Signature ……

Designation: OMM Programme Sponsor

Appendices

Attachment A: Concept Technical Design

Attachment B: Socio-Economic Development

Attachment C: Concept Integrated Schedule

Attachment D: Class 5 Capital Cost Estimate

Attachment E: Financial Model and Analysis

Attachment F: Operational Readiness

Attachment G: Stakeholder Management

Olifants Management Model (OMM) Programme

Programme Early Business Case – High Value

Attachment A: Concept Technical Design Summary

Version E | 3 February 2022

IMPROVING LIVES THROUGH WATER

Table of Contents

1. Summary of the Integrated OMM Programme Technical Scope

The Integrated OMM Programme Technical Scope provides a consolidated view of the benefits that the proposed OMM Programme sets out to achieve, including the associated current assets.

The OMM Programme, from a technical perspective, is a complex series of design and construction activities to sequence the implementation of several capital projects in such a way as to maximise current local and national Government and LWUA assets and to deliver new assets in the most efficient manner to achieve short term benefits, whilst maximising total life cycle cost efficiencies. Together these component projects make up the Integrated Olifants Management Model Water User Association (OMM WUA) Programme, referred to in this Attachment as the “OMM Programme”.

The OMM Programme is summarised in an integrated diagramme, as depicted in ‘Figure 1’. This diagramme shows the OMM Programme initially in all its detail, and then successively breaks it down in subsequent diagrammes into current assets, proposed future assets, and the associated proposed future capital projects that together make up the OMM Programme.

The component infrastructure elements of the OMM Programme will be managed as an integrated infrastructure programme.

Figure 1 – Integrated OMM Programme Master Plan – schematic layout of current and future assets and water delivery off-takes (potential)

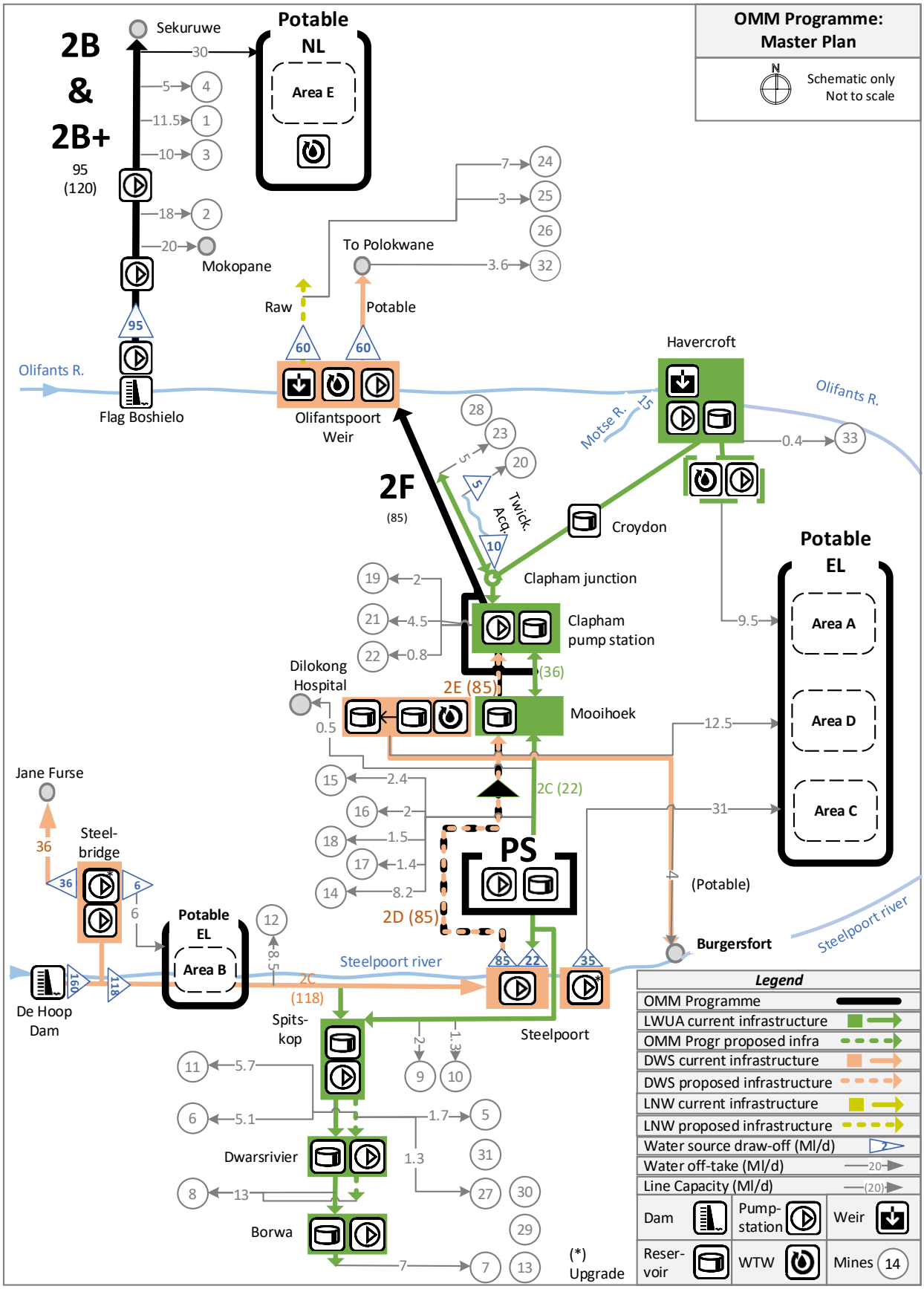


Figure 2 – Integrated OMM Programme – summary of Programme benefits and scope (March 2022)

Bulk raw water Capex programme

"2F": Pipeline ORWRDP 2F		"2B &2B+": Pipeline ORWRDP 2B and 2B+		"PS": New pumpstation	
Length	58.13 km	Length	121 km	Pump capacity	26 - 50 Ml/d
Capacity	85 Ml/d	Capacity	95 Ml/d	Reservoir capacity	20 - 25 Ml (24h)
Pumpstations	None. Gravity	Pumpstations	3	Direction	South to North
NDA	1,200 - 700 mm	NDA	1,400 - 750 mm	Key risk	Condition of assets
NGL (start)	1,038 m	NGL (start)	808 m	NGL (Start)	742 m
NGL (high point)	935 m	NGL (high point)	1,339 m	NGL (High point)	1,062 m
Start End Capex (Real) (*) Capex (Nominal)	Refer to Business Case	Start End Capex (Real) (*) Capex (Nominal)	Refer to Business Case	Start End Capex (Real) (*) Capex (Nominal)	Refer to Business Case

Potable water Capex programme

Potable Northern Limb		Potable Eastern Limb	
People	121,000 People	People	233,000 People
WTW	1 Number	WTW (**)	4 Number
Area	9,333 ha	Area	32,775 ha
Housing units	29,432 Number	Housing units	66,233 Number
Density	3.2 Units/ha	Density	2.0 Units/ha
AADD	60 Ml/d	AADD	60 Ml/d
Start End Capex (Real) (*) Capex (Nominal)	Refer to Business Case	Start End Capex (Real) (*) Capex (Nominal)	Refer to Business Case

(**) 1x new (Havercroft), 2x updgrades (Steelbridge and Steelpoort), 1 x existing (Mooihoek)

Key business dependencies:

1. Timing of LNW 2nd pipeline from Olifantspoort weir to Polokwane.
2. Timing of the Usage consumption of ORWRDP 2D and 2E.
3. Condition of current DWS and potable assets

Abbreviations:

AADD	Annual Average Daily Demand (Ml/d)
EL	Eastern Limb
Ha	Hectare
NDA	Nominal Diameter (i.e. pipe size)
Ml/d	mega liters per day
NGL	Natural Ground Level (height)
NL	Northern Limb
PS	Pumpstation
ORWRDP	Olifants River Water Resources Development Project
DWS	Department of Water and Sanitation

Mines

#	Company	Operation
1	Sibanye	Akanani
2	IvanPlats	Platreef Mine
3	Anglo American Platinum	Mogalakwena Mine
4	Bushveld Minerals	Mokopane Mine
5	Assore	Dwarsrivier Chrome Mine
6	African Rainbow Minerals / Implats	Two Rivers Mine
7	Northam Platinum	Booysendal Mine
8	Anglo American Platinum	Mototolo Mine
9	Platmin SA	Grootboom Mine
10	Samancor	Lannex Chrome Mine
11	Glencore-Merafe	Lion Smelter
12	Eastplats	Kennedys Vale Mine
13	Eastplats	Mareesburg Mine
14	African Rainbow Minerals / AAP	Modikwa Mine
15	Samancor (Tubatse Alloys)	Dilokong Smelter
16	Dilokong	Dilokong Chrome Mine
17	Samancor	Doornbosch Mine
18	Corridor Resources	Black Chrome Mine
19	Chromex	Mecklenburg Mine
20	Anglo American Platinum	Twickenham Mine
21	Implats	Marula Mine
22	Samancor	Lwala Mine / Smelter
23	Sefateng	Sefateng Chrome Mine
24	Tameng	Tameng Mine
25	Sibanye	Messina Platinum Mine
26	Pietersburg (Kumba)	Pietersburg Iron Ore Mine
27	Samancor	Tweefontein Mine
28	Anglo American Platinum	Bokoni Mine
29	Glencore-Merafe	Magareng Mine
30	Glencore-Merafe	Thorncliff Mine
31	Samancor	Tubatse Smelter
32	Anglo American Platinum	Polokwane Smelter
33	Samrec	Rhino Mine

From 'Figure 1' and 'Figure 2' above, the following summarises key elements of the OMM Programme:

- Water provided to commercial activities: 134 Ml/d
- Water provided to social infrastructure: 180 Ml/d
  - Potable water off-take: 93 Ml/d (of which 4 Ml/d will be routed to Burgersfort)
  - Raw water provided to Polokwane: 30 Ml/d
  - Raw water provided to Mokopane: 20 Ml/d
- Potable water provided to approximately 354,000 people

1.1 Current Infrastructure

The two figures that follow illustrate the current infrastructure owned by the local and national Government (including municipalities, water services authorities and the Department of Water and Sanitation (DWS)) and LWUA that are relevant to the OMM Programme.

1.1.1 Current Local and National Government Infrastructure

The DWS institutionally owned ORWRDP scheme, relevant to the OMM Programme, primarily provides potable water from the Olifantspoort weir northwards to Polokwane, potable water from Mooihoek to Burgersfort (raw water is provided by LWUA via Clapham), potable water from Steelbridge to the town of Jane Furse, and raw water from De Hoop Dam to Steelpoort.

The DWS institutional assets are summarised as follows:

1. Flag Boshielo Dam
2. Olifantspoort weir complex:
   - Weir;
   - Water Treatment Works (WTW); and
   - Pump station.
3. Potable pipeline from Olifantspoort weir to Polokwane
4. Mooihoek complex:
   - Reservoirs x 2; and
   - WTW.
5. Potable pipeline from Mooihoek reservoir to Burgersfort

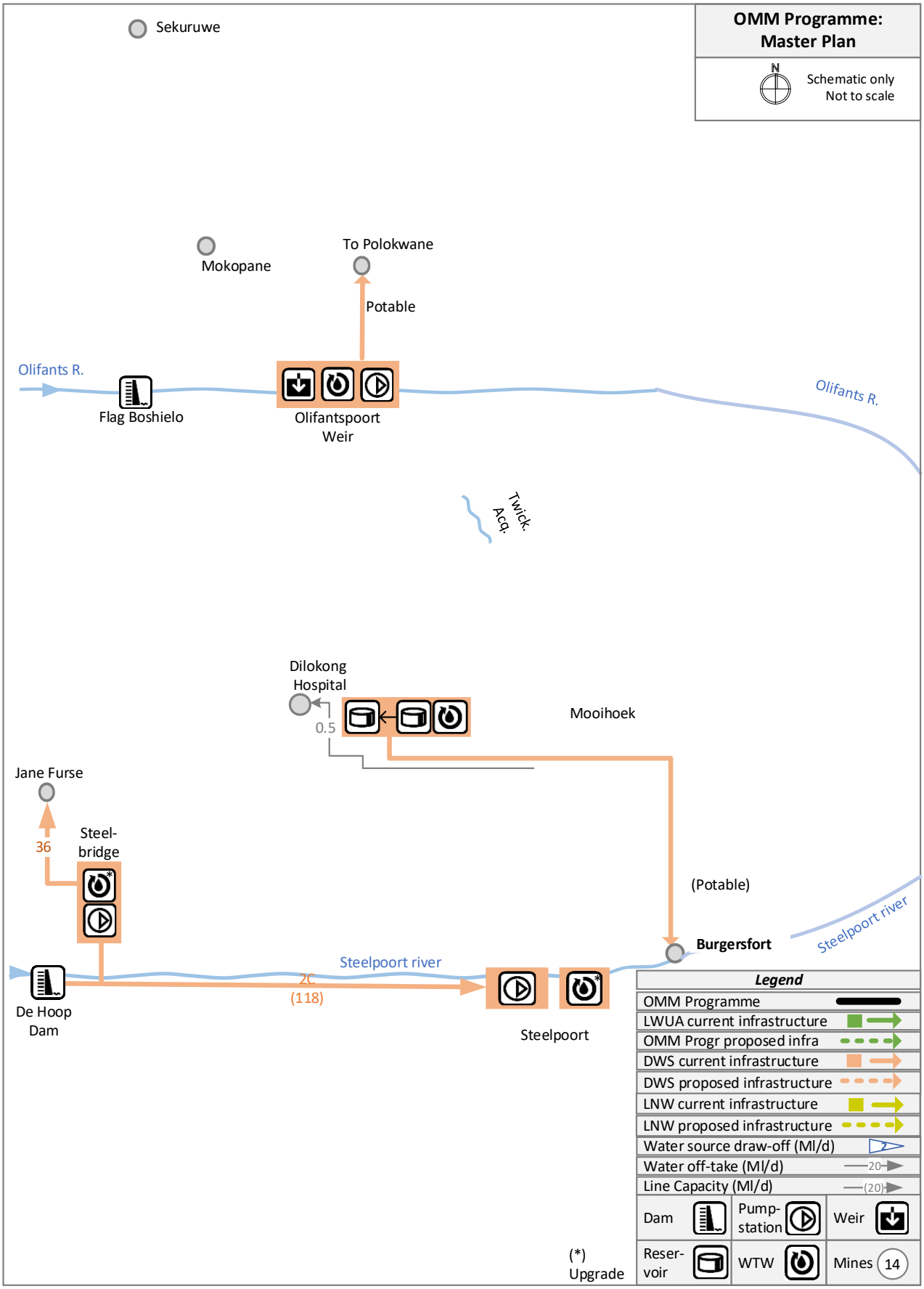
   Steelpoort complex:
   - Pump station; and
   - WTW.
6. ORWRDP pipeline 2C from De Hoop Dam to Steelpoort

   Steelbridge complex:
   - WTW; and
   - Pump station.
7. Potable pipeline to Jane Furse town

   De Hoop Dam

These assets are illustrated in brown in the Integrated OMM Programme Master Plan in the diagramme on the next page.

Figure 3 – Integrated OMM Programme – summary of current DWS institutional assets



1.1.2 Current LWUA Infrastructure

The current assets of the LWUA scheme comprise of a 110 km pipeline from the Olifants river, extracting water at the Havercroft weir and providing water in a southerly direction to a number of participating mines and the Dilokong hospital with four off-take points provided for potable water of which two are currently utilised.

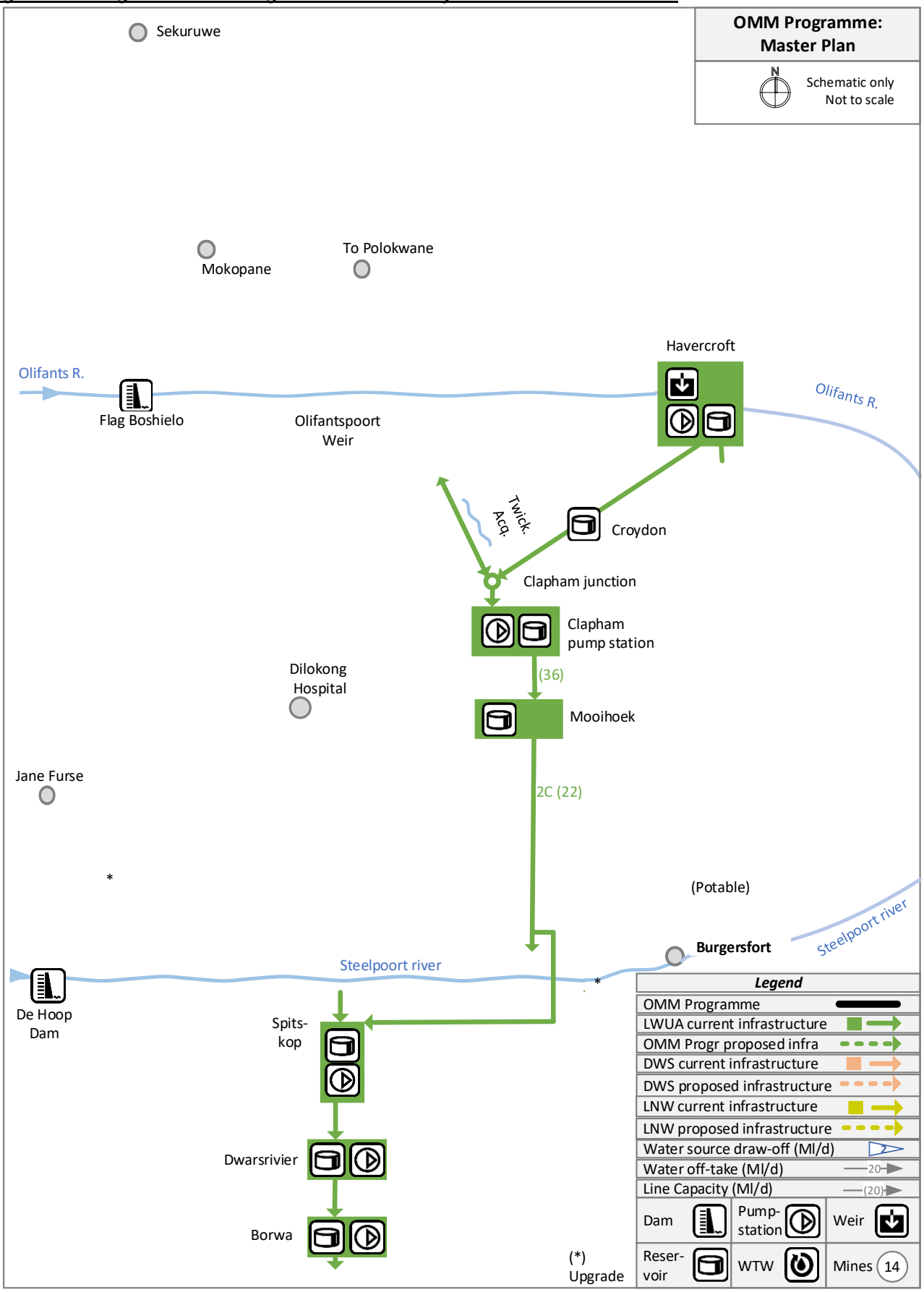
The pipeline is a combination of pumped and gravity fed lines, via the Croyden reservoir, the Clapham works, Mooihoek reservoir, Spitskop works, Dwarsrivier works and eventually to the Borwa works. The end point reservoir and connecting pipelines are not included in the schematic diagramme but are part of the current OMM Programme.

The current LWUA infrastructure is summarised as follows:

1. Havercroft complex:
   - Abstraction weir;
   - De-siltation plant;
   - Pump station; and
   - 2 Reservoirs.
2. Croyden reservoir
3. Clapham works:
   - Pump station; and
   - Reservoir.
4. Mooihoek reservoir
5. Spitskop works:
   - Pump station; and
   - Reservoir.
6. Dwarsrivier works:
   - Pump station; and
   - Reservoir.
7. Borwa works:
   - Pump station; and
   - Reservoir.

These assets are illustrated in green in the Integrated OMM Programme plan in the diagramme overleaf.

Figure 4 – Integrated OMM Programme – summary of current LWUA assets



1.2 Proposed New Infrastructure

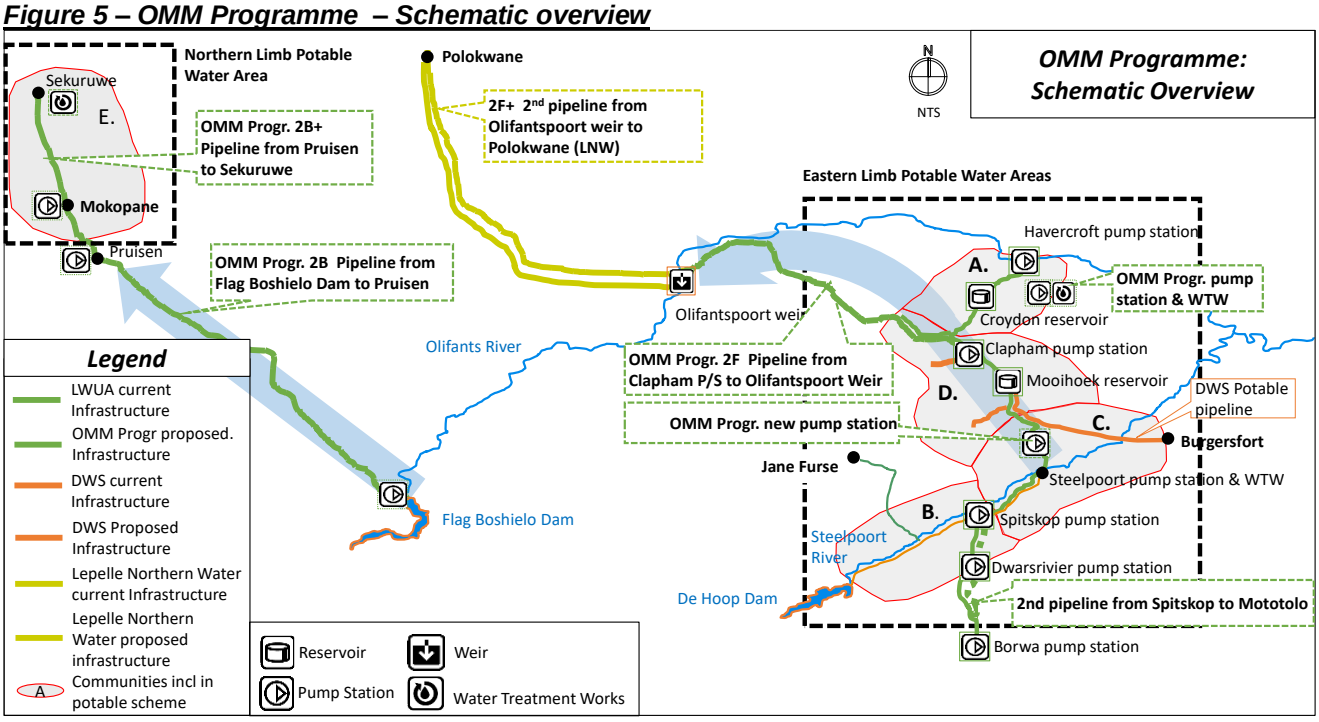
The proposed new infrastructure of the OMM Programme sets out to abstract raw water primarily from the De Hoop Dam on the Steelpoort river, instead of the Olifants river, to relieve pressure on the already over-allocated Flag Boshielo Dam on the Olifants river. This requires that raw water is pumped in a northerly direction (i.e. the reverse of the current scheme) to serve additional participating mines and associated communities.

To achieve this efficiently, a re-sequencing of the construction of the ORWRDP scheme is required, commencing with Phase 2F (and 2F+ by LNW) in parallel with 2B & 2B+, while deferring phases 2D and 2E. This will also require the routing of potable water from the Steelpoort Water Treatment Works (WTW) to Burgersfort to defer the construction of Phase 2D. The OMM Programme will also support existing potable Water Services Authorities (WSA) by developing and operating potable water infrastructure in defined areas in the Northern and Eastern Limb to address immediate and long-term social water needs.

The new infrastructure required to deliver the OMM Programme includes the design and construction of the following projects, as illustrated in 'Figure 5' below

1. Bulk raw water: ORWRDP phase 2F – steel pipeline from Clapham pump station to Olifantspoort weir;
2. Bulk raw water: ORWRDP phase 2B & 2B+ – steel pipeline from Flag Boshielo Dam to Sekuruwe Water Treatment Works (WTW) in the northern limb;
3. Bulk raw water: new pump station between Steelpoort pump station and Mooihoek reservoir;
4. Potable water Eastern Limb: potable pipelines, reservoirs, water treatment works, pump stations and associated infrastructure, reticulation network and yard connections in defined areas surrounding the CUC mines in the Eastern Limb; and
5. Potable water Northern Limb: potable pipelines, reservoirs, water treatment works, pump stations and associated infrastructure, reticulation network and yard connections in defined areas surrounding the CUC mines in the Northern Limb.

Figure 5 – OMM Programme – Schematic overview



The proposed new infrastructure is summarised in the Integrated OMM Programme Master Plan in the diagrammes as follows:

1. ‘Figure 6’: Summary of proposed new OMM WUA assets
2. ‘Figure 7’: Summary of proposed new OMM WUA assets, including the proposed water off-takes

Figure 6 – OMM Programme – summary of proposed new infrastructure to be delivered under the OMM Programme

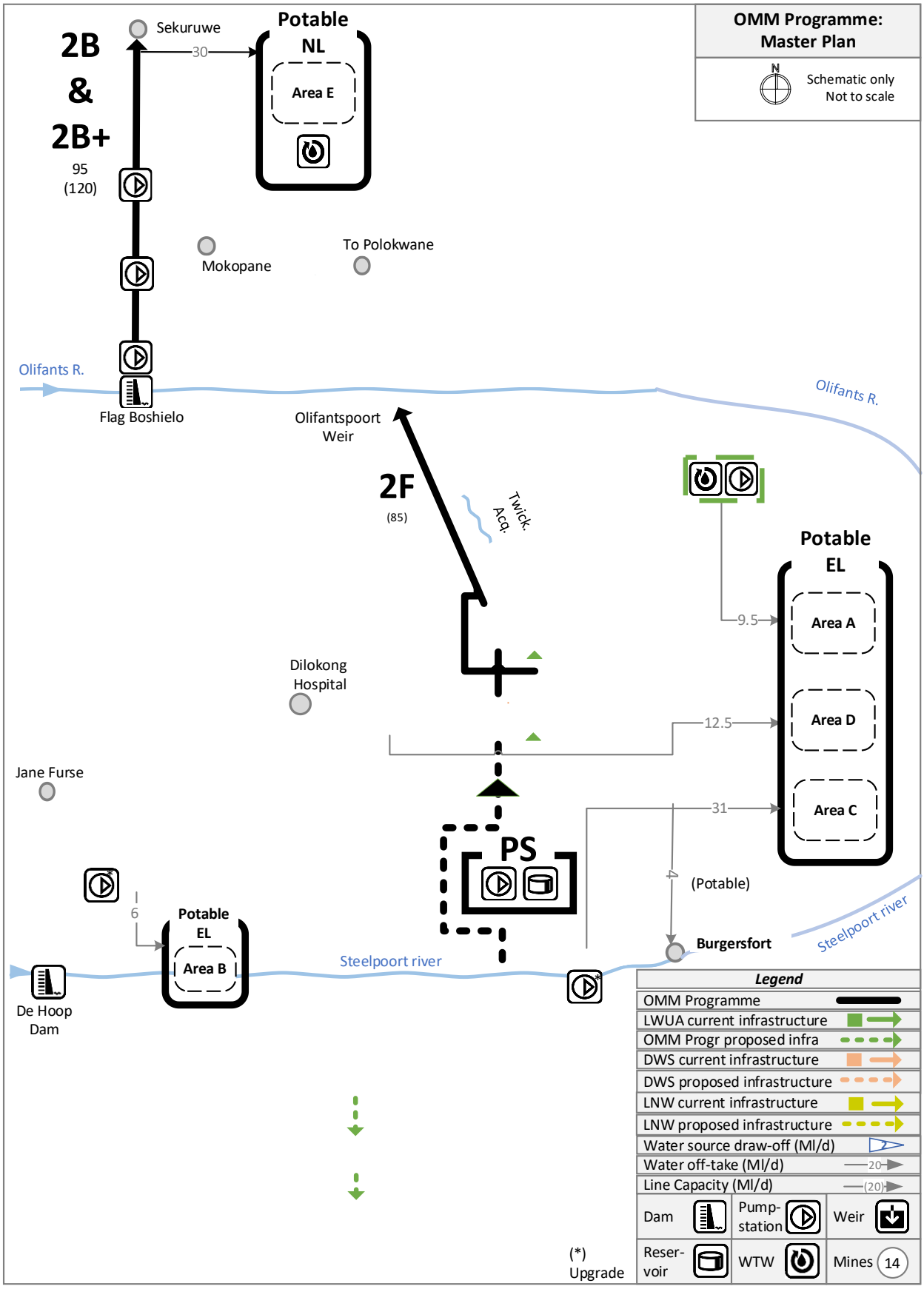
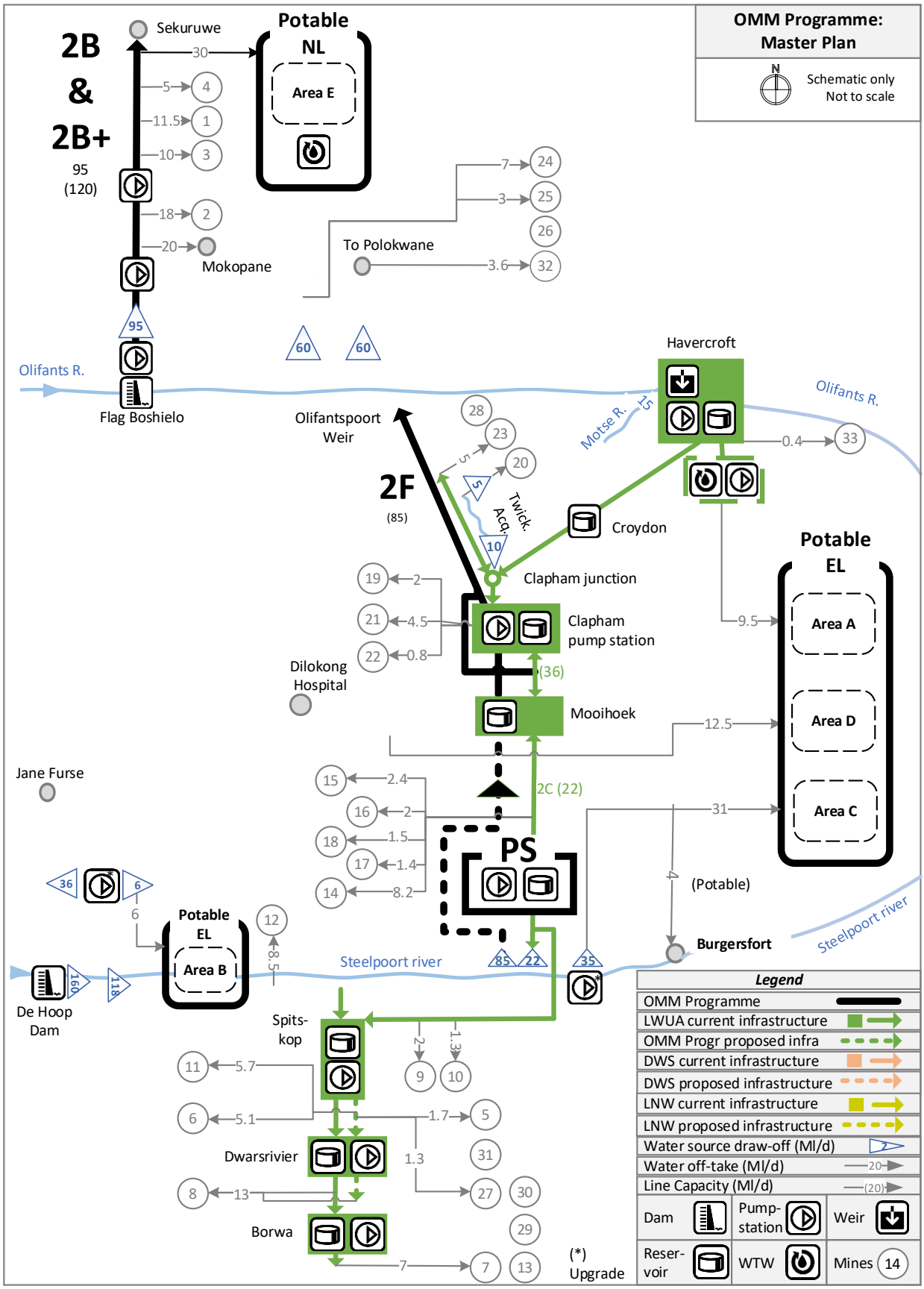


Figure 7 – Integrated OMM Programme – summary of proposed new infrastructure to be delivered under the OMM Programme, including water off-takes (potential)



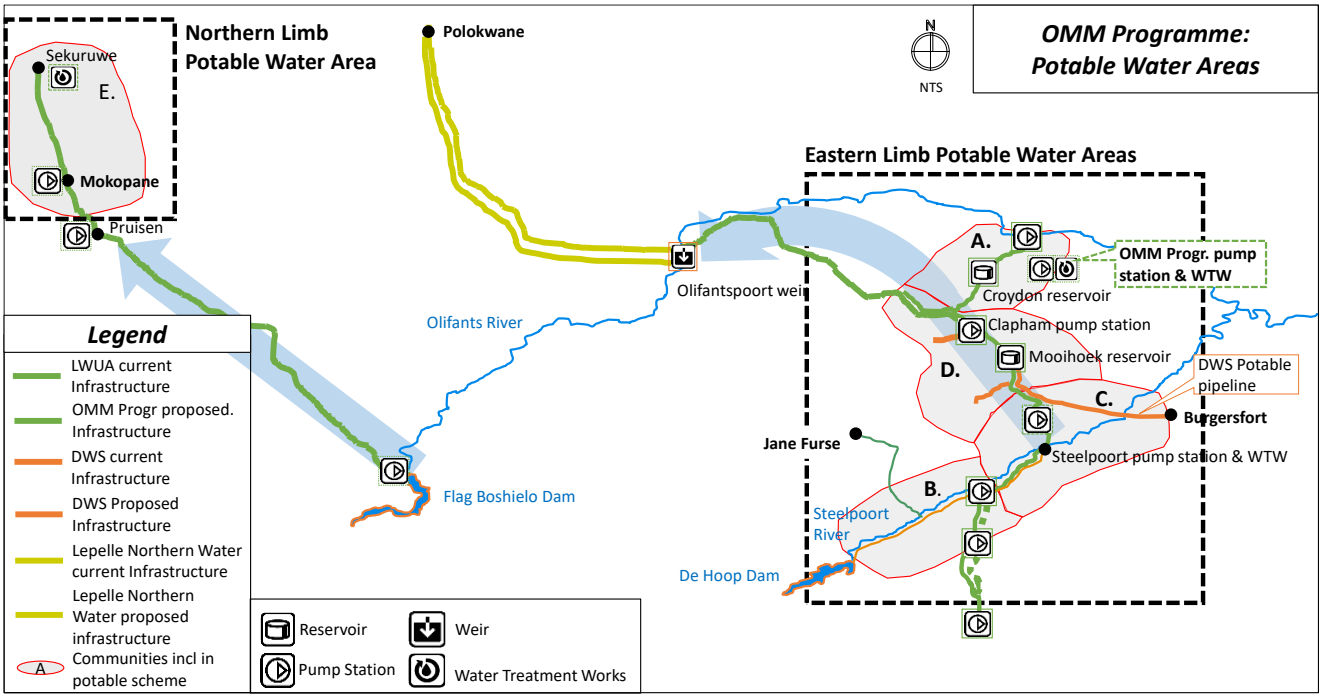
1.2.1 Potable Areas

The two projects to provide potable water to communities are the Northern Limb Potable Project and Eastern Limb Potable Project respectively, and are divided into five sub-areas for purposes of planning:

1. Eastern Limb:
   - Area A: Havercroft to Clapham junction community area
   - Area B: De Hoop to Spitskop community area
   - Area C: Steelpoort to Burgersfort community area. Note that this project includes routing of bulk potable water to the Burgersfort community as well
   - Area D: Mooihoek community area.
2. Northern Limb:
   - Area E: Communities along the northern portions of pipeline 2B+

These areas are graphically illustrated in 'Figure 8' below.

Figure 8 – OMM Programme Potable Water community areas



1.3 Capital Projects

From the Integrated OMM Programme Plan, five projects were identified to be further developed, namely two bulk water pipelines, a new pump station and two potable water projects. The development of these are described in the sections below including the projects' description, key objectives and benefits, design considerations, scope, risks, schedule and estimated costs.

1.3.1 Bulk Raw Water Project ORWRDP Phase 2F

1.3.1.1 Project Description

Bulk raw water ORWRDP phase 2F: Gravity steel pipeline from Clapham pump station to Olifantspoort Weir.

1.3.1.2 Project Objective and Benefits

Objective:

The primary objective of the project is to feed bulk raw water from the Mooihoek reservoir, as well as to consolidate water from aquafers and Havercroft weir, and route such to the Olifantspoort weir to supply Polokwane with an augmented water supply.

This project is a key link in relieving capacity constraints on the Olifants river by pumping water northwards from the De Hoop Dam to Polokwane.

Benefits:

The benefits from the project are to provide a total bulk pipeline capacity of 85 Ml/d, sized to optimize the Olifants River system balance with offtakes as follows:

1. Total raw water off-take from Olifantspoort weir to Polokwane: 60 – 75 Ml/d
   The commercial portion of the water supply agreement will be 10 Ml/d, as follows:
   Additional off-take capacity: 15 Ml/d – The balance of the water to go to Polokwane for social water.

***Note** – The routing of 85 Ml/d will only be possible if and when ORWRDP phases 2D and 2E are constructed.*

1.3.1.3 Project design description

The process that was followed for the Concept design was as follows:

1. An initial design study was conducted by the technical design consultant, namely Infraburo Civil and Structural Consulting Engineers.
2. This was reviewed by the OMM PMU in terms of the wider Integrated OMM Programme Plan for purposes of integrating business benefits, scope, schedule, risk, cost, contracting and water balancing.

Sequencing of project elements:

Additional water capacity from the Mooihoek reservoir to Clapham pump station is not anticipated to be required in the short to medium term (10 – 20 years). Consequently, the scope of the proposed project will exclude any additional pipelines from Steelpoort to Mooihoek (ORWRDP D), and Mooihoek to Clapham pump station (ORWRDP 2E) at this point. Current pressure from the Mooihoek reservoir in the current LWUA pipeline will be utilised by constructing a bypass around the Clapham pump station, and with an additional link to the Clapham pump station. For purposes of longer-term future planning, the potential additional pipeline from Mooihoek to Clapham pump station is provided in the diagrammes that follow for sake of completeness.

Two options were considered for purposes of gravity feed (please refer to the figures on the next page and thereafter):

Option A (not preferred): Gravity feed from Croydon reservoir. This maximises the asset life of existing infrastructure and maximises the Motse river in lieu of the Olifants river. It also provides a potential redundancy to Option B below in the event of temporary mechanical failures in Option B infrastructure. However, this option has the following disadvantages:

- Constrains ultimate delivery capacity;
- Abstraction is not from the De Hoop Dam, i.e. it does not solve the need for rerouting water in a northerly direction from Steelpoort river to Olifants river;
- Loses hydraulic head as it is a circuitous route;
- Risk of insufficient head to overcome a geographic high point; and
- Higher operational cost.

Option B (preferred): Gravity feed water with a hydraulic head from the Mooihoek reservoir utilising the current LWUA pipeline (i.e., reverse current water flow to a south to north direction), but bypassing Clapham pump station.

The project will include:

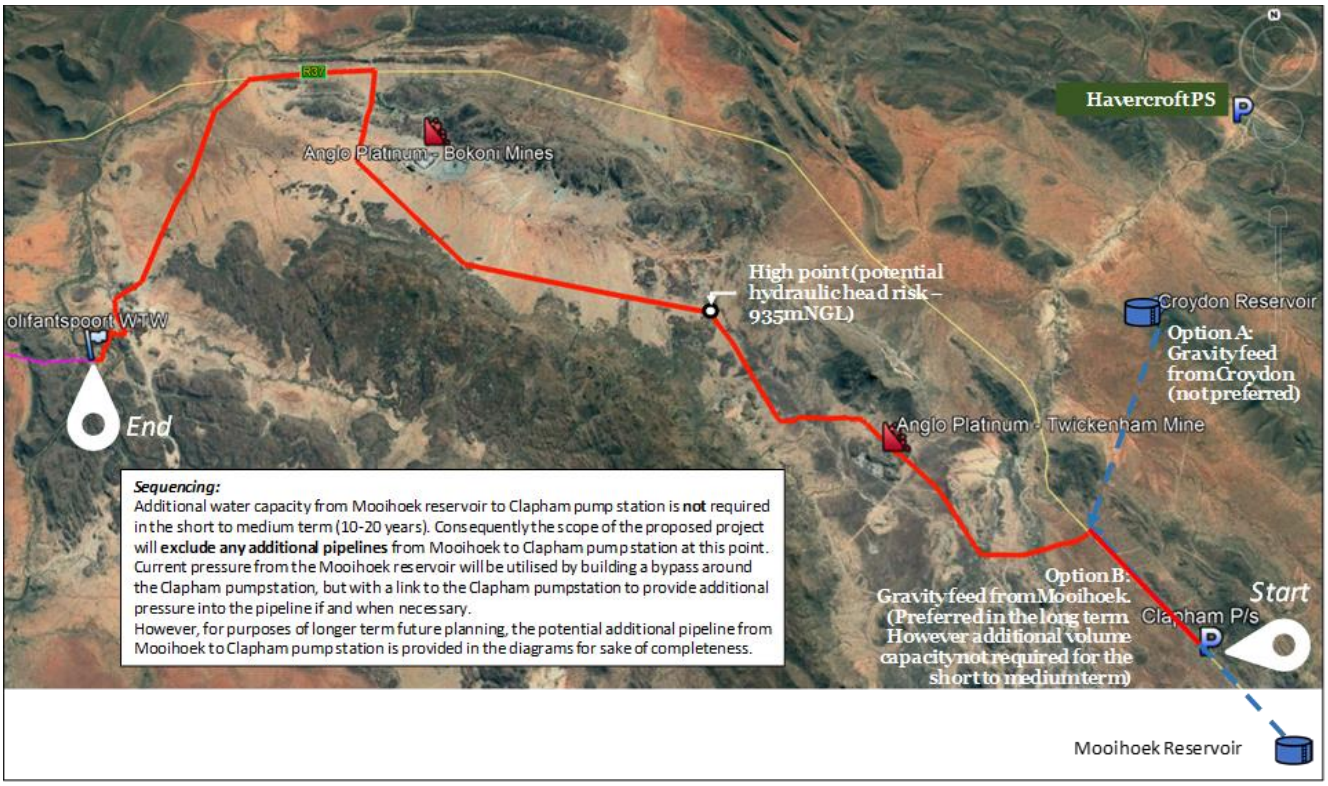
- Constructing a new 5.5 km line from Clapham pump station towards Clapham junction;
- Constructing a new pipeline from the Clapham junction area to Olifantspoort WTW (52 km); and
- Total pipeline length: 58 km.

While this option does not optimise the current assets as much as Option A, it has the following advantages:

- Requires lower initial CAPEX;
- Its full lifecycle cost is substantially lower;
- Creates immediate higher capacity; and
- Abstraction is from the De Hoop Dam on the Steelpoort river.

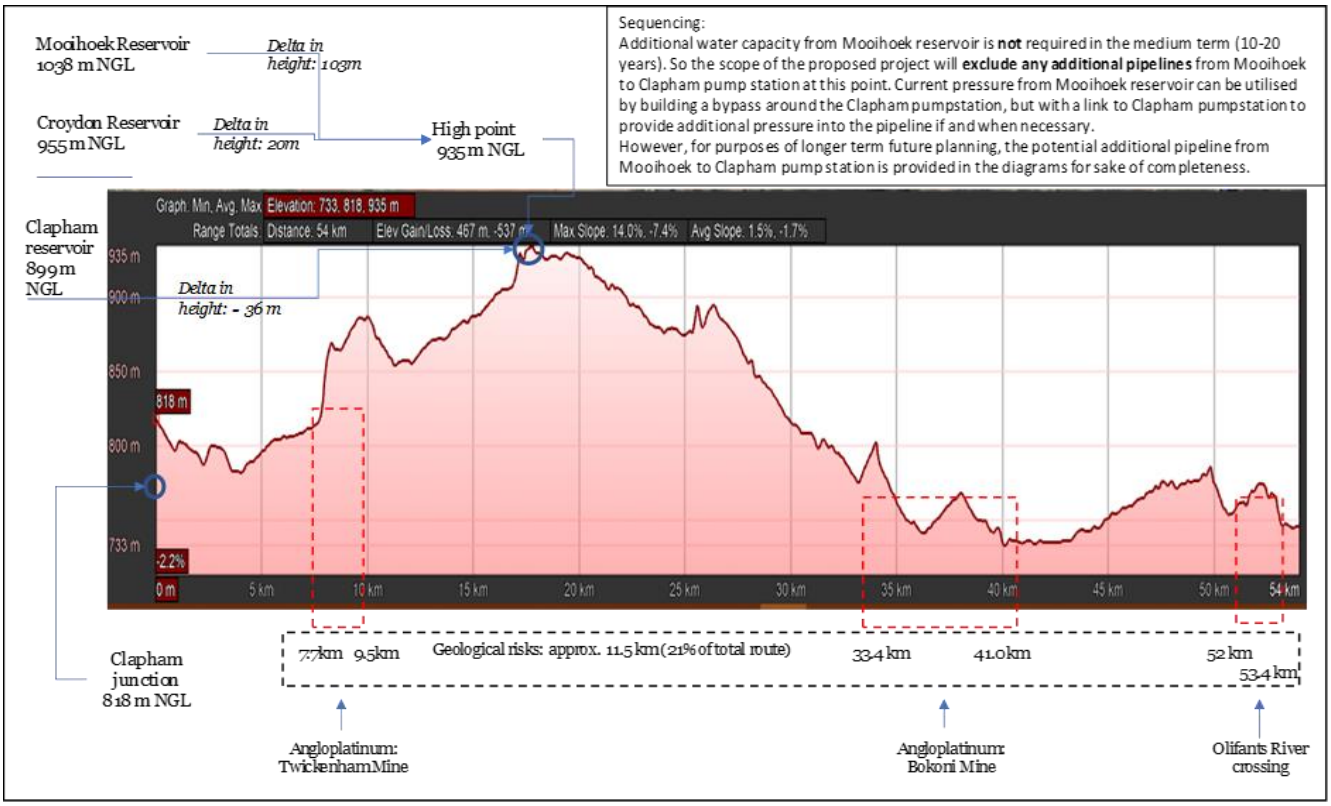
For this reason, it is the preferred option. The ‘Figure 9’ on the next page describes the approximate route of the two options considered.

Figure 9 – Pipeline 2F – approximate potential route showing the two alternative routes



The 'Figure' 10 on the next page illustrates the approximate long section of the preferred route, including the hydraulic high point downstream of the Clapham junction that requires consideration. The long section also highlights potential geological risks of hard rock along the route. The hard rock sections were scaled from high level aerial maps. These will need to be investigated in Pre-feasibility and Feasibility Stages.

Figure 10 – Pipeline 2F - approximate long section and hydraulic high point considerations



Option B was considered as the preferred option for purposes of gravity feed given the design conditions described above. The design consultant for the Concept phase (Infraburo Civil & Structural Consulting Engineers) therefore prepared a Concept level scope, cost and potential schedule as described in the paragraphs below for Option B only.

1.3.1.4 Technical Scope of the Project

The scope of the project is proposed as follows:

1. 58 km of high and medium pressure steel pipeline;
   Nominal Diameter (ND) sections as follows:
   - 1200 ND, 10mm wall thickness, 9.226 km;
   - 1000 ND, 10 mm wall thickness, 9.604 km;
   - 800 ND, 8 mm wall thickness, 31.34 km; and
   - 700 ND, 8 mm wall thickness, 7.96 km.

   Outside Coating of Medium-density polyethylene (MDPE);
   Inside lining: Cement Mortar Lining (CML) or Solvent Free Epoxy;
   Valves: 20 isolating valves, 120 air valves, 40 scour valves. Total – 180;
   Cathodic protection;
   Suspension bridges: 8;
   Pressures: 23 to 32 bar;
   Pipejacking: 400m under surfaced roads;
   Pipeline markers: 200; and
   Independent surge analysis.

The following assumptions were made during the design:

1. The current LWUA pipeline from the Mooihoek reservoir to Clapham pump station will have to be investigated for confirmation of capacity and condition.
2. The hydraulic high point midway along the pipeline is assumed as acceptable. This requires further investigation during Pre-feasibility and Feasibility Stages, however.
3. Pipes buried: 1.3 m cover.
4. Industry estimates were used for %'s of rock, boulder and intermediate excavation.
5. Surge protection at pump stations is based on similar projects from KSB Pumps.
6. Assume that construction will be split into sections with different contractors per section.

1.3.1.5 Technical Risks

The following initial project specific risks were identified:

1. The potential for a higher than estimate % of hard rock and boulders could exist, especially in light of the igneous geology, especially at the following approximate chainages: 7 – 9.5 km, 33.4 – 41 km, 52 – 53.4 km.
2. The hydraulic high point downstream of the Clapham junction may threaten the gravity feed option, and thus necessitate alternative solutions, and thus add additional costs.

A number of OMM Programme risks were identified, i.e. risks which are common to the OMM Programme and are documented in Section 1.6 of the Strategic Case.

1.3.1.6 Schedule

An indicative schedule for execution is proposed in Section 2.6 of the Economic Case, with further detail in Attachment C.

1.3.1.7 Issues for Further Investigation

From the Concept design, the following issues were identified as requiring further investigation in the next phase of development:

1. Geographic high point: Evaluate the required solutions to potentially overcome a hydraulic high point downstream of the Clapham junction. This could threaten the gravity feed option, which could result in the addition of a pump station;
2. Investigate the current LWUA pipeline from the Mooihoek reservoir to Clapham pump station, and the new pipeline around the pump station and onwards towards the Olifantspoort weir to confirm capacity and condition. Propose solutions as required;
3. Investigate bypass options around Clapham pump station; and
4. Investigate possible "shortcut" of pipeline route from near Bokoni mine directly to Olifantspoort WTW, i.e. potentially reduce the length of the northern section of the pipeline towards road R37.

1.3.1.8 Estimated Cost

The estimated capital costs of this project are detailed in Section 4.1 of the Financial Case, with further detail in Attachment D.

1.3.2 Bulk Raw Water Project ORWRDP Phase 2B and 2B+

1.3.2.1 Project Description

Bulk raw water ORWRDP phase 2B and 2B+: Pipeline and three associated pump stations from Flag Boshielo Dam to Sekuruwe Water Treatment Works.

1.3.2.2 Project Objective and Benefits

Objective:

The primary objective of the project is to feed bulk raw water from the Flag Boshielo Dam to three Water Treatment Works (WTW) and four mines in the Northern Limb of the Bushveld Igneous Complex.

Aside from providing raw water to four mines, this project is key to providing water to Mokopane and a number of water-stressed communities in the Northern Limb. The WTW's will be the subject of separate projects, only one of which (Sekuruwe WTW) will be constructed under the OMM Programme, i.e. as part of the Northern Limb potable water project.

Benefits:

The benefits from the project are to provide a bulk pipeline with a total capacity of 120 Ml/d, with offtakes as follows:

1. Total raw water off take: 95 Ml/d as follows:
2. Commercial off take: 45 Ml/d
3. Social off take: 50 Ml/d

***Note** – While 95 Ml/d is assumed as the required demand at this point, it is suggested that the pipeline could be sized for a maximum capacity of 120 Ml/d for future planning purposes. This extra potential capacity is to be confirmed in the Pre-feasibility and Feasibility Stages.*

1.3.2.3 Project Design Description

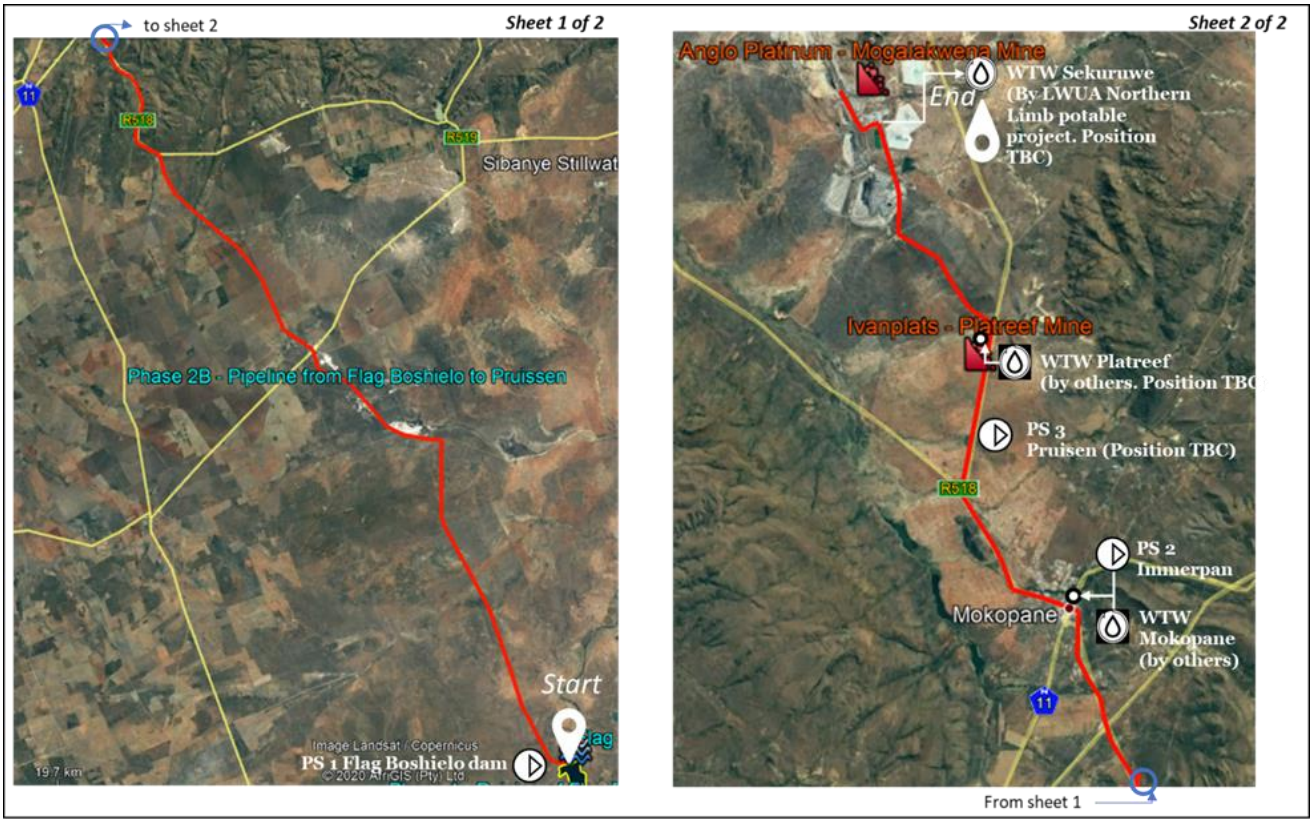
The process that was followed for the Concept design was as follows:

1. An initial design study was conducted in 2019 by the technical design consultant, namely Infraburo Civil and Structural Consulting Engineers.
2. This was reviewed by the OMM PMU in terms of the wider Integrated OMM Programme Plan for purposes of integrating business benefits, scope, schedule, risk, cost, contracting and water balancing.

The Concept Design proposes 121 km of medium and high-pressure steel pipeline with three pump stations.

The approximate route plan is illustrated in 'Figure 11' below.

Figure 11 – Approximate route of pipeline 2B & 2B+



The figures on the next page illustrate the approximate long section of the approximate route, including highlights of the potential geological risks of hard rock along the route.

The hard rock sections were scaled from high level aerial maps. These will need to be investigated during the Pre-feasibility and Feasibility phases.

Figure 12 – Pipeline 2B and 2B+: approximate long section (sheet 1 of 2)

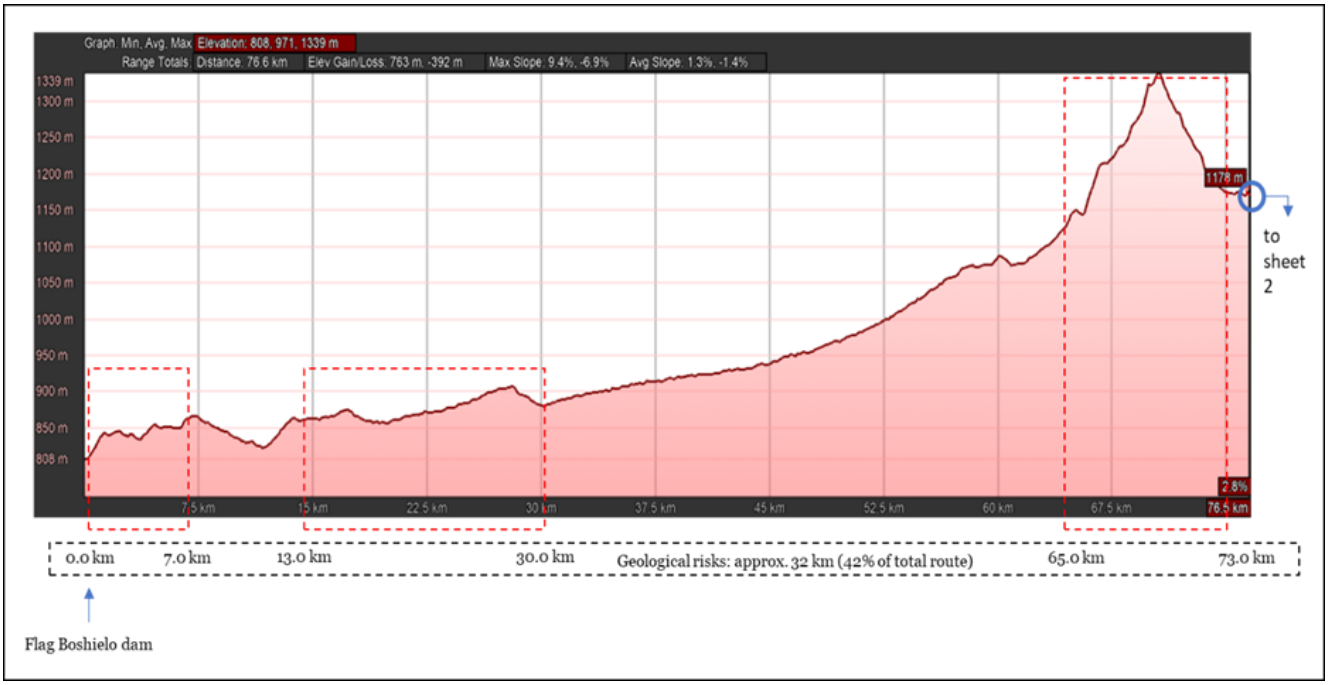
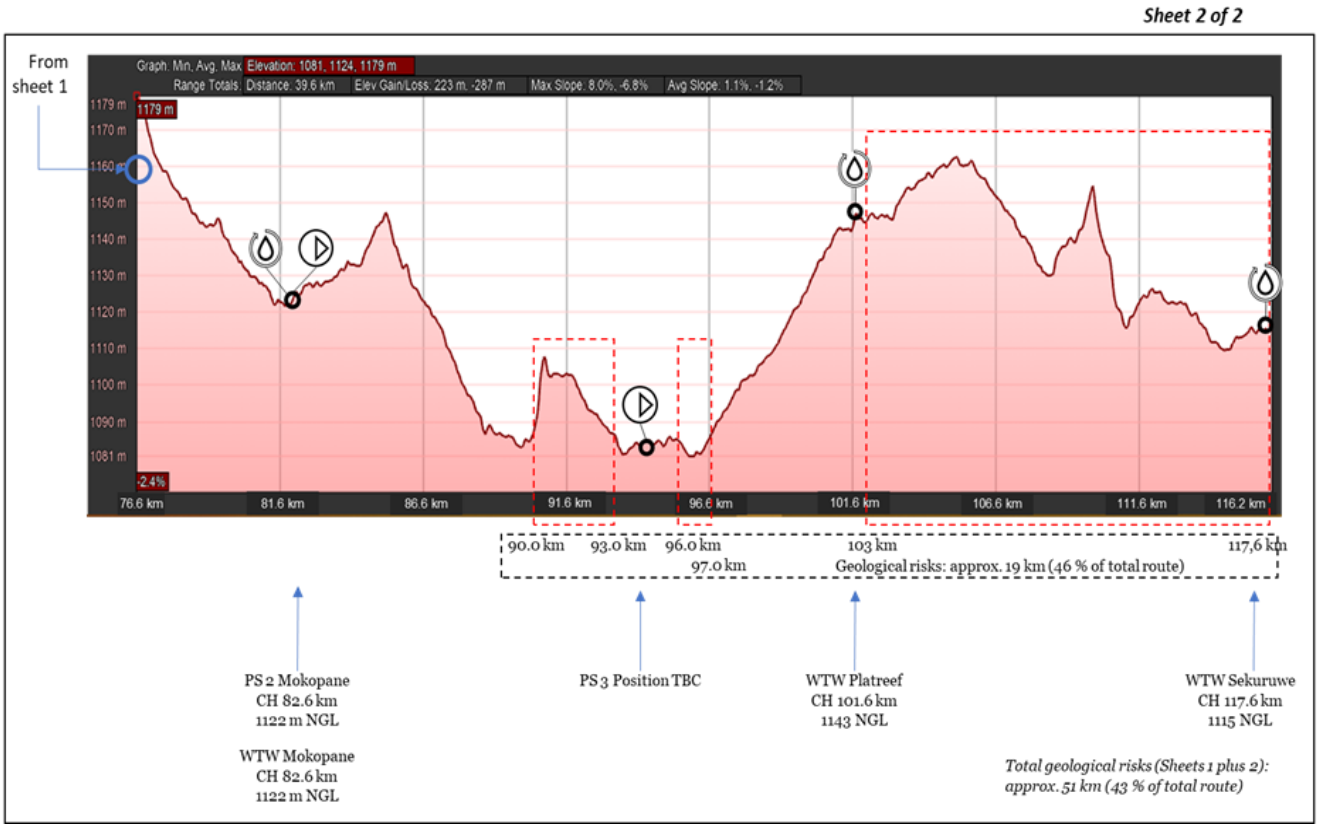


Figure 13 – Pipeline 2B and 2B+: approximate long section (sheet 2 of 2)



1.3.2.4 Scope of the Project

The scope of the project is proposed as follows:

1. 121 km, high and medium pressure steel pipeline:
   - 1400 mm ND Steel Grade x42, SAW-H, 12mm wall, 43.46 km;
   - 1300 mm ND Steel Grade X42, SAW-H, 12mm wall, 21.27 km;
   - 1200 mm ND Steel Grade X42, SAW-H, 10mm wall, 5.69 km;
   - 1050 mm ND Steel Grade X42, SAW-H, 10mm wall, 24.75 km;
   - 950 mm ND Steel Grade X42, SAW-H, 8mm wall, 7.0 km;
   - 850 mm ND Steel Grade X42, SAW-H, 8mm wall, 7.65 km; and
   - 750 mm ND Steel Grade X42, SAW-H, 8mm wall, 10.910 km.

   Outside Coating Polymer Modified Bitumen (PMB);

   Inside lining SF Epoxy 400um;

   Pressures: 27 to 35 bar;

   Length of high-pressure pipeline: 43 km;

   Length of medium pressure pipeline: 114 km;

   Valves: isolating 40, air 245, scour 80. Total 365;

   Surge protection at pump stations;

   Cathodic protection;

   Pump stations: 3;

   Storage facilities at 2 pump stations (storage at PS1 not required since there is direct feed from Flag Boshielo Dam);

   Access roads;

   Suspension bridges: 7;

Bulk electricity supply: 132 kV overhead lines from sub-stations to pump station sites, and sub-stations (utilise Eskom power);

3 Charlotte Bladder Surge Tanks of 40m3 at each pump station; and

Pipeline markers: 255.

It is to be noted that certain sections of the pipeline already exist and will be utilised as required.

The following assumptions were made during the Concept design:

1. Utilise Eskom bulk power supply (not renewables) for purposes of costing at this stage. Construct 132kV overhead powerline from sub-stations to the envisaged pump station sites and construct sub-station at each pump station. However, it is known that there is little to no energy infrastructure in the area currently. Consequently, renewable power will need to be investigated at the next design stage;
2. WTW number 1 will be at Mokopane, not Pruissen (to be delivered by the Municipality);
3. WTW number 2: to be constructed to the north west of Mokopane, between Platreef and Mogalakwena offtakes to provide potable water to rural areas (to be delivered by others);
4. WTW number 3 at Sekuruwe (close to Anooraq offtake), will be constructed under OMM WUA Northern Limb Potable Project Area E;
5. Pump stations' flow velocity:
   - Pumpstation 1 – 1.62 m/s;
   - Pumpstation 2 – 1.69 m/s; and
   - Pumpstation 3 – 1.32 to 1.49 m/s.
6. 24 hr storage capacity;

7. Storage at pump stations: It is proposed that water storage structures be provided at each pump station, as well as emergency overflow, scour works, and suitable material be found for the construction of embankments and lining of the dams. The approximate dimensions per dam will be 2x (86 m x 86 m x 6m).
8. Two dams will be required at each pump station. An allowance is made for a 0.5 m freeboard in each storage area;
9. Each pump station will utilise 4 pumps on duty, with 1 additional on standby, i.e. 5 in total;
10. Control and instrumentation stations at every 12 km along route, power provided from renewable sources;
11. Cathodic and surge protection to be included;
12. Geotechnical information was not readily available, and therefore estimates were applied for percentage allowances for excavations;
13. Water pressures will be between 27 bar and 35 bar;
14. Pipes buried: 1.3m cover;
15. Pipejacking under several road crossings and railway crossings;
16. Surge protection at pump stations based on similar projects from KSB Pumps;
17. Cost of electrical cabling, MCC's, PLC's, SCADA systems, VSD's and HVAC checked by Buro Tech cc;
18. Cost estimate of bulk electricity supply based on information from discussions with Eskom and Buro Tech cc, and Consulting Electrical Engineers; and
19. Assume that construction is split into sections with different contractors per section.

1.3.2.5 Technical Risks

The following initial project specific risk was identified:

1. The potential for a higher than estimate % of hard rock and boulders could exist, especially in light of the igneous geology, especially at the following approximate chainages: 0 – 7 km, 13 – 30 km, 65 – 73 km, 90 – 93 km, 96 – 97 km, 103 – 117 km.

A number of additional OMM Programme risks were identified, i.e. risks which are common to the OMM Programme and documented in Section 1.6 of the Strategic Case.

1.3.2.6 Schedule

An indicative schedule for execution is proposed in Section 2.6 of the Economic Case, with further detail in Attachment C.

Long lead time frames are considered for the following items:

1. Steel piping; and
2. Cement.

1.3.2.7 Issues for Further Investigation

From the Concept design, the following issues were identified as requiring further investigation in the Pre-feasibility and Feasibility phases:

1. Evaluate an option of renewable energy source for pump stations, versus, the current assumed Eskom power supply;
2. Evaluate optimal location of pump stations, especially PS3;

3. Evaluate optimal position of WTW near Sekuruwe; andEvaluate optimal route of pipe considering geological risks, especially at CH's: 0 – 7 km, 13 – 30 km, 65 – 73 km, 90 – 93 km, 96 – 97 km, 103 – 117 km).

1.3.2.8 Estimated Cost

The estimated capital costs of this project are detailed in Section 4.1 of the Financial Case, with further details in Attachment D.

1.3.3 Bulk Raw Water Project: New Pump Station Between Steelpoort and Mooihoek

1.3.3.1 Project Description

Construction of a new pump station and associated reservoir between Steelpoort and Mooihoek reservoir and re-commissioning of pumps at the DWS Steelpoort pump station to facilitate the pumping of raw water from the Steelpoort river (from the De Hoop Dam) northwards up to the existing Mooihoek reservoir.

1.3.3.2 Project Objective and Benefits

Objective:

The primary objective of the project is to augment the supply of bulk raw water to Mooihoek reservoir through reverse pumping water in a southerly to northerly direction from Steelpoort through the current LWUA pipeline.

In the longer term, the pump station could potentially also require pumping of water through future ORWRDP pipeline phase 2D with the purpose to increase supply to Polokwane.

This project is key to increasing the potential supply of bulk raw water to new pipeline 2F of 85Ml/d, and thus increasing the supply of bulk raw water to the proposed new 2F+ pipeline to Polokwane (to be delivered by Lepelle Northern Water) and thus deferring ORWRDP phases 2D and 2E.

Since the southerly to northerly direction is mainly uphill, the pump station and its associated reservoir is a key link in the programme.

The DWS pumps at Steelpoort pump station have been out of commission for several years, hence a condition assessment will be included in the pre-feasibility stage to assess what refurbishment, if any, may be required. Depending on the condition of the DWS pumps and the current LWUA pipeline, the capacity of the new pump station will be adjusted accordingly to augment the DWS pumps to ensure at least 85 Ml/d to phase 2F. Current capacity of the LWUA pipeline to flow in a northerly direction is assumed to be between 22 Ml/d and 26 Ml/d.

Benefits:

The benefits from the project will be a new pump station that allows pumping from De Hoop Dam to Olifantspoort weir, via the Mooihoek reservoir, by reversing of the current north to south water flow.

The total long-term capacity of the pump station is dependent on the usage demand if and when ORWRDP Phase 2D goes ahead:

1. If ORWRDP Phase 2D does not go ahead, the maximum capacity of the pump station will be 26 Ml/d (360 l/s pumping at 20 hrs/day)

2. If ORWRDP Phase 2D does go ahead, then the capacity of 2D is to be included, therefore the capacity of the pump station could be 111 Ml/d.

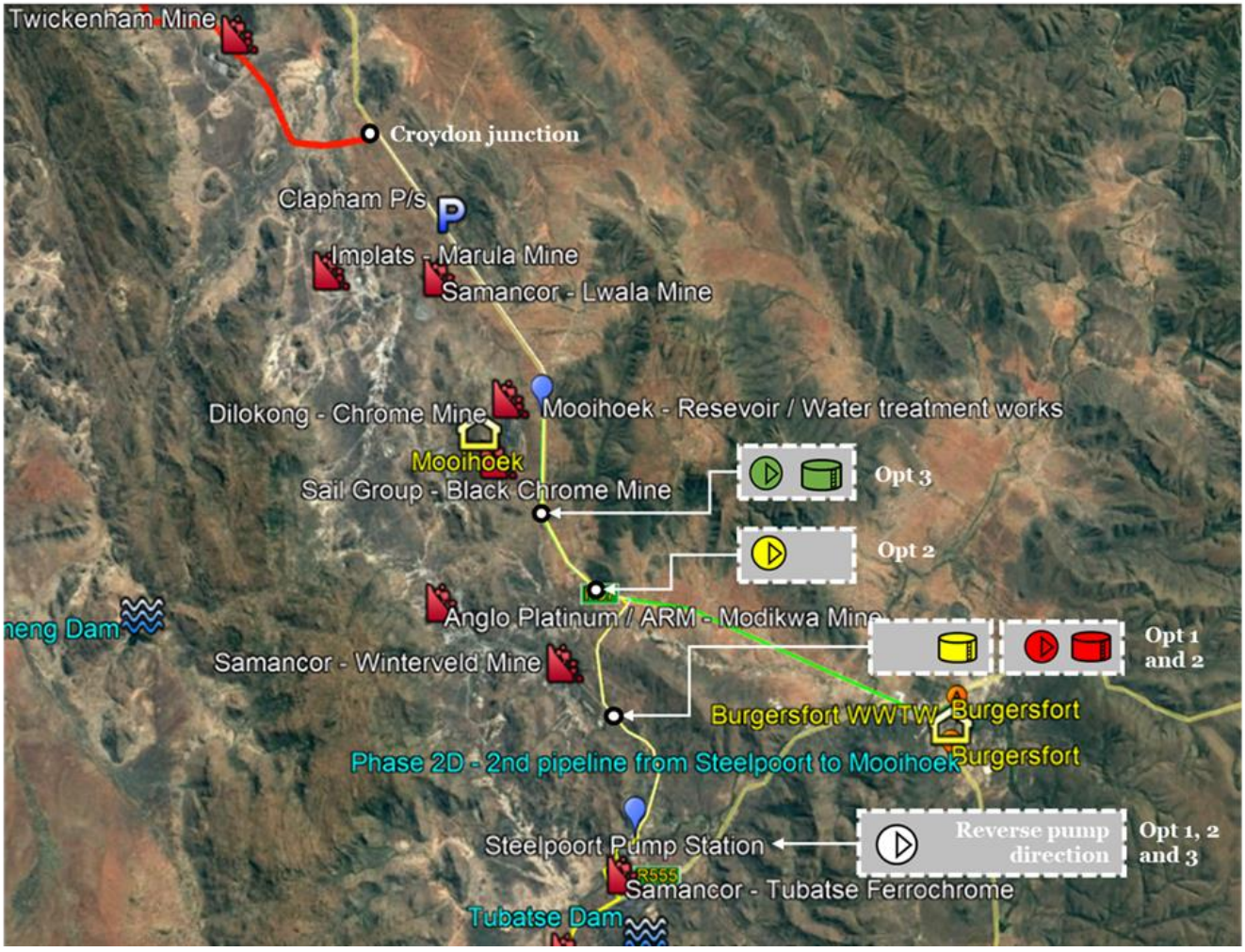
1.3.3.3 Project Design Description

The process that was followed for the Concept design was as follows:

1. A feasibility study was conducted by the technical design consultant, namely C2D Engineering
2. This was reviewed by the OMM PMU in terms of the wider Integrated OMM Programme Plan for purposes of integrating business benefits, scope, schedule, risk, cost, contracting and water balancing.

The 'Figure 14' on the next page shows the current Steelpoort pump station and Mooihoek reservoir and the three potential options for positions for the new pump station and reservoir.

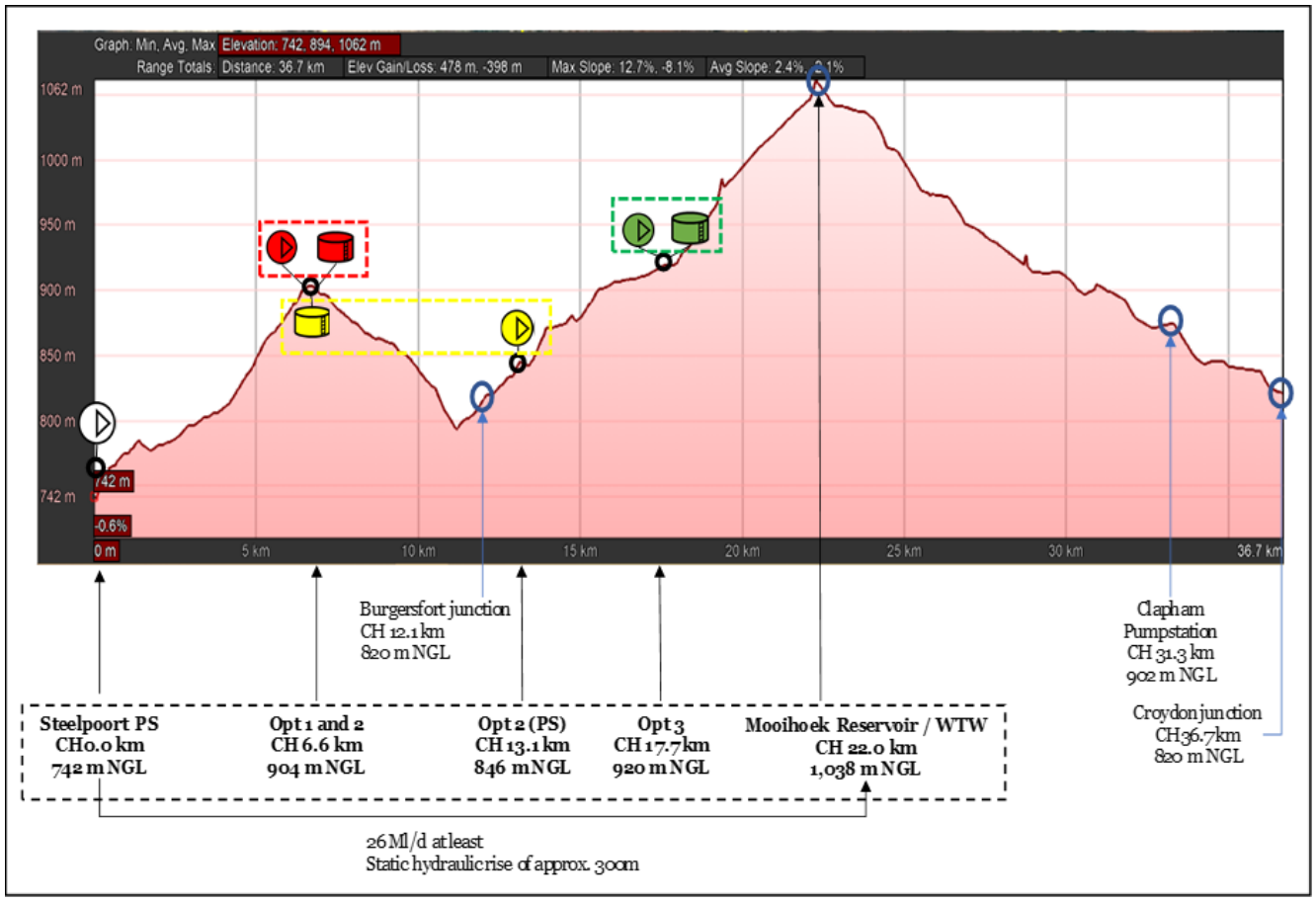
Figure 14 – Possible options for the positioning of the new pump station and reservoir



The 'Figure 15' on the next page illustrates approximate hydraulic elevations of the possible three options for the pump station and reservoir.

The hard rock sections were scaled from high level aerial maps. These will need to be investigated during the Pre-feasibility and Feasibility phases.

Figure 15 – Approximate static hydraulic elevations of LWUA Steelpoort to Mooihoek pump station and reservoir options



1.3.3.4 Scope of the Project

The scope of the project is proposed as follows:

1. One new pump station;
   One new break-pressure reservoir (20 - 25 Ml earth fill);
   Eskom transmission and connection;
   Access road;
   Relocations and land acquisition;
   Inspection and possible minor refurbishment of Steelpoort pumps;
   SCADA - design and installation;
   Mechanical works;
   Civil works;
   Bridges and river crossing; and
   Electrical and electronic equipment including Variable Speed Drive
   Re-commissioning of pumps at the DWS Steelpoort pump station.

This scope includes the following assumptions:

1. Electrical: bulk Eskom power is currently available, however there is an immediate need to consider renewable alternatives to reduce high OPEX costs;
2. The current pipe capacity, north to south water flow, is 22 Ml/d (assumed 289 l/s pumping at 20 hrs/d). However, if water is pumped at 360 l/s in direction south to north, then capacity could be 26 Ml/d;
3. The current installed pump station at Steelpoort can accommodate the required discharge, and that the current asset life cycle condition will be sufficient for new life cycle demand. Minor works on Steelpoort pump station could be needed as it would have been unused for some years. It is to be noted that the current pump station at Steelpoort was originally designed to pump in a northerly direction;
4. If phase 2D does not go ahead, current pipeline infrastructure is operable under new pressures (currently is 11 – 15 years old);
5. The nearby Eskom power supply is used for purposes of Concept design;
6. Flow rates of either 289 l/s or 360 l/s can be assumed as technically feasible;
7. Current pipelines' Cement Mortar Lining (CML) damage is low and won't be a restriction on new demands; and
8. Assumed 24hr storage reservoir capacity, then storage capacity would be 20 – 25 Ml with a peak factor of 1.2.

1.3.3.5 Technical Risks

The following initial project specific risks were identified:

1. The condition of the current Steelpoort pump station may not be sufficient for the new asset lifecycle demand, therefore the current condition of the Steelpoort pump station should be assessed during the Pre-feasibility and Feasibility phases of the OMM Programme;
2. The condition of the current pipeline of ND 650 (constructed in 2003) and ND 500 (constructed in 2007) is not yet confirmed. The condition may not be sufficient for the new asset lifecycle demand. Therefore, the current condition of the pipelines should be assessed during the Pre-feasibility and Feasibility phase of the OMM Programme; and
3. The condition of the current ND 650 (constructed in 2003) and ND 500 (constructed in 2007) is not yet confirmed with specific reference to the Cement Mortar Lining (CML) condition. Therefore, a drained CCTV qualitative inspection should be included in the Pre-feasibility and Feasibility study.

4. A number of OMM Programme risks were identified, i.e. risks which are common to the OMM Programme and documented in Section 1.6 of the Strategic Case.

1.3.3.6 Schedule

An indicative schedule for execution is proposed in Section 2.6 of the Economic Case, with further detail in Attachment C.

This following key schedule dependencies were noted:

1. Public consultation;
2. Environmental impact assessment;
3. Environmental applications/ authorisations;
4. Land acquisition;
5. Water use license approval;
6. Long lead times of special materials such as steel pipes, mechanical equipment and cement; and

7. Condition of current Steelpoort pump station.

1.3.3.7 Issues for Further Investigation

The following should still be investigated and confirmed during the Pre-feasibility and Feasibility phases:

1. When the water demand from ORWRDP Phase 2D will be required. The required flow rate (289 l/s or 360 l/s) should be investigated;
2. The possibility of the use of renewable energy sources in lieu of Eskom supplied power should be investigated. It is advantageous to locate renewable energy source close to communities to supply power for both commercial and community use;
3. The optimal position of a new pump station and reservoir should be investigated (three options);
4. The availability of land close to the Modikwa road branch close to road R37 should be investigated; and
5. The possibility of extending the current assets' lifespan to the lifecycle requirement of the new asset should be investigated. Assuming 2D is commissioned in 2035, the lifespan is possibly only required until then.

1.3.3.8 Estimated Cost

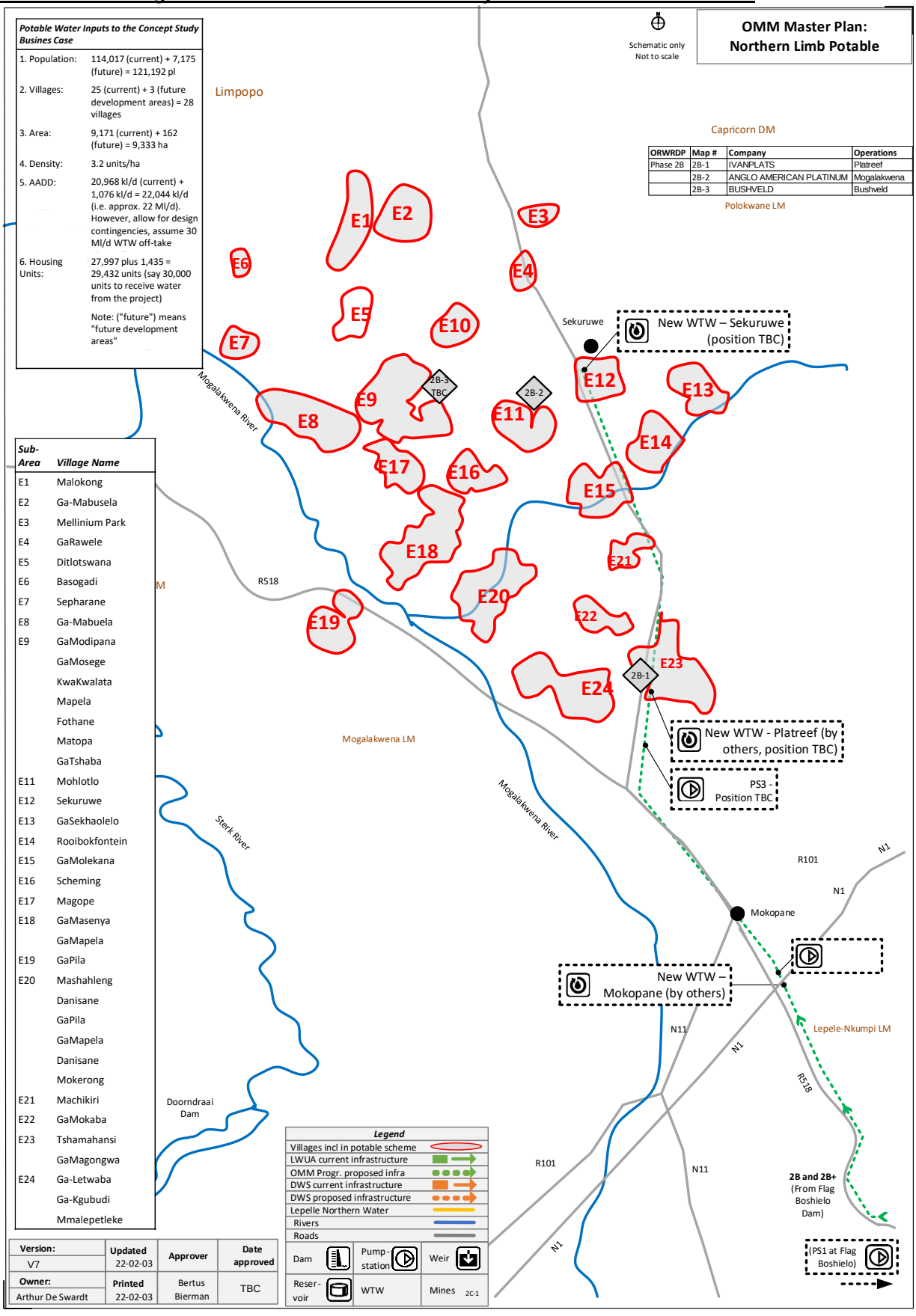
The estimated capital costs of this project are detailed in Section 4.1 of the Financial Case, with further detail in Attachment D.

1.3.4 Potable Water: Northern Limb

1.3.4.1 Project Description

The Potable Water Northern Limb project is a bulk and internal network reticulation project for the supply of potable water to community areas along the Northern Limb of the Bushveld Igneous Complex, designated as "Area E". This area is illustrated in the red areas in 'Figure 16'.

Figure 16: OMM Programme - Potable Water community areas in the Northern Limb



1.3.4.2 Project Objective and Benefits

Objective:

The primary objective of the project is to provide 30 Ml/d potable water to approximately 121,000 people in area E.
The level of service provided will be yard connections with a demand of 63 l/person/day (AADD).

Benefits:

The Northern Limb potable project sets out to serve communities generally along the pipeline route of project 2B+, as well as to the water stressed community of the Mogalakwena Local Municipality (MLM) (the treatment of the raw water at Mokopane will be done by others). This constitutes a significant investment into the communities by augmenting the supply of potable water ordinarily delivered by the relevant Water Services Authority (WSA).

The battery limits of the supply of potable water to communities have been defined and are available in more detail in the Concept design drawings. However, for sake of brevity, the project sets out to serve 121,000 people in rural communities as illustrated in 'Figure 17' and 'Figure 18' overleaf. This aside from augmenting water to the town of Mokopane.

The benefits from the project are summarised as follows:

1. Population: 114,017 (current) + 7,175 (future) = 121,000 people (approximately);
   Villages: 25 (current) + 3 (future development areas) = 28 villages;
   Area: 9,171 (current) + 162 (future) = 9,333 ha;
   Density: 3.2 units/ha;
   Average Annual Daily Demand (AADD): 20,968 kl/d (current) + 1,076 kl/d = 22,044 kl/d (i.e. approximately 22 Ml/d); and
   Housing units: 27,997 plus 1,435 = 29,432 units (say 30 000 units) that will receive water from the project.

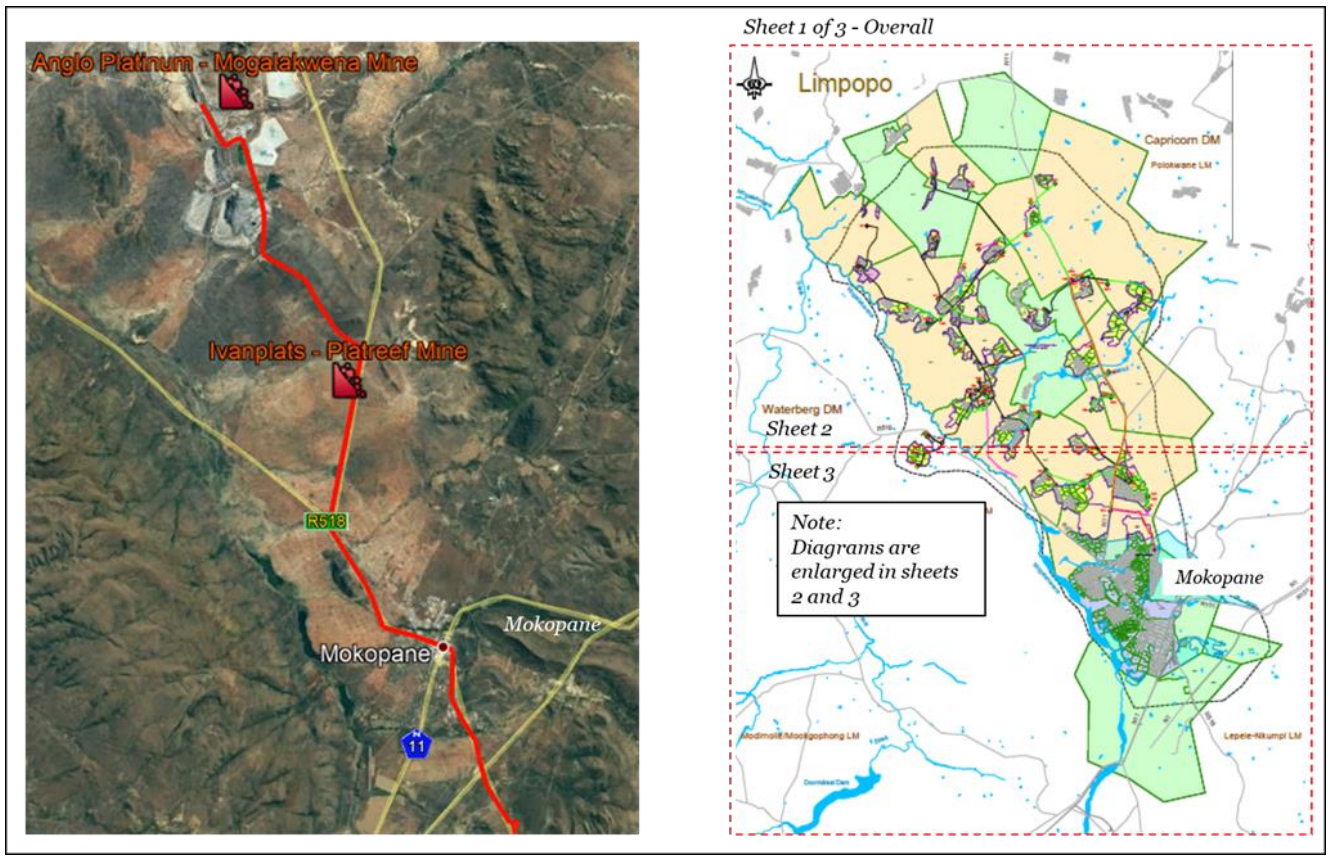
1.3.4.3 Project Design Description

The process that was followed for the Concept design was as follows:

1. An initial design study was conducted by the technical design consultant, namely Yenza Advisory Services; and
2. This was reviewed by the OMM PMU in terms of the wider Integrated OMM Programme Plan for purposes of integrating business benefits, scope, schedule, risk, cost, contracting and water balancing.

The figure on the next page shows the general overview of area E.

Figure 17 – OMM Programme Potable Water – Northern Limb area E (sheet 1 of 3)



The two figures on the next page show the communities that will be supplied with potable water in more detail.

Figure 18 – OMM Programme Potable Water – Northern Limb area E (sheet 2 of 3)

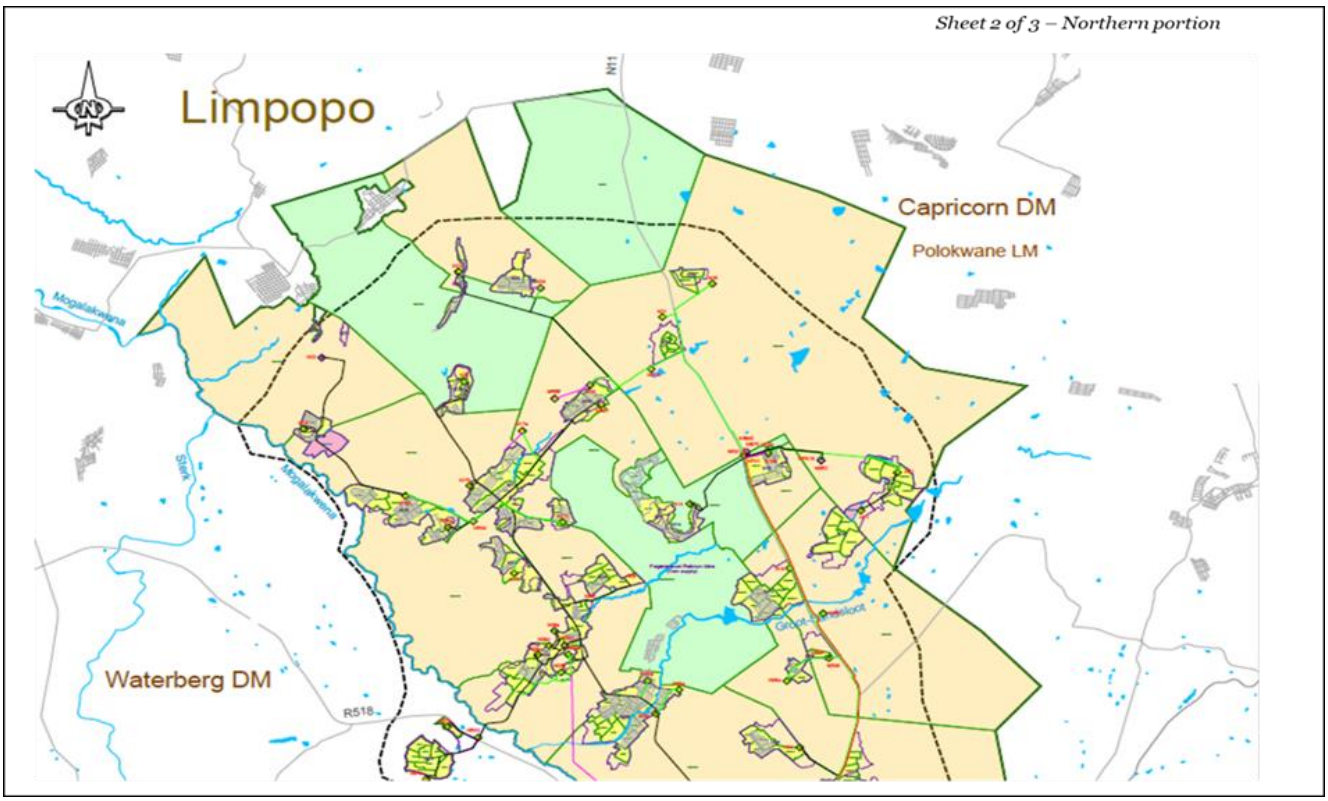
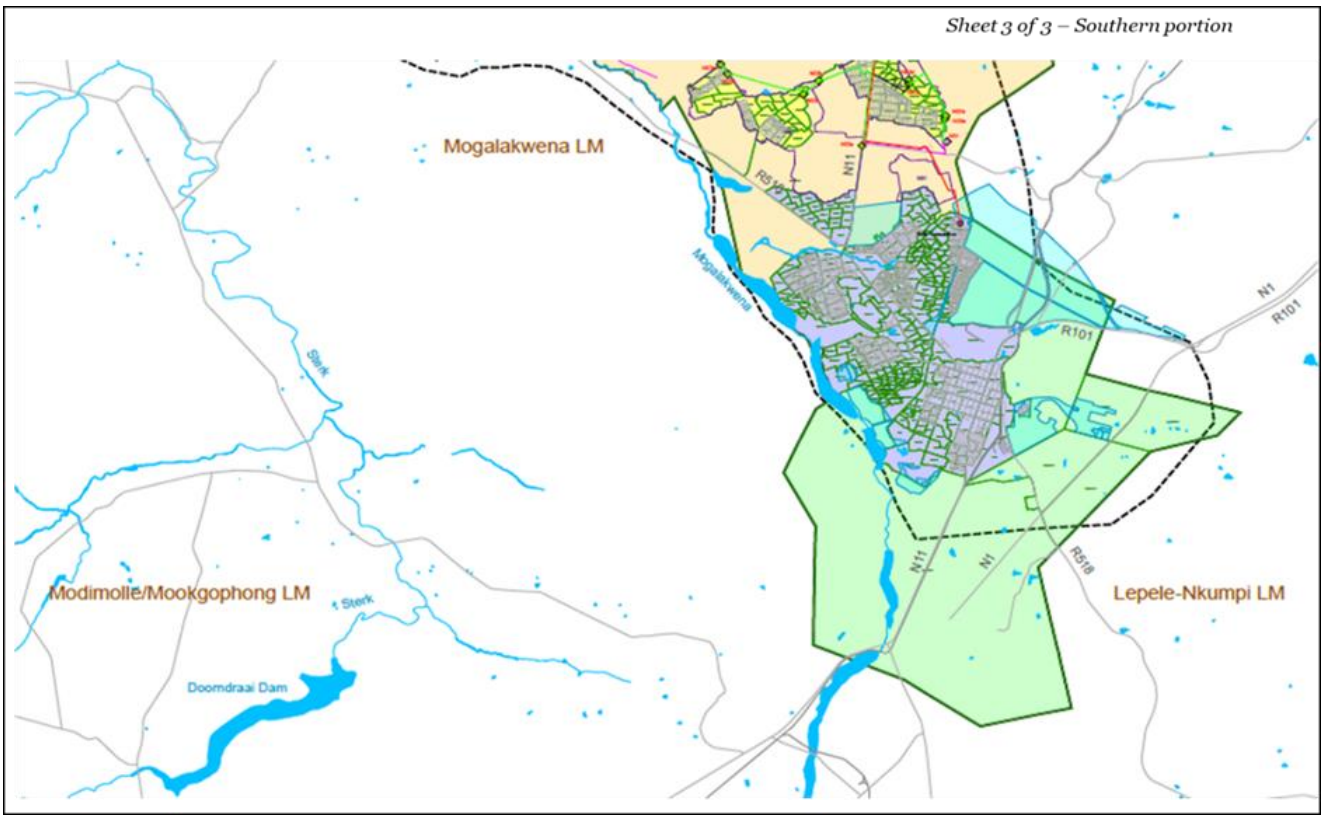


Figure 19 – OMM Programme Potable Water – Northern Limb area E (sheet 3 of 3)



The basis for proposing these villages was as follows:

1. Villages that are in relatively close proximity to the OMM Programme assets, mines participating in the programme, as well DWS infrastructure;
2. Villages that would benefit from bulk raw water provided via the OMM Programme;
3. Villages that are contained within hydraulic accessibility, i.e. where villages are within elevations and proximity to water resources that can be reasonably reached within technical constraints.

Names of villages included in the scheme

The names of the villages included in the scheme are indicated in Table 1 below. Note that these names are extracted from the GLS/ Yenza "Northern Limb Proposed Bulk Supply System, Scenario 2: Master Plan Layout, Figure 3. (Refer to the SDM BULK WATER SERVICES MASTER PLAN DRAFT 2.1: September 2014)".

Table 1: Names of villages included in the Northern Limb Potable Scheme

Sub-Area	Village Name	Concept design equivalent number
E1	Malokong	N23
E2	Ga-Mabusela	N24
E3	Mellinium Park	N25
E4	GaRawele	N21
E5	Ditlotswana	N20
E6	Basogadi	N22
E7	Sepharane	N19
E8	Ga-Mabuela	N16
E9	GaModipana	N17
	GaMosege	N17
	KwaKwalata	N17
	Mapela	N17
	Fothane	N17
	Matopa	N17
	GaTshaba	N17
E11	Mohlotlo	N14
E12	Sekuruwe	N15
E13	GaSekhaolelo	N12
E14	Rooibokfontein	N11
E15	GaMolekana	N10
E16	Scheming	N09
E17	Magope	N13
E18	GaMasenya	N08
	GaMapela	N08
E19	GaPila	N07
E20	Mashahleng	N05
	Danisane	N05
	GaPila	N05
	GaMapela	N05
	Danisane	N05

Sub-Area	Village Name	Concept design equivalent number
	Mokerong	N05
E21	Machikiri	N06
E22	GaMokaba	N04
E23	Tshamahansi	N03
	GaMagongwa	N03
E24	Ga-Letwaba	N02
	Ga-Kgubudi	N02
	Mmalepetleke	N02

1.3.4.4 Scope of the Project

The scope of the project is proposed as follows:

1. Pump stations (number): 3;
   New Water Treatment Works (number): 1 (Sekuruwe);
   Water treatment works (requirement): 30 Ml/d;
   Off-take Cap to Area E: 30 Ml/d;
   Reservoirs (number): 45;
   Water Towers (number): 36;
   Flow Control Valves (number): 52;
   Pipelines length (bulk): 163 km;
   Pipelines NDA (bulk): 110-700 mm; and
   Pipeline Length (reticulation): 664 km.

The scope excludes:

1. The use of any current existing and general reticulation network; and
2. Individual yard metering, storage and flow controls.

The following assumptions were made during the design:

1. Water delivery standard is individual yard connections;
2. Water demand is 50 l/d per person, plus 20% unaccounted for water, i.e. = 63 l/person per day;
3. Allowance for population growth/densification is 0% since a bulk over capacity is assumed at this point;
4. Population based on Geoterra data as at January 2020;
5. Include infrastructure for reticulation, bulk potable water, water towers, pumps, valves, electricity and related works;
6. Design standard based on the Red Book standards;
7. Bulk storage capacity of 36 – 48 hours;
8. For bulk demand purposes, assume 65 l/per person per day;
9. Land use distribution for current villages: "Mixed", and for future areas "Residential"; and
10. New water treatment works will be designed and build but others just north of Mokopane town

1.3.4.5 Technical Risks

No project specific risks have been identified yet.

A number of OMM Programme risks were identified, i.e. risks which are common to the OMM Programme and documented in Section 1.6 of the Strategic Case.

1.3.4.6 Schedule

An indicative schedule for execution is proposed in Section 2.6 of the Economic Case, with further details in Attachment C.
This following key schedule dependencies were identified:

1. Public consultation;
2. Environmental impact assessment;
3. Environmental applications / authorisations;
4. Land acquisition;
5. Water use license approval; and
6. Lead times of special materials such as steel pipes.

1.3.4.7 Issues for Further Investigation

The following should still be investigated and confirmed during the Pre-feasibility and Feasibility phases:

1. Confirm the options for the optimal position of the Sekuruwe water treatment works. Options to consider for the position of the water treatment works is either north of the supply area of the Mogalakwena local municipality or at Sekuruwe village; and
2. Water demand for population growth and densification projections.

1.3.4.8 Estimated Cost

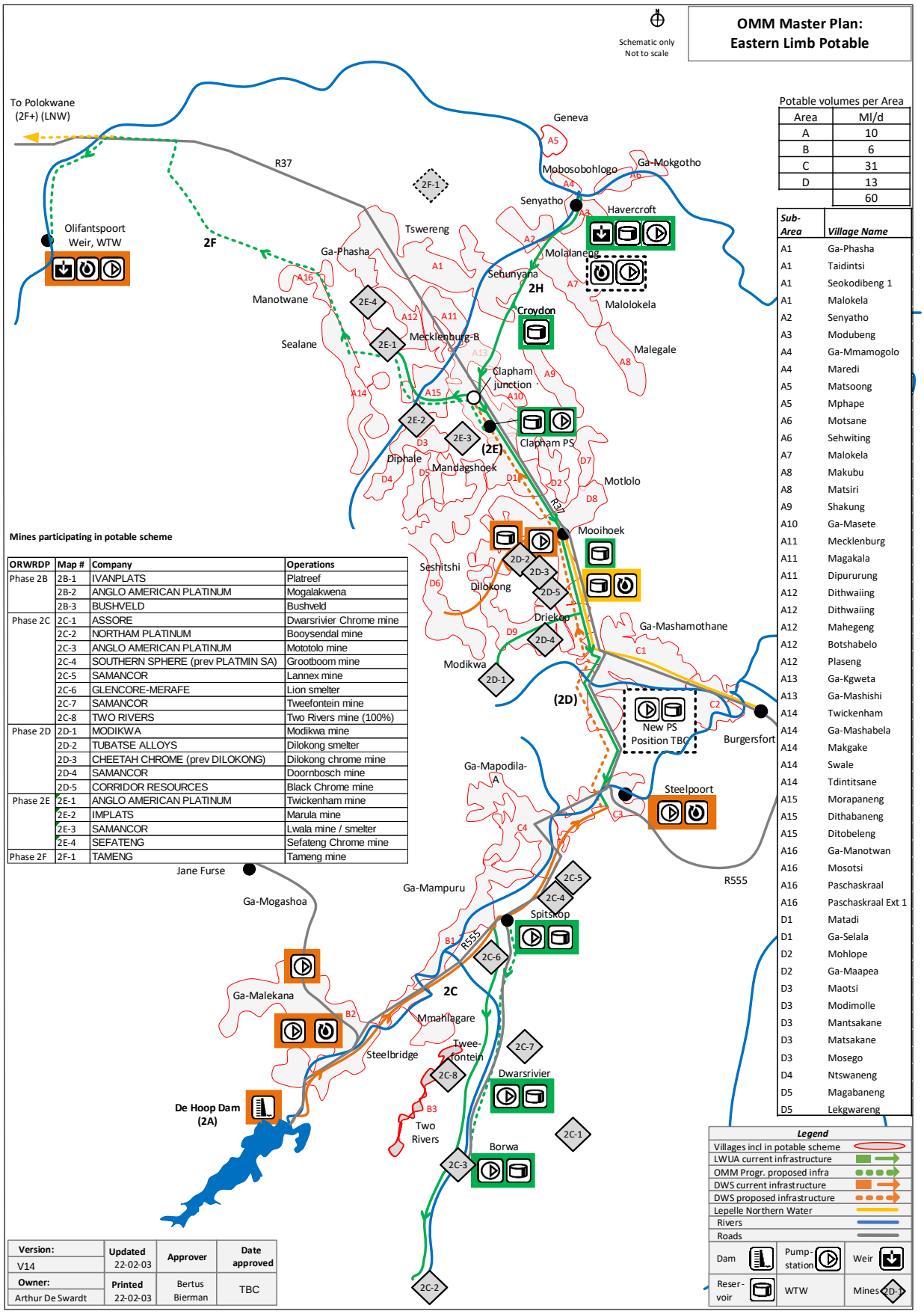
The estimated capital costs of this project are detailed Section 4.1 of the Financial Case, with further detail in Attachment D.

1.3.5 Potable Water: Eastern Limb

1.3.5.1 Project Description

The Potable Water Eastern Limb project is a bulk and internal network reticulation project for the supply of potable water to certain communities along the Eastern Limb of the Bushveld Igneous Complex, designated as “Areas A, B, C and D”. These areas are illustrated in ‘Figure 20’ overleaf.

Figure 20: OMM Programme - Potable Water community areas in the Eastern Limb



1.3.5.2 Project Objective and Benefits

Objective:

The primary objective of the project is to provide 59 Ml/d potable water to approximately 233,000 people in areas A, B, C and D.

Benefits:

The Eastern Limb potable project sets out to serve communities generally along the pipeline routes of current LWUA infrastructure and DWS infrastructure, as well as routing water to the town of Burgersfort. This constitutes a significant investment into the communities by augmenting the supply of potable water ordinarily delivered by the relevant Water Services Authorities (WSA).

The basis for proposing these villages was as follows:

1. Villages that are in relatively close proximity to the OMM Programme assets, mines participating in the programme, as well DWS infrastructure close to the De Hoop Dam;
2. Villages that would benefit from bulk raw water provided via the OMM Programme;
3. Villages that are contained within the Sekhukhune District Municipality (SDM) "Bulk Water Services Master Plan (BWSMP)" scheme areas. The boundaries of these scheme areas were in turn informed by their hydraulic accessibility, i.e. where villages are within elevations and proximity to water resources that can be reasonably reached within technical constraints; and by the District and Local Municipal boundaries. Importantly, the DWS were also signatories to the BWSMP, where water resources and water services data was included into the overall DWS water resources data.

The battery limits of the supply of potable water to communities have been defined and are available in more detail in the Concept Design drawings. However, for sake of brevity, the project sets out to serve approximately 233,000 people in rural communities as illustrated in Figure 20. This aside from augmenting potable water to the town of Burgersfort.

The benefits from the project are summarised as follows:

1. Population: 201,506 (phase 1) + 31,659 (phase 2) = 233,165 people;
   Area: 28,397 (phase 1) + 4,379 (phase 2) = 32,775 ha;
   Density: 2 units/ha average;
   Average Annual Daily Demand (AADD): 59 Ml/d; and
   Housing units: 57,692 (phase 1) + 8,541 (phase 2) = 66,233 units.

***Note** – an additional 4 Ml/d will be routed to the town of Burgersfort via the potable project infrastructure. This is however not regarded as in the scope of the OMM Programme.*

1.3.5.3 Project Design Description

The process that was followed for the concept design was as follows:

1. An initial design study was conducted by the technical design consultant, Yenza Advisory Services in 2011. This study was updated in 2019 for costing purposes, and then further updated for the CUC concept design during May 2020; and
2. This was reviewed by the OMM PMU in terms of the wider Integrated OMM Programme Plan for purposes of integrating business benefits, scope, schedule, risk, cost, contracting and water balancing.

Raw water will be processed at four Water Treatment Works (WTW) sources to serve the potable areas as follows:

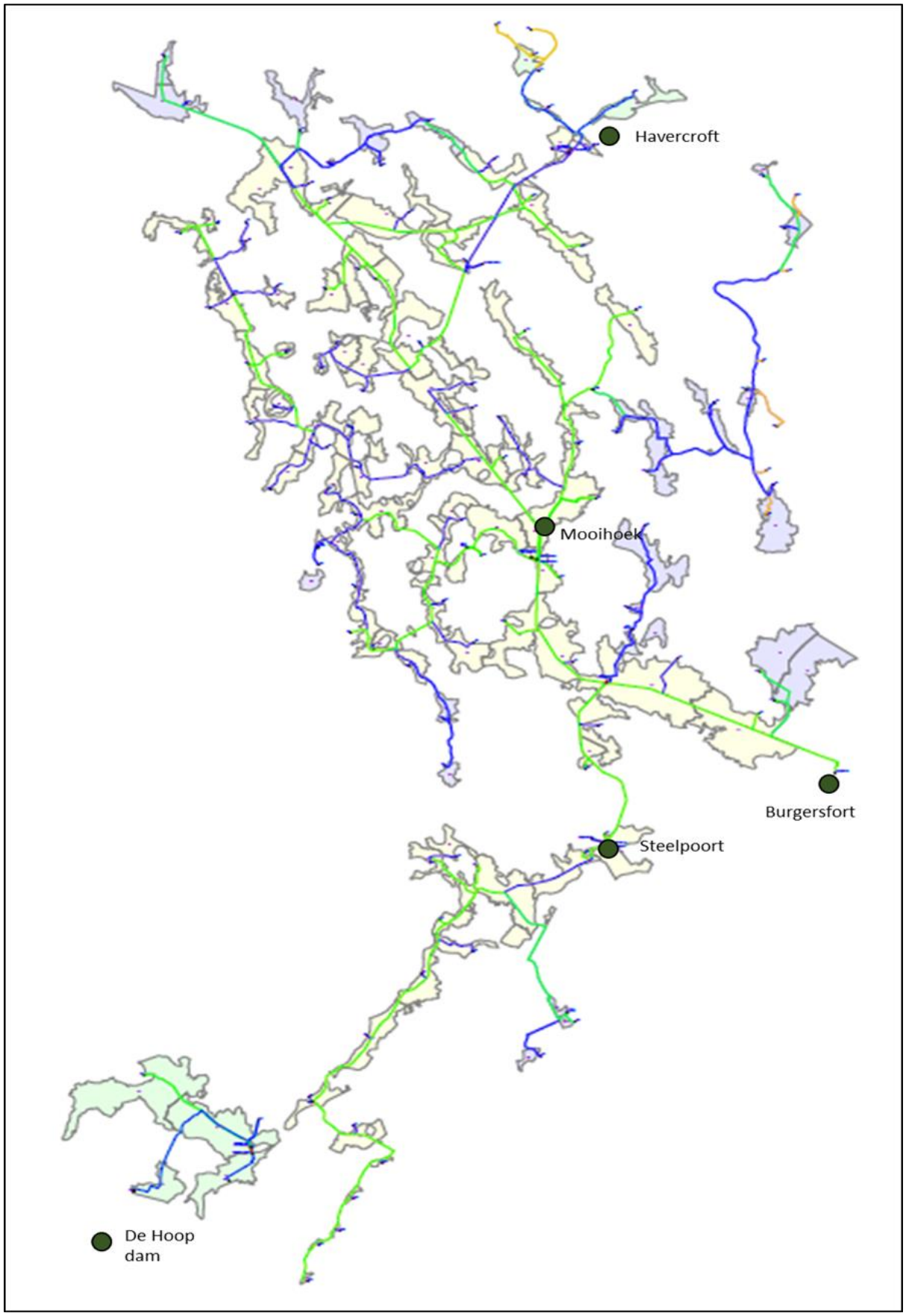
1. New Havercroft WTW to serve Area A: a new WTW and associated reservoir – 9.5 Ml/d;
2. Existing Mooihoek WTW to serve Area D: 12.5 Ml/d;
3. Existing Steelpoort WTW to be expanded to serve Area C: 31 Ml/d. For note an additional 4 Ml/d will be routed to Burgersfort via the project infrastructure, but the water off-take is regarded as out of scope to the OMM Programme; and
4. Existing Steelbridge WTW to be extended to serve Area B: 6 Ml/d.

'Figure 21' on the next page shows the communities to be supplied with potable water in the Eastern Limb as follows:

1. Communities in the yellow and green areas in the figure are to be supplied under the proposed project. These areas are referred to as phases 1 and 2; and
2. A third phase, i.e. the blue areas in the figure, could be implemented as the subject of a separate future project.

The detailed battery limits of the communities to be served are defined in detail in the Concept Design drawings and are available upon request.

Figure 21 - OMM Programme Potable Water – Eastern Limb phases 1 (yellow) and 2 (green)



The design consultant for the Concept design (Yenza Advisory Services) prepared a Concept level scope, cost and potential schedule.

Names of villages included in the scheme

The names of the villages included in the scheme are indicated in Table 3 below. Note that these names area extracted from the GLS/ Yenza "Eastern Limb Proposed Bulk Supply System, Scenario 2: Master Plan Items – Phases", and the associated "20200424 – SDM Planbook and Planbook Index". Again, only communities in the yellow and green areas in the Figure 18 above are to be supplied under the proposed project. These areas are referred to as phases 1 and 2 (Refer to the SDM "BULK WATER SERVICES MASTER PLAN DRAFT 2.1: September 2014").

Table 3: Names of villages included in the Eastern Limb Potable Scheme

Sub-Area	Village Name	Planbook reference
A1	Ga-Phasha	B2
A1	Taidintsi	C2
A1	Seokodibeng 1	C2
A1	Malokela	C3
A2	Senyatho	B3
A3	Modubeng	B3
A4	Ga-Mmamogolo	B4
A4	Maredi	B3
A5	Matsoong	B3
A5	Mphape	A3
A6	Motsane	B4
A6	Sehwiting	B4
A7	Malokela	C3
A8	Makubu	D4
A8	Matsiri	D4
A9	Shakung	D3
A10	Ga-Masete	D3
A11	Mecklenburg	C2
A11	Magakala	D2
A11	Dipururung	D2
A12	Dithwaiing	D2
A12	Dithwaiing	D2
A12	Mahegeng	C2
A12	Botshabelo	C2
A12	Plaseng	C2
A13	Ga-Kgweta	D2, D3, E3
A13	Ga-Mashishi	E3
A14	Twickenham	D2
A14	Ga-Mashabela	D2
A14	Makgake	D2
A14	Swale	E2
A14	Tdintitsane	E2
A15	Morapaneng	D2

Sub-Area	Village Name	Planbook reference
A15	Dithabaneng	D2
A15	Ditobeleng	D2
A16	Ga-Manotwan	C1
A16	Mosotsi	C1
A16	Paschaskraal	C1
A16	Paschaskraal Ext 1	C1
D1	Matadi	E3
D1	Ga-Selala	E3
D2	Mohlope	E3
D2	Ga-Maapea	E3
D3	Maotsi	E2
D3	Modimolle	E2
D3	Mantsakane	E2
D3	Matsakane	E2
D3	Mosego	E2
D4	Ntswaneng	E2
D5	Magabaneng	E2
D5	Lekgwareng	E2
D5	Seuwe	F2
D6	Madikane	E3
D6	Legabeng	F2
D6	Diphale	F2
D6	Ga-Makhwae	F2
D6	Swale	G2
D6	Ga-Mamphanhlane	G3
D7	Massehwaneng	E3
D7	Ga-Podile	E3
D8	Montwaneng	F3
D8	Motlolo	F3
D8	Ga-Maroga	F3
D8	Driekop	G3
D8	Ga-Maroga Ext	F3
D8	Ga-Mahlokwane	F3
D8	Khubetswane	F3
D8	Digabane	F3
D8	Ga-Mapea	F3
D9	Crossing	G3
D9	Sehlaku	G3
D9	Mashibishane	G3
D9	Mooihoek	G3
D9	Balotsaneng	G3
D9	Montrose Mine	G3
D9	Driekop Fut 4	G3
D9	Driekop Fut 5	G3
C1	Maandagshoek	H3

Sub-Area	Village Name	Planbook reference
C1	Magemeng	H4
C1	Riba Cross	H4
C1	Mandela	H4
C1	Ga-Maeseng	H4
C2	Batau	H4
C2	Mariliseng	H4
C3	Winterveld Mine	I4
C3	Steelpoort 1	I4
C3	Mahlokwane	I4
C4	Tukakgomo A	I3
C4	Mapodile	I3
C4	Legotong	I3
C4	Stoking	I3
C4	Ga-Phasha 1	J3
B1	Ga-Phasha 2	J3
B1	Mampuru	K3
B1	Mampuru Ext	K2
B1	Tsakane	I2
B1	Mahlagari	I2
B2	Ga-Malekana	L2, L1, K1, M1, M2
B2	Kokwaneng	
B2	Ga-Malekana 2	I1
B2	Maphopha	I1
B2	Ga-Maepa	I1
B2	Madidimola	I1
B2	Mmaphoko	I1
B3	Two Rivers 1	M2
B3	Two Rivers 2	M2
B3	Two Rivers 3	M2
B3	Two Rivers 4	M2

1.3.5.4 Scope of the Project

The scope of the project is proposed as follows:

1. Pump stations (number): 7;
2. Water treatment works (number): 4
   - One new WTW: Havercroft;
   - Two WTW upgrades: Steelbridge and Steelpoort; and
   - One WTW stays as is: Mooihoek.
3. Water treatment works (requirement): 51 Ml/d;

   Off-take capacity: 59 Ml/d in total, which is divided over the four areas as follows:
   - Area A: 9.5 Ml/d (Off-take from Havercroft);
   - Area B: 12.5Ml/d (Off-take from Mooihoek);

- Area C: 31 Ml/d (Off-take from Steelpoort), (this aside from the out-of-scope additional 4Ml/d routed to Burgersfort); and
- Area D: 6 Ml/d (Off-take from Steelbridge).

Reservoirs (number): 100;

Reservoirs (capacity): 127 Ml;

Water Towers (number): 1;

Flow Control Valves (number): 1,162;

Pipe length (bulk): 513 km;

Pipelines NDA (bulk): 110 – 600 mm;

Pipe length (yard): 1,326 km;

A condition assessment of the existing infrastructure; and

Refurbishment of infrastructure assumed to be in acceptable condition (35% of bulk and 15% of reticulation infrastructure).

Note that the 35 Ml/d extracted from Steelpoort WTW (Area "C") includes 4 Ml/d that will be routed to Burgersfort via the potable bulk pipelines. This 4 Ml/d will be routed via the Eastern Limb pipelines northwards from Steelpoort WTW but will be split at the road junction to Burgersfort, to be routed southwards via the existing SDM potable pipeline to Burgersfort.

The following assumptions were made during the design:

1. Reticulation standard is assumed as individual yard connections at the yard boundary;
2. Water demand is 50 l/person/day, plus 20% unaccounted for water, i.e. = 63 l/person/day (AADD);
3. Allowance for population growth/densification is 0%. This should be confirmed during the Pre-feasibility and Feasibility study;
4. Population size is based on Geoterra data as at January 2020;
5. Include infrastructure for reticulation, bulk potable water, water towers, pumps, valves, electricity and related works;
6. Design standard based on the Red Book standards;
7. Bulk storage capacity of 36 – 48 hours is assumed;
8. For bulk demand purposes, assumed 65 l/per person per day;
9. Bulk potable pipeline from Steelpoort WTW is assumed as a viable alternative, which is, to utilise new pipeline feeding into existing Mooihoek/ Burgersfort pipeline, with a booster pump station pumping towards Mooihoek (less head and smaller capacity);
10. Assume that approximately 35% of current existing bulk potable infrastructure, and 15% of current existing reticulation infrastructure can be utilised;
11. Land use distribution for current villages is "Mixed", and for future areas "Residential"; and
12. Only implement Phase 1 ("yellow") and Phase 2 ("green"), and not phase 3 ("blue") as shown in Figure 18 above.

1.3.5.5 Technical Risks

The following initial project specific risks were identified:

1. It is assumed that the condition of the current assets is sufficiently acceptable to be incorporated into the OMM Programme. The condition of the assets should be assessed during the Pre-feasibility and Feasibility phase of the OMM Programme; and
2. It is assumed that the component sizes of the current assets are sufficient to cater for the assumed design volumes if incorporated into the OMM Programme. The condition of the assets should be assessed during the Pre-feasibility and Feasibility phase of the OMM Programme.

A number of additional OMM Programme risks were identified, i.e. risks which are common to the OMM Programme and documented in Section 1.6 of the Strategic Case.

1.3.5.6 Schedule

An indicative schedule for execution is proposed in Section 2.6 of the Economic Case, with further details in Attachment C.

The following key schedule dependencies were identified:

1. Public consultation;
2. Environmental impact assessment;
3. Environmental applications / authorisations;
4. Asset condition assessment of current infrastructure;
5. Land acquisition;
6. Water use license approval;
7. Long lead times of special materials such as steel pipes; and
8. Availability of required services – power.

1.3.5.7 Issues for Further Investigation

The following should be investigated during the Pre-feasibility and Feasibility phases:

1. Evaluate the options for maximising the current existing bulk and reticulation infrastructure;
2. Confirm if alternative 7 (towards Mooihoek) is more beneficial than alternative 6 (gravity feed from Steelpoort WTW) for the bulk potable pipeline from Steelpoort WTW to Burgersfort; and
3. Confirm the water demand accounting for population growth and densification projections.

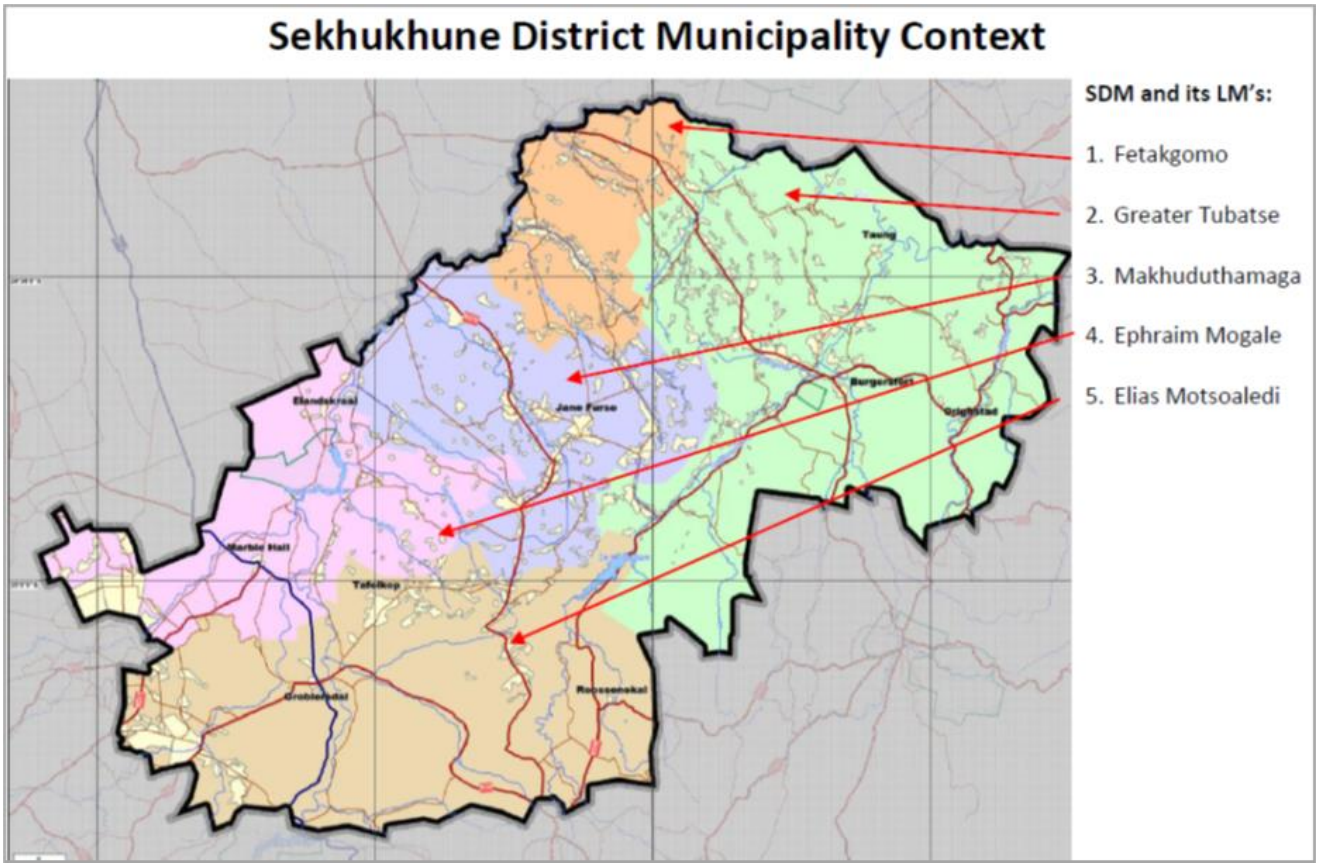
1.3.5.8 Estimated Cost

The estimated capital costs of this project are included in Section 4.1 of the Financial Case, with further details in Attachment D.

1.4 Sekhukhune District Municipality projects in the Eastern Limb

The Sekhukhune District Municipality (SDM) and its five associated Local Municipalities (LM's) is geographically illustrated as follows:

Figure 22 Geographical context of the SDM and its LM's



The SDM, which is the Water Services Authority (WSA) for the majority of the Eastern Limb, have several known bulk and reticulation projects in various stages of development in the corresponding OMM WUA Eastern Limb area.

The water and sanitation projects within the SDM fall under the SDM "Bulk Water Services Master Plan (BWSMP)". This plan is akin to the Water Services Development Plan (WSDP) as mandated for all Municipalities by DWS.

Records indicate an initial SDM Bulk Water Services Master Plan of 2007 – 2010. This was then updated and issued under the auspices of SDM and DWS (the funder) in Sep 2014, referred in this attachment as "The SDM Potable Water Master Plan" (SDM PWMP).

The SDM PWMP sets out to depict the engineering and technical networks, and aligns the systems, schemes, and associated infrastructure, comprising the entire water supply network in the area. The SDM PWMP is consistent with the strategic direction of SDM, which in turn aligns with the strategic direction of the DWS.

The SDM PWMP also developed or updated associated general water services data, including:

1. As-built Metadata
2. Map book (digital)
3. Complete project list
4. Demographic analysis full report
5. Socio-economic analysis full report
6. Affordability of water assessment report
7. Groundwater assessment report
8. Asset register

9. Project execution plan (PEP) - PEP WP10662-2
10. Demand model spreadsheet
11. Longitudinal sections from Nebo Plateau hydraulic model

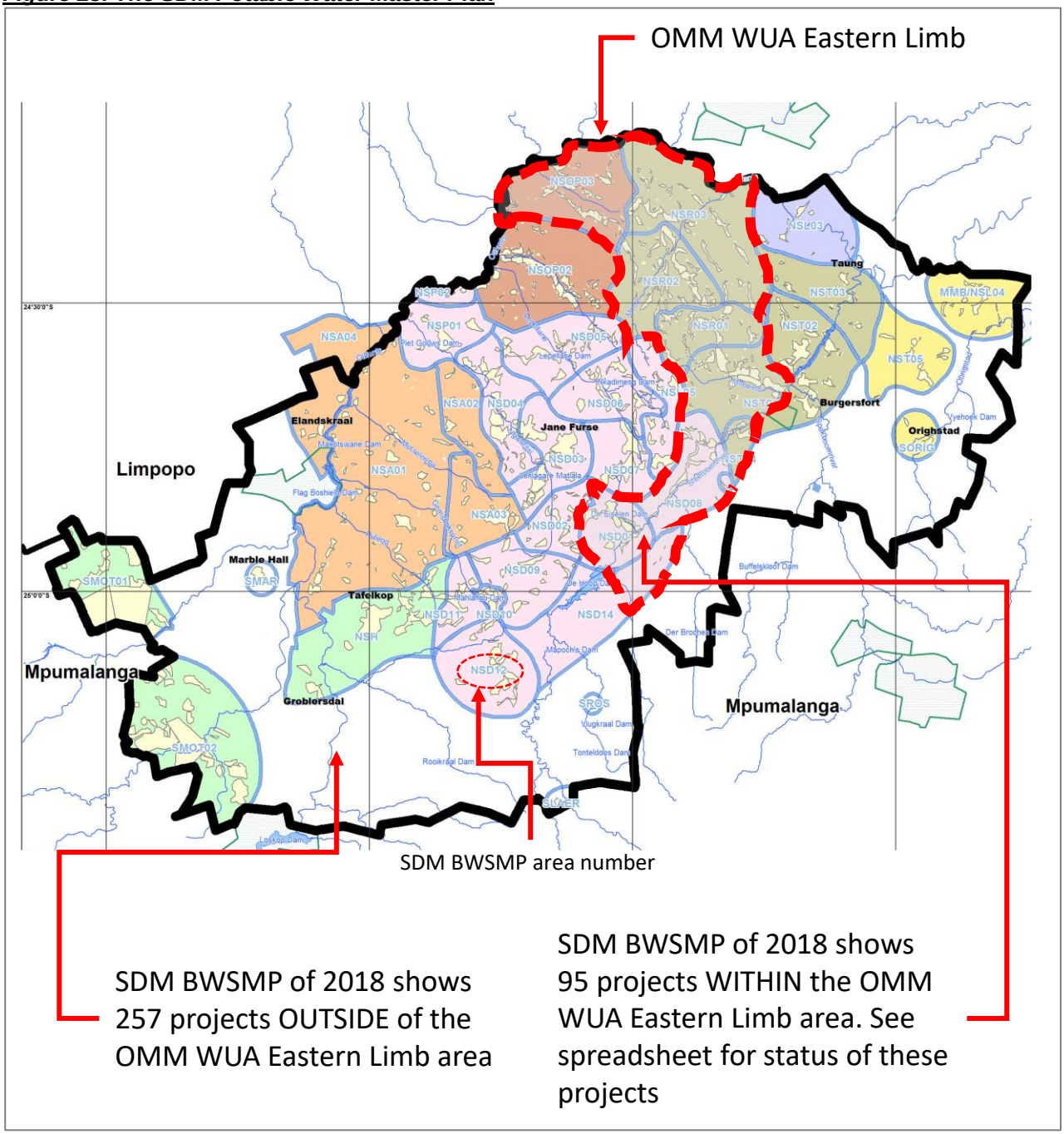
Importantly, the SDM PWMP sets out a list of current and future projects that give effect to the delivery of water and sanitation services within the SDM. This project list also references comprehensive data on, amongst others, the status of each project, water demand horizon, design horizon, estimated costs, status of feasibility reports, how many households are served, and the like.

This project list was updated in 2018.

This data is therefore of key interest to the OMM Programme to incorporate projects and plans from the SDM that will be relevant to the proposed mandate of the OMM Programme. Again, this will avoid the obvious duplication of historical work and make for efficiency of costs and effort.

The projects and their locations relative to the OMM Programme are summarised in ‘Figure 23’.

Figure 23: The SDM Potable Water Master Plan



From the above figure, it can be seen that:

All the OMM Programme Eastern Limb areas fall within the Greater Tubatse LM, except for the most northern area which falls under the Fetakgomo LM, and a small portion north of the Olifants River near Havercroft.

The OMM Programme areas (in red dotted lines above) correspond to several sub-boundary lines (marked as NSA, NSD, NSH etc). These geographical sub-boundaries are the Water Scheme boundary areas as defined in the SDM PWMP (2014).

The boundary limits of the OMM WUA mandated potable areas were determined prior to the Concept design and were defined in the SDM PWMP Plan (2014). It appears as if the rationale for these boundary limits was a combination of the topographical hydraulic constraints, existing community areas and LM boundaries.

From the preceding figure, it is shown that all the proposed OMM Programme mandated areas fall within the Greater Tubatse LM, except:

1. Area A16 and portions of A1, A12 and A14 (near the Olifantspoort Weir) – which fall under the Fetakgomo LM
2. Areas A5 and A4, and portions of A6 (north of the Olifants river near Havercroft) – which fall under the Lepelle-Nkumpi Municipality.

An analysis of known projects within the SDM reveals the following:

1. A total 95 projects fall within the OMM Programme proposed mandated area;
2. The SDM PWMP facilitated the updating of GIS information to include all regional- and internal bulk water services supply systems. The GIS was also updated to include attribute data (diameter, materials, classes, condition, etc.). The GIS with attribute data is referred to as a geodatabase. The geodatabase was provided to DWS to update the national geodatabase relating to SDM;
3. Attribute data for older water supply systems and components is not available;
4. As-built data of completed projects prior to the SDM PWMP is limited;
5. There is limited data available of the reticulation projects. The majority of these in the semi-rural areas are community boreholes with limited community standpipe reticulation;
6. During 2008, SDM commissioned SMEC (also a well-respected engineering consultancy) to compile a condition assessment of their infrastructure as part of the development of the asset register;
7. Generally, the water services infrastructure was considered to be in a reasonable condition at the time. For WTWs, the asset register showed that major components such as pumps and motors were near the end of their useful life. There was no comprehensive asset replacement programme in place at the time, however. The current condition of the assets is therefore largely unknown and would be assumed as having deteriorated since 2008 in light of a comprehensive asset replacement programme not being in place;
8. The District Water Services Managers' Forum (DWSMF) conducted a peer review of Sekhukhune DM in 2011. At that time, SDM did not have a comprehensive asset management plan in place and the asset register was reported as still being updated, as assets were not allocated replacement value and budget. In response to the recommendations made by the peer review, SDM committed to obtaining approval and budget for the asset management plan and completion of the asset register to include all required fields for all movable and immovable assets. This task was to be completed by end of 2012. According to the 2013-2014 IDP of the municipality, the GRAP compliant asset register was reported by the SDM as completed and was reported as being updated on a quarterly basis;
9. Most of the water services capital projects are unfunded, and therefore have not been implemented within the intended timeframes as set out in the SDM PWMP and its project list update in 2018;
10. A key observation of the data is that SDM do not appear to have an updated, integrated consolidated view of the water services in the area. Whilst much data exists on various water schemes and projects, this does not appear to be housed in a single integrated data pool with current updates.

1.5 Quick Win Projects

Since data exists on SDM potential projects that have already completed feasibility (or other planning stages) but yet have not been implemented (as per the section above), the OMM Programme will therefore propose some Quick Win projects that could deliver early benefits to the larger programme by utilising the available information.

Olifants Management Model (OMM) Programme

Programme Early Business Case – High Value

Attachment B: Socio-Economic Development

Version E | 10 March 2022

IMPROVING LIVES THROUGH WATER

Table of Contents

1. Socio-Economic Development

1.1 Synopsis

This section conceptually sets out a socio-economic development (SED) strategy and plan for the proposed OMM Programme. The OMM Programme aims to develop an alternative solution for the accelerated delivery of bulk raw and potable water services to address pressing social and commercial needs to defined areas in the Northern and Eastern Limbs of the Bushveld Igneous Complex.

The proposed OMM Programme represents a significant opportunity for socio-economic development in the region given the extent of the infrastructure programme across the Limpopo Province and its associated capital and operational spend.

There are three outcomes the SED strategy aims to achieve through the OMM Programme:

1. Provision of potable water to communities in the defined areas;
2. Create jobs through the associated capital and operational spend of the OMM Programme; and
3. Enterprise development.

To inform the SED strategy two baseline studies were initiated, one a study of the socio-economic conditions in the Northern and Eastern Limbs, the other the potential economic impact of the OMM Programme in the region.

These studies revealed the dire need for potable water, jobs and socio-economic upliftment as the areas impacted are amongst the poorest areas in the Limpopo Province. Fetagkomo Tubatse generally fares worse than both Limpopo Province on average and Mogalakwena Municipality on the majority of indicators with an unemployment rate of 60%.

The economic impact assessment revealed that the OMM Programme would likely result in 14,750 jobs being created in Limpopo Province linked to the construction spend with a further 9,580 jobs linked to the ongoing operational spend. Low income groups would receive approximately 30% of the annual capital spend (over a 6 year period) and 39% of the annual operational spend (over a 27 year period) in the Province. This is without any specific SED intervention on the part of the OMM Programme.

To maximise the socio-economic impact on the region, guiding principles and key performance indicators were established and an implementation approach and plan conceptually developed.

The proposed plan involves a number of aspects to be further developed and/or implemented during the pre-feasibility and feasibility study phases; including:

1. Establishing a strong governance structure over the SED activities, budget and spend;
2. Recruitment of additional organisational SED capability;
3. Continued development of baseline studies, surveys and community risk assessments;
4. Regular and timely engagement with communities across a number of levels;
5. Development of school and community level behavioural programmes;
6. Creation of jobs during the various phases of the OMM Programme through procurement policy and other strategies;
7. Establishment of self funding skills and enterprise development structures using procurement policy;
8. Formation of a SED Collaboration Forum to explore ways in which members and others can collaborate around common themes to accelerate SED in the region; and
9. Regular tracking of progress and refinement of the plan.

1.2 Objectives and Alignment with OMM WUA Strategy

The purpose of OMM WUA is **"Improving lives through water"** and its strategy sets out a three-staged approach that not only aims to transform the water utility into a strategic model for future water delivery in the country, but to use water as a catalyst for socio-economic development in the areas it operates in.

The model has the potential to be replicated across the country as it is underpinned by public-private participation which sets a platform for community inclusivity and socio-economic growth.

The three-staged approach focuses on:

Figure 1 – OMM WUA Strategic Horizons

1.2.1 Proposed SED Programme

Horizon 2 of the OMM WUA strategy sets out to develop a trusted socio-economic platform to provide the necessary foundation for socio-economic development in the areas OMM WUA and its members operate. To achieve this platform the OMM WUA recognises the need to become a strategic partner to Government to build, operate and maintain bulk raw and potable water infrastructure.

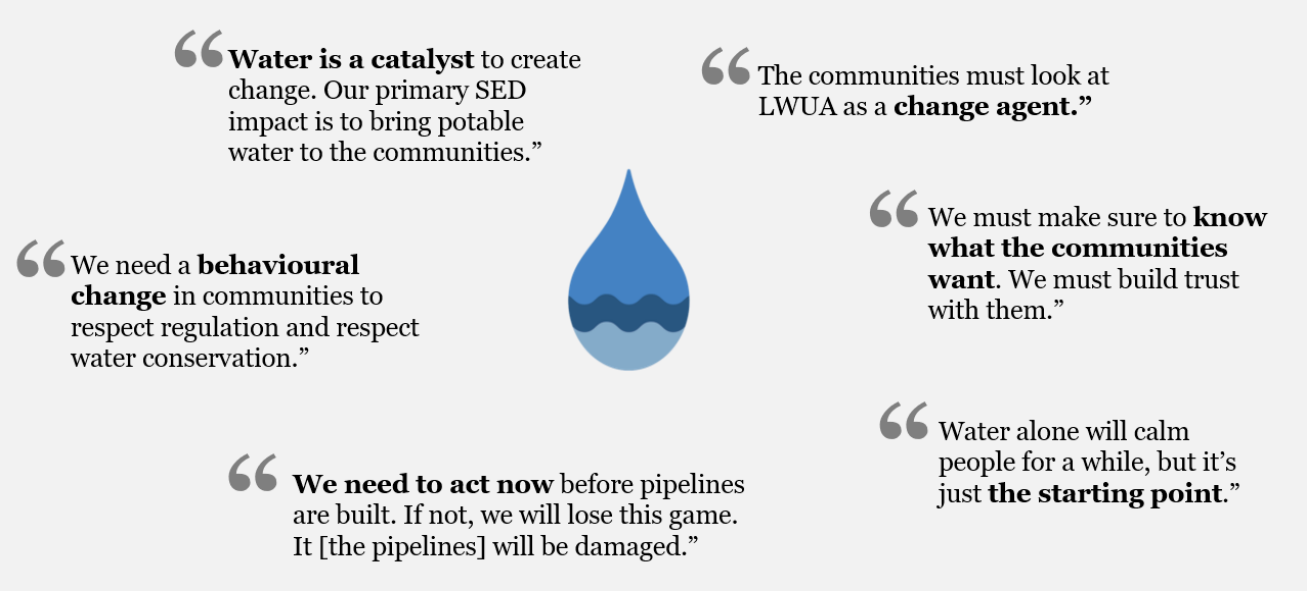
To give effect to this, OMM WUA developed an integrated water services model solution (the proposed OMM Programme) for the accelerated delivery of bulk raw and **potable water services** to address pressing social and commercial needs to defined areas in the Northern and Eastern Limb of the Bushveld Igneous Complex.

1.2.2 SED Collaboration Forum

OMM WUA has also recognised that the provision of potable water to communities will not be enough over the medium to long term and that a socio-economic development collaboration forum is required for members and others to collaborate around common socio-economic development themes that can address the medium to long term needs of the defined communities. It is proposed that the existing OMM WUA Social and Ethics Committee be transformed to include the functions of the SED Collaboration Forum.

During the concept study phase the workstream identified a number of key areas of high relevance:

Figure 2 – Key areas of high SED relevance



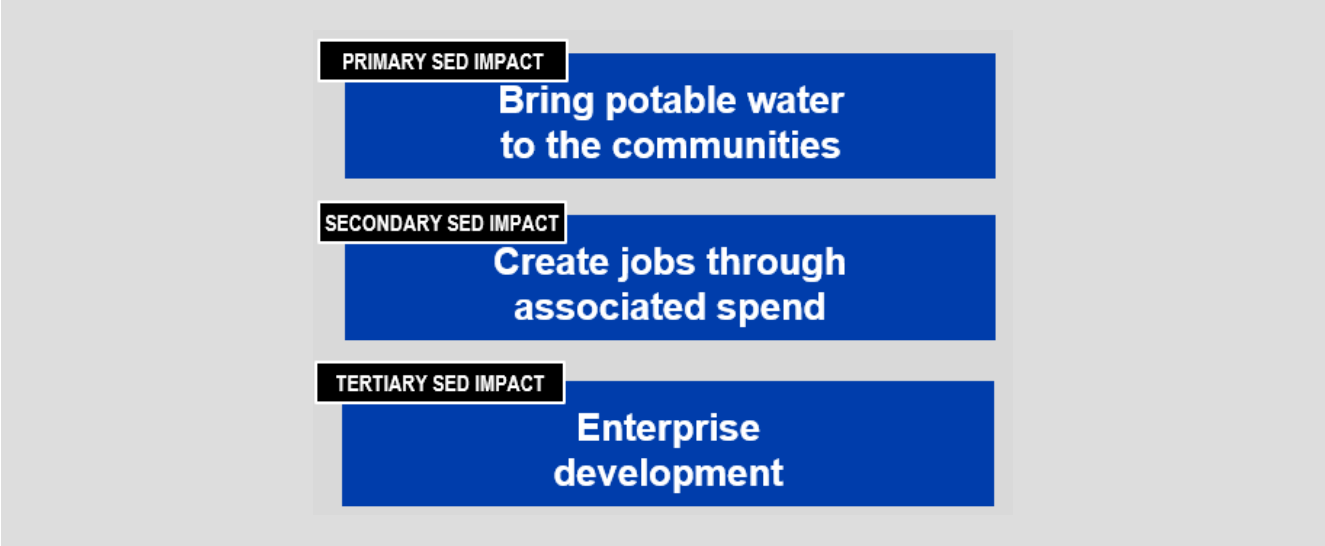
These have been categorised and developed into primary, secondary and tertiary[1] **desired outcomes or objectives** that OMM WUA wish to achieve. These are set out in the Figure 3 overleaf.

The realisation of these outcomes will benefit OMM WUA, its members as well as adjacent communities and stimulate socio-economic development and growth in the communities around OMM WUA's water infrastructure operations.

In order to ensure that the OMM Programme is effective in its SED efforts, it will be critical that OMM WUA provides adequate levels of governance and oversight even in instances where external service providers are utilised to deliver on objectives. The SED collaboration forum will assist in streamlining SED around the common themes. In addition, the procurement strategy and policies utilised by the OMM Programme need to be tailored to accommodate maximum inclusion of community services during its lifecycle. Timely community engagement and extensive stakeholder communication will continue to be the foundation for the programme's success.

[1] *Primary, secondary and tertiary refers to the nature or category of the outcome, not their chronological sequence.*

Figure 3 – Socio-economic development strategy outcomes



1.2.2.1 Primary SED Outcome – Bringing Potable Water to Communities

Water is at the heart of OMM WUA which is why the envisioned primary outcome of our strategy is the acceleration of potable water to communities adjacent to the raw water infrastructure through the repositioning of OMM WUA's mandate and overall infrastructure development programme.

Our success depends on the alignment of our operational implementation to the real and non-constant community needs. To identify these needs we must build trust with the communities and start a continuous dialogue to ultimately empower the communities based around a joint understanding of value, hope, pride and ultimately ownership which will ensure that the communities are "on our side" and effectively create a "buffer" against pipeline and borehole vandalism.

1.2.2.2 Secondary SED Outcome – Creation of Jobs through Associated Spend

To realise this primary outcome there are five key areas that require consideration and planning during the Pre-Feasibility and Feasibility Study Phases of the OMM Programme:

1. **Community engagement** – Timely community engagement to initiate continuous dialogue which will assist in building trust and understanding as well as help in managing expectations.
    a. A community engagement strategy and plan would need to be developed and carefully implemented, monitored and adjusted to reflect community dynamics.
2. **Safety** – The planning, construction and operation of the infrastructure will require a safe and stable environment for work to be conducted. Accordingly, efforts will need to be made to understand and monitor the local environment to pre-empt and/or quickly respond to threats that may jeopardise the safety of personnel and communities. A safety risk assessment and plan will need to be developed during the next phase of the OMM Programme. This plan will need to inform the community engagement plan and be integrated into member mine plans to provide effective intelligence coverage across the region.
3. **Behavioural change** – The OMM Programme will bring with it a series of potential risks that require mitigation. The combination of poverty, unemployment, lack of basic services and other adverse social impacts borne from the afore mentioned have created a negative psyche for many.
    a. A behavioural change programme will need to be developed to address aspects such as water conservation, hygiene education, compliance with law as well as payment for services culture.

   b. Youth leadership would be another area to focus on given the high youth unemployment in the region. NGOs and governmental programmes would need to be identified and incorporated into an integrated plan starting at school level and further addressed through community events and use of sponsored digital platform(s).

4. **Communication and brand validation** – LWUA historically suffered brand damage due to a misunderstanding of its role and responsibilities by communities. A communication strategy and plan should be developed to address this including a public relations media campaign around the OMM WUA, the OMM Programme and its benefits. Part of the plan includes a OMM WUA naming competition to be held amongst communities during the Pre-feasibility study phase. A brand review is to form part of the Feasibility Phase to assess whether there is a need to rebrand the organisation or not.
5. **SED Collaboration Forum** – The OMM WUA strategy recognises that the provision of potable water to communities will not be enough over the medium to long term and that a mechanism is needed to accelerate socio-economic development in the region over and above the outcomes outlined in the proposed OMM Programme. To address this a SED Collaboration Forum is to be established in the Pre-Feasibility Study phase to explore ways in which members and others can collaborate around common themes to accelerate socio-economic development in the region. This Forum will also provide an opportunity for members to contribute resources, skills, studies, community intelligence, technology, processes, connectivity access, amongst a range of needs, to the OMM Programme to achieve programme outcomes at an efficient cost. A transformed OMM WUA's Social and Ethics Committee is proposed to fulfil the function of the SED Collaboration Forum.

OMM WUA wants to use water as a catalyst for change and the significant capital and operational expenditures of the OMM Programme are anticipated to create a multitude of employment opportunities in the area. To realise this outcome, locating available skills in the community and timely developing of relevant skills are essential.

In developing an appropriate skills development response, four horizons were considered in the Concept Study:

1. **Immediate** – LWUA's Covid-19 response to deliver water to tanks is expensive and requires a more cost-effective solution. Communities in the Eastern Limb can be engaged in daily work packages to assist in pipeline repairs and network development. The OMM Programme will also investigate opportunities, linked to available data and designs from Municipalties, for immediate kick-off of potable water supply projects in areas where raw water is already available.
2. **OMM Programme planning** – Consideration to be given to paid activities that communities can participate in during the community engagement processes as well as when contractors are conducting site visits for planning purposes
3. **Construction** – This stage will represent the bulk of the employment opportunity and is expected to occur mainly in the potable water projects. The skills development programmes should be timed to take full advantage of this opportunity
4. **Operations** – LWUA will transition into the OMM WUA, from 40 personnel to approximately 160 personnel once the Programme Management Unit (PMU) is disbanded. This represents a sizeable employment opportunity and recruitment policy will be geared towards recruiting local existing or developed skills

To realise this outcome there are two key areas that require consideration / planning during the Pre-Feasibility Phase of the OMM Programme:

1. **Skills database** – Skills registration into a database to identify existing skills in the region. This can leverage existing databases, or a new database could be considered with technology-based screening capability. Approved contractors would be encouraged through procurement policy targets to source relevant skills from this database.
2. **Skills Development Fund** – OMM WUA to establish either a self-funding tax effective commercial entity and/or a Public Benefit Organisation (PBO) with a mandate to develop and co-ordinate training programmes. Consideration to be given to outsourcing this to a professional training service provider(s) to assess the skills gap and develop appropriate training programmes. Rather than duplicating or replacing existing training facilities, the aim is to co-ordinate across existing training facilities and education centers, helping to identify the best place to acquire the needed skills for specific community members. Seed

funding would be required for set up of the Fund and ongoing funding would be sourced through a skills development levy on all contracts related to the OMM Programme.

1.2.2.3 Tertiary SED Outcome – Enterprise Development

OMM WUA's socio-economic development strategy will lead to additional positive change in the communities adjacent to the OMM Programme which go beyond the provision of water and creation of direct employment opportunities; namely we will support the creation of enterprise development in the region. The Concept Study Phase focused on developing enterprises providing:

- **Direct goods and services** – OMM WUA aim is to develop suppliers based on demand from the capital and operational spend. Procurement policy will assist in channelling spend to these suppliers
- **Workforce wellbeing goods and services** – Given the volume of contractors moving into the region during the construction phase this represents a sizeable opportunity for local enterprises
- **Indirect goods and services** – Indirect employment opportunities will also materialise and consideration will need to be given to assist existing and new enterprises to take advantage of the increased economic activity in the region

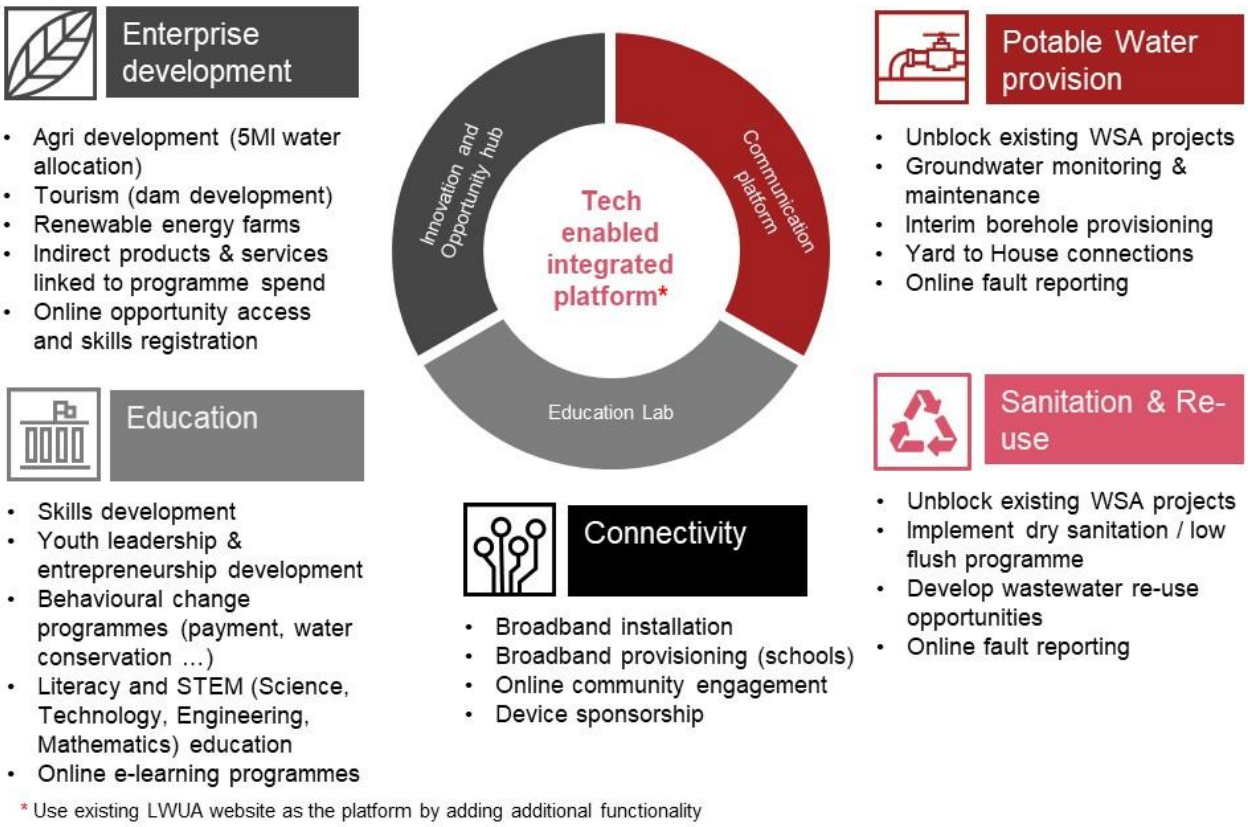
A key aspect will be to collaborate and coordinate across various existing SME support initiatives, creating economies of scale and ensuring better matching of suppliers with demand. The aim is to coordinate and support existing enterprise development efforts and incubate enterprises through an Enterprise Development Fund (EDF).

To realise this outcome there are two key areas that require consideration / planning during the Pre-Feasibility Phase of the OMM Programme:

1. **Local supplier database** – This requires either the development of a local enterprise registration portal / database and accreditation process or leveraging an existing accredited database. Approved contractors would be encouraged through procurement policy targets to utilise this supplier database
2. **Enterprise Development Fund** – OMM WUA to establish a self-funding tax effective commercial entity and/or a Public Benefit Organisation (PBO) with a mandate to incubate and support local enterprises. Consideration to be given to outsourcing this to a professional enterprise development service provider(s) to assess the supplier landscape and develop an Enterprise Development and Support plan for the OMM Programme. Seed funding would be required for set up of the Fund and ongoing funding would be sourced through an enterprise development levy on all contracts related to the OMM Programme.

Five priority themes have been identified to steer SED activities and enable greater impact across the primary, secondary and tertiary outcome levels. These themes are underpinned by an integrated technology enabled hub that drives innovation (opportunities), communication and education. Proposed SED projects will be aligned to the themes with the SED approach being to identify existing SED projects that can be leveraged for quick wins and building on existing technology infrastructure. The figure below provides an overview of the themes – the themes objective, programme catalyst and programme components are discussed thereafter.

Figure 4 – Five priority themes for SED activities



In keeping with these themes, the OMM Programme intends to achieve the intended benefits across the identified impact tiers as outlined below:

1. Potable water provision, in line with the core mandate of the provision of potable water to communities in the defined areas
2. Sanitation and reuse addressing wastewater treatment and usage on the back of the primary mandate of potable water provision
3. Connectivity which focuses on broadband installation and provisioning which serves an enabler for communication, knowledge sharing and access to information across all the priority themes
4. Education focusing on all aspects of skills development, youth leadership and behavioural change programmes
5. Enterprise development targeting the establishment and expansion of businesses focused on regional agriculture (5Ml water allocation), Tourism (dam development) and renewable energy

The implementation approach will ensure that specific SED projects will need to align to the themes. Quick wins can be achieved by expanding existing SED projects and technology infrastructure as well as working with schools to raise awareness in communities to enable shifts in mindset.

1.2.3 Key Performance Indicators

The effects of our SED strategy will be quantified through the following KPIs which can be assessed by OMM WUA and through a number of economic and demographic indicators and variables. Annual targets are to be set during the Pre-Feasibility and Feasibility Phases and KPIs assessed, validated, and reported on an annual basis to assist in refining the strategy. Where possible KPIs will be set at the Area level to assist in focusing the strategy and interventions.

The table below shows indicative baseline figures based on 2018 municipal level data and initial Area level data collected in the baseline study. The baseline numbers will be affected by the impacts of COVID-19 and the targets will need to be adjusted accordingly.

Table 1 – SED Key Performance Indicators

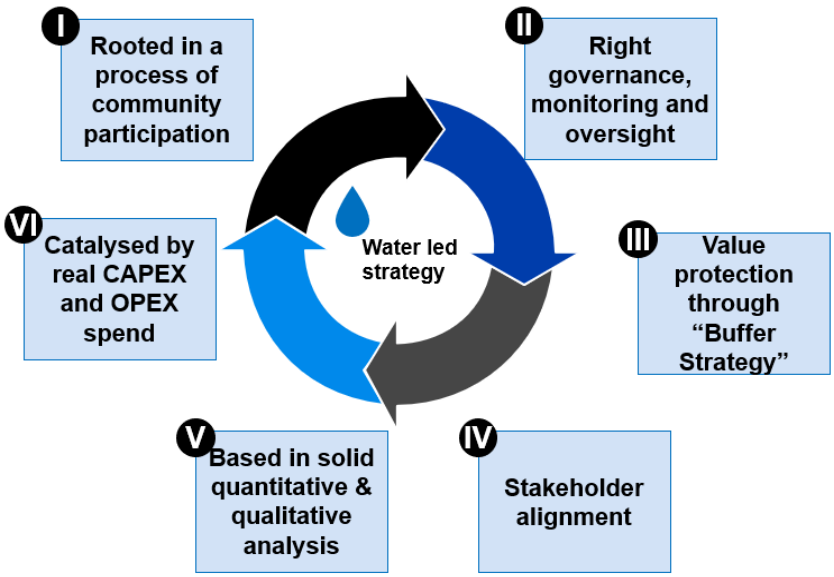
KPI / Resulting change	Indicator / Variable	Baseline	Target	Source	SDG goal alignment
Primary: Potable water to communities	• Access to piped water • OMM installed yard connections	• **Area 1:** Mogalakwena: 63% of households have access to piped water in dwelling or yard; 7042 households without any access to piped water • **Area 2:** Fetakgomo Tubatse: 31% of households have access to piped water in dwelling or yard; 24,153 households with no access to piped water • Figures for Area 1 and Area 2 to be determined during Pre-feasibility study • OMM installed yard connections: 0	• **Area 1:** Households with piped water in yard or dwelling increases by 2000 • **Area 2:** Households with piped water in yard or dwelling increases by 4500 • OMM installed yard connections in Area 1 and area 2: To be determined during Pre-feasibility study	• Quantec municipal level data 2018 • LWUA • Survey	• Clean water and sanitation (5) • Good health and wellbeing (3)
Secondary: Creation of jobs through associated spend	• Number of OMM jobs created in the communities • Number of people trained	• To be determined during Pre-feasibility study • TBD To be determined during Pre-feasibility study	• 4500 direct jobs • Number of people trained: TBD	• LWUA • Skills Development PBO • Target: SEIA Model	• Decent work and economic growth (6) • No poverty (1)
Tertiary: Enterprise development	• Number of new enterprises developed • Number of existing enterprises supported	• Nil • Nil	• To be determined during Pre-feasibility study • To be determined during Pre-feasibility study	• Enterprise Development PBO	• Decent work and economic growth (6) • No poverty (1)

KPI / Resulting change	Indicator / Variable	Baseline	Target	Source	SDG goal alignment
Economic activity increase	• Total real (nominal) compensation • Contribution to GDP (prediction)	• Total real compensation Mogalakwena municipality: R4.3 billion; total nominal compensation in Fetakgomo Tubatse municipality: R6.7 billion	• Average total household income to rise by R1.5 billion • Contribution to GDP: R2.6 billion	• Quantec municipal data 2018 • Target: SEIA model	• Decent work and economic growth (6) • No poverty (1)
Unemployment reduction	• Total employment numbers	• **Mogalkwena:** 54832 employed (40,211 formally) • **Fetakgomo Tubatse:** 57649 employed (41236 formally)	• Additional direct jobs: 6000 • Additional indirect jobs: 5000. Additional induced jobs: 3000	• Quantec municipal level data 2018 • LWUA	• Decent work and economic growth (6) • No poverty (1)
Average income increase	• Number of people per income group	• Area 1: 52% (16,372), earn less than R40,985 per year; Area 2: 65% (37,205) earning less than R40,985 per year	• Number of people earning below R40,985 to decrease below 50%	• Geoterra Image	• No poverty (1) • Reduced inequality (10)
Educational level improvement	• Mean years of schooling • Level of schooling achieved	• Mogalakwena: 7.7; Greater Tubatse: 8.5 Fetakgomo: 7.6 • Level of schooling TBD through granular baseline study	• 8.5	• Quantec municipal level data 2018 • Survey	• Quality education (4) • Reduced inequality (10)
Health level improvement	• Life expectancy • Number of sick days	• Mogalakwena: 62.5; Fetakgomo Tubatse: 62 • Number of sick days TBD through granular baseline study	• 64 • Reduction of 10%	• Quantec data 2018 • Survey	• Good health and wellbeing (3)
Reduction in social discontent	• Cases of public violenceand cases of malicious damage to property	• Continuous increase (TBD)	• Decrease	• ISS/GTI data LWUA members	• Peace, justice and strong institutions (16)

1.3 Guiding Principles

OMM WUA's SED strategy is of vital importance to programme success and is built around six fundamental principles. The principles form our guiding "north star" and underpin all specific tactics, actions and activities taken.

Figure 5 – Six socio-economic development principles



1.3.1 Principle 1: A Strategy Rooted in a Process of Community Participation

The communities adjacent to the OMM Programme are at the heart of our SED strategy. Strategies would fail if the OMM Programme unilaterally decided for the communities adjacent to our programmes. Instead we will build our strategies collaborative with the people in the communities and their leaders to ensure our actions and activities are well aligned to actual community needs. Operationally this requires dedicated full time equivalents (FTEs) who engage and liaise with the communities on a continuous basis. By following this process of participation, we ensure maximum community impact and value protection (see principle 3 below).

1.3.2 Principle 2: Right Governance, Monitoring and Oversight

We must ensure best in class, fit for purpose governance to protect our expenditures and limit instances of fraud as much as possible. At all times we must ensure OMM WUA retains full ownership and has full line of sight. The organisational SED structures set up within the OMM WUA must be defined by their clear roles, clear reporting lines and clear responsibilities. Success of the socio-economic development activities can be quantified through a number of indicators such as the percentage of people using safely managed water and sanitation services, the number of direct and indirect jobs in relation to our programme, general income per capita, unemployment percentages, cases of malicious damage to property as well as number people per education level in the affected communities. Monitoring and reporting must consider these indicators to ensure full line of sight of programme success.

1.3.3 Principle 3: Value Protection through "Buffer Strategy"

LWUA's assets including pipeline and borehole infrastructure are at constant risk of vandalism. Without risk mitigation strategies cases of malicious damage of property are, unfortunately, likely to occur on a constant basis which would put OMM WUA as well as its members' operations continuity and efficiency in jeopardy. All assets are physically located in the regional communities. By building trust in communities and uplifting and empowering them we ensure they are "on our side" which will ultimately lead to them protecting our assets as a natural "buffer".

1.3.4 Principle 4: Stakeholder Alignment

The OMM Programme involves many stakeholders – members and affected communities – which requires alignment. From an SED perspective it is paramount to consider that our most vulnerable communities' primary concern is the access to water. OMM WUA and its members will be jointly held liable by communities and jointly see community goodwill fade *("The mines have water, and we don't.)* even when delays in the access to potable water that are attributable to bureaucratic process or failings of individual members only. With regards to community liaising it is critical to ensure a constant dialogue so that all expenditures are exactly aligned with the actual needs of the communities, not just our conjectures on what such needs could be.

1.3.5 Principle 5: A Strategy Based in Solid Quantitative and Qualitative Analysis

The SED strategy is designed to uplift and empower the communities adjacent to the programmes. To ensure our expenditures are used as effectively as possible. All decisions must be made based on a scientific, data-driven perspective of qualitative and quantitative analysis. This takes into account all relevant community issues, regional issues and changing SED conditions, pressures and responses.

1.3.6 Principle 6: A Strategy Catalysed by CAPEX and OPEX

The SED strategy uses water as a catalyst for change. The primary SED impact is to uplift the most vulnerable by providing potable water to communities. The secondary SED impact relates to the employment opportunities (direct employment as well as increased local entrepreneurship) arising from programmes which are directly linked to real capital expenditures and operational expenditures.

1.4 Economic Assessments

1.4.1 Summary of Baseline Study of Socio-Economic Development Conditions

1.4.1.1 Purpose

In order to effectively ensure progress in improving the proposed socio-economic development conditions of the communities in its areas of operation, the OMM WUA aims to better **understand the current status quo**.

This section summarises the initial baseline study of SED conditions. The purpose of this baseline study is to provide **baseline** data against which to monitor and evaluate socio-economic development conditions in the affected communities as well as to help inform the conceptualisation and planning of appropriate socio-economic development interventions. This will also enable OMM WUA and its members to determine the socio-economic return on investment (SROI) of OMM WUA's activities and impact on communities at specific programme implementation intervals and after its completion.

1.4.1.2 Methololgy

This study analyses secondary data sources to provide socio-economic development profiles of the two demarcated areas around the targeted OMM WUA's operations.

We begin by presenting a broad overview of the SED profile of Limpopo Province. This information is based primarily on National Treasury documents, Provincial Government documents, national statistics, and business reviews.

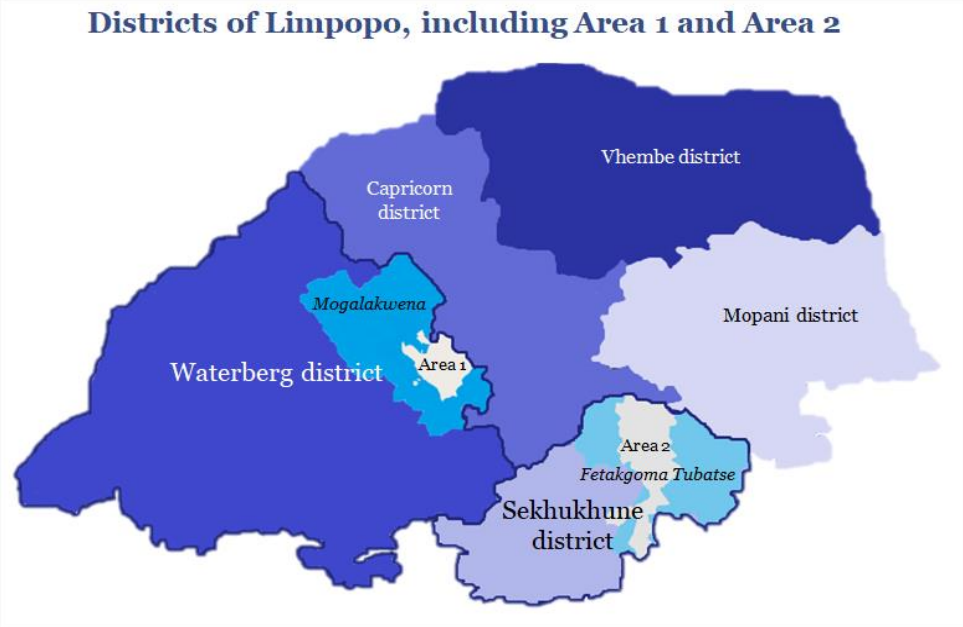
We then analyse and summarise data on the municipalities in which the demarcated areas are located. It provides insights into aspects of socio-economic development, such as access to basic public services, that are not available at the level of the exact demarcated area. This includes more precise information on employment (by economic sector), access to water and sanitation services, housing, energy, as well as indicators on life expectancy and educational attainment.

We then narrow in on the specific demarcated areas (denominated as Area 1 and Area 2). This data relies on geospatial images that are coded down to precise areas, matched with further data sets. This includes demographic data (population by gender, ethnicity, and age), basic employment data (formal versus domestic as well as inflows and outflows of daytime workers), income data, and information on buildings and structures (such as schools and health clinics).

1.4.1.3 Results

The two demarcated areas (shown in grey on the map below) form part of the Bushveld Igneous Complex, specifically Area 1 and Area 2:

Figure 6 – Districts of Limpopo



Area 1 is a 727 km^2 area in the Northern Limb of the Bushveld Igneous Complex of approximately 127,370 inhabitants. It is located within a part of the Mogalakwena Local Municipality (Waterberg District, Limpopo Province). Area 1 covers approximately 12% of the surface area of Mogalakwena municipality.

Area 2 is a 2073 km^2 area in the Eastern Limb of approximately 245,586 people within a part of Fetakgomo Tubatse Local Municipality (Greater Sekhukhune District, Limpopo Province). Area 2 covers approximately 36% of the surface area of Fetakgomo Tubatse municipality.

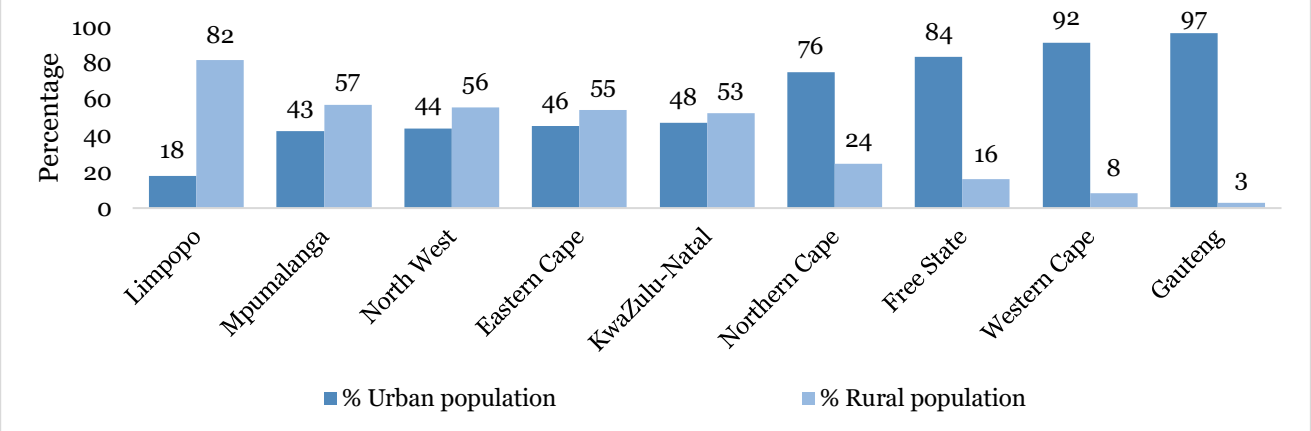
1.4.1.4 Socio-Economic Overview of Limpopo

Both of the demarcation areas are located in the Limpopo province. The socio-economic profile of Limpopo province is characterised by rich endowments in minerals, agriculture and tourism attractions on one hand and by high levels of poverty and unemployment on the other.

Limpopo has only one large city (Polokwane) and is predominantly rural. 88% of its population live in non-urban areas with many located in rural towns and villages that contain less than 1000 inhabitants. [2] This dispersion of the population makes provision of public services more costly, and has resulted in poor basic service coverage. For example, only 73% of households have access to water and over 150,000 people in Limpopo do not live in formal dwellings.[3]

[2] *Limpopo Provincial Government, 2015, Limpopo Development Plan (LDP) 2015-2019: Summary Document, file:///C:/Users/cposchl002/Downloads/limpopo%20development%20plan%20(1).pdf*
[3] *National Treasury, 2019. Limpopo: Socio-Economic Review and Outlook, http://www.treasury.gov.za/documents/provincial%20budget/2019/4.%20Guide%20to%20the%20Budget/Limpopo%20-%20Socio-Economic%20Review%20and%20Outlook.pdf*

Figure 7 – Urban vs rural population across South Africa's provinces, 2011



Sources: StatsSA, SACSC

The poverty rate in Limpopo at 53% is higher than in South Africa on average (42%).[4] **Related to this, Limpopo has a particularly low percentage of economically active people.** The (narrowly defined) official unemployment rate stood at 23.1% in the final quarter of 2019. While this figure is below the national average of 29.1%, it masks the high number of people not looking for jobs. Based on the expanded unemployment rate which includes discouraged workers and those not looking for work (including discouraged jobseekers), Limpopo's figure is the second highest among South African provinces, after Eastern Cape.

The main driver of economic activity is mining, a highly capital-intensive industry. It contributes 28% to provincial GDP but only 5% to jobs in the province.[5] The importance of the manufacturing sector is particularly small compared to other provinces, while a large number of people instead depend on subsistence agriculture.

Agriculture contributes 3% to Limpopo's GDP and 10% to jobs.[6] On the one hand, there are extensive forestry plantations and the province is noted for its wide variety of agricultural production of fruits and vegetables, cereals, tea and sugar, particularly in the north and east of Limpopo. On the other hand, there are large numbers of small-scale farmers living on land portions that are mostly of marginal agricultural productivity, in areas with more fickle rainfall and high land degradation.[7]

The province is seen to have potential as a regional trade hub, given its international borders and proximity to Gauteng, further developing tourism, as well as further beneficiation of minerals and agricultural produce to high value products, to market both locally and for export.

1.4.1.5 Socio-Economic Profile of Area 1 and Mogalakwena Local Municipality

Area 1 is located in the Northern Limb of the BIC in Limpopo within the south-eastern part of Mogalakwena Local Municipality and covers an estimated 727 square kilometres. The area has many grass- and farmlands and is surrounded by only a few mountains. A relatively large portion of the area is covered by mining activity, particularly Anglo American Platinum's large-scale open pit platinum mine. The area also has a small number of dams close to residential properties.

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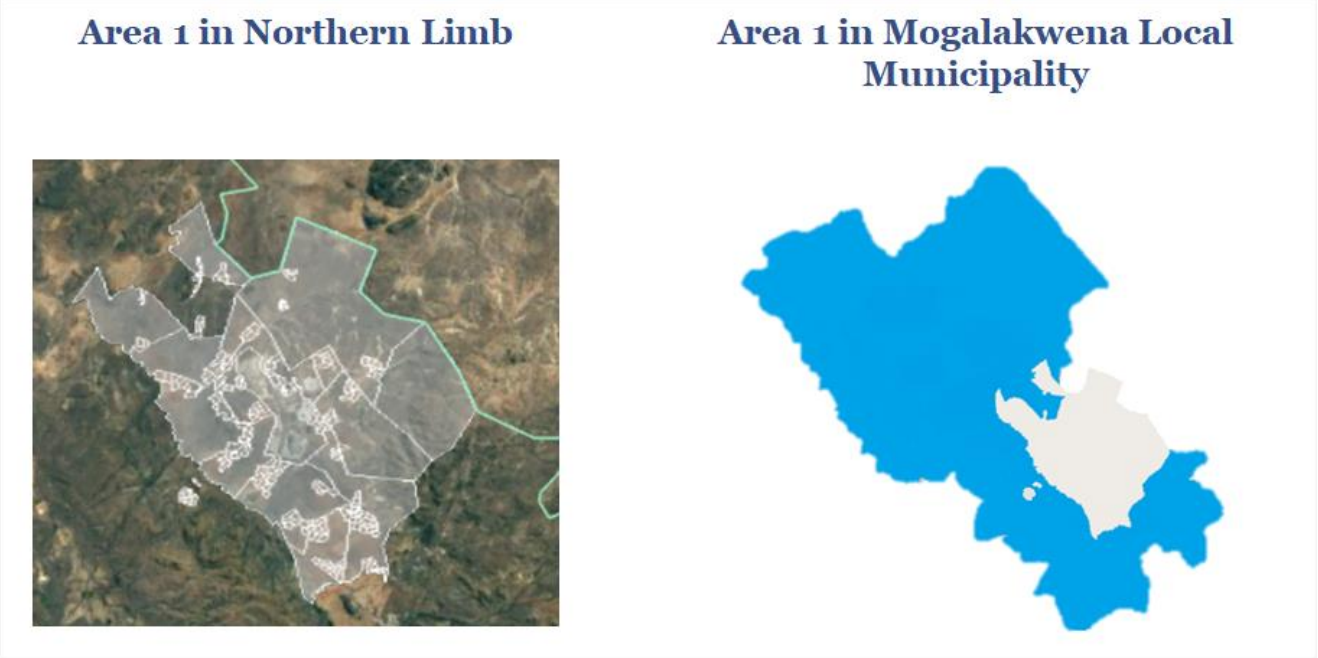
[4] *National Treasury, 2019. Limpopo: Socio-Economic Review and Outlook, http://www.treasury.gov.za/documents/provincial%20budget/2019/4.%20Guide%20to%20the%20Budget/Limpopo%20-%20Socio-Economic%20Review%20and%20Outlook.pdf*

[5] *National Treasury, 2019. Limpopo: Socio-Economic Review and Outlook, http://www.treasury.gov.za/documents/provincial%20budget/2019/4.%20Guide%20to%20the%20Budget/Limpopo%20-%20Socio-Economic%20Review%20and%20Outlook.pdf*

[6] *Global Africa Network, 2019. A 2020 vision of the agricultural sector in Limpopo https://www.globalafricanetwork.com/2020/01/16/company-news/a-2020-vision-of-the-agricultural-sector-in-limpopo/*

[7] *National Treasury, 2019*

Figure 8 – Northern Limb Profile Areas

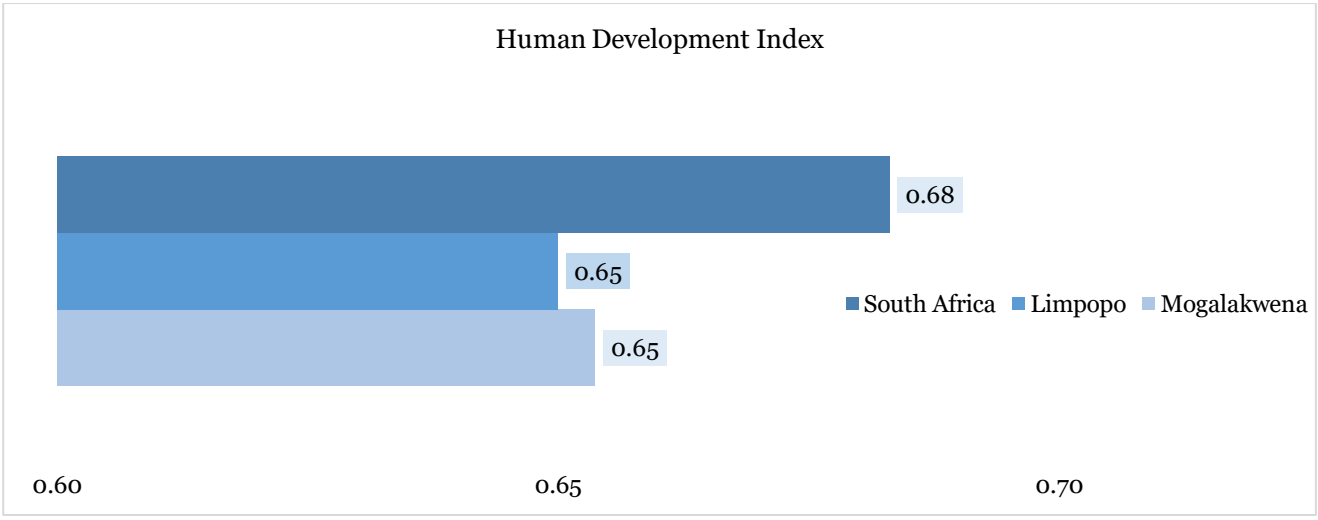


Sources: Geoterra Image, Google Earth

Mogalakwena Local Municipality is one of five local municipalities located in the Waterberg district within the Limpopo province. People living in Mogalakwena are more likely to be unemployed, less educated, more likely to die sooner, and have considerably lower income than the average South African.

Compared to Limpopo Province, incomes and mean years of schooling are also lower, yet life expectancy is slightly higher. With regard to access to energy for lighting and formal housing, households in Mogalakwena municipality fare better than the average Limpopo and average South African household.

Figure 9 – Human Development Index

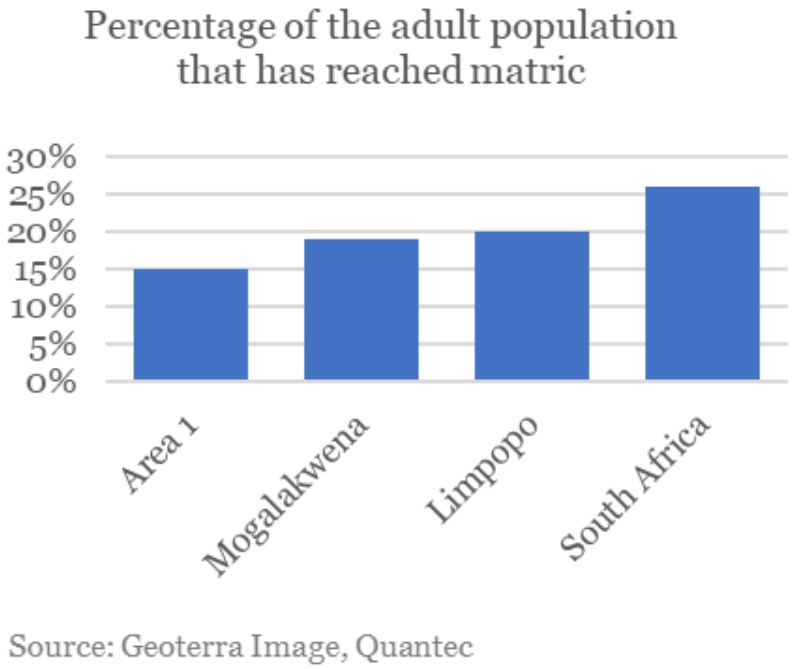


Also, more people have access to piped water inside their dwellings or inside their yards than in Limpopo on average and more have flush or chemical toilets. However, it is still less than a third of households that have a flush or chemical toilet.

With regard to employment, the municipality as a whole had an expanded unemployment rate of 38% in 2018, in line with that of the province and the South African average in the same year.

Examining Area 1 specifically, the demarcated area of OMM WUA planned operations in Mogalakwena, its population shows similar demographics to that of the wider Mogalakwena Local Municipality. Both have a very youthful population, 68% of which is below the age of 35, though Area 1 has a smaller percentage of children below the age of 14 than the municipality as a whole. Average household income is very low. 52% of households earn less than R40,985 per year or less than R3,415 per month with over 94% earning less than R133,919 per year, according to geospatial data matched with Neighbourhood Lifestyle Index data.

Figure 10 – Adult Population Education Statistics



Source: Geoterra Image, Quantec

Levels of education in Area 1 are lower than in Mogalakewena and Limpopo, and considerably lower than in South Africa on average. Overall the literacy rate in the municipality is low at 69% compared to 78% nationally. In Area 1, 14% of adults have had no schooling at all, compared to 9% nationally. What stands out is that in Area 1, only 15% of adults have reached matric compared to 19% in Mogalakwena, 20% in Limpopo, and 26% in South Africa on average. 3% have a higher education qualification.

Area 1 has a net outflux of workers, with more people migrating out of the area to work elsewhere than those working inside the area. Aerial data shows that 53% of the population are not leaving home to work or go to school.

Finally, statistics from the South African Police Department show that Area 1 has recorded **an increasing trend in crime over the last years.**

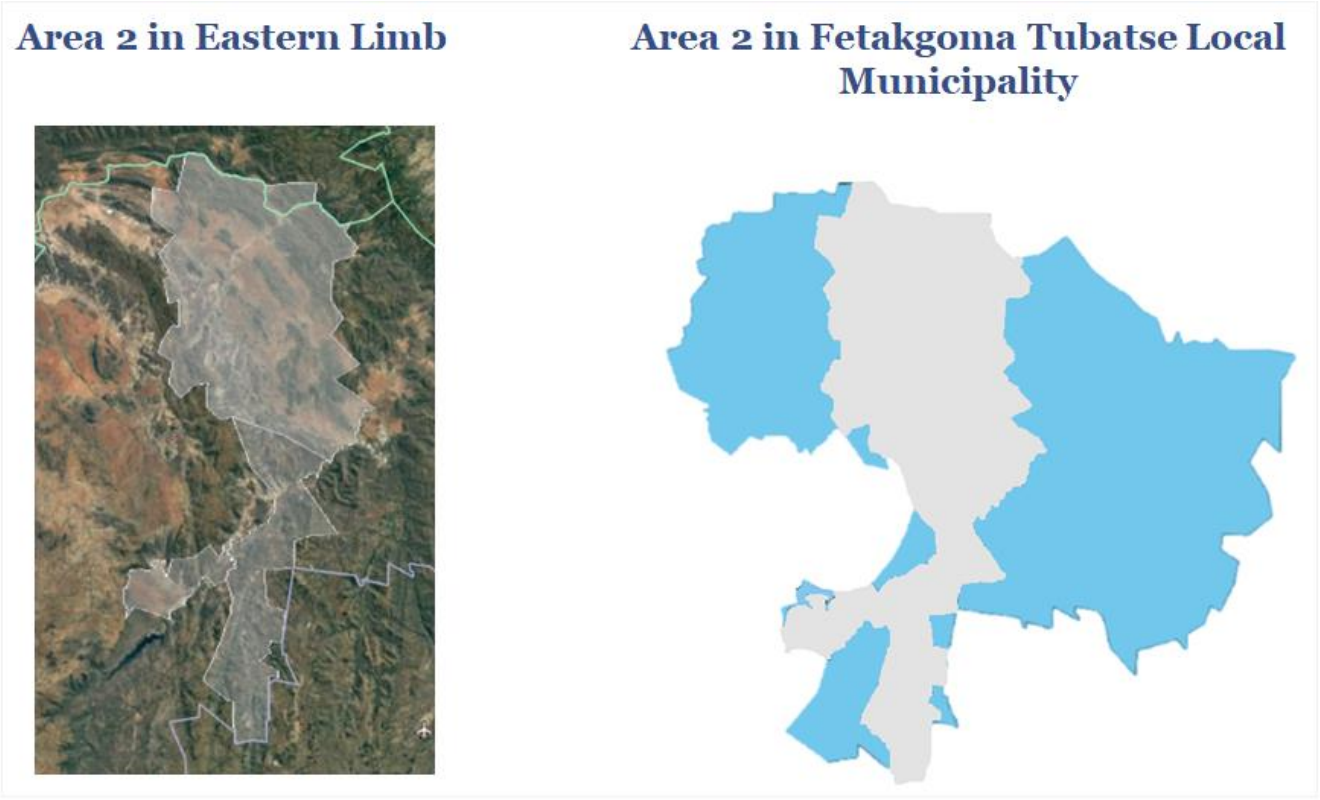
1.4.1.6 Socio-Economic Profile of Area 2 and Fetakgomo Tubatse Local Municipality

Area 2 is situated within Fetakgomo Tubatse Local Municipality in the Eastern Limb and covers an estimated 2,073 square kilometres. The area is sub-tropical woodland, surrounded by mountains. It is close to the Steelpoort River and contains several platinum and chrome mines.

The Fetakgomo Tubatse Local Municipality is one of four municipalities located in the Greater Sekhukhune District in the Limpopo province. It was formed in 2016 through the merging of the Fetakgomo and Greater Tubatse municipalities.

The two former municipalities that now make up Fetakgomo Tubatse municipality differ considerably in terms of their human development indicators. Residents in the former Fetakgomo in the western half of the municipality fare considerably worse than Greater Tubatse in the eastern part on most socio-economic indicators, especially income levels.

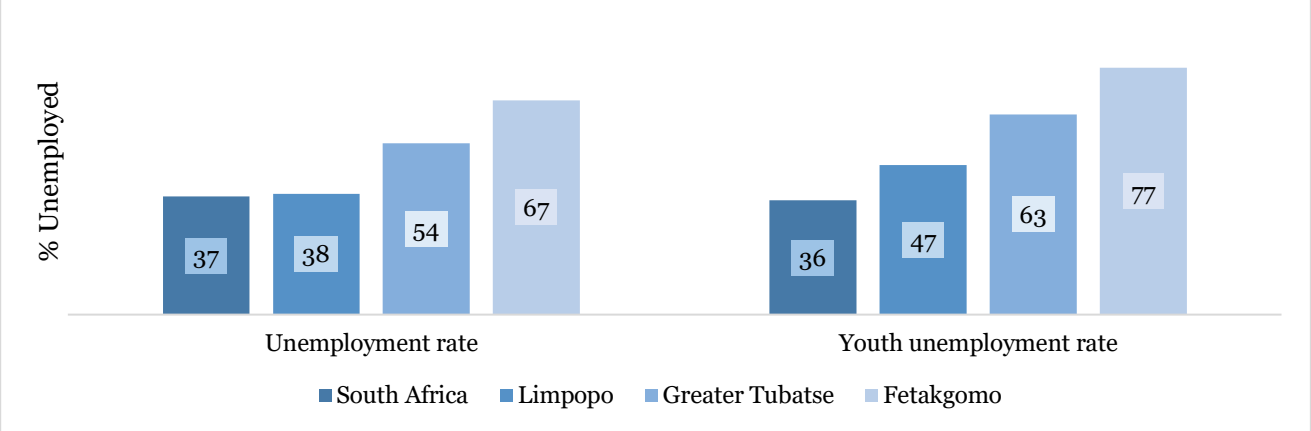
Figure 11 – Eastern Limb Profile Areas



Sources: Geoterra Image, Google Earth

As a whole, Fetakgomo Tubatse's expanded unemployment rate and informal economic activity are significantly higher at between 55-65% than the provincial and national averages and higher than that of Mogalakwena. Again, the former Fetakgomo fares considerably worse than the former Greater Tubatse municipality.

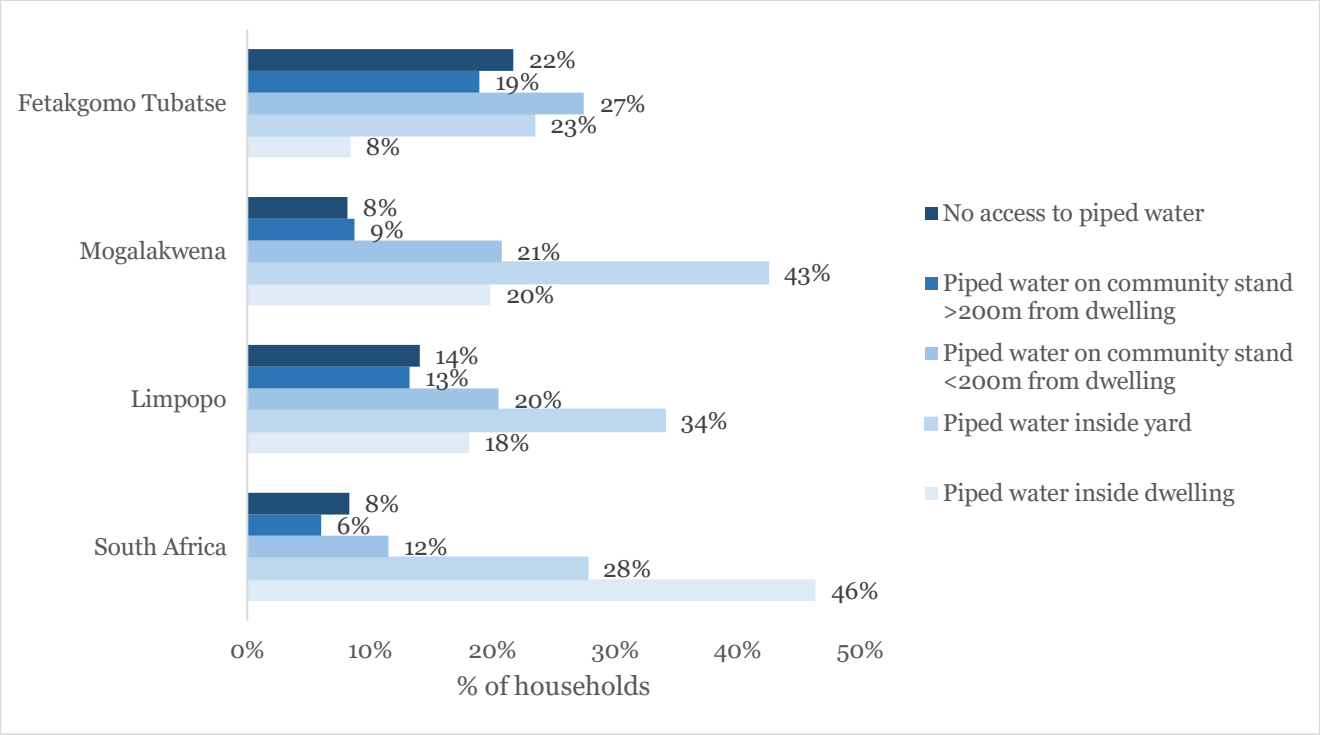
Figure 12 – Expanded unemployment rate (%), 2018



Source: Quantec

The municipality is also lagging behind the provincial and national averages in terms of access to electricity, piped water, and toilet facilities. Looking at access to piped water, 22% of the municipality's population does not have access to piped water, compared to 8% in Mogalakwena and 14% in Limpopo on average.

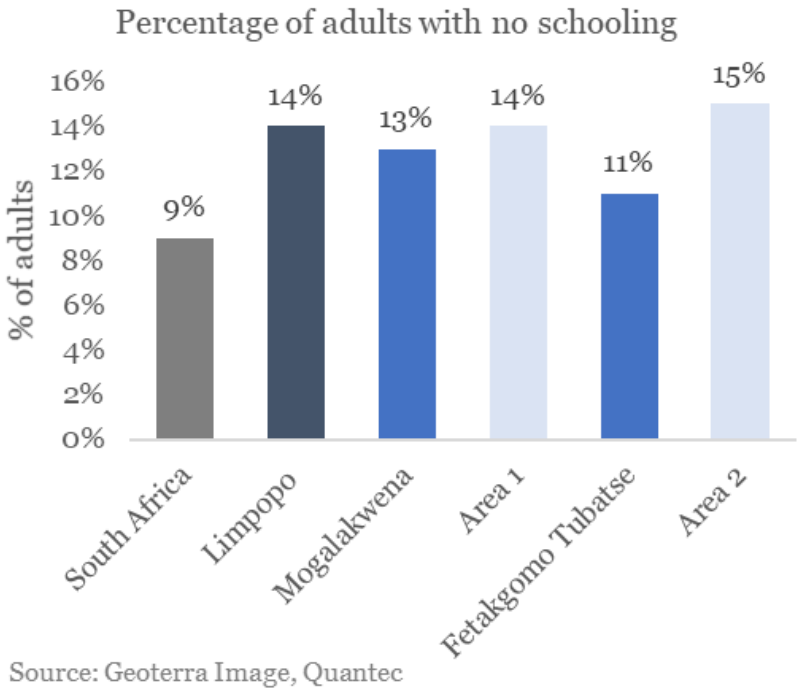
Figure 13 – Type of water access (% of households), 2018



Source: Quantec

Looking specifically at Area 2, this shows similar demographics (age, race, and gender) to that of the wider Fetakgomo Tubatse municipality as a whole. Average yearly earnings in Area 2 are slightly higher at R69,924 than the municipality's R66,619, with both showing very low incomes.

Figure 14 – Adult Population Education Statistics



In terms of education, the percentage of adults who have had no schooling is higher in Area 2 than in the municipality as a whole and slightly higher than in Area 1. The percentage of adults with matric is 21%, the same as at municipal level.

Unlike Area 1, **Area 2 has a net influx of workers coming into the area to work.** Aerial data shows that 54% of the population is not leaving home to work or go to school.

With regard to buildings, areal data shows that Area 2 has a greater percentage of non-residential buildings than Area 1 (6% compared to 3%) and it has 390 commercial buildings against Area 1's 14. The evidence points towards a greater amount of existing business activity in Area 2 than in Area 1, though this is low in both.

Like in Area 1, there has been an increasing trend in crime over the last years, as recorded by the South African Police Department.

1.4.1.7 Conclusions

The findings show a low-income population with comparatively few economically active individuals.

The majority of the indicators on the demarcated areas and the municipalities in which they are located, while showing a gap to the national average, are comparable to that of Limpopo province. The fact that these are lower than the national average may be a function of, or typical for, its characteristic as a rural area with a large amount of subsistence agriculture. It is more costly and complex to reach dispersed, remote populations with public services than it is to reach concentrated urban populations.

Comparing the municipalities to Limpopo province, some differences are apparent. In Mogalakwena, incomes and education levels are considerably lower than in the province as a whole. On the other hand, Mogalakwena fares better than the province on average in terms of access to energy for lighting, formal housing, access to water and sanitation. The expanded unemployment rate is the same as that of Limpopo at 38%.

Fetagkomo Tubatse generally fares worse than both Limpopo province on average and Mogalakwena municipality on the majority of indicators. It lags behind the provincial average in terms of energy for lighting, access to water and sanitation, and education. It also has a significantly higher expanded unemployment rate at around 60%. If the same percentage were to apply to Area 2, this would equate to 91,357 unemployed people out of 152,263 adults between the age of 15 and 64. Average household income is higher in Fetakgomo Tubatse than in Mogalakwena, but this masks particularly stark differences within the province. The west (former municipality of Fetakgomo) has far lower average household income than the east (former municipality of Greater Tubatse).

While the demarcated areas generally follow the same trends as the wider municipalities that they sit in, there are also some differences. In particular, income and education levels are lower in Areas 1 and 2 than average income and education levels in Mogalakwena and Fetakgomo Tubatse respectively.

Based on the findings, key areas for development are:

- Education;
- Piped water and sanitation (especially in Area 2); and
- Opportunities for employment and economic activity, particularly for youths.

Given demand in the province for higher skills and the potential to develop manufacturing and beneficiation of minerals and agricultural products, investment in education and vocational skills training could see a particularly high impact on employment creation and incomes with positive effects on standards of living. These could be linked with livelihood or value-chain development projects that leverage Limpopo's assets, including its mineral and agricultural endowments, trade links and tourism.

1.4.2 Summary of Socio-Economic Development Impacts Study

1.4.2.1 Purpose

OMM WUA proposes to construct water infrastructure to bring raw water to mines and potable water to communities in demarcated areas within Limpopo province. OMM WUA's planned water infrastructure activities will bring increased water to its members. Its members include mining companies and the DWS. With this increase in water, mining companies will be able to expand their activities. The water that will go to the DWS will be channeled to the municipalities who will be able to provide this potable water to households and businesses in the communities in the area. The areas of OMM WUA operations and surrounding communities are delineated in the map below as Area 1 and Area 2.

The purpose of this study is to estimate the socio-economic impacts that OMM WUA's planned operations will have on the communities in OMM WUA's area of operation.

1.4.2.2 Methodology

OMM WUA's expected socio-economic contribution is estimated through two methods:

- Socio-economic impact assessment (SEIA): We conduct a SEIA to show the impact that OMM WUA's water infrastructure is likely to have on economic growth, jobs, taxes, and poverty alleviation. We examine the knock-on effects in Limpopo Province as well as in the rest of South Africa.

We estimate:

1. the impacts of the water infrastructure and ancillary activities both for construction (capital expenditure) as well as for day-to-day spend on the infrastructure (operational expenditure).

2. the impacts resulting from additional mining activity that will be rolled out as a result of OMM WUA infrastructure
3. we also review the corporate social initiatives taken forward by OMM WUA. These are separate from the activities conducted through the mining companies' social labour plans (SLPs). We estimate the knock-on effects of CSI spend by OMM WUA members on the economy and list some examples of the projects conducted to date.

- Growth and productivity impact analysis (GPI): We conduct a separate analysis to demonstrate further benefits of the OMM Programme through further linkages beyond the expenditure and its knock-on effects on the economy. This analysis relies on results of past studies and compares these to the local context in Limpopo, in order to explore expected effects. These include impacts on growth and productivity resulting from the ability of water dependent businesses to form and from improvements in health and hygiene, which in turn has impacts on productivity and growth.

1.4.2.3 Results

OMM WUA's anticipated expenditure of approximately ZAR4.37 billion/a (as a 2020 estimate) on constructing the water infrastructure will make a significant contribution to the economy and create jobs. It will contribute around **ZAR2 bn/a** to Limpopo's GDP and create approximately **14 750 jobs**.

Figure 15 – CAPEX Socio-Economic Impact

LWUA's expected economic activity through planned capital expenditure associated with bulk raw water and potable water

R4.37 billion
average annual capital expenditure over the next 6 years (2022 -2027)

Limpopo Province

	Direct	Indirect	Induced	TOTAL
GDP added p.a.	R1.3 billion	R327 million	R345 million	R2.0 billion
Jobs added / sustained p.a.	9 360	2 775	2 615	14 750
Added tax revenue p.a.				R478 million
Household income added p.a.				R1.1 billion

Approx. 30% flowing to low-income households

Rest of South Africa

	Direct	Indirect	Induced	TOTAL
GDP added p.a.	-	R792 million	R1.3 billion	R2.1 billion
Jobs added / sustained p.a.	-	3 070	5 890	8 960
Added tax revenue p.a.				R736 million
Household income added p.a.				R1.7 billion

Combined

	TOTAL
GDP added p.a.	R4.1 billion
Jobs added / sustained p.a.	23 710
Added tax revenue p.a.	R1.2 billion
Household income added p.a.	R2.8 billion

Approx. 15% flowing to low-income households

Due to the planned **operational activities of approximately ZAR3.95 billion/a (as a 2020 estimate)**, OMM WUA will contribute around **ZAR2.6 billion/a** to Limpopo's GDP and create approximately **9 580 jobs**.

Figure 16 – OPEX Socio-Economic Impact

LWUA's expected economic activity through planned operational activities associated with bulk raw water and potable water

R3.95 billion
average annual operational expenditure over the next 27 years (2023-2050)

Limpopo Province

	Direct	Indirect	Induced	TOTAL
GDP added p.a.	R697 million	R1.5 billion	R465 million	R2.6 billion
Jobs added / sustained p.a.	2 020	4 560	3 000	9 580
Added tax revenue p.a.				R667 million
Household income added p.a.				R1.5 billion

Approx. 39% flowing to low-income households

Rest of South Africa

	Direct	Indirect	Induced	TOTAL
GDP added p.a.	-	R970 million	R1.6 billion	R2.5 billion
Jobs added / sustained p.a.	-	5 860	7315	13 175
Added tax revenue p.a.				R969 million
Household income added p.a.				R1.8 billion

Combined

	TOTAL
GDP added p.a.	R5.1 billion
Jobs added / sustained p.a.	22 755
Added tax revenue p.a.	R1.6 billion
Household income added p.a.	R3.4 billion

Approx. 18% flowing to low-income households

Additional mining activity that will become possible as a result of OMM WUA providing increased water will also significantly contribute to the economy.

Figure 17 – Additional Mining Activity Socio-Economic Impact

Expected impact on the mining sector due to additional water expected to be provided by LWUA

R6.88 billion
average additional mining revenue p.a. over the next 28 years (2022-2050)

Limpopo Province

	Direct	Indirect	Induced	TOTAL
GDP added p.a.	R3.1 billion	R941 million	R825 million	R4.8 billion
Jobs added / sustained p.a.	6 515	5 930	5 310	17 755
Added tax revenue p.a.				R1.0 billion
Household income added p.a.				R3.6 billion

Approx. 33% flowing to low-income households

Rest of South Africa

	Direct	Indirect	Induced	TOTAL
GDP added p.a.	-	R1.7 billion	R3.0 billion	R4.6 billion
Jobs added / sustained p.a.	-	7240	14 060	21 300
Added tax revenue p.a.				R1.7 billion
Household income added p.a.				R3.5 billion

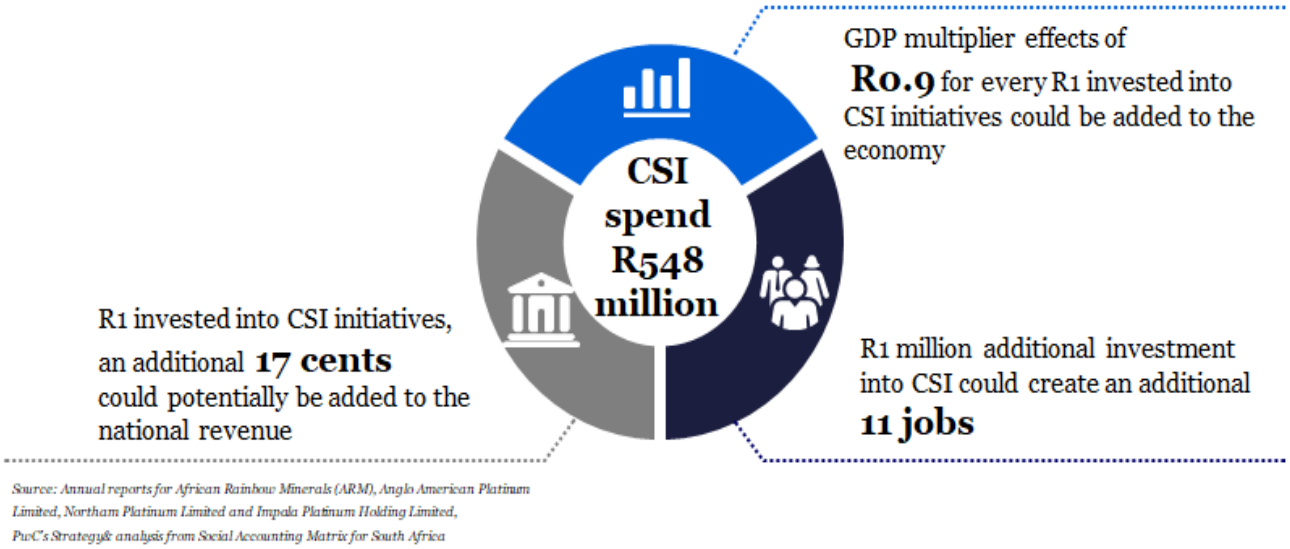
Combined

	TOTAL
GDP added p.a.	R9.4 billion
Jobs added / sustained p.a.	39 055
Added tax revenue p.a.	R2.7 billion
Household income added p.a.	R7.1 billion

Approx. 20% flowing to low-income households

We examined the impact of some of the CSI activities completed by CUC members in 2019. In 2019 the total CSI spend by four of CUC members, African Rainbow Minerals (ARM), Anglo American Platinum (AAP), Northam Platinum Limited and Impala Platinum Holding Limited, totaled ZAR548 million. This included spending on education, health, and infrastructure projects, among others. The estimated socio-economic impact of this spending on the wider economy are shown below.

Figure 18 – CSI Spend Summary



Source: Annual reports for African Rainbow Minerals (ARM), Anglo American Platinum Limited, Northam Platinum Limited and Impala Platinum Holding Limited, PwC's Strategy& analysis from Social Accounting Matrix for South Africa

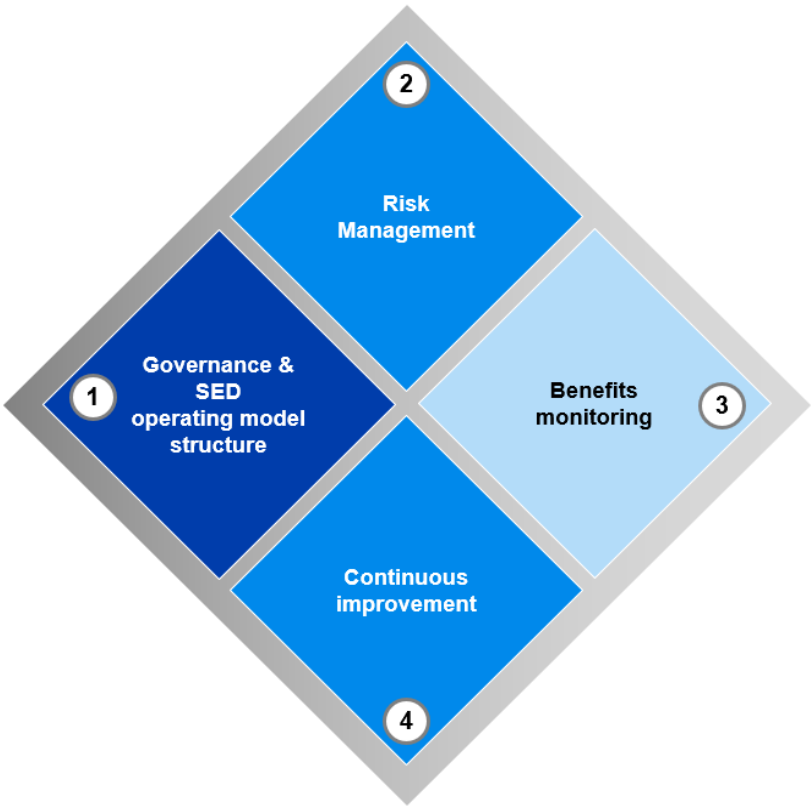
Once the communities in Area 1 and Area 2 receive improved access to water as a result of OMM WUA's planned water infrastructure activities, several further benefits are expected to arise.

1. **First, the additional water infrastructure will enable the growth of many new types of businesses in the community**, water-dependent businesses as well as further businesses that rely on water-dependent businesses in the value chain. Studies indicate that small businesses that are most affected by water supply and could stand to gain significantly from improved water access, are food businesses (including fruit and vegetable stores, butcheries) and hairdressers. In addition to this, improved water enables subsistence farming, which increases food security of households.
2. **Second, OMM WUA's water infrastructure is expected to improve health and hygiene** by helping to improve communities' access to safe and reliable water. Improved health and hygiene, particularly in early childhood development, has been shown to have positive impacts on cognitive abilities, school attendance, and education attainment. While these health and educational benefits represent positive impacts in their own rights, they are also linked to productivity gains and increased incomes in the long run. It is important to note that education on hygiene and health as well as further sanitation facilities should accompany improved access to piped potable water in order to maximise health and education benefits coming from these.
3. Finally, **improved access to piped water** through OMM WUA infrastructure will reduce time spent collecting water and increase time available for labour, leisure, and education. The analysis has shown that without access to piped water in dwellings or in the yard, households spend considerable amounts of time collecting water (approximately 27 hours per week). This is time that could be used for alternative activities such as labour, leisure, or education.

1.4.3 Implementation Approach

The following fours levers have been adopted to achieve the envisioned outcomes.

Figure 19 – Four Practical Levers

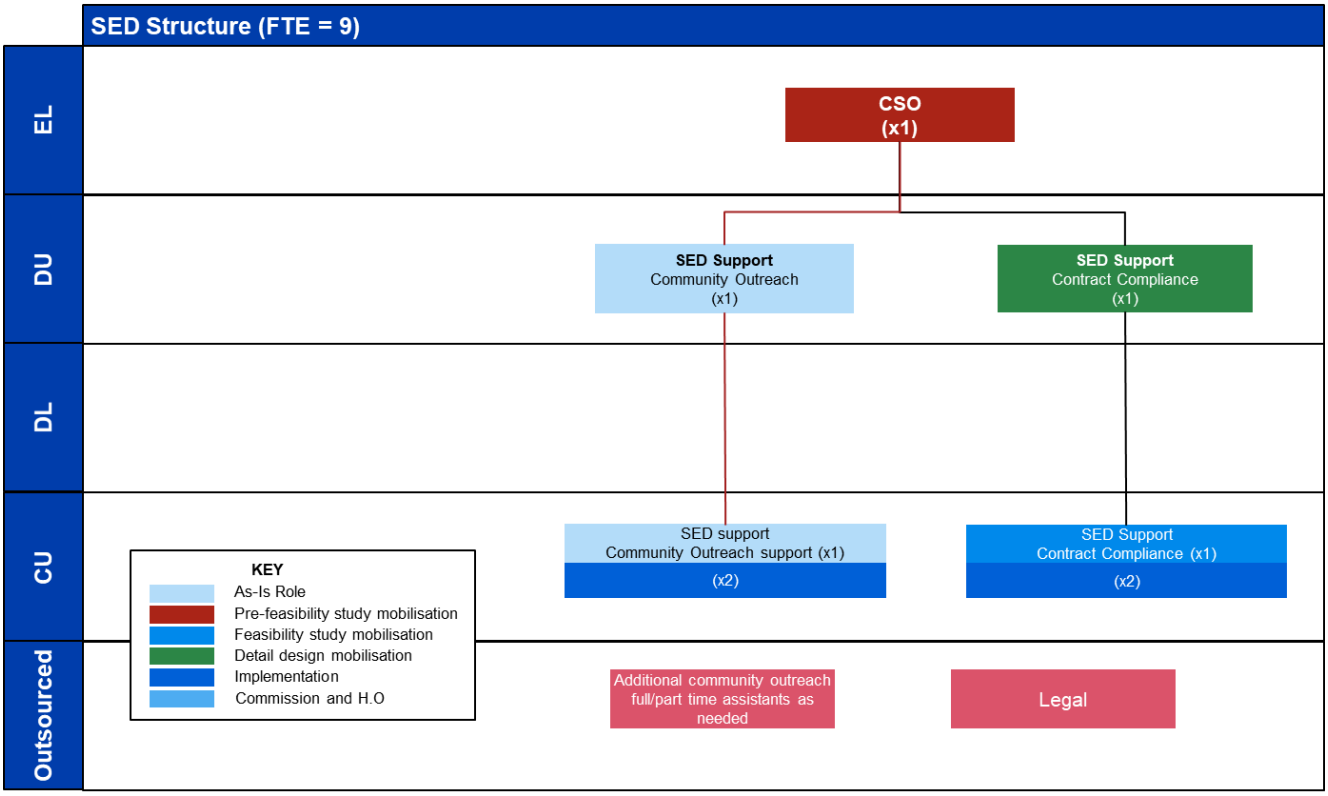


Lever 1: Governance & SED Operating Model Structure

To successfully realise a SED strategy, governance, structures and budgeting are important with a dedicated owner's team in place some time before the OMM Programme gets implemented. The SED team during the Feasibility phase should consist of 4 FTEs (full time equivalent employees) led by an executive level SED manager.

This SED team should perform two functions: First, it must provide oversight across a range of implementing agents, perform contract management functions and manage SED related project spend. Second, the team should engage with users and community stakeholders on a continuous level to build trusted relationships.

Figure 20 – SED Structure



Design principles applied:

- Enforce end-to-end accountability and clear roles and responsibilities;
- Stimulate a culture of progression;
- Do not compromise entities license to operate;
- Enablement of SED collaboration; and
- Strengthen governance structures.

Lever 2: Risk Management

The OMM Programme brings with it a series of potential risks that require mitigation. Our governance, structures and budgeting in combination with continuous engagement with the communities ensure that risks are identified early on so that impactful risk mitigation adjustments can be made. As the entire OMM Programme is deeply linked with and interconnected to the affected communities virtually all areas of risk share some touch points with OMM WUA's socio-economic development (SED) strategy.

Risks that are **directly mitigatable** through SED-related activities primarily include illegal offtake as well as vandalism and destruction of property.

Communities adjacent to, but not supportive of, the OMM Programme could likely engage in behaviour causing operational outages including vandalism and destruction of property. Many communities are currently connecting illegally to the raw water infrastructure or using water from rivers, both of which are untreated and create health risks, such as cholera. Illegal consumption also reduces water volumes in the system and could compromise the programme's ability to meet commitments for the provision of water to all consumers. While illegal offtake likely would be exacerbated if communities are not in support of the programme such risk is primarily mitigated through educational programmes on conscious water usage and conservation, culture of payment for service and law compliance are envisioned to positively affect the risk as well.

In sum the following risks share primary touchpoints with the SED strategy and are mitigated through the specific activities described in the next section.

Table 2 – Risk Management

Risk	Mitigation activities
Illegal take-off by communities and damage to property	• Behavioral programmes on conscious water usage and conservation, culture of payment for service and law compliance • Community engagement strategy leading to trust built with the communities and joint understanding of value, hope, pride and ultimately ownership ("buffer strategy")
Relationships with local authorities	• Continuous liaising with all stakeholders • Community engagement ensuring communities are "on our side" • Communication strategy • Roll out of SED projects with the local authorities
Local procurement and corruption	• Strict adherence to SED procurement policy • Right governance, strict oversight and compliance rules • Community engagement ensuring communities are "on our side"
Community pressure to change scope	• Continuous liaising with all stakeholders • Community engagement ensuring communities are "on our side" • Communication strategy
Water conservation	• Behavioral programmes on conscious water usage and conservation
Sanitation and sewerage	• Behavioral hygiene education programmes

Lever 3: Benefits monitoring

Our SED strategy is built around the principle of monitoring and oversight from strategy through to execution, led by OMM WUA. This will ensure full line of sight of all outcomes and safeguard our spend. Please refer to the Table for KPIs to be monitored.

Lever 4: Continuous improvements

Successful SED strategies are not set in stone but purposely designed around an understanding that long-term projects will require continuous adjustments to the strategy. SED related risks mainly include aspects of operational risks including illegal offtake as well as vandalism. The risks are addressed through comprehensive community engagement programs. Results should be monitored on a defined basis and communicated to all stakeholders.

1.4.3.1 Implementation plan

The activities that need to be considered/planned during the Pre-Feasibility and Feasibility Study Phases and the related budget is presented below and explained in further detail in the underlying sections.

(Note: To ensure success some activities have to be started in the Pre-Feasibility Phase while other activities can start at a later point in time. This is indicated in the table below.)

Table 3 – Implementation Plan

Outcome	Activities	Tasks	Pre-Feasibility	Feasibility
			R4.0m	**R3.0m**
1. Primary	1.1 Granular baseline study	Interviews and focus group discussions	**x**	
		Survey	**x**	
		Combine results from baseline study and SEIA studies to estimate targets		**x**
	1.2 SEIA studies	Impact study to determine impacts of different spending options on jobs and growth	**x**	**x**
	1.3 Recruit SED team	Recruitment of SED capability (in Operations Team budget)	**x**	
	1.4 Engage community	Develop community engagement strategy and plan	**x**	**x**
		Conduct community engagement events	**x**	**x**
	1.5 Assess community risks	Reconnaissance	**x**	
		Engagement with stakeholders	**x**	
	1.6 Behavioural programmes	Hygiene education		**x**
		Conscious water usage and conservation		**x**
		Culture of payment for service		**x**
		Law compliance		**x**
		Youth leadership		**x**
	1.7 Communi-cation Strategy	Perform brand validation		**x**
		Refine communication strategy	**x**	
		Develop media buying and creatives strategy		**x**
	1.8 Align procurement	Procurement policy (SED portions)	**x**	
		Set up/implementation of platform/website	**x**	

Outcome	Activities	Tasks	Pre-Feasibility	Feasibility
	1.9 Collaboration Forum	Start collaboration Forum	**x**	
			R2.5m	**R3.5m**
2. Secondary	2.1 Skills database	Alignment	**x**	
		Database design and RPA	**x**	
		Marketing	**x**	
	2.2 Skills development fund	Establish and register fund	**x**	**x**
	2.3 Bursary programmes	Effect bursary programmes		**x**
	2.4 Training plan	Skills identification	**x**	**x**
		Gap analysis	**x**	**x**
		Facilities assessment	**x**	**x**
			R1.0m	**R3.5m**
3. Tertiary	3.1 Develop local supplier database	Develop a local enterprise registration portal/ database and accreditation process	**x**	
		Conduct workshop to align database with supply needs		**x**
		Develop website that matches supply and demand		**x**
	3.2 Enterprise Development Fund	Establish and register fund		**x**
		Begin coordination activities to match buyers and suppliers		**x**
	3.3 Back office support	Investigate through the Fund a back office support platform for new and existing enterprises		**x**
Total			**R7.5m**	**R10.0m**

1.4.3.2 Required Activities to Achieve Primary SED Outcome

The **primary SED outcome** entails the acceleration of potable water to communities in the OMM Programme area. To deliver the primary outcome we have identified the following seven activity sets which have to be conducted during the Feasibility Study Phase of the OMM Programme:

1. Conduct granular baseline study

This study should combine demographic data analysis from secondary sources with detailed primary data analysis which will be captured through a representative household survey and interviews/focus group discussions in the affected areas. Key data to be collected includes data around access to utilities, employment, income, health and education. This will allow obtaining a more granular baseline representative specifically for the community members in the affected areas.

2. SEIA studies

During the pre-feasibility and feasibility phases, further soico-economic impact assessments will be conducted as updated data on OMM WUA's proposed expenditure becomes available. Measuring the socio-economic impact of different spending options will guide decision-making towards spending with higher income on jobs and economic growth. In combination with the baseline study, it will also enable estimating SED outcome targets/KPIs over the years and compare this to a business as usual trendline.

3. Recruit SED team

A total SED team envisioned at 9 FTEs, with a smaller team of 4 FTEs necessary in the Feasibility Phase to ensure impacts are realised. The SED team will provide oversight across a range of implementing agents and engage with the community stakeholders on a constant level. The SED team will be led by a Chief Socio-Economic Development Officer (CSO) who will direct the strategic objective of building a trusted platform for SED in the region and establishing a trusted SED collaboration forum. Two separate sub-teams will report:

- SED community engagement and participation readiness team: 4 FTEs will focus on community engagement and liaising including SED collaboration across water users as well as the establishment of skills and enterprise development readiness programmes to ensure communities are able to participate in the capital and operational spend of the programme. The intent is for these skills and enterprise development programmes to be outsourced to professional institutions. The roles are envisioned to entail substantial out of office commitments and daily in person liaising with different stakeholders across the communities to ensure full line of sight of actual community needs as well as potential grievances or conflicts early on.
- SED contract spend and compliance team: 4 FTEs will focus on contract spend, oversight, compliance and all related administration and reporting. The FTEs in this function would primarily work office based.

SED related legal work will be outsourced.

4. Engage community

Develop a community engagement strategy and plan which should be informed by the baseline study community interviews. To ensure a good understanding of and alignment to true community needs a series of large-scale community meetings (or "town hall meetings") should be conducted. Practically the meetings would be held across the affected areas and will be used as an avenue to inform the communities about the programme and give them a forum to express their views. As part of the community engagement work in the Pre-Feasibility Phase detailed agendas and locations for the community meetings must be decided on. The decision must ensure wide community representation and flexibly accommodate local community needs and circumstances. In general to conduct the meetings proper venues must be identified and operational aspects such as transportation of, and catering for, participating community members organised. Based on the learnings from the community meetings an engagement plan will be formulated.

5. Assess community safety

The planning, construction and operation of the infrastructure will require a safe and stable environment for work to be conducted. Accordingly, efforts will need to be made to understand and monitor the local environment to pre-empt and/or quickly respond to threats that may jeopardise the safety of personnel and communities. The plan would need to be developed and integrated into member mine plans and intelligence shared amongst members. A safety risk assessment and plan will need to be developed during the next phase of the OMM Programme. This plan will need to be inform by the community engagement plan. The assessment would include strategic reconnaissance and target interviews with stakeholder in the region such as local business owner and local leaders and chiefs and be performed by a specialised security and intelligence consultant.

6. Develop behavioural programmes

The combination of poverty, unemployment, lack of basic services and other adverse social impacts borne from the afore mentioned have created a negative psyche for many.

Behavioural change programmes will need to be developed to address the associated risks. NGOs and Governmental programmes would need to be identified and incorporated into an integrated plan starting at school level and further addressed through community events and use of sponsored digital platform(s). Five behavioural programmes and monitoring mechanisms should be developed:

1. Hygiene education programme;
2. Conscious water usage and conservation programme;
3. Embedding a culture of payment for service programme;
4. By-law compliance and rule of law compliance programme; and
5. Youth leadership programme given high youth unemployment.

7. Develop communication strategy and validate brand

LWUA historically suffered brand damage due to a misunderstanding of its role and responsibilities by communities. A communication strategy and plan should be developed to address this including a public relations media campaign around the OMM Programme and its benefits. Part of the plan includes an OMM Programme naming competition to be held amongst communities during the Pre-feasibility study phase. A brand review is to form part of the Feasibility Phase to assess whether there is a need to rebrand the organisation or not. The communication strategy would be informed by the community interviews and risk assessment and continuously updated following behavioural programme learnings.

The strategy must target the entire marketing mix including creatives ideation and media buying and capture all avenues of marketing including high-reach media such as radio and print media (“above the line”) as well as more targeted and focused approaches both offline (“below the line”) as well as on the internet (“through the line”).

All communication would target three most different groups of recipients:

1. Communities in need and directly affected (ties in with behavioural programme, additional focus on job and training opportunities)
2. Wider regional area media (stronger focus on overall project, procurement opportunities and business development aspects)
3. National media (stronger focus on milestones achieved, broad SED activities plus potential crisis management)

8. Align procurement

RFQs and awarded contracts must be tested for compliance against SED procurement policy requirements and standards which must be developed in conjunctions with specific working instructions. Further a digital platform for procurement must be introduced.

9. Launch collaboration forum

The OMM WUA strategy recognises that while the provision of potable water to communities will have significant impact in the short term it will not be enough over the medium to long term. Mechanisms are needed to accelerate socio-economic development in the region over and above the outcomes outlined in the proposed programme. To address this, a SED Collaboration Forum is to be established in the Pre-Feasibility Study phase to explore ways in which members and others can collaborate around common themes to accelerate socio-economic development in the region. This Forum will also provide an opportunity for members to contribute resources, skills, studies, community intelligence, technology, processes, connectivity access amongst others, to the OMM Programme to reduce programme cost. A transformed OMM WUA Social and Ethics Committee is proposed to fulfil the function of the SED Collaboration Forum.

1.4.3.3 Required Activities to Achieve Secondary SED Outcome

The secondary SED outcome entails the creation of jobs through the associated capital and operational expenditure of the programme by focusing on timely skills development.

The baseline study indicated that there is particularly high unemployment, especially among the proportion of youths in the delineated areas around LWUA's operations. In addition to this, household incomes and education levels are particularly low, with a larger proportion of adults with no schooling and no matric than in other parts of the municipalities on average. This indicates that there are few opportunities for youths to escape poverty.

In order to help address these issues, one of the key areas of the SED strategy is skills development and employment creation. One channel through which OMM WUA aims to achieve skills development and employment creation is through hiring contractors among the community members in the delineated areas of OMM WUA's operations, wherever possible, for the construction of the water infrastructure and for its maintenance. This will ensure that capital spending from OMM WUA's activities has a direct impact on the incomes in the communities and salaries will at least partially be spent within those communities.

With respect to employment opportunities four horizons were considered in the Concept Study:

1. **Immediate** – LWUA's Covid-19 response to deliver water to tanks is expensive and requires a more cost-effective solution. Communities in the Eastern Limb can be engaged in daily work packages to assist in pipeline repairs and network development. The OMM Programme will also investigate opportunities, linked to available data and designs from Municipalties, for immediate kick-off of potable water supply projects in areas where raw water is already available.
2. **OMM Programme planning** – Consideration to be given to paid activities that communities can participate in during the community engagement processes as well as when contractors are conducting site visits for planning purposes
3. **Construction** – This stage will represent the bulk of the employment opportunity and is expected to occur mainly in the potable water projects. The skills development programmes should be timed to take full advantage of this opportunity. Specifically, skills and functions needed range across the areas of construction, earth moving and civil works. From a capital expenditure perspective, they include:

Table 4 – Construction Job Functions

Construction Job Functions	Earth Moving Job Functions	Civil Works Job Functions
1. Mechanical engineers	1. Truck operators	1. Site managers
2. Industrial engineers	2. Mechanics	2. Site supervisors
3. Civil engineers	3. Plant administrators	3. Site accountants
4. Site managers	4. Plant accountants	4. Site procurement
5. Foremen	5. SHEQ officers	5. Pipelayers
6. Supervisors	6. Diesel controllers	6. Bricklayers

Construction Job Functions	Earth Moving Job Functions	Civil Works Job Functions
7. Laborers 8. Site engineers 9. Procurement officers 10. Receiving clerks 11. Site accountants 12. IT supervisors 13. SHEQ officers 14. Warehousing officers 15. Warehouse manager 16. Training officers 17. Security guards	7. Diesel attendants 8. Lube technicians 9. Supervisors 10. IT supervisors 11. Workshop operators 12. Workshop managers 13. Training officers 14. Security guards	7. Plumbers 8. Electricians 9. Fitter and turners 10. Mechanics 11. Millwrights 12. SHEQ 13. Training officers

4. **Operations** – LWUA will transition into the OMM WUA. from 40 personnel to approximately 160 personnel once the PMU is disbanded. This represents a sizeable employment opportunity and recruitment policy will be geared towards recruiting local existing or developed skills. In addition to the 44 functions identified above which relate to programme related capital expenditures, a further 15 functions are required from an operational expenditure perspective (including back office functions):

Table 5- Operations Job Functions

Operations Job Functions	Back Office Functions
1. Dam operations 2. Desiltation 3. Pump Station operations 4. Potable water treatment 5. Bulk and potable water distribution 6. Build 7. Maintenance 8. Plumbing	1. Procurement 2. Energy management 3. Electrical management 4. Electronic Management 5. Financial management 6. Accounting 7. IT and digital technology

Where the demanded skills are not available, OMM WUA aims to build the demanded skills by offering training plans, ramp up a skills development fund and provide bursaries to nearby educational institutions where these skills can be acquired. OMM WUA also aims to develop skills that can be used beyond the water infrastructure projects and beyond the lifecycle of the infrastructure construction.

OMM WUA's strategy with regard to secondary SED outcomes thus entails the following key activities:

1. Skills database

In order to match existing skills among community members with the demanded skills for the infrastructure construction, maintenance, and related activities, OMM WUA aims to make use of a skills database (this can leverage existing databases, or a new database could be considered with technology-based screening capability), recording areas and levels of experience of community members seeking jobs in the immediate and medium term. While the immediate goal is to match skills supply with OMM WUA's demand, the database will be designed to be an open jobs forum for other employers and employment seekers beyond OMM WUA's activities, and beyond the programme's lifetime of the infrastructure construction.

On the demand side, this component will involve gathering data on the required skills for the construction well in advance of its commencement. It will also involve outreach to Human Resources departments of employers in the area. On the demand side, OMM WUA will involve collaboration with educational institutions to understand available skills and conduct a campaign to advertise the database and demanded skills among employment seekers.

2. Skills development fund (SDF)

OMM WUA to establish either a self-funding tax effective commercial entity and/or a Public Benefit Organisation (PBO) with a mandate to develop and co-ordinate training programmes. Consideration to be given to outsourcing this to a professional training service provider(s) to assess the skills gap and develop appropriate training programmes. Rather than duplicating or replacing existing training facilities, the aim is to co-ordinate across existing training facilities and education centers, helping to identify the best place to acquire the needed skills for specific community members. Seed funding would be required for set up of the Fund and ongoing funding would be sourced through a skills development levy on all contracts related to the OMM Programme.

3. Training plan

The training plan involves understanding training needs as well as past training and experience acquired by community members (**skills identification**). It also involves a gap analysis whereby the unmet supply of skills is identified (**gap analysis**). It will then lay out an appropriate training programme for trainees that will bring these to a level where they are able to meet the demanded skills and assess nearby facilities to understand where the required training is offered (**facilities assessment**). The objective here is to collaborate across the various facilities providing training and to coordinate between these and with the trainees to ensure that trainees obtain the required training at the right place.

4. Bursaries

Through skills development fund, bursaries will be supplied for trainees to upskill in the demanded skills. Further bursaries may also be supplied to enable youths in the communities to complete civil and water engineering studies based on demand.

5. Expanded operational needs

Contractors for OMM WUA's water infrastructure will then be hired via the database and training, and bursary programmes.

1.4.3.4 Required Activities to Achieve Tertiary SED Outcome

The **tertiary SED outcome** entails **enterprise development**. In line with the secondary SED outcome, the underlying objective of this outcome is to contribute to job creation and economic growth. In addition to supporting individuals, it also aims to support the growth and start-up of businesses.

OMM WUA's construction work will require supplies and, where possible, OMM WUA will aim to draw on local suppliers from the communities in the demarcated areas. This will ensure that capital and operational spending directly reaches the communities and has economic knock on effects in those communities. Where these suppliers do not exist, the aim is to help develop suppliers based on demand from the water infrastructure construction.

More specifically, the following goods and services are needed for the OMM Programme:

Table 6 – Required Good and Services

Direct Goods and Services	Workforce Wellbeing Goods and Services
1. Engineering Firms (pipeline manufacturers, man hole covers, heavy vehicle overhauls) 2. Cement distributors 3. Plant Hire 4. Plant Maintenance Workshops	1. Accommodation 2. Food & beverage outlets 3. Health clinics 4. Recreation facilities 5. Mobility - service stations

Direct Goods and Services	Workforce Wellbeing Goods and Services
5. Renewable Energy Generation 6. Consumables: Fuel, oil, lubricants	6. Connectivity (wi-fi, device outlets) 7. Transportation

In addition to direct employment opportunities originating from programme related capital expenditures and operational expenditures a number of **indirect employment opportunities** will materialize. They are related to the businesses offerings goods and services to the programme as well as those who provide essential and wellbeing goods to the workers:

Table 7 – Supporting Job Functions

Supporting Job Functions	
1. Consulting engineering firms	8. Food and Beverage Outlets
2. Fuel providers	9. Doctors and dentists
3. Lube and Oil providers	10. Pharmacists and staff
4. Electrical and Plumbing wholesalers	11. Accommodation
5. Building product wholesalers	12. Recreational outlets
6. Cement producing plants	13. Fitness centres and staff
7. Accounting and consulting firms	14. Supermarkets and staff

The key activities to be conducted during the Feasibility Study Phase to achieve this outcome are:

1. Local supplier database

This entails the development of a local enterprise registration portal/ database and accreditation process. An initial workshop to align the database with supply needs. A website will then be developed, linked to the OMM WUA website, from where supply and demand will be matched through AI and machine learning systems.

2. Enterprise development fund

OMM WUA to establish a self-funding tax effective commercial entity and/or a Public Benefit Organisation (PBO) with a mandate to incubate and support local enterprises. Consideration to be given to outsourcing this to a professional enterprise development service provider(s) to assess the supplier landscape and develop an Enterprise Development and Support plan for the OMM Programme. Seed funding would be required for set up of the Fund and ongoing funding would be sourced through an enterprise development levy on all contracts related to the OMM Programme.

Notably, as part of the tax considerations for SED funding, in the event that the WUA after extension of its mandate and activities is reclassified as a “Water Service Provider” (as defined by the Income Tax Act), tax exemptions for SED contributions will not apply. The funding mechanisms for the initiatives identified will be explored through the planned SED Collaboration Forum.

3. Back office support

An online back-office support platform for enterprises incubated in the Enterprise Development Fund will be investigated.

Olifants Management Model (OMM) Programme

Programme Early Business Case – High Value

Attachment C: Concept Integrated Schedule

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IMPROVING LIVES THROUGH WATER

Table of Contents

1. Schedule

1.1 Introduction

High-level indicative schedules, which can be described as a flightpaths for the project from the concept phase to the handover of assets following commissioning and ramp-up has been developed. It should be noted that the schedules could have many outcomes at this stage of the project, depending on the alternatives that will be studied in the Pre-feasibility phase.

1.2 Proposed Implementation Scope

The following infrastructure projects are proposed for the Integrated Water Services Model Solution ("The OMM Programme"):

1. Project 1: Bulk Raw Water: ORWRDP phase 2B & 2B+ – steel pipeline from Flag Boshielo dam to Sekuruwe Water Treatment Works (WTW) in the northern limb;
2. Project 2: Bulk Raw Water: ORWRDP phase 2F – steel pipeline from Clapham pump station to Olifantspoort weir;
3. Project 3: Bulk Raw Water: New pump station between Steelpoort pump station and Mooihoek reservoir including reversed pumping from Steelpoort pump station utilising existing LWUA infrastructure;
4. Project 4: Potable Water Eastern Limb: Potable pipelines, reservoirs, water treatment works, pump stations and associated infrastructure, reticulation network and yard connections in the Eastern Limb surrounding the mines;
5. Project 5: Potable Water Northern Limb: Potable pipelines, reservoirs, water treatment works, pump stations and associated infrastructure, reticulation network and yard connections in the Northern Limb surrounding the mines.

1.3 Implementation Approach

Considering the critical success factors related to the OMM Programme schedule and the selected technical design options a high level implementation approach was developed with priority given to projects with available design data to support acceleration:

1. Implement Eastern Limb potable water along the current LWUA network utilising existing available network capacity (Eastern Limb potable water phase 1) and along the completed ORWRDP phase 2C;
2. Implement bulk raw water phases 2B & 2B+, Flag Boshielo Dam to Sekuruwe, with maximum use of existing available design data from DWS.

These project will then be followed by parallel implementation of the remaining projects:

1. New pump station with reverse flow of current LWUA network;
2. Bulk raw water phase 2F, a pipeline directly from Clapham to Olifantspoort weir;
3. Northern Limb potable water;
4. The remainder of the potable water scope in the Eastern Limb (phase 2).

1.3.1 Northern Limb "Early Win"

Flag Boshielo Dam to Sekuruwe (bulk raw water and potable water)

Based on the assumption that the extended phase 2B is ready for execution:

1. Start RFP process for the Execution Phase of phases 2B & 2B+, bulk raw water supply, based on available DWS data;
2. At Pre-feasibility phase kick-off, the selected Consultant will perform a review and gap analysis of the DWS ORWRDP Phase 2B design scope, inclusive of all approved scope modifications:
   a. Specific focus on final scope and signed off deliverables;
   b. Comparison with OMM requirements (system water availability, raw water up to the Mokopane area and Sekuruwe in the Mogalakwena Municipal area, and potable water in villages surrounding the mines) and define the scope deltas;
3. The selected consultant's contract scope will be updated based on the gap analysis and aligned with the final scope and capacity agreements for the OMM Programme:
   a. Update required deliverable details, to match adjusted scope, for a Financial Investment Decision (FID);
   b. In parallel with FID time frame, update design deliverables, and be ready to appoint contractors for the Execution Phase of the scope (money at risk to secure fast track approach);
4. Finalise potable water battery limits and scope to enable parallel start of the associated study phase RFP proses;
5. Parallel start of RFP process for SED scope associated with both raw water execution and potable water study phases.

1.3.2 Eastern Limb "Early Win"

Potable water supply to defined communities along current LWUA network

1. Utilise available raw water in the current LWUA Network and completed ORWRDP phase 2C for accelerated potable water supply in the region;
2. Based on a LWUA network model, determine available capacity and optimal extraction points;
3. Start study phase RFP proses for potable water supply to agreed villages in the region along the current network (Eastern Limb potable water Phase 1);
4. Pre-approvals and dedicated fast track processes up to FID;
5. Parallel start of RFP process for SED scope associated with potential total Eastern Limb scope (raw and potable water).

1.3.3 Scope Remainder of the OMM Programme

Increase current network capacity and supply water to Polokwane

1. As part of pre-feasibility phase (scope development phase) evaluate available study materials from ORWRDP project and CUC Concept study for:
   a. Compliance to agreed water availability and system capacity requirements;
   b. In order of priority, lowest capital cost and fastest execution;
2. It is anticipated that reverse flow of the current LWUA network will be more cost effective than immediate construction of ORWRDP phases D and E;
3. Phases D and E will not be cancelled, but postponed to a date when demand require implementation;
4. Focus will be placed on Phase 2F to secure additional potable water supply to Polokwane;
5. Agree final potable water battery limits in the region and scope (Eastern Limb potable water Phase 2);
6. Start study phase RFP process for the above raw and potable water scopes in a single consultant contract.

1.4 OMM Programme Indicative Schedule

Based on the current indicative OMM Programme study phases is expected to kick-off between 1 May 2022 and 1 August 2022 with the following estimated completion targets:

Project 1:	Bulk raw water phases 2B & 2B+	Q3 2026 to Q1 2027
Project 2:	Northern Limb potable water	Q1 2030 to Q3 2030
Project 3:	Eastern Limb Phase 1 potable water	Q1 2028 to Q3 2028
Project 4:	Reverse flow of LWUA network	Q4 2026 to Q2 2027
Project 5:	Bulk raw water phase 2F	Q2 2028 to Q4 2028
Project 6:	Eastern Limb Phase 2 Potable water	Q4 2029 to Q2 2030

Note: *Above dates are indicative only and will be updated prior to study phase kick-off. Although overall completion date targets are indicated for the potable water supply in the respective regions, it is important to understand that subsections within villages will be completed and handed over on an ongoing basis during the construction period.*

1.5 Basis of the Schedule

1. The schedule is mainly milestone based; dates are derived from durations based on a planning unit of months;
2. The OMM Programme study phase will kick-off after a Ministerial Heads of Agreement on the programme implementation approach is reached between the parties. This will be followed by a 3 month RFP process to appoint consultants for the execution of the study phase scopes;
3. Maximum use of available design data and regulatory approvals:

a. Confirmation that Phases 2B&2B+ are designed up to “ready for procurement” status through a design due diligence, FID documentation can be prepared and approval thereof can initiate construction. This can significantly shortened the design & procurement phase;

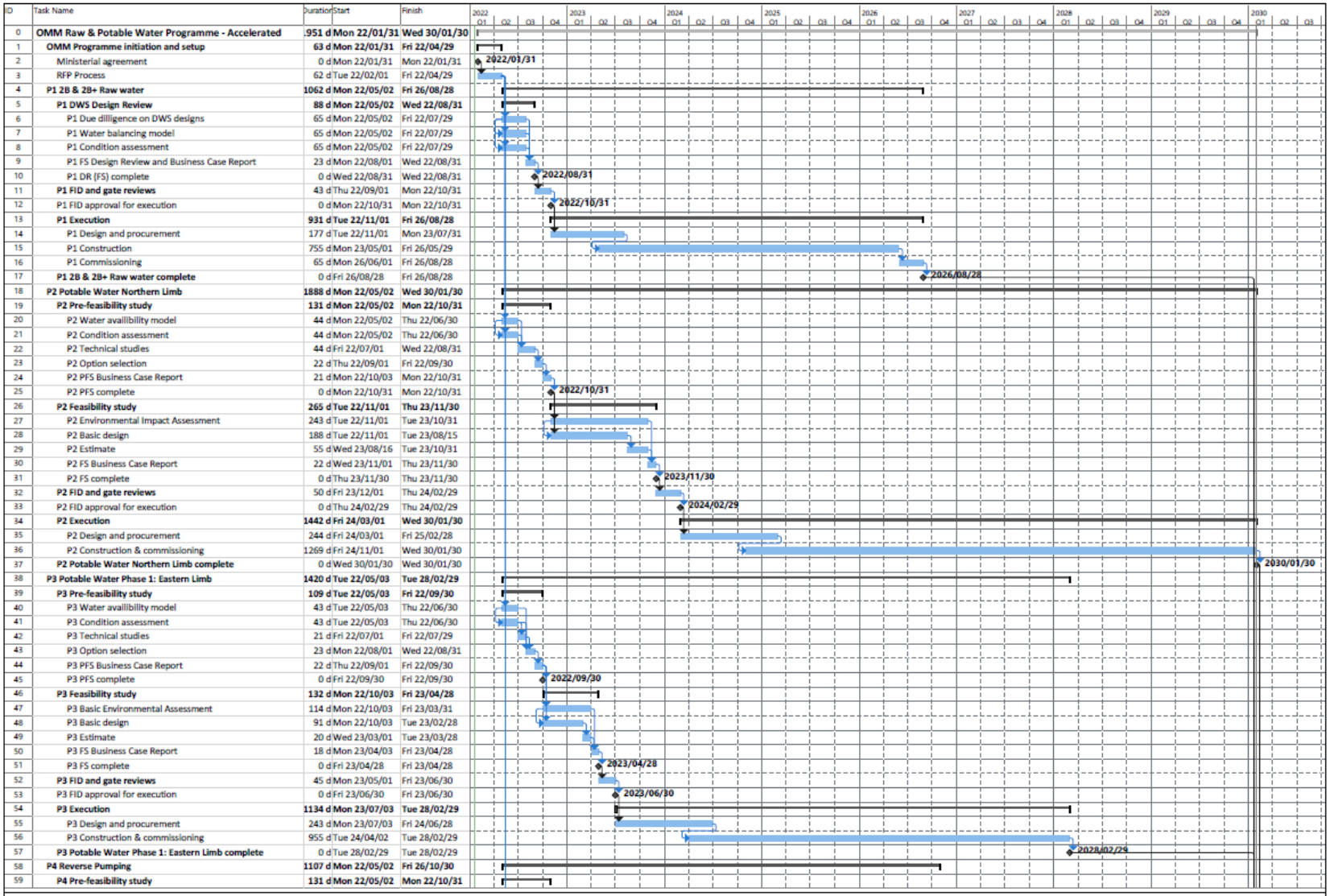
b. Utilising available capacity in the LWUA network and ORWRDP phase 2C in the Eastern limb, a potable water project can commence nearby the existing LWUA network and phase 2C at an accelerated speed utilising available designs from local authorities with associated regulatory approvals;

4. Pre-Feasibility phases for each project (excluding above mentioned possible early works) are assumed as 6 months with direct roll over into the Feasibility phase;
5. Feasibility study phases for each project are assumed as 12 months. The actual duration will be determined by the time required to obtain EIA RODs;
6. Final Investment Decision (FID) is the only “Hold” point in the program with a time period of between 2 and 3 months allocated for each project;
7. An intermediate and full business case report will be developed based on the 5 Case Project Business Model requirements after pre-feasibility and feasibility phase for each project. A time period of between 1 and 2 months are allocated for each project to perform these reports;
8. Design and construction periods are as per the CUC Concept Study Report;
9. A main construction period for the raw water infrastructure projects:
   - ORWRDP Phase 2B & 2B+, 38 months
   - ORWRDP Phase 2F, 38 months
   - New Pump station, 24 months
10. The following main durations for potable water infrastructure projects:
    - Eastern Limb Potable Water, 60 months
    - Northern Limb Potable Water, 60 months
11. No allowances for rain nor inclement weather have been made in the flightpath schedules;
12. No allowance for early works or long lead items have been made in the flightpath schedules..

The projects are assumed to be executed in parallel, either with multiple contractors, or with a contractor with sufficient resources to have multiple projects in execution simultaneously with multiple work fronts.

1.6 High Level Flightpath: Accelerated Schedule

ID	Task Name	Duration	Start	Finish
0	**OMM Raw & Potable Water Programme - Accelerated**	**951 d**	**Mon 22/01/31**	**Wed 30/01/30**
1	**OMM Programme initiation and setup**	**63 d**	**Mon 22/01/31**	**Fri 22/04/29**
2	Ministerial agreement	0 d	Mon 22/01/31	Mon 22/01/31
3	RFP Process	62 d	Tue 22/02/01	Fri 22/04/29
4	**P1 2B & 2B+ Raw water**	**1062 d**	**Mon 22/05/02**	**Fri 26/08/28**
5	**P1 DWS Design Review**	**88 d**	**Mon 22/05/02**	**Wed 22/08/31**
6	P1 Due dilligence on DWS designs	65 d	Mon 22/05/02	Fri 22/07/29
7	P1 Water balancing model	65 d	Mon 22/05/02	Fri 22/07/29
8	P1 Condition assessment	65 d	Mon 22/05/02	Fri 22/07/29
9	P1 FS Design Review and Business Case Report	23 d	Mon 22/08/01	Wed 22/08/31
10	P1 DR (FS) complete	0 d	Wed 22/08/31	Wed 22/08/31
11	**P1 FID and gate reviews**	**43 d**	**Thu 22/09/01**	**Mon 22/10/31**
12	P1 FID approval for execution	0 d	Mon 22/10/31	Mon 22/10/31
13	**P1 Execution**	**931 d**	**Tue 22/11/01**	**Fri 26/08/28**
14	P1 Design and procurement	177 d	Tue 22/11/01	Mon 23/07/31
15	P1 Construction	755 d	Mon 23/05/01	Fri 26/05/29
16	P1 Commissioning	65 d	Mon 26/06/01	Fri 26/08/28
17	**P1 2B & 2B+ Raw water complete**	0 d	Fri 26/08/28	Fri 26/08/28
18	**P2 Potable Water Northern Limb**	**1888 d**	**Mon 22/05/02**	**Wed 30/01/30**
19	**P2 Pre-feasibility study**	**131 d**	**Mon 22/05/02**	**Mon 22/10/31**
20	P2 Water availibility model	44 d	Mon 22/05/02	Thu 22/06/30
21	P2 Condition assessment	44 d	Mon 22/05/02	Thu 22/06/30
22	P2 Technical studies	44 d	Fri 22/07/01	Wed 22/08/31
23	P2 Option selection	22 d	Thu 22/09/01	Fri 22/09/30
24	P2 PFS Business Case Report	21 d	Mon 22/10/03	Mon 22/10/31
25	P2 PFS complete	0 d	Mon 22/10/31	Mon 22/10/31
26	**P2 Feasibility study**	**265 d**	**Tue 22/11/01**	**Thu 23/11/30**
27	P2 Environmental Impact Assessment	243 d	Tue 22/11/01	Tue 23/10/31
28	P2 Basic design	188 d	Tue 22/11/01	Tue 23/08/15
29	P2 Estimate	55 d	Wed 23/08/16	Tue 23/10/31
30	P2 FS Business Case Report	22 d	Wed 23/11/01	Thu 23/11/30
31	P2 FS complete	0 d	Thu 23/11/30	Thu 23/11/30
32	**P2 FID and gate reviews**	**50 d**	**Fri 23/12/01**	**Thu 24/02/29**
33	P2 FID approval for execution	0 d	Thu 24/02/29	Thu 24/02/29
34	**P2 Execution**	**1442 d**	**Fri 24/03/01**	**Wed 30/01/30**
35	P2 Design and procurement	244 d	Fri 24/03/01	Fri 25/02/28
36	P2 Construction & commissioning	1269 d	Fri 24/11/01	Wed 30/01/30
37	**P2 Potable Water Northern Limb complete**	0 d	Wed 30/01/30	Wed 30/01/30
38	**P3 Potable Water Phase 1: Eastern Limb**	**1420 d**	**Tue 22/05/03**	**Tue 28/02/29**
39	**P3 Pre-feasibility study**	**109 d**	**Tue 22/05/03**	**Fri 22/09/30**
40	P3 Water availibility model	43 d	Tue 22/05/03	Thu 22/06/30
41	P3 Condition assessment	43 d	Tue 22/05/03	Thu 22/06/30
42	P3 Technical studies	21 d	Fri 22/07/01	Fri 22/07/29
43	P3 Option selection	23 d	Mon 22/08/01	Wed 22/08/31
44	P3 PFS Business Case Report	22 d	Thu 22/09/01	Fri 22/09/30
45	P3 PFS complete	0 d	Fri 22/09/30	Fri 22/09/30
46	**P3 Feasibility study**	**132 d**	**Mon 22/10/03**	**Fri 23/04/28**
47	P3 Basic Environmental Assessment	114 d	Mon 22/10/03	Fri 23/03/31
48	P3 Basic design	91 d	Mon 22/10/03	Tue 23/02/28
49	P3 Estimate	20 d	Wed 23/03/01	Tue 23/03/28
50	P3 FS Business Case Report	18 d	Mon 23/04/03	Fri 23/04/28
51	P3 FS complete	0 d	Fri 23/04/28	Fri 23/04/28
52	**P3 FID and gate reviews**	45 d	Mon 23/05/01	Fri 23/06/30
53	P3 FID approval for execution	0 d	Fri 23/06/30	Fri 23/06/30
54	**P3 Execution**	**1134 d**	**Mon 23/07/03**	**Tue 28/02/29**
55	P3 Design and procurement	243 d	Mon 23/07/03	Fri 24/06/28
56	P3 Construction & commissioning	955 d	Tue 24/04/02	Tue 28/02/29
57	**P3 Potable Water Phase 1: Eastern Limb complete**	0 d	Tue 28/02/29	Tue 28/02/29
58	**P4 Reverse Pumping**	**1107 d**	**Mon 22/05/02**	**Fri 26/10/30**
59	**P4 Pre-feasibility study**	**131 d**	**Mon 22/05/02**	**Mon 22/10/31**



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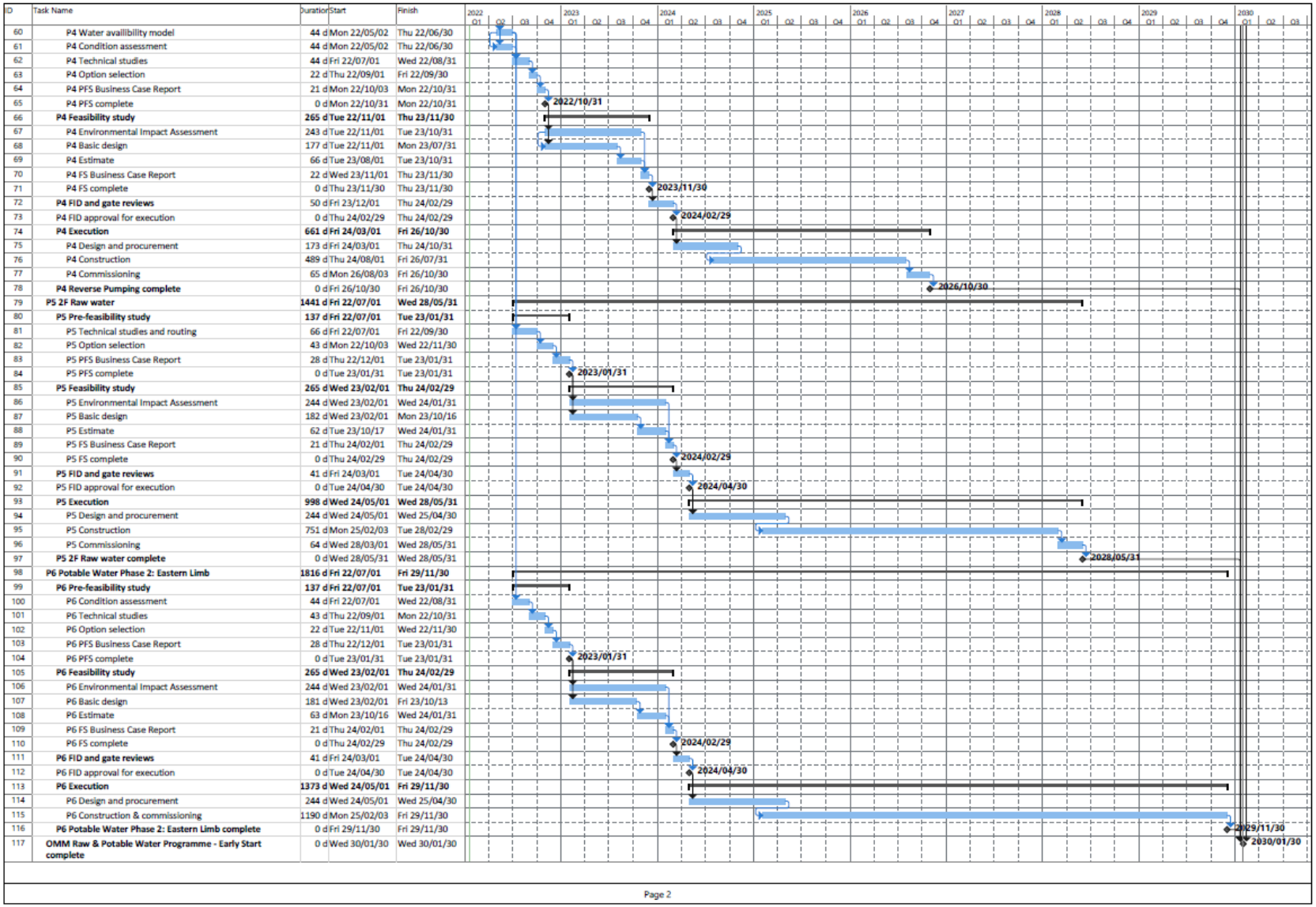

ID	Task Name	Duration	Start	Finish
60	P4 Water availibility model	44 d	Mon 22/05/02	Thu 22/06/30
61	P4 Condition assessment	44 d	Mon 22/05/02	Thu 22/06/30
62	P4 Technical studies	44 d	Fri 22/07/01	Wed 22/08/31
63	P4 Option selection	22 d	Thu 22/09/01	Fri 22/09/30
64	P4 PFS Business Case Report	21 d	Mon 22/10/03	Mon 22/10/31
65	P4 PFS complete	0 d	Mon 22/10/31	Mon 22/10/31
66	**P4 Feasibility study**	**265 d**	**Tue 22/11/01**	**Thu 23/11/30**
67	P4 Environmental Impact Assessment	243 d	Tue 22/11/01	Tue 23/10/31
68	P4 Basic design	177 d	Tue 22/11/01	Mon 23/07/31
69	P4 Estimate	66 d	Tue 23/08/01	Tue 23/10/31
70	P4 FS Business Case Report	22 d	Wed 23/11/01	Thu 23/11/30
71	P4 FS complete	0 d	Thu 23/11/30	Thu 23/11/30
72	**P4 FID and gate reviews**	50 d	Fri 23/12/01	Thu 24/02/29
73	P4 FID approval for execution	0 d	Thu 24/02/29	Thu 24/02/29
74	**P4 Execution**	**661 d**	**Fri 24/03/01**	**Fri 26/10/30**
75	P4 Design and procurement	173 d	Fri 24/03/01	Thu 24/10/31
76	P4 Construction	489 d	Thu 24/08/01	Fri 26/07/31
77	P4 Commissioning	65 d	Mon 26/08/03	Fri 26/10/30
78	**P4 Reverse Pumping complete**	0 d	Fri 26/10/30	Fri 26/10/30
79	**P5 2F Raw water**	**1441 d**	**Fri 22/07/01**	**Wed 28/05/31**
80	**P5 Pre-feasibility study**	**137 d**	**Fri 22/07/01**	**Tue 23/01/31**
81	P5 Technical studies and routing	66 d	Fri 22/07/01	Fri 22/09/30
82	P5 Option selection	43 d	Mon 22/10/03	Wed 22/11/30
83	P5 PFS Business Case Report	28 d	Thu 22/12/01	Tue 23/01/31
84	P5 PFS complete	0 d	Tue 23/01/31	Tue 23/01/31
85	**P5 Feasibility study**	**265 d**	**Wed 23/02/01**	**Thu 24/02/29**
86	P5 Environmental Impact Assessment	244 d	Wed 23/02/01	Wed 24/01/31
87	P5 Basic design	182 d	Wed 23/02/01	Mon 23/10/16
88	P5 Estimate	62 d	Tue 23/10/17	Wed 24/01/31
89	P5 FS Business Case Report	21 d	Thu 24/02/01	Thu 24/02/29
90	P5 FS complete	0 d	Thu 24/02/29	Thu 24/02/29
91	**P5 FID and gate reviews**	41 d	Fri 24/03/01	Tue 24/04/30
92	P5 FID approval for execution	0 d	Tue 24/04/30	Tue 24/04/30
93	**P5 Execution**	**998 d**	**Wed 24/05/01**	**Wed 28/05/31**
94	P5 Design and procurement	244 d	Wed 24/05/01	Wed 25/04/30
95	P5 Construction	751 d	Mon 25/02/03	Tue 28/02/29
96	P5 Commissioning	64 d	Wed 28/03/01	Wed 28/05/31
97	**P5 2F Raw water complete**	0 d	Wed 28/05/31	Wed 28/05/31
98	**P6 Potable Water Phase 2: Eastern Limb**	**1816 d**	**Fri 22/07/01**	**Fri 29/11/30**
99	**P6 Pre-feasibility study**	**137 d**	**Fri 22/07/01**	**Tue 23/01/31**
100	P6 Condition assessment	44 d	Fri 22/07/01	Wed 22/08/31
101	P6 Technical studies	43 d	Thu 22/09/01	Mon 22/10/31
102	P6 Option selection	22 d	Tue 22/11/01	Wed 22/11/30
103	P6 PFS Business Case Report	28 d	Thu 22/12/01	Tue 23/01/31
104	P6 PFS complete	0 d	Tue 23/01/31	Tue 23/01/31
105	**P6 Feasibility study**	**265 d**	**Wed 23/02/01**	**Thu 24/02/29**
106	P6 Environmental Impact Assessment	244 d	Wed 23/02/01	Wed 24/01/31
107	P6 Basic design	181 d	Wed 23/02/01	Fri 23/10/13
108	P6 Estimate	63 d	Mon 23/10/16	Wed 24/01/31
109	P6 FS Business Case Report	21 d	Thu 24/02/01	Thu 24/02/29
110	P6 FS complete	0 d	Thu 24/02/29	Thu 24/02/29
111	**P6 FID and gate reviews**	41 d	Fri 24/03/01	Tue 24/04/30
112	P6 FID approval for execution	0 d	Tue 24/04/30	Tue 24/04/30
113	**P6 Execution**	**1373 d**	**Wed 24/05/01**	**Fri 29/11/30**
114	P6 Design and procurement	244 d	Wed 24/05/01	Wed 25/04/30
115	P6 Construction & commissioning	1190 d	Mon 25/02/03	Fri 29/11/30
116	**P6 Potable Water Phase 2: Eastern Limb complete**	0 d	Fri 29/11/30	Fri 29/11/30
117	**OMM Raw & Potable Water Programme - Early Start complete**	0 d	Wed 30/01/30	Wed 30/01/30

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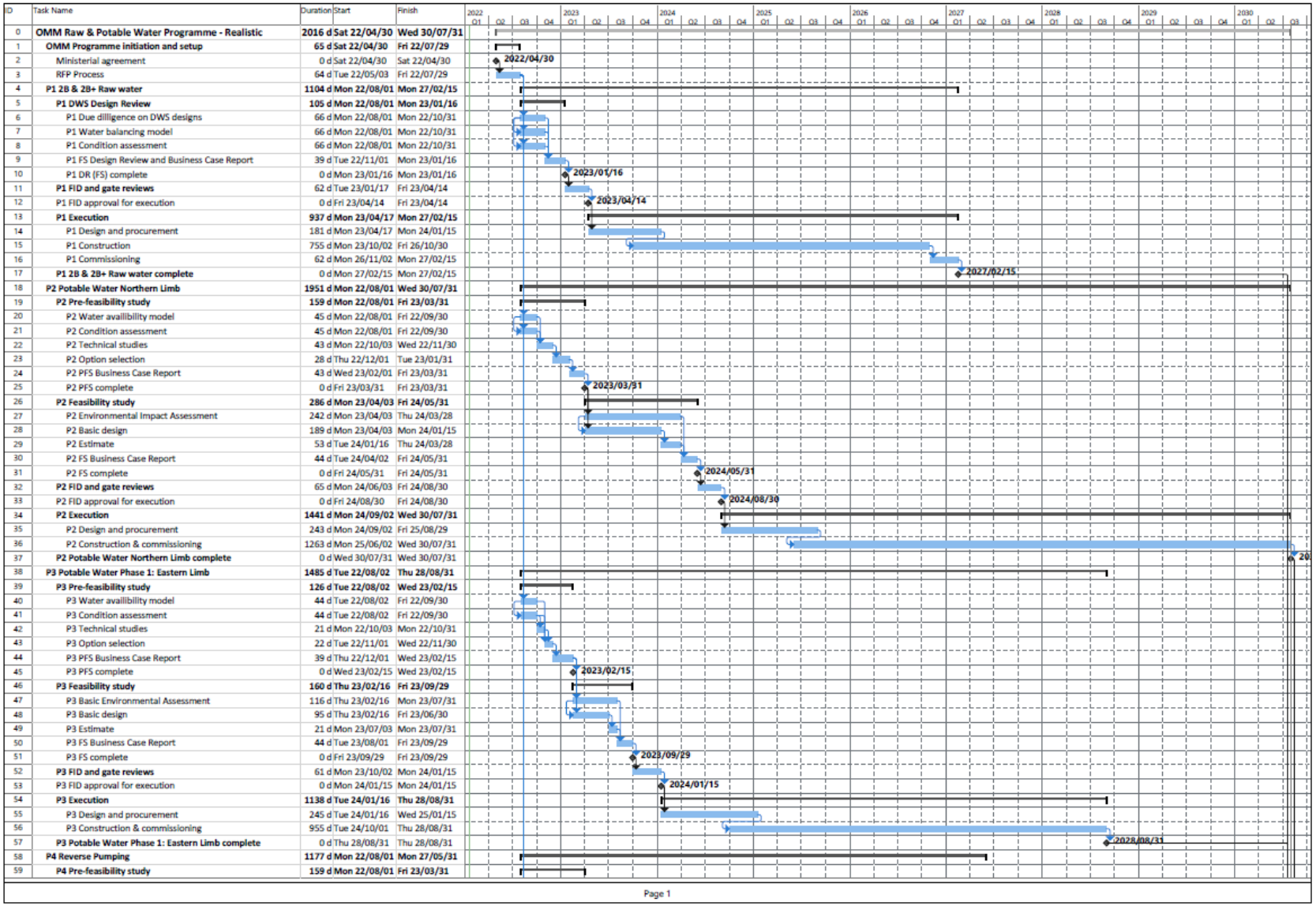
1.7 High Level Flightpath: Realistic Schedule



ID	Task Name	Duration	Start	Finish
0	**OMM Raw & Potable Water Programme - Realistic**	**2016 d**	**Sat 22/04/30**	**Wed 30/07/31**
1	**OMM Programme initiation and setup**	**65 d**	**Sat 22/04/30**	**Fri 22/07/29**
2	Ministerial agreement	0 d	Sat 22/04/30	Sat 22/04/30
3	RFP Process	64 d	Tue 22/05/03	Fri 22/07/29
4	**P1 2B & 2B+ Raw water**	**1104 d**	**Mon 22/08/01**	**Mon 27/02/15**
5	**P1 DWS Design Review**	**105 d**	**Mon 22/08/01**	**Mon 23/01/16**
6	P1 Due dilligence on DWS designs	66 d	Mon 22/08/01	Mon 22/10/31
7	P1 Water balancing model	66 d	Mon 22/08/01	Mon 22/10/31
8	P1 Condition assessment	66 d	Mon 22/08/01	Mon 22/10/31
9	P1 FS Design Review and Business Case Report	39 d	Tue 22/11/01	Mon 23/01/16
10	P1 DR (FS) complete	0 d	Mon 23/01/16	Mon 23/01/16
11	**P1 FID and gate reviews**	62 d	Tue 23/01/17	Fri 23/04/14
12	P1 FID approval for execution	0 d	Fri 23/04/14	Fri 23/04/14
13	**P1 Execution**	**937 d**	**Mon 23/04/17**	**Mon 27/02/15**
14	P1 Design and procurement	181 d	Mon 23/04/17	Mon 24/01/15
15	P1 Construction	755 d	Mon 23/10/02	Fri 26/10/30
16	P1 Commisssioning	62 d	Mon 26/11/02	Mon 27/02/15
17	**P1 2B & 2B+ Raw water complete**	0 d	Mon 27/02/15	Mon 27/02/15
18	**P2 Potable Water Northern Limb**	**1951 d**	**Mon 22/08/01**	**Wed 30/07/31**
19	**P2 Pre-feasibility study**	**159 d**	**Mon 22/08/01**	**Fri 23/03/31**
20	P2 Water availibility model	45 d	Mon 22/08/01	Fri 22/09/30
21	P2 Condition assessment	45 d	Mon 22/08/01	Fri 22/09/30
22	P2 Technical studies	43 d	Mon 22/10/03	Wed 22/11/30
23	P2 Option selection	28 d	Thu 22/12/01	Tue 23/01/31
24	P2 PFS Business Case Report	43 d	Wed 23/02/01	Fri 23/03/31
25	P2 PFS complete	0 d	Fri 23/03/31	Fri 23/03/31
26	**P2 Feasibility study**	**286 d**	**Mon 23/04/03**	**Fri 24/05/31**
27	P2 Environmental Impact Assessment	242 d	Mon 23/04/03	Thu 24/03/28
28	P2 Basic design	189 d	Mon 23/04/03	Mon 24/01/15
29	P2 Estimate	53 d	Tue 24/01/16	Thu 24/03/28
30	P2 FS Business Case Report	44 d	Tue 24/04/02	Fri 24/05/31
31	P2 FS complete	0 d	Fri 24/05/31	Fri 24/05/31
32	**P2 FID and gate reviews**	65 d	Mon 24/06/03	Fri 24/08/30
33	P2 FID approval for execution	0 d	Fri 24/08/30	Fri 24/08/30
34	**P2 Execution**	**1441 d**	**Mon 24/09/02**	**Wed 30/07/31**
35	P2 Design and procurement	243 d	Mon 24/09/02	Fri 25/08/29
36	P2 Construction & commissioning	1263 d	Mon 25/06/02	Wed 30/07/31
37	**P2 Potable Water Northern Limb complete**	0 d	Wed 30/07/31	Wed 30/07/31
38	**P3 Potable Water Phase 1: Eastern Limb**	**1485 d**	**Tue 22/08/02**	**Thu 28/08/31**
39	**P3 Pre-feasibility study**	**126 d**	**Tue 22/08/02**	**Wed 23/02/15**
40	P3 Water availibility model	44 d	Tue 22/08/02	Fri 22/09/30
41	P3 Condition assessment	44 d	Tue 22/08/02	Fri 22/09/30
42	P3 Technical studies	21 d	Mon 22/10/03	Mon 22/10/31
43	P3 Option selection	22 d	Tue 22/11/01	Wed 22/11/30
44	P3 PFS Business Case Report	39 d	Thu 22/12/01	Wed 23/02/15
45	P3 PFS complete	0 d	Wed 23/02/15	Wed 23/02/15
46	**P3 Feasibility study**	**160 d**	**Thu 23/02/16**	**Fri 23/09/29**
47	P3 Basic Environmental Assessment	116 d	Thu 23/02/16	Mon 23/07/31
48	P3 Basic design	95 d	Thu 23/02/16	Fri 23/06/30
49	P3 Estimate	21 d	Mon 23/07/03	Mon 23/07/31
50	P3 FS Business Case Report	44 d	Tue 23/08/01	Fri 23/09/29
51	P3 FS complete	0 d	Fri 23/09/29	Fri 23/09/29
52	**P3 FID and gate reviews**	61 d	Mon 23/10/02	Mon 24/01/15
53	P3 FID approval for execution	0 d	Mon 24/01/15	Mon 24/01/15
54	**P3 Execution**	**1138 d**	**Tue 24/01/16**	**Thu 28/08/31**
55	P3 Design and procurement	245 d	Tue 24/01/16	Wed 25/01/15
56	P3 Construction & commissioning	955 d	Tue 24/10/01	Thu 28/08/31
57	**P3 Potable Water Phase 1: Eastern Limb complete**	0 d	Thu 28/08/31	Thu 28/08/31
58	**P4 Reverse Pumping**	**1177 d**	**Mon 22/08/01**	**Mon 27/05/31**
59	**P4 Pre-feasibility study**	**159 d**	**Mon 22/08/01**	**Fri 23/03/31**

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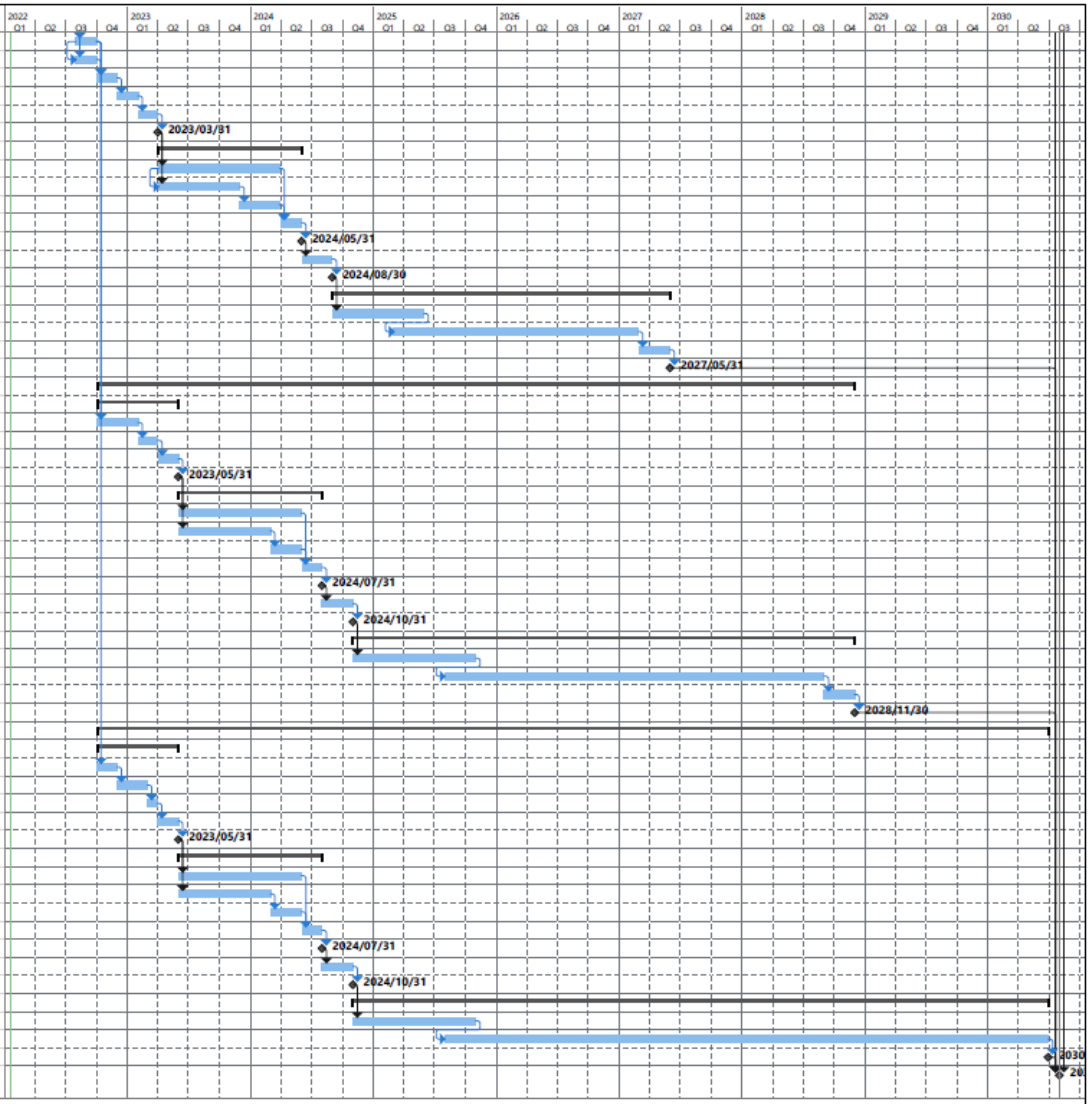
ID	Task Name	Duration	Start	Finish
60	P4 Water availibility model	45 d	Mon 22/08/01	Fri 22/09/30
61	P4 Condition assessment	45 d	Mon 22/08/01	Fri 22/09/30
62	P4 Technical studies	43 d	Mon 22/10/03	Wed 22/11/30
63	P4 Option selection	28 d	Thu 22/12/01	Tue 23/01/31
64	P4 PFS Business Case Report	43 d	Wed 23/02/01	Fri 23/03/31
65	P4 PFS complete	0 d	Fri 23/03/31	Fri 23/03/31
66	**P4 Feasibility study**	**286 d**	**Mon 23/04/03**	**Fri 24/05/31**
67	P4 Environmental Impact Assessment	242 d	Mon 23/04/03	Thu 24/03/28
68	P4 Basic design	172 d	Mon 23/04/03	Thu 23/11/30
69	P4 Estimate	69 d	Fri 23/12/01	Wed 24/03/27
70	P4 FS Business Case Report	44 d	Tue 24/04/02	Fri 24/05/31
71	P4 FS complete	0 d	Fri 24/05/31	Fri 24/05/31
72	**P4 FID and gate reviews**	65 d	Mon 24/06/03	Fri 24/08/30
73	P4 FID approval for execution	0 d	Fri 24/08/30	Fri 24/08/30
74	**P4 Execution**	**667 d**	**Mon 24/09/02**	**Mon 27/05/31**
75	P4 Design and procurement	178 d	Mon 24/09/02	Fri 25/05/30
76	P4 Construction	488 d	Mon 25/03/03	Fri 27/02/26
77	P4 Commissioning	64 d	Mon 27/03/01	Mon 27/05/31
78	**P4 Reverse Pumping complete**	0 d	Mon 27/05/31	Mon 27/05/31
79	**P5 2F Raw water**	**1506 d**	**Mon 22/10/03**	**Thu 28/11/30**
80	**P5 Pre-feasibility study**	**155 d**	**Mon 22/10/03**	**Wed 23/05/31**
81	P5 Technical studies and routing	71 d	Mon 22/10/03	Tue 23/01/31
82	P5 Option selection	43 d	Wed 23/02/01	Fri 23/03/31
83	P5 PFS Business Case Report	41 d	Mon 23/04/03	Wed 23/05/31
84	P5 PFS complete	0 d	Wed 23/05/31	Wed 23/05/31
85	**P5 Feasibility study**	**288 d**	**Thu 23/06/01**	**Wed 24/07/31**
86	P5 Environmental Impact Assessment	244 d	Thu 23/06/01	Thu 24/05/30
87	P5 Basic design	181 d	Thu 23/06/01	Thu 24/02/29
88	P5 Estimate	64 d	Fri 24/03/01	Fri 24/05/31
89	P5 FS Business Case Report	43 d	Mon 24/06/03	Wed 24/07/31
90	P5 FS complete	0 d	Wed 24/07/31	Wed 24/07/31
91	**P5 FID and gate reviews**	66 d	Thu 24/08/01	Thu 24/10/31
92	P5 FID approval for execution	0 d	Thu 24/10/31	Thu 24/10/31
93	**P5 Execution**	**997 d**	**Fri 24/11/01**	**Thu 28/11/30**
94	P5 Design and procurement	244 d	Fri 24/11/01	Fri 25/10/31
95	P5 Construction	754 d	Fri 25/08/01	Thu 28/08/31
96	P5 Commissioning	65 d	Fri 28/09/01	Thu 28/11/30
97	**P5 2F Raw water complete**	0 d	Thu 28/11/30	Thu 28/11/30
98	**P6 Potable Water Phase 2: Eastern Limb**	**1883 d**	**Mon 22/10/03**	**Fri 30/06/28**
99	**P6 Pre-feasibility study**	**155 d**	**Mon 22/10/03**	**Wed 23/05/31**
100	P6 Condition assessment	43 d	Mon 22/10/03	Wed 22/11/30
101	P6 Technical studies	48 d	Thu 22/12/01	Tue 23/02/28
102	P6 Option selection	22 d	Wed 23/03/01	Thu 23/03/30
103	P6 PFS Business Case Report	42 d	Fri 23/03/31	Wed 23/05/31
104	P6 PFS complete	0 d	Wed 23/05/31	Wed 23/05/31
105	**P6 Feasibility study**	**288 d**	**Thu 23/06/01**	**Wed 24/07/31**
106	P6 Environmental Impact Assessment	245 d	Thu 23/06/01	Fri 24/05/31
107	P6 Basic design	181 d	Thu 23/06/01	Thu 24/02/29
108	P6 Estimate	64 d	Fri 24/03/01	Fri 24/05/31
109	P6 FS Business Case Report	43 d	Mon 24/06/03	Wed 24/07/31
110	P6 FS complete	0 d	Wed 24/07/31	Wed 24/07/31
111	**P6 FID and gate reviews**	66 d	Thu 24/08/01	Thu 24/10/31
112	P6 FID approval for execution	0 d	Thu 24/10/31	Thu 24/10/31
113	**P6 Execution**	**1374 d**	**Fri 24/11/01**	**Fri 30/06/28**
114	P6 Design and procurement	244 d	Fri 24/11/01	Fri 25/10/31
115	P6 Construction & commissioning	1196 d	Fri 25/08/01	Fri 30/06/28
116	**P6 Potable Water Phase 2: Eastern Limb complete**	0 d	Fri 30/06/28	Fri 30/06/28
117	**OMM Raw & Potable Water Programme - Early Start complete**	0 d	Wed 30/07/31	Wed 30/07/31



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1.8 Schedule Risk and Opportunities

The following risks need to be noted for the current timeline:

1. The schedules have not been developed to any level of detail and are purely indicative timelines to provide a possible view of the roll-out or flightpath of the projects. Actual detail, which is dependent on the final scope to be discovered during the Pre-feasibility study, basic designs to be developed during the feasibility study, as well as final contractor schedules to be confirmed during the detail design stage of the implementation phase, will determine the actual implementation schedules;
2. Actual durations could be much longer than the indicative durations assumed for the purposes of this flightpath as it is dependant on external factors such as agreements between OMM WUA members, time for collecting of information, stakeholder management, etc. Indicated durations have not been based on the finalscope (to be developed during pre-feasibility study phase) and therefore not currently available, nor any specific execution strategy nor construction methods to be applied;
3. Optimal durations for project assurance and governance processes have been assumed. Assurance reviews' actual duration which need to be conducted through a complex stakeholder structuremay be much longer than the allowable time and may result in significant extensions to assumed total durations;
4. Assumptions around the ability of primary contractors to have parallel construction efforts implemented in parallel with multiple work fronts depends on the availability of resources during execution. Actual execution may be optimised by cost rather than time and result in much longer overall durations;
5. The current execution and design strategies assume that a significant portion of existing water infrastructure assets that have not been optimally operated nor maintained will be able to be utilised with a certain amount of remediation. Should these assets not be usable, or require a higher level of remediation, overall durations for the projects may be considerably longer;
6. Risks such as disruptions due to disaffected communities, industrial actions within the contractors' work forces and other forms of social unrest/ disruption have not been allowed for;
7. Rain and inclement weather have not been accounted for in the schedule;
8. Early works and long lead items have not been accounted for in the schedule;
9. Opportunities may exist in the commissioning and handover phases, which could be optimised if operating personnel are in place prior to the commencement of commissioning periods. No allowance for such opportunities are in the schedule;
10. Considerable project execution skills exist in the various member mining companies, these resources may be able to provide input, skills and critical resources that could save time and costs for the project. No allowance for such input is in the schedule.

Olifants Management Model (OMM) Programme

Programme Early Business Case – High Value

Attachment G: Operational Readiness

Version B | 20 January 2022

IMPROVING LIVES THROUGH WATER

Table of Contents

1. Operating Model and Operational Readiness Plan

1.1 Synopsis

The objective of the operating model and operational readiness planning was to create a vehicle for the OMM WUA implementation and operation of the proposed OMM Programme. In order to achieve this a as-is evaluation was conducted to understand the current operating model. This involved an analysis of the current value chain – this showed that LWUA is in line with its initial mandate which was to build and distribute bulk raw water infrastructure to develop the Eastern Limb through a collaboration between the DWS and the mining industry. However, the value chain suggests that it will need to be transformed in order to cater for the future OMM WUA's social licence to operate, allow mines to take advantage of a favourable commodity cycle. The evaluation of the current functional structures and organisational structures show that the association is fit for its current purpose. With a staff complement of 40, key functional roles exist in the business such as; Administration, Project management, Core operations (bulk water reticulation), Finance, SED / PR / CC and governance, risk, compliance and legal (GRC&L).

The framework deployed to develop the OMM WUA target operating model (TOM) is geared to transforming LWUA's business strategy into tactical operations through four main lenses – customer offerings, business capabilities, organisational structures and enterprise performance management. The approach adopted focussed on the following elements:

1. **Development of design principles** – The design principles for the operating model is aimed at achieving the strategic objectives of horizon 1 and 2 which is to "Improve lives through water" and "transform into a Smart Water Utility". Nine principles were developed and their impact on the TOM were established.
2. **To-be value chain analysis** – The new mandate means that OMM WUA will maintain the current LWUA bulk water value chain and will include management support and oversight into the potable water value chain to service communities in the eastern and northern limbs. There will also be further emphasis on the SED structures to bolster the organisations impact on the communities it services.
3. **Service delivery model** – This model describes the functional centres where work will be performed. This model is essentially the context in which OMM WUA's new capabilities will be arranged into services. The model consists of executive leadership, Centre of Expertise (CoE), Centres of Competence (CoC), Outsourced services (which is split into construction sourcing and outsourced functional and operational service), On Site and Functional Centres.
4. **Capability model and key process matrix** – Based on the requirements for the future state of the association's value chain, key processes were established and linked to functional owners. Furthermore, a capability model was developed to demonstrate the sub-functions for each function. Then processes were established and linked to the service delivery model and geographic location (so that there is an understanding of who and where processes will be performed).

5. **Functional structure and organisational structures** – In order to operationalise the envisaged capabilities of the OMM WUA business, LWUA will need to grow significantly. The business will be organised under four functional heads that will all report into the CEO – these five roles will make up the executive structure of the association. The Programme Director will manage and control the project management of the mega projects. The COO will be responsible for core operations, these include raw and potable water management support and oversight, SHEQ and asset management. The CFO role will manage all support functions including; finance, supply chain, HR, IM and GRC&L. Lastly, the Chief Socio-Economic Development Officer (CSO), who will ultimately manage the SED platform. The staff complement is expected to grow from 40 FTE to 333 FTE at the end of FY28.

A gap analysis was conducted to establish the gaps between the current operating model and the future state operating model from a functional perspective. This was performed to identify areas of enhancement to achieve the strategic objectives of the business.

Based on the flight plan drafted for the OMM Programme, an implementation roadmap for operationalising the structures was developed. This was done in a way that aligned activation of structures to the phases of the OMM Programme and activation of assets such as pump stations. The planned implementation of the structure was used (in conjunction with Paterson grading) to cost the operationalisation of the TOM.

1.2 Introduction

A target operating model (TOM) is a blueprint of a firm's business vision that aligns operating capacities and strategic objectives and provides an overview of the core business capabilities, internal factors, and external drivers, strategic and operational levers, organisational and functional structure, technology, and information resources of a company. The objective of this stream is to assist with the formation of a fit for purpose institutional vehicle for the implementation and operation of the defined OMM Programme.

The model structure would be designed through the following elements:

- **Value chain analysis** – Analysis of the value chain to determine what constitutes primary support, functional support and operational scope.
- **Service delivery model** – Model describing which operational entities are responsible for the strategy, tactical planning and execution of business processes.
- **Capability model** – Representations of all organisational business capabilities, their relationship, geography and hierarchy.
- **Functional structure** – Illustration of functional groups in the organisation according to a specialised or similar set of roles or tasks.
- **Organisational structure** – System describing an organisation's hierarchy within which all the managerial tasks are performed.
- **Technology landscape** – Functional representation of the structure and workings of the IT infrastructure in an organisation**.** This will be addressed as part of the pre-feasibility study.

1.3 Description of As-Is Operating Model

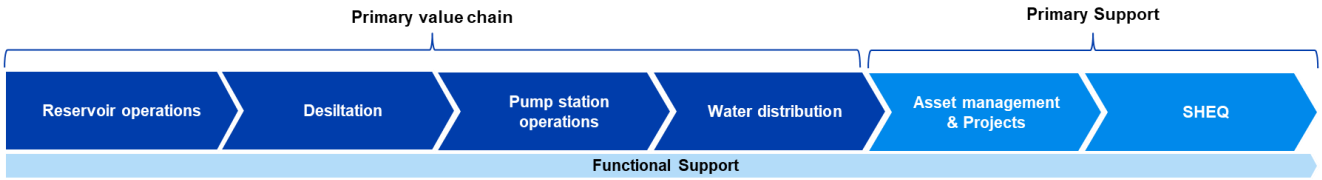
1.3.1 Introduction

The as-is operating model gives an indication of the current state of the organisation. An analysis of LWUA's current value chain (for the provision of raw water) is illustrated as well as a view of the organisation's current capabilities, functional structure and organisational structure. This forms the base of the development of the to-be state and is used as the baseline for the gap analysis.

1.3.2 Current Value Chain

The current value chain (see 'Figure 1' below) is in line with LWUA's initial mandate which was to build and distribute bulk raw water infrastructure to develop the Eastern Limb through a collaboration between the DWS and the mining industry.

Figure 1 – LWUA current value chain



The table below (see 'Table 1') describes each functional area as well as lists the functions of the current LWUA value chain.

Table 1 – Description and function of current LWUA value chain

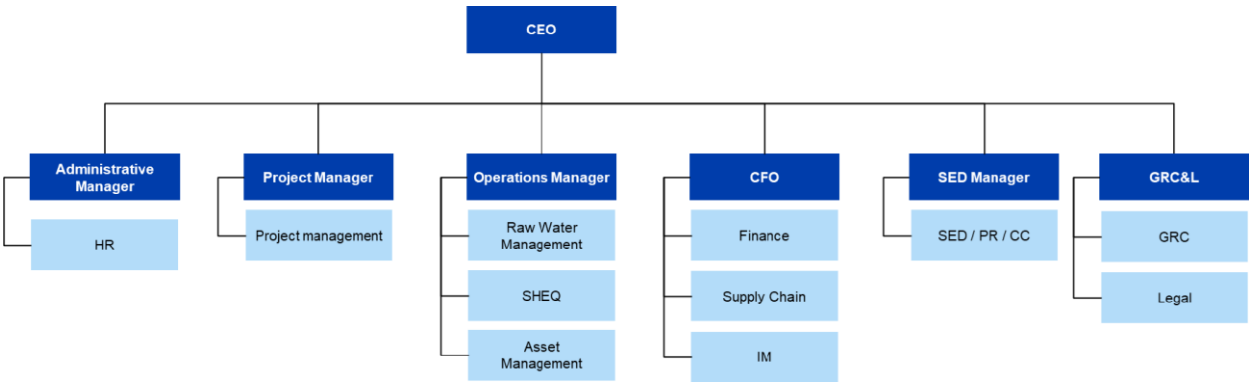
	Description	Functions
Primary value chain	• Pump station (including weir) and reservoir operations • Treatment of bulk-water through de-siltation • Activities in operating and monitoring distribution	• Weir operations • De-siltation • Pump station operations • Reservoir operations • Bulk water distribution
Primary support	• Support services directly required for delivery of primary value chain • Functions operating one step away from the primary value chain • Safety, Health, Environmental and Quality (SHEQ), asset management and projects	• Projects • SHEQ • Asset management

	Description	Functions
Functional support	• Support provided to both primary value chain and primary support activities	• Corporate • Human Resources (HR) • Finance • Socio economic development (SED) • Enterprise Development (ED) • Public Relations (PR) • Corporate Communication (CC) • Governance, Risk and Compliance (GRC) • Legal • Information Management (IM)

1.3.3 Current LWUA Functional and Organisational Structure

The current structures of LWUA can be described as fit for purpose. All functions report into the executive structure at the CEO level and therefore there is a high span of control. This is suitable for the scale and size of the organisation in its current state. Key functional roles exist in the business such as; Administration, Project management, Core operations (bulk water reticulation), Finance, SED / PR / CC and governance, risk, compliance and legal (GRC&L). 'Figure 2' illustrates the current functional grouping at LWUA. 'Figure 3' illustrates the current organisational structure; it demonstrates both the number of full-time employees (FTE) in a role as well as their current level within the organisation. The levels are described using the Paterson grading system that is currently in use by LWUA (see 'Table 2') for description and grading applied across this report.

Figures 2&3 – Current functional structure at LWUA



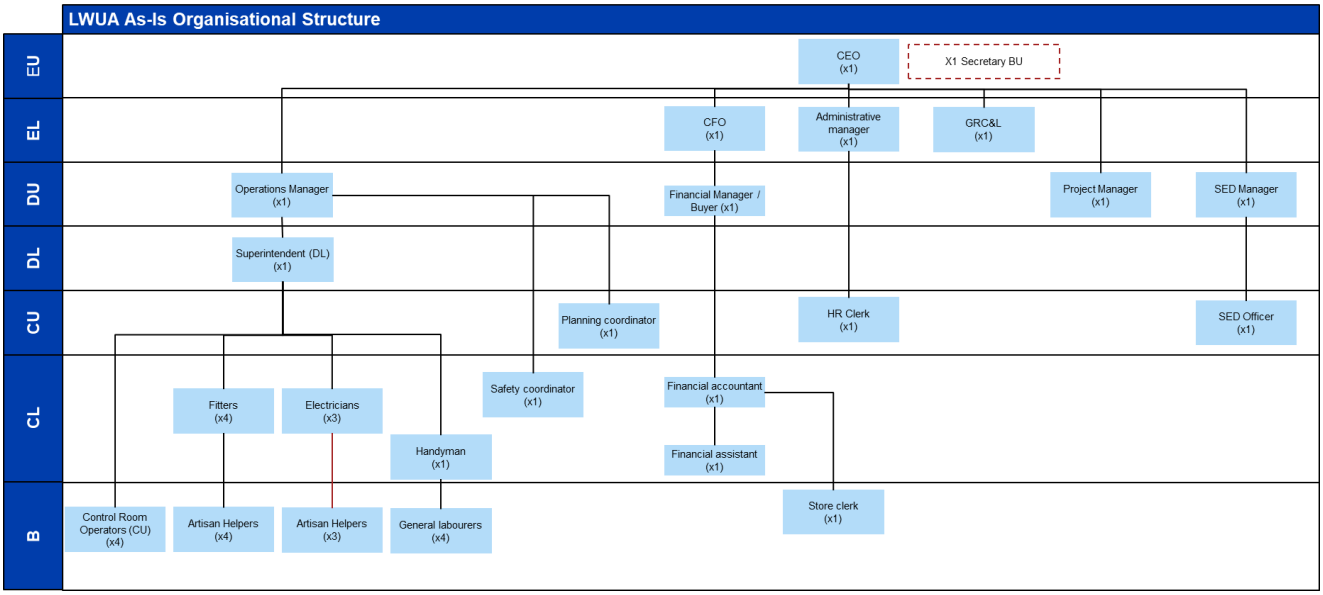


Table 2 – LWUA Total Guaranteed Package (TGP) pay scale based on the Limpopo Mining Industry market data as at July 2019

Paterson Classic	Definition:
B	B, lower (BL)- Automatic or operative decisions B, upper (BU)- Coordinating, automatic decisions. Theory or systems knowledge for grade B is not required, though employees, such as semi-skilled workers, can decide where and when to perform operations.
C	C, lower (CL)- Routine decisions C, upper (CU)- Coordinating, routine decisions. Theory and/or systems knowledge for grade C is required, and employees, such as skilled workers or supervisory personnel, decide what must be done – through knowledge and experience – for deterministic outcomes.
D	D, lower (DL)- Interpretive decisions D, upper (DU)- Coordinating, interpretive decisions. Grade D involves middle management's ability to optimize resources through decision-making about processes and procedures with planning programs or budgets one year ahead.
E	E, lower (EL)- Programming decisions E, upper (EU)- Coordinating, programming decisions. Grade E consists of senior management's cross-functional coordination – coordinating many departments – and strategic policy decisions made by top management, with plans made five years in advance.
F	F - Policy decisions - Coordinating, policy decisions. Grade F consists of top management, such as a board or CEO who manages organizational scope and goals.

1.4 Development of the Future State Operating Model

1.4.1 Objectives

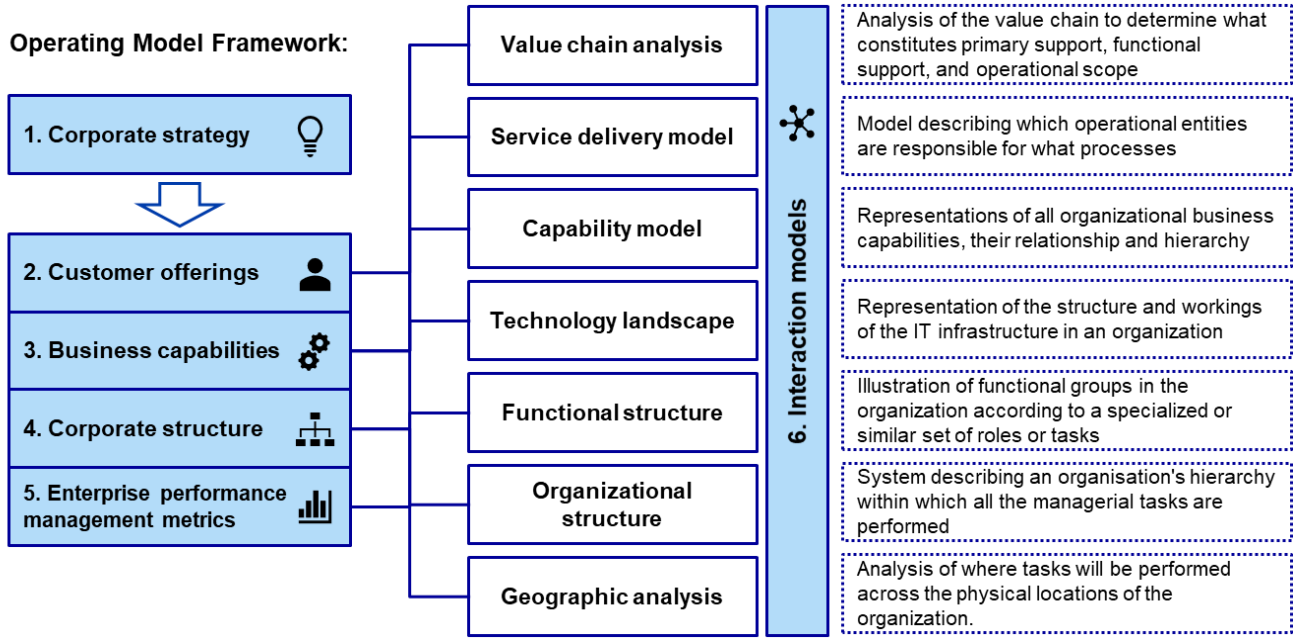
The objective of the future state operating model is to create a vehicle for the implementation and operation of the defined programme.

1.4.2 Framework

The framework set out in 'Figure 4' was used to design the proposed target operating model. The framework is geared to transforming LWUA's business strategy into tactical operations through four main lenses – customer offerings, business capabilities, organisational structures and enterprise performance management. The approach adopted focussed on the following elements:

1. **Design principles** – a set of principles were agreed to guide development of every element of the TOM to align to the strategic objectives of the future OMM WUA.
2. **Value chain analysis** – Analysis of the value chain to determine what constitutes primary support, functional support, and operational scope.
3. **Service delivery model** – A model describing which operational entities are responsible for what processes.
4. **Capability model** – Representations of all organisational business capabilities, their relationship and hierarchy.
5. **Geographic analysis** – Analysis of where tasks will be performed across the physical locations of the organisation.
6. **Functional structure** – Illustration of functional groups in the organisation according to a specialised or similar set of roles or tasks.
7. **Organisational structure** – System describing an organisation's hierarchy within which all the managerial tasks are performed.
8. **Technology landscape** – Representation of the structure and workings of the IT infrastructure in an organisation.

Figure 4 – Target Operating Model Framework



1.4.3 Design Principles

The agreed design principles are set out in 'Table 3' overleaf.

Table 3 – Design principles and impact on LWUA TOM

Design principle	Potential impact on the operating model
a. Expand role with the provision of raw and potable water – People, processes and technology are aligned to support this objective	New set of capabilities will need to be introduced to LWUA to manage the Flag Boshielo and De Hoop dams on behalf of dWS and to support and provide oversight to the WSAs to manage the treatment, reticulation and management support and oversight of potable water included in the OMM Programme.
b. Enablement of SED collaboration – through formalised SED forums, committees and internal structures	Executive level leadership to drive the socio-economic collaboration in the region with well-defined strategy, policy and processes to enable it.
c. Strengthen governance structures – designed using recognised regulatory frameworks	Robust governance structure in line with corporate requirements and aligning to various regulatory frameworks.
d. Improved agility and flexibility to achieve operational excellence – lower fixed cost base and allow for scale	Functional executive to have greater decision-making authority to drive the operations, ably supported by a strong governance structure.
e. Ensure safety and security is not compromised – must not comprise safety and compliance to required legislated standards	Design of structure, processes and technology to ensure industry leading standards on safety and security of people and assets.
f. Enforce end-to-end accountability and clear roles and responsibilities – organisational design to avoid duplication	Functional executives will be accountable for the end-to-end value chain i.e. Functional strategy and execution. They will be supported by centres of expertise and competence, where necessary.
g. Stimulate a culture of progression – Structures in the OMM WUA to be geared for transformation and developing staff	The new organisation structure design will consider career growth for staff and promote transformation in the business.
h. Don't compromise our license to operate including e.g. legislative requirements for Socio-economic Development, Health, Environment and Corporate Affairs	Central to business decisioning will be to keep OMM WUA's social license to operate. There should also be no compromising of regulatory norms and standards.
i. Emphasis on cost efficiency – not only in project development but also operationally	Process accountability and operational excellence will be key to ensuring a cost-effective way of working (both during construction and stabilised phases).

1.4.4 To-be Water Value Chain Analysis

The to-be value chain is geared to address the problem statement posed in the strategic evaluation of the business. The new mandate will mean that OMM WUA will maintain the current LWUA bulk water value chain (as stated in the as-is) and expand with additional bulk water infrastrucre including the management of the Flag Boshielo and De hOpp dams on behalf of DWS, in a larger region of supply. Although the OMM Programme will include the construction of potable water infrastructure to service communities in the eastern and northern limbs, the OMM WUA will only provide the WSAs and municipalities, responsible to operate and maintain the systems

with management support and perform an oversight role with respect to the infrastructure provided as part of the OMM Programme. There will also be further emphasis on the SED structures to bolster the organisation's impact on the communities it services. The new value chain is illustrated in 'Figure 5' with descriptions and functions in 'Table 4'.

Figure 5 – LWUA future state value chain

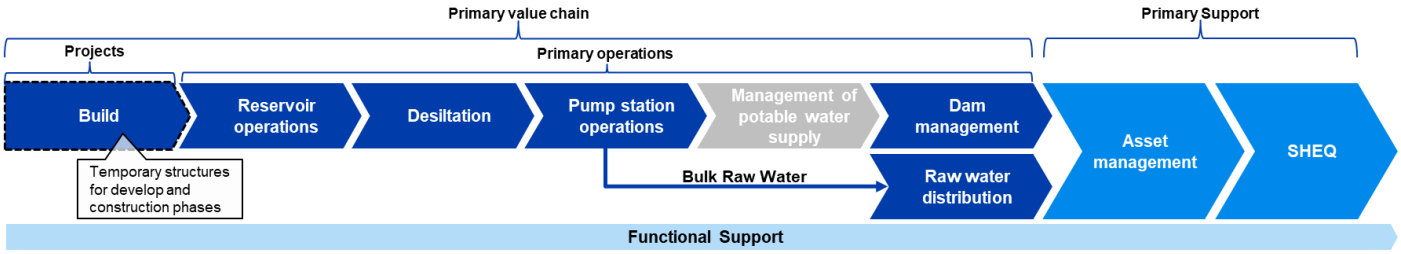


Table 4 – Description and function of future state LWUA value chain

	Description	Functions
Primary value chain	**Raw water management** • Pump station (including weir), reservoir operations and de-siltation • Treatment of bulk raw water through de-siltation • Activities in operating and monitoring bulk raw water distribution • Management of Flag Boshielo and De Hoop dams • **Potable water** • WSAs and municipal management support • Oversight on effective operations and maintenance of systems included in the OMM Programme • **Temporary build processes** – to construct infrastructure during the build phase of the defined programme.	• Dam and reservoir operations • De-siltation • Pump station operations • Bulk water distribution • Mega projects
Primary support	Support services directly required for delivery of primary value chain: • SHEQ • Asset management • Projects • Functions operating one step away from the primary value chain	• SHEQ • Asset management • Projects
Functional support	Support provided to both primary value chain and primary support activities.	• HR • Finance • SED

	Description	Functions
		• PR • CC • GRC&L • IM • Supply chain

1.4.5 Service Delivery Model

The service delivery model (SDM) describes the functional centres where work will be performed. This model is essentially the context in which OMM WUA's new capabilities will be arranged into services. 'Table 5' illustrates the designed Service Delivery Model for the OMM WUA target operating model (TOM).

Table 5 – Future state LWUA Service Delivery Model

Executive Leadership		**Responsible for business strategy, performance and oversight. Ensures alignment with LWUA strategies, standards, policies and governance.**
Centres of Expertise (COE)		Centres of Expertise will be responsible for the development of functional strategies, policy, standards, governance and oversight. It will conduct research on "next practice" and support Centres of Competence with translating strategies into executable action plans. Will have overall responsibility for functional capability
Centres of Competence (COC)		Responsible for development of functional plans and execution of "judgement based" operational support activities.
Outsourced	**Outsourced construction sourcing**	The contractor coordinates all design, procurement and construction work and ensures that the whole project is completed as required and in time.
	Outsourced functional and operational services	Provides any service / function outside the core business capability. Deployed to enhance service quality, provide additional access to intellectual capital and to relieve capacity. Functions include; Security services, Internal Audit, Training, Tax, Fleet management, Facilities management, Legal and IM
On site		Responsible for execution of operational support activities to the pipe network and physical assets. Activities that need to be delivered at, or close to the operations with personal interface required will be located on site.
Functional Centres		The management functions that will perform the work supporting core operations.

1.4.6 Capability Model and Key Process Matrix

This section covers the association's capability in the future state. ‘Table 6’ illustrates the key functions as well as the sub-functions required to achieve the strategic objectives of the project. ‘Table 7’ illustrates the key processes and their respective owners that will be required and ‘Table 8’ and ‘Table 9’ indicates the structured graphical representations of all organisational business capabilities, their relationship, hierarchy (as per the Service Delivery Model in section 1.4.5 and their geographic locations.

Table 6 – To-be functional and sub-functional capability

	Primary Operations	Primary Support			Functional Support						
	Operations	Projects	Asset Management	SHEQ	SED/PR/CC	GRC	Strategy	Finance	SCM	HR	IM
Sub-Functions	Bulk raw water Operations	Mega Projects	Asset Management	Safety	Community Development & Relations	Compliance & Corporate Governance	Business Strategy	Management Accounting	Procurement	Training & Development	ERP
	Management support and oversight of potable water operations	Quick Win Projects	Stay in Business Capital	Occupational Health	Public Relations & Media	Company Secretarial	Funding	Tax	Warehousing	Employee Relations	Operational Technology
	Maintenance		Fleet Management	Environment	Corporate communication	Legal	Business Development	Internal & External Audit	Logistics	Talent Management	Communication - WiFi, Phone
	Security		Facilities Management	Quality Management		Risk Management		Treasury		Medical & Wellness	Data management
	Monitoring & Control Room			Laboratory				Financial Reporting			IT Infrastructure
	R&D / Innovation							Internal & Financial control			

Table 7 – To-be key process matrix

Function		Key Processes				
		1. Abstraction to raw water delivery	**2. Water treatment to customer**	**3. Metering to receipts**	**4. Procure to pay**	**5. Project planning to commissioning**
Primary Value Chain	**Raw Water Management**	Owner - Raw water Operations Manager		X	X	X
	Potable Water management support and oversight					X
Primary Support	**Projects**	X	X		X	Owner - Project manager
	Asset Management	X	X	X	X	
	SHEQ	X	X		X	
Functional Support	**SED/PR/CC**			X	X	X
	GRC&L				X	X
	Corporate					X
	Finance			Owner - Finance Manager	X	X
	SCM				Owner - Supply chain manager	X
	HR					
	IM			X		
Outsourced	**EPCM**				X	X
	Security	X	X		X	

Table 8 – To-be capability matrix with geographic analysis (Executive Leadership, CoC and CoE)

	Primary Operations	Primary Support			Functional Support							
	Operations	Projects	Asset Management	SHEQ	SED/PR/CC	GRC&L	Strategy and business development	Finance	SCM	HR	IM	Location
Executive Leadership	Functional Governance	Project Strategy	Functional Governance	Functional Governance	SED Strategy	Compliance & Corporate Governance	Business Strategy	Strategy, Policy & Procedures	Functional Governance	Functional Governance	Functional Governance	Polokwane
	Operational Strategy	Project Policy, Governance & Framework			Liaison with regulators, Municipalities and community leaders	Risk assessment and monitoring	Project Funding - Corporate	Functional Governance				
		Project Funding			Corporate Communication & Public Relations		New Agreements with Commercial Users					
					SED collaboration		Project Funding - Govt.					
					Skills Development							
					Enterprise Development Funds interface							

	Primary Operations	Primary Support			Functional Support							
	Operations	Projects	Asset Management	SHEQ	SED/PR/CC	GRC&L	Strategy and business development	Finance	SCM	HR	IM	Location
CoC & CoE	Operational Strategy	Project Policy, Governance & Framework	Asset management Strategy, Policy & Standards	SHE Strategy, Policy & Standards	Strategy execution			Long term Planning, Budgeting & Forecasting	SCM Strategy, Policy & Procedures	HR Strategy, Policy & standards	Establishing IT services framework and IT security policies	Polokwane
	Develop & Manage Operational Plan and Budgets		Asset Management Frameworks		Communi-cation with commercial & personal users				Warehouse & non productive assets	Labour Planning	Establishing strategic service provider partnerships	
	Operational Reporting		SIB CAPEX Planning						SC Performance Reporting		IT Projects	
	Lab standards & protocols								Inclusive Procurement		Technology / Application Architecture	

Table 9 – To-be capability matrix with geographic analysis cont. (Functional Centres, Construction Sourcing, On-site and Outsourced)

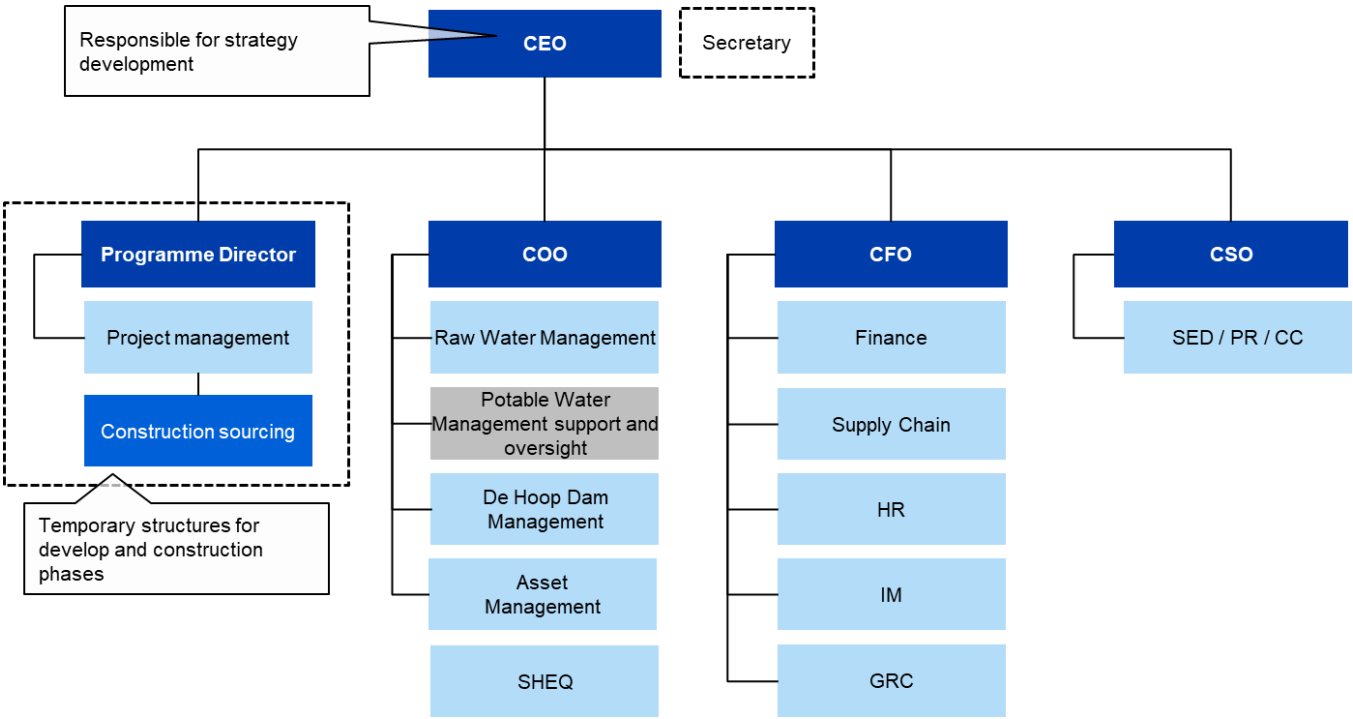
	Primary Operations	Primary Support			Functional Support							
	Operations	Projects	Asset Management	SHEQ	SED/PR/CC	GRC&L	Strategy and business development	Finance	SCM	HR	IM	Location
Functional Centres		Capital Project Sourcing	Manage & implement Asset Management strategy	Manage & Implement Compliance framework	Manage Community Programs & Projects	Manage local compliance & Governance		Perform Finance Reporting	Warehouse Management and Asset Disposal	Manage Employee Relations	Data management	Polokwane
		PMO	Asset Life Cycle Management	Manage SHE program	Manage local stakeholder groups			Manage Cash	Purchase to Pay	Manage Reward and Retain	Integration	
		Design Coordination	Manage Asset Register and Maintenance plans	Manage Protection & Security protocol	Manage Local Corporate Communi-cation			Process Expense Reimburse-ments	Supplier Relationship Management	Manage communi-cation	Data Analytics	
		Contract Design & Management	Spares Administration		Manage Social Development Projects			Planning, Budgeting & Forecasting	Inventory Management	Develop and Counsel	IT Support Services	
			Fleet Management		Create & Issue Press Release			Cost Accounting & Control		Recruit, source and select		
			Facilities Management					Tax Management		Payroll		
								Evaluate & Manage Financial Performance		Housing		

	Primary Operations	Primary Support			Functional Support							
	Operations	**Projects**	**Asset Management**	**SHEQ**	**SED/PR/CC**	**GRC&L**	**Strategy and business development**	**Finance**	**SCM**	**HR**	**IM**	**Location**
Construction sourcing		Project Management						CAPEX project accounting	Capital Projects & Service Delivery			Regional / Polokwane
		Engineering workshops							Sourcing & Purchasing			
		Coordinates Design							Capital Project Procurement			
On Site	Pump Operations & Maintenance	Commission-ing	SIB Execution	Implemen-tation of Compliance Framework		Ensure Site Compliance to Regulatory Requirements		Cost Management	Warehouse & Disposal Management		Telemetry	Regional
	Dam Operations & Maintenance	Operational Readiness		Investigate & Report SHE Impacts							Communi-cation	
	Water treatment plant operations & Maintenance			Report Performance of SHE Program								
	Laboratory operations			Maintain Site Regulatory Compliance								
Outsourced	Construction	Security Services	Legal	Training	Technical Project Assurance	Tax	Internal Audit	External Audit	Project Execution			Regional / Polokwane

1.4.7 Functional Structure and Organisational Structures

Functions in the new operating model will be organised under four functional heads that will all report into the CEO – these five roles will make up the executive structure of the association (see 'Figure 6'). The programme director will manage and control the project management of the mega projects – for both the owner's team as well as any outsourced contractors. (This structure is proposed to be a temporary function for a period of 8 years during the design and construction of the new project). The COO will be responsible for core operations, these include raw and potable water management support and oversight, SHEQ and asset management. The CFO role will manage all support functions including; finance, supply chain, HR, IM and GRC. Lastly, the Chief Socio-Economic Development Officer (CSO), who will ultimately manage the SED platform.

Figure 6 – To-be LWUA functional structure



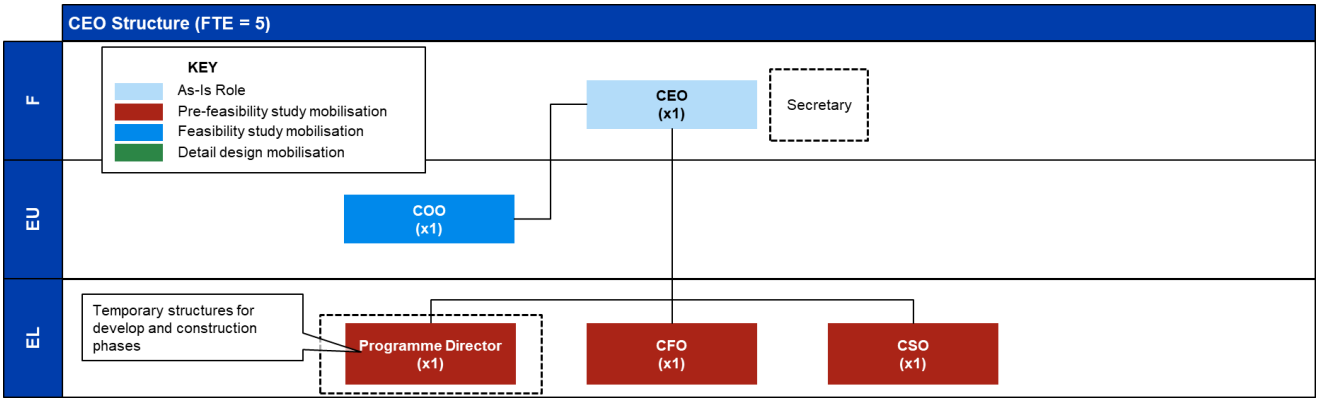
1.4.7.1 Chief Executive Officer (CEO) Structure

The CEO structure (see 'Figure 7' below) forms the executive leadership of the organisation – Responsible for business strategy, performance and oversight. Ensures alignment with OMM WUA strategies, standards, policies and governance.

The structure is made up of:

1. Programme Director – who will direct and control major and quick win projects across Horizon 2 and 3. This role should be set at a Paterson EL grade given the size and complexity of the programme and organisation.
2. Chief Operations Officer (COO) – who will direct primary operations and primary support functions.
3. Chief Financial Officer (CFO)– who will direct all support functions, except for SED.
4. Chief Socio-Economic Development Officer (CSO)– who will direct the strategic objective of building a trusted platform for SED in the region and establishing a trusted SED collaboration forum.

Figure 7 – To-be CEO structure

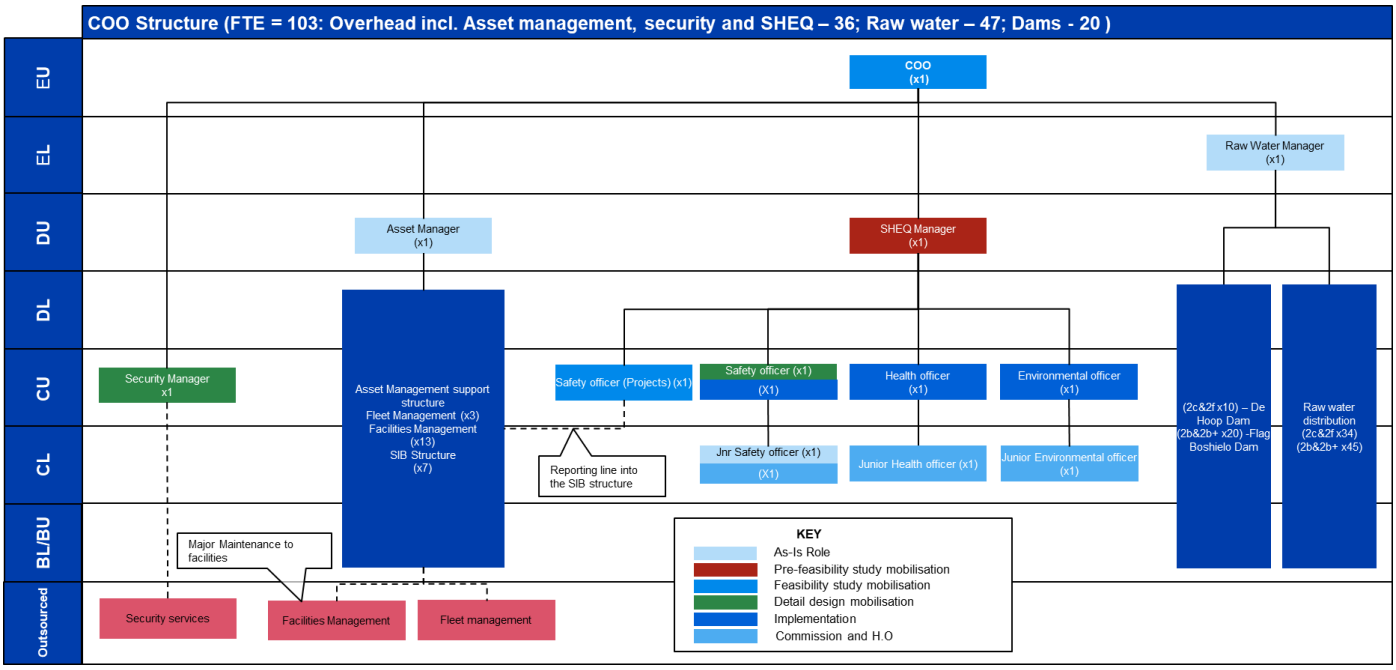


1.4.7.2 Chief Operations Officer (COO) Structure

The COO structure (see 'Figure 8' below) forms the heart of core operations for the association. It will be the most scaled function increasing in size and scale proportional to the increase in the build programme. The COO will have 4 functions that will report directly into the role; namely:

1. **Raw water manager** – will control the operations of all raw water reticulation operations (see 'Figure 11' and 'Figure 12'). This is being scaled in line with the increased footprint, however, with same management oversight.
2. **Asset manager** – will be responsible for all SIB projects, fleet management and facilities management pertaining to the existing and new assets added to the programme (see 'Figure 9'). This is mostly a new function within the structure which will have the increased responsibility of establishing an asset management strategy and asset life cycle management frameworks to ensure the assets operate in an efficient and reliable manner.
3. **SHEQ manager** – will be responsible for health services, environmental and safety across all operations. Given the increased footprint and workforce, dedicated functions for environmental and health services are being created under the new operating model.
4. **Security manager** – will be responsible for the management of outsourced security services that will monitor and secure all existing and new assets added to the programme.

Figure 8 – To-be COO structure

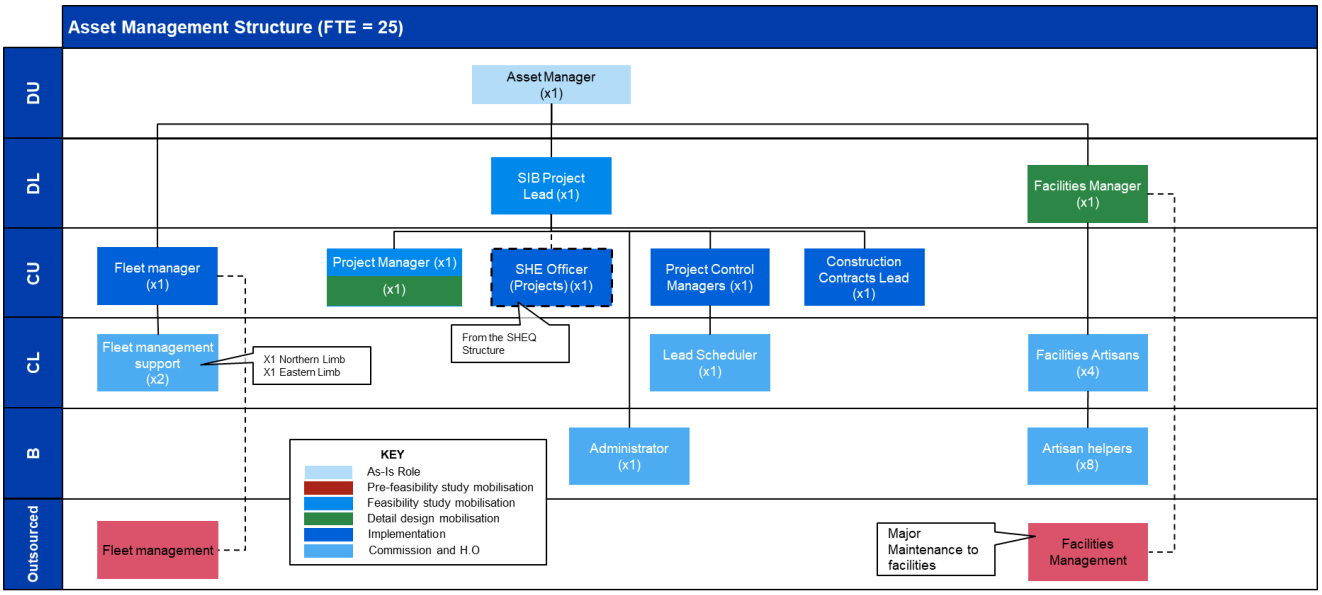


The asset management structure (see 'Figure 9' below) is split into three main functions:

1. **Fleet management manager** – run by one manager and two support staff for each limb of the operation – Given the increase in the geographical footprint with the new construction, the current fleet is expected to increase. The philosophy will still largely be to outsourced fleet management services, however, with a small team to coordinate and manage the fleet.
2. **SIB project manager –** who will control the stay in business projects to ensure the assets in the existing scheme and new programme are optimised and oversee major maintenance projects.
3. **Facilities manager** – who will be responsible for day-to-day facility's upkeep and will oversee any major maintenance performed on facilities by an outsourced party.

The total headcount in the asset management structure is proposed to be 25, an increase of 24 from the As-Is structure.

Figure 9 – To-be asset management structure



The raw water structure will cover all pump stations and pipelines anticipated in the plan with one raw water manager to which all superintendents (at each area) will report into. One set of control room operators will remotely control all pump station and reservoir operations. There will also be shared staff, which include technicians, maintenance planners and admin staff.

'Figure 10 below illustrates the raw water structure for the Eastern limb operation which will include the LWUA scheme, phase 2c and 2f known as the Havercroft area, the Steelpoort area and also the De Hoop dam. Figure 11 illustrates the additional full-time equivalents (FTE) to the raw water structure for the northern limb area (2B and 2B+).

Figure 10 – To-be raw water structure Eastern Limb

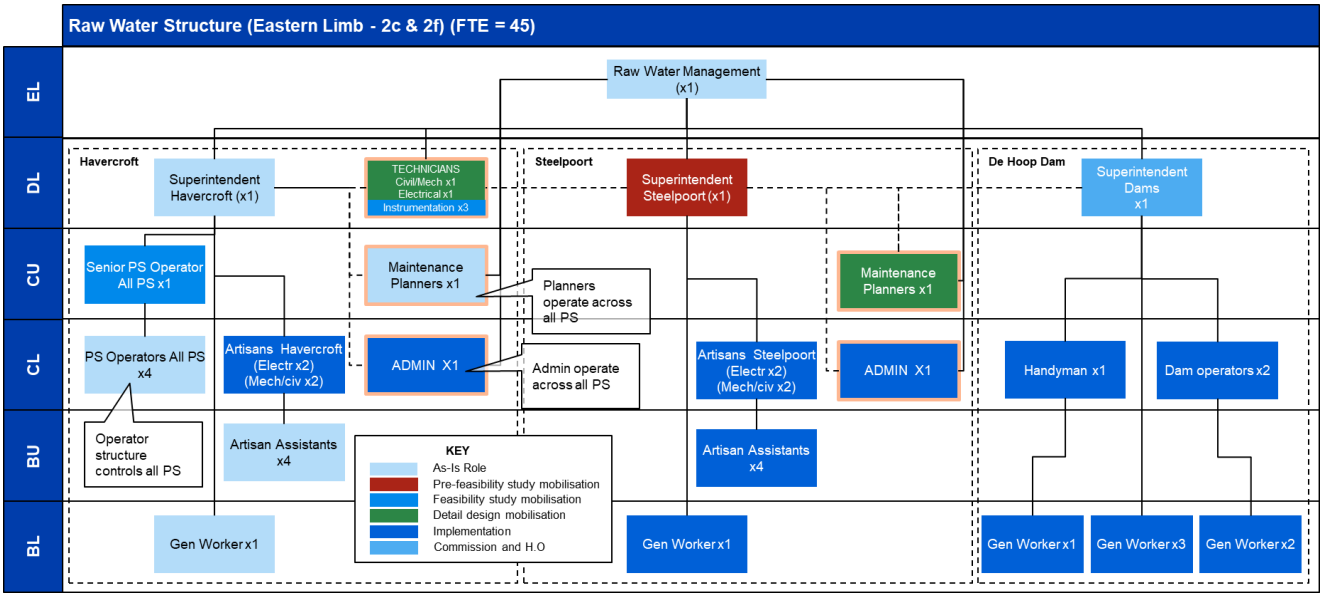
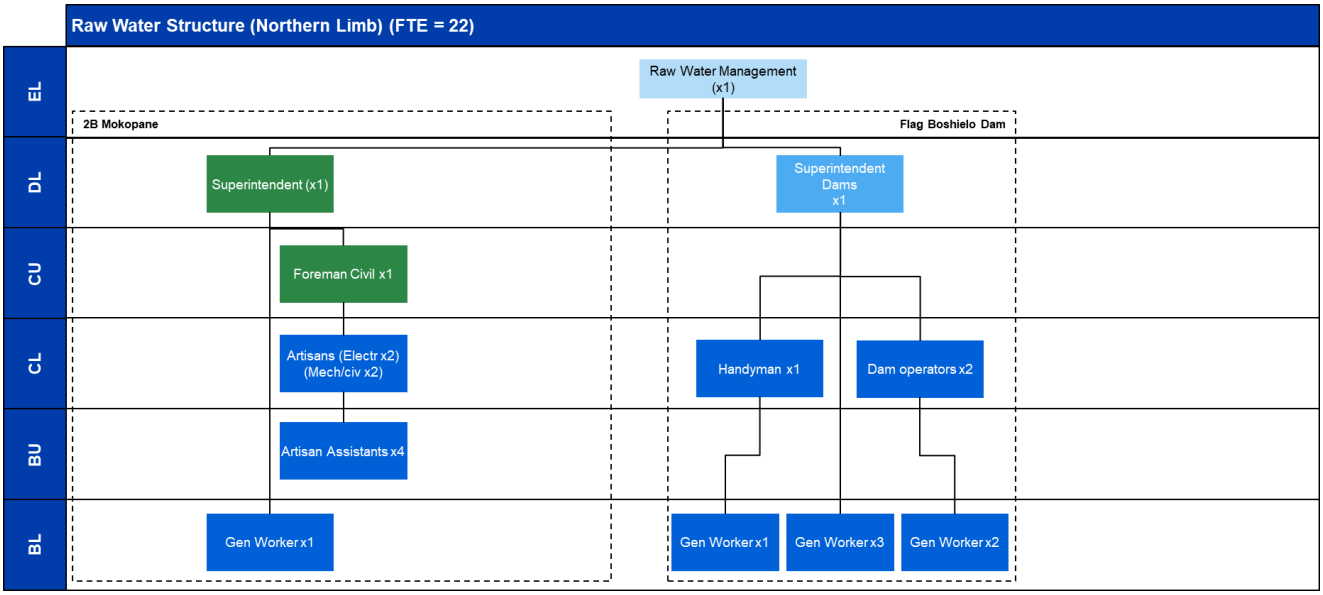


Figure 11 – Additional FTE to the To-be raw water structure Northern Limb

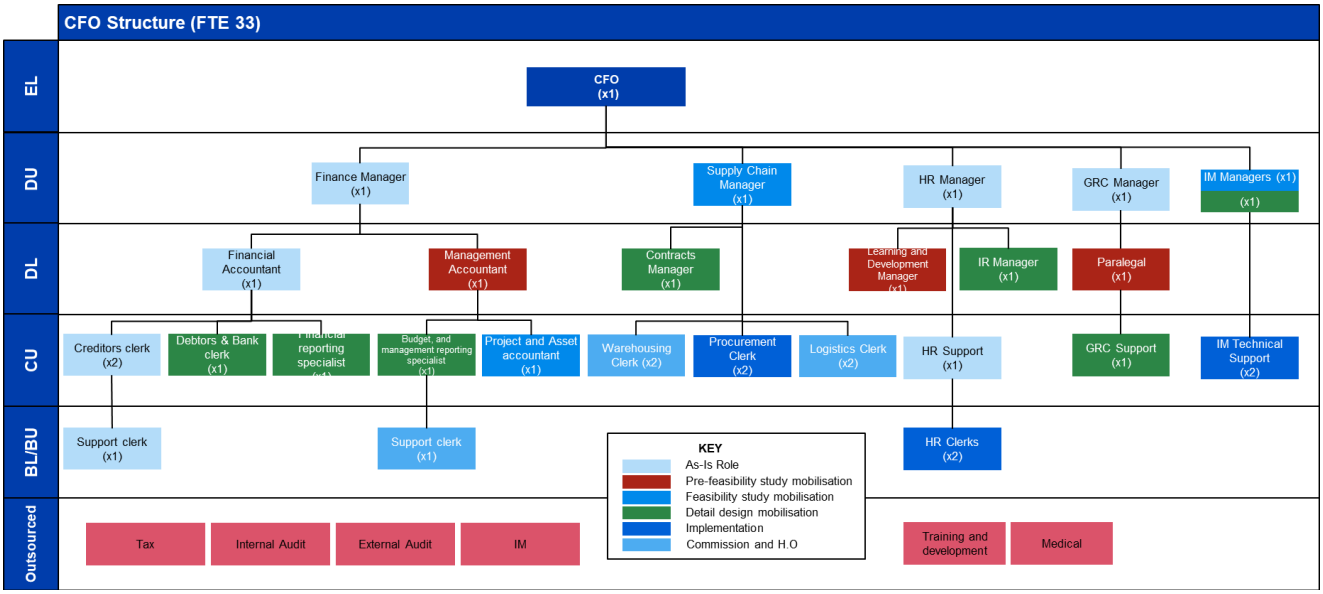


1.4.7.3 Chief Financial Officer (CFO) Structure

In the To-be state there are five sub-structures that will report directly into the CFO (see 'figure 12' below) namely:

1. **Finance** – controlled by a financial manager, the finance function will be made up of management and financial accounting teams. The financial accounting team will be responsible for creditors, debtors, financial reporting and bank while the management accounting team will look at budget, management reporting, project accounting and asset accounting. Given the scale of the growth, current resource constraints and increased need for governance given the size of the finance function, it is proposed to be increased significantly (from 5 FTE to 11 FTE).
2. **Supply chain management** - will be managed by a supply chain manager. The function will be responsible for contract management, procurement, logistics and warehousing for all operational costs. The Capital procurement for the mega projects will be managed through the Projects structure.
3. **Human resources** – this function will be managed by a HR manager. This function will be responsible for setting the HR strategy, policies and standards as well as developing the learning and development programme, managing employee relations, recruitment and on/off boarding of all employees. The size of the structure will increase from 2 FTE to 6 FTE in the future state as the full-time employees will increase from 40 to 332.
4. **Governance, risk and compliance** – will be bolstered by an addition a support para-legal and GRC support staff. They will also be responsible to manage the internal audit and external audit.
5. **Information management** – introduction of two IM managers with two support staff to handle primary support requests and assist with any technology implementation.
6. **Outsourced functions** include, pure legal, tax, internal audit, external audit, information management (secondary support and implementations), training and development and medical.

Figure 12 – To-be CFO structure



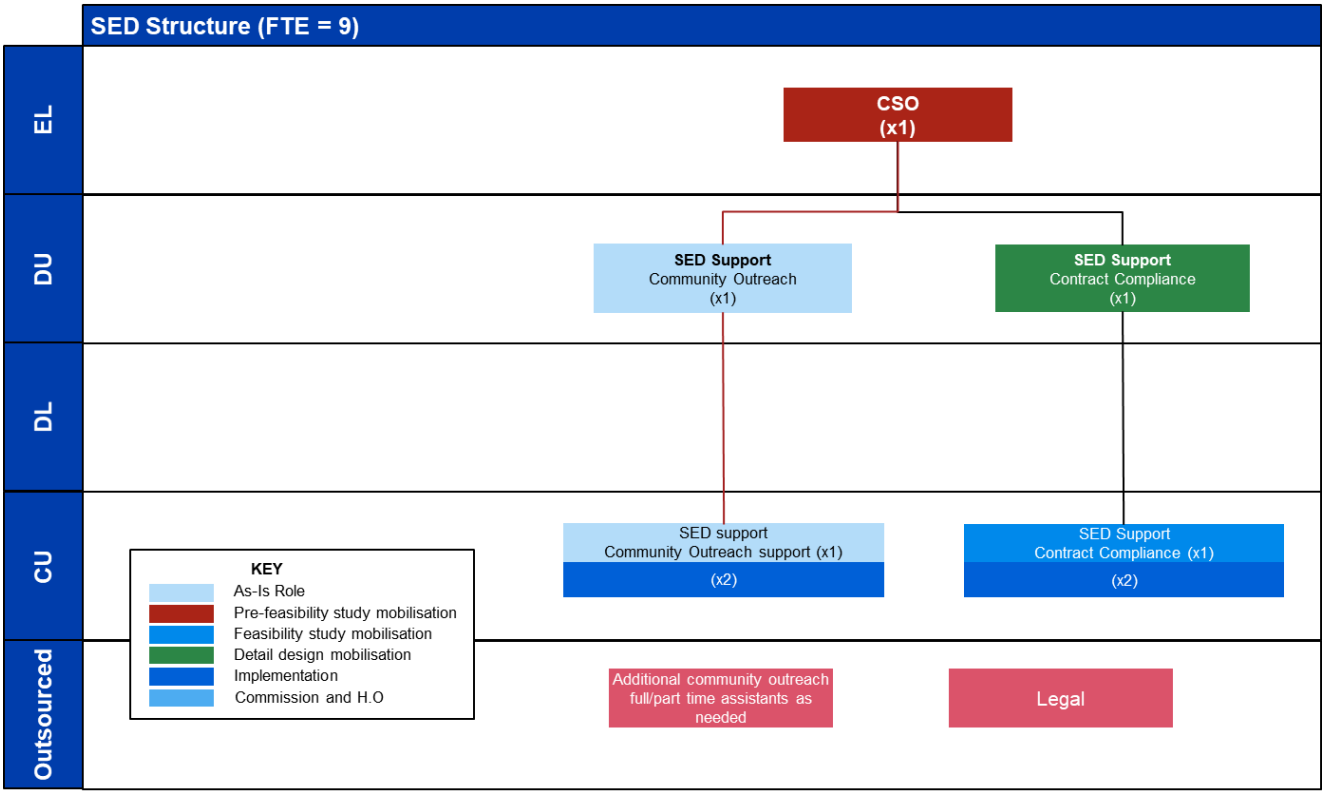
1.4.7.4 Socio-Economic Development (SED) Structure

The SED team (see 'Figure 13' below) will provide oversight across a range of implementing agents and engage with the community stakeholders on a constant level. Best-practice experience indicates that small, but focused SED structures are most successful. The SED team will be led by a Chief Socio-Economic Development Officer (CSO) who will direct the strategic objective of building a trusted platform for SED in the region and establishing a trusted SED collaboration forum. Two separate sub-teams will report:

1. SED community engagement and participation readiness team: 1 senior support FTE supported by 3 junior support FTEs will focus on community engagement and liaising including SED collaboration across water users as well as the establishment of skills and enterprise development readiness programmes to ensure communities are able to participate in the capital and operational spend of the programme. The intent is for these skills and enterprise development programmes to be outsourced to professional institutions. The roles are envisioned to entail substantial out of office commitments and daily in person liaising with different stakeholders across the communities to ensure full line of sight of actual community needs as well as potential grievances or conflicts early on.
2. SED contract spend and compliance team: 1 senior support FTE supported by 3 junior support FTEs will focus on contract spend, oversight, compliance and all related administration and reporting. The FTEs in this function would primarily work office based.

SED related legal work will be outsourced.

Figure 13 – To-be SED structure



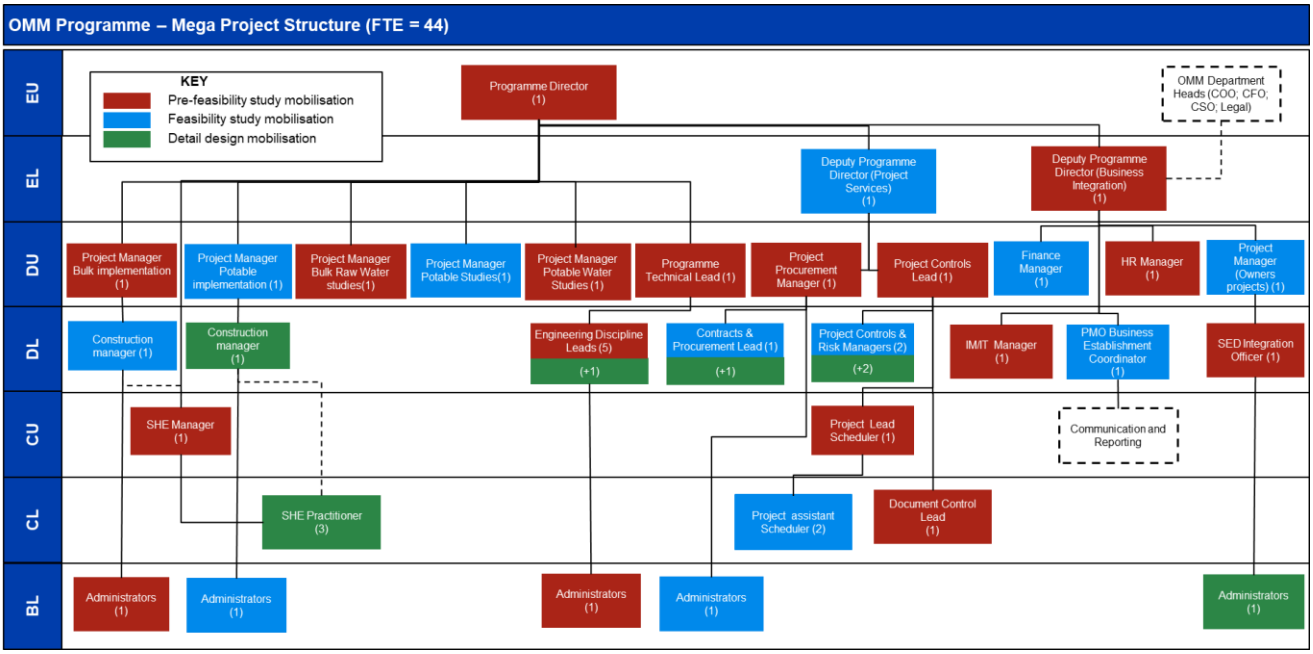
* In the pre-feasibility and feasibility studies, the assistence of an additional (DL) resource may be necessary to support the wider SED structure. In this case the total headcount for the SED structure would be 10 FTE (including the CSO).

1.4.7.5 Mega Project Structure

The Mega projects structure is made up of contracted staff for the period between pre-feasibility and end of implementation (see 'Figure 14'). It will be led by an executive level programme director. The structures composition is as follows:

1. Project managers will be recruited (split evenly between bulk and potable water projects), supported by administrative staff as well as dedicated SHE managers and practitioners.
2. A technical lead will be recruited to manage all engineering expertise.
3. A project controls lead will be recruited to oversee project controls, risks and overall schedule of the project.
4. A dedicated procurement manager will also be required to assist in the management of contracts as well as ensure the project procurement processes are followed. This resource will work closely with the project controls lead to ensure costs and compliance are managed effectively.
5. A dedicated business manager will be recruited to cover project specific back office functions such as, finance, IM and HR.

Figure 14 – Mega project structure



1.4.8 Gap Analysis

'Table 10' below illustrates the gaps between the current operating model and the future state operating model from a functional perspective. It provides a view of the growth in FTE from the current state (see sections 1.3.3) to the desired state (see sections 1.4.7) as well as the identified areas of enhancement to achieve the strategic objectives of the business.

Table 10 – OMM WUA TOM Gap analysis

Function	As-is	To-Be	Gaps Identified
CEO	1	1	No changes are envisaged at a CEO level other than a Paterson grading change to Band F. The CEO will have a larger footprint to manage and therefore, an expansion of structures under the role to provide strategic guidance and leadership across different functions. The CEO will drive the OMM WUA strategy through the executive team.
Secretarial service	1	1	
Programme Director	0	1	LWUA does not have any resources to deliver the project given the scale and value of the Mega projects. Thus, a complete project structure under the leadership of a programme director is proposed to deliver on the projects. The structure is temporary for a period of 8 years during the design, construction and commissioning phases. It will comprise a contracted owners project team of 44 to facilitate the mega projects.
Mega Projects	0	44	
CFO	0	1	Addition of a CFO to manage the scaled support functions that are required to operate the scaled operations. The CFO is viewed as the accountable person for all back-office functions.

Function	As-is	To-Be	Gaps Identified
Finance	5	11	The finance structure will be scaled and divided into financial accounting and management accounting structures. Functional roles will now include; creditors, debtors and bank, financial reporting, management reporting, budgeting, project accounting and asset accounting. By adding more granularity in the structure, the aim is to enforce end-to-end accountability and define clear roles and responsibility. Automation and efficiency measures will be deployed wherever possible to minimise headcount and improve organisational effectiveness.
SCM	0	8	Introduction of a supply chain management function. Functions include contract management, warehousing, procurement and logistics. This function will be critical in a larger organisation. Procurement and contract management roles will enforce stronger governance within the Association. Automation and efficiency measures will be deployed wherever possible to minimise headcount and improve organisational effectiveness.
HR	2	6	The HR function would need to be scaled to handle the influx of onboarding staff. The function will also be responsible for establishing the HR strategy, policies and procedures including learning and development programme. Given the scale of the organisation it will also need resources to manage employee relations and drive the transformation agenda. This structure is geared to simulate a culture of progression and improved performance.
GRC&L	1	3	Scaled GRC&L functions, as the size of the business grows and its impact on both its commercial users and local users is scaled there will be a requirement to create a larger GRC&L structure. This also aids in creating a more robust governance structure in line with corporate requirements and aligning to various regulatory frameworks.
IM	0	4	To achieve the goal of becoming a smart utility a IM function will be introduced. This function will assist in the implementation of new technology as well as provide primary support to staff across the business as well as automation and efficiency measures to minimise headcount and improve organisational effectiveness.
CSO	0	1	Recruitment of an executive level SED manager to lead the realisation of the strategic goal of creating a trusted platform for SED in the region.
SED	2	9	The existing structure will need to be supported with functions including SED outreach teams, communication and liaison, SED user collaboration and SED administration and oversight. This structure will be important to focus on the timely sensitising of the community to the project as well as initiating skills development and enterprise development programmes to ensure community readiness to participate in the capital and operational spend of the project. The intent is for these programmes to be implemented through professional outsourced institutions.

Function	As-is	To-Be	Gaps Identified
COO	0	1	Introduction of COO to manage and control the scaled operations. This would include managing core operations (which will now include for the Flag Boshielo and De Hoop dams), asset management (including fleet management, facilities management, and the SIB structure), SHEQ (which includes Health, Safety and Environment) and security. The role will create an accountable person that will be responsible for the efficient, cost effective delivery of operations to the mines and communities.
Security	0	1	Additional security manager to manage the outsourced security function. The aim is to ensure the facilities safety standards are high and that security of staff and assets are not compromised.
Asset Management	1	25	The asset management function will be scaled to be able to service the growing operations. A SIB function will be created to run all internal projects, Fleet management to coordinate the movements of vehicles across the region and facilities management to both execute minor facilities maintenance and oversee major facilities maintenance.
SHEQ	1	10	A scaled SHEQ function will be recruited in relation to the growth of core operations. New capabilities such as health and environment will be added to the portfolio of the structure. The expansion of the SHEQ function is directly in line with the design principle of ensuring safety is not compromised. The function will have to comply with all health, safety and environmental legislation in order to assure LWUA's licence to operate.
Raw Water	26	66	Growth in the raw water structure will be in line with the additional raw water pipelines and pump station to be operated and maintained. There will continue to be a single set of control room operators (controlling and monitoring the operations of all pump stations) and minimal staff situated at the pump stations to action on site tasks. Automation and efficiency measures will be deployed wherever possible to plan efficient and effective headcount and improve organisational effectiveness.
Total	**40**	**193**	

1.4.9 Rollout of Operational Structures

This section of the report covers how the structures covered in section 1.4.7 will be implemented across the 5 phases (Pre-feasibility, feasibility, detailed design, implementation and commissioning) of the programme. The aim is to provide a view of the rationale behind the structural implementation as well as demonstrate the change in FTE to the future state.

1.4.9.1 High-Level Implementation of Operational Structures

The implementation roadmap below (see 'Table 11' below, for operational and overhead rollout and 'Table 12' below – for mega project structure rollout) illustrates the timing of structure enablement across the project phases as well as providing a view of at what level each of the staff will be entering the organisation. Note that the timing will have to be further refined and optimised during the pre-feasibility phase. All new staff entering the business during the following phases will be capitalised (across FY20 till FY30). The timing assumption used was:

1. **Activation of pre-feasibility structures will take place in May to July 2022** – This phase (and therefore all subsequent phases) is predicated on signoff of the Early Business Case report. It is important to note that the assumption used is that the report will be signed off and the pre-feasibility phase anticipated to begin in July to August 2022. During this phase, a half of the mega-project's structures will be phased in to begin preparations for the feasibility study. Furthermore, senior members of the following structures will be activated; SED, Asset management, core operations and SHEQ. The assumption is that recruitment for both the project team and operational team will begin a month prior to the start of the phase.
2. **Activation of the feasibility structure** – During this phase further project team support staff will be activated along with some back office and core operations structures. The COO will also be introduced at this stage. Eighty percent of the entire projects team will be in place by the end of the phase. This ensures OMM WUA will have the capability to perform the tasks set out in the feasibility study and are prepared to move into Detailed Design and Implementation.
3. **Activation of detailed design structures** – Detailed Design marks the start of the programme execution. The entire mega projects team will be active in this phase to begin execution. It is also at this point that the additional headcount in back office operations will begin to be activated (namely the finance (+3 FTE), SCM (+1 FTE), HR (+1 FTE), GRC (+1 FTE) and the IM lead (+1 FTE)). They will be able to provide input into the implementation phases and focus on operationalising their new structures.
4. **Activation of Implementation structures** – Additional core operational FTE will be phased across implementation. Operational staff required in this phase will be brought in slowly to prepare for the activation of assets. By the end of implementation all operational staff are required to be in place – the principle followed is that there should be a lag between the time staff are appointed to the commissioning of an asset. This ensures proper onboarding, training and handovers can occur. Back office will immediately operationalise their respective structures. Optimisation of the rollout timing will be further refined during the pre-feasibility phase.
5. **Activation of commissioning and handover structures** – This phase will see the activation of all core operational structures and support additions to the overhead structures. Remaining junior level staff will be brought in across some of the functions to support the workload. It is also important to note that one year after the start of the commissioning and handover phase, the Mega-project structures will be dissolved.

Table 11 – Rollout of operational structures – Operations FTE

			Number of Resources added with Paterson Grading				
Structure	**As-Is**	**To-Be**	**Pre-feasibility**	**Feasibility Study**	**Detail design**	**Implemen-tation**	**Commiss-ioning and handover**
CEO	1	1					
Secretarial service	1	1					
CFO	0	1	1 (EL)				
Finance	5	11	1 (DL)	1 (CU)	3 (CU)		1 (BL)
SCM	0	8		1(DU)	1 (DL)	2 (CU)	4 (CU)
HR	2	6	1(DL)		1 (DL)	2 (BL)	

			Number of Resources added with Paterson Grading				
Structure	**As-Is**	**To-Be**	**Pre-feasibility**	**Feasibility Study**	**Detail design**	**Implemen-tation**	**Commiss-ioning and handover**
GRC&L	1	3	1(DL)		1 (CU)		
IM	0	4		1(DU)	1 (DU)	2 (CU)	
CSO	0	1	1 (EL)				
SED	2	9		1(CU) 1(DL)	1(DU)	4 (CU)	
COO	0	1		1 (EU)			
Security	0	1			1(CU)		
Asset Manage-ment	1	25		1(DL) 1(CU)	1(DL) 1(CU)	4 (CU)	7 CL) 9(B)
SHEQ	1	10	1 (DU)	1 (CU)	1(CU)	3(CU)	3 (CL)
Raw Water	26	66	1 (DL)	3 (DL) 1 (CU)	3 (DL) 2 (CU)	10 (CL) 6 (CL – Dams) 12 (BL – Dams)	2 (DL – Dams)
Total	**40**	**148**	**7**	**13**	**17**	**45**	**26**

Table 12 - Rollout of operational structures – Owner's Team FTE (Mega-project structures)

			Number of Resources added with Paterson Grading		
Structure	**As-Is**	**To-Be**	**Pre-feasibility**	**Feasibility Study**	**Detail design**
Programme Director	0	1	1 (EU)		
Administrat-or	0	5	2 (BL)	2 (BL)	1 (BL)
Project Mngs	0	6	2 (DU)	4 (DU)	
Construction Manager	0	2		1 (DL)	1 (DL)

			Number of Resources added with Paterson Grading		
Structure	**As-Is**	**To-Be**	**Pre-feasibility**	**Feasibility Study**	**Detail design**
SHE	0	4	1 (CU)		3 (CL)
Technical Leads	0	1	1 (DU)		
Discipline Engineering Leads	0	6	5 (DL)	1(DL)	
Project Controls Lead	0	1	1 (DU)		
Project cntrl & risk	0	4	2 (DL)	2 (DL)	
Scheduler	0	3	1(CU) 2 (CL)		
Document control	0	1	1(CL)		
PPM	0	1	1 (DU - SCM)		
Contracts & Procurement	0	2		1 (DL)	1 (DL)
Deputy Programme Directors	0	2	1(EL)	1(EL)	
Supplier Develop-ment	0	1	1 (DL - SED)		
Finance, HR, IM	0	4	1 (DU - HR) 1(DL – IM)	1(DU – Fin)	1 (DL)
Total	0	44	24	13	7

1.5 Next Phase Plan

1.5.1 Operating Model Next Phase Plan

1. Develop a detailed technology landscape for the future state operating model – this includes an understanding of the current state technology landscape and future requirements.

2. Create a detailed organisation design (refined based on any changes that may occur to the development plans or business requirements).
3. Clear roles and responsibilities defined by job descriptions, review of grading and RACI matrix.
4. Optimisation of organisational structure rollout plans.
5. Review the timing based on the approved concept study report and any potential change in development plan.
6. Review of costing based on any changes to the TOM from points (2), (3), (4) and (5).
7. Development of a detailed recruitment plan based on the finalised TOM.
8. Development of a detailed training plan based on the requirements of the final TOM.
9. Assist and support of the hiring processes (as part of the initial implementation of the TOM).

1.6 Operational Readiness Planning

Operational readiness planning was not started during the concept phase; however, the following elements of operational readiness will be addressed in the next phases.

1.6.1 Pre-feasibility Phase

Once the scope has been confirmed, the framework for an end state operating user requirements and specifications document will be drafted, this will define the elements required during the basic engineering phase for the following:

1. Operability and maintainability specifications and requirements of facilities.
2. Operability and maintainability specifications and requirements for systems.
3. Interoperability requirements and specifications for control and organisational systems (such as PLC/SCADA systems and ERP/ SCM systems).

1.6.2 Feasibility Phase

During the feasibility phase, the basic engineering function needs to be provided with input regarding the operability and maintainability specifications and requirements to ensure reliable, fit-for-purpose, safe and efficient operational and maintenance processes. To this end, the operational readiness team will liaise with the engineering design team and provide input into the Hazard and Operability Studies (HAZOPS). Input for operating and maintenance requirements will be provided at a sub-system level.

The End State Operating Requirements document and Operational Readiness Plan (ORP) will be a primary deliverable for Operational Readiness Planning in the feasibility phase. The plan will detail interoperability requirements and specifications for facility, system and sub-system controls with enterprise management systems such as ERP/ SCM systems. The ORP plan will also detail the requirements for commissioning, ramp-up and handover processes between project and operational resources.

Olifants Management Model (OMM) Programme

Programme Early Business Case – High Value

Attachment G: Stakeholder Management

Version C | 10 March 2022

IMPROVING LIVES THROUGH WATER

Table of Contents

1. Stakeholder Management

1.1 Synopsis

Stakeholder management is critical to the success of any project. It has been identified from the onset that the OMM Programme will not succeed if buy-in and commitment are not obtained from key stakeholders. The stakeholder engagement process became more challenging due to the complexity of the different stakeholders. The nature of past engagements between the then LWUA, National Government and communities caused a lot of mistrust. These relationships had to be rebuilt through showing transparency and demonstrating that all stakeholders are committed to positive change and sustainable transformation.

An extensive stakeholder analysis process was undertaken to identify the relevant role players within all spheres of Government with power to influence the programme and whose support was required to progress. A similar process was followed for all commercial stakeholders. Stakeholders were mapped and a subsequent stakeholder management plan developed as per the outcomes of the analysis. A targeted engagement approach was followed with each one of the identified stakeholders to ensure that the benefits of the OMM Programme were understood and buy-in obtained. Information around the OMM Programme was shared and stakeholder views incorporated into the bigger programme. Through this concerted effort; the OMM Programme has been socialised within Government (those specific to the OMM Programme) and commercial users. Although the OMM Programme received overwhelming support, additional engagement is still required to ensure that all stakeholders share a common objective. This is necessary, especially at a local government level, since some of the municipalities could not be reached due to the COVID 19 lockdown and administrative matters.

1.2 Introduction

The stakeholders have an interest in the outcome of the OMM Programme. One of the major reasons why projects fail is due to a lack of consultation with stakeholders which is why the project team acknowledged early on that managing stakeholders effectively can have a big impact on the success of the OMM Programme.

1.3 Stakeholder Management

1.3.1 Introduction

The stakeholders identified are those that have a big influence on policy, finance, sustainability and implementation. The reason for this is that policy decisions are required in Government for the OMM WUA to be established and commitment from commercial users and Government to fund the OMM Programme. Municipal buy-in is required to ensure the sustainable operations and maintenance of potable water infrastructure as well as supporting community engagement and SED programmes. An extensive stakeholder analysis was done on Government and commercial stakeholders. The level of influence and commitment of each stakeholder was assessed, and an engagement approach was developed for each of these stakeholders.

1.3.2 Stakeholder Management Plan

The stakeholder management plan aims to define and document the approach and actions that will increase support and minimise the negative impacts of stakeholders throughout the life of the OMM Programme. The key objectives of the stakeholder management plan are:

- Ensure understanding of, and buy-in from, key stakeholders
- Guarantee support and commitment from both commercial users and Government
- Maintain a good reputation and build the OMM brand
- Ensure integration on SED initiatives and alignment with Government programmes and priorities

An established stakeholder engagement model was used to develop the plan. During this process four stakeholder groups were identified. These included commercial users, National, Provincial and Local Government stakeholders. Communities in the mining area of operations have also been identified as a key stakeholder. Key persons in each of these stakeholder groups were identified and analysed against the stakeholder map. The level of engagement with each of them was assessed and documented in the communication plan. The stakeholder identification and analysis process formed the basis of the stakeholder management plan. It is important to note that stakeholders often change roles, resign or new stakeholders are appointed in their different organisations. Additionally, stakeholders often change their point of view and position on aspects of the OMM Programme. Hence, the reason that the stakeholder management plan is not a static document and is reviewed on a regular basis. The stakeholder groups engaged are as follows:

Table 1 – Stakeholder Groups Engaged

Stakeholder	Reason for Engagement	Progress to Date
National Government		
Department of Water and Sanitation (DWS)	• DWS is the water sector leader and responsible for the management, build and operate of water resources infrastructure • Support and agreement are required for the OMM WUA to operate and maintain the ORWRDP scheme on behalf of the Department • DWS to sign the MoI on behalf of Government • Agree on the proposed funding solution for the remainder of the ORWRDP infrastructure. • Withdraw the disestablishment notice against LWUA • Issue the required water use licenses for the OMM Programme • Support the request to establish the OMM WUA as part of the OMM Programme • DWS to sign the Heads of Agreement on behalf of Government	• The MOI was signed by DWS • An interim Steering Committee was set up with representatives from Government and CUC • Negotiation sessions between Government and CUC took place around finance, institutional arrangements, technical and SED. • Meetings were held with the new Minister of DWS who supports the OMM Programme • A Heads of Agreement has been developed and will be presented to the Minister on 31 January 2022

Stakeholder	Reason for Engagement	Progress to Date
Trans Caledon Tunnel Authority (TCTA)	• TCTA is an implementation and funding agent of DWS and was involved in the development of the ORWRDP planning. • TCTA's staff might be used to support the OMM WUA PMU structure.	• Members of TCTA formed part of the interim Steering Committee as representatives from Government. • TCTA was part of the Government negotiation team
National Treasury (NT)	• Is responsible for the national fiscus and manage the budgets of departments and provides guarantees for external funding • NT need to support the financing arrangements for the OMM Programme (Opex and Capex) • NT can structure new grants as required • Their support is required for policy changes to allocate a share of mining royalties to pay for municipalities' monthly OPEX obligations in the areas the mines operate	• A meeting has been set up between DWS and NT to discuss the progress made with the OMM Programme and specifically the finance arrangements
Presidential Infrastructure Coordinating Council (PICC) and Infrastructure South Africa (ISA)	• The role of the PICC is to identity and coordinate the development of large infrastructure programmes that are beneficial to the economic growth of the country • The support of the PICC is required to socialise the OMM Programme as a large-scale water project that will stimulate economic growth in areas in the Limpopo Province • Support for the OMM Programme to be included as one of the President's priority projects.	• The PICC is regularly updated on progress made with the OMM Programme implementation
Public-Private Growth Initiative (PPGI)	• OMM WUA engaged with the PPGI for support to profile the OMM Programme as an example of collaboration between Public and Private sector stakeholders.	• The PPGI fully supports the OMM Programme • Regular progress reports are submitted to the PPGI
Department of Cooperative Governance and Traditional Affairs (CoGTA)	• CoGTA is responsible for municipalities and provide guidance on municipal powers and functions • CoGTA is also responsible for administering the MIG funding • OMM WUA intends to provide potable water supply to communities in the Eastern and Northern Limb and requires Departmental support as a water services provider to municipalities or with measuring the performance standards of water infrastructure management	• No formal engagement has happened as yet with CoGTA. This will happen as part of the municipal engagement

Stakeholder	Reason for Engagement	Progress to Date
SALGA	• SALGA represents the interest of municipalities and will be part of the discussions should there be a need to change water services providers	• No formal engagement has happened as yet with SALGA. This will happen as part of the municipal engagement
Department of Human Settlements (DHS)	• The OMM Programme promotes the provision of water in conjunction with the upliftment of human settlements	• No formal engagement has happened as yet with DHS • discussion is required to determine the extent of DHS's involvement with the OMM Programme
Department of Mineral Resources (DMR)	• Responsible for oversight over the mining sector • Support required for the SED programme • Support required for mines social labour plans to be allowed to include contributions for potable water to communities	• Initial discussions were held with DMRE • Continued discussion is needed around the use of mining royalties for SED development
Lepelle Northern Water (LNW)	• LNW is an entity of DWS and is responsible for supplying bulk water in the Limpopo Province and supporting municipalities with the implementation of water services • LNW's role in the OMM Programme needs to be determined. • Staff from LNW will considered for staffing of the OMM Programme structure • LNW has been mandated to construct phase 2F+	• Initial discussions were held with LNW • Continued discussion is required to determine the extent of LNW's involvement with the OMM Programme
Municipal Infrastructure Support Agent (MISA)	• MISA is responsible for supporting municipalities with asset management and operations and maintenance. • MISA is critical in supporting the SED programme with skills development of municipal staff and technical staff with training	• No formal engagement has happened as yet with MISA. This will happen as part of the municipal engagement
Provincial Government		
DWS Limpopo	• Representative of DWS in the Province • Responsible for ensuring water supply to communities • Regulate and support water services authorities	• The regional office is part of the Steering Committee and actively involved in the OMM Programme
Limpopo - Office of the Premier & Premier's Employment Growth	• PEGAC is responsible for economic growth and development in the Province. It is important that this project is integrated with what is planned for the Province	• The OMM Programme is supported by the Premier • Regular feedback is provided at the PEGAC meeting.

Stakeholder	Reason for Engagement	Progress to Date
Advisory Council (PEGAC)	• The OMM Programme will stimulate economic development in the Olifants River Catchment area in the Limpopo Province • Provide leadership and coordination with local municipalities in the Province	
Local Government		
Sekhukhune District Municipality (SDM)	• They are the water services authority in the Eastern Limb • Need to supply these communities with potable water supply	• SDM committed to supporting the OMM Programme • They will form part of the Steering Committee and will crucial in community engagements and SED development
Mogalakwena Local Municipality (MLM)	• MLM is the Water Services Authority for the impacted communities in the Northern Limb • They need to ensure supply their communities are supplied with potable water supply	• MLM committed to supporting the OMM Programme • They will form part of the Steering Committee and will crucial in community engagements and SED development
Capricorn District Municipality (CDM)	• Engage in terms of the District Development Model (DDM) model	• No formal engagement has happened as yet with CDM. This will happen as part of the municipal engagement
Commercial Users		
African Mineral Rainbow (ARM) **Anglo American Platinum (AAP)** **Impala Platinum** **Booysendal Platinum (Pty) Ltd (Northern Platinum)** **Corridor Resources Inc.** **Cheetah Chrome South**	• The CUC members are responsible for 50% of the funding contributions for Bulk raw and potable water. • The mines need to be aware of the required funding commitments for the studies phase • The implementation of the OMM Programme will support members social license to operate and certain members expansion needs • SLP's of mines should be integrated to support the SED programme	• CUC members are part of the Steering Committee and the negotiation team • Regular updates on progress are made to the rest of the CUC members

Stakeholder	Reason for Engagement	Progress to Date
Africa Proprietary Limited		
IvanPlats Proprietary Limited		
Bushveld Minerals		
Glencore-Merafe Venture (Lion Smelter)		
Steelpoort Industrial Park		
Assore Limited		
Two Rivers Mine		
Tameng Mining and Exploration Proprietary Ltd		
Nkwe Platinum Limited		
BCR Holdings (Pty) Limited		
Vanadium Resources Pty Ltd		
Southern Palladium Limited		
Marula Platinum (Pty) Limited		

During the stakeholder consultation process, a few of the mines decided not to participate in the OMM Programme. These mines are:

- Chromex Mining Limited;
- Samancor Chrome
- Samrec Proprietary Limited;
- Sefateng Chrome Mine Proprietary Limited;
- Sibanye-Stillwater;
- Southern Sphere Platinum; and
- Sylvania Platinum Limited.

The success of the stakeholder engagement process was measured against the ability to achieve the reasons for engagements. The feedback that we have received from stakeholders thus far has been very positive. The President has also emphasised at various platforms the need for public and private sector role players to work together in identifying projects that will stimulate the economy of this country. The response from stakeholders in this programme demonstrates the commitment to do exactly that.

1.3.3 Communication Plan

Table 2 – Communication Plan

Stakeholder	Seniority	One-on-one sessions	EXCO/Man meetings	Meetings	Email Correspondence
DWS	DG, DDGs	✓	✓	✓	✓
NT	CD, Dir	✓	✓		✓
PICC	Advisors	✓		✓	✓
ISA	CEO, Advisors	✓	✓	✓	✓
PPGI	Chairperson	✓	✓		✓
DMRE	DDG			✓	✓
CoGTA	Dir			✓	✓
Sekhukhune DM	Mayor, MM	✓		✓	✓
Mogalakwena	Mayor, MM			✓	✓
Treasury Limpopo	MEC	✓		✓	✓
Office of the Premier	Premier		✓	✓	✓
LWUA Members	CEO's	✓	✓	✓	✓
JWF Members	CEO's / JWF rep	✓	✓	✓	✓
DWS	DG, DDGs	✓	✓	✓	✓

1.3.3.1 Engagement Sessions

Once the stakeholders were identified and ranked in terms of their level of influence and power, a communication plan was developed that set out the terms of engagement. The purpose of these engagements was as follows:

- Socialise and obtain buy-in for the overall OMM Programme
- Obtain in-principle support for the MoI
- Facilitate the signing of the MoI and the Heads of Agreement
- Approval of the concept and early business case, and signed commitment letters to initiate the study phases

A concerted effort was made to engage with DWS as the policy maker and owner of the ORWRDP infrastructure as well as NT who controls the national fiscus. If this was not done it would have been very difficult to move forward with the OMM Programme. Engagements happened as follow:

For each of these engagements' presentations were developed specific to the stakeholder group. Presentations ranged from information regarding the programme to detailed information per stakeholder. As can be noted from the engagement table some of the stakeholders were extensively engaged whilst others require more consultation. Some of the planned meetings, especially with Government stakeholders, have been postponed till after the COVID-19 lockdown is lifted. A key engagement for the OMM Programme was with the new Minister, Honorable Senzo Mchunu. The Minister conducted roadshows in each Province and allowed the CEO of LWUA to do a presentation on the OMM Programme. The Minister expressed his support for the OMM Programme and that created the platform for further collaboration with the Mayors of the impacted water services authorities as well as his departmental officials and other Government departments.

Some of the key outcomes of these engagements can be summarised as follow:

- In principle there is strong support for the OMM Programme from both Government and commercial users
- Government need to confirm the repayment of their funding contribution with National Treasury
- There is acknowledgement that COVID-19 has exacerbated the need for commercial users and Government's social license to operate as communities have been severely impacted by COVID-19 and increased social unrest is likely without any large-scale intervention
- Funding will have to be sourced using various options available, especially to support Government's share of OPEX
- Mines need to secure their capacity required in the pipeline to ensure that they can operate and expand their operations and not just focus on their current water allocation
- The existing LWUA will be transformed into the OMM WUA, aligned to the DWS transformation principles for water user associations and will be the implementing vehicle for the OMM Programme
- The OMM Programme has been listed as a SIDS project (Sustainable Infrastructure Development Symposium) which is driven by the PICC
- Phase 2F+ will not form part of the OMM Programme and will be financed through the DBSA and implemented by Lepelle Northern Water.

1.3.3.2 Programme Newsletters

Quarterly newsletter on the OMM Programme will be distributed. The focus of the newsletter will be to provide feedback to members on the progress made. This will be a means to showcase the OMM Programme to various stakeholders as it is a first of its kind and can be replicated in various sectors and industries.

1.4 Stakeholder Risks and Mitigations

Risks pertaining to stakeholder management have been identified. These risks are as follows:

Table 3 – Key Stakeholder Risks and Mitigations

	Risk	Consequence(s)	Mitigating Actions
1	Government unable to fund or fully fund programme due to impact of COVID-19	1. Commercial users may need to fund Government shortfall 2. Higher financing costs and compliance requirements due to sovereign risk and source of funding	1. Target alternative global crisis funding support 2. Early sensitisation of commercial users of COVID-19 impact on Government 3. Intensify discussions with PICC and PPGI to get the OMM Programme listed as a priority project 4. Engage with DWS on the most cost-effective option to implement the ORWRDP. (re-evaluate current options to confirm most economical solution)
2	Some commercial users may withdraw support due to financial constraints	1. OMM Programme may not be fundable due to insufficient offtakers 2. Delays in getting water to distressed areas may result in existing mines being unable to operate due to social unrest 3. Reduced economic activity will impact GDP, fiscus and related stakeholders 4. Where funding secured, the cost of water will increase given smaller commercial user base to absorb capital costs	1. Quarterly OMM Programme communication update to all members 2. Presentation to EXCO of all members with requirement to sign commitment letters 3. Follow up calls with influential EXCO members 4. Investigate alternative funding solutions 5. Bring in new members into the OMM Programme
3	Government partially aligns with the proposed solution (does not approve potable water mandate)	1. Delays in getting water to distressed areas 2. Increase in social unrest 3. Cost of potable water will escalate due to construction and operational inefficiencies 4. Pressure being exerted on commercial users to increase their potable water contribution	1. Engage Minister of DWS to get Mayors over the line 2. Set up a alignment session with Government stakeholders

	Risk	Consequence(s)	Mitigating Actions
4	Changes in key stakeholder leadership (public & private)	1. OMM Programme may lose support or be delayed as new stakeholders need to be aligned	1. Set up engagement meetings with new stakeholders 2. Lobby OMM Programme supporters to influence new stakeholders 3. Ensure Heads of Agreement and commitment letters are signed
5	Increased community unrest due to unmet expectations	1. Unrest incidents could threaten the safety of contractors and community members 2. Social unrest which could further delay completion of the OMM Programme 3. Communities may threaten the safety or prevent service providers from surveying the site to demarcate area battery limits (farm boundaries, community boundaries, mines spheres of influence and municipal boundaries) 4. Construction mafia block contractors to construct the programme infrastructure	1. Regular engagement with traditional leaders through the municipalities and DWS Limpopo on the OMM Programme 2. Engage with Water Services Authorities on unrest 3. Quarterly newsletter for communities to provide updates on the OMM Programme and progress 4. Early engagement with communities to ensure that local communities are prepared to participate in the construction Programme.

1.5 Next Phase Plan

1.5.1 Pre-Feasibility Phase

During the pre-feasibility phase the following activities will be done:

1. Existing stakeholder management and communication plan is updated. Continued discussions will be held with existing stakeholders especially around the following topics:

Table 4 - Pre-Feasibility Phase Plan

Stakeholder	Engagement topics
DWS	• Signing of Heads of Agreement • Withdrawal of intention to disestablishment notice • Set up Transformed LWUA • Provide access to existing studies • Written commitment on the repayment of Government's funding contribution • Agree with DWS to use their training programmes for graduates, artisans and municipal officials as part of the SED programme • DWS Limpopo to facilitate discussions with municipalities and communities
NT	• Develop and agree on cost recovery model • Reprioritise funding for CAPEX spend for both DWS and municipalities • Develop a defaulters pay model for OPEX funding payable by municipalities to the OMM Programme
CogTA	• Facilitation of discussions with local municipalities around the water services provider function and funding implications • Support the use of MIG funding as contribution to municipal CAPEX contribution for potable water
DMRE	• Discussions to be held on current SLP's and how to work collaboratively • Incentives for mines that participate in this programme (mining royalties)
SDM and MLM	• Agreement that OMM will provide bulk potable water • Agree on performance oversight standards for the operations of OMM infrastructure
PICC / PPGI / ISA	• Facilitate and coordinate discussions between LWUA and Government departments around the programme
MISA	• Provide training support on asset management to municipal officials

2. New stakeholders, especially those stakeholders around SED and communities will be identified, analysed and added to the existing stakeholder management plan;
3. Update of website content and transition it to the OMM Programme;
4. Produce quarterly newsletters to stakeholders and communities; and
5. Continue to set up engagement sessions with key stakeholders.

1.5.2 Feasibility Phase

During the feasibility phase the bulk of the stakeholder engagement will happen at a local Government and community level. This will be dealt with mainly by the SED team.

However, the following activities will be done on a continuous basis:

1. Update the stakeholder plan to reflect stakeholders in the Feasibility Phases. This will include discussions around the following issues:

Table 5 - Feasibility Phase Plan

Stakeholder	Engagement topics
DWS	• Agreement on funding split and arrangement • Agreement of infrastructure to be operated by OMM • Roles and responsibilities between OMM and DWS entities • Existing and revised water use licences required • Approval of Pre-feasibility study • Support with the SED implementation
NT	• Discussion around funding arrangements and creation of new grants • Discussion around the equitable share allocations to SDM and MLM
CogTA	• Funding arrangements (MIG, equitable share) • Facilitation of discussions with Traditional Authorities
DMRE	• DMRE to lead deliberations around the use of SLP for water supply provisioning
SDM and MLM	• Council approval to proceed and signing of the necessary agreements • Reallocation of MIG funding to OMM for potable water contribution • Appointment of water services provider to operate and maintain OMM infrastructure
PICC / PPGG / ISA	• Continue to act as coordinator between Government and Private sector to get the programme off the ground.
CUC members	• Approval of Pre-feasibility study • Agreement on SED arrangements • Payment of invoices based on commitment letters signed

2. Drive the communication plan to ensure engagement with key stakeholders;
3. Update of website content and transition to OMM; and
4. Produce quarterly newsletters to stakeholders and communities.