Introduction

It is estimated that the Mangaung Metropolitan Municipality (MMM) has a population of around 747,431 (according to the 2011 Census). Approximately 95% of the households within the MMM is supplied from bulk surface water systems that are operated by MMM (Bloem Water, MMM and the Department of Water and Sanitation (DWS) are the Water Service Providers (WSPs)).

"Unfortunately like many other cities in the world, old towns, such as Bloemfontein, also suffer from large losses and about R132 million (or 26.7 million m³/a) is currently lost as non-revenue water primarily due to ageing water supply network. To aggravate the matter even more a number of recent studies have shown that MMM system input volume will exceed the capacity of the bulk water systems within the next two years. It is therefore essential that water conservation and water demand management (WCDM) initiatives be accelerated as a matter of urgency and that additional long term sources be identified in parallel to the WCDM initiatives." 2015-2016 Integrated Development Plan, Mangaung Metropolitan Municipality (p. 236)
As a measure to reduce the water shortages, water restrictions have recently been implemented as per the Department of Water and Sanitation (DWS) Regulatory Performance Requirements (Gazetted 2014). This was necessary despite the fact that Non-Revenue Water losses (e.g. from leaking pipes and toilets) have been reduced by 12%, and stepped-tariff measures and water re-use have been initiated by the Metro. It has therefore become necessary for MMM to investigate other means of increasing the water supply to its system as a matter of urgency.

Subsequent to the completion of a Pre-Feasibility Study that explored options to increase water supply to the Greater Bloemfontein Supply Area (conducted in consultation with Department of Water and Sanitation (DWS), it was decided that one of the options had to be studied in more detail. The Mangaung Gariep Water Augmentation Project Bankable Feasibility Study (BFS) was commissioned by MMM for this purpose. The detail of the scope of the BFS is depicted in a schematic drawing [Figure 1] and described later.

Some of the studies required as part of the BFS include an Environmental Impact Assessment (EIA) and Water Use License Application (WULA) and Waste Licenses. This Background Information Document (BID) serves as the introductory document in the Public Participation Process (PPP). This document has been designed to inform all Interested and Affected Parties (I&APs) that MMM proposes to apply for an Environmental Authorization, Water Use Licenses (WUL), and Waste Licenses for the following purposes:

- The establishment of a ±180km buried water pipeline between the Gariep Dam wall and the Longridge Reservoir Complex in the Mangaung metropolitan area. This component of the project will also entail pumping stations, a water storage facility, Water Treatment Works (WTW) along the way, and Green energy (Hydro- and/or Solar energy generation).

- Provision is being made to possibly provide draw-off points to smaller towns in the southern Free State on the way to Bloemfontein from the Gariep dam. These smaller towns will be able to make an agreement with Mangaung regarding extraction water from the Mangaung Gariep water pipeline to augment their existing sources. These towns require additional water, since they do not receive all of their water from bulk sources currently. (The respective municipalities will have to develop their own pipeline from the draw-off point to their towns.) The following towns are being investigated: Gariepdam, Bethulie, Springfontein, Philippolis, Trompsburg, Edenburg, Reddersburg, Bethani, Jagersfontein, Fauresmith, Norvalspont, Petrusburg, Soutpan and Smithfield.

- A series of pipelines that will link the Bloemspruit Waste Water Treatment Works (WWTW), the Sterkwater Waste Water Treatment Works (WWTW) and the North East WWTW to the Mockes Dam. This work is to be done in stages.

- The temporary storage of the water in the Mockes Dam.

- An increased in the abstraction rate at the Maselsoort Water Treatment Works (WTW).

In order to obtain authorisation for these activities, MMM is required to undertake an Environmental Authorisation (EA) issued by the National Department of Environmental Affairs, under the provisions of the National Environmental Management Act, 1998 (At 107 of 1998, NEMA) as amended, and following the requirements of the relevant EIA regulations, 2014, for several Listed Activities. In addition, there are proposals for a number of activities listed under the National Water Act (Act 36 of 1998, NWA), and the National Environmental Management: Waste Act (Act 59 of 2008, NEM:WA).
Besides the Environmental Authorisation (EA) and Water Use License (WUL), there may also be a need to obtain mining permits for sourcing construction material from borrow pits under provisions of the Minerals and Petroleum Resources Development Act (Act 28 of 2002). Finally, Waste Licenses for landfill sites (for general waste) and a hazardous waste site under the National Environmental Management: Waste Act (Act 59 of 2008) may be required. Therefore, MMM has to:

1. Notify and consult with Interested and Affected Parties (I&APs).
2. Conduct an Environmental Impact Assessment (EIA) and develop an Environmental Management Plan Report (EMPr) for submission to the National Department of Environmental Affairs.
3. Submit a Water Use License Application (WULA) to the Department of Water and Sanitation (DWS), Free State Regional Office.
4. Possibly apply for Mining Permits at the Department of Mineral Resources.
5. Apply for Waste Licenses at the Department of Environmental Affairs.

MMM has appointed GladAfrica Consulting Engineers who has appointed GA Environment (Pty) Ltd. as the Independent Environmental Assessment Practitioner to assist in complying with all these requirements.
The Public Participation Process (PPP) forms an integral part of any environmental-, water- or mining-related applications. This Background Information Document (BID) provides basic information regarding the project and offers the reader the opportunity to obtain further information so as to make informed comments, raise issues of concern and contribute to the development of the process. The distribution of this document is a crucial step in advising the reader on how to become involved in the process. This BID includes the following:

- A brief introduction to the project, including location details and the proposed infrastructure.
- An overview of the proposed activities and the legal framework in which the project will be executed.
- An explanation of the Public Participation Process (PPP) to be followed.
- An explanation of how to get involved as an Interested and Affected Party (I&AP).
List Of Abbreviations and Acronyms

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Overview of the proposed project

Introduction

Mangaung Metropolitan Municipality (MMM) requires a number of authorisations by several government departments (namely the Department of Environmental Affairs, the Department of Water and Sanitation, and the Department of Mineral Resources) for a number of activities that are regulated by several South African laws.

These include:

• Activities listed in terms of the EIA Regulations, 2014, promulgated under the National Environmental Management Act (Act 107 of 1998, NEMA).

• Activities listed in terms of the National Water Act (Act 36 of 1998).

• Possible borrow pits, as required by the Minerals and Petroleum Development Act.

Mangaung Gariep Water Augmentation Project (MGWAP)

**Need for the Project**

The purpose of the Project is to obtain water from a source that is reliable, efficient and sustainable (in other words - secure). Water is vital to life and plays a significant role in agriculture, industrial activity and the economic growth of MMM. To this end, it is the duty of a Municipality to ensure sufficient and sustained water supply of adequate quality to not only sustain life, but also to ensure that economic development can take place.

The above-mentioned authorisations will take MMM one step closer to being able to ensure that the water supply to MMM is increased to allow for a growing population and a growing economy.

There are a number of challenges with the current system, which include:

- Current demand exceeds the yield of the Caledon- and Modder Rivers’ supply systems.
- MMM experiences severe shortages during hot summer months. This is due to a 95% loss in the storage capacity of the silted-up Welbedacht dam. Unfortunately, there is currently no reserve water stored to supply water during the dry seasons, or the normal no-rain periods. Off-channel storage in the Knelpoort dam is required to compensate for this storage loss.
- The water supplied via the mentioned systems is expensive to consumers as a result of the additional energy transfer costs to transfer water from the Caledon System to MMM, and specifically to the Metropolitan areas. It is anticipated, based on historical trends, that this cost will most probably escalate at a minimum of 14% per annum over the next three years.
- The multiple open channel transfers result in significant water losses due to evaporation, seepage, drainage and technical water losses at the works of each transfer point.
- The Caledon-/Modder River system is a complex system that is difficult and costly to manage.
- The Mangaung Gariep Water Augmentation Project (MGWAP) will assist MMM to diversify its access to water resources, optimise cost of water, and establish operational efficiencies.

A Pre-Feasibility Study, executed and completed by MMM explored various options (14 options in 24 configurations) and established that an augmentation system directly from Gariep to Bloemfontein was the most effective option.

This direct augmentation system is required not only to augment water supply to Bloemfontein, but also to overcome some of the challenges inherent to the Caledon- or Modder River systems.

Apart from the Mangaung Gariep Augmentation system, MMM is also investigating and implementing other water efficiency and conservation projects.
Study Area

Xhariep and Joe Gqabi District Municipalities and Mangaung Metropolitan Municipality

The study area falls within the Xhariep and Joe Gqabi District Municipalities and Mangaung Metropolitan Municipality:

- Mangaung Metropolitan Municipality (Free State Province)
- Xhariep District Municipality (Free State Province)
- Kopanong Local Municipality
- Joe Gqabi District Municipality (Eastern Cape Province)
- Gariep Local Municipality

The study area has been divided into the following sections:

1. **Xhariep Study Area**: This study area includes the Gariep – Mangaung pipeline (and therefore includes a small part of the Mangaung Metropolitan Area) and the associated infrastructure.

2. **Mangaung Study Area**: This study area includes the WUL related to the re-use aspects of the project.

3. **Joe Gqabi Study Area**: This study area includes the possible generation of hydro power via the Oviston pipeline.

The investigation of the areas for a proposed linear activity is carried out in what is commonly referred to as a pipeline corridor. In this case, the corridor is 1km wide. MMM only requires a servitude of approximately 36m, however, access roads and construction areas are required within the 1km corridor. The servitude will be negotiated with the respective landowners.

*Please feel free to contact GA Environment with your property or farm details and we will send you a map indicating your property in relation to the corridor.*
What will the project entail?

This proposed project will constitute the following:

- The establishment of a ±180km buried water pipeline between the Gariep Dam wall and the Longridge Reservoir Complex in the metropolitan area of the MMM. This component of the project will also entail the construction of pumping stations, a water storage facility and Water Treatment Works along the way.

- Renewable energy facilities to off-set long-term operational costs.

- A series of pipelines that will link the Bloemspruit WWTW, the Sterkwater WWTW and the North East WWTW to the Mockes Dam. (The EIA for this part of the project is already completed and it will only entail the Water Use License Application.)

- The temporary storage of the water in the Mockes Dam.

- An increase in the abstraction into the Maselspoort WTW.

(The EIA for this part of the project is already completed and it will only entail the Water Use License Application.)

Alternatives Under Investigation

In compliance with the National Environmental Management Act (NEMA), alternatives need to be investigated. The following alternatives will be investigated during this EIA study:

Three alternatives identified for the EIA Process are as follows:

- Alignment Alternatives within the corridor.

- Technological Alternatives.

- Site Alternatives for ancillary infrastructure along the route.

- The No-Go (or do-nothing) Alternative.
The environmental processes authorisations to be applied for

Environmental Impact Assessment (EIA)

What is EIA?
An EIA process is an effective planning and decision-making process that aims to describe and assess the biophysical, social and economic impacts that a proposed development may have. This enables the decision-making authority to make an informed decision regarding whether the project should be allowed to proceed. During an EIA process, emphasis is placed on issues, concerns and questions that may be raised by the public as this enables the EIA Team to investigate such issues during the detailed study phase (or EIA Phase).

What is the EIA Process?
The EIA process follows a two-phased procedure: A Scoping Phase and the Environmental Impact Assessment (EIA) Phase.

Scoping Phase
During the Scoping Phase, several preliminary investigations are carried out to identify key issues that must be investigated in more detail during the EIA Phase. For example, the corridor will be described and the EIA Team will work with the Engineers to make a recommendation for the most favourable alignment, which will be investigated in more detail during the EIA Phase. During the Scoping Phase, comments from I&APs will be encouraged, so that all potential impacts may be considered. Where possible, mitigation measures will be proposed. The Scoping Report will identify those potential impacts that should be investigated further during the EIA Phase and those that do not need further attention.

EIA Phase
The main aim of this phase is to investigate and comparatively assess the identified alternatives and makes a recommendation to the competent authority as to which of the alternatives are the most feasible. In addition, the identified impacts are assessed and relevant management and mitigation measures are developed which are then included into an Environmental Management Programme Report (EMPr).

Decision-Making Phase
Once the relevant processes have been completed and the resultant documentation submitted to the competent authority (the DEA in this instance), the Department reviews the application and makes a decision. Once a decision to grant or refuse the application is made, the DEA will provide MMM with a letter called an Environmental Authorisation (EA) or a Refusal Letter. The EA or Refusal Letter will be communicated to all the registered I&APs who will then have the opportunity to appeal in the event that they disagree with the decision.
What is a Water Use License (WUL)?

Section 21 of the National Water Act (Act 36 of 1998, NWA) lists certain activities that require a Water Use License in order to commence or continue. The MGWAP will trigger a number of activities that require a WUL, namely:

21(a) Abstraction of water.
21(b) Storing water.
21(c) Impeding or diverting the flow of water in a watercourse.
21(e) Engaging in a controlled activity identified as such in section 37(1) or declared under section 38(1).
21(f) Discharging waste water into a water resource through a pipe.
21(i) Altering the bed, banks, course or characteristics of a watercourse.
21(g) Disposing of solid waste (e.g. sludge) in a manner which may have a detrimental impact on a water resource.

What is the Process to Obtain a WUL?

A WULA commences with a Pre-Application Meeting (which, for this project, took place on 12 January 2016). The next step will be to conduct a Public Participation Process and to submit the necessary information to the Department. For each of the listed activities there are a number of detailed forms, reports and supporting documents to submit. It is important that all the necessary information is completed prior to submission, since incomplete submissions cannot be assessed.

Mining Permit

What is a Mining Permit?

A mining permit is issued by the Department of Mineral Resources (DMR) for a mineral (in this case borrow pits are considered a source of suitable construction material) that can be optimally mined within two years and has a size of less than 1.5 hectares.

What is the process to obtain a Mining Permit?

In order to obtain a mining permit, the applicant must apply with the regional office in the manner prescribed by the DMR. Part of the process includes an Environmental Management Programme Report (EMPr) pertaining to the activities and consultation with the landowner(s).

Waste Management License

What is a Waste Management License?

As far as possible, waste will be reused or recycled. However, there will still be a need to send some waste to landfill. For this reason, Waste Management Licenses will be required. A Waste Management License is a license issued by the competent authority (the Free State DEStEA in this instance) that authorises the holder to dispose of certain categories of waste at a particular site (it also prescribes how the waste should be handled and how the site should be managed during operation and rehabilitated on closure). In the case of this project, it is anticipated that most of the waste will be construction rubble and unused soil and rocks.

What is the process to obtain a waste management license?

Waste disposal is a listed activity under the 2014 EIA Regulations and, as such, the EIA process is followed.
The Environmental Assessment Practitioner

The Environmental Assessment Practitioner (EAP) for this project is GA Environment (Pty) Ltd. under the leadership of Mr Andrew Woghiren. According to the NEMA, the EAP must be an independent professional with no links to the proponent or downstream interests in the project. GA Environment is an independent consultant and has no vested interest in the MGWAP.

The public participation process (PPP)

What is a PPP?
A Public Participation Process (PPP) is a “...process leading to a joint effort by stakeholders, technical specialists, the authorities and the proponent who work together to produce better decisions than if they had acted independently” (Greyling, 1999). Throughout this process the public and specifically the I&APs who registered, will be consulted and involved. This involvement will be achieved through dissemination of information by means of this BID, meetings and making Draft Reports (Scoping and Environmental Impact Report) available for perusal and comment. I&APs are encouraged to participate as far as possible.

Invitation to become involved
You are hereby invited to participate in this PPP for the Mangaung Gariep Water Augmentation Project. Your participation, comments, issues and questions will assist the EAP and the entire project team to do a thorough study and make the most informed recommendations. This, in turn, will enable the DEA, DWS and DMR to make informed decisions.

As you have come to recognize, a PPP is only effective if as many I&APs as possible are identified and consulted. We therefore invite you to not only become involved yourself, but also to spread the news about the project and to assist us to involve as many of your farm workers, tenants, occupiers, neighbours, friends, colleagues and partners as possible in this process.

Responsibilities as an Interested and Affected Party (I&AP)
Firstly, you need to register as an I&AP. This is done by filling out a registration form or attending an event (e.g. an Open Day, Public Meeting or Discussion) or contacting the representative of GA Environment, providing her with your name and contact details.

As a Registered I&AP you will be placed on a Database of I&APs that contains your name and contact details. Please indicate your most preferred means of communication – this is vital.

Your responsibility as an I&AP is three-fold:
• To register officially as an I&AP
• To comment on reports and other requests timeously.
• To inform the EAP of your interest in the EIA.
GA Environment (Pty) Limited

Contact Person: Ms. Ariel Oosthuizen  Tel: (051) 430-0430  Fax: (051) 430-3452
Email: MGWAP@gaenvironment.com  Website: www.mgwap.co.za
Postal Address: GladAfrica, Postnet Suite #5, P. Bag X16, Brandhof, 9324