BUSINESS PLAN FOR THE DELIVERY OF BASIC WATER AND SANITATION SERVICES IN THE ETHEKWINI MUNICIPAL AREA
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PART 1 - EXECUTIVE SUMMARY

1.1 INTRODUCTION

eThekweni Municipality (eTM), has embarked on a Water and Sanitation Programme (WSP) in the rural and peri urban areas within its jurisdiction. The eTM will provide basic water and sanitation services under a single programme.

The 5 year target is to reduce the sanitation services backlog by 25% and to reduce the water services backlog by 100%.

The eTM piloted a basic water and sanitation programme in the Mzinyathi Area. Since then a further 17 projects have been identified and are in various stages of development.

1.2 AREA BACKGROUND INFORMATION OF THE ETHEKWINI MUNICIPALITY

1.2.1 Location

The eTM is the only Category A Metro Municipality in the province of KwaZulu Natal. It is bounded by the Ugu District Municipality (DC21) to the south, the Ndlovu District Municipality (DC22) to the west, and the King Shaka District Municipality (DC29) to the north and the Indian Ocean to the east.

The eTM’s area of jurisdiction is the newly demarcated Durban Metropolitan Unicity Municipality area (refer to Map 1). The new area includes the previous Durban Metropolitan area as well as portions of the old Ugu, Ndlovu and Ilembe Regional Council areas, situated within KwaZulu Natal.
1.2.2 Target area

The target area for implementation of the Water and Sanitation Programme is the area lying between the Waterborne Sewerage Line and the outer limits of the Unicity Boundary (refer Map 3).
1.2.3 Demographic Data

The estimated total population of the eTM is approximately 3 million. The estimated population within the Target Area is approximately 364 000 people who currently have inadequate or no basic sanitation. These figures are based on 1996 census figures adjusted to 2000. A zero percent grown rate has been used beyond 2000.
1.2.4 Existing Sanitation Status

Households within the Target Area 75000
Deduct household which have been provided with sanitation 5000
Estimated demand for subsidised Water and Sanitation 70000
Deduct known and proposed housing projects 7000
Total estimated households requiring assistance 63000

1.2.4.1 Schools

It has been identified that many schools within the project area do not have adequate water and sanitation.

- There are 194 schools within the target area
- There are 103 schools which do not have adequate sanitation and
- 60% of the schools which do not have adequate sanitation have toilet to learner ratios greater than 60

It is not clear how many of the schools have adequate water supply.
1.2.5 ADOPTED POLICIES AND GUIDELINES

The Water Services Act (108 of 1997) (WSA) and the National Water Act (36 of 1998) (NWA) provide the legislative framework within which water supply and sanitation services and water use need to take place.

1.2.6 Policies

Programme Implementation - the provision of basic level water and sanitation services will be implemented under a single programme. An integral part of the programme will be systematic health and hygiene education.

Programme Management - the Construction Department of the eThekweni Water Services will act as the Programme Managers. The Construction Department will be responsible for the purchase and supply of materials, general supervision and the provision of training.

Utilisation of Service Providers - external consultants will be used to provide additional resources for the implementation of the programme.

Community Participation - the eTM is committed to ensuring community participation and recognises that it is critical to the success of projects. A Projects Steering Committee (PSC) will be formed for each project such that the community can be represented. The PSC will act as the channel of communication between the community and the eTM.

Education, Training and Capacity Building - Education, training and capacity building will be carried out through health and hygiene education. ISD Consultants will be used to train facilitators from the community who will then train the householder.

Focus on Women - the involvement of women is seen as being essential to the success of the programme.

Labour Intensive methodologies - Labour intensive methodologies will be used in all phases of the individual projects.

Employment Policy - Local labour will be employed on a task basis to carry out construction of the trunk water mains.
1.3 LEVELS OF SERVICES

Water - The adopted level of service is 200 litres of free potable water supplied to a 200 litre ground tank, which is filled daily.

Sanitation - the adopted level of service is a urine diversion toilet consisting of two chambers or vaults constructed above or slightly below the ground.

1.4 GENERAL MANAGEMENT OF THE PROGRAMME AND THE PROJECTS

Programme Management - the Water and Sanitation Programme is managed by eThekwini Water Services in close collaboration with the Departments of Health.

Project management - the Construction Branch of eThekwini Water Services acts as the programme manager. The project manager appoints the ISD consultant (3) and a site agent (4). ISD consultants play a more substantial role throughout the project cycle. They are responsible for “informing the community about the project, confirming demographic data, awareness creation, promotion of health and hygiene, assessing preferred sanitation options, training of local community committees and liaising with tribal structures (where applicable), and councillors”. Local facilitators (6) are employed by the ISD consultants to carry out health and hygiene education, training and capacity building. A Project Steering Committee (7) is formed for each project to allow local representation and participation and to act as a communication mechanism between the community and the programme manager.

1.5 IMPLEMENTATION

Each project will be divided into two phases viz. The Planning Phase and the Implementation Phase. The sequencing of tasks within each phase is seen as being critical to the success of each project.

Task group 1 - prioritisation of projects
Projects will be prioritized based on the following headings: -

- Health related incidences – this will generally carry the highest weighting factor.
- Technical feasibility
- Provision of funding,
- Availability of resources.

Task group 2 – project planning
This involves the upfront investigations and engineering, budget developments and council approvals.

**Task group 3- project implementation**

This involves the mobilisation of the project management and construction teams, ordering of materials and setting up a central construction camp within the community. The facilitators that have passed the training programme are then sent into the community, households are visited, the project explained, and the prescribed health and hygiene awareness programmes are initiated.

**Task group 4 – capacity building and education**

Technical skills during construction - All construction work for the laying of the bulk mains reticulation and community mains will be conducted using local contractors and labour supported by the Construction Department. Local building contractors will be identified and trained to manage the pipeline laying contracts.

Operations and Maintenance skills - The scheme will be operated and maintained by eTM Operations Department.

Affirmative Procurement Principles and Tendering- All orders placed for materials and services for this contract will be subject to the eThekwini Councils affirmative procurement regulations.

Small Business and Contractual Management - Site Agents will ensure that local plumbing and concrete block making businesses are developed.

ISD Consultants and community facilitator training - Training at household level is done by facilitators who live within the community. An ISD Consultant is appointed and is then provided with a set of training materials prepared by the eWS. The ISD Consultant is then responsible for selecting (in consultation with the PSC and the Councilor) a number of facilitators who undergo a two-day training programme at an eWS training venue.

Disposal of greywater and vault contents - Greywater disposal and drainage issues in general and their impact on health will be addressed as part of the education program. Households will be trained on the safe disposal of grey water.

**Task group 5 - Monitoring and evaluation**
The eWS has appointed the Human Sciences Research Council to monitor the effectiveness and acceptance of the project goals and health and hygiene education.

1.6 FINANCIAL

Financial Policy

The source of funding for the basic household sanitation programme will be grant funding from DWAF and CMIP supplemented by eTM monies for the Water Supply portion of the project. The eTM will provide bridging finance as required.

Grant funding requirements per installation

The cost of delivering the proposed water and sanitation installation per household is indicated below.

<table>
<thead>
<tr>
<th>Description</th>
<th>Cost</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sanitation</td>
<td>R 2,900</td>
</tr>
<tr>
<td>Water</td>
<td>R 1,800</td>
</tr>
<tr>
<td>Sub-total</td>
<td>R 4,700</td>
</tr>
<tr>
<td>Feasibility studies, Geotechnical, geohydrological and social assessments</td>
<td>R 130</td>
</tr>
<tr>
<td>4. Capacity building, community consultations and health and hygiene education</td>
<td>R 400</td>
</tr>
<tr>
<td>5. On site supervision, project administration and training.</td>
<td>R 20</td>
</tr>
<tr>
<td>6. Supplementary education programmes during construction</td>
<td>R 50</td>
</tr>
<tr>
<td><strong>Total excluding VAT</strong></td>
<td><strong>R 5,300</strong></td>
</tr>
<tr>
<td><strong>VAT</strong></td>
<td><strong>R 672</strong></td>
</tr>
<tr>
<td><strong>Total grant funding required per installation</strong></td>
<td><strong>R 6,042</strong></td>
</tr>
</tbody>
</table>

Note that the cost associated with the bulk supply lines and reservoirs will be funded by the Council.
Capital Cost Estimate for the target area

Based on an estimated 62800 households within the target area requiring assistance over the envisaged programmes duration (10 years) and making provision for 6% escalation on costs, a total of R 460 million is required.
PART 2 - BUSINESS PLAN FOR THE DELIVERY OF BASIC WATER AND SANITATION SERVICES IN THE ETHEKWINI MUNICIPAL AREA

2.1 INTRODUCTION

2.1.1 General information

eThekweni Municipality (eTM), as the responsible Local Authority for the newly consolidated Unicity, has embarked on a Water and Sanitation Programme (WSP) in the rural and peri urban areas within its jurisdiction.

The eTM has adopted a policy that basic water and sanitation services should be provided under a single programme. Thus, the programme has been designed to provide an acceptable basic level of free potable water, an appropriate and sustainable sanitation service and health and hygiene education to those disadvantaged, predominantly rural and peri-urban communities, where a higher level of service is both unaffordable and inappropriate. The 5-year target is to reduce the sanitation services backlog by 25% and to reduce the water services backlog by 100%.

The eTM piloted a basic water and sanitation programme in the Mzinyathi Area. This represented the first intervention by the eThekweni Water Services Department into the newly incorporated areas. Since then a further 17 projects have been identified and are in various stages of development. The programme is in accordance with one of the primary planned outcomes of the eTM’s Integrated Development Plan 2003 – 2007, which is to extend services to all.

This document provides an overview of the programme and records the adopted, tried and adjusted methodologies employed which have received approval and support from a variety of sources.

2.1.2 Purpose of the Business Plan

The purpose of the Business Plan is to:

- Provide an overview of the Water and Sanitation Programme,
- Document the adopted approach that will ensure consistency in the delivery of integrated water and sanitation services in the eThekwini Municipal area.
Set up a arrangement whereby funds can be obtained from DWAF and CMIP to implement the various projects forming part of Water and Sanitation Programme.

Set out and record protocols for the implementation of projects forming part of the Water and Sanitation Programme.

2.1.3 Format of the Business Plan

The format of the business plan is set out as follows:-

Part 1 – an executive summary of the business plan for those readers who do not wish to read the details.

Part 2 – a detailed explanation of the programme for the rural areas together with a detailed description of the processes and protocols presently being used in the existing and proposed Water and Sanitation Projects.

Part 3 – appendices in support of Part 2

2.2 AREA BACKGROUND INFORMATION OF THE ETHEKWINI MUNICIPALITY

2.2.1 Location

The eTM is the only Category A Metro Municipality in the province of KwaZulu Natal. It is bounded by the Ugu District Municipality (DC21) to the south, the Ndlovu District Municipality (DC22) to the west, and the King Shaka District Municipality (DC29) to the north and the Indian Ocean to the east.

The eTM’s area of jurisdiction is the newly demarcated Durban Metropolitan Unicity Municipality area (refer to Map 1). The new area includes the previous Durban Metropolitan area as well as portions of the old Ugu, Ndlovu and Ilembe Regional Council areas, situated within KwaZulu Natal.
2.2.2 Target area

The target area for implementation of the Water and Sanitation Programme is the area lying between the Waterborne Sewerage Line and the outer limits of the Unicity Boundary (refer Map 3)

The “Waterborne Sewerage Line” is a line, which in turn defines an area, established by the eTWS, within which it is technically and economically feasible to offer waterborne sewerage as an option to its customers.

Further the basic level of water and sanitation will be implemented in areas;

♦ Where the basic level of water service is planned, and

♦ Where conditions are appropriate for installation and operation of dry sanitation systems

♦ That are not serviced by municipal waterborne sewage and where such provision is not anticipated in the short to medium term or not anticipated at all according to eTM programme for sewering of the Unicity area.
2.2.3 Demographic Data

Large portions of the eTM (ex Durban Metro areas) already have a higher level of sanitation service comprising waterborne sewerage or septic tank sanitation. These areas have been specifically excluded from this business plan and the demographics in the Business Plan only relate to the outlying rural areas with inadequate or no form of sanitation.

The estimated total population of the eTM is approximately 3 million. The estimated population within the Target Area is approximately 364 000 people who currently have inadequate or no basic sanitation. These figures are based on 1996 census figures adjusted to 2000. A zero percent grown rate has been used beyond 2000.
2.2.4 Existing Sanitation Status

2.2.4.1 Households

eTWS have recently completed a data gathering exercise during which co-ordinates and addresses to all households in the Unicity were collected. Households falling within the Target Area generally have inadequate levels of sanitation and/or water supply. Very few housing projects have been planned over the next 10-15 years in these areas and in addition the income levels are very low.

Households within the Target Area 75000
Deduct household which have been provided with sanitation 5000
Estimated demand for subsidised Water and Sanitation 70000
Deduct known and proposed housing projects 7000
Total estimated households requiring assistance 63000

Note - inadequate sanitation has been defined as the service level where a household has an unimproved pit latrine i.e. long drop or bucket system or no sanitation facilities at all.
2.2.4.2 Schools

It has been identified that many schools within the project area do not have adequate water and sanitation.

Data obtained from these schools has been analysed and forms part of the Metro GIS. The data has still to be verified by visits to the school but the following statistics indicate the present situation:-

- There are 194 schools within the target area
- There are 103 schools which do not have adequate sanitation and
- 60% of the schools which do not have adequate sanitation have toilet to learner ratios greater than 60

It is not clear how many of the schools have adequate water supply.

2.3 ADOPTED POLICIES AND GUIDELINES

2.3.1 National Acts and Local ordinances

2.3.1.1 The Water Services Act (108 of 1997) and the National Water Act (36 of 1998)
The Water Services Act (108 of 1997) (WSA) and the National Water Act (36 of 1998) (NWA) provide the legislative framework within which water supply and sanitation services and water use need to take place.

The WSA requires the municipality to draw up and implement Water Service Development Plans (WSDPs) within the framework of Integrated Development Plans (IDP)\(^1\). This brings the right of access to basic water services into the planning and budgeting process.

2.3.1.2 The National Sanitation Policy

The National Sanitation Policy\(^2\) contains various definitions relating to sanitation as follows:-

- The term SANITATION refers to the hygienic principles and practices relating to the safe collection, removal or disposal of human excreta, refuse and waste water, as they impact upon users, operators and the environment.

- The term ADEQUATE SANITATION for a household means the provision and ongoing operation and maintenance of a safe and easily accessible means of disposing of human excreta and waste water, providing an effective barrier against excreta-related diseases, which is used by all members of a household, and does not have an unacceptable impact on the environment.

- The term BASIC LEVEL OF SERVICE for a household means a VIP (Ventilated Improved Pit) latrine (in its various forms, to agreed standards) or its equivalent in terms of cost, robustness, health benefits and environmental impact; together with ongoing exposure to readily understandable information about correct hygiene practices.

Prior to determining which sanitation option to proceed with, the Council accepted a policy on sustainability, which was underpinned by the principle that “the only sustainable on-site household sanitation option was one which the householder could sustain himself”.

\(^1\) Integrated Development Plans are strategic planning instruments which form the center of planning for service provision by local government and guides all planning, budgeting and decision making in a municipality in terms of Chapter 5 of the Municipal Systems Act 32 of 2000

2.3.1.3 Local Authorities Ordinance Act

Cognisance has been taken of the responsibilities and constraints imposed upon the eTM by the Local Authorities and Ordinance Act with particular reference to:-

- The provision of services
- Access to private property

2.3.2 Policies

2.3.2.1 Programme Implementation

The provision of basic level water and sanitation services will be implemented under a single programme. An integral part of the programme will be systematic health and hygiene education.

The basic level of sanitation will be implemented in those areas where the provision of the basic level of water supply is planned. These areas will be denoted as Project Areas.

2.3.2.2 Programme Management

The Construction Department of the eThekweni Water Services will act as the Programme Managers. Staff employed by the Construction division will generally be used to manage individual projects.

The Construction Department will be responsible for the purchase and supply of materials, general supervision and the provision of training.

2.3.2.3 Utilisation of Service Providers

External consultants will be used to provide additional resources for the implementation of the programme.

External consultants will be appointed to assist on a particular project.

2.3.2.4 Community Participation

The eTM is committed to ensuring community participation and recognises that it is critical to the success of projects.

A Projects Steering Committee (PSC) will be formed for each project such that the community can be represented. The PSC will act as the channel of communication between the community and the eTM.
2.3.2.5 Education, Training and Capacity Building

Education, training and capacity building will be carried out through health and hygiene education. ISD Consultants will be used to train facilitators from the community who will then train the householder.

Standard education and training material consisting of posters, pamphlets and handouts developed by eWS will be made available for use by the ISD consultants.

2.3.2.6 Focus on Women

The involvement of women is seen as being essential to the success of the programme. At all stages of individual projects the Programme Manager will ensure that the women of the community are involved in decision-making and implementation.

2.3.2.7 Labour Intensive methodologies

Labour intensive methodologies will be used in all phases of the individual projects.

2.3.2.8 Employment Policy

Local labour will be employed on a task basis to carry out construction of the trunk water mains.

The employment policy for task related work will be as follows:-

- The most needy individuals within the community will be identified by the PSC and employed to carry out task related work within the area in which they live.
- In general priority will be given to women, youth, unemployed and single headed households.
- Disabled people will be given an opportunity to participate in this programme, on an equal basis, wherever possible.

2.4 LEVELS OF SERVICES

2.4.1 Water

The adopted level of service is 200 litres of free potable water supplied to a 200-litre ground tank, which is filled daily.
The backbone of the system is a conventional pressurised reticulation. The reticulation is laid within the road reserves of the recognised rural road network. The pipes are laid according to SABS specifications using labour-based construction methods.

Communal mains are laid from the council mains along the footpaths and tracks used to access people’s homes. These are small diameter plastic pipes and extend to within 200 metres of every house. Community mains usually supply between 15 and 30 consumers.

The homeowner is required to excavate a 300mm deep trench and lays a 15mm plastic pipe from the tank to the community main – this pipe is the responsibility of the household. A local contract plumber installs and connects a 200-litre tank on a plinth at their house. The tank inlet is controlled by a float valve arrangement, its maintenance is the responsibility of the owner.

2.4.2 Sanitation
The adopted level of service is a urine diversion toilet consisting of two chambers or vaults constructed above or slightly below the ground.

The vaults consist of a block work chambers with an impervious floor – the size of the vault is 0.926 m³ (generally smaller than a conventional pit toilet).

The superstructure consists of a concrete brick walls having internal dimensions of 1160mm by 910mm wide. The roof is galvanized IBR profile 0.6mm thick sheeting. The floor of the toilet consists of 40mm thick reinforced precast panels that are transported to site and then, once placed in position, receive an in situ structural topping.

Pipework (32mm diameter) is cast into the structural topping and is designed to allow urine to be diverted to an external soakaway positioned some meters away from the toilet.

Holes in the floor slab allow a pedestal to be position over one of the vaults while the other is covered with a plug. The pedestal is designed to allow urine to be collected separately and flow, via the soakaway, into the surrounding soils (as opposed to being allowed to mix with the faecal matter). The pedestal is designed such that it can be moved from one vault to the other.

While the faecal matter is being collected in the one vault, the other is kept empty. Additional sand (ash, lime or soil) is added to the faecal matter to assist in drying. The contents of a chamber need to be regularly agitated e.g. the pile needs to be flattened.

When the vault is full, the pedestal is moved and positioned over the second vault. The first vault is then sealed off, and the contents allowed to dehydrate and solidify until the second vault is full. When the second vault is full, the contents of the first vault are then emptied and disposed of.
The first vault is then used to collect the faeces while the second vault is left to decompose. The cycle is then repeated as many times as required.

2.5 GENERAL MANAGEMENT OF THE PROGRAMME AND THE PROJECTS

2.5.1 Programme Management

The Water and Sanitation Programme is managed by eThekwini Water Services in close collaboration with the Departments of Health.

2.5.2 Project management

The diagram below illustrates the role players involved in implementing water and sanitation projects.

The Construction Branch of eThekwini Water Services acts as the programme manager (see 1 on diagram), using their own staff to project manage (2) and using local labour on a task basis to carry out construction activities. The project manager appoints the ISD consultant (3) and a site agent (4).
For project specific tasks, institutional and social development (ISD) consultants, engineers and hydrogeologists are employed. The simple design of the system ensures that the need for engineering consultants is limited. Specialist civil consultants (5) and hydrogeologists are used as required for geotechnical and environmental inputs.

**ISD consultants** play a more substantial role throughout the project cycle. They are responsible for “informing the community about the project, confirming demographic data, awareness creation, promotion of health and hygiene, assessing preferred sanitation options, training of local community committees and liaising with tribal structures (where applicable), and councilors”. Local facilitators (6) are employed by the ISD consultants to carry out health and hygiene education, training and capacity building.

A **Project Steering Committee** (7) is formed for each project to allow local representation and participation and to act as a communication mechanism between the community and the programme manager. In order to initiate the process either the Ward Councillor or the Project Manager acts as a temporary Chairperson and initiates a process whereby a Chairperson for the PSC is elected by the community. Members of the PSC are paid for attending monthly committee meetings - all other services are voluntary.

**Households** (8) are involved in a number of ways as follows:-.

- Decide with the contractor where the toilet will be constructed.

- Excavate the trench from the communal supply point to the position of the water supply tank

- Backfill the trench once the pipe has been laid

- Operate the urine diversion VIP and empty the composted contents as required.

## 2.6 IMPLEMENTATION

### 2.6.1 Introduction

There will be a number of projects undertaken under the Water and Sanitation Programme. Thus, it is considered necessary that a standard methodology is adopted in the way the projects are implemented. The Programme Manager will be responsible for ensuring that the various projects follow this methodology.
Each project will be divided into two phases viz. The Planning Phase and the Implementation Phase. The sequencing of tasks within each phase is seen as being critical to the success of each project.

This section provides an overview of the tasks that need to be undertaken in each phase and the sequencing to be followed.

Note: An Implementation Protocol Guideline for the Programme Manager has been developed (refer Appendix E,) which gives a detailed description of the phases and tasks associated with a Water and Sanitation Project

2.6.2 Task group 1 - prioritisation of projects

Projects will be prioritized based on the following headings: -

- Health related incidences – this will generally carry the highest weighting factor.
- Technical feasibility
- Provision of funding,
- Availability of resources.

The Programme Manager will be responsible for final decisions regarding the prioritization of projects.

2.6.2.1 Health

The eThekweni Health Department has noted that the incidence of cholera re-occurs every 3 – 5 years in areas that do not have access to potable water and sanitation. Intervention programmes consisting of intensive health education are not as successful as the provision of suitable water and sanitation. With this in mind, criteria for the prioritisation of water and sanitation projects have been drawn up. The criteria listed below would each be given a weighting factor and then each area would be allocated a weighted point score based on the prevalence of pathogens and the absence of rudimentary infrastructure. The criteria, which would be used for evaluating the status of the areas, are as follows: -

- The incidence of cholera and other diarrhoeal and water borne diseases.
- Source of water e.g. river, dam, groundwater etc
- Existing sanitation
- Walking distance to the water source
- Solid waste disposal practices within the community

A final list of prioritised projects will be presented to eThekweni Council for approval and implementation.

2.6.2.2 Technical feasibility
The listed project area would be placed in an order of priority based on health factors. The technical feasibility would involve an assessment of the complexity of providing water to an area (location of reservoirs, bulk supply lines etc) and the cost of implementing such a service.

It is envisaged that the order of the projects would not be significantly altered by the technical feasibility study but could be significantly altered by the availability of funding and of resources.

2.6.2.3  Funding and availability of resources

Whilst it is recognised that the health and technical aspects will dictate the order in which projects are undertaken, it is recognised that the availability of funding will determine whether a project proceeds.

Certain projects may receive specialised funding and then the availability of resources would dictate whether the project proceeds or otherwise.

2.6.3  Task group 2 – project planning

This involves the upfront investigations and engineering, budget developments and council approvals.

External consultants are used to carry out field assessments, the results of which are then assessed and intervention strategies developed. Once the intervention strategy is fully developed, funding and approval by Council is sought.

Typically the answers to the following key questions will be considered during this phase: -

- Is there a need for sanitation in the area?
- Is ground tank water supply appropriate and acceptable?
- Are there areas within the project boundaries where on site sanitation is unsuitable or where special precautions needs to be taken?
  - Are the sites or plots less than 250m² in size?
  - Is the average slope of the ground is greater than 1:3?
  - Is there a risk of polluting the groundwater?
  - Do the soils have a permeability of less than 50 mm/hr?
- Is the political environment conducive to the implementation of a basic water and sanitation project?
- What special precautions need to be taken to protect the environment?
- What Environmental Management Plans during Construction need to be put in place?

ISD Consultants are then appointed and facilitators from within the community are selected and trained. A Project Steering Committee (PSC) is established. Ideally, the PSC members will be elected from existing development committees in the project area. eTM officials will address gaps in knowledge of the technical issues of water and sanitation supply during PSC meetings. Each project committee will be briefed on the roles and responsibilities expected from members during the implementation of the particular project which forms part of The Programme.

2.6.4 Task group 3- project implementation

This involves the mobilisation of the project management and construction teams, ordering of materials and setting up a central construction camp within the community. The facilitators that have passed the training programme are then sent into the community, households are visited, the project explained, and the prescribed health and hygiene awareness programmes are initiated.

The application procedure (application form to be completed for water connection and assistance in provision of a toilet) requires commitment of sweat equity principles and connection fees for water supply

In order to meet the production rates and keep the cost of the toilets units as low as possible, local contractors are used to construct the toilets. All materials are managed and supplied by the eWS. Production rates are dependant on material supply, weather conditions and site accessibility but generally range between 600 to 1000 toilets per month.

In order for the householder to obtain a free water supply, the trenches must be excavated from the communal mains to the position of the ground tank. Further, the pipe work must be laid and the ground tank positioned. eWS will only make the final connection to the water main after all work is inspected and complete.

Once the work on site is complete, a final inspection is held whereby the facilities are handed over to the householder and become the householders responsibility to maintain.

2.6.5 Task group 4 – capacity building and education

2.6.5.1 Technical skills during construction
All construction work for the laying of the bulk mains reticulation and community mains will be conducted using local contractors and labour supported by the Construction Department. Local building contractors will be identified and trained to manage the pipeline laying contracts.

The labour will be changed every 1 to 2 weeks to enable every household in the scheme an opportunity to earn money to pay for the connection fees.

2.6.5.2 Operations and Maintenance skills

The scheme will be operated and maintained by eTM Operations Department. Registered plumbers in the community will be encouraged to apply to this Department for inclusion on the roster of private contractors employed to complement municipal employees in attending to faults in the reticulation system.

2.6.5.3 Affirmative Procurement Principles and Tendering

All orders placed for materials and services for this contract will be subject to the eThekwini Councils affirmative procurement regulations.

2.6.5.4 Small Business and Contractual Management

Site Agents will ensure that local plumbing and concrete block making businesses are developed and that guidance and necessary training is provided such that these businesses deliver goods and services on a sustainable basis. It is anticipated that there will be an ongoing demand for these goods and services in the community and surrounding areas after the contract is complete.

2.6.5.5 ISD Consultants and community facilitator training

Training at household level is done by facilitators who live within the community. An ISD Consultant is appointed and is then provided with a set of training materials prepared by the eWS. The ISD Consultant is then responsible for selecting (in consultation with the PSC and the Councilor) a number of facilitators who undergo a two-day training programme at an eWS training venue.

All facilitators receive the same training and materials thus consistency is maintained. Once the facilitators are trained, the ISD Consultant is then responsible for coordinating the dissemination of information throughout the community and the individual household visits.
2.6.5.6 Disposal of greywater and vault contents

Greywater disposal and drainage issues in general and their impact on health will be addressed as part of the education program. Households will be trained on the safe disposal of grey water.

Major problems with the disposal of greywater are not foreseen in areas where the plots are larger than 500m² (>500 m²) bearing in mind that the quantity of water on a site will be limited to 200 litres a day. For plots less than 350m², a purpose built soakaway will be included in the construction.

The disposal of the chamber contents will necessitate particular attention. Whilst it is established technology that the chamber contents, if allowed to dry over a period, will transpose into friable compost, the success of this will depend on the care that is given by the householder in ensuring that the toilet is properly used initially and later in ensuring that the chamber contents remain dry.

The rate of kill –off of pathogens and the factors affecting this needs further research and the WRC has been approached in this regard for assistance.

A disposal policy will be developed in time as further experience is gained both on the ground and as a result of the research through WRC. It is however envisaged that the development of small business operations, offering an emptying service will be part of the solution. Those households who chose not to empty the chambers themselves and who have the money may employ the services of others to do the work.

It is accepted that an ongoing intervention programme with each community receiving a toilet system will be necessary. The ongoing programme will be designed to correct usage patterns and address any cultural issues.

2.6.6 Task group 5 - Monitoring and evaluation

The eWS has appointed the Human Sciences Research Council to monitor the effectiveness and acceptance of the project goals and health and hygiene education.

Facilitators are tested, a few weeks after they have completed their training, on their knowledge of the project and on health and hygiene aspects of their training. Households that the facilitators have visited are also interviewed to determine the effectiveness of the facilitators presentations. Results of these surveys are assessed by eWS and intervention measures put in place e.g. certain facilitators could be asked to attend additional training.

In addition community focus groups are interviewed in order to continue the process of monitoring peoples understanding of the water and sanitation project. The main purpose of this process is to understand the community reaction to the Water and
Sanitation Programme and to identify problems at an early stage such that interventions can be put in place.

2.7 FINANCIAL

2.7.1 Financial Policy

The source of funding for the basic household sanitation programme will be grant funding from DWAF and CMIP supplemented by eTM monies for the Water Supply portion of the project. The eTM will provide bridging finance as required.

In delivering a combined package of both water and sanitation, the consumer will receive an enhanced service at a reduced cost.

2.7.2 Grant funding requirements per installation

The cost of delivering the proposed water and sanitation installation per household is indicated below.

<table>
<thead>
<tr>
<th>Description</th>
<th>Cost</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sanitation</td>
<td>R 2,900</td>
</tr>
<tr>
<td>Water</td>
<td>R 1,800</td>
</tr>
<tr>
<td>Sub-total</td>
<td>R 4,700</td>
</tr>
<tr>
<td>Feasibility studies, Geotechnical, geohydrological and social assessments</td>
<td>R 130</td>
</tr>
<tr>
<td>4. Capacity building, community consultations and health and hygiene education</td>
<td>R 400</td>
</tr>
<tr>
<td>5. On site supervision, project administration and training.</td>
<td>R 20</td>
</tr>
<tr>
<td>6. Supplementary education programmes during construction</td>
<td>R 50</td>
</tr>
<tr>
<td><strong>Total excluding VAT</strong></td>
<td><strong>R 5,300</strong></td>
</tr>
<tr>
<td>VAT</td>
<td>R 672</td>
</tr>
<tr>
<td><strong>Total grant funding required per installation</strong></td>
<td><strong>R 6,042</strong></td>
</tr>
</tbody>
</table>
Note that the cost associated with the bulk supply lines and reservoirs will be funded by the Council.

2.7.3 Capital Cost Estimate for the target area

Based on an estimated 62800 households within the target area requiring assistance over the envisaged programmes duration (10 years) and making provision for 6% escalation on costs, a total of R 460 million is required.

2.7.4 Breakdown of Capital Cost Requirements and Grant Funding Requirements

Table 8.4 below indicates the activities within the sanitation programme to be funded by the eThekwini Municipality, using their own resources and those activities for which grant funding is required.
Table 8.4

<table>
<thead>
<tr>
<th>Funded by eTM</th>
<th>Funded by grant funding</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Project initiation</td>
<td>1. Feasibility studies, Geotechnical, geohydrological and social assessments.</td>
</tr>
<tr>
<td>2. Engineering survey</td>
<td>2. Capacity building, community consultations and health and hygiene education</td>
</tr>
<tr>
<td>4. Project intervention plan and budget</td>
<td>4. On site supervision, project administration and training.</td>
</tr>
<tr>
<td>5. Council presentations and approval procedure</td>
<td>5. Supplementary education programmes during construction</td>
</tr>
<tr>
<td>6. PSC selection process</td>
<td></td>
</tr>
<tr>
<td>7. Demonstration toilets</td>
<td></td>
</tr>
<tr>
<td>8. Pay office and security</td>
<td></td>
</tr>
<tr>
<td>9. Head office administration and project management of construction activities</td>
<td></td>
</tr>
<tr>
<td>10. Monitoring, evaluation, supplementary education programmes and information</td>
<td></td>
</tr>
</tbody>
</table>

2.7.5 Operating and Maintenance and Provision for Recurrent Expenditure

Sanitation beneficiaries will be trained through workshops and awareness campaigns on the correct procedure and use of the toilets and how to operate and maintain them.

The responsibility for emptying the pits (when this is safe to do so) will rest with the homeowner. The cost implications of emptying the pit, and or moving the superstructure will not be high and will only cost the homeowner time and manual labour.
Formal transfer of the sanitation infrastructure to the relevant beneficiaries will take place and full responsibility for operation and maintenance will thereafter rest with the homeowner.

2.8 REPORTING

2.8.1 Key Performance Indicators

Project progress will be monitored by means of Key Performance Indicators (KPI’s) in order to assess progress against programme

- connection fees collected
- Number of ground tanks installed
- Number of toilets installed
- Actual progress against envisaged progress

Actual cost against envisaged cost
PART 3 - GUIDELINE FOR THE DESIGN AND
CONSTRUCTION OF TOILETS

3.1 INTRODUCTION

The Water Services Act gives substance to the clause in the Constitution providing the right of access to basic water and sanitation service for every citizen. The minimum standard for basic sanitation is:

- The provision of appropriate health and hygiene education; and
- A toilet which is safe, reliable, environmentally sound, easy to keep clean, provides privacy and protection against the weather, well ventilated, keep smells to a minimum and prevents the exit of flies and other disease – carrying pests.

The eThekwini Municipality has developed principles for the provision of sanitation services that are underpinned by a resolution accepted by Council as follows:

“The only sustainable on-site household sanitation option is one which the householder can sustain himself”.

In support of this resolution, the sanitation options accepted by the Municipality are:

- A ventilated improved double pit with urine diversion or
- a dual pit system with a moveable top structure

This document sets out the standards for the design and construction of toilets. The document should be read in conjunction with the following two documents entitled;

- “Principles for Basic Levels Of Service for Water and Sanitation”; and
- “Implementation Protocol for the Delivery of On site Sanitation in the eThekwini Municipality”

3.2 PURPOSE AND OBJECTIVES OF THIS GUIDELINE

The purpose of this guideline is to set out the minimum standards for the design and construction of latrines installed within the eThekwini Municipality.
The objective of this guideline is to ensure that installation of toilets where the basic level of service is appropriate within the eThekwini Municipality are correctly carried out and that intervention by the Waste Water Department to ensure long-term sustainability is minimized.

3.3 APPLIICATION OF THIS GUIDELINE

The basic level of sanitation will only be implemented in areas: -

- That are not presently served by municipal waterborne sewerage and where such provision is not anticipated in the short to medium term or at all according to the eThekweni Municipality Council’s programme for the sewering of the Unicity Area,

- where the basic level of water service is planned and

- Where conditions are appropriate for the installation and operation of VIDP type systems.

In general the guideline has been developed for implementation in areas where difficult geological conditions are not present. Specifically the guideline is not applicable for: -

- informal settlement areas where the sites or plots have not been allocated or defined.
- areas where the average slope of the ground is greater than 1:3
- areas where the risk of pollution of the groundwater cannot be mitigated
- Sites/plots which do not have basic level water supply
- Sites or plots of less than 250m²

For those areas that are found to be unsuitable, alternative solutions shall be discussed with the Department and approval sought.
3.4 DESIGN, LOCATION AND CONSTRUCTION STANDARDS

3.4.1 General requirements

A toilet system shall consist of a chamber, cover slab, superstructure, vent pipe, pedestal and urine diversion pipe work and soak away if appropriate.

The minimum general requirements for toilets having dual chambers constructed within the Municipality shall be as shown on drawings 1 and 2 in appendix A.

3.4.2 On-site location

The toilet shall be located such that:

- It is no further than 3 metres away from the site or plot boundary and if possible, close to an access road so as to allow easy access by maintenance crews if required.
- It falls outside the 1:50 year flood line or at least 20 metres from a watercourse.

3.4.3 Minimum standards for the superstructure

- The superstructure shall provide the user with privacy, comfort and shelter against weather.
- The door shall be sturdy, securely hinged to the superstructure and be able to be latched from both the inside and outside.
- Two basic shapes are acceptable - a simple rectangular box or a round superstructure.
- Recommended minimum internal dimensions for the various shapes are given on the attached drawings. The internal height should be a minimum of 2 metres.
- The vent pipe(s) shall be located on the outside of the superstructure.
PART 4 - IMPLEMENTATION PROTOCOL

Prioritisation of projects by Health

Discussion of project with Councilor/s

Feasibility study by EWS, boundary definition, and development of preliminary project budget

Council approval

Application to DWAF/CMIP for funding

Have funds been approved?

Yes

No

Appointments of:

1. ISD Consultant
2. Geotechnical and hydrogeological Consultant

Social, engineering and environmental surveys of the area

Review of survey reports

Selection and training of facilitators

Appointment and training of the PSC (and TMC if required)

Selection and training of facilitators

Resource allocation, programming, site establishment and start of construction

Should the project proceed?

Yes

Action by Health Dept

Action by Operations

Action by Water R&D

Action by Construction

Action by Ext. Cons.

Business plan for the delivery of basic water and sanitation services in the etekwini municipal area  June 2003
PART 5 - TYPICAL ENQUIRY DOCUMENTS

5.1 TENDER EQUiry FOR THE PROVISION OF SERVICES TO CARRY OUT A GEOHYDROLOGICAL AND GEOTECHNICAL SURVEY FOR THE MPUSHINI AREA

5.1.1 INTRODUCTION

The Water Services Act gives substance to the clause in the Constitution providing the right of access to basic water and sanitation service for every citizen.

The eThekweni Municipality has interpreted the minimum standard for basic sanitation as: -

- The provision of appropriate health and hygiene education; and
- A toilet which is safe, reliable, environmentally sound, easy to keep clean, provides privacy and protection against the weather, well ventilated, keep smells to a minimum and prevents the exit of flies and other disease – carrying pests.

The eThekweni Municipality has developed principles for the provision of sanitation services that are underpinned by a resolution accepted by Council as follows: -

“The only sustainable on-site household sanitation option is one which the householder can sustain himself”.

In support of this resolution, the sanitation options accepted by the eThekweni Municipality are: -

- a dual pit system with a moveable top structure or
- A ventilated improved double pit with urine diversion

The option of using the VIDP with urine diversion will primarily depend the geotechnical and geological conditions at the site. In order to enable the project to be planned a number of investigations will be carried out in the project area as follows: -

- An overview of the area with respect to the proximity of bulk water and sanitation
- A social status survey of the area
- A geological and geotechnical survey of the area.
5.1.2 PURPOSE OF THIS DOCUMENT

The purpose of this document is to provide:

- information to Professional Service Providers (PSP) who are capable of carrying out a geotechnical and geohydrological surveys
- A standardized method of enabling the work to be carried out, the costs associated with such a survey to be compiled by the PSP and the tender to be evaluated by the client.

5.1.3 KEY DATES

<table>
<thead>
<tr>
<th>Event</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tenders to be returned</td>
</tr>
<tr>
<td>Award of the tenders and the instruction to proceed</td>
</tr>
<tr>
<td>Start of field work</td>
</tr>
<tr>
<td>Completion of the study</td>
</tr>
</tbody>
</table>

5.1.4 SCOPE OF WORK

It should be noted at the outset that the Scope of Work required by the EThekweni Water Services exceeds the standard guidelines contained in “A Protocol to Manage the Potential of Groundwater Contamination from On-Site Sanitation” issued by Department of Water Affairs and Forestry – 1997.

The amended Scope of Work is aimed at gathering sufficient geohydrological and geotechnical information to assist the Sanitation Engineer with the planning, design and implementation of the proposed on-site sanitation project.

The amended Scope of Work includes the following components:
5.1.4.1 Geological Mapping

A geological mapping exercise aimed at compiling a detailed geological map of the study area, showing all geological boundaries and discontinuities within the study area must be carried out.

This mapping must be carried out at a scale of 1:10 000 scale and all boundaries and structures must be captured in electronic format compatible with the Metro GIS system.

5.1.4.2 Geotechnical Mapping

The geological mapping must be augmented by a geotechnical mapping exercise to delineate all areas where soil cover is < 1.5m and vadose zones < 2m can be expected. All other geotechnical features, which may have an influence on the planning, design or implementation of on-site sanitation systems, must be recorded.

This data together with the inferred soil cover and vadose zone boundaries must be captured in electronic format compatible with the Metro GIS format.

Mapping must be carried out at 1:10 000 scale and due diligence should be observed to ensure that the mapping represent prevailing and defensible geological and geotechnical field conditions.

5.1.4.3 Hydrocensus and In-situ Testing

A hydrocensus should be carried out within the study area, to identify and evaluate the fitness for use and vulnerability of all protected and unprotected surface and groundwater domestic water supply sources used by the communities, in terms of the proposed on-site sanitation programme.

Water samples collected from each of these sources must be submitted to the Metro Water Analytical Services, for SABS 241: 1999 analysis. Metro Water will supply sample bottles and Metro Water will absorb the cost of analysis.

A series of trial pits should be excavated throughout the study area, to expose the subsoil and weathered parent rock to depths of up to 1.5m.

The exposed soil and rock profiles should be logged in accordance with accepted geotechnical logging procedures. In addition, these soil profiles must be classified in accordance with the definition of Forms and Families contained in “Soil Classification - A Taxonomic System for South Africa” by the Soils Classification Working Group issued by the Department of Agricultural Development - Pretoria – 1991.
In-situ percolation tests, in accordance with the methods outlined in SABS 0400 must be carried out in the base of each trial pit and the rate of percolation determined and recorded.

5.1.5 ADDITIONAL DATA TO BE COLLECTED WHEN IN THE FIELD

- Extraordinary terrain or geological conditions
- Average slope of the ground
- Locations of rivers and streams in the area
- Existing wetlands

5.1.6 GEOHYDROLOGICAL REPORT

The information and data gathered in the preceding phases (as noted above), will be used to compile a report, which will include:

All the relevant project information gathered as well as a comprehensive description of attributes used in both the geological and soils mapping exercises.

Evaluation of the strategic importance and vulnerability of groundwater and/or surface water as a potential domestic water supply source within the study area in view of the proposed inception of an extensive on-site sanitation programme.

- Classification of Risk of the unprotected and protected water sources within the study area in terms of the overall Waste Load and Macro-Geology of individual communities in accordance with Table 1 of the Groundwater Protocol (Muller – 1998)
- Identification of flag situations and recommendations of Appropriate Risk Reduction Measures aimed at guiding the Sanitation Engineer in the planning/design and implementation of the project.

In addition to the above the report should contain a full set of drawings/data relating to:

- The locality of the project area
- Regional geology plan
- Detailed geology map
- Geotechnical/soils map
• Risk Classification map
• Geohydrological database data
• Hydro census data
• Groundwater chemistry data
• Soil profiles and percolation test results
• Summarised list of mapping attributes used

4 No hard copies of the report together with an electronic version of the report will be submitted and suitable arrangements will be made with representatives of the Metro GIS division to ensure that all spatial data relevant to this project is merged successfully with their in-house systems.

5.1.7 DOCUMENTS SUPPLIED WITH THE TENDER
• Location of Project area within the Municipality
• Orthophoto of the project area

5.1.8 ADDITIONAL DOCUMENTS TO BE RETURNED WITH THE TENDER

In addition to this completed document the following items need to be returned with this document and will be used in the adjudication:

• The proposed project team and project leader

• An estimate of the duration of the study in the form of a GANT chart showing when information will be available for use by the Project Manager

• Any other terms and conditions that are relevant to the evaluation of proposal
### 5.1.9 SCHEDULE OF QUANTITIES TO BE COMPLETED BY TENDERER

<table>
<thead>
<tr>
<th>No.</th>
<th>Description</th>
<th>Unit</th>
<th>Quantity</th>
<th>Rate</th>
<th>Amount</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Fees associated with conducting the following exercises</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>a)</td>
<td>Geological mapping</td>
<td>Sum</td>
<td>1</td>
<td></td>
<td></td>
</tr>
<tr>
<td>b)</td>
<td>Geotechnical mapping</td>
<td>Sum</td>
<td>1</td>
<td></td>
<td></td>
</tr>
<tr>
<td>c)</td>
<td>Hydro census and in-situ testing</td>
<td>Sum</td>
<td>1</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>Fees associated with compiling the report</td>
<td>Sum</td>
<td>1</td>
<td></td>
<td></td>
</tr>
<tr>
<td>3*</td>
<td>Fees associated with reporting on an ongoing basis to the Project Manager and attendance at meetings. (Provisional Quantity)</td>
<td>Hr</td>
<td>50</td>
<td></td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>General disbursements associated with carrying out the work e.g. travel, printing telephone calls etc</td>
<td>Sum</td>
<td>1</td>
<td></td>
<td></td>
</tr>
<tr>
<td>5**</td>
<td>Costs associated with digging of trial pits and percolation tests (Provisional Quantity)</td>
<td>No</td>
<td>10</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Subtotal 1

Add: Contingency amount to be used to cover unforeseen items - to be expended in consultation with the Project Manager [15 % of subtotal 1]
**  Service Provider to identify the person [in terms of level of seniority] who will be responsible for providing information to the Project Manager or his designated representative regarding progress and findings.

**  The number of trial pits will depend on the complexity of the geology within the area. Motivation should be made to the Project Manager re the number of trial pits that should be undertaken. As far as possible the trial pits should be dug using local labour.

5.2   TENDER ENQUIRY FOR THE PROVISION OF INSTITUTIONAL AND SOCIAL DEVELOPMENT CONSULTANCY SERVICES FOR A WATER AND SANITATION DEVELOPMENT PROJECT IN THE MPUSHINIA AREA

5.2.1   INTRODUCTION

The Water Services Act gives substance to the clause in the Constitution providing for the right of access to a basic water and sanitation service for every citizen.

The eThekweni Municipality has interpreted the minimum standard for basic sanitation as:
• The provision of appropriate health and hygiene education; and
• A toilet which is safe, reliable, environmentally sound, easy to keep clean, provides privacy and protection against the weather, well ventilated, keep smells to a minimum and prevents the exit of flies and other disease - carrying pests.

The eThekweni Municipality has developed principles for the provision of on site sanitation services that are underpinned by a policy of the Council as follows: -

"The only sustainable on-site household sanitation option is one which the householder can sustain himself".

In general the implementation of basic water and sanitation infrastructure in the eThekweni Municipal area will be addressed by means of the following strategic interventions: -

• Community engagement
• Promotion of community participation
• Promotion of health and hygiene awareness and practices
• The use of local resources and the development thereof
• The upgrading of local facilities
• The implementation of an integrated water, sanitation and environmental management approach

As a number of projects of this nature will be initiated a common approach has been adopted. The approach has been documented in various guidelines and in the Water and Basic Sanitation Area Business Plan.

This enquiry is for service providers who have experience in such projects to provide proposals to assist the eThekweni Municipality Water and Sanitation Development Project Team in the institutional and social development aspects of the proposed project.

5.2.2 PURPOSE OF THIS DOCUMENT

The purpose of this document is to provide: -

• Information to Professional Service Providers (PSP) who are capable of providing
Institutional and Social Development Services

- An overview of the standardised approach adopted by the eThekweni Municipality
- A standardized method of appointing service providers, assessing and developing the costs associated with such provision of services and a methodology to enable the proposals to be evaluated by the client.

5.2.3 KEY DATES

<table>
<thead>
<tr>
<th>Event</th>
<th>Date</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tenders to be returned</td>
<td>9 November 2001 @ 12h00</td>
</tr>
<tr>
<td>Award of the tenders and the instruction to proceed</td>
<td>15 November 2001</td>
</tr>
<tr>
<td>Start of field work</td>
<td>19 November 2001</td>
</tr>
<tr>
<td>Envisaged completion of the project</td>
<td>14 December 2001</td>
</tr>
</tbody>
</table>

5.2.4 SCOPE OF WORK

The Scope of Work includes the following components:

5.2.4.1 Survey and data collection

In order that specific interventions can be formulated for the project area, social surveys of the area will be carried out. This will require the following actions:

- Selection of potential facilitators from the community
- Training the selected potential facilitators and the final selection of the required number of facilitators who will be paid directly by the Council as temporary employees.
- Managing the household surveys and ensuring a consistent approach to the information gathering exercise.
- Capturing the information collected in a structured manner allowing for further analysis of the data.
- Interpreting the data collected and disseminating the information to the project team
The information that is to be collected will be as follows:

- The basic level of education within the area.
- The socio political environment.
- Prevalence of waterborne and faecal related diseases.
- Current disposal of solid waste.
- Schools and clinics within the area, their existing water and sanitation facilities and what health and hygiene programs have been carried out in the area.
- Social structures within the area.
- Average number of people per household.
- Current sanitation practices.
- Current water collection points.
- Small businesses in the area.
- Capacity of existing organisations.
- NGOs working in the area.
- How many households have a Metro Number.
- How many households are tenants (as opposed to landowners).
- What is the current knowledge of VIP type latrines?
- Are there any social or political reasons why a sanitation or water project would fail?

The Project Manager will supply a standard questionnaire.

5.2.4.2 Community participation

During the Promotional phase of the project the ISD consultant will be responsible for ensuring community participation by making the community aware of the project, discussing the involvement of the community and informing the community of the requirements of the Municipality.

An essential service that the ISD consultant will be required to provide is the assessment of the needs of the community in terms of training and capacity building.

Continual reporting to the project team will be required in terms of progress and the need for specific interventions to address identified problems within the area.

During the Promotional Phase of the project a Project Steering Committee will be established. The ISD consultant will be required to assist in the establishment of the PSC and may be required to chair the initial meeting until such time as a chairperson can be elected. The ISD consultant shall ensure that representation on the PSC is fair and that the various communities have equal representation.

The ISD consultant will assist in developing the Terms of Reference for the PSC and provide the necessary training and capacity building programs in order for the PSC to function effectively.
5.2.4.3 Education and Information Dissemination

During the Promotional Phase the facilitators under the control of the ISD consultant will be required to visit each household twice. During the first visit information will be gathered as noted above. During the second visit information regarding sanitation will be disseminated and carefully explained to the householders. Information brochures will be made available to the ISD consultant by the Project Manager for distribution.

5.2.4.4 Delivery phase

During the delivery phase the facilitators under the control of the ISD consultant will be required to visit the household to assess progress and to reinforce pertinent issues. Assistance may be required in terms of training the household members to provide the required sweat equity and operational aspects of the installed sanitation system. It is envisaged that a further 3 visits to each household will be required during this phase.

5.2.5 ENVISAGED ISD PROJECT TEAM

The project team organogram will consist of the following personnel:

- Project manager – Mr. A. Kee
- Engineering Manager – Mr. I Duncum
- Construction Manager – Mr. J Rust
- ISD Manager – To be advised

As the input required by the ISD consultant will be consistent throughout the Promotional Phase and portions of the Delivery Phase, remuneration will be based on the provision of competent staff members on a secondment basis as follows:

5.2.5.1 ISD Manager

Typically a Scientist/Engineer who has at least 5 - 10 years experience in such projects at a senior level. The ISD Manager should be available for periods during a typical project month i.e. it is not envisaged that the ISD Manager needs to be seconded on a full time basis. The ISD Manager will attend project meetings at the set up by the Project Manager. The ISD Manager should be capable of managing and directing the activities of the field representatives, liaising with the PSC and advising the project team.

5.2.5.2 Field Representative

Typically a person who is fluent in both Zulu and English who has at least 2 - 5 years of experience in such projects in a similar capacity. The Field Representative should be capable of managing and directing the activities of the facilitators and advising the Construction Manager. The Field Representative will be permanently seconded to the
5.0

Business plan for the delivery of basic water and sanitation services in the ethekwini municipal area
June 2003

5.2.5.3 Assistant Field representative

Typically a person fluent in Zulu who has 1-2 years of experience in such projects in a similar capacity.

The Assistant Field Representative will be permanently seconded to the project – typically 160 hours per month. The Assistant Field Representative will be located on site in office accommodation to be supplied by the project team.

5.2.6 DOCUMENTS SUPPLIED WITH THIS TENDER

- Location of Project area within the Municipality
- Orthophoto of the project area

5.2.6.1 ADDITIONAL DOCUMENTS TO BE RETURNED WITH THE TENDER

In addition to this completed document the following items need to be returned with this document and will be used in the adjudication:

- The proposed ISD Manager and support team together with summarized Curriculum Vitae highlighting experience in similar projects
- Any other terms and conditions that is relevant to the evaluation of proposal.

5.2.7 SCHEDULE OF QUANTITIES

<table>
<thead>
<tr>
<th>No</th>
<th>Description</th>
<th>Unit</th>
<th>Rate</th>
<th>Quantity</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Fees associated with providing the following personnel: -</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>ISD Manager(^1)</td>
<td>R/hour</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Field Representative(^2)</td>
<td>R/month</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Assistant Field Representative(^3)</td>
<td>R/month</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>No</td>
<td>Description</td>
<td>Unit</td>
<td>Rate</td>
<td>Quantity</td>
<td>Total</td>
</tr>
<tr>
<td>----</td>
<td>-----------------------------------------------------------------------------</td>
<td>----------</td>
<td>----------</td>
<td>----------</td>
<td>-------</td>
</tr>
<tr>
<td>2</td>
<td>Amount to cover general disbursements for carrying out the tasks e.g. Photocopies.</td>
<td>R/month</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>Amount for project related transport to be supplied by the PSP.</td>
<td>R/month</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Add Contingency to be expended in consultation with the Project manager (15% of sub-total)

Total (excluding VAT)

Notes

1. The total hours per month that the ISD Manager needs to carry out his responsibilities shall be inserted by the PSP under the quantities column.

2. Quantity shall be the full project duration

3. Quantity shall be the total project AFR months estimated as necessary for the project by the PSP e.g. if 2 x AFRs are considered necessary for the full project duration of 6 months and 1 for half the project duration then the quantity would be 15 months. Alternatively if the PSP choses to combine the FR and AFR activities then the quantity in the AFR column will be nil.

4. Quantity shall be the total project duration.

5. Quantity shall be the total project duration and the rate shall cover all project related transport.

#108459