



## CLOSE-OUT REPORT

# Action plan to improve revenue water: metering and billing pilot area: Sundumbili

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Contract No.: VILP/S/012

Date: 26 August 2019

**Final Version**

Prepared By:



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## ACRONYMS AND ABBREVIATIONS

DWS	Department of Water and Sanitation
IDM	iLembe District Municipality
IDP	Integrated Development Plan
KDLM	KwaDukuza Local Municipality
KZN DETEA	KwaZulu-Natal Department of Economic Development, Tourism and Environmental Affairs
LED	Local Economic Development
MLM	Mandeni Local Municipality
MPLM	Maphumulo Local Municipality
NLM	Ndwedwe Local Municipality
PCU	Vuthela Programme Project Coordinating Unit
SECO	Switzerland State Secretariat for Economic Affairs
SP	Service Provider
ToR	Terms of Reference
WSA	Water Services Provider
WCWDM	Water Conservation and Water Demand Management

# 1 INTRODUCTION AND BACKGROUND

This report is the close-out report for the contract VILP/S/012 to Develop an Action Plan to Improve Revenue Water: Metering and Billing, Pilot Area: Sundumbili as part of the Vuthela Local Economic Development (LED) Programme. The focus of the action plan is to reduce apparent or commercial losses by linking and analysing the cadastral data, meter asset register, prepaid billing system and the Munsoft billing system. The expected outcome of the action plan is to bill all customers based on actual metered consumption.

This project forms part of the Vuthela LED Programme, which was officially launched on 29 November 2017 by the iLembe District Municipality (IDM), together with the Switzerland State Secretariat for Economic Affairs (SECO) and the KwaZulu-Natal Department of Economic Development, Tourism and Environmental Affairs (KZN DETEA).

The Vuthela LED Programme footprint comprises the IDM and its local municipalities of KwaDukuza (KDM), Mandeni (MLM), Ndwedwe (NLM) and Maphumulo (MPM).

The primary purpose of the Programme is the improvement of the economic future of the IDM residents through sustainable economic growth of the local economy and the creation of higher, better and more inclusive employment and income generating opportunities.

The Programme comprises five components, namely:

- Public Financial Management Component;
- Municipal Infrastructure Component;
- Private Sector Development Component;
- Building Inclusive Growth Component; and
- Partnership and Coordination Component.

This appointment falls under the Municipal Infrastructure Component (MIC). The MIC focuses on the improvement and development of municipal infrastructure and services and itself, has three sub-components:

- Reduced infrastructure constraints (improved scope and quality of basic infrastructure services);
- Increased planning capacity and financing strategies for an integrated and systematic expansion of (urban) infrastructure, as a basis for sustainable development of regional centers; and
- Enhanced planning and management of key infrastructure sectors.

The Vuthela LED Programme has entered its Inception Phase, which focuses on the scoping, preparation and implementation-readiness for support projects during the Implementation Phase.

## 1.1 Project Consultant and Sub-Consultants / Contractors

The lead consultant for the project was:

WRP Consulting Engineers Pty Ltd

Upper Level, 5 Green Park Estate

27 George Storrar Drive

Groenkloof, Pretoria, 0181

Tel : +27 (12) 346 3496

Contact person: Willem Wegelin, PrEng

P.O. Box 1522

Brooklyn Square

Pretoria, 0075

South Africa

No sub-consultants or contractors were utilised on the project.

## **1.2 Objectives of this assignment within the context of the Vuthela LED Programme**

The IDM is one of five coastal districts within the province of KwaZulu-Natal and borders the eThekweni Metropolitan Municipality in the south, uMgungundlovu and uMzinyathi districts in the west and the uThungulu district in the north. The total surface area of the IDM is 3 260km<sup>2</sup> and it has an estimated 657 612 people according to the Stats SA Community Survey of 2016.

The IDM is the designated Water Services Authority (WSA) in its area of jurisdiction and is therefore responsible for water supply and sanitation. The IDM provides bulk and reticulation water services (water and sanitation) to most parts of the district. Umgeni Water acts as bulk water provider. The areas not served by the district, are served by Sembcorp Siza Water, a company in a public-private-partnership with the IDM.

The IDM has initiated a Water Conservation and Water Demand Management (WCWDM) programme and has recently completed the Non-Revenue Water Master Plan - Strategy for 2018/19 – 2022/23 Financial Year. The strategic Non-revenue Water Master Plan has been approved by the Council. The NRW targets and possible interventions mentioned in the plan include:

- The best case scenario, minimum practical achievable NRW by volume for the entire IDM area of supply has been established as 34.9% of the SIV - it will become prohibitively expensive and require a disproportionate amount of time, resources and budget to achieve any better target than this in the next 5-years;
- In addition, there are a number of interventions which they do not have a direct water savings impact, but that are vital for the success of any WCWDM implementation plan: bulk meter installation, system monitoring, NRW reduction team and logging equipment, training and awareness campaigns, etc. All of the local municipalities in IDM are deemed high priority supply areas for NRW reduction. This is due to low confidence in the data that was provided. The activities that should be prioritized for NRW Reduction are:
  - Pressure management: PRV maintenance and additional pressure management zones (advance pressure management - only certain areas);
  - Leak detection and repair;
  - New metered connections;
  - Billing database and data collection improvements; and
  - Metering of all bulk meters for all the systems such that reasonably accurate water balances can be calculated.

A detailed analysis of the consumption and billing information, linked to meters installed, which can either be conventional or prepaid, has not yet been conducted.

## **1.3 Objectives of this Assignment within the context of the TOR**

In order to ensure efficient and effective service delivery within the municipal area, to instil green values and identify economic beneficiation opportunities, improved and extended water services is a great enabler for municipalities. This would ensure beneficiation to its residents, enhance business confidence and ensure investment within the district area.

The main objective of this consulting assignment was for the development of an Action Plan to Improve Revenue Water: Metering and Billing. The selected pilot area was the 2011 Census sub-place Sundumbili A SP. Included in the main objective, was to ensure that there is a one-to-one linkage of meters installed on site, and meters recorded in the billing system. The assignment had strong technical and financial systems components.

## 1.4 Main Project Deliverables and Contractual Dates

The main project deliverables and contractual dates are summarised in the table below:

No.	Task / Deliverable	Planned date
1	Inception Report, three hard copies, one electronic copy	11 June 2019
2	Action Plan to Improve Revenue Water: Metering and Billing, three hard copies, one electronic copy, including all supporting GIS and supporting information conforming to the GIS standards of the IDM.	18 July 2019
3	Workshop to present and discuss the Action Plan to Improve Revenue Water: Metering and Billing, for finalisation.	12 July 2019
4	Attendance of two progress meetings and provision of meeting notes.	June 2019 July 2019
5	Submission of weekly progress reports.	Weekly
6	Close-out report, three hard copies, one electronic copy.	31 July 2019
7	Presentation to the Municipal Infrastructure Forum, one electronic copy.	18 July 2019
8	Presentation to the Vuthela Programme PSC, one electronic copy.	18 July 2019

## 2 SCOPE OF WORK

### 2.1 Overview of the Methodology

The project tasks were included in the terms of reference (ToR) and follow and a chronological order. Details of each task are discussed in more detail in the following sections.

### 2.2 Inception meeting and report

An inception report was prepared following an inception meeting held on 17 May 2019 followed by a site visit on 4 June 2019 to confirm the conditions on site. The inception report was based on the TOR, proposal outcomes of the inception meeting and site visit.

### 2.3 Understanding the current situation

Based on Census 2011, Sundumbili A has a population of 27 423 or 9 126 households. Using the Community Survey 2016, the population and number of households are now estimated at 34 033 and 11 325 respectively. The project team used, ArcMap (ESRI®) and PlanetGIS to plot the location of the properties, meters, stand type, meter type, etc. The project team used the 2011 Census spatial data and in-house GIS capabilities to perform this task. Existing iLembe DM GIS sources indicate 3 405 stands which suggest 3.3 households per stand.

### 2.4 Verification of Accounts and meter Numbers

The 2017 meter asset register, Munsoft (data extract of 2018-05, 2018-6, 2018-07 and 2019-05) and prepaid (data extract of 2018-11 and 2019-03) metering and billing data were analysed. To ensure sustainability and transfer of skills, the data were analysed in Excel and setup in such a way that the municipality can copy and paste new data without redoing all the calculations. The results are included in electronic format to assist the municipality with understanding the issues raised and correction thereof. The meter readings and billed consumption figures for the past year were also analysed as part of this task to assess the quality of the

meters readings and actual billed volumes. The following reports were prepared in addition to reports listed on the scope of services:

- Meters registering zero consumption;
- Meters registering high consumption;
- The difference between the metered and the billed consumption;
- Cycled meters, repeat readings or stuck meters; and
- Water tariff versus land use.

Care was taken with the interpretation of duplicate account numbers in the billing and asset register. If the meter was replaced in the past year, there were two meters, with different serial numbers, against the same account number.

The results were analysed and presented in tabular format. The reports can be used to prepare monthly action reports for the technical and financial departments. The results were also used to identify key problem areas and to develop an Action Plan to Improve Revenue Water: Metering and Billing.

## **2.5 Process documentation and Evaluation**

Monthly meetings were arranged with the technical, financial and GIS departments to discuss and understand the connection, metering, reading, billing and cost recovery cycle. The process was documented in a clear and concise manner and include activities, roles and responsibilities. Aspects that were covered include:

- Meter connection application process – connection between the land use parcels, meter asset register, account details, etc.;
- Meter reading process – meter reading collection process, error and exception codes, data verification and validation, prepaid meters, etc.;
- Meter reread and repair process – communications between technical and finance departments, response to exception codes, etc.;
- Billing process - billed metered consumption, invoicing, volume and amount corrections and journal entries, etc.; and
- Cost recovery process – non-payment, remedial action, bylaws, etc.

## **2.6 Process and steps for data cleansing and alignment**

The outcomes of the previous tasks were used to develop processes for data cleansing and alignment. The project team worked closely with the Munsoft operators to explain the problems and how it should be resolved.

## **2.7 Training requirements**

Municipal staff is acquainted with the Munsoft, GIS and prepaid metering systems and were able to provide most of the requested information, however assistance from billing system service providers is still required in some instances. Knowledge of these systems can always improve and training should continue.

## 2.8 Finalisation of the Action Plan to Improve Revenue Water: Metering and Billing

The outcomes of the previous tasks were used to develop an Action Plan to Improve Revenue Water: Metering and Billing.

## 2.9 Project Management and Administration

Project management activities included:

- Submission of weekly progress reports;
- Minutes of meetings;
- Preparation of invoices;
- Attendance of workshops and progress meetings; and
- Quality and time control.

# 3 PROGRAMME

This section discusses the execution of project activities within the anticipated programme.

## 3.1 Programme and Milestones

This section provides the project programme of the contract, illustrating the main tasks and timeframes to complete the tasks. **Table 3** provides a summary tasks, planned and actual completion dates.

**Table 3 Main Project Tasks and Estimated Completion Dates**

No.	Task / Deliverable	Planned date	Actual Date
1	Inception Report, three hard copies, one electronic copy	11 June 2019	11 June 2019
2	Action Plan to Improve Revenue Water: Metering and Billing, three hard copies, one electronic copy, including all supporting GIS and supporting information conforming to the GIS standards of the IDM.	18 July 2019	2 August 2019
3	Workshop to present and discuss the Action Plan to Improve Revenue Water: Metering and Billing, for finalisation.	12 July 2019	25 July 2019
4	Attendance of two progress meetings and provision of meeting notes.	June 2019 July 2019	20 June 2019 25 July 2019
5	Submission of weekly progress reports.	Weekly	-
6	Close-out report, three hard copies, one electronic copy.	31 July 2019	31 August 2019
7	Presentation to the Municipal Infrastructure Forum, one electronic copy.	18 July 2019	31 August 2019
8	Presentation to the Vuthela Programme PSC, one electronic copy.	18 July 2019	31 August 2019



### 3.2 Meeting of Programme Milestones: Achievements, Delays and Reasons for Delays

Delays were experienced with obtaining the meter reading data and finalising the reports.

The presentation to the Municipal Infrastructure Forum (taking place every two months) could not take place due to the forum scheduled date (2 August 2019) and readiness of the Action Plan. Similarly the presentation to the Vuthela Programme PSC (28 August 2019) could not take place. However, a presentation is planned for the next opportune ManCo and / or Finance Portfolio Committee meeting as this may provide more impetus to establish an internal project to implement the Action Plan.

## 4 FINANCIAL MATTERS

This section discusses the financial matters related to the contract and execution of activities.

### 4.1 Project Budget

No.	Task / Deliverable	Milestone (yes/no)	Cost (Including VAT at 15%)
1	Inception Report, three hard copies, one electronic copy	Yes	R 40 845.00
2	Action Plan to Improve Revenue Water: Metering and Billing, three hard copies, one electronic copy, including all supporting GIS and supporting information conforming to the GIS standards of the IDM.	Yes	R 156 745.00
3	Workshop to present and discuss the Action Plan to Improve Revenue Water: Metering and Billing, for finalisation.	Yes	R 47 840.00
4	Attendance of two progress meetings and provision of meeting notes.	Yes	R 48 935.00
5	Submission of weekly progress reports.	Yes	R 11 040.00
6	Close-out report, three hard copies, one electronic copy.	Yes	R 40 480.00
7	Presentation to the Municipal Infrastructure Forum, one electronic copy.	TBC	R 34 960.00
8	Presentation to the Vuthela Programme PSC, one electronic copy.	TBC	R 34 960.00
<b>Total</b>			<b>R 415 805.00</b>

### 4.2 Variations

There were no contract variations.

### **4.3 B-BBEE Component of the Contract**

The following B-BBEE staff was involved with the project:

- Tshilidzi Godzwana Civil engineering technologist
- Thabo Maubane Civil engineering technician

## **5 RISK MANAGEMENT**

There were no adverse risks experienced during the project that caused significant delays. The extraction of the Munsoft data was the biggest challenge and was overcome following discussions with the municipality and Munsoft.

## **6 TRAINING AND SKILLS TRANSFER**

No official training was provided as part of the project. The results from the study however, enabled skills transfer through the:

- Analysis and interpretation of billing results; and
- Thematic mapping of the results highlighted a number of issues on the meter routes, average consumption, unmetered properties and meter reading intervals.

## **7 LESSONS LEARNT**

The following lessons were learnt as part of this project:

- The life cycle cost of water meters should be considered above the initial capital costs.
- Municipalities should have a central Enterprise Resource Planning (ERP system). Operating the prepaid metering system alongside Munsoft causes duplication, loss of control and inefficiencies.
- The importance of coordination between the Finance Department's activities and processes on metering and billing, alongside that of the Technical Services (responsible for meter management), was once again emphasised.
- It remains important to analyse existing data on metering and billing to better understand the extent of apparent losses and opportunities for revenue recovery and enhancement.

## **8 CONCLUSIONS AND RECOMMENDATIONS**

Based on the results from the study, the following conclusions and recommendations are made:

- The IDM has a functional metering and billing system for conventional meters to enable the metering and billing of users based on actual consumption. The municipality should build on this existing system to enhance revenue;
- Munsoft should provide documented procedures for how billing adjustments are made, based on water consumption estimates and how actual water meter readings for consumption are used for billing purposes;

- The IDM and Munsoft should review and update existing quality control and checks for data capturing to prevent actions such as entering of future dates;
- The IDM Finance and Technical Departments should continue with regular meetings such as on a monthly interval to discuss activities and processes affecting meter management, meter reading, billing and customer care;
- The IDM has a functional prepaid billing system, however cannot .provide information on the volume water used and causes duplication and loss of control;
- Most customers are metered with good quality meters installed in an aboveground meter box. The municipality should continue this standard and meter all stands connected to the water supply system in the urban and formal areas;
- The Municipality should develop a metering and billing policy and guideline to inform users of the transition process from prepaid to conventional meters. The guideline should include information on dates, historical consumption, outstanding debts, etc.;
- The IDM should continue and expand the awareness programme to promote payment for services and efficient use of water;
- Review the water balance calculation to obtain a clear understanding of the actual authorised consumption, apparent losses and real losses. Ensure all treatment works and reservoir inlets and outlets are metered and that meters are read manually or via a remote system;
- The asset and prepaid meter databases should be consolidated into Munsoft;
- To perform a similar study for other areas to ensure systematic and continued action to address NRW; and
- The recommended actions should be implemented as soon as possible to enhance revenue that in turn can be applied for improvement of services.

## 9 PROJECT SIGN-OFF

We hereby confirm that the project has been conducted successfully and that the deliverables were received in good order:

<b>Client:</b>	Signature:	
	Full Name:	
	Organisation:	
	Designation:	
	Date:	

<b>Consultant's Project Leader:</b>	Signature:	
	Full Name:	
	Organisation:	
	Designation:	
	Date:	

# ANNEXURE 1

Letter of Award

**PROJECT 27830**

**ILEMBE LED PROGRAMME**

**NOTICE OF TENDER AWARD**

The Vuthela Ilembe LED programme makes notice to award for the following tender:

**CONTRACT NO:** VILP/S/012

**DESCRIPTION:** DEVELOP AN ACTION PLAN TO IMPROVE REVENUE WATER:  
METERING AND BILLING, PILOT AREA: SUNDUMBILI

**AWARDED CONSULTANT:** WRP CONSULTING ENGINEERS (PTY) LTD AT A VAT  
INCLUSIVE PRICE OF ZAR 415 805.00

**CONTRACT PERIOD:** 2 MONTHS FROM INCEPTION MEETING



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Procurement Manager

2019/04/24  
Date

# ANNEXURE 2

Terms of Reference

**DEVELOP AN ACTION PLAN TO IMPROVE REVENUE WATER: METERING AND BILLING,  
PILOT AREA: SUNDUMBILI**

**8.2.3 Mediation**

Add the following at the end of this sub clause

“Mediation shall be conducted at the place stated in the Particular Conditions

**8.2.7 Commencement of Arbitration Proceedings**

Replace “90 days” with “within the time stated in the Particular Conditions”

**8.3.2 Arbitration**

Delete this sub clause in its entirety and replace with the following

“Arbitration shall be undertaken by a single arbitrator in terms of the rules of arbitration stated in the Particular Conditions, with the seat of arbitration and place of arbitration also being as stated in the Particular Conditions”

**E. APPENDICES**

Appendix 1 and Appendix 2 as defined in the General Conditions of Contract contain information provided by the Client to the Consultant, and thus form part of the Section 1 Contract Data and appear below. Appendix 3 and Appendix 4 as defined in the General Conditions of Contract contain information provided by the Consultant to the Client and thus form part of the Section 2 Contract Data which is in Section 2 of the Project Document.

**E.1 APPENDIX 1: SCOPE OF SERVICES**

The scope of services to be provided by the Consultant is described in this section of the document.

**E.1.1 Inception**

The consultant needs to arrange an inception meeting with the client and municipality to discuss amongst other the lines of communication, agreement on the study programme and project management.

Within one week of the Inception meeting, the consultant, after having studied the documents provided and considering the assignment, should submit an Inception Report for approval by the Vuthela Programme Project Coordinating Unit (PCU).



## DEVELOP AN ACTION PLAN TO IMPROVE REVENUE WATER: METERING AND BILLING, PILOT AREA: SUNDUMBILI

### E.1.2 Scope of Work

The scope of work is described in this section of the document.

#### **Understanding the Current Situation**

The pilot study area is the 2011 Census Sub-place called Sundumbili A SP. The iLembe District Municipality (IDM) initiated an asset verification study to compile the water and sanitation assets for the asset register. Included, were the field verification of water meters in the KwaDukuza (KDM) and Mandeni Local Municipalities (MLM). The water meters can be represented spatially, as the latitudes and longitudes were captured for the meters.

The data is captured in Excel format and includes a column indicating whether the meter is linked to the IDM's MunSoft system, along with other attribute information such as a column for the meter serial number, property occupant details, IDM account number, presumably the same account number in the MunSoft billing system. However not all meter records have all supporting information. The meter serial number may link to the prepaid database, which is a separate database and not part of MunSoft.

**The following tasks should be executed under this activity:**

- **Thematic Mapping**

Spatially map the meter information as per the MS Excel information, using GIS, to illustrate at least the following, for the study area:

- The location of the asset data water meters
- Conventional meters and whether the water meter is linked to the IDM MunSoft Account
- Prepaid meters and whether the water meter is linked to the prepaid database
- Stand type: domestic, commercial, etc.

The maps should be made available electronically in pdf format, paper size set up for A3.

- **Verification of Accounts and Meter Numbers**

The consultant should analyse and interrogate the asset register data's accounts and verify that the accounts are existing, active accounts on the MunSoft billing system; or the prepaid database. Furthermore, whether the meter connections are active (water is provided, consumption volumes recorded).

The consultant should ensure reporting is based on active accounts.

## **DEVELOP AN ACTION PLAN TO IMPROVE REVENUE WATER: METERING AND BILLING, PILOT AREA: SUNDUMBILI**

The consultant may need to consult with the service provider that prepared the asset register information, namely SMEC South Africa. SMEC's contact details will be provided.

Furthermore, Joat has conducted preliminary analysis on the spatially represented meters and the meter information on the billing system. The consultant is expected to consult with Joat on the already-analysed field meter to billing system linkage and include the findings in this report.

The consultant should provide a listing in tabular format of at least the following:

- Asset meter accounts, linked to accounts in MunSoft; linked to accounts in the prepaid database;
- Asset meter accounts, not linked to accounts in MunSoft; not linked to the prepaid database;
- Asset meters, that do not have any account information;
- MunSoft meters that do not have any account information;
- MunSoft meters with accounts, that do not have asset meters and/or asset accounts;
- Prepaid meters in the database, but with no asset meters and/or asset accounts;
- MunSoft accounts that are billed for water consumption, with the MunSoft meter information;
- Duplicate meter numbers in the asset register;
- Duplicate meter numbers in the MunSoft billing system; duplicate meter numbers in the prepaid database;
- Duplicate account numbers in the asset register;
- Duplicate account numbers in the MunSoft billing system; duplicate account numbers in the prepaid database.

The listing should be used to develop the steps required in the Action Plan to Improve Revenue Water: Metering and Billing.

There may be other analysis to be conducted that should ensure the one-to-one linkage between the billing system's account and metering information, with the asset register's meter information.

## **DEVELOP AN ACTION PLAN TO IMPROVE REVENUE WATER: METERING AND BILLING, PILOT AREA: SUNDUMBILI**

- **Process Documentation and Evaluation**

The consultant should document the current processes involved from when new meters are installed or replaced, to customers activating an account, or to update accounts with new meter information.

The consultant should then investigate and document the processes followed that led to the misalignment of asset meters versus meters and accounts in MunSoft and the prepaid database.

The consultant should make recommendations as necessary to improve the Standard Operating Procedures (SOPs) applied to metering and billing, with responsibilities assigned to Financial and Technical Services.

- **Processes and Steps for Data Cleansing and Alignment**

The consultant should provide step-by-step processes to clean the data and ensure alignment of data recorded in the asset register, with the data in MunSoft, then the data in the prepaid database.

This will require an in-depth understanding of the MunSoft billing system, how account and meter information is stored, added or updated; linkages between data tables or datasets; active and non-active accounts; accounts per property or owner; meter information linked to accounts; recording of meter readings; etc. Similarly, the consultant has to obtain an in-depth understanding of the prepaid database.

Regarding the asset data, it should be cleaned in order to be incorporated into the GIS of the IDM. Similarly, the steps required to ensure the one-to-one linkage between the MunSoft meters and GIS meters or as applicable, prepaid database meters and GIS meters should be stipulated. This should ensure only meters that are verified, installed in the field, should be on the GIS. There should be no duplicate information. At any time, the meters in the GIS should be able to link to meters in the billing system or prepaid database to establish which meters on the GIS do not yet have active meter and account information.

The processes should clearly stipulate the data custodians, responsibilities and actions to be taken which could include technical-related steps and if necessary, the development or enhancement of business processes. The resulting document should be such that it can be implemented immediately by the relevant IDM officials. Close consultation will therefore be required with officials from the Finance, Technical and GIS Departments as well as existing consultants as needed.

- **Identification of Training Requirements**

The consultant should, during its engagement with the municipal officials, establish whether the data cleansing steps can be performed in-house by the municipal officials assigned with the specific responsibilities. If necessary, the consultant should identify and list training requirements

## **DEVELOP AN ACTION PLAN TO IMPROVE REVENUE WATER: METERING AND BILLING, PILOT AREA: SUNDUMBILI**

to ensure municipal officials can fulfil their functions in data cleansing as well as data maintenance. This includes financial, technical and GIS functions.

- **Finalisation of the Action Plan to Improve Revenue Water: Metering and Billing**

The above activities would culminate in developing the Action Plan to Improve Revenue Water: Metering and Billing. The Action Plan should include the documented activities and processes required to ensure the one-to-one linkage between the billing system and asset register and the prepaid database and asset register. It should further include a preliminary programme of activities.

The consultant should engage officials from the Finance, Technical and GIS Departments and identify a responsible official/s to drive and implement the Action Plan starting with the pilot area and include the name and/or designation of such officials in the Action Plan.

### E.1.3 Information Management

The consultant should submit the electronic information, including spatial data used and created in the mapping and analysis as part of the deliverables of this project.

The consultant should provide the information in a GIS format, compatible with the IDM's existing GIS system, which is based on the ESRI® suite of products.

The existing asset register meter information will be provided to the consultant in MS Excel format. The coordinates of the meters are contained in the Excel workbook and need to be used for mapping and analysis of the meter data. The consultant has to engage the GIS officials responsible for the data in the IDM to obtain data standards and input requirements for updating of the GIS for this assignment.

The consultant should establish the most suitable format to provide a listing of meters and accounts related to the billing system and prepaid database's data cleansing. This could be in Excel, text file or similar format for tabulation and analyses.

### E.1.4 Existing Documentation

The following documents exist and will be made available to the successful consultant for the purpose of this assignment:

- Extract of the asset register verification listing in MS Excel format, for the pilot area.
- Extract of the billing system data, for the iLembe District Municipality.
- Extract of the prepaid database, for the iLembe District Municipality.
- Existing Standard Operating Procedures (SOPs) relevant to billing and metering.

## **DEVELOP AN ACTION PLAN TO IMPROVE REVENUE WATER: METERING AND BILLING, PILOT AREA: SUNDUMBILI**

It is expected that the consultant has access to the 2011 Census spatial datasets and other supporting GIS datasets and in-house GIS capability required for this assignment.

### **E.1.5 Project Management, Meetings, Presentations and Reporting**

The task-specific client for this appointment is the iLembe District Municipality. The overall project management will be undertaken by the Vuthela PCU.

#### **Meetings, Workshop and Presentations**

The consultant will attend progress meetings each fourth week, at the office of the PCU in KwaDukuza, for the duration of the contract until project hand-over. The consultant would provide meeting notes within seven days of the progress meeting in a format provided by the PCU.

The consultant needs to arrange a workshop with the IDM involving senior officials responsible for finance, water and sanitation services, to present and discuss the contents of the Action Plan to Improve Revenue Water: Metering and Billing, before finalisation.

The consultant will be required to make a presentation at the end of the contract to the members of the Municipal Infrastructure Forum, on the completed activities.

The consultant will be required to make a presentation on completed activities at the next opportune Vuthela Programme Project Steering Committee (PSC) meeting.

#### **Reporting**

The consultant would provide concise weekly progress reports, electronically, in the prescribed format which the PCU will provide.

The consultant needs to provide a close-out report at the end of the contract period, in the prescribed format which the PCU will provide. There should be one electronic copy and three hard-copy close-out reports.

### **E.1.6 Deliverables and Outputs**

The following is a summary of the list of the deliverables, refer to the prior sections for more detail.

1. Inception Report, three hard copies, one electronic copy.
2. The Action Plan to Improve Revenue Water: Metering and Billing, three hard copies, one electronic copy, including all supporting GIS and supporting information conforming to the GIS standards of the IDM.
3. Workshop to present and discuss the Action Plan to Improve Revenue Water: Metering and Billing for finalisation.

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4. Attendance of two progress meetings and provision of meeting notes.
5. Submission of weekly progress reports.
6. Close-out report, three hard copies, one electronic copy.
7. Presentation to the Municipal Infrastructure Forum, one electronic copy.
8. Presentation to the Vuthela Programme PSC, one electronic copy.

All electronic deliverables can be provided on one storage device.

**E.1.7 Methodology (Method Statement) and Programme (Time Schedule)**

The Consultant should submit a methodology and programme, detailing the approach to conduct the assignment and programme of activities. The methodology and approach should demonstrate an understanding of the scope of work and the activities required for its successful completion.

The programme should illustrate the main activities, the duration and date of completion.

**E.2 APPENDIX 2: EQUIPMENT, FACILITIES, AND SERVICES OF OTHERS TO BE PROVIDED BY THE CLIENT**

No facilities or equipment will be provided by the client in order for the Consultant to execute his / her duties other than the use of the Client's Boardroom in its KwaDukuza Office for the purposes of progress meetings and presentations.

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**APPENDIX A: OVERVIEW MAP**

Study area

