

KfW Bankengruppe

Entwicklungsbank
Palmengartenstr. 5 – 9
60325 Frankfurt a. M.
GERMANY

Rustenburg Local Municipality

Solid Waste Management Department
156 Bethlehem Drive
Rustenburg
SOUTH AFRICA

Summary of Needs Analysis, Technical Options and Service Delivery Options

Feasibility study for an Advanced Integrated Solid Waste Management System for Rustenburg Local Municipality (RLM)



November 2014

TABLE OF CONTENTS

0	Summary	1
1	Introduction	2
1.1	Background	2
1.2	Previous Steps	5
1.3	Aim of this Report	7
2	Summary of Needs Analysis	7
2.1	Demonstration that the Project Aligns with the RLM's Strategic Objectives.....	7
2.2	Identification and Analysis of the Available Budget.....	8
2.3	Demonstration of the RLM's Commitment and Capacity.....	9
2.4	Specification of the Outputs	12
2.5	Definition of the Project	14
3	Summary of Technical Options Analysis.....	14
3.1	Screening of Advanced Solid Waste Management Options.....	15
3.2	Evaluation of Technical Solution Options	16
3.3	Selection of the Best Technical Solution Option	18
4	Summary of Service Delivery Options Analysis.....	19
4.1	Internal Options	19
4.2	External Options.....	21
4.3	Evaluation and Proposal	23
5	Next Steps	24

ANNEXES

- Annex1: Potential Key Stakeholders
- Annex 2: Comparison of External Service Delivery Mechanism Options

LIST OF TABLES

Table 1	Screening of advanced “waste to energy” treatment options	15
Table 2	Summary of the assessment of pre-selected options for waste treatment in RLM.....	17
Table 3	Comparison of internal service delivery mechanism options.....	20
Table 4	Summary of main aspects of the assessment of external service delivery options.....	22
Table 5	Overview of the next steps	25
Table 6	Potential Key stakeholders	27
Table 7	Comparison of external service delivery mechanism options.....	30

LIST OF FIGURES

Figure 1	Waste management infrastructure in RLM.....	4
Figure 2	Stages of municipal PPP feasibility study.....	6
Figure 3	Project officer and project team.....	10
Figure 4	Pellets produced from waste after biological drying	13

ABBREVIATIONS

AAP	Anglo American Platinum
ACMP	Association of Cementitious Material Producers
AD	Anaerobic digestion
BBBEE	Broad-Based Black Economic Empowerment
BD	Biological drying
BOD	Board of Directors
BPDM	Bojanala Platinum District Municipality
CBO	Community Based Organisation
COGTA	Department of Cooperative Governance and Traditional Affairs
DEA	South African Department of Environmental Affairs
DPLG	Department of Provincial and Local Government
FS	Feasibility study
HR	human resources
IAP	Interested and Affected Party
IMATU	Independent Municipal and Allied Workers Trade Union
IU	INFRASTRUKTUR & UMWELT
IWMP	Integrated Waste Management Plan
JV	joint venture
KfW	KfW Entwicklungsbank (German Development Bank)
MBT	Mechanical biological treatment
ME	Municipal Entity
MFMA	Municipal Finance Management Act
MIG	Municipal Infrastructure Grant
MPPP	Municipal PPP
MRF	Material recovery facility
MSA	Municipal Systems Act
MSW	Municipal solid waste
MTEF	Medium-Term Expenditure Framework
Nersa	National Energy Regulator of South Africa
NGO	Non-governmental Organisation
NWMS	National Waste Management Strategy
NWPG	North West Provincial Government
PPC	Pretoria Portland Cement
PPP	Public Private Partnership
PSC	Public Sector Comparator

RBN	Royal Bafokeng Nation
RDF	Refuse derived fuel
RLM	Rustenburg Local Municipality
SALGA	South African Local Government Association
SAMWU	South African Municipal Workers Union
SLA	Service Level Agreement
NEHAWU	National, Education, Health and Allied Workers Union
SDA	Service Delivery Agreement
SUAWEC	Strumosa Urban Agricultural and Waste Education Centre
SWMU	Solid Waste Management Unit of RLM
TA	Technical assistance
TVR	Treasury Views and Recommendations

0 Summary

As a component of the Advanced Integrated Solid Waste Management Program, financed by the German Development Bank (KfW) and headed by the South African Department of Environmental Affairs (DEA), KfW is assisting the RLM with the following tasks:

1. Technical assistance for improving the efficiency of the municipal SWM services
2. Technical assistance for the implementation of a waste to energy facility at the new Waterval landfill (transaction advisory services)

The consulting services are implemented by INFRASTRUKTUR & UMWELT (IU) and PDNA.

As it is suggested, that the RLM itself shall not implement and operate the waste treatment plant, a Feasibility Study has to be performed, to allow for the implementation of a decision to employ an external service delivery mechanism, such as a PPP according to provisions of the Municipal Finance Management Act (MFMA).

The first three stages of the Feasibility Study, the Needs Analysis, the Technical Options Analysis and the Service Delivery Option Analysis, are already completed. The report at hand summarises the respective results.

With the implementation of a waste treatment facility at the new Waterval landfill

- Resources (recyclables and energy) will be recovered from the municipal waste stream.
- Jobs will be created and the recycling sector in the region will be stimulated.
- Required landfill volume and landfill emissions will be considerably reduced.
- A pilot for fulfilment of South African waste management policies, specifically the Polokwane Declaration on Waste Management and the National Waste Management Strategy (NWMS), will be established.

A waste to energy plant to produce Refuse Derived Fuel is the recommended technical solution option for the RLM. This way the sustainable use and effective management of resources will be supported. The RLM does not have the financial, technical or operational capacity to establish this waste to energy facility. By contrast, the private party has the means to do so and with a public-private partnership (PPP) the risks for the RLM will be lowest. Thus for the implementation of the waste treatment facility at the new Waterval landfill a PPP is recommended.

1 Introduction

1.1 Background

In 2009 a Feasibility Study (FS), financed by the German Development Bank (KfW) as part of the German Financial Cooperation with South Africa, for an Advanced Solid Waste Management (SWM) system in Rustenburg Local Municipality (RLM), was prepared.¹ In this study various waste treatment options were analysed, and the establishment of a waste treatment facility for reclamation of recyclables and production of refused derived fuel (RDF) at the new Waterval Landfill was recommended.

As a component of the Advanced Integrated Solid Waste Management Program, financed by KfW and headed by the South African Department of Environmental Affairs (DEA), in 2013 KfW has extended the support to RLM to assist the municipality with the following tasks:

1. Technical assistance for improving the efficiency of the municipal SWM services
2. Technical assistance for the implementation of the new waste treatment facility (transaction advisory services)

The Consulting services are implemented by INFRASTRUKTUR & UMWELT and PDNA.

Currently, RLM is constructing the new Waterval sanitary landfill. In 2012 this landfill was licensed and will replace the existing Townlands landfill as well as some other small communal landfills. Start of operation of the new Waterval landfill was scheduled for 2014, but due to various delays, operation may commence in 2015.

RLM's SWM Unit (SWMU) intends to implement a central Material Recovery Facility (MRF) at the new Waterval Landfill with grant funding from Anglo American Platinum (AAP). A separate FS has been prepared for this aspect of the project and submitted to AAP in December 2013.² Discussions with AAP regarding the implementation of the MRF are ongoing.

With the start of operation of the new Waterval Landfill, all existing communal disposal sites in RLM shall be closed and all waste shall be transported to this landfill. For this

¹ INFRASTRUKTUR & UMWELT Professor Böhm and Partner, PD Naidoo & Associates (Pty) Ltd: Final Feasibility Study Report for an Advanced Integrated Solid Waste Management System for Rustenburg Local Municipality, October 2009. As well as Dilewski, Gernod and Louw, Johann: Advanced Integrated Solid Waste Management System for Rustenburg Local Municipality: Verification and Update of Results of the Feasibility Study, February 2012.

² Golder Associates Africa (Pty) Ltd: Waterval Waste Management Facility – Feasibility Study in Preparation for Tender of Material Recovery Facility (MRF), December 2013.

purpose RLM plans to implement at least three transfer stations. The design of all envisaged transfer stations includes inter alia a material recovery facility (MRF). Also other activities and concepts for resource recovery from waste are contemplated and planned by RLM's SWM Unit, such as implementation of separation-at-source or establishment of buy-back centres as well as implementation of the Strumosa Urban Agricultural and Waste Education Centre (UAWEC), which includes a buy-back centre, composting and agricultural as well as aqua-cultural activities. Some of the envisaged measures obviously overlap each other and may need additional consideration. Especially, the financial implications should be carefully analysed, taking into account all planned facilities for SWM in RLM (especially the central MRF and subsequent waste treatment facility at Waterval Landfill).

The following figure presents the existing and planned facilities in the RLM.

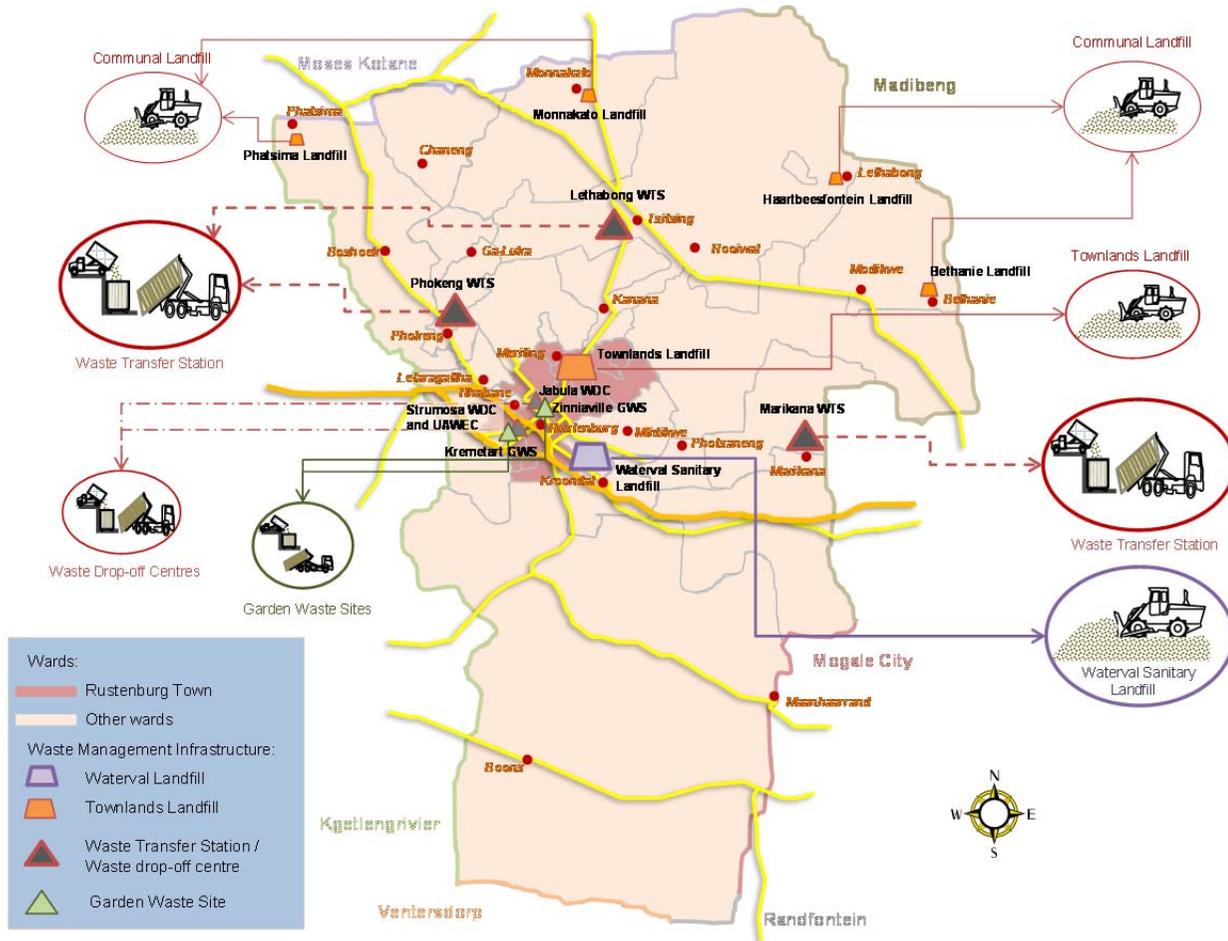


Figure 1 Waste management infrastructure in RLM

In any case, it should be noted that RLM's waste management service currently is at a turning point from applying end-of-pipe technologies (waste collection and disposal) towards recovery of waste as a resource.

1.2 Previous Steps

It is suggested that RLM itself will not implement and operate the waste treatment plant, but it may be implemented as a Municipal Public-private Partnership (PPP). In order to do so, the municipal PPP project cycle has to be passed through.³

According to the Municipal Service Delivery and PPP Guidelines the Municipal PPP Project Cycle consists of the following phases:

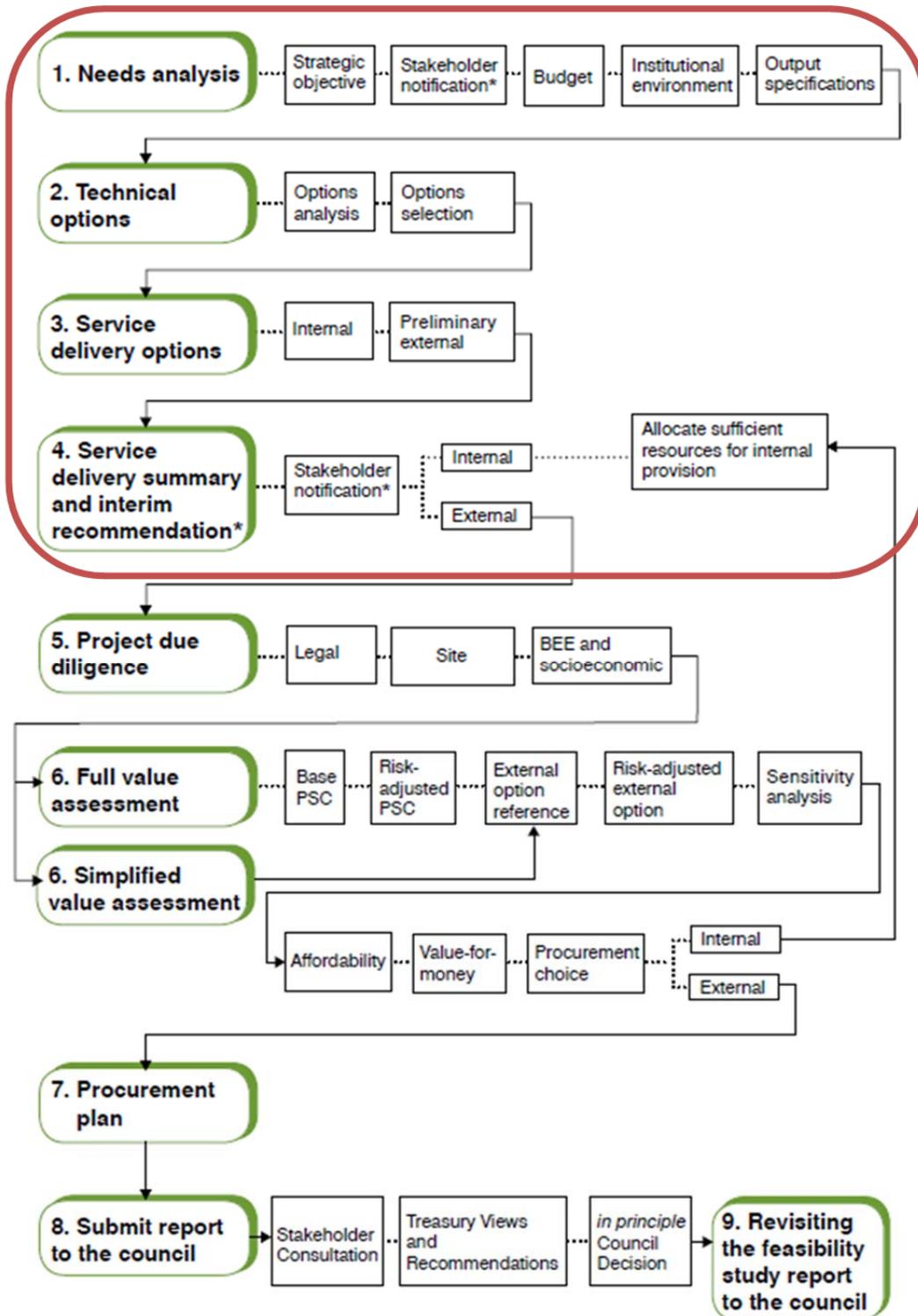
- Inception
- Feasibility Study
- Procurement and
- PPP Contract Management

Currently the Project is in the Feasibility Study Phase that has the main aim to assess which of several different service-delivery methods is in the best interest of the RLM. It will provide the basis for the council to make the investment decision. Therefore the Feasibility Study is critical for project preparation, as it

- Provides information about costs, and indicates whether costs can be met from within municipal budgets without disruptions to other activities
- Allows for the identification, quantification, mitigation and allocation of risks
- Prompts municipalities to consider how the project will be structured
- Identifies constraints that may cause the project to be halted
- Ensures that a proper business plan is developed for the project.

Altogether the Feasibility Study comprises the following stages, which are explained in detail in the Municipal Service Delivery and PPP Guidelines:

³ A detailed description and standard operating procedures are to be found in the Municipal Service Delivery and PPP Guidelines published by South African National Treasury and Department of Provincial and Local Government (DPLG)



* For municipal services only

Figure 2 Stages of municipal PPP feasibility study

So far the first three stages of the Feasibility Study are completed. The respective reports have been submitted and also been presented to the SteerCom.

1.3 Aim of this Report

The aim of this report is to summarise the evaluations and findings of the first three stages of the Feasibility Study, namely

1. Needs Analysis
2. Technical Solution Options Analysis
3. Service Delivery Options Analysis

The Feasibility study is concerned with a municipal PPP for a waste treatment process and is hence classified as a support function.

2 Summary of Needs Analysis

The Needs Analysis is the first stage of the Feasibility Study. It shall provide comprehensive information on the envisaged project, and thus prepare the way for the subsequent stages.

According to the Municipal Service Delivery and PPP Guideline, the Needs Analysis should consist of the following five parts:

1. Demonstration that the project aligns with the RLM's strategic objectives
2. Identification and analysis of the available budget
3. Demonstration of the RLM's commitment and capacity
4. Specification of the outputs
5. Definitions of the project

The following subchapters summarise the respective results of the Needs Analysis.

2.1 Demonstration that the Project Aligns with the RLM's Strategic Objectives

The general overall mission of the RLM is “to continuously improve the quality of life, economic growth and eradicate poverty through best practise, sustainability and inclusive governance”; its vision is to be “a world class city where all communities enjoy a high quality of life”.

The general overall mission and vision of the RLM are broken down into strategic objectives as listed in the following:

- Efficient provision of quality basic services and infrastructure within a well-planned spatial structure
- Diversified economic growth and job creation
- Ensured municipal financial viability and management
- Maintained clean, green, safe and healthy environment for all
- Vibrant and sustainable rural development
- Good governance and public participation
- Optimal municipal institutional development, transformation and capacity building

With regard to SWM the Integrated Waste Management Plan (IWMP) is the municipality's most important planning instrument, providing both a comprehensive status quo analysis of the current situation as well as a presentation of the envisaged future state and approaches to achieve and implement the future goals in SWM.

A review of the IWMP prepared in 2006, is currently underway. The main purpose of the review is to ensure that the originally proposed plan is being successfully implemented. The review serves as a mechanism for evaluating progress so that it may take steps to ensure that it does not lag behind in reaching the goals and targets set out in original the implementation plan. Where policies have been developed or changed (local and national, e.g. national policies for waste valorisation) and the plans of the municipality have altered (e.g. implementing waste to energy), these need to be captured in the reviewed plan.

In general, with the intention to implement a waste treatment facility at the new Waterval landfill in order to recover resources (recyclables and RDF) from the municipal waste stream the RLM supports the sustainable use and effective management of resources and hence maintaining a clean, green, safe and healthy environment for all.

2.2 Identification and Analysis of the Available Budget

In the financial years 2011/2012 and 2012/2013 the revenue of the SWMU, exceeded the expenditure, thus at first glance suggesting a financially comfortable situation of the RLM's SWM Unit. However, on closer inspection, the financial situation reveals that

- Major share of capital investment is not included

- The increase in revenue is mainly due to increases in tariffs. Thus, in spite of considerable efforts to improve the fee collection rate, the situation of poor billing and fee collection efficiency still remains.
- The unit costs of services for different waste types are not known. Even for new projects, the focus is on investment costs (i.e. acquisition of Municipal Infrastructure Grant (MIG) funds), without calculating the full costs of the measures and the financial implications on the waste management system.
- Waste management services in the RLM are still rudimentary; development/enhancement of services will result in a considerable cost increase.

Approaches to deal with the additional costs, besides increasing the household tariffs, include

1. Extending the revenue basis for services
2. Improving efficiency of service delivery

Implementation of the envisaged mechanical biological treatment (MBT) will further increase the costs for SWM in the RLM. The anticipated range is between 13 – 24 %, depending on financing conditions for initial investments. The financing impact will also be dependent on the successful marketing of its products (especially the RDF).

Due to the existing financial constraints the available budget of the SWM Unit provides hardly any scope for the implementation of an Advanced Waste Treatment Facility, funded from internal resources.

2.3 Demonstration of the RLM's Commitment and Capacity

To successfully carry out the project, i.e. the implementation of the waste treatment facility, a project team has been established, consisting of representatives of RLM's SWM Unit and the Consultant. The general team structures are shown in the following figure.

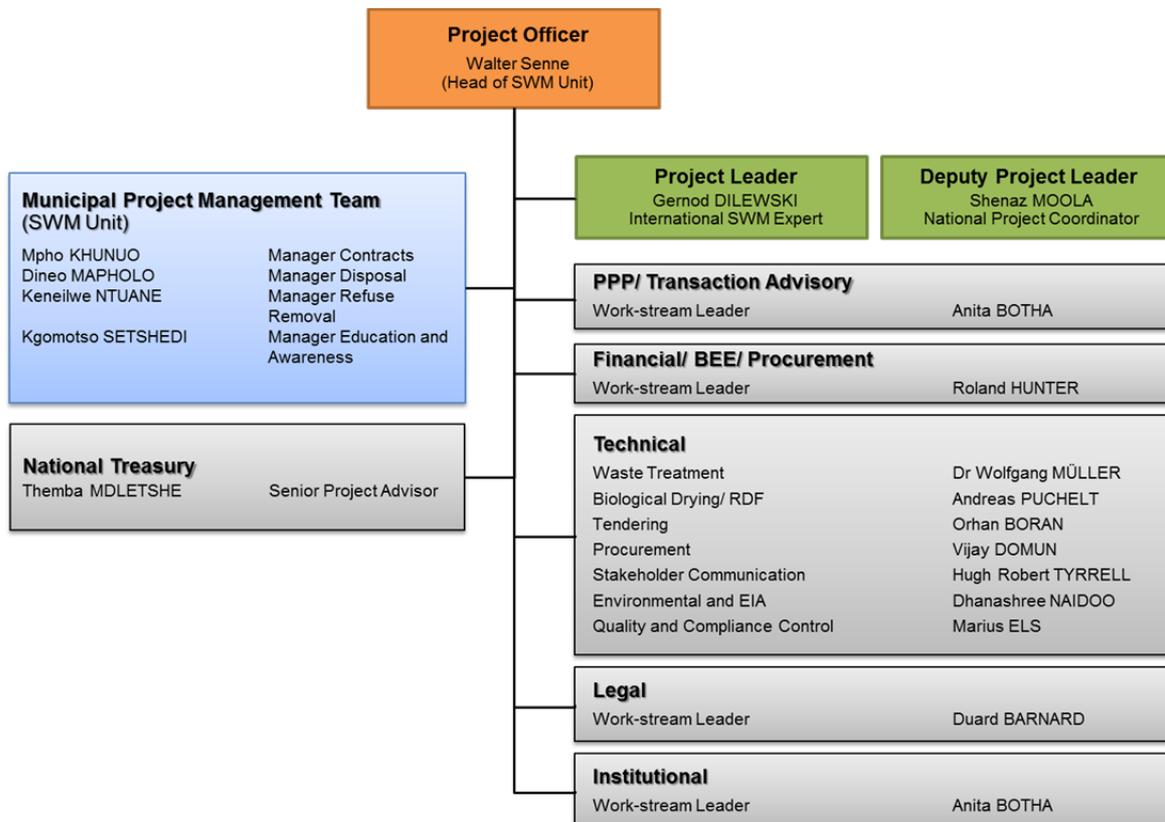


Figure 3 Project officer and project team

The Project Officer, Mr Walter T Senne is the Head of the RLM's Solid Waste Management Unit and is responsible for

- Reporting to and taking direction from the RLM Council
- Developing project plans and assigning tasks to RLM project personnel
- Controlling department budgets, scheduling resources and recommending suitable work approaches
- Measuring project success against budget, original scope and business objective
- Ensuring that all resources and their respective skills are optimally utilised, and providing quality assurance of work undertaken by department staff assigned to the project
- Providing the principal point of contact between the RLM council and the Transaction Advisory Team

The Project Leader, Mr Gernod Dilewski, is responsible for

- Reporting to and taking direction from the RLM's project officer

- Developing project plans and assigning tasks to other technical assistance (TA) project team personnel
- Controlling the project budget, scheduling resources and recommending suitable work approaches
- Measuring project success against budget, original scope and business objectives
- Ensuring that all resources and their respective skills are optimally utilised, and providing quality assurance of work undertaken by TA teams resources assigned to the project
- Providing the principal point of contact between the Municipal Project Officer and the TA project team
- In this he is supported by the Deputy Team Leader, Ms Shenaz Moola

The Work-stream leaders are responsible for

- Managing tasks for a specific process, functional or application area defined as part of the work breakdown structure of the project
- Supporting the daily tasks of the assigned team
- Initiating and managing the issue research and resolution process
- Monitoring and reporting the progress of the assigned team, completing tasks and deliverables assigned by the Project Leader, and keeping the Project Leader informed of progress and issues in a timely manner

The TA project team is comprised of Consultants and Analysts with diverse skill-sets, to fulfil the requirements of the project. The role of each team member is to

- Undertake the fulfilment of the assigned work breakdown structure of the project as defined
- Communicate suitably with all persons involved and concerned with suitable fulfilment of the work tasks and activities defined for the project
- Produce all project documentation in accordance with the standards deployed for the project
- Coordinate and generate the design, development and deployment of all common-usage materials that may be required for the fulfilment of the specific work tasks and activities of the project

All in all, the project team, comprising of both the Project Officer and the Transaction Advisory Team, has the capacity to undertake the Feasibility Study. The TA team is

available to assist the RLM where an external mechanism is preferred for the procurement of the private sector partner.

Key stakeholders of the project comprise

- Representatives of different departments and units of the RLM
- Representatives of other municipalities in the Bojanala Platinum District Municipality (BPDM)
- Representatives of the BPDM
- Representatives of the North West Provincial Government (NWPG)
- Representatives of tribal communities
- Representatives from treasuries
- Bank representatives
- Representatives of local communities
- Representatives of national departments
- Representatives of cement producers
- Representatives of business/ industry associations
- Representatives of labour organisations
- Representatives of mining houses
- Representatives of service providers to the RLM/ private operators
- Any other party that may express an interest in the project

A detailed list of the potential key stakeholders is attached in Annex 1.

The key stakeholders will be kept informed about the project's progress in accordance with a stakeholder consultation plan.

2.4 Specification of the Outputs

The activity to be undertaken by the RLM is the treatment of municipal solid waste before disposal by means of mechanical and biological processes.

The outputs of this activity will be threefold, namely

1. reduction of the quantity and volume of waste to be disposed in the landfill,

2. production of refuse derived fuel (RDF) to be used as a secondary fuel in cement plants or similar facilities,
3. separation of recyclables.

In addition to these, the following additional outputs are expected:

- Improved financial management system
- Optimised organisation and administrative processes
- Improved organisational management structures
- Successfully operated waste information system
- A number of public awareness measures and public campaigns
- Integration of informal sector into the formal waste management, where practicable

The minimum standards for the outputs are summarised in the following:

1. Reduction of the quantity and volume of waste to be disposed in the landfill:

The treatment will reduce the quantity of waste to be disposed in the landfill.

Altogether, i.e. after mechanical biological treatment as well as material recovery, a reduction of the incoming municipal waste by 80 – 85 % is envisaged.

In addition, the material to be landfilled is envisaged to have an inert character and a density of at least 0.85 t/ m³.

Consequently, all in all the volume of the waste to be disposed of is envisaged to be reduced by approximately 90 %.

In addition, more airspace volume is envisaged to be saved, because the mainly inert material does not require daily earth cover, because its material properties are quite similar to gravel. Also for the emplacement and compacting of waste reduced operations will be required.

2. Production of refuse derived fuel (RDF):

It is foreseen, that the RDF to be produced, is used as a substitute fuel in designated plants, such as cement kilns or in coal fired power plants, in order to produce energy.



Figure 4 Pellets produced from waste after biological drying

3. **Separation of recyclables:**

After delivery of the waste at the treatment plant, recyclables will be manually separated at the MRF. After the biological drying process the ferrous and non-ferrous metals will be separated mechanically.

2.5 **Definition of the Project**

The scope of this project is to implement a new waste treatment facility/ waste to energy facility at the new Waterval Landfill in Rustenburg. In this way, compliance with the South African National Waste Policies with regard to utilisation of waste as a resource (recyclables, energy recovery), by applying innovative waste treatment technologies, shall be achieved, while at the same time the quality and efficiency of waste management services in RLM are increased. As a most favoured solution, a MBT with biological drying to produce refuse derived fuel (RDF), has been identified, subsequent to a Material Recovery Facility for reclamation of recyclables.

The implementation of the MBT shall be undertaken jointly between RLM and private industry thus optimising the strength and opportunities of both sectors. The operation of the MBT and the marketing of its products shall be given to the private industry. Therefore, this project focusses on the justification and implementation of the foreseen municipal PPP, strictly in accordance with the South African legislative and regulatory frame work.

Thus, this project entails the following:

- a detailed feasibility study that will provide options to RLM with respect to the implementation of the new waste treatment/ waste to energy facility from an external service provider via a PPP; and
- in the event that the RLM wishes to proceed with the preferred option, to assist in the procurement of the private sector partner.

3 **Summary of Technical Options Analysis**

The Technical Options Analysis is the second stage of the Feasibility Study.

Within this analysis various technical options for meeting the needs of the RLM were identified and evaluated. As an outcome of this analysis a technical option to be implemented in the RLM was recommended.

3.1 Screening of Advanced Solid Waste Management Options

Advanced SWM options can be realised through a broad variety of different technologies, as summarised in the following table.

Table 1 Screening of advanced “waste to energy” treatment options

Technology		Economic Aspects	Waste Reduction	Proven Technology
Incineration	Grade Furnace	- High costs for investment and operation	+ > 90 %	+ Common treatment in Europe
	Mechanical Biological Treatment (MBT)			
	Aerobic Stabilisation	+ Costs similar to composting	○ up to 50 %	+ Common treatment in Europe
	Anaerobic Digestion	○ Overall costs higher than aerobic stabilization	○ up to 50 %	+ Common treatment in Europe
	Biological Drying	○ Overall costs depending on marketing of RDF	+ app. 80 %	+ Common treatment in Europe
Advanced Thermal Treatment (ATT)	Gasification	- High costs for investment and operation	+ > 90 %	- Limited experience with MSW
	Pyrolysis	- High costs for investment and operation	+ > 90 %	- Limited experience with MSW
	Plasma Gasifiers	- High costs for investment and operation	+ > 90 %	- Limited experience with MSW
	Waste/ Plastic to Diesel	- High costs for investment and operation	+ > 90 %	- Limited experience with MSW
+ = comparably positive - = comparably negative ○ = intermediate				

Mass burn incineration is very costly, especially with regard to emission control and has a low public acceptance in South Africa. It is therefore proposed that this solution is excluded from further consideration.

Emerging waste to energy technologies – gasification and pyrolysis – have been well known processes for a long time, but only for well-defined feedstock like coal or wood. The experience with treatment of municipal waste is still very limited. It can be summarised that gasification, pyrolysis, plasma treatment and waste-to-diesel are not long-term proven technologies for municipal waste treatment and therefore will also be excluded from further consideration.

Mechanical-biological waste treatment appears to be the most suitable option for the RLM. Of the MBT technologies, both the “anaerobic digestions” and the “biological drying” approach appear to be reasonable options for the RLM:

- Anaerobic digestion is a technical option, which achieves high beneficiation of the waste. AD is a technology with some track record in South Africa (even though largely in wastewater treatment)
- Biological drying allows for maximal utilisation of the energy content of the waste. Overall costs for biological drying depend on the successful marketing of the produced RDF. All cement plants in the neighbourhood of RLM have repeatedly confirmed their continued interest in using RDF in their kilns.

Due to these circumstances, as part of the Technical Options Analysis, the two alternative options “anaerobic digestion” and “biological drying” have been assessed.

3.2 Evaluation of Technical Solution Options

A summary of the assessment of the two pre-selected options is provided in the following table.

Table 2 Summary of the assessment of pre-selected options for waste treatment in RLM

Criteria	Option 1: MBT with Anaerobic Digestion (AD) to produce Biogas	Option 2: MBT with Biological Drying (BD) to produce RDF
Financial Impacts	-	+
	Net costs 80% higher than direct landfilling	Net costs 34% higher than direct landfilling
Funding and Affordability	Except for higher costs for option 1 there are no differences. Costs have to be recovered from tariffs. Grant funding for investment would contribute considerably to lower unit costs. Cost increase shall be compensated by: gate fee for industrial waste, improved fee collection efficiency, improved efficiency of service delivery, cost reflective tariffs	
Risk	There is no significant difference between the two options. Without improvement in fee collection efficiency and efficiency of service delivery there may be a financing risk.	
BEE and Other Socioeconomic Aspects	No significant differences between both options. BEE aspects to be considered in the procurement process.	
Delivery Arrangements	No significant differences between both options. Detailed assessment in the Service Delivery Options report.	
Transitional Management Issues	No significant differences between both options. As long as the treatment plant is not operational, residual waste will be disposed at the Waterval landfill.	
Technical Analysis	-	+
	Limited experience with dry digestion for mixed waste. Overall lower recovery rates due to low percentage of organics in the RLM waste	Technology proven and well established in Europe. Higher recovery rates.
Site Issues	No significant differences between both options. Treatment plant to be built at licensed Waterval landfill site.	
Legislation and Regulations	No significant differences between both options. Both options fully comply with the South African waste management policies. However, other than in Europe, in South Africa there is no legal obligation for municipalities to implement advanced waste treatment.	
Human Resources	No significant differences between both options. Both options comprise new activities in the RLM. Implementation of the treatment plant neither leads to job losses nor does it require any transfer of personnel. On the contrary, jobs will be created. For the existing staff of the RLM waste unit additional tasks have to be addressed (depending on selected service delivery option).	
Qualitative Factors	No significant differences between both options. Qualitative factors include employment creation (app. 180 new jobs for MRF and biological treatment), recovery of resources (material and energy), reduction of greenhouse gas emission, development of innovative technologies.	
Suitability for External Service Delivery	No significant differences between both options. Details provided in the Service Delivery Options Report.	

3.3 Selection of the Best Technical Solution Option

For most of the criteria there is no significant difference between the two options. Differences in the comparison consider financial impact and technical analysis. Investment and operation costs for biological drying are lower than for anaerobic digestion. Provided that, indeed, RDF can be successfully marketed to the cement industry, the overall net costs are apparently 25 % lower than for anaerobic digestion.

In Europe in recent years, a large number of biogas plants have been built, producing electricity which is fed into the grid. In 2013 in Germany there were a total number of 9200 biogas plants. However, most of these plants use agricultural products such as corn. Furthermore, construction of biogas plants in Germany has been boosted by subsidies from the Renewable Energy Law. Only a small percentage of the biogas plants are using waste as feedstock. If indeed, municipal waste is used as feedstock, mostly separately collected organic waste is used. Therefore, there is only limited experience of dry digestion of mixed municipal waste. Furthermore, the waste in the RLM has fairly low moisture content and a comparably small organic fraction. For AD, on the other hand, high moisture and organic content would be advantageous. The waste characteristics in RLM very much favour the production of waste derived fuel.

The fact that currently four cement kilns are operated in fairly close distance to the RLM (and a fifth one being under construction) indicates good chances for successful marketing of the produced RDF.

As a result, a waste treatment plant with biological drying to produce RDF is the recommended technical solution option for the RLM.

4 Summary of Service Delivery Options Analysis

After determination of the preferred technical solution, in the course of the Service Delivery Options Analysis, service delivery options were evaluated and a preferred option recommended. Although in the previous feasibility studies undertaken in 2009 and 2012, it was ascertained that the MBT project needs external funding and external expertise and capacity, a discussion of internal organisational mechanisms was considered in the Service Delivery Options Analysis and is summarised here.

4.1 Internal Options

Internal mechanisms allowed for in the Municipal Systems Act (MSA) are

- department or other administrative unit within the RLM's structures,
- business unit operating within the administration and under Council's control;
- another component of the administration.

These mechanisms are in essence different organisational structures financially dependent on the Municipality that must ensure effective service delivery if a project linked to the solid waste service is located, i.e. funded, designed, build, operated and maintained internally.

The MSA provides certain criteria in terms of which the implications of an internal mechanism in respect of services must be assessed. The primary consideration is whether the Municipality can commit and has budgeted for adequate human and financial resources to implement and sustainably manage and operate the service components and facilities forming part of the project and in accordance with the MSA. This includes formulating and implementing the prescribed policies, e.g. performance management, tariffs, credit management, etc. and, of necessity, that this must be done within the timeframe applicable to the project and as dictated by the needs to be addressed.

Irrespective of which of these mechanisms or organisational structures is selected, if an internal option is chosen by a Municipality, the project concerned is done through the traditional public sector procurement, whereby the municipality directly procures and finances the design and build as well as operate and maintain the required Waste Management facilities and is obliged to have the right capacity and expertise on-board. This option is referred to as the Public Sector Comparator (PSC) option.

The following table provides an overview and comparative analysis of having an internal, ring-fenced unit vis-à-vis other organisational structures.

Table 3 Comparison of internal service delivery mechanism options

Organisational Option	Advantages	Disadvantages	Risk Transfer
Department or Administrative Unit	<ul style="list-style-type: none"> • If can be re-structured, then in-house capacity strengthened 	<ul style="list-style-type: none"> • Lack of capacity • Financially dependent on Municipality and no fundraising ability 	<ul style="list-style-type: none"> • No risk transfer
Business Unit	<ul style="list-style-type: none"> • Ring-fenced with cost centres • One-point service with required expertise and capacity on-board (or contracted from Municipality if such exists) • Can align the income and expenditure nature of the service • Can allow for a more devolved decision-making process • Above allows for accountability and more effective performance management 	<ul style="list-style-type: none"> • Could lead to a duplication of certain functions and the reduction of responsibilities of other departments • Limited capacity if not specifically empowered with correct skills • Financially dependent on Municipality and no fundraising ability 	<ul style="list-style-type: none"> • No risk transfer

As a conclusion it can be stated, that in the RLM the implementation of the MBT project is not possible through an internal option, because the RLM does not have

- the funding or the creditworthiness to obtain the necessary funding,
- the Human Resources (HR) capacity as well as
- the necessary technical or operational capacity skills.

4.2 External Options

External mechanisms allowed for in the MSA are

- a **municipal entity (ME)** including a private company, service utility or multi-jurisdictional service utility;
- another municipality, i.e. a **public-public partnership (PPP)** through non-competitive bidding and a service delivery agreement;
- a national or provincial organ of state, i.e. a **public-public partnership (PPP)** through non-competitive bidding and a service delivery agreement;
- a private institution, entity or person with relevant skills and experience, i.e. a **public-private partnership (PPP)** through a competitive bidding process and a service delivery agreement or whichever legal contractual arrangement is necessary.

However, irrespective of which external option is selected, the following criteria must be met:

- The project should be affordable to the municipality.
- There must be risk transfer from the municipality to the private party.
- The project should provide value for money.

The possible external options are discussed in terms of

- Governance and management
- Finance, including impact, funding and affordability
- Broad-based Black Economic Empowerment (BBBEE) and socio-economic impacts
- Legal considerations
- Human resources
- Capability and appetite

The following table summarises the main aspects of the assessment. The detailed comparison of the external service delivery mechanism options is attached in Annex 2.

Table 4 Summary of main aspects of the assessment of external service delivery options

Criteria	Municipal Entity/ Joint Venture	Public Private Partnership
Governance and Management	<ul style="list-style-type: none"> • Co-owned with private party with shareholder agreement • Municipal appointed BOD, with no councillors or officials on the BOD, only as non-participating observers 	<ul style="list-style-type: none"> • Fully owned by private party • BOD appointed by and accountable to private party
Finance, incl. impact, funding and affordability	<p style="text-align: center;">-</p> <ul style="list-style-type: none"> • Municipality must contribute major share of funding commensurate with shareholding to finance project development and capital cost 	<p style="text-align: center;">+</p> <ul style="list-style-type: none"> • Project development fully funded by private company thus taking full financial risk – typical 70/30 debt (third party) to equity (sponsor provided) ratio
BBBEE and socio-economic	<ul style="list-style-type: none"> • The Municipality controls the entity and should therefore be in a position to drive BBBEE outcomes in the same way it ordinarily does. 	<ul style="list-style-type: none"> • The municipality sets its BBBEE targets and the private party commits to the BEE obligations.
Legal considerations	<ul style="list-style-type: none"> • Well drafted shareholders agreement necessary to regulate functioning and control of the JV 	<ul style="list-style-type: none"> • A comprehensive PPP Agreement will need to be concluded with the Private Party
Human resources	<p style="text-align: center;">-</p> <ul style="list-style-type: none"> • Joint recruitment responsibility subject to municipal policies (current municipal recruitment policies have caused an overstaffing and under-skilling of the SWM unit) 	<p style="text-align: center;">+</p> <ul style="list-style-type: none"> • Legally compliant and quick recruitment practices • Better able to attract and retain the right skills
Capability and appetite	<p style="text-align: center;">-</p> <ul style="list-style-type: none"> • Finding a private party willing to enter into a JV with a municipality and not having control of the vehicle would be the main challenge 	<p style="text-align: center;">+</p> <ul style="list-style-type: none"> • There are numerous role players within the private sector who have the capacity to develop, operate and maintain such a project • Funding models for the PPP model are available and there is sufficient funding capacity in the financial market in South Africa

4.3 Evaluation and Proposal

As demonstrated in the analyses in the previous subchapters it became clear, that the RLM will not establish a MBT facility on its own, as it does not have the financial, technical or operational ability to do so. By contrast, the private party has the means to do so and the appetite and capability to take on and manage the concomitant risks (including financing, design, construction, operation and maintenance as well as refurbishment to the extent determined by a PPP contract) provided the payment mechanism and the contract term incentivise taking on these risks and enable good risk management.

When looking at the risks associated with the external service delivery mechanisms, it becomes clear that the PPP option will have the lowest risks for the RLM. The PPP option is furthermore favoured by the following factors:

- It will mobilise private funding for the delivery of a municipal activity that would have a significant impact on the lifespan of an important asset, i.e. the landfill;
- It will assist to accomplish strategic national, provincial and municipal solid waste (MSW) targets and contribute to the development of solid waste cost centres and the ring-fencing of the function;
- It requires no upfront financial outlay from the municipality and the landfill avoided costs will support the financial viability of the project while having a potentially beneficial impact on solid waste tariffs;
- The PPP model is the most optimal vehicle for delivery on the Government's BBBEE objectives;
- This model is likely to be quicker to implement due to the fact that the private sector is assumed to already have the human resource capacity required to deliver on the projects;
- The SLAs to be signed with the PPP agreements will ensure the optimal operation and maintenance of the plant.

Given the above analysis and specifically the significant risk transfer a PPP option is recommended for the delivery of the MBT project.

5 Next Steps

The waste to energy plant falls within the definition of a municipal support activity, as opposed to a municipal service,⁴ in that it is a measure that can either “reduce the overall cost of waste collection and disposal or reduce the environmental impacts of waste management”. As per the National Treasury Municipal Service Delivery and PPP Guidelines,⁵ if a municipal service was being considered, there would be a requirement for harmonisation of sections 77 and 78 of the MSA with section 120 of the MFMA which would require a decision at this point in the feasibility study.

This would be carried out through a process of summarising the evaluation and findings of the previous reports and submitting these to the municipal manager for a decision in terms of section 78(2) of the MSA. This requirement for an MSA section 78(2) decision does not apply here as this step does not apply to municipal support activity feasibility studies.

The MPPP Feasibility Study will proceed with the preparation of the Project Due Diligence and the Value Assessment.

The following table provides an overview on the next steps.

⁴ As per the National Treasury Municipal Service Delivery and PPP Guidelines, the following solid waste management activities are municipal services: cleansing (street cleaning), refuse removal, refuse dumps and solid waste disposal

⁵ National Treasury Municipal Service Delivery and PPP Guidelines.
<http://www.ppp.gov.za/Legal%20Aspects/New%20Municipal%20Service%20Delivery%20and%20PPP%20Guidelines/Municipal%20Service%20Delivery%20and%20PPP%20Guidelines%20new.pdf> (accessed 17.11.2014)

Annex 1: Potential Key Stakeholders

Table 6 Potential Key stakeholders

Stakeholder	Roles
<i>RLM</i>	
Local Municipality: RLM – Council, Mayoral Committee and relevant Portfolio Committee	Receive, comment on and approval of Feasibility study and contractual arrangements
Local Municipality: RLM – Solid Waste Management Unit	Mandated to implement the project
Local Municipality: RLM – PMU	Project management unit that manages several projects that might have a bearing on this project including the Boffin & Fundi contracts
Local Municipality: RLM – Municipal Manager	Project Champion and Accounting Officer
Local Municipality: RLM – Chief Operations Officer	Overall management of the services level framework for outsourced services
Local Municipality: RLM – Corporate Support Services	Human Resources, ICT and Legal Services
Local Municipality: RLM – Budget and Treasury	Budget and financial management, Billing services
Local Municipality: RLM – Infrastructure Directorate	Directorate within which RLM Solid Waste Management Unit falls and responsible for infrastructure capital projects
Local Municipality: RLM – Rustenburg Rapid Transport	Project synergies
Local Municipality: RLM – Directorate Planning and Human Settlement	Development Planning and Environment Management
<i>Other Local Municipalities</i>	
Local Municipality: Madibeng	Local municipality within the BPDM – east of RLM
Local Municipality: Moses Kotane	Local municipality within the BPDM – north, north-west of RLM
Local Municipality: Moretele	Local municipality within the BPDM – east of Madibeng Local Municipality
Local Municipality: Kgetlengrivier	Local municipality within the BPDM – west of RLM
<i>District Municipality</i>	
District Municipality: Bojanala Platinum District Municipality (BPDM)	District Municipality within which RLM sits and which has its seat in the RLM
<i>North West Provincial Government (NWPG)</i>	
NWPG	Department of Health/Waste involvement and inputs
<i>Tribal Communities</i>	
Royal Bafokeng Nation (RBN)	
<i>Treasuries</i>	
National Treasury	Guidance/Advice/Support/TVR iro PPP
North West Provincial Treasury	Guidance/Advice/Support/TVR iro PPP
<i>Banks</i>	
IDC	Funding
DBSA	Funding physical, social and economic infrastructure

Stakeholder	Roles
KfW Entwicklungsbank	Feasibility Study/Technical Advisory/Technical Assistance Funder on Project
<i>Local Communities</i>	
RLM Ward Councillors and ward committees	For local community consultation
Local Non-governmental Organisations (NGOs)	
Relevant local Community Based Organisations (CBOs)	For local community consultation
Other interested and affected parties	For local community consultation
Reclaimer Communities	Reclaimer community input and involvement
<i>National Departments</i>	
Department of Environmental Affairs (DEA)	Project Champions/KfW Contact
Department of Co-operative Governance and Traditional Affairs (COGTA)	Consultation iro views and recommendations iro PPP
South African Local Government Association (SALGA)	Represent , promote and protect the interests of local government
<i>Cement Producers</i>	
Afrisam (Pty) Ltd	Potential Offtaker: Utilize the RDF produced in MBT
Lafarge	Potential Offtaker: Utilize the RDF produced in MBT
Pretoria Portland Cement (PPC)	Potential Offtaker: Utilize the RDF produced in MBT
Sephaku Cement	Potential Offtaker: Utilize the RDF produced in MBT
<i>Business/Industry Associations</i>	
Association of Cementitious Material Producers (ACMP)	Industry Association for information dissemination and stakeholder support
Rustenburg Association of Business	Business Association for information dissemination and stakeholder support
<i>Labour Organisations</i>	
South African Municipal Workers Union (SAMWU)	Engagement on labour issues
National, Education, Health and Allied Workers Union (NEHAWU)	Engagement on labour issues
North West Employers Organisation	Engagement on labour issues
Independent Municipal and Allied Workers Trade Union (IMATU)	Engagement on labour issues
<i>Mining Houses</i>	
AngloPlat	Land lessor
<i>Service Providers to the RLM/Private Operators</i>	
Landfill Operators/Managers	
MRF Operators/Managers	
Compost Producers	

Annex 2: Comparison of External Service Delivery Mechanism Options

Table 7 Comparison of external service delivery mechanism options

Criteria		Option 1: ME	Option 2: PPP
Governance	Legal Status	<ul style="list-style-type: none"> Separate juristic entity established in terms of Companies Act and MFMA compliant 	<ul style="list-style-type: none"> Juristic entity established in terms of Companies Act
	Ownership	<ul style="list-style-type: none"> Co-owned with private party with shareholder agreement 	<ul style="list-style-type: none"> Fully owned by private party
	Control	<ul style="list-style-type: none"> Relationship with shareholders (municipality and private party) regulated via a service delivery agreement 	<ul style="list-style-type: none"> Relationship with municipality regulated via a PPP contract
Management	Board of Directors	<ul style="list-style-type: none"> Municipal appointed BOD, with no councillors or officials on the BOD, only as non-participating observers. Could include community representatives as non-executive directors Municipality may recall/ remove a director Private party will wish to make sure the BOD is effective and competent Fiduciary duties in terms of Companies Act and MFMA 	<ul style="list-style-type: none"> BOD appointed by and accountable to private party. The BOD could include community representatives as non-executive directors. Fiduciary duties in terms of Companies Act.
Financial analysis and impact	Governance	<ul style="list-style-type: none"> Subject to MFMA iro bank accounts, budget, asset and liability management, revenue and expenditure control – contract to regulate and reconcile MFMA with Companies Act responsibilities (All revenue should be credited to the ME and costs debited to the ME. Money collected by the ME in the ordinary course of operations should not need to be paid into the revenue fund, i.e. revenue security – in some municipalities this does not apply to ME). 	<ul style="list-style-type: none"> Subject to Companies Act and related financial legislation. Financial reporting could take account of MFMA stipulations.
	Management	<ul style="list-style-type: none"> Subject to MFMA and Companies Act. 	<ul style="list-style-type: none"> Subject to Companies Act and accepted corporate governance accounting

Criteria		Option 1: ME	Option 2: PPP
			practices.
	SCM (procurement)	<ul style="list-style-type: none"> Subject to MFMA 	<ul style="list-style-type: none"> Subject to accepted corporate governance procurement procedures.
	Funding	<ul style="list-style-type: none"> Municipality must contribute major share of funding commensurate with shareholding to finance project development and capital cost. Since the municipality can only budget for its equity contribution in the next MTEF cycle, project commencement may be delayed. Third party debts funding to be sought from sources open to ME. Allocation of Council counter funding throughout project to ME will be subject to Council approval. 	<ul style="list-style-type: none"> Project development fully funded by private company thus taking full financial risk – typical 70/30 debt (third party) to equity (sponsor provided) ratio Once funds in place, process in place for possible fast tracking iro capex needs More aggressive funding structures may be required to facilitate BEE participation
	Financial impact	<ul style="list-style-type: none"> Budget for upfront equity capital contribution or borrow it, having to service the interest Combined credit rating of both parties important but creditworthiness of municipality will be a main risk criteria for any investors / parties Could share in surpluses via dividends as per shareholder agreement 	<ul style="list-style-type: none"> Upfront equity capital contribution is anticipated to be a requirement - transferring the responsibility for raising these funds to the private party Municipality need only to budget for unitary payments which are regular and consistent amounts and easy to accommodate within the budget structure
	Revenue (incl. payment mechanism)	<ul style="list-style-type: none"> From Municipality - rate per ton diverted from the landfill provides incentivised mechanism (avoided cost for municipality) From RDF off-takers iro Nersa determined tariff 	<ul style="list-style-type: none"> From Municipality - rate per ton diverted from the landfill provides incentivised mechanism (avoided cost for municipality) From RDF off-takers iro Nersa determined tariff
	Expenditure	<ul style="list-style-type: none"> Responsible for share of operation and maintenance costs either through in-house or contracted 	<ul style="list-style-type: none"> Responsible for operation and maintenance costs either through in-house or contracted resources

Criteria		Option 1: ME	Option 2: PPP
	Structure	<p>resources</p> <ul style="list-style-type: none"> • Ring-fenced for MBT and related RLM solid waste activities, no unrelated or commercial activities allowed • Structure to comply with MFMA and traditional municipal structuring and the perceived level of recourse of lenders to the JV partners could have a negative impact on the cost of debt funding. • Complexity of structure might render it more expensive than other option and hence less affordable. 	<ul style="list-style-type: none"> • Ring-fenced for MBT and related RLM solid waste activities • Streamlined structure with direct accountability
BEE and socio-economic impact		<ul style="list-style-type: none"> • The Municipality controls the entity and should therefore be in a position to drive BBBEE outcomes in the same way it ordinarily does. 	<ul style="list-style-type: none"> • The municipality sets its BBBEE targets and the private party commits to the BEE obligations. A competitive bidding process typically improves the quantum and quality of BBBEE initiatives for projects; • The BBBEE obligations in the PPP agreement should provide for monitoring and evaluating over the period of the concession. • BEE and socio-economic benefits of the project can be optimized through an external partner option. The nature and scale of the project facilitates the enhancement of BEE and the delivery of significant socio-economic benefits to the local community. • The project will create a significant number of work opportunities during the initial construction stage. • Training and mentoring in a range of construction industry related skills

Criteria		Option 1: ME	Option 2: PPP
			<p>areas can be effectively implemented.</p> <ul style="list-style-type: none"> During the operational lifecycle of the project long term BEE opportunities can be created in the technical, administrative and managerial functional areas which are required to operate and maintain the project.
Legal	Statutory requirements	<ul style="list-style-type: none"> Registration of project with National Treasury PPP Unit Ito s84(2) of MFMA Treasury Views and Recommendations (TVR) from PPP Unit and MFMA Unit iro ME (JV) Feasibility Study Provincial Treasury & COGTA and other relevant departments' views and recommendations iro s84(2) Council approval of Feasibility Study iro s84(2) Council approval of shareholders agreement TVR from PPP Unit and MFMA Unit iro s33 of the MFMA iro SDA/ contract Provincial Treasury & COGTA and other relevant departments' views and recommendations iro s33 Council approval of s33 SDA/Contract The Executive Mayor, as the accounting officer in terms of the MFMA, authorized to sign agreements/contract. 	<ul style="list-style-type: none"> Registration of project with National Treasury PPP Unit Treasury Views and Recommendations (TVR) I, from PPP Unit for Feasibility Study as per s120(6) of MFMA Provincial Treasury & COGTA and other relevant departments' views and recommendations iro s120(6) Council approval of s120(6) Feasibility Study TVR IIA and IIB from PPP Unit iro PPP Regulations iro tender process to get private partner TVR111 from PPP Unit and MFMA Unit iro s33 of the MFMA iro PPP contract Provincial Treasury & COGTA and other relevant departments' views and recommendations iro s33 Council approval iro s33 of PPP Contract The Executive Mayor, as the accounting officer in terms of the MFMA, authorized to sign the PPP Agreement <p>The Minister of Energy acting with the concurrence of the</p>

Criteria		Option 1: ME	Option 2: PPP
			Minister of Finance will need to sign off on any guarantees or indemnities (typically found in PPP Agreements).??
	Contractual	<ul style="list-style-type: none"> Well drafted shareholders agreement necessary to regulate functioning and control of the JV to ensure: respective obligations and responsibilities are spelled out; disputes can be amicably resolved; recourse of parties if failure to perform of any one of them; etc. Service delivery agreement (SDA) between shareholders and delivery vehicle detailing the service level specifications, standards, incentives, penalties, payment mechanism, risk transfer, etc. similar to those in the PPP agreement. 	<p>A comprehensive PPP Agreement will need to be concluded with the Private Party that details, inter alia:</p> <ul style="list-style-type: none"> Service level specifications signed off by the relevant municipality; Consequences of failure to meet service levels, and any incentives for exceeding service levels; The payment mechanism and how and when penalties will be applied; and Risk transfer to the private party, taking into consideration key value for money drivers such as skills availability, operational efficiency, funding capacity, experience developing a MBT, etc.
	Consultation – Community	<ul style="list-style-type: none"> Needs to be consulted / asked for comments in accordance with s21 of the MSA. Should receive all reports to comment on ito s84(2) of the MFMA (note no municipal services involved) Receive SDA to comment on ito s33 of the MFMA 	<ul style="list-style-type: none"> Needs to be consulted / asked for comments in accordance with s21 of the MSA. Should receive all reports to comment on ito s120(6) of MFMA Receive PPP contract to comment on ito s33 of the MFMA
	Consultation – Organised Labour	<ul style="list-style-type: none"> Should receive reports to comment on ito s84(2) of the MFMA (note no municipal services involved) Receive SDA to comment on ito s33 of the MFMA 	<ul style="list-style-type: none"> Needs to be consulted if any current staff affected – not any known Invited as IAP to comment on report ito s120(6) of MFMA Invited as IAP to comment on PPP Contract ito s33 of the MFMA

Criteria		Option 1: ME	Option 2: PPP
Human resources	Recruitment, skills & training	<ul style="list-style-type: none"> Joint recruitment responsibility subject to Municipal policies (Current municipal recruitment policies has caused an overstaffing and under-skilling of the solid waste management unit) Inadequate contract management skills in municipality has a detrimental impact 	<ul style="list-style-type: none"> Legally compliant and quick recruitment practices Better able to attract and retain the right skills Known for effective, continuous training Inadequate contract management skills in municipality has a detrimental impact on partnership
	Remuneration	<ul style="list-style-type: none"> Subject to or influenced by Municipal policy changes and developments, guidelines, etc. 	<ul style="list-style-type: none"> Legally compliant policies and wage structures, consistent implementation, industry related scales
	Staff	<ul style="list-style-type: none"> No existing staff will be affected due to no requisite skills for the MBT currently existing within RLM If however, there are staff to be transferred to the ME, the application of s197 of the LRA will apply and could delay the project 	<ul style="list-style-type: none"> No existing staff will be affected due to no requisite skills for the MBT currently existing within RLM If however, there are staff to be transferred to the ME, the application of s197 of the LRA will apply and could delay the project
	Labour relations	<ul style="list-style-type: none"> Preferred option 	<ul style="list-style-type: none"> Contentious structure but given that it does not affect a current municipal service, labour resistance should not play a role
Market capability and appetite		<ul style="list-style-type: none"> ME/JV will have no trading history – reliance on trading history of JV partners, negative impact on risk costing The issue of ownership control of the municipal entity is the main potential drawback of the JV Option. Finding a private party willing to enter into a JV with a municipality and not have control of the vehicle would be the main challenge. The other challenge is likely 	<ul style="list-style-type: none"> Selection of preferred partner with good reputation and trading history – important for contractors, positive impact on risk costing There are numerous role players within the private sector who have the capacity to develop, operate and maintain such a project. Funding models for the PPP model are available and there is sufficient funding capacity in the

Criteria		Option 1: ME	Option 2: PPP
		to be the municipality capacity to provide the required funding to hold a controlling stake	financial markets in South Africa. <ul style="list-style-type: none"> • The challenge is ensuring optimal BBBEE participation due to the high capital requirements.