SANITATION DEMAND AND DELIVERY IN INFORMAL SETTLEMENTS – PLANNING AND IMPLEMENTATION SUPPORT

Report to the
WATER RESEARCH COMMISSION

by

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Executive Summary

Rapid urbanization is a critical challenge for those charged with service provision to urban centres in developing countries. Unable to keep up with the rapid pace of population growth, many urban centres are experiencing a substantial increase in the number of people living below the poverty line in informal or unplanned settlements, many of which are illegal. Most informal settlements lack access to adequate and affordable basic services such as water supply and sanitation.

In South Africa, despite enabling national policies, institutional initiatives to develop delivery frameworks for basic sanitation have been slow because of the lack of consensus in Water Services and related units within local authorities on a way forward. There is broad policy acceptance of the right to basic sanitation but the details for the delivery of "free basic sanitation" are not provided.

In response to Regional Stakeholder requests at the Provincial Sanitation Task Team (Western Cape), the Community Water Supply and Sanitation Unit at Peninsula Technikon was approached to spearhead the development of a planning and implementation framework for basic sanitation services in informal settlements in the City of Cape Town.

Formative Research focused on the lack of alignment at the planning stages, particularly between local government departments and a range of key stakeholders, to assist people to work together towards taking action that is founded on building consensus. An inclusive approach to the research involved key actors (officials, NGOs and community participants) in identifying the elements that need to be moved forward to guide more effective planning and action.

This research of current approaches, while drawing from local case studies to inform the City of Cape Town, has relevance to the rest of the country. The proposed Framework also has the potential of wider application in the development of service delivery protocols through an action research methodology.

This report is the culmination of the first phase of developing this framework through the Water Research Commission (WRC) funded project, "Sanitation Demand and Delivery in Informal Settlements – Planning and Implementation Support". The Framework is intended for application in planning and to improve the efficiency and effectiveness of delivery by facilitating the development of implementation guidelines.

The document does not propose a "quick fix" for the suggested change of paradigm that is needed for approaching delivery strategically. Accepting that there are financial and legal constraints to be addressed, the focus of the

Framework is to facilitate the building of capacity and changing of roles, including the recognition that communities are key activists in sanitation improvements and sustainability.

The challenge for strategic approaches to sanitation provision is to move forward in ways that are appropriate to the task in hand, and that respect the way in which knowledge and skills are distributed amongst the stakeholders. It has thus been imperative that stakeholders with a direct interest have been involved in the research. The value of this report ultimately relies on the will that resides within local authorities, service providers and the communities who will actively take up the challenge to engage in developing delivery models.

Strategic sanitation planning is based on three strategic elements, suggesting that the development of three strategic programmes require planning within, and across, the relevant local authority departments. The associated key programme elements are those that have emerged from the research of current approaches in the City of Cape Town. Identifying these programme elements further enable strategic planning as an initial step. Implementation of strategic plans will facilitate the development of delivery models and the refinement of guidelines for replication.

Planning and Implementation Phases of the Support Framework are further illustrated in introducing the body of the report, which endeavors to present the product in a logical sequence. Further understanding will be derived through the active process of application that is inherent in this action research methodology.

Acknowledgements

The research and outputs of this report emanated from the prioritisation of sanitation delivery to informal settlements as a key backlog area to be focused on by stakeholders serving on the Peri-Urban Core Group of the Provincial Sanitation Task Team, Western Cape. As a priority area of both the Water Research Commission (WRC) and the City of Cape Town, the support and participation required to address the lack of local authority protocol regarding basic services delivery to informal settlements has been forthcoming. This is gratefully acknowledged by the project team, as without this institutional support in addition to the WRC financing, the project would not have been possible.

The WRC Steering Committee that has provided regular and valuable feedback on the presentation of three progress reports, consisted of the following persons:

Mr J Bhagwan	Water Research Commission (Chairperson)
Mr N Hendricks	City of Cape Town, Water Services
Mr AF Van Niekerk	City of Cape Town, Development Support
Mr G White	City of Cape Town, Dept of Health (delegated by Dr I Toms)
Mr S Nomdo	Dept of Health, Western Cape
Ms W Kloppers	Dept of Water Affairs & Forestry: Water Quality
Ms MM Semmelink	Dept of Education, Western Cape
Mr E Carollisen	(previously) Healthy Cities Programme, CMC

Both Peninsula Technikon (Pentech) and the National Research Foundation (NRF) are acknowledged for encouraging staff and students to incorporate this important area of research in their work-plans. Support for the Community Water Supply and Sanitation (CWSS) Unit's niche area research, with the provision of space, resources, equipment, facilities and encouragement is much appreciated by the project team. Assistant Researchers, drawn from promising Pentech students have brought diverse disciplinary perspectives and their own interest in developing understanding and research skills to enrich the project team.

The authors extend particular thanks to the numerous interested stakeholders who have given of their time, thought and feedback. Stakeholder Reference Groups participated in validation workshops, generously shared their experience and insights, and contributed to creating an opportunity to carve a way forward. These stakeholders include:

- Committee members and Volunteers engaged in projects within study sites;
- Local Authority officials in the engineering, development support and health services sector; and
- NGOs collaborating with communities and local authorities.

Last but not least, the households living in poverty conditions are acknowledged for their willingness and enthusiasm to engage with a laudable openness in confronting both constraints and opportunities for improving their environments.

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Acronyms

CBO	Community-Based Organization
CMIP	Consolidated Municipal Infrastructure Programme
CWSSP	Community Water Supply and Sanitation Programme
DPLG	Department of Provincial and Local Government
DWAF	Department of Water Affairs and Forestry
EHO	Environmental Health Officer
IDP	Integrated Development Plan
MLC	Municipal Local Councils (previous to new demarcation)
NGO	Non-Governmental Organisation
O&M	Operation and Maintenance
PSP	Public Sector Partnerships
PSTT	Provincial Sanitation Task Team
PSC	Project Steering Committee
SALGA	South African Local Government Association
SETA	Sector Education Training Authority
SMME	Small and Medium and Micro Enterprises
TOR	Terms of Reference
UDS	Urine Diversion System
VIP	Ventilated Improved Pit latrine
WRC	Water Research Commission
WSA	Water Services Authority
WSDP	Water Services Development Plan
SSA	Strategic Sanitation Approaches

Glossary and Definitions

Ablution Block:
A multi- purpose, public facility used by a large number of residents. The settlement is usually divided into zones with the facility centrally located in the zone. The facility may include toilets, showers, hand basins and wash troughs.

Basic Household Sanitation:
As set out in national policy individual households should have access to basic levels of on-site sanitation that is acceptable, affordable and sustainable.

Basic Sanitation Service:
A basic sanitation service includes: appropriate health and hygiene education; a toilet that is acceptable to users; a toilet that is safe, reliable, environmentally sound, easy to keep clean, private, well-ventilated and which keeps smells to the minimum and prevents the exit of flies and other disease carrying pests.

Bucket System:
A 20 to 25-litre durable container used for the transpose of human excreta to a location off-site for further treatment and biodegradation.

Container toilets:
A 100-litre container used for the transport of human excreta to a location off-site for further treatment and biodegradation.

Community:
All the people living together in a particular area with certain interests in common.

Capacity:
The ability to do, experience or understand something.

Categories of settlements:
The different types of human settlement areas as classified by local authorities currently comprise four categories. Categories suggested are unencumbered, encumbered, state owned and unlawful informal settlements.

- *Unencumbered:*

Situated on Council land with no development constraints.

- *Encumbered:*

Situated on Council land reserved for other uses such as, road reserves, storm water retention facilities, services servitude and other restrictions.

- *State owned*: Situated on state land including provincial land.
- *Unlawful:* Situated on privately owned land.

Demand-driven:
Delivery that is responsive to the conscious and expressed aspiration of a community.

Deploy:
Bring into effective action: utilize

Ecological Sanitation (Ecosan):
A system based on ecological principles: i.e. zero pollution, water conservation and recycling. The range of designs include the EnviroLoo and the Urine Diversion system. These systems have on site, self-composting mechanisms that accelerate pathogen destruction through dehydration and/or composting.

Empowerment:
Giving or allowing people the authority or power to do something in such a way that those actions make people stronger and more confident in controlling their lives.

Grey Water:
Wastewater resulting from the use of water for domestic purposes but not including human excreta.

Indigent:
Poor, needy and in the context of basic service provision, unable to pay for basic water and sanitation.

Sanitation:
In this document refers to the disposal of human excreta and grey-water.

Sanitation systems:
Sanitation technology, use, management and maintenance as a set of connected parts forming a complex whole.

Sanitation services:
The collection, removal, disposal and/or treatment of human excreta and greywater, done by or on behalf of a water services authority.

Sustainable:
Able to be maintained indefinitely.

Rudimentary Services:
The current use of this term by local authority officials includes a basic level of sanitation system that is needed for the safe, healthy and affordable disposal of human excreta. These services may be shared, may have a limited life span and do not emphasize robustness and sustainability.

1. Introduction

1.1 Report layout

The planning and implementation support framework involves an acceptance that the action research approach adopted by this project is based on learning from action for capacity building. The **Introduction** to the report therefore sets out the need for two phases in applying the proposed Framework prior to presenting the product.

The Framework for Planning and Implementation Support for Sanitation Services to Informal Settlements that was developed during the course of this project is set out in **Chapter 2** of this document, which outlines the proposed Framework in more detail. **Chapter 2** presents the product of research, illustrating the linkages between key strategic elements, related programmes and the facets of these programmes. The Framework includes initial guidelines for the development of delivery models for replication, pointing the way forward for refining protocol based on existing experience and developing capacities.

Chapter 3 provides a synthesis of three progress reports that were presented during the course of research, including the stakeholder validation of Phase 1 of the proposed framework. **Chapter 3** outlines the research activities that contributed to the development of the Framework.

The chapter summarizes the literature review of international trends, the South African Policy Framework and local initiatives for water services to the poor in general and sanitation in particular. The summary highlights the key outputs, which details an extensive exploration to determine the Strategic Elements of a Planning and Implementation Framework for Sanitation services to informal settlements.

This chapter further includes the baseline profiles reflecting current delivery approaches in four sites of study in the City of Cape Town. A summary of issues arising from delivery approaches is presented in the form of a Photo Diary. Against the background of the strategic elements of the framework, data from the four sites is further reviewed in the context of three strategic programs.

Field Data and research informed the identification of programmes that are strategic to alignment in planning. The summary of this detailed data contained in progress reports is presented in **Chapter 3**, which includes the emergence of the key programme elements suggested from investigation of current approaches.

1.2 The Process of Developing the Framework

The process for the development of the framework has its roots in work done internationally on "Strategic Approaches to Sanitation Delivery" (Wright, 1997). The process consists of:

- Exploring linkages at the policy, municipal and local levels by reviewing delivery of basic services to the poor and identifying strategic elements of the delivery framework;

- Assessment of the opportunities and constraints presented by the present situation by investigating sanitation service delivery at four case study sites in the City of Cape Town, to identify and validate overarching programs that can be linked to the strategic elements; and

- Building consensus among the various stakeholders on the way forward by identifying and validating key elements of sanitation service delivery that can form the basis of alignment at the planning stage and form the basis of the implementation framework.

Determining strategic elements for a planning and implementation framework for sanitation services to informal settlements was based on an initial literature review encompassing international trends, the South African Policy Framework and local initiatives. Three strategic elements identified as appropriate for the framework were:

- **Stimulating Demand** – health and sanitation promotion;
- **Responding Appropriately to Demand** – institutional arrangements for delivery;
- **Sustainability** - community responses to delivery.

During the next stage of the investigation of current delivery approaches in the City of Cape Town, the community responses to delivery and emergent local roles and responsibilities in sustainability became explicit in Community Partnerships, rather than remaining implicit in Promotion and Institutional Arrangements. This translated into the need for a specific program with a focus on sustainability as part of the framework in addition to programmes aligned with demand and delivery.

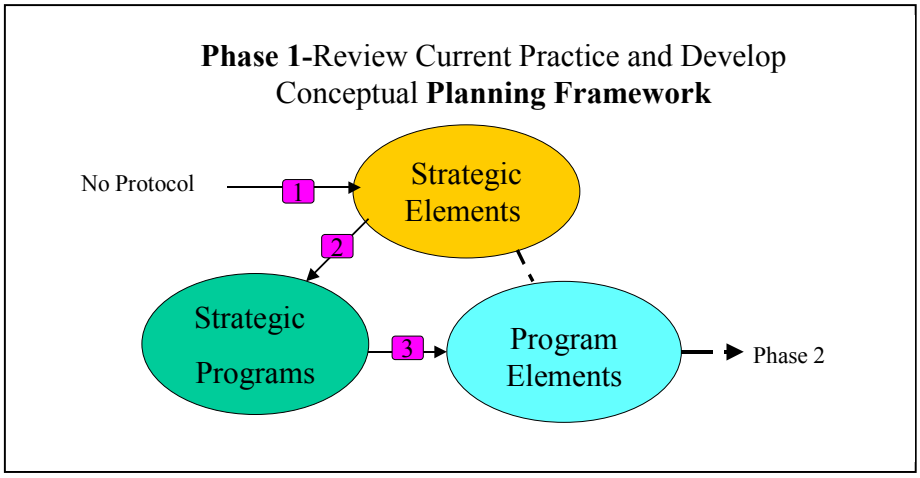
The development of consensus on a local level is key to the effectiveness of planning. Effective strategic planning will enable implementation in order to develop models that may be replicated, as appropriate to each particular context.

1.3 The Framework: Planning and Implementation Phases

Phase 1 has developed from the methodology for aligning planning for sanitation services to informal settlements in this study. Phase 2 is based on the

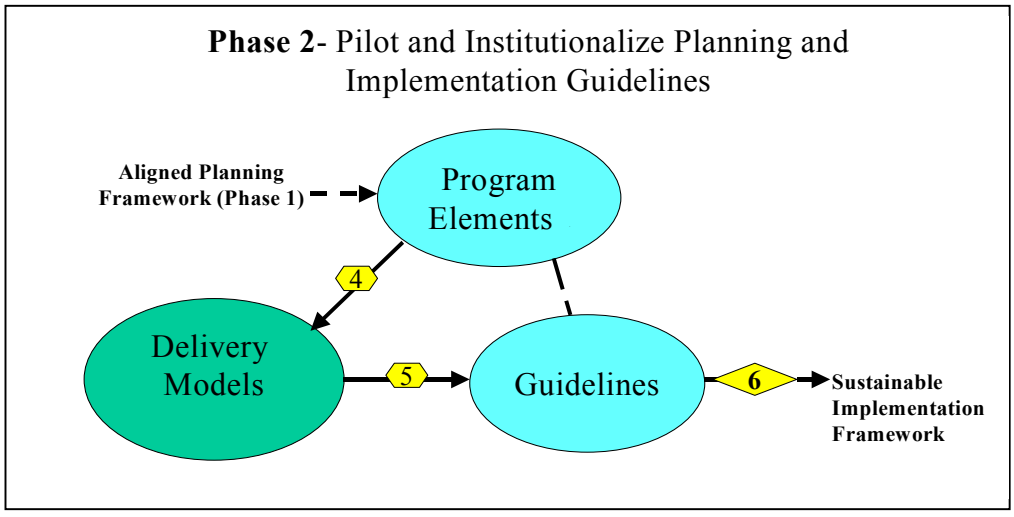
recommendations for the way forward. The sequence of planning and implementation to develop delivery models and guidelines for a local authority protocol are illustrated in the figures below.

FIGURE 1: Phase 1 - Develop a Planning Framework for Alignment and Efficiency by reviewing current practice



1. Identify strategic elements of the delivery framework by reviewing international, national and local policy and experience,
2. Identify and validate the overarching programs that can be linked to the strategic elements by reviewing current delivery practice.
3. Identify programme elements that facilitate alignment at the planning stage and form the basis of an implementation framework.

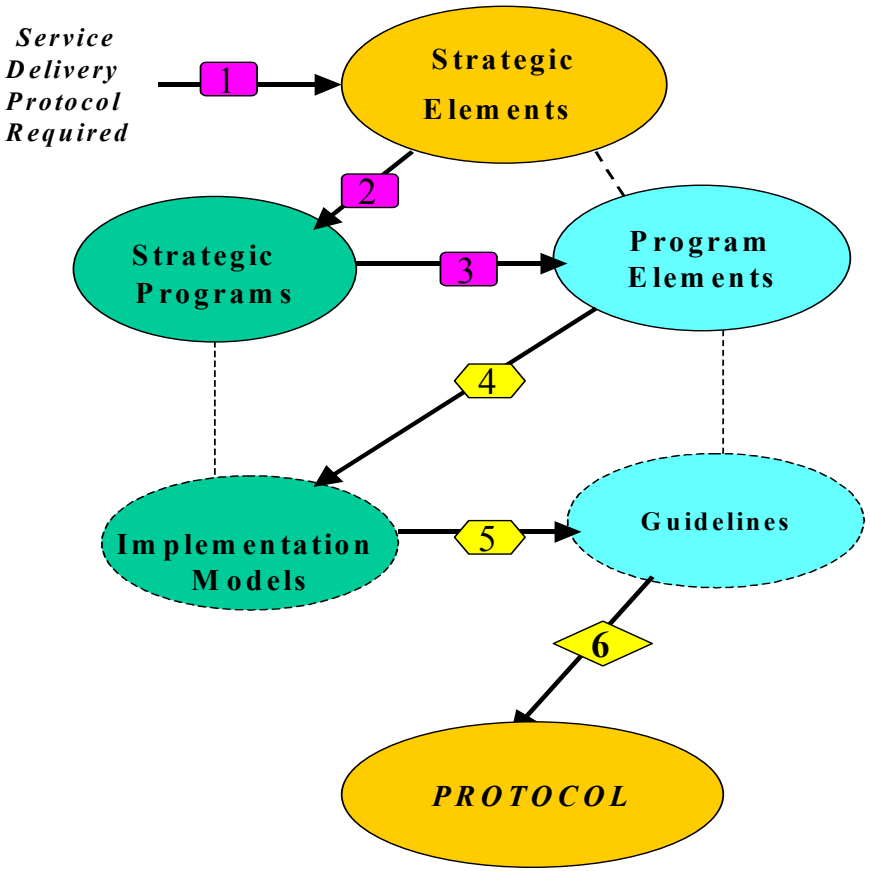
FIGURE 2: Phase 2 - Develop an Implementation Framework for Sustainability and Effectiveness by identifying delivery models for developing guidelines in context



4. Identify and pilot implementation models linked to programme elements based on best practice,
5. Evaluate pilot programmes to develop Implementation model guidelines in context.
6. Refine, Validate and Institutionalise guidelines to sustain the protocol.

FIGURE 3, on the page below, illustrates the link between **Phase 1**, which concerns the alignment for planning sanitation services to informal settlements, and **Phase 2**, which concerns recommendations for the way forward, in the context of this study.

The Framework



Phase 1-Review Current Practice and Develop Conceptual Planning Framework

3 Stages to Alignment and Efficiency

1. Identify Strategic Elements of Service Delivery Framework reviewing policy and trends
2. Identify overarching Strategic Programs by reviewing current local practice
3. Identify the Program Elements that provide alignment in the planning phase

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Phase 2- Pilot and Institutionalize Planning and Implementation Guidelines

3 Stages to sustainability and effectiveness

4. Identify, develop and pilot Implementation Models based on policy imperatives, resource constraints and sustainability
5. Evaluate models based on pilot and develop Guidelines
6. Institutionalize Guidelines -PROTOCOL

2. A Framework for Delivery of Basic Sanitation Services – Developing consensus on Planning, Implementation and replication at local level

Three strategic elements were identified as appropriate for the framework during the literature review stages of the investigation. These elements are an adaptation of the elements currently accepted by Strategic Sanitation Approaches (SSA) in that the element of sustainability is made explicit in Community Partnerships, rather than implicit in Promotion and Institutional Arrangements. This approach translates into the need for a specific program with a focus on sustainability as part of the framework.

The strategic elements recommended for the framework are:

- **Stimulating Demand** – Health and Sanitation Promotion provides the methodology.
- **Responding Appropriately to Demand** – Institutional Arrangements provide the vehicle.
- **Sustaining Systems** - Community Partnerships provide the context.

2.1 Emergent Themes

Emergent themes were identified during the initial stage of the investigation. These themes are listed below: (also refer to Chapter 3)

- Sanitation promotion should be adequately funded and linked to service delivery
- Sanitation co-ordination function must be designated within the micro-design
- City policy should be aligned with legislative and national policy requirements
- Criteria used to define adequate basic sanitation to be made clear
- Guidelines and details with regard to servicing the basic sanitation backlog should be in the WSDP
- Access to service for households located in rural areas, illegally on land designated for other purposes and those residing in temporary “transit” camps should be resolved
- Access to national conditional grants for clearing the backlog in informal settlements should be facilitated
- Alternatives to chemical toilets (given the high cost of servicing these toilets) are required.
- Social development and capacity building and incentives for community partnerships are imperatives for sustainability

2.1.1 Key Issues in Current Approaches

The outputs of the field-based investigation into current practice is summarised in **Chapter 3**, which includes baseline profiles reflecting current delivery approaches in four sites of study in the City of Cape Town. In **Section 3.2** a

summary of sanitation service delivery to the four informal settlements is presented in the form of a Photo Diary.

The following are key issues that emerged from gathering data on current approaches:

- Health hazards are common sights in these informal settlements
- It is evident that residents are concerned and actively addressing their needs to varying degrees
- After service delivery of either water-borne sewerage or buckets/containers, sanitation remains hazardous
- Evolving approaches and aspects such as costs and affordable options are being explored.
- Issues related to options mainly concern management (Ablution), Sharing (Units), Collection and disposal (Ecosan)
- Key issues impacting on Sustainability of programmes are emergent in site experiences, e.g. Khayelitsha's health promotion, Kayamandi's O&M solutions. Neither can have value nor be effective if reliant on externally funded efforts.
- Local Authority management and support for sustaining the value of health and sanitation promotion investments is essential.

2.2 Recommendations

Against the background of the strategic elements of the framework, the data from the four sites is reviewed in **Section 3.3** in the context of three programs that were identified as vehicles for alignment in planning.

2.2.1 Recommendations for Health & Sanitation Promotion

- The difficult and challenging task for the "soft", social and qualitative nature of health and sanitation promotion that seeks to change behavior requires **consistent application and continuity**, rather than once-off investments.

- Local authority adoption and support of **ongoing programmes is essential** to effective investment in promotional campaigns that have lasting value.

- Health and sanitation promotion must be firmly **linked to the particular technology** option with its ongoing operation and maintenance system. This will influence:
  - Targeted mobilisation of particular resident users/user groups;
  - Education materials and methods of communicating the purpose of technology options and their design as barriers to contamination;
  - Delivery elements that relate to health concerns (such as the location of facilities), including operation and maintenance inputs (such as on-site management of sharing).

- **Local authorities must link with local institutions and support local organisation** of ongoing health and sanitation promotion functions and activities. These need to be formally established and accountable, rather than left to externally funded short-term initiatives.

- A strategic programme will consider the **impact of health and sanitation promotion seriously** by deliberately tying health and sanitation promotion design and implementation firmly to:
  - Monitoring of the effective functioning of systems,
  - Evaluation of services in respect of health impacts.

- Environmental health staff are well-placed to carry out a **key support role in monitoring and evaluation** within sanitation promotion programmes.

- It is necessary to **align engineering and environmental health during programme planning** for hygiene behavior to impact on the effectiveness of sanitation systems,

2.2.2 Recommendations for Institutional Arrangements for Service Delivery

- Ongoing initiatives should focus on **improving the working environment and avenues for various stakeholders to work together** towards improving service delivery to the poor. Understanding the roles that various actors can and do play is an important product of collaborative efforts, reflected in the added value of initiatives such as the Provincial Stakeholder forum (e.g. the PSTT) and the approach of this project.

- Reconciling the national, provincial and the local strategy frameworks and integrating formal housing and informal settlement services **delivery strategies must be part of the IDP & WSDP processes.**

- Indications are that there is guidance needed in the **determination of operation and maintenance budgets**. This is a function of education cost, monitoring cost, the cost to balance system failure and the cost to upgrade the community self-coping potential.

- At project level the management of shared facilities and **local employment opportunities in service provision and maintenance** are key challenges to local authority, community and NGO partnerships.

- The social development imperatives beyond information sharing and “training” requires attention. **Project role development and capacity building** in project design is imperative to sustain community involvement and the development of partnerships.

- The substantial servicing costs of communal ablution facilities and containerized toilets provide **opportunities for SMME and workplace skills development** as poverty alleviation mechanisms.

- Public and private sectors must facilitate service delivery to the urban poor, improve their understanding of implications, and **develop mechanisms for ensuring benefits for the poor.** Key innovations relate to:
  - improving the regulatory environment of partnerships
  - developing contractual arrangements that result in services for the poor,
  - initiating collaborative service delivery arrangements that include small scale providers, NGOs and CBOs, and
  - institutional reforms to enable the participation of other stakeholders in service delivery.

2.2.3 Recommendations for Community Partnerships

- Partnerships are founded by working with people to understand the options open to them, which includes understanding of the use, operation and maintenance of the options. A partnership that seeks to increase local responsibility will **maximise local roles** in the interests of sustainability.

- Identifying the community capacities and skills that reside within the settlements will improve services by appropriate investment in **developing local roles and responsibilities that build on both active and latent capacities.**

- Understanding of the limitations and scope of the role of local social organisation in the informal settlement context will assist local authorities in making **provision to support communication and facilitation functions** appropriately.

- **Identifying existing community capacity for both informal deployment and formal employment of operation and maintenance** functions on-site has benefits for both service providers and the recipients of services.

- **Appropriate skills training, mentor-ship and ongoing support** may be effectively planned, targeted and implemented. Municipal officials and service providers may aim more accurately at building on local roles that are responsible for operation and maintenance functions.

- **Community-based contracts to support the formalization of partnerships** formed in the interest of sustainability of services will also add substantial value in providing employment opportunities in a situation of scarcity.

2.3 Features of the Framework

The Planning and Implementation Support Framework for Protocol Development that was developed during the course of this project focuses on:

- **Strategic Elements and associated Programs** of the delivery framework that contribute towards planning alignment and efficiency
- **Strategic Programs and associated Key Program Elements** towards implementation alignment and sustainability
- **Guidelines based on current best practice models** for the key program elements that can provide a basis for replication and effectiveness

2.3.1 Linking Facets

A summary of the outputs of applying the framework for Sanitation Service Delivery to Informal Settlements in the context of initial planning in Phase 1 is shown in Table 1 below:

Table 1: Linking facets of the Planning and Implementation Support Framework

Strategic Elements	Strategic Programmes	Programme Elements	Implementation Models & Guidelines
Stimulate Demand for Sanitation	Health and Sanitation Promotion	Targets	H & S Promotion Models
		Role players	
		Promotion Programmes	
		Monitoring and Evaluation	M & E Models
Inform and Respond Appropriately to Demand	Institutional Arrangements for Service Delivery	Team and Roles*	Planning Guidelines*
		Settlement Category-Investment/Technology Choice*	
		Delivery Framework	Procurement Models
		Operation and Maintenance	0 & M Models
Sustain Systems	Community Partnerships	Customer/User Roles	Capacity Building based on H&S Promotion and M & E Models
		Committee/Volunteer Roles	
		Community Contracts and local Employment in Infrastructure Delivery	Capacity Building based on Procurement Models
		Community Contracts and local Employment in Operation and Maintenance	Capacity Building based on O & M Models

The table linking the **Strategic Elements, Strategic Programmes, Programmes Elements, Planning Guidelines** and **Implementation Models** of the framework that is given above, requires that:

- Responsibility within the local authority for the three programs should be made explicit as a planning guideline.
- Proposed Service Levels (Technology Options) for the range of settlement categories should be made explicit as a planning guideline.

- The remaining programme elements are key features of four implementation models
- Implementation models are specific to technology choice
- Capacity building is specific to the sequence of implementation models.

2.4 Using the Framework in Context

The context of technology and role alignment for programme development is the starting point that is provided for in Table 2 and Table 3 below:

Table 2: Technology Options for SETTLEMENT CATEGORIES

<table>
<tr><td>Unencumbered Land***</td><td>No</td><td>Yes</td><td>Yes</td><td>Yes</td><td>Yes</td><td>Yes</td></tr>
<tr><td>Encumbered Land**</td><td>No</td><td>Yes</td><td>Yes</td><td>Yes</td><td>Yes</td><td>No</td></tr>
<tr><td>Private Land</td><td colspan="6">There is no legal impediment to use grants for municipal structure for the poor on private land. The grant is unconditional for poor on own plots or communal land. In the case of intermediaries (another owner), grants may be subject to intermediary contribution.*
Options as for unencumbered land</td></tr>
<tr><td></td><td>Buckets (25 l)</td><td>Containers (100 l)</td><td>Communal Ablution Facilities</td><td>VIP</td><td>Ecological sanitation</td><td rowspan="2">Condominium Sewer</td></tr>
<tr><td></td><td colspan="3">Shared/Communal</td><td colspan="2">Individual Dry</td></tr>
</table>

*** Criteria to be developed for unencumbered land options based on age and type of settlement, density of settlement and integrated service investment envisaged in the medium term. A rudimentary and Basic Sanitation Guideline is the process of being developed in the City of Cape Town.

** Criteria to developed for encumbered land based on age and type of settlement, density, risk, envisaged time frame for relocation and budget.

* Draft White Paper on Water Services – October 2002

Table 3: Roles within Spheres of Government and Departmental roles at Local Authority

Spheres of Government	. **Government** (NSTT with DWAF as lead dept) – Policy Strategy and Capital and Operation Cost (Equitable Share R86 p/m). Funding of Basic Services through Municipal Infrastructure Grants (MIG) **Provincial co-ordination;** Masibambane Water Services Co-ordination and Local Authority Support Programme , PSTT with DWAF as lead dept – Policy and Strategy roll-out, Capacity Building of District Sanitation Managers and Capital programmes for clearing backlog **Local government** Water Services Authority and Water Services Provider delivers basic sanitation services as per WSDP targets and **Protocol.**
Departments Within Local Authority	***Water Services Section/ District Sanitation Manager*** Co-ordinates Integrated Programme, Develops Guidelines and Manages Delivery Program, Service Provider Contracts and Budgets and Operation and Maintenance ***Health Department*** Manages Health and Sanitation Promotion Programme and M&E function ***Community Development Department*** -Facilitates Community Partnerships, SMME Development Training and Employment opportunities

2.5 Next Steps

The extent to which the programme elements and implementation models are technology and programme specific is illustrated in the tables that follow. These tables provide additional information for the programme elements (in the context of level of service/technology choice) for consideration during development of implementation models.

Table 4: HEALTH AND SANITATION PROMOTION

Monitoring and Evaluation *Reports*	**EHO,** **Attendants** **Clinics** **Complaints Centre**	**EHO** **Health Promoters** **Resource Centre**	**EHO** **Health Promoters** **Resource Centre**
Programmes Educational Resources/ Materials *For Worms, Waste Streams Methodology and Understanding Technology*	**-Promoters/Attendants Programme** **-Teachers programme** **-Clinic Programme** **Promotional Events** **Training Manuals** **Pamphlets** **Posters/billboards** **- Resource Centre**	**-Promoters programme** **-Household Programme** **- Schools Programme** **Promotional Events** **Training Manuals** **Pamphlets** **Posters/billboards** **-Resource Centre**	**- Promoters programme** **- Block Programme** **- School Programme** **Promotional Events** **Training Manuals** **Pamphlets** **Posters/billboards** **-Resource Centre**
Role-players	**EHOs** **Schools/Teachers** **Trainers** **Health Promoters** **Attendants/Staff** **Technical support**	**EHOs** **Schools/Teachers** **Trainers** **Health Promoters Technical Support**	**EHO's,** **Schools/Teachers** **Trainers** **Health Promoters Technical support**
Target /Context	**User Community** **Street Committees/ Neighbourhoods** **Youth groups** **Pupils/Parents**	**User Groups** **Street Committees /Neighbourhoods** **Pupils/Parents**	**Blocks or Condominium committees** **Pupils/Parents**
	Communal	**Individual Dry**	**Condominium**

The table above suggests a direct link between H&S Promotion and M&E in that a successful model provides for role-players with capacity to continue promotion and participate effectively in M&E to sustain the beneficial impact of the sanitation service.

Table 5: INFRASTRUCTURE DELIVERY FRAMEWORK

Operation and Maintenance	**Contract for effective facility management** **Dedicated budget for contract** **Service Monitoring system**	**Partnerships for effective service support** **Dedicated budget for service support** **Service Monitoring system**	**Partnerships for effective support and local maintenance** **Dedicated budget for service support** **Service Monitoring system**
Delivery Framework. *Managed by Water Services. Key partners: Health Dept and Community Development*	**Community Based Procurement strategy & Contract** **Integration of services approach** **Jobs creation and Capacity building for promotion, maintenance and monitoring roles.**	**Community based Delivery Strategy- targeting households** **Job creation and capacity building for promotion, construction, and maintenance support and monitoring roles**	**Contacted Bulk Connection & Community-based internal connections targeting blocks** **Job creation and Capacity building for construction and maintenance roles**
Technology *(2002 price ranges)*	**Ablution blocks** **48 families per block, 8 toilets per block** **Capital Costs - Up to R250 000** **Operating costs - R40 000 p/a** **R180000 p/a management contract** **Choice of site and levels of water supply critical** **Requires skilled and semi-skilled labour** **(City Council, Interview T. de Jager)** **Container (100 l) toilets** **Capital cost –R2000** **Operating costs-R4000 p/a** **4 families per toilet**	**VIP's** **R1200-R3000** **Check Groundwater conditions make provision for emptying, access and disposal.** **Up to R275 p/a** **Ecological sanitation** **R1800 -R4000,** **Provide for greywater disposal** **Community and Household Management of dehydrating emptying and composting and disposal/use - R1000p/a**	**Capital costs** **R3700 per stand** **Community pays R100 to connect (can be earned on project)** **Operating cost R168 p/a** **Reliable Water supply yard connections & grease trap required** **LA provides guidelines for installation and operation** **Communities do installation and connect to municipal manholes** **(Johannesburg Water (Pty) Limited)**
	Communal/Shared	**Individual Dry**	**Condominium**

The Delivery Framework table suggests that social development and poverty alleviation opportunities should be explored within the context of contractual arrangements for infrastructure delivery and O&M for each service level option.
The capacity for Operation and Maintenance (O&M) must be built during the delivery phase.

Table 6: COMMUNITY PARTNERSHIPS

Partnerships: Community Contracts and local employment *Operation and Maintenance*	**Management Contract/Franchise of Facility** **Service Quality Assurance** ▪ **Sanitation Service provider** ▪ **Attendants** ▪ **Security** ▪ **Operators/Plumbers** ▪ **Hygiene promoters**	**Quality Assurance & Mentorship** ▪ **Sanitation Promoters** ▪ **Sanitation Operators** ▪ **Sanitation supervisors** **Pit emptying/ Composting /disposal** **Support or SMME**	**Quality Assurance & Mentorship** ▪ **Sanitation Operators** ▪ **Sanitation Supervisors** ▪ **Sanitation Promoters** **Mid-block maintenance and connection support**
Partnerships: Community Contracts and local employment *Delivery Framework*	**Community Based Procurement strategy** **Service providers/ Contractors Employees** **(Hygiene promoters, Supervisors, Builders, Labourers, Plumbers)**	**Community based Delivery Strategy** **Service providers/ Contractors Employees** **(Hygiene promoters, Supervisors, Builders, Labourers)**	**Contacted Bulk Connection & Community-based internal connections** **Service providers/ Contractors Employees** **(Hygiene promoters, , Supervisors, Builders, Labourers, Plumbers)**
Committees and Volunteers *Social Good*	**Inform residents** **Location of facilities** **Facilitate local contracting, staffing** **Monitoring**	**Inform residents** **Facilitate local contracting, staffing** **Monitoring**	**Inform residents** **Facilitate local contracting, staffing** **Monitoring**
Customers/Users	**Personal hygiene** **Appropriate use** **Quality Assurance of service provided**	**Personal hygiene** **Appropriate use** **On site operation, maintenance**	**Personal hygiene** **Appropriate use** **On site operation, maintenance**
	Communal	**Individual Dry**	**Condominium**

The Community Partnerships table provides a framework for effective capacity building by identifying:

- Outcomes envisaged for participants who are not directly employed in the project but are essential to sustainability,
- Opportunities available for economic activity in the context of procurement,
- O&M and M&E as a basis for meaningful partnership in a community-based approach.

2.5.1 Linking Planning and Implementation Phases in the Framework

Table 2 below incorporates the outcomes of this investigation into Phase 1 of the proposed framework. Planning alignment is provided by stakeholder acceptance of:

- The overarching programmes and the key elements of each programme
- A local authority micro design that locates the responsibility for each programme within an appropriate unit* (Table 4)
- A broad guideline for level of service based on the category of informal settlement* (Table 3)

Table 7: A Planning Framework for Alignment and Efficiency – Phase 1

Entry Point	Not aligned to Policy		
Stage 1	Identify Strategic Elements		
Strategic Elements[1]	**Stimulate Demand for Sanitation**	**Inform and Respond Appropriately to Demand**	**Sustain Systems**
Stage 2	Investigate Current Practice – ***Identify Programs*** *of current delivery environment linked to strategic elements*		
Strategic Programmes [1]	Health and Sanitation Promotion	Institutional Arrangements for Service Delivery	Community Partnerships
Stage 3	Provide Planning Support – ***Identify program elements*** *that provide alignment at the planning stage*		
Programme Elements [1]	- Targets/Roles - Promotion Programs - Monitoring and Evaluation	- Team and Roles* - Settlement Category& Investment/Technology Choice* -Delivery Framework -Operation and Maintenance	-Customers/ Users Roles -Committee Roles -Opportunities for Contracts and Employment in Procurement, M&E and O&M

* Planning Guidelines to be made explicit as precursor to the development of Implementation models

The table below sets out Phase 2 of the framework which consist of following three stages:

- Identify appropriate implementation models in context of technology choice based on current best practice
- Pilot implementation models and develop guidelines from pilot evaluation
- Validate and institutionalize model guidelines within the framework for replication

This phase provides a coherent framework for translating policy to sustainable practice based on the planning alignment provided in Phase 1. This approach of developing and institutionalizing guidelines in context has important and positive ramifications for Quality Assurance and Performance Management down the line.

Table 8: Develop an Implementation Framework for Sustainability and Effectiveness

Programme Elements [2]	H&S Promotion Programs Monitoring and Evaluation	Delivery Framework Operation and Maintenance	Opportunities for Contracts and Employment in Procurement: M&E and O&M
Stage 4	Identify implementation models in context of technology choice and pilot. ***Identify appropriate implementation models*** *for key programme elements based on current best practice*		
Implementation Models[2]	H& S Promotion Models Monitoring and Evaluation Models	Procurement Models O&M Models	Integrated Capacity Building Model for H&S promotion, M&E, Procurement and O&M
Stage 5	Develop Guidelines for Implementation Models in context. *Evaluate pilot programmes to* **develop guidelines**		
Guidelines[2]	H&S Promotion M & E systems	Procurement O&M systems	Capacity Building and Social Development in context
Stage 6	Sustain Implementation Framework *Refine, Validate and* ***Institutionalise guidelines***		
Institutionalised Planning and Implementation Framework – **WSDP Protocol**	**H&S Promotion Framework**	**Basic Sanitation Service Delivery Framework**	**Community Partnerships Framework**

3. Research Methodology and synthesis

Research was conducted in three phases, as follows.

1 A comprehensive review of relevant literature,
2 An investigation of current approaches to delivery, and
3 The development of a conceptual framework for a strategic approach.

Within each phase of research, stakeholder validation allowed for responses to presentations of data, and for further input by the informants involved in current delivery initiatives. APPENDIX 1 provides an overview of the sequence and nature of stakeholder engagement that sustained the momentum of action-research and a summary of the outputs of each event.

Initially, a literature review of global trends, the South African national sanitation policy environment and local government approaches to basic service provision provided the starting point for investigation. A review of the current discourse on community involvement sought to define the areas of community activity that are crucial to sustainability. Recent documentation of local authority and NGO collaboration to address the challenges to delivery posed by informal settlements informed a baseline as preparation for further on-site investigation of current approaches.

Stakeholders with a direct interest in sanitation delivery identified four informal settlements in Cape Town to produce comparative data for the study. In each site, community demand for sanitation was established and local authorities were engaged in responding to that demand. An inclusive approach to the research involved key actors (officials, NGOs and community participants) in identifying the elements that need to be moved forward to guide more effective planning and action.

In the second phase, field-based research focused on establishing the extent to which the identified strategic elements form part of existing approaches. The objective of field visits, attendance of project meetings and stakeholder interviews was to look at what people are doing and hear what they are saying. Given an emphasis in the discourse on community involvement, one research objective was to identify both institutional and community level roles and responsibilities in the three strategic elements of delivery that emerged from the literature review.

The third and final phase of research and analysis pursued the alignment of Key Strategic Elements with programme strategies. Key elements of programmes were identified in order to complete the construction of a Conceptual Framework for the provision of support for planning by local authorities.

Finally, a Stakeholder Reference Group comprising mainly city officials from key departments was invited to gather for validation of the overall outputs. The construction of concepts, terminology and the organisation of data was cross-checked, and several adjustments in the presentation of the outputs and synthesis of the research have been made accordingly, to enhance the usefulness of the product.

The synthesis of the three Progress Reports emanating from this study serves to summarise the incremental research process and outputs, while the product of the Planning and Implementation Framework is offered as a working tool for application by city officials and their partners. [1]

[1] The detailed Progress Reports 1, 2 and 3 are available on request for those who are interested, available from CWSS Unit, Peninsula Technikon/ Water Research Commission or authors)

3.1 Literature Review: Key Elements of Strategic Sanitation Approaches

In developing a protocol for provision of Basic Sanitation Services to peri-urban settlements, the research dealt with international trends, our national policy framework and the City of Cape Town initiatives for servicing the poor with basic services in general and sanitation in particular. In reviewing the City's approaches and initiatives for basic sanitation delivery in this context, the elements of strategic value to a basic sanitation protocol become apparent.

The review of current international research on strategic approaches to delivery highlighted that sanitation strategies need to be **demand responsive** but must also recognize the ways in which **supply-related factors** affect the options for change. Response to demand does not necessarily mean accepting that demand in the form that it is first expressed. Rather, it means entering into dialogue in order to deepen understanding so as to arrive at a shared view of the way forward**.** This suggests that the process of sanitation provision must include action to:

- Assessing and creating demand for sanitation;
- Informing and responding to that demand, with regard to appropriate options;
- Achieving their objectives and sustaining the improvements.

The danger with this approach is that assessing; informing and responding to demand will continue to be a top-down supply-driven process. Methodologies that use the knowledge and skills of the various stakeholders in ways that are appropriate to the task in hand need to respect the way in which the knowledge that is drawn from experience, and the skills for applying lessons, are distributed amongst the stakeholders.

In doing this, it is necessary to allow for the fact that there is often an apparent lack of demand for sanitation services provided through government programs. Is the problem one of absolute lack of demand or is it that government programs are not offering the right products?

In pursuing the development of a model for protocol for service delivery to informal settlements the work done by GHK Research & Training LTD (Strategic Planning for Municipal Sanitation, July 2001) on "Strategic Approaches to Sanitation Delivery" (GHK) provided the basis for a focus on three Key Strategic Elements. The initial investigation in the first stage of research confirmed the strategic elements of a protocol as:

- Stimulate Demand
- Inform and Respond to Demand
- Sustainability

Each of these elements is discussed below in the context of the literature review phase of research.

3.1.1 Stimulate Demand

Development experience has demonstrated that in circumstances where there is no sanitation or inadequate services, assessment of both physical and socio economic conditions is necessary. It is a well documented and widely shared experience that initiating change by provision that is not responding to a "demand" for those changes, in the sense of a conscious desire, choice or aspiration, is doomed to misuse, abuse or vandalism.

Global sanitation initiatives advocate a community-based approach, described as a "commitment to building on people's energy and creativity", and an approach in which "households and communities take the important decisions and actions" (WSSCC, 2001).

Since the publication in 1994 of the *White Paper on Water Supply and Sanitation Policy*, in the draft *National Sanitation White Paper* of 1996 (DWAF, 1996) and subsequent revisions, our policy principles consistently promote a demand-driven approach. In the *Framework for National Sanitation Strategy* (Annexed to the revised White Paper) the centrality of "a community-based approach" is re-affirmed and given form as guidelines. Four elements to be included in addressing hygiene, and four training activities to be included in capacity building suggest that the "developmental approach" leans heavily on education and training (DWAF, 2001).

Previous research of practical applications of these principles across the country flags the need to intensify efforts to apply community development principles. By way of example, a 1998 evaluation of three study areas where basic sanitation interventions were conducted, reported that "people have been under-consulted….and under-educated about the use of the system they possess" (Dunstan et al, 1998:.47). Further research into the difficulties of provision and maintenance of services in dense, informal settlements has re-iterated that, "service provision has historically not involved detailed discussion with the community" (Wood et a, 2001:12). By 2001 research outputs provide scant evidence any substantial progress in practice.

An investigation into these constraints (Pybus et al, 2001) has suggested that an application of indicators of adequate communication procedures and mechanisms may provide a way forward. Such indicators are linked to stimulating demand within assessment, consultation and information transfer phases of a project cycle, and may be broken down as follows:

- Establishment of a go-between that links providers and users;
- Interaction between parties that aim at interpreting messages and making them clear;
- Provision of substantial support for dealings and information transfer;
- Advice to change agents by the user-community on the choice of medium for messages, settings, and context for communicating (Pybus et al, 2001).

This study suggests that the quality of project communication requires considerably more attention. In addition, adequate follow-through of support provided for these essential functions should be monitored and evaluated.

A wealth of information and experience has contributed to the knowledge base available to planners and practitioners alike (Simpson & Wood, 1998; Duncker, 2000; Soul City et al, 2001). Funding is accessible for knowledge practices to unfold in the context of efforts to address South Africa's sanitation backlogs. This is available via national and provincial programmes to support accelerated delivery as well as from international funders participating in the current drive to address the global sanitation crisis.

Stimulating demand through health and hygiene education is accepted as a key aspect of sanitation projects because the aim of services is to ensure real health benefits from projects. In the context of sanitation, health and hygiene promotion and education is defined as all activities aimed at encouraging behaviour that will maintain the conditions that prevent contamination and the spread of sanitation related diseases.

From this definition it is clear that health and hygiene education entails different activities for different groups of people, and programmes that will differ according to the context.

3.1.2 Inform and Respond to Demand

A strategic sanitation approach must take account of fundamental concepts and principles and be based on a realistic assessment of the opportunities and constraints presented by the present situation. Plans that concentrate on the overall picture and the need for large investments are often based on unrealistic assumptions with insufficient consideration of how benefits will reach people on the ground. A prevailing emphasis on rules and procedures leaves little room for the problem-solving analysis of logical planning processes that are generally supported by external agencies. The limited powers of NGOs and the tendency for small-scale, piece-meal activities that operate outside any overall planning framework, leave such initiatives unsustainable beyond the cessation of external support.

Government's aim to clear the sanitation backlog within the next 10 years was extensively discussed at national conferences during 2001 and 2002. Given the daunting challenge of an estimated 3 million households yet to be served, a strategic approach has been conceptualized. The unique characteristics and complexities of working in informal settlements in particular necessitate collaborative efforts in the delivery of basic services.

In general the constraints that an implementation strategy has to overcome are:

- Financial: how to finance and target the supply of free basic services in a sustainable and efficient manner;
- Socio-political: how to establish successful communication and co-operation between consumers, councillors, local government officials and different spheres of government;
- Institutional: how to develop the required organisational capacity and working relationships between different institutions
- Technical: how to choose the appropriate technical and service level options to facilitate free basic services.

In efforts to accelerate delivery to the poorest sectors of society an increasing number of urban poverty programmes and projects include measures to increase access to essential services. These measures focus on three key aspects:

- Review institutional arrangements, policy frameworks and regulations to develop alternative strategies and pilot models for delivery to the urban poor;
- Increase de-centralisation of decision-making, management and delivery to enable working partnerships between public and private stakeholders that undertake change, including the accommodation of community management;
- Develop and disseminate appropriate technical innovations, learning through pilots and increasing the range of options that can be adapted for serving the poor.

3.1.2.1 Basic Services to the Poor

The National Framework for Basic Services Provision demonstrates that in South Africa we have the political will and policy framework to address the challenge of providing Basic Services to the poor. Socio-political considerations suggest that attempts to link action at the policy, municipal and local levels should be founded on building consensus among the various stakeholders on the way forward. To ensure that sanitation reaches households in an effective manner, it is suggested that sanitation planning, implementation and monitoring are co-ordinated on National, Provincial and Local levels through dedicated co-ordination forums.

Governments (national and local), working in partnership with other actors should review policy frameworks and regulations (e.g. Housing, Land, Local Government Water, Public Health), and develop alternative strategies for ensuring access to services for the urban poor. Governments (national and local) should facilitate the review and development of models for water and sanitation service delivery. This requires a fundamental review of existing arrangements and the piloting of models that facilitate improvement of environmental sanitation by linking water and sanitation more deliberately.

According to the guideline, ” Targeting Poor Households in the Provision of Basic Municipal Services: *A Guideline for Municipalities*, Department of Constitutional Development, 1999”, basic municipal services, typically include:

- access to a minimum safe water supply;
- adequate sanitation;
- solid waste removal;
- access to household energy;
- protection from flooding (adequate drainage and stormwater management);
- mobility , locally and to areas of economic opportunity (access to and availability of roads and public transport); and
- facilitation of community activities (access to libraries, community halls and recreation facilities).

A free basic services policy for the indigent requires a wide range of issues to be addressed both nationally and locally to enable successful implementation of a complex task. The process of implementation will also differ across municipalities. Given the very different income and service level profiles of municipalities some will

find it relatively easy to implement the policy while others will face severe constraints.

Provision for the right of access to basic water supply and to basic sanitation is made in *The Water Services Act (Act 108 of 1997*). Regulation 2, together with Regulation 3, defines basic sanitation and basic water supply respectively and, thereby, give effect to the relevant sections of the Act. Delivery models for water to the poor are set out in detail in Free Basic Water guidelines by the Department of Water Affairs and Forestry at national level, as follows:

- Department of Water Affairs and Forestry, 2000: *Water Supply Service Levels: A Guide for Local Authorities*, DWAF, Pretoria.
- Department of Water Affairs and Forestry May 2001*: Free Basic Water Implementation Strategy***,** version 8.3, DWAF, Pretoria.
- Department of Water Affairs and Forestry June 2001: *Free Basic Water Guideline for Local Authorities,* DWAF, Pretoria.

While these guidelines have been implemented in Water Services Development Plans (WSDP), basic sanitation delivery is not covered in any detail.

There is a broad policy decision to supply free basic sanitation, but neither a definition of 'free basic sanitation' nor a detailed policy framework is yet in place. In certain situations there may be difficulties in reconciling current sanitation policies with a free basic water strategy. For example, if poor households have waterborne sanitation some proportion of their free water allocation will be used for flushing. Often water and sanitation are dealt with by the same departments at the local level and financial viability of one service may affect the other. The free basic water policy therefore may have negative impacts on the provision of sanitation and local authorities will have to consider the implications at the local level. This issue of integration of a free basic water policy with a possible free sanitation policy is being given urgent attention by DWAF.

The national sanitation policy of September 2001 sets out the following as principles for success in the national sanitation strategy.

- A **developmental approach** will be followed which is community based, creates construction jobs for local community members and emerging businesses and enables communities to sustain the services with support from local government.
- **Integrated planning** will take place within the Integrated Development Planning/strategy processes. The process will demonstrate the sustainability and acceptability of the various sanitation technical options. This approach should encourage local government to target the resources available so that everybody has access to at least a basic level of service and not leave some with high levels of service and others without any services at all.
- A **dedicated conditional grant** will be provided to local government with the aim of clearing the backlog. This is to ensure that the momentum needed to clear the backlog is maintained. The conditional grant will be subject to clearly defined norms and standards.

3.1.2.2 Water Services Development Plan (WSDP) - Case of City of Cape Town

The provision of basic services to informal settlements on private land is currently under investigation in the City with the view to producing a policy early in the 2002. At this stage, legal advice sought by the City in the recent Doornbach, Blaauwberg case discourages the supply of any form of services to such areas.

The City has set basic services delivery as one of the four political priorities in its Integrated Development Plan (IDP). Equitable, affordable and sustainable service delivery to all areas within context of an agreed package of service is identified as a critical policy issue that needs to be concluded. In addition, specific areas of need such as the provision of services to informal settlements is identified for "accelerated attention".

The reasons for the lack of services in certain City of Cape Town areas are mainly due to the following:

- the illegal occupation of land designated for other purposes and cannot therefore be formally serviced,
- consumers located in rural areas where there is no access of bulk water and sanitation services,
- the perception that some areas are used as temporary "transit" camps, where people reside before settling on a formally serviced site,
- the affordability of high levels of services.

With regard to corporatization of trading services, the following provisional program has been approved by the City's Executive Committee for Water and Sanitation, Electricity and Solid Waste Disposal subject to the outcome of proposed studies.

- Establish the Ring fenced Business Units by July 2001
- Commence the studies referred to above by July 2001
- Conclude studies by January 2002
- Establish corporatised entities as Companies by July 2002

Section 3 of the Water Services Act that states that, "Everyone has a right of access to basic water supply and basic sanitation", subject to certain limitations as set out in the Act including "the availability of resources", as indicated in section 11.2. The City of Cape Town is in the process of drafting a Service Delivery Strategy, for the provision of basic services. The overall objective is to extend water services as rapidly as possible to all potential customers. The service levels that are recommended in Water Services Development Plan (WSDP) of the City of Cape Town are shown in the table below.

Table 9: Service Level Categories (Source CCTWSDP,2001)

Category	Water
Basic	a) the provision of appropriate education in respect of effective water use; and b) a minimum quantity of potable water of 25 litres per person per day: ▪ at a minimum flow rate of not less than 10 litres per minute; ▪ within 200 metres of a household; and ▪ with an effectiveness of not more than 7 days interruption supply to any consumer per year. This service is usually provided through communal taps (standpipes)
Intermediate	Yard Tap, Yard Tank
Full	House connection
	Sanitation
Basic	a) the provision of appropriate health and hygiene education; and b) a toilet which is safe, reliable, environmentally sound, easy to keep clean, provides privacy and protection against the weather, well ventilated, keeps smells to a minimum and prevents the entry and exit of flies and other disease- carrying pests. *This service includes VIP's, Formal black bucket, Container and Chemical Toilet usually provided as a communal service.*
Intermediate	Communal Toilet (Ablution Facilities)
Full	On-site Waterborne, Septic Tank or French Drain

Current coverage is reflected in a general percentage distribution of households with inadequate water and sanitation services. According to results of the 1996 census the majority of un-serviced are located along the N2 corridor near the Cape Town International Airport. APPENDIX 2 provides summaries of backlog and levels of service data, drawn from current and available official documentation.

Survey results are summarised in the table below for water and sanitation services respectively.

Table 10: Informal Consumers with no access to basic water services (source**:** CCT WSDP 2001)

"Ownership"		**Water**	**Sanitation**
Private	No. of households	10 500	16 000
	% of informal households	11.4%	17%
	% of total no. of households	1.7%	2.5%
"Council"	No. of households	7 600	37 100
	% of informal households	8.4%	41%
	% of total no. of households	1.2%	6%
Total	No. of households	18 100	53 100
	% of informal households	20%	57.7%
	% of total no. of households	2.9%	8.5%

A recent survey commissioned by DWAF as a Needs Assessment (DWAF, May 2000), of which the results are summarized in APPENDIX 2, indicate that there are approximately 92 000 informal households (from a total of 622 000 consumers). All existing formal houses have adequate water and sanitation services but the planned provision of formal houses is inadequate to reduce the housing backlog.

According to the WSDP, provision of basic services to households living in informal housing is expected to require an expenditure of about R5 million per annum. (There are approximately 18,100 households without adequate water services and 53,100 households without adequate sanitation services at present.) The City intends to provide at least basic water and sanitation services to all households within the City subject to legal constraints (many informal settlements are situated on private land). The actual investment requirement is subject to change due to the dynamic nature of informal settlements – with changes in location and anticipated growth in informal settlements due to the housing backlog.

In the aftermath of the dispute between the Blaauwberg Administration and a private landowner with regard to responsibility for providing rudimentary services to an informal settlement on private land, the Management of Trading Services of City commissioned the Manager of Development to investigate policy on service provision to informal settlements. The services package under investigation included water, sanitation, roads, storm-water and solid waste. The sanitation group included representatives from each of the Unicity substructures. With health and engineering staff interacting on fundamental policy issues and strategy the exercise has thus far proved to be a positive experience for the participants.

The flood disaster on the Cape Flats in the winter of 2001 and the associated disaster relief demands splintered the group and the delayed progress. A discussion document was completed by the co-ordinator in December 2001.

The draft document has been circulated for comment. On the basis of the comments received from the team members, the next stage of the policy framework will be tackled. The draft document suggests that sanitation protocol be developed to "merge technical provision and social promotion approaches" for appropriate, optimum and sustainable sanitation services.

Some key issues that emerge from examining the current delivery environment are:

- **Alignment** of the City of Cape Town (Unicity) policy to legislative and national policy requirements; and
- **Delivery mechanisms**, including:
  - Development of appropriate delivery mechanisms and timeframe for basic sanitation service delivery,
  - **Location of responsibility** for sanitation co-ordination within the Unicity micro-design, and
  - **Alternative servicing**, such as to the R100 million bill (N. Hendricks, 2001) for servicing chemical toilets in the Unicity.

Bucket systems and shared facilities as proposed by the City do not subscribe to what is considered adequate by the national sanitation policy requirements. The notion that shared/communal facilities can be considered adequate sanitation should be reviewed against the background of the evidence of general disrepair across the city. Investment in shared or communal facilities does not translate into household access without sustainable organization and management.

Appropriate health and hygiene awareness and behaviour; a system of disposing human excreta, household wastewater and refuse which is affordable, safe and hygienic, easily accessible and that does not have a negative impact on the environment, and the provision of a toilet facility for each household are the minimum standards prescribed by sanitation policy. This suggests that the basic services backlog in the City is the full complement of informal settlements.

With regard to developing a Strategic Approach to Basic Sanitation Services for the poor, the following aspects in the City of Cape Town's WSDP require attention:

- The estimation of the backlog and the extent of its potential increase.
- The criteria used to define adequate basic sanitation
- Detail and guidelines with regard to servicing the backlog
- Delivery Mechanisms that recognize the social development imperatives of the basic services investment.

3.1.2.3 Financial Implications

The current estimate of 92,000 informal housing units in the WSDP is in line with the DWAF Sanitation Needs Assessment (DWAF, 2000) and the estimates of the First Order Water services Strategy estimate (DWAF, 1996). The informal housing stock will continue to grow with a growth rate of 3.25% in the metro (including the conservative in-migration estimate of 40 000; Wesgro, 2000) and an increasing housing backlog (the backlog increased by 35 000 units since 1996; PAWC, 2001).

Although reference is made to a strategy development process being underway, an annual investment of R5 million on basic services is proposed without a timeframe for clearing the backlog.

The introduction of an equitable share of nationally raised revenue for local government is intended to help municipalities to provide basic services to poor households. The size of the grant is determined by the number of poor households multiplied by the estimated annual operating cost of providing basic services. Poor households are defined as those with a total income lower than R800 per month. The estimated costs of provision are taken to be R86 per month based on an average household size of 4.5 people. The amount of R86 will be fully phased in over five years in urban areas, and seven years in rural areas.

The provision of waterborne sanitation increases water consumption, raising the bills of low-income consumers. Some poor households may not be in a position to pay this an additional amount to their water bills, and there are limits in the extent to which other consumers can cross-subsidise the service.

The long-term financial implications of the sanitation options need to be assessed. Among the issues to be considered in the proposed assessment by City of Cape Town (CCT) are the following:

- Affordability of monthly bills to consumers,
- Consumers willingness to pay for the service levels provided and accept the tariff increases that may be necessary,
- Non-payment levels,
- delays in the need for bulk capacity expansion,
- Unaccounted-for-water losses.

The high operating costs of black buckets, chemical toilets and management of communal facilities have not received attention in the WSDP. The efficiency and sustainability of supply driven basic services requires attention as the drain of substantial operating costs paid to suppliers outside the community precludes opportunities for social investment and poverty alleviation.

3.1.2.4 Technology choice

While technology is an important issue, closely related to demand, choice is bound to the most appropriate sanitation system to be used in any given situation. It is commonly assumed that choice requires that people are given a range of priced sanitation options, offering different levels of service, from which they can chose. Research suggests that this is a flawed concept.

The variations in level of service offered by different sanitation approaches are less than might appear the case at first sight. It could be argued that there are variations in levels of service between different versions of a basically similar technology. The guiding principles are that that the technology must be appropriate to the local environment, to the needs of the people, the economy and to health.

Sanitation provision systems are often inflexible, poorly responsive to demand and driven by perverse incentives and it would seem that the scope for the implementation of a strategic approach to sanitation is very limited. Rather than trying to achieve the ‘strategic approach’ in one jump, the aim should be to identify the opportunities that exist for moving incrementally towards more effective overall planning and action. **The key question here is when do such incremental movements become part of a strategic approach rather than individual ad-hoc interventions with no clear strategic goal in sight?**

Further development and dissemination of "good practice" in technological innovation will spread the use of appropriate options and mainstream this knowledge. Actions include documentation and disseminating good practices, developing refresher and standard course in institutions of higher learning, including innovation/learning components in projects. Learning through pilots, creating incentives for private sector to innovate and increasing the range of options for serving the poor requires strengthening of learning and dissemination on key principles of technological innovation to allow adaptation to other circumstances.

3.1.3 Sustainability

International advocacy and national policy embraces a social definition of sanitation and the principle that households and communities are central role-players. While there is broad agreement that community-level actions are key to effective and sustainable sanitation, inadequate implementation of this principal remains a frequently cited cause of failure (WSSCC, 2001). In response to expectations that community action will compensate for socio-economic constraints beyond the control of those experiencing the failure of services, the practical implications for effective planning are explored.

The White paper on Basic Household Sanitation includes a section on institutional arrangements that re-iterates the inclusion of "households and communities (first and foremost)" as central role-players (DWAF, 2001:10). The roles and responsibilities of tiers of government, various departments, the private sector and NGOs are spelled out. However, guidelines for community-level institutional arrangements are yet to be developed beyond the broad facilitation and communication function of representative Project Steering Committees.

Previous research suggests that longer-term benefits will result from investments in the provision of adequate support for ongoing relationships between all the partners. In this regard there are two recent South African studies that may assist in clarifying the capacities for sustaining systems that are best built on a community-level.

Pybus, Schoeman and Hart's study on levels of communication in service provision, focuses on effective communication as a key aspect of all phases of the project cycle. An implication for capacity building, defined as "an overarching concept for awareness creation, participation, knowledge transfer and training", is that reliance on local Committees is misplaced (Pybus et al, 2001:34). The study suggests that the degree to which local Committees are expected to reach all the target groups and deal with multiple issues within communities is unrealistic. It is pointed out that local Committees "do not have the finance, infrastructure or other resources to deal effectively with all aspects of a project…", which need different levels of responses (Pybus et al, 2001: 26).

A study on rapid capacity building by Rossouw and Crous suggests that investing in community-based resource centres or local "hubs", to enable service related tasks and community-level functions to be carried out more competently, is cost-effective in both the short and long term (Rossouw & Crous, 2000).

Both studies have illustrated a strong case, in that costly promotions and training inputs have dubitable benefits if not invested in clear, ongoing, concrete and manageable roles. Providing resources for capacities that are located close to the day-to-day elements of sustainability may achieve both short-term benefits of mobilization through awareness drives and once-off training interventions, while enabling the longer-term building of capacity over time.

Key sustainability issues identified in the studies of both rural and peri-urban cases of sanitation provision are inextricably linked to community-level responses to delivery, and the potential for roles and responsibilities to be formalised on a community level. Opportunities for collaboration between community (users) and local authority (providers) entails an understanding of the potential and the limitations of household users and local organisation in actively taking up the responsibility for improving and sustaining sanitation systems.

Field-based enquiry therefore focused on what community members in local project sites do to contribute to the sustainability of sanitation systems, as individuals, organised groups or entities.

4. Investigating Current Practice in the City of Cape Town

The literature review explored the strategic elements as appropriate guidelines for analysis of the field-based research of current approaches to service delivery. Key Strategic Elements were applied as the yardstick by which to measure what is lacking in current approaches and what needs to be included in programmes, provided a focus for field-based investigation.

Subsequent research and analysis focused on establishing the extent to which the identified Key Strategic Elements form part of existing approaches. The chapter below introduces the four study sites in a visually presented overview as a summary of initial community profiles and emerging delivery issues. The data produced highlighted the continued existence of health hazards in each context, the technology options applied and the attempts that were made to address the needs of communities.

4.1 Summary of Community Profiles and Current Delivery Approaches

Sanitation delivery approaches were investigated in four peri-urban informal settlements that were identified by stakeholders participating in the Peri-Urban Strategy Workshops conducted by the Provincial Sanitation Task team (PSTT). Each is a case where community demand for improved sanitation was established, based on stakeholder reports of “community ripeness”. In each case a local authority and NGO partnership was engaged in responding to this demand.

A summary of the community profiles and current approaches to sanitation delivery, as data that was produced during the second stage of the research project, is presented as a Photo Diary of the four case study sites. The selected pictures and comments serve to summarize the common themes emerging from local authority approaches and community responses to delivery.

In **Khayelitsha - Site B**, the *Khayelitsha Task Team (KTT)* had initiated a de-worming programme in 12 schools in response to a 95-98% worm infestation at primary schools. The collaborative task team facilitated participatory research into the causes of worm infestation thereby stimulating community demand for improved sanitation. The KTT consists of:

- Parents and teachers of the school community
- The Western Cape Department of Education
- The City of Tygerberg Health Services – Environmental Health Officers
- The Western Cape Department of Health (Health Promoting Schools programme and nurses)
- The Healthy Cities Project of the Cape Metropolitan Council
- The Public Health Program of the University of the Western Cape
- The Peninsula School Feeding Association
- The Medical Research Council
- The Parasitology research Program of the University of Witwatersrand

In a Review of Waste Management in Khayelitsha (Liebenberg et al, 1999) the following issues were raised in respect of dense informal settlements: poor infrastructure; problems of poor access to closely packed shacks; and a lack of bins for waste collection. These problems were reportedly overshadowed by a consistent emphasis on the lack of sanitation facilities.

Kayamandi, situated in Stellenbosch, is one of nine test cases conducted nationally by the Department of Water Affairs and Forestry, in collaboration with local authorities and supported by Danida (Danish Aid). The analysis of water stream pollution in the *Kayamandi Test Case: Managing the Water Quality Effects from Settlements*, highlighted the issue of maintenance of shared Ablution Blocks. The project attended to community-level roles, responsibilities and local organisation in seeking solutions to servicing the over-burdened facilities. At the time of the investigation, the local authority had not yet taken up proposed plans to improve local management, repairs and reporting of breakdowns in the system through a local Complaints Office.

Joe Slovo, situated in Langa, was a pilot collaborative project of the City of Cape Town, the *Ukuvuka Firestop Campaign*, in response to repetitive fire outbreaks affecting the overhead ESKOM power-lines. The informal settlement is relatively near to central Cape Town, close to places of work and employment opportunities. Services were typically minimal in this previously uncontrolled development on 28 hectares of land. The national Botanical Institute (NBI) partnered a *Greening Project* initiative to facilitate the removal of shacks from under the ESKOM servitude. In response to a demand for sanitation in addition to access roads, electricity and fire-hydrants, the local authority and NBI coordinator of the project attended Provincial Sanitation Task Team (PSTT) meetings to investigate the potential for sanitation service delivery.

Imizamu Yethu, situated in Hout Bay, is a self-built, semi-serviced area with an estimated 7,000 residents. Active street committees and a local Civic Association manage the allocation of plots and negotiate inputs for basic infrastructure and services. The South Peninsula Administration first investigated the development of access roads and improvements were contracted to consultants with a budget from the Provincial Administration of the Western Cape. The South Peninsula Administration engineer subsequently engaged local authority departments, provincial authorities and the collaborative *Ukuvuka – Operation Firestop Campaign*

for funds and support to improve service provision, and managed the appointment of a consultant to implement an integrated project plan that included sanitation.

In both Joe Slovo and Imizamo Yethu, sanitation was not the central focus of integrated service delivery interventions by the local authority. Whereas in the Water Quality Effects (Kayamandi) and Worm infestation Khayelitsha) interventions, poor sanitation retained primary urgency as a major block to addressing the causes of severe problems and to further progress of the projects. Both of the latter projects were funded from external resources.

The following are the key issues that emerged from the initial field-based research of current approaches to Sanitation Demand and Delivery:

- **Health hazards** are a common sight in all these informal settlements;

- **After Service Delivery** of water-borne sewerage, containers or buckets, individual units or ablution facilities, sanitation remains hazardous in posing a health risk,

- **Technology option issues** are largely about Operation and Maintenance (Ablution Blocks), Sharing of individual units (Containers), and the collection and disposal of faeces (Ecological sanitation);

- **Maintenance** is visibly a key issue in all sites;

- **Sustainability** issues that impact on the effectiveness of programmes are evident in all sites;

- **Residents are concerned** and actively addressing their needs for sanitation to varying degrees, seen in the evidence of self-provided pit latrines, degrees of quality of cleaning regimes, managing of access and locking of shared individual units;

- **Density** is a common problem to all these informal settlements and is associated with the poor sanitation infrastructure and overburdening of facilities.

4.2 Analysis of approaches in Four Case Study Sites

Khayelitsha - Site B

- KTT initiated a de-worming programme at primary schools
- Lack of bins for waste collection
- Emphasis is on a lack of sanitation facilities

Health Hazards

- MRC highlighted the lack of proper sanitation
- EHO pointed to the severe health risk incurred by faeces
- MRC tested 316 children, 96% had worms
- A survey of 12 schools showed between 80-100% children had worms
- Faecal material is common on the ground, soil was found to contain worm eggs

Addressing Needs

- De-worming programme - 1999
- Pilot schools identified causes of infestation in environment.
- Pilots sites comprised 25 houses next to *Ikhusi* , 25 houses next to *Vunzamanzi* primary schools
- Aim to extend awareness and education into the broader community
- Sanitation options needed

Technology Options

Ablution Facilities

- Shared by estimated 350 people/day
- Two attendants are employed to manage local use of facility
- Local contractor services has improved vandalism

Container toilets:

- EHO is monitoring facilities, user education (initiated campaign)
- Collection services once a week
- 5-8 families share one unit
- Locking and cleaning is managed by sharing households

KTT: Exploring Options

- Urine Diversion option - testing
- Mvula Trust funded the supply of materials for units,
- Volunteers households undertook to erect toilet themselves
- Disposal of faeces is an issue

Other options under consideration

- Enviro-loo and Ecosan

Kayamandi, Stellenbosch

- Densities of over 60 dwellings/hectare – little space for additional infrastructure
- Estimated population of 22 000
- Served by 29 ablution blocks
- Approximately 500 people/ ablution block
- Settlement built on top of

Health Hazards

- Inadequate use of toilet facilities
- Toilets too far from houses
- Shared toilets' keys are not always available;
- People use the surroundings/ bushes or own containers
- Blockages and overflows occurs frequently
- Poor reporting systems
- Lack of repairs and

Addressing Needs

- Operation and maintenance of facilities identified as key issue in Problem Tree analysis (workshop)
- Danida/ DWAF project initiated rehabilitation of sanitation facilities,
- Training of 13 plumbers to repair, employment of 30 cleaners to maintain facilities
- Project trained 26 volunteer health workers for hygiene promotion.
- A range of materials were developed and disseminated.
- Program was monitored and evaluated

- Ablution systems rely on daily users, group sharing and voluntary maintenance inputs.
- Introduction of toilet block supervisors drawn from users
- Health awareness campaigns aimed to change behaviour
- Establishment of a local Complaints office, a local Project Manager to improve reporting
- Commitment from community and local authority required to ensure sustainable solutions

Joe Slovo, Langa

- City of CT's collaborated in an Ukuvuka Firestop Campaign, to address fire hazard (of shacks) under ESKOM power-lines
- Sanitation delivery was not planned - self-provided pits only
- Children playing in Canal that is contaminated

Health Hazards

- Faecal contamination in evidence - faeces visible in the canal, in plastic bags
- 50% of the residents have diarrhea , 37% infested with worms. (C. of C.T. survey)
- Community used canal, the bush or the toilets in another area
- Some households built their own pit toilets of varying quality

Technology Options

Self-Made Pits

- This is one of the best-made Pit Latrine Toilets.
- Pits are up to 3m deep.
- A ladder is used to dig the hole deeper.
- Pits have no ventilation

Container toilets

- The container toilets are erected in single rows due to density.
- Notice on toilet door explains how sharing to be managed, and unlocking for times of weekly collection.
- There are four households sharing each unit
- One householder keeps the key.
- The number in the door is that off the household-keeping key.

Imizamo Yethu, Hout Bay

- Density - Access to dwellings is limited
- Land shortage – space for infrastructure limited
- Sporadic and uncontrolled development
- Estimated 7 000 residents

Health Hazards

- Widespread use of unhygienic bucket system
- No doors or broken doors on top structures of existing facilities, seats in disrepair
- Density causes constant potential hazard with respect to fire control and health
- Grey-water and solid waste contamination is evident

Technology Options

Self-Made Pits

- Some toilets are informally self provided
- No doors on the top structures
- Uncontrolled development and abandonment of pits are evident

Bucket System

- Buckets are regularly serviced by a local contractor and are in use

Water Borne

- Inadequate, overburdened use of toilets is evident
- Blockages and overflows occur
- Leaking pipes, sewage reaching the river
- Lack of ownership of existing facilities
- Vandalized facilities
- Poor maintenance

Addressing Needs

- Storm-water drainage problem (between houses on steep route to ablution facility) is included in current plans
- New Ablution Blocks: cost is R200 000 including servitude (underground sewer pipes and manholes)
- Health campaign, before and after completion of ablution facilities is planned
- Proposed janitor system at ± R250/week to keep ablution facilities in a hygienic condition
- SME development envisaged for servicing facilities

5. Strategic Programmes and Programme Elements

Investigation of the extent to which key strategic elements are manifest in the current delivery environment has confirmed that three programme streams requiring guidelines are:

- Health and Sanitation Promotion,
- Institutional Arrangements for Service Delivery
- Community Partnerships for Sustainability

The strengths and shortcomings of delivery approaches in the four case study sites provide ample learning material for defining programme elements that may be applied as yardstick by which to delineate areas of focus for the effective planning of programmes.

The analysis of current delivery approaches as discussed below highlights those elements of programmes for further refinement. As initial guidelines these essential elements will allow planners and project teams to measure the fit of programme activities with the purpose and objectives of each programme.

5.1 Health and Sanitation Promotion

The basic sanitation delivery context depends on the risk management of systems where health and hygiene practices are integral to the sanitation system provided. In the high-density context of sharing facilities with several families, the need for hygienic risk management on a daily basis increases dramatically.

The impact of promotion programmes will ultimately manifest in the effective functioning of the sanitation system. It follows that the educational methods used should be those that strengthen and empower individuals and communities to undertake and work for change by maintaining risk management over time.

Participatory approaches and processes that cannot be faulted for their quality of methodology in initiating change, have failed to take root or lead to substantive improvements in the sanitation environment with which participants interact on a daily basis. Analysis of why this is so must continue to suggest ways forward.

APPENDIX 3 provides a summary of the data drawn from field research, which has shown that in **Kayamandi** and **Khayelitsha** the demand for sanitation was based on adequate participation and communication procedures, in that:

- Investigation and assessment involved dialogue, with the residents as key informants;
- Establishing go-between linkages between providers and users was an overt aim of activities, including planning, staffing and initial organising;
- Participatory assessment of local and specific problems was built into recorded presentations, workshops and meetings;
- Support was provided for local level dealings and an information transfer function, in the appointment of site-based staff, office/administration space;

- Community input on messages was sought. Local residents were involved to some extent in choice of the medium and context for communication.
- Interactions between the service provider and the community aimed to interpret messages and make them clear.

In **Joe Slovo** the partnership of the *Ukuvuka Firestop Campaign* and *Greening Project* adopted procedures for communicating with the broader community, in line with the indicators above. Sanitation was an add-on issue that was addressed as follows:

- Assessment and demand was flagged by the Greening Project initiative and became an add-on to the planned provision of access tracks, fire hydrants and electricity;
- Go-between and interaction for sanitation was accommodated in monthly Community Liaison Meetings, with Community Leaders representing block committees and residents;
- The Councillor dealt directly with local authority officials in negotiating a budget and optional systems, reported to Community Liaison Meetings where questions were raised and further dealings took place;
- Community Leaders and volunteers had the responsibility of information transfer from Community Liaison Meetings to residents;
- The EHO used this mechanism for informing Community Leaders of a sanitation/hygiene "Perceptions Survey" and plans for an education programme involving training-of-trainers, targeting community volunteers.

In **Imizamo Yethu**, the extent to which investigation and assessment engaged with residents as informants was contained within the "Public Facilitation" brief to the appointed project consultant. Part of the output of delivering a Plan to the project manager in the local authority was:

- Public meetings and setting up a local Project Development Committee that represented block committees and was chaired by the Civic Association leader;
- The consultant reported to this local Development Committee, receiving feedback, approval and ideas for overcoming constraints at these meetings;
- The local committee had the responsibility of information transfer to residents;
- A planned "education drive", led by the environmental health department, scheduled two household visits for discussion with distribution of pamphlets;
- A pamphlet was produced with inputs by various departments in regular Project Team Meetings (officials from all relevant departments) of which improving household sanitation and hygiene was one of the messages, amongst other informal settlement service concerns.

While previous Environmental Health Department assessments reportedly informed service provision departments of the urgency of sanitation and environmental hygiene interventions in all cases, local authority responses required additional support from external stimuli and sources before action was taken. External resources, additional to local authority budget allocations, were acquired from donors to enable the interventions, particularly in respect of community mobilization and sanitation promotion.

There is little indication that planning and related local organisation is negotiated with service providers. Community involvement, decision-making and ongoing action is not emerging as a result of two-way interaction between equals. Manifestations of community level organisation for sustaining sanitation interventions, including health promotion initiatives, are generated and maintained by external role-players and resources for only as long as these are available.

Where plans have led to setting up some form of community-based organisation, the follow up planning for options, information-sharing and support for non-dependant capacity to interact with service providers directly, has not been developed. External resources and role-players remain core to achieving the objectives enshrined in plans.

It is evident that communities are willing and able to inform investigations and participate in assessment. Community demand for improving sanitation is readily engaged, despite differences in the degree and quality of communication, planning procedures and programme approaches.

However, the extent to which hard information is transferred and understood is hidden in decisions that once-off educational and awareness-raising responses will provide the solution. Community organisation and capacity building activities tend to be rolled into “education drives”. These consist primarily of service providers interacting with each other to establish the content and procedures for a broad relaying of messages to the broad user community, in a one-directional flow.

From carefully ascribing to the principles of community involvement, setting up support for ongoing to-and-fro communication and establishing the community demand for sanitation, there is a tendency for service providers to then leap across the ongoing information-sharing and community decision-making that would lead to, and sustain, local action. A tendency to depend on broad education and awareness-raising constrains adequate follow through of ongoing communication, negotiation and decision-making, resulting in a paucity of recorded community roles and responsibilities.

It is more readily apparent to engineers, service providers and maintenance contractors that hygiene behavior impacts on the operation and maintenance of systems once they are in place. There is, however, sufficient experience and knowledge across the sector to integrate the social or “software” with the “hardware” or technical components within an integrated strategy.

The technical aspects of sanitation solutions are too closely related to social and behavioral aspects to separate them off entirely. Losing sight of their relatedness diminishes the links and closes opportunities for mutual strengthening of programme streams. To separate the behaviors of users out of the delivery equation, either in the form of once off “drives”, occasional training workshops, or discreet educational programmes, is to close off opportunities as they are presented in each logical step of working towards solutions.

5.1.1 Recommendations for Health and Sanitation Promotion Programmes

Health and Sanitation Promotion is a programme that requires sustainable organisation on a local level. The following recommendations are based on the analysis of shortcomings in relation to the aims of the interventions in the four case study sites:

- The difficult and challenging task for the "soft", social and qualitative nature of health and sanitation promotion that seeks to change behavior requires consistent application and continuity, rather than once-off investments.

- Local authority adoption and support of ongoing programmes is essential to effective investment in promotional campaigns that have lasting value.

- Health and sanitation promotion must be firmly linked to the particular technology option with its ongoing operation and maintenance system. This will influence:
  - Targeted mobilisation of particular resident users/user groups;
  - Education materials and methods of communicating the purpose of technology options and their design as barriers to contamination;
  - Delivery elements that relate to health concerns (such as the location of facilities), including operation and maintenance inputs (such as on-site management of sharing).

- Local authorities must link with local institutions and support local organisation of ongoing health and sanitation promotion functions and activities. These need to be formally established and accountable, rather than left to externally funded short-term initiatives.

- A strategic programme will be considerably strengthened by deliberately tying health and sanitation promotion design and implementation firmly to:
  - Monitoring of the effective functioning of systems,
  - Evaluation of services in respect of health impacts.

- Environmental health staff are well-placed to carry out a key support role in monitoring and evaluation within sanitation promotion programmes.

- Given the impact of hygiene behavior on the effectiveness of sanitation systems, the necessity of aligning engineering and environmental health concerns arises during initial planning.

5.2 Institutional Arrangements for Service Delivery

Responding to local demand for improved sanitation services and working with people to understand their situation is an essential step in a protocol that aims for sustainability. Initial delivery data on the current delivery environment in the four informal settlement study sites is summarized in three tables in APPENDIX 2.

There are various roles and specific functions to be fulfilled on different levels in the quest for providing adequate sanitation to indigent communities. Drawing from current experience, key roles that interact through levels of functions are expanded on below.

5.2.1 Alignment to National Policy and Strategy

The current draft policy document for rudimentary services to informal settlements that is circulating for development in the City of Cape Town is based on National Sanitation Policy guidelines. In addition, the bucket eradication programme has been actively promoted as part of this initiative, as demonstrated in recent meetings convened to initiate a pilot programme that draws on the action research that is captured in this report (APPENDIX 1).

The development of a Provincial Strategy in the Western Cape scrupulously engaged key local authority role-players as well as key provincial departments for their input, which has demonstrated a way to achieve buy-in.

This process culminated in a presentation of a Western Cape Provincial Strategy to Provincial Cabinet, which was well received (APPENDIX 1). This is due to be followed by a second presentation to full cabinet, on their request. The Minister of Environment and Development Planning offered to facilitate the process, given the department's concern for the impacts of a lack of sanitation services to informal settlements on public space. Provincial inputs have been integrated into the review of national policy and the refinement of a National Sanitation Strategy.

The current policy and strategy development process in the City of Cape Town can assist administrations to develop a coherent sanitation delivery framework. A Draft Policy for Rudimentary Services suggests that informal settlements will not change in status within the next four years as targets for servicing. The strategy for serving the target and the timeframe for eradicating the backlog is currently being developed and should consequently form part of the WSDP.

5.2.2 Local Authority departments: Roles and Responsibilities

Alignment of local authority roles and functions within project teams impacts considerably on the ability of all the role-players to respond to sanitation demand adequately and appropriately. An inventory was made of the actual involvement of different departments and role-players, involved as custodians in sanitation delivery in the four study sites, using a conventional Project Cycle Model.

The role of the professional team is core to project capacity and yet undermines the potential role of the community because the process is bound by contractual arrangements between the professional parties involved. These arrangements tend to be costly and impose inappropriate "efficiencies" measured against delivery time, budgets and professional fees rather than ensuring sustainability within a very different socio-economic context.

Table 11: Local Authority Departments and other role-players in case study areas in the Project

Stage of project Cycle (Survey)	Institutional Level Involvement in Case Study Area			
	Joe Slovo	**Kayamandi**	**Khayalitsha**	**Imizamu Yethu**
Project Identification	Dev. Support (City of CT), Committee Councillor	(a) Sewerage Branch (b) DWAF and Health research - a Task Team	(a) Engineering, EHO. (b) MRC, School Health, Khayalitsa Task Team (KTT)	Engineering – Water Services
Request for funding	Councilor, Engineering and (Sewerage Br.)	Task Team	(a) Engineering (b) KTT	Engineering – Water Services
Supply of funding	Engineering (Sewerage Br).	Outside donor	(a) Engineering (b) External Funder	Engineering, Depts Liaison, Ukuvuka
Project detail design	Engineering (Sewerage Br)	(a) Sewerage Br (b) Task Team	(a) Contractor (b) Funder	Consultant
Procurement	Engineering (conventional)		(a) Contractor (b) Funder	Engineering Consultant
Construction	Three different suppliers	(a) Sewerage Br (b) Contracted Project Manager &local plumbers	(a) Contractor (b) Households	Contractors
Supervision	Engineering contractors		(a) Local Authority and contractors	Consultant and Engineer
Commis-sioning	Engineering (Sewerage Br.)	Task Team	(b) Funder	Consultant/ Local Authority
Operation and Maintenance	Contractors appointed by Local Authority	Local Authority and community	(a) Local caretakers (b) Households	Caretakers and Janitor to be commisioned
Monitoring	Local Authority (role of liaison committee?)	(a) EHOs (b) Complaints Office	Environmental Health Officers	Environmental Health Officers

From the above table, the following deductions are made:

- Engineering departments play the major role in;
  - Project identification, funding, choice and design of the technology options
  - Procurement initiatives that lead to conventional appointment of contractors
  - Appointment of Consultants and Contractors to manage and supervise projects that deliver sanitation infrastructure and services
- Operations, maintenance and monitoring is an Engineering department function conducted in conjunction with Environmental Health officials.
- Development Support has played a facilitative role in one project.
- One project obtained external funding for assistance in monitoring through a local complaints office, and maintenance by local plumbers
- One project obtained external funding for the design, procurement and delivery of materials to household volunteers in the trial of a dry option

Environmental Health Officers are employed by departments of Health and are responsible for health and hygiene promotion in communities, the installation of toilet facilities at clinics, hospitals and other health institutions. The Department of Public Works acts as the implementing agent for the Department of Education. There is currently a vast backlog of sanitation facilities in schools and all new schools have to provide at least a basic level of sanitation.

Health and hygiene education is included in the school curriculum while the Department of education together with the Government Communications and Information Services (GCIS) is currently distributing health and hygiene education materials to all in the country.

5.2.3 Technical Options

Technical options on the sites are in line with the temporary settlement provision policy of shared containerized toilets or communal ablution facilities as suggested by the City of Cape Town WSDP.

Donor-funded Ecological sanitation (Ecosan) options are being piloted in Khayelitsha as dry sanitation systems appropriate to the Cape Flats and as an alternative to the many self-provided pit latrines. Composting is also suggested as an alternative to a pit emptying service. Communities see the self-provided pit latrines as part of the landscape given the backlog and lack of access to shared facilities.

Capital and Operating Costs for Dry and Wet options, dated February 2002, appear below.

Table 12: Guideline Costs

Cost Element	**Dry Systems**		
	Ventilated Improved Pit (VIP)	Ventilated Improved Double Pit (VIDP)	Composting (Urine Diversion)
Capital Cost	R 900 - R 3 000 depending on householder input and choice of materials	R 2 000 - R 4 500 depending on householder input and choice of materials	R 2 500 - R 4 000 depending on system, supplies and householder input
Operational Cost	R 60 p.a. if emptied once very 5 years	R 35 – R 135 once very 2 years depending on h/h and institutional involvement	R 35 – R 500 p.a. depending on h/h and institutional involvement

Cost Element	**Wet Systems**						
	Pour Flush	Aqua-Privy with soak-away	Conservancy Tank	Water-borne	Septic Tank with soak-away*	Shallow sewerage	Com-munal Blocks
Capital Cost	R 2 000 – R 3 500 depending on drainage conditions		R 2 000 – R 5 000 depending on top structure and tank volume	R 6 000 - R 7 000 p.a.	R 7 000 – R 8 500	R 2 500 – R 3 000	R 2 000 p.h/h (estimated)
Operating Costs	R 150 – R 300 depending on subsoil drainage		R 550 phh pa (emptied 3 times p.a.)	R 400 – R 800 p.a.	R 200 – R 450 per emptying	R 300 – R 450	R 175 p.h/h p.a. (estimated)

** Small bore solids-free sewers are within the septic tank and soakaway cost range as detailed above if the septic tank is already in place.*

- The R2 000 per container at Joe Slovo compares with the lower end of the wet systems in the guideline estimates of Table 3.1
- The planning of bucket systems in Joe Slovo should be viewed from the DWAF eradication policy
- In comparison with Table 3.1, the two communal facilities in Imizamu Yethu should potentially serve 200 families
- The cost of R 1 400 per container toilet in Khayelitsha appears economical when compared to Table 3.1
- Most of the case study projects provide for Operations and Maintenance budgets for 2002/3

Funding of the servicing costs for these options, despite the economy brought about by the notion of "shared facilities", remains a challenge when compared with the national sanitation subsidy. Leasing of ablution facilities to communities, investigating mechanisms for user contributions and other technology options are alternatives that are being investigated.

5.2.4 Financial considerations

An overview of funding and service levels for the four case study areas is given against the background of policy for potential sources of funding and guideline estimates for various technical options. The main sources of funding for sanitation improvement are

1. Equitable Share Subsidy- this is a subsidy from National Government to Local Government. It covers the operational costs of free basic services to the very poor.
2. Currently the Department of Water Affairs provides a once off grant of R 1 200 per family for community development and a basic toilet structure
3. The CMIP (Consolidated Municipal Infrastructure Programme) is funding on site sanitation as well as bulk and connector infrastructure in urban and rural areas
4. National Housing Subsidies of R 16 000 per household in formalised townships. This is used to obtain land, build houses and to provide infrastructure such as toilet connections.
5. Other mechanisms of funding include initiatives from the Department of Health and the Provincial Departments of Public Works.

The various capital funding programs for municipal infrastructure will be consolidated into a Municipal Infrastructure Grant, (MIG) programme in 2004 will be co-ordinated via the Integrated Development Plan (IDP) to integrate funding and to ensure that there are no overlaps.

Furthermore, National Treasury proposes that funding for household infrastructure programmes should be channeled directly to local government as a conditional grant, focusing on output conditions.

In respect of the funding of sanitation projects, the debate between misdirected and well-placed subsidies is ongoing. Misdirected subsidies implies services that are above the basic minimum and insufficient community capacity. Well-placed subsidies implies that public health concerns are addressed, the very needy are

targeted and avoidance of inappropriate systems. The relation between subsidy and proper technical choice is not clearly conveyed by Service Providers, including sensitivity toward local incentives.

5.2.5 Recommendations for a Delivery Framework

Reorganization of service units and appointment of management structures in the local authorities has continued to retard movement towards a coherent strategy and the "Cinderella" status of sanitation service delivery remains.

The City of Cape Town policy workshop (23rd January 2002), the WRC Stakeholder Validation Workshop (26th April 2002) with the reference groups of three of the sites and the PSTT regional strategy development process (March to May 2002) provided benchmarks for the potential of collaborative efforts (APPENDIX 1). The input of collaborative efforts, such as this project, continue to add value to these initiatives.

Limited funding options are recorded over the case study areas. The extent of information sharing and options available should be investigated. Except for Khayelitsha (experimental Urine Diversion system) most technical options are within the range of wet systems. Cost savings are inherent in dry systems. Results of the Khayelitsha experiment would therefore prove useful.

Based on the information as contextualised in the above discussion, the following guideline comments are:

- Initiatives from the Department of Health and Public Works are not recorded at the project initiation stage. Such information could prove useful in future projects
- The lack access to DWAF and National Housing subsidy funds shown over the case study areas may well be due to concerns presented by requests for double-subsidising. It is suggested that the issue of double-subsidies be flagged in the IDP co-ordination program.
- The provision of a dedicated provisional grant would short circuit the waiting period for the funding of future planned projects

It is suggested that, unless a dedicated conditional grant is provided, the momentum needed to clear the backlog will not be achieved due to the low priority still given to sanitation at local, community and household level.

Water and Sanitation departments at local authorities have been earmarked to act as Implementing Agents with the support of the Health Department. The extent to which the partnership develops is dependent on the extent to which their collaboration on policy and strategy development translates into formal roles within the delivery environment.

Recommendations from this research suggest that the context for strategic programmes must attend to the following aspects of the delivery environment:

- Ongoing initiatives should focus on improving the working environment and avenues for various stakeholders to work together towards improving service delivery to the poor. Understanding the roles that various actors can and do play is an important product of collaborative efforts, reflected in the added value of

initiatives such as the Provincial Stakeholder forum (e.g. the PSTT) and the approach of this project.

- Reconciling the national, provincial and the local strategy frameworks and integrating formal housing and informal settlement services delivery strategies must be part of the IDP & WSDP processes.

- Indications are that there is guidance needed in the determination of Operation and Maintenance budgets. This is a function of education/capacity building cost, monitoring cost, the cost to balance system failure and the cost to upgrade the community self-coping potential.

- At project level the management of shared facilities and local employment opportunities in service provision and maintenance are key challenges to local authority, community and NGO partnerships.

- The social development imperatives beyond information sharing and "training" require attention. The role of project committees on sites is generally confined to one-way information sharing. Inadequate project role development and capacity building within project design mitigates against sustaining community involvement and developing partnerships.

- The substantial servicing costs of communal ablution facilities and containerized toilets provide opportunities for SMME and workplace skills development as poverty alleviation mechanisms.

- The potential of an increased role for the private sector requires a well-regulated environment that encourages competition and partnerships with other actors. This entails a better understanding of regulatory requirements and contractual arrangements. Public and private sectors must facilitate service delivery to the urban poor, improve understanding of implications, and develop mechanisms for ensuring benefits for the poor.

- Key innovations relate to:
  - Improving the regulatory environment for Public Sector Partnerships (PSP),
  - Developing contractual arrangements that result in services for the poor,
  - Initiating collaborative service delivery arrangements that include small scale providers, NGOs and CBOs,
  - Institutional reforms that enable the participation of other stakeholders in service delivery.

5.3 Community Partnerships for Sustainability

The limitations and potential of local roles and responsibilities need to be understood by the local authority and service providers as the basis for appropriate capacity building. Manifestations of active community-level roles and responsibilities in:

- Health, hygiene and sanitation promotion,
- Delivery,
- Operation and maintenance, and

- Monitoring the quality of services

may serve as key indicators of substantial community involvement. The extent that community level skills and capacities are actively engaged in sustaining projects serves to track current practice. Research suggests that the very gaps that emerge may also serve to point towards the formation of appropriate community partnerships in the interests of sustainability.

While substantial partnerships between local authorities and community-level organisation for sustaining sanitation improvements are not manifesting in the sites of study, there are emergent roles and responsibilities that may be developed.

The **Kayamandi** intervention produced workable plans, based on community-level input, for improving the management and maintenance of existing sanitation arrangements. The proposed plan that was promoted to the local authority included a capacity-building component that would:

- engage and develop user responsibility and management for cleaning;
- employ local plumbers for repair and maintenance support;
- establish a local project manager in an unused local office;
- establish this as a complaints office for liaison between the local authority services, community cleaning, maintenance and on-site repairs.

A cost-effective plan was presented by the Project Manager (previously supported by donor funds) to the local authority. The Project Manager did not succeed in gaining adoption of the proposed plan, the key product of the intervention. Follow through in organisation and capacity-building was lacking in respect of both the local authority and community roleplayers, and would need to be more effectively addressed in the interests of project progress.

The **Khayelitsha** intervention was successful in achieving its worms treatment objectives by engaging the local institutional capacity of school communities. However, addressing the causes of worm infestation (poor sanitation) has not progressed to community organisation and capacity building beyond the school-based worms treatment programme. The following progression unfolded:

- The poor sanitation issue was raised with the local authority by means of a community presentation of their assessment of the causes of worm infestation, and community demand for improved sanitation;
- Local authority representatives on the project's management committee (KTT) designated to the project area did not influence the engineering department's plans for improving sanitation provision;
- Lack of response to KTT's demand that options be explored, led to a site visit in Namaqualand to see Urine Diversion toilets, organized by KTT/Mvula Trust.
- External funding and supply of materials for a trial of an alternative Urine Diversion option, involving 10 volunteer households in an experimental method (transporting collected faeces to bury in the adjacent school grounds);
- The EHO of the area monitors the trial of the externally supplied option.

The local authority response in that context was to supplement the supply of shared container toilets (5-8 h/h per unit) with serviced ablution facilities. A local contractor was appointed, on the advice of the Councillor, to manage maintenance. Thus locally employed attendants have improved access to hygienic facilities and appointing a local contractor has contributed to overcoming vandalism.

The community capacity to play a role and take responsibility for sanitation conditions beyond the schools has manifested in the Councillor's linkage between the local authority and the residents. The proposal to solve vandalism of ablution facilities by appointing a local contractor was achieved through these channels. The Councillor's role in channeling proposals for further improvements is deemed by the local authority to be adequate for addressing sanitation issues.

In **Joe Slovo** the local authority rapidly progressed to the location and delivery of container toilets, while a feasibility study will establish the cost of a possible (but unlikely) conversion to water-borne, shared units. In respect of capacity and organisation on a community-level the following points emerge:

- Community Leader representation is deemed adequate for addressing sanitation provision in Joe Slovo;
- Regular (monthly) Community Liaison Meetings continued to function as fulfilling the need for community organisation around sanitation provision, eg for some consultation in locating the supplied container units;
- The EHO "Perceptions Survey" results indicate an adequate understanding of hygiene and health issues related to sanitation;
- The training of 10 community volunteer trainers for an education drive had not yet emerged after some time - volunteer "Greening project" trainees in food gardening were targeted for training as health promoters;
- The Councillor was the primary mover in negotiating sanitation facilities and the use of a latent budget, expressing a preference for water-borne sewerage system.

In terms of the sanitation intervention, there is no additional community capacity-building activity or perceived need for organisation around sanitation beyond the existing representation of the broader community and volunteer health promoters.

In **Imizamo Yethu**, the existing inadequate systems, mainly buckets serviced by a local contractor, are to be augmented with ablution facilities. Each facility will be cleaned and maintained by locally nominated and employed attendants**,** appointed by the local authority. Arriving at this plan has entailed the steps below:

- Consultant reported on progress in developing the plan to local Project Development Committee Meetings;
- Meetings provided feedback and suggestions for overcoming constraints to creating access tracks, largely due to density and requiring moving of shacks;
- The local Project Development Committee is responsible for communicating with broader community, through local Block organization;
- For each facility 3 nominees for the appointment of 1 attendant per facility will be put forward by the local Project Development Committee;
- An education drive component comprising house-to-house pamphlet distribution and an additional house visit is to be led by the EHO.

The possible training of attendants for their function as caretakers of facilities is being followed up, with a view to transferring direct management of employees by the local authority to entrepreneurships, whereby each caretaker would charge community users a small fee for their income.

Prior research indicates that community mobilization, awareness and 'education drives' appear to be "synonymous with capacity building" (Pybus et al, 2001). The assumption that users of facilities will take responsibility for maintaining the facilities they use as an outcome of education and "awareness" drives is reflected in current approaches. Where there is evidence of innovative planning for community action, the externally funded activities in line with those plans have not been sustained nor adopted by local authorities responsible for sanitation.

A comparison of findings across each case study area provided in APPENDIX 6. shows the roles and functions that actually materialised in the four study-site experiences, and reflects the extent to which community capacities were deployed and employed (underlined in table) across projects. The extent to which these roles may contribute to sustainability is the result of local authority management decisions and the resources made available for on-site functions.

Manifestations of locally managed maintenance indicates that the extent to which sanitation systems of any kind can work effectively, is largely dependant on the users of the system and on-site management of facilities. In particular, individual container units managed by families sharing, locking and cleaning, and where staffing of the ablution facility is contracted out locally, sanitation conditions are improved and maintained.

In current approaches however,

- Clearly defined functions, specific roles and responsibilities that contribute to sustainability of the systems and that are located within the community are scarce.
- Technical guidance and maintenance skills for developing community-level roles and responsibilities was confined to Worms Treatment in schools (KTT), and Plumber Training in Kayamandi (KTSSC).
- Where externally funded capacity-building activities had local authority agreement, in no case was this assumed as the responsibility of, nor been subsequently funded by, the local authority.
- In all but one site (Kayamandi), the extent to which community responsibility for sanitation is translated into active roles and responsibilities during planning and decision-making is limited to a representative committee with a facilitation and broad communication function in the project.

Current approaches to community capacity building do not adequately cater for the emergence of defined functions, roles and responsibilities for sustaining services at community-level. Training inputs, and especially once-off events, that do not lead to specific, traceable roles and responsibilities are lost investments.

Evidence suggests that residents of informal settlements are resourceful and able to contribute substantially to sustaining sanitation systems. Where the method of service provision employs local capacity, either informally or formally, systems stand a greater chance of being sustained.

However, voluntary contributions cannot be viewed as equally supported or accountable as those that are resourced or remunerated.

5.3.1 Recommendations for Community Partnerships

- Partnerships are founded by working with people to understand the options open to them, which includes understanding of the use, operation and maintenance of the options. A partnership that seeks to increase local responsibility will maximise local roles in the interests of sustainability.

- Identifying the community capacities and skills that reside within the settlements will assist local authority officials to improve their services by appropriate investment in developing local roles and responsibilities that build on both active and latent capacities.

- Understanding the limitations and scope of the role of local social organisation in the informal settlement context will assist local authorities in making provision to support communication and facilitation functions appropriately.

- Identifying existing community capacity for both informal deployment and formal employment of operation and maintenance functions on-site, offers substantial benefits to both service providers and the recipients of services.

- Appropriate skills training, mentor-ship and ongoing support may be effectively planned, targeted and implemented. Municipal officials and service providers may aim more accurately at building on local roles that are responsible for operation and maintenance functions.

- Community-based contracts to support the formalization of partnerships that are formed in the interest of sustaining services will add substantial value in also providing employment opportunities in a situation of scarcity.

6. Conclusion

The research has sifted out those elements of each programme stream that may guide more effective planning and action. These Programme Elements have been drawn from the outputs of analysis in order to inform and develop further planning guidelines for local authorities.

Alignment to National Policy and Strategy

Engaging the different levels of stakeholders in this research has led to their realisation that the alignment of role-players in approaching delivery to informal settlements is essential as an entry point.

At local government level, the Integrated Development Plans (IDP's) and Water Services Development Plans (WSDP's) would serve to guide the co-ordination of responsibilities in a strategic manner, indicating clear targets, priorities, activities and resource allocations.

At provincial level, the Provincial Sanitation Task Teams and various infrastructure delivery programs perform a co-ordinating function by providing a forum and an ongoing learning environment for all stakeholders.

At national level, the National Sanitation Task Team (NSTT) performs an inter-departmental co-ordination role in addition to linking with provincial level task teams.

6.1 Key elements of Health and Sanitation Promotion Programmes

Commitment from both community and municipality to the health of people and the environment, and that will ensure manageable and sustainable solutions to the problems in the area, requires concrete foundations to be laid in a strategically planned programme.

For the purpose of stimulating demand for improved sanitation, a common understanding between all role-players on the aim and objectives of the intervention may be forged during the planning of a strategic programme.

The design of **Health and Sanitation Promotion**, awareness or education will be directly related to the technology choice that is to assist in improving sanitation conditions. The link between sanitation promotion "software" and "hardware" technology options suggests elements that can be firmly tied to traceable functions in health and sanitation promotion, in the use, operation and maintenance of systems and in monitoring and evaluation of systems.

It is worth noting that the current range of approaches to health and hygiene promotion that is expected to create awareness in indigent communities are all referred to as "educational" without clearly distinguishing:

- Targets (usually "the whole community")
- Who conducts the programme, the competencies needed, and their training requirements,
- Consideration of the impact of programmes, assessed against objectives.

Particular targets and roles may be shaped appropriately to the particular technology option being utilized and offered, as would educational programmes and materials**.**

Key Programme Elements that emerge are explained below:

- **Targets** of educational inputs should be more specific than the usual "whole community" and need to be clearly identified before a programme can be designed.

- **Role players** are those responsible for conducting the programme. The competencies needed and training requirements must be clear and made accountable in measurable performance.

- Making decisions about **Programmes, Educational Approach, Resources and Materials** will be informed by the particular context of choice of technology and the operation and maintenance requirements of particular sanitation systems.

- **Monitoring and Evaluation** of implementation of the programme will be by measuring the impact of the programme against objectives, which is essential at the planning stages of educational/awareness-raising initiatives. The ongoing quality of sanitation services are most effectively reflected at the user level.

6.2 Key elements in a Delivery Framework

Appropriate targeting for planning of delivery serves to identify the priority backlog areas and the role players involved, providing the opportunity to make initial decisions. Specific projects require detailed project descriptions, business plans and technical reports only after strategic planning.

The programme in line with **Informing and Responding to Demand** will be managed through different departments that need to work together to achieve programme objectives. The role of each departmental official will be further guided during planning by consideration of the emergent key elements expanded on below.

Based on current discussions, indications are that an appropriate technology option may be are catered for in a **Decision Making Model** to guide appropriate choice of options up front. Such a model will group a range of technology versions within the types of options that may be applicable in different categories of informal settlements.

Rather than get bogged down in detail, three groups or types of options that take key management issues into account are: communal or shared facilities; dry or ecological sanitation systems; and condominium variations.

- **Technology choices** are linked to **Categories of informal settlements** that are related to land tenure and the permanency of services was discussed extensively at a stakeholder meeting in September 2002. Categories of settlement may be based on criteria for settled and transitory settlements that need to be developed. Criteria should be based on age and type of settlement, risk, time-frames and budgets for envisaged short and medium term investments.

Questions revolving around the technology choice will be addressed in each context, with due consideration of local capacities, understanding and preferences.

- **Teams and Roles** across a project team, including those on community level, require clarity on responsibilities. There is scope for Local Authorities to engage with indigent communities in a more collaborative manner, given the support available from provincial departments and national government for clearing the backlog.

- A **Delivery Framework** will include appropriate contracts, managed by Water Services and the key partners of Health Department and Community Development Support. These contractual arrangements should fit the needs of the abnormal conditions intrinsic in informal settlements.

Procurement strategies, to enable community-based service provision, should be developed and responsive to opportunities arising. Opportunities for job creation and capacity building for promotion, construction, maintenance and monitoring may be pursued in the interests of effective and sustainable service delivery.

- **Operation and Maintenance** considerations will address the issue of sustainability on site. Technology choice will influence the level of service provision, the functions and roles that need to be fulfilled and which service providers are best suited to the associated tasks.

Opportunities for the involvement of SMME's, the use of local labour, job creation for unemployed local residents, training and skills development need to be considered at an early stage. Opportunity costs and benefits should be established before contractual arrangements and partnerships are set in place.

Services support and Monitoring of the services requires a dedicated budget and system, which may suggest opportunities for the creation of local level partnerships. Construction costs, work requirements and skills development needs may be assessed along with design costing.

6.3 Key elements in Community Partnership Programmes

As the management and controls devolve from off-site (LA) through a chain of linkages that go all the way to individual households on site, breaks in the linking parts will result in breakdown of the system. It thus becomes apparent that those functions carried out on site and closest to the ground are key links.

After delivery, the sustainability of each technology choice depends on appropriate roles and specific responsibilities being located closest to the sanitation system. Sanitation promotion that targets the user groups and households is an ongoing function in maintaining the whole system. Thus adequate mechanisms must be put in place for ongoing sanitation promotion and operation and maintenance functions.

Municipalities will need to ensure that capacities, resources and the tools and equipment that enable the optimal functioning of those capacities, are in place as part of their responsibility.

A **Strategic Programme** for ensuring sustainability will need to address certain key programme elements at the planning stage, as follows:

- **Customer/User Roles** are to be identified within Health and Sanitation Promotion, delivery and operation and maintenance activities, and shaped according to the particular technology option being utilised. Ongoing promotion of good community practice requires ongoing support to be computed into programmes.

- **Volunteer and Committee Roles** contribute a great deal of added value on the basis of the 'social good' benefits that are negotiated on behalf of the broader

community. Undermining the value to the programme of social networking with excessive expectations is a common miscalculation that can be avoided.

- **Delivery Contracts and local Employment** opportunities should fit the needs of the abnormal conditions intrinsic in informal settlements, rather than attempting to squeeze the context into a fit with the conventional contract and project cycle model used in normal (tariff- paying) circumstances.

- **Operation and Maintenance** planning may address the issue of sustainability on site where the technology will influence the level of service provision, the functions and roles that need to be fulfilled and which service providers are best suited to the associated tasks.

APPENDIX 1: STAKEHOLDER INVOLVEMENT

TIMELINE OF STAKEHOLDER ENGAGEMENT & PRODUCTS		
Year/Month	**Stakeholder Event**	**Outputs**
2000		
February	PSTT Peri-Urban Core Group set up	Informal Settlements agreed as focus
April	Peri-Urban Strategy Workshop 1	Planning: Address departmental silos
June	Peri-Urban Core Group Planning	WRC priority area: proposal motivated
August October	WRC proposal: Task Team Meetings	Proposal written, presented to PSTT and submitted to WRC – conditional approval by WRC received.
Nov.-Dec.	Presentations (x4): City of Tygerberg	Senior managers approval, support.
2001		
January	Tygerberg Administration meeting	Dept. Health commitment – letter.
April May	Informal Settlements Task Team	P-Urban Core Grp. Convenor attends, City of CT request to PSTT to assist Informal Settlements policy research.
June	City of CT/PSTT Meeting	PSTT policy research inputs, resources
July	Peri-Urban Strategy Workshop 2	Inform stakeholders who propose case study sites; Plan research programme.
September	Project Leaders Meeting	WRC Project contract signed.
November	KTT MANCO/WRC Research meeting, Attend Appropriate Technologies Conf.	Clarify roles and workplans; Project Team participation in research (KTT).
December	Attend City of C.T. meetings (internal); Obtain projects' documents.	Informal Settlements policy discussion Document; Mentor desk-top studies.
2002		
January	Draft Progress Report 1 presented to Reference Groups (per Study site).	Reference Groups assist in field-based research, interviews (per Study site).
Feb.- July	Presentations of progress to PSTT quarterly meetings.	Broader provincial stakeholder grouping informed and responsive.
April	Stakeholder Validation Workshop 1.	Data produced and validated.
May	PSTT Provincial Sanitation Strategy ~ Task Team presentation to Provincial Cabinet (accompanied by DWAF).	"..collaborative approach for basic sanitation provision to the poor" spells out City backlog, preliminary approval
August	Progress Report 2, 1st draft.	Draft report writing and cross-checking with stakeholder reference groups.
September	Stakeholder Validation Workshop 2. City of CT Policy and Pilot Meeting.	Data presented and validated. Validation for Categories/Options table.
2003		
January	Stakeholder Validation Workshop 3	Review Report's concepts, terminology, and diagrammatic representation.
April	Reference Group Workshop	Review structure of final Report.

APPENDIX 2 Summaries: Current Backlog and Levels of Service

Summary of DWAF Needs Assessment Survey results (2000):

Service Level	Water	Sanitation
None or Inadequate	18043	53122
Basic Services	71264	35607*
Intermediate	1200	1778**
Full	1713	1713
Total	**92220**	**92220**

**Includes shared on-site facilities, Buckets, Chemical Toilets*

*** Includes Communal waterborne Ablution Facilities*

Notes taken from draft Water Services Development Plans (2000)

Data per informal settlement drawn from City of Cape Town WSDP

AREA- MLC*	Draft WSDP Comments
Tygerberg	Estimates 40000 informal units & unaccounted for water (UAW) 40% in Khayelitsha, offers 4 levels of service, lists sanitation projects to "squatters" a priority suggests that new methods be investigated
Helderberg	Backlog will be cleared as funds become available, lower levels of service not likely to be considered, backlog in draft underestimated at 575 units, Urban periphery
Blaauwberg	Informal settlements on council land to be provided with waterborne sanitation and on- site water, emergency temporary services will be provided where feasible, concern expressed over affordability R38 monthly fee for proposed service package to low income areas
South Peninsula	Shared water and toilets approach to areas until formal services can be delivered once tenure is secured. Social contracts for service packages suggested as a strategy.
Oostenberg	Eliminate buckets and minimize conservancy strategy noted. Chemical toilets used. Backlog underestimated when compared to CCT data.
City	Draft WSDP not available.

** Formerly MLC Area, now City of Cape Town*

APPENDIX 3

Health & Sanitation Promotion in the four study sites (end August 2002)

Study Site	Programme	Plans	Outcomes
Kayamandi (KTCSC)	▪ Problem Tree & Intervention Plan - Workshop. ▪ Training 26 participants ➢ *Awareness 1* –Distribute pamphlets, Posters at toilet blocks ➢ *Awareness 2* – Ownership of toilets	▪ Complaints office ▪ Trained plumbers to repair ▪ Sharing h/h to manage, clean, maintain.	▪ Complaints office not in operation ▪ Plumbers not employed ▪ Once off H+H training ▪ Used pamphlets + posters, door to door visits ▪ CD + Booklet (target?)
Joe Slovo (GREENING PROJECT)	▪ Initiate Greening project ▪ CBO Organise and Conduct Training Workshops related to Greening ▪ EHO link-Community Liaison Committee	EHO Plan: ▪ KTT to train volunteer trainers in workshops ▪ help from Greening project	▪ Hygiene/ Perception survey, 116 questionnaires, results are not available ▪ Awaiting response from contracted trainer ▪ Targets? (Also of trainer of trainers?)
Imizamo Yetho (LA SERVICE PROVISION)	▪ Collects educational inputs from internal depts as contribution to Integrated Education & Training programme approach	Educ. + Training drive planned: ▪ R12, 500 allowance for materials; ▪ R3, 000 for xl Trainer H&H campaign: after ablution blocks handover	▪ Pamphlets designed ▪ Ukuvuku helped with distribution ▪ Education drive (house visits) will start a month before toilets are in place ▪ Follow up? ▪ Targets?
Khayelitsha (KTT "WORMS")	▪ Engages pilot schools, establishes Schools Worms Treatment, Education materials, Training workshops ▪ CoCT -EHO: Container use and management Education Campaign	▪ KTT Project roll-out for Khayelitsha ▪ SACLA health promotion link explored ▪ KTT Target – parents?	▪ KTT workshops ▪ EHO designs,conducts Health Awareness campaign in partnership with Sport & Recreation, Schools, and Community ▪ Pamphlet on managing containers distributed ▪ Targets?

APPENDIX 4:

The current delivery environment in four informal settlement sites is summarized in three tables below:
Table 1 summarizes key elements of Planning and Organization.
Table 2 summarizes key elements of Funding and Service Levels.
Table 3 identifies Focus areas for the final phase of the project

Table 1: Planning and Organization

Element	Kayamandi	Joe Slovo	Imizamo Yethu	Khayelitsha
Service Planning Initiators	• DWAF/Project Team • Engineering Dept	• Community Dev. Department	• Engineering Dept • Housing Dept	• Engineering Dept • Khayelitsha Task Team
Linkages	• Danish Funding/DWAF	• National Botanical Institute (NBI) • Tsoga Environmental Forum	• Community Health Forum • Fairest Cape Association	• MRC • Mvula Trust
Communication	Kayamandi Test Case Steering Committee (KTCSC)	Community Liaison Committee	Project Dev Committee	Khayelitsha Development Forum (KDF)
Service Level Decisions	• Engineering dept	• Engineering Dept /Councillor	• Engineering Dept	• Engineering Dept • KTT/Mvula
Capacity building	• Survey Volunteers • Community Plumbers • Cleaners	*Not available*	*Not available*	Teachers
Service Providers	• Project manager (Donor funded)	• Consultants • Contractors	• Consultants	• Project co-ordinator (donor funded) • Contractors

Table 2: Funding and Service Levels

Element	Kayamandi	Joe Slovo	Imizamo Yethu	Khayelitsha
Current operation and maintenance funding	Local authority (LA) DANIDA (rehabilitation of communal ablution facilities & Training)	LA	LA	LA* Ausaid - Ecosan Options & facilitation pilot Mvula – Urine Diversion System pilot
Service level *Costs* • ***Capital & Operational*** ***Service provider***	29 -Ablution Blocks- 500 people per ablution block Not available Not available LA Maintenance team	190 – (100L) container Toilets 2000 4000p/a Contractor serviced	50 black buckets - not adequate (Ablution facilities to come) Contractor	49 clusters of 3 container toilets* 5-8 Families per toilet Contractor serviced Ablution Block* 200000 150000 p/a? Contractor
Planned facilities ***Cost*** ***Service unit***	None	1100 bucket toilets (100ltr container) 4 families per toilet R1 300 per unit + R 100 per month per unit Contractor serviced	3Toilet “Container” Ablution blocks 60000 & 35000p/a Lease to community members	25 Ecosan Systems 4000 & 1000 p/a Build composter or bury faeces.
Greywater	• Ablution facilities • On-site disposal	• On-site disposal	• Ablution facilities • On-site disposal	• Ablution facilities • On-site disposal

Table 3: Focus Areas

Element	Kayamandi	Joe Slovo	Imizamo Yethu	Khayelitsha
Reference group Inputs	• Set up liaison mechanism • Water usage concern • Revisit O&M budget • Set up help desk and block maintenance roles as local authority /Community partnership • Locked facilities arrangements	• Location of shared toilets • Sharing Toilets • Servicing Contracts monitoring and sustainability • Revisit O & M budget	• Construction of container Ablution facilities • Leasing of ablution facilities and Monitoring	• Contracts and monitoring arrangements • Revisit O & M budget • Eco sanitation Trails in context, composting?
WSDP reference	*Not available*	22 standpipes & 170 container toilets available to 4489 h/h 808 container units planned	445 serviced sites 30 standpipes and 50 black buckets available to 2490h/h 500 serviced sites and 1545 to be relocated	*Not available*
Tools developed	• Problem Tree Analysis • Training Materials and arrangements		• Container Ablution block blueprint.	• School Involvement & Training materials

APPENDIX 5: Funding and Levels of Service

Funding and Service Levels of the four case study areas.

Element	Case Study Area			
	Kayamandi	**Joe Slovo**	**Imizamu Yethu**	**Khayalitsha**
Level of Service	Ablution Blocks- 29 serving 500 people per block	100 l Container Toilets- 190	2 Communal Ablution facilities and 50 inadequate black buckets	49 clusters of 3 Container toilets. 5-8 families per toilet served. Also an ablution block
Service Provider	LA	Contractor	LA/ Contractor	Contractor
Capital Costs	Not available	R 2000/ container	R 400 000	R 200 000
Operational Costs	Not available	R 4000 pa	R 35 000 pa	R 150 000 pa
Institute responsible for Operation and Maintenance	LA and DANIDA (rehab of communal ablution facilities and training)	LA	LA	LA and Ausaid-Ecosan Options and facilitation Pilot. Also Mvula-Urine Diversion System pilot
Planned facilities	None	1100 Buckets @ 4 families per toilet = R 2000 @ R 4000 pa	Not available	25 Ecosan Systems = R 4000 @ R 1000 pa

A telephonic survey was done with the service providers to establish what the sources of funding were in each cases study area. The availability of an operational cost budget as well as funding applications for planned future facilities was also addressed in the same interview. The results appear below:

Element	Case Study Area			
	Kayamandi	**Joe Slovo**	**Imizamu Yethu**	**Khayelitsha**
Person interviewed	Not available	Mr. F van Niekerk, CCT	Mr. N. Hendricks, CCT	Mr. T de Jager
Source(s) of Funding	Not available	CMIP/ LA funding	LA Capital Loan Fund	Private
Availability of O & M Budget for 2002/3	Not available	Yes, internal funding	Yes, Unicity funds = R 1,17 Billion	R 300 000 for all services
Funding Applications for Planned future facilities	Not available	Housing subsidy and CMIP funding for permanent upgrading	Not defined	CMIP (R5M)/LA Funds (R3M) for buckets/pour flush/pump stations
Progress on planned future facilities	Not available	Application and design stage	New strategy for informal settlements: in-situ upgrade	Pump stations in progress

APPENDIX 6: Sustainability - Roles and Responsibilities

A comparison of roles and responsibilities as manifested in each of the four study-sites, reflects the community capacities that were deployed and employed.

Project Functions, Roles and Responsibilities

	OFFICIALS	SERVICES	COMMITTEE	COMMUNITY
IMIZAMO YETHU	**Engineer: Decide/ Plan**; Access funds; Brief, **Appoint** Consultant, **Coordinate depts**. For 'project liaison', **Appoint** Facility Caretakers. **EHO: Assess** health/conditions; **Promote** H&H	**Consultant: Public Facilitation** - local Committee; **Submit Plan** to Municipality; **Inform** Committee for comment/approval; **Report** to engineer and Municipality. **Manage** appointed **Contractors.**	**Feedback** to consultant: Plans/ Phases; **Suggest** Solutions (density); **Inform residents** through Civic reps of Street Blocks; **Nominate** Facility Caretakers	**Health Workers Report** to clinic. **Local** Environment Group - **clean up and promote. Local Contractor** services bucket system. **Facility Caretakers** to be appointed - possible SMEs ?
JOE SLOVO	**Development Support:** Access funds, Sets up project Committee **Manage Contracts** (service providers). **Sewerage Branch:** links to Councillor . **EHO: Assess.**	**Contractors: deliver** infrastructure and services, **Reports to CoCT** through Dev. Support./ Sewerage Branch. **Train** local volunteers	Committee **Meet - Inform** residents; **Manage** moving of shacks; Raise issues **(eg poor sanitation); Locate** facilities. **Councillor** links to Sewerage Branch**.**	**Co-operate** - moving shacks. **Share** facilities (4 h/h per container). **Unlock doors** for weekly services. **Volunteer** for H&H, (drawn from Greening Project)
KAYA-MANDI	**Sewerage Branch** - ablution facilities. **Municipal depts service** facilities. **Officials participate** BUT Questions about commitment (?) **EHO: Assess, Monitor** and **Report.**	**Health Researcher** collaborate with **DWAF** Water Quality – KTCSC. **DANIDA funds Project Manager: Trains** plumbers, **Liaise** with Municipality, runs **Complaints Office** - project funded	Meet - **KTCSC,** Organise **Public Meeting, Prioritise** -improve sanitation services, more toilets. **Plan, Propose** - user families to rotate, sharing families to pay.	**Volunteer** training - **Conduct Survey**, **Cooperate-** survey. **Volunteer** workers (20 p.), **Clean** up and **Rehabilitate** (29 toilet blocks) **Plumber** training, Repair (once off). **Proj. Coordinator** proposed.
KHAYA-LITSHA	**Engineer: Provide** Container Units and Ablution Facilities, **Manage** contracts. **Consult** Councillor, Comm. Dev. Forum **Plan – Tender, Appoint** Contractor to service. **Health (Clinics): Report** health problems (worms). **EHO: Monitor** services, **Report** to Engineering. **Report** to KTT.	**Health Research (MRC)** collaborate with **School Health**, **Univ.W.C.- Public Health**, **NGOs** and link **programmes** in KTT "Worms" project: Provide **Project Coordinator**. **Access Funds –** trial of options. **Funder** organised **Supplier** of UDS units.	**Councillor planning;** Addressed **vandalism –** Suggested **Local contractor, staff; Inform** residents. **Sub-committee (KTT): Attend** meetings and workshops; **Meet, Visit** Namaqualand (UDS option); **Organise** 10 volunteers for UDS	**Contractor:** service, maintain Ablution facilities. **Ablution Staff:** report to contractor. Households **Share, maintain** container units (5-8 h/h p. unit), assist Security- "the eyes" for Ablution block. **School staff** and **Parents** do worms treatment, **Identify** poor sanitation. **Volunteer**UDS trial.

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