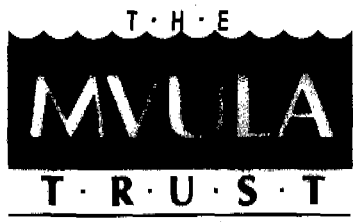

THE MVULA TRUST

SPECIFIC POLICIES FOR WATER AND SANITATION PROJECT DEVELOPMENT

VERSION 6.0

SEPTEMBER 1995

The Mvula Trust

SPECIFIC POLICIES FOR WATER AND SANITATION PROJECT DEVELOPMENT

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1. INTRODUCTION

The mandate of the Trust is to improve the health and welfare of disadvantaged rural and peri-urban South Africans through increasing access to safe domestic water and sanitation services. The Trust aims to work in co-operation with other national institutions that are working towards the same goals.

The purpose of this document is to provide specific details on criteria to be applied to funding applications. It provides a guide for reviewing applications for funding to enable the Trust to be consistent, fair and effective in its financial assistance to projects.

The policies outlined in this document are subject to change, both as the national policy environment develops and as lessons are learned which can improve on existing approaches.

2. AREAS OF TRUST SUPPORT

2.1. Poor and Disadvantaged Communities

The Trust's primary task is to provide financial and other support for water supply and sanitation development to poor and disadvantaged South African communities with inadequate access to such services.

Disadvantage denotes the historical inequity, in the South African context, where applicants have previously not had adequate support for infrastructure development.

2.2. Capacity Building

Support will be considered for building the capacity of community and local-level organisations, for regional sector organisations assisting in water and sanitation provision for poor and disadvantaged communities, and for regionally based small-scale contractors, NGOs or other implementing or training agents (*Ref. Section 7 - Training and Education*).

2.3. Policy Development

The Trust will provide modest support for initiatives which assist the process of national and regional policy development for providing sustainable water and sanitation for poor and disadvantaged communities.

2.4. Sector Development

The Trust will provide modest support for applied research and development work on techniques and approaches which will significantly enhance aspects of water and sanitation development for poor and disadvantaged communities.

3. FINANCIAL ISSUES

Financial support to projects will generally be provided through community or local-level organisations which will be encouraged to contract out to local service agencies for technical and other support, where required.

3.1. Grant Finance

The Trust provides support for basic levels of service primarily through non-repayable grant finance. Financial support offered will be based on the community's economic status, its contribution towards costs, the financial status of local service institutions and the level and type of services required.

3.2. Loan Finance

The Trust offers a loan finance facility to support water and sanitation initiatives in the following areas:

- Structured project financing where complementary loan and grant components can gear up the impact of grant components and mobilise local sources of funding.
- Loan financing for levels of service higher than can be accommodated within the grant finance ceiling.
- Loan financing for facilities for inadequately served populations on private land, such as farmworkers.
- Loan financing for local entrepreneurs providing services (skills, tools, transport, etc.) for water and/or sanitation projects for poor communities.
- Loan finance for capacity building for institutions supporting water and sanitation service delivery amongst poor populations.

3.3. Capital Cost

The capital cost of a project, for both water supply and sanitation, is defined as excluding the costs of training, operations, maintenance and repair, feasibility studies and capacity building. Design and supervision costs and VAT associated with capital costs are included as a component of capital costs.

3.4. Sustainability

The Trust will fund the capital cost of projects which are sustainable in the long term. Sustainability implies in particular that the services can be managed (operated, maintained and repaired) and that users are willing and able to pay for them. Sustainability will be the overriding concern where a conflict exists between different criteria (*Ref. Section 3.13 - Beneficiary Contributions to an Operation, Maintenance and Repair Fund*).

3.5. Cost-Effective Approaches

The Trust will seek to extend the range of water and sanitation supply options available to users in South Africa. To this end, grant ceilings will be offered in the case of both water and sanitation projects. Given a choice of equally sustainable options, preference will be given to services which have the lowest cost. Cost per capita is the key statistic for determining cost-effectiveness. In order to minimise statistical misrepresentation, standard measuring techniques will be applied to determine the population benefiting from the grant.

3.6. Costing for Future Demand

Rural and peri-urban population movements in South Africa are currently highly variable. For this reason the per capita subsidy is to be based strictly on the present population, verified to a reasonable accuracy by a community census (i.e. a list of households/persons in the project). Notwithstanding the above, where relevant and possible, schemes should be designed and costed with the bulk mains (rising and gravity) sized to cater for at least a ten year period of growth using the best available projections.

3.7. Co-Financing

As far as possible, when Mvula participates in co-financed water and sanitation schemes, the Mvula policy framework should not be compromised.

Grant finance from other agencies cannot be substituted in applications to the Trust for the community contribution.

The Trust would generally expect its contribution within larger co-financed schemes to contribute to easily identifiable and community controlled items. Mvula's funds could also be stretched by using funding from other institutions.

There may be cases where a regional utility can only provide an affordable, acceptable and sustainable water supply to a community with grant finance assistance. Provided that there are no cheaper local alternatives available and no other sources of grant finance are likely to be accessible, the level of the Trust's grant will be determined by the funding required to make the end service affordable to the community, but only up to the Trust's grant ceiling.

3.8. Water Supply Projects

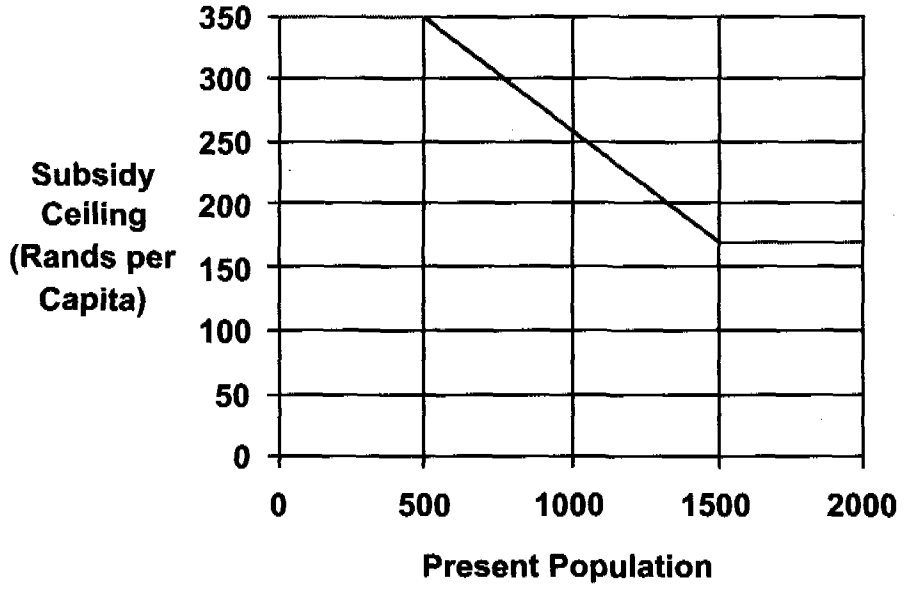
Communities with more than 1500 persons
A maximum grant of R170 per capita will be offered towards capital costs. Any additional capital costs should be funded by the community by way of additional own contributions or loan finance. The cost of individual household connections will not be subsidised by the Trust.

Communities with between 1500 and 500 persons
The Trust recognises that small communities may require additional support to construct a viable water supply project. If necessary, the subsidy ceiling can be raised for communities with populations of less than 1500 according to the formula:

Subsidy ceiling = R170 + R0,180 (1500 - n)

The formula provides for a proportional increase in the subsidy ceiling from R170 per capita at 1500 persons, to R350 per person at 500 persons. The relation is shown graphically below.

PER CAPITA SUBSIDY FOR SMALL COMMUNITIES



Communities with less than 500 persons
The subsidy ceiling is fixed at R350 per person for communities of less than 500 persons. While this may not provide sufficient funds for the construction of a reticulated supply it is considered sufficient to allow for basic levels of service such as handpumps and rainwater harvesting.

3.9. Additions to Existing Facilities

The Trust only supports the provision of basic services and generally does not upgrade adequate services to higher levels with grant finance.

Where a project involves connection to an owned water source or system, such as by a public authority, written approval must be obtained for connection prior to Trust project approval.

The Trust will consider applications for support for the completion, extension or rehabilitation of existing services only when such services would be affordable to the community or users and sustainable in their entirety. The Trust will not provide grant finance for private connections, and will not subsidise an expensive alternative when a cheaper option of equal or greater acceptability, sustainability and reliability is available.

3.10. Sanitation Projects

A maximum grant towards capital costs of R700 per household latrine is offered. A guideline of a maximum of 10 people per household toilet is advised. Any additional costs should be funded by the household by way of additional own contribution or by loan finance *(Ref. Section 6 - Sanitation).*

In the case of sanitation facilities for public institutions, such as schools or clinics, the maximum grant towards capital costs will be R1200 per seat/toilet unit. The recommended maximum pupil : toilet ratio is 30 : 1 for girls and 60 : 1 for boys. Boys should in addition be provided with one urinal space per 60 boys.

To encourage hygienic behaviour, the Trust will assist public institutions with providing hand washing facilities close to the sanitation facilities.

3.11. Future Adjustment of Water and Sanitation Subsidy Ceiling

The Trust will review the subsidy limits from time to time, in the context of the demand for its funds, the cost of construction, the viability of the projects seeking its support and other national initiatives in this sector.

3.12. Community Contributions

The Trust requires a community contribution towards project capital costs. Contributions may take the form of labour in the form of measured work done, costed at acceptable local market rates, or as cash or a mix of both. An agreement on the level and form of community contribution must be reached between the Trust and the community before project implementation commences. The agreed community contribution should commence before the second disbursement of funds from the Trust and be completed before the completion of the project. The third and subsequent disbursements will only be paid if the community contribution is being made as agreed in the implementation plan.

The purpose of the community contribution is to locate ownership of projects within the community, ensure community leadership has widespread support, contribute to national domestic resource mobilisation for infrastructure development and promote the dignity of the beneficiaries.

- **Community Contributions to Capital Costs of Water Projects**

Based on experience of what is achievable, the level of capital contribution required from communities to obtain funding from the Trust will be a minimum of 8% of project capital costs (for communities of more than 1500 persons). This equates to R15 per capita contribution from a community receiving an Mvula subsidy of R170 per capita. This would be in addition to any initial fund that is required to be set aside for operation and maintenance *(Ref. Section 3.13 below)*. Table 3 presents estimates of what the minimum community contribution would be for different water supply technologies.

In the case of small communities where the subsidy ceiling is raised *(Ref. Section 3.8)* the minimum community contribution remains R15 per person, or 8% of project capital costs, whichever is the lowest.

- **Owner Contribution for Household Sanitation**

In order to secure ownership of the sanitation facility by the owner, an owner/user contribution is required for every facility. The level of this contribution is set at a minimum of 8% of the capital cost. In the case of Ventilated Improved Pit (VIP) latrines, this will amount to approximately R60 per household, about the cost of pit excavation. This will make basic sanitation affordable by poor households. Where varieties of service levels are provided, individual households will pay the excess of the cost of their chosen service level above the R700 subsidy.

- **Contribution for Sanitation Facilities at Public Institutions**

The level of contribution from community-linked bodies managing public institutions is set at a minimum of 8% of the capital cost. This will amount to approximately R100 per toilet seat or cubicle for a facility costing R1200 per seat (the Mvula institutional sanitation subsidy level). As in the case of domestic sanitation, beneficiaries will pay all capital costs above the subsidy level.

3.13. Beneficiary Contributions to an Operation, Maintenance and Repair Fund

All water and sanitation technologies require operation, maintenance and repair. Effective operation, maintenance and repair are the responsibility of the project beneficiaries.

Tables 1 and 2, in Annexures A and B, list the common operating and maintenance requirements for different water and sanitation technologies. Prior to funding, all projects will be required to demonstrate the applicant's willingness and ability to undertake all operations, maintenance and repair functions.

In order to ensure that communities select technical options for water supply and institutional sanitation that they can operate and maintain, all beneficiary communities will be required to raise an additional fund specifically for operation, maintenance and repair contingencies.

The size of this fund should allow for reasonable operation and maintenance contingencies to ensure the survival of the project through the estimated period that it will take for the community to learn to administer the project, and for teething problems (technical and administrative) to be ironed out. The fund should also cover the cost of all skilled labour and spare parts required to carry out the manufacturer's standard service specification for this period. It should also cover the replacement costs of certain major items of equipment, such as engines, which may require renewal during the overall life of the water system. The size of the O&M contingency fund will be project specific and be determined by the community's technology choice. Table 3 in Annexure C presents an estimate of fund size by different water technology options. The cost of maintenance will be expected to be covered by tariffs levied by the water committee on all consumers or by the latrine owner.

In the case of domestic sanitation, each household will be responsible for the costs of operation and maintenance of the facilities located on the residential plot. Where VIP latrines or other on-site sanitation facilities are being provided, there is no need for the creation of an operations and maintenance fund. However, where there are facilities shared between households, such as communal septic tanks or sewer reticulation systems, a fund will be necessary.

The operation and maintenance fund should be collected in full preferably before completion of the project, but at least within six months of the completion of the project.

3.14. Operations and Maintenance Performance Incentive

An operations and maintenance performance incentive will be included in addition to project capital cost by the Trust, for water projects and institutional sanitation. This will be deposited into the community maintenance funds after a satisfactory system inspection (e.g. checking to see that maintenance is being carried out, administrative and operating procedures are being followed, monies are being collected, etc.) Incentive levels are set at 2% of actual project capital cost after six months and an additional 3% after two years from project completion. The onus is on the community to apply for assessment at the relevant times (standard forms will be provided for this application). The Trust's regional agent will usually need up to two month's notice to ensure that the evaluation visit can be arranged.

In the case of institutional sanitation projects, it will be necessary to demonstrate that all unsatisfactory sanitation facilities have been upgraded,

demolished or made safe and hygienic in some other way before incentive payments can be made.

3.15. Labour

Labour-intensive construction techniques are encouraged, where viable and where cost-efficient. Payment of labour should wherever possible be linked to the satisfactory completion of measured tasks (e.g. ten metres of trench excavation per person per day).

Labour will be costed at the rate that a building contractor might be expected to pay locally employed labour, assuming exemption from the gazetted minimum labour rates (as adopted by the South African Federation of Civil Engineering Contractors). In the course of development of the project budget, communities must specify at what rate local labour will be valued. A reduced rate can be regarded as part of the community contribution.

3.16. Payment of Committee Members

The Trust will support modest expenses for committee members, on condition that this is agreed by the community and budgeted as part of the overall project costs.

Committee members who *work on the project* as administrators, supervisors, artisans or labourers will be paid at the rates appropriate for that work and agreed by the committee as a whole.

3.17. Contracts with Engineers and Agents

Contracts between communities and their engineers, implementing agents or NGOs, are required to clarify their mutual obligations, and to ensure that no costs are hidden. There are significant differences between development work in rural areas and conventional construction. The following guidelines are relevant for contracts with agents (more detailed guidelines are contained in Annexure E).

Pre-project and preliminary feasibility work will only be reimbursed after the signing of the project contract (except where this work is supported by funding from the Pre-Project Revolving Fund). This implies that the agent will be required to accept a level of risk. Liaison with the Trust and its regional agents and a good understanding of Trust policies will help minimise this risk.

Design work will be reimbursed at either market related hourly rates, or a negotiated percentage fee. The total amount agreed for design should take cognisance of savings due to the existence of standard details, and/or to the simplified level of documentation that will be required for community level subcontracts.

Field supervision will be paid on a cost plus reimbursive basis, where the mark-up on payroll cost should be kept relatively low in cognisance of the fact that this kind of work is most time consuming.

Project management is the term used to incorporate all the activities not usually required in conventional construction where an experienced contractor undertakes the work in closely defined circumstances. The Trust recognises that a significant amount of time is required to cover this item. This work will also be paid on a cost plus reimbursive basis, where the mark-up on payroll cost should be kept relatively low in cognisance of the fact that this kind of work is most time consuming.

Training is to be paid for at negotiated rates. The cost of training will depend on the training needs of the project, and is thus quite variable. The Trust would like to invest at least 5% of the capital cost of any project in training, but will require special motivation to accept training costs in excess of 20% of the capital cost of the project.

3.18. Use of Local Contractors

To ensure that skills remain in the community, the use of local contractors and service suppliers will be encouraged as an employment creation measure and to bring maximum benefits to the community. This is particularly important in the case of sanitation projects where local builders will be the major implementing agents. Many tasks in water projects may also be undertaken by local contractors.

Quality criteria for appointment of contractors, will however, be the overriding criteria.

3.19. Resolution of Management Difficulties between Agents and Communities

The Trust recognises that community-based development work often involves the management paradox of an external agency being employed by a community to train, supervise and in some ways manage elements of the community itself. In such cases both parties become in some ways the employer of their employer. The Trust recognises that this can give rise to awkward situations, but considers this disadvantage being outweighed by the positive aspects of community ownership and management of the project. In the event of difficulties the Trust regards its regional agents as the overall authority.

A service agency tasked with a supervisory and/or auditing function on a Mvula project is required to report to the Trust's regional agent if any problems or irregularities should occur in the course of the project. Such a report must be made promptly, so that the matter can be attended to before the Trust's

interests might be prejudiced significantly more than has already occurred due to the problem or irregularity concerned. The report must be copied by the regional agent or agency to the community concerned for their information and/or comment.

By the same token a community is required to report to the Trust's regional agent if it has a problem with a service agency contracted to work on its project. Such a report must be made promptly, so that the matter can be attended to before the Trust's interests might be prejudiced significantly more than has already occurred due to the problem or irregularity concerned. The report must be copied by the regional agent or community to the agency concerned for their information and/or comment.

3.20. Pre-Project Revolving Fund

In cases where the Trust deems it appropriate to fund pre-project costs prior to approval, such funding may be drawn from a Pre-Project Revolving Fund, operated by the Trust. On project approval the amount drawn from the fund will be reimbursed from the project budget. Applications for pre-project funding should come from beneficiary communities.

Pre-project funding may be considered under the following circumstances:

- Where projects seem likely to fit the Trust's criteria and be funded by the Trust.
- Where specific circumstances make it unreasonable for agencies to bear the costs or risk incurred in pre-project phases.
- Where s pecific circumstances make pre-project training and capacity building necessary. *(Ref. Section 7.5 Pre-Project Capacity Building and Needs Assessment).*

4. INSTITUTIONAL ISSUES

4.1. Institutional Arrangements

Figure 1 (Annexure D), presents a schematic arrangement of the anticipated institutional relationships to be developed through the Trust's financial assistance. It illustrates the Trust's concern for the following issues:

- To support national policy development and work within a framework of national water and sanitation policy.
- To support regional capacity building and regional programme planning.
- To fund service users directly and to place project accountability for financial support with communities who want to improve their levels of service.
- To encourage efficient implementation by the private sector, NGOs and local service agencies.

4.2. Response to Demand

The Trust will support communities who want improved water and sanitation services and are prepared to undertake long-term management of projects and contribute towards development costs.

Applicants will be required to demonstrate a specific desire for better services through prior and other efforts to acquire them and/or by making contributions to the construction and management of these services.

4.3. Support for Community or Local-Level Institutions

Projects supported by the Trust will generally be executed and managed by representatives of viable local-level organisations which must be user-representative bodies, accountable to the project beneficiaries. These local level organisations will be the accountable authorities and will be encouraged to hire services from local agencies for planning, design, management, training and supervision of project implementation.

4.4. Role of Private Sector and NGOs

Private sector, non-governmental, and other institutions are encouraged to assist community or local-level organisations to develop project proposals and to apply for project support. Implementing agents are encouraged to offer their services to communities for project implementation.

4.5. Strengthening Community Management

Particularly impoverished communities with very low levels of management skills will be encouraged to enter into joint ventures with local NGOs or other

agencies, whereby more experienced managers can be seconded to community management associations. This will be in addition to the training activities built into the project (see below).

4.6. Community Participation

The Trust endorses the principle of user accountability. To this end the Trust will support users and communities which take ownership of facilities through local organisations that enjoy clearly demonstrable support from their communities. The Trust will support communities which are able to demonstrate a willingness to play a full part in planning and implementing proposed projects. As described in Section 3.12, communities will be expected to share in the capital costs of the projects, through cash contributions or contributions in labour and demonstrate their willingness and/or capability to undertake or arrange for the operation, maintenance and repair of all project facilities (*Ref. Section 3.13*).

4.7. Management of Regional Projects

Where regional projects provide a better service option, local community management associations will be encouraged to develop regional structures from representatives of local community organisations, together with representatives from other agencies where appropriate. The regional body should be accountable to the local bodies.

4.8. Liaison with Central, Regional and Local Authorities

In pace with the development of new governmental structures, the Trust will work in close consultation with local, regional and central authorities for the public good in water and sanitation development. Mechanisms will be developed at all these levels to ensure open channels of communication on Trust policies and proposed Trust project support.

The Trust will work with both local and regional governments and in areas where the role of local authorities has not yet been clarified, or where the capacity of such institutions is not yet sufficient to meet local needs. In such instances, the Trust may consider helping to strengthen the capacity of local and regional authorities.

4.9. Encouragement of Good Practice in Project Implementation

The Trust will encourage efficiency in project implementation by competitive tenders and quotations prior to the awarding of contracts for the provision of goods and services. The Trust will, in separate initiatives, encourage good practice among project implementation agents.

The Trust will keep a list of sector agencies by region which have a good track record in water and sanitation project implementation and make this list available to applicants seeking these services.

4.10. Institutional Support

The Trust will seek by means of training and educational activities and, where justified, technical assistance, to assist institutional development of key institutions supporting water and sanitation development among poor and disadvantaged communities. In addition to community institutions, the Trust will also consider institutional support to needy local and regional authorities.

4.11. Partnership with Other Development Agencies

The Trust encourages partnerships with other development agencies. Collaborative, co-financing, and cost-sharing relationships are all possible.

5. WATER SUPPLY

5.1. Water Supply Technology Choice

Mvula Trust support is not determined by technology but by the appropriateness of a technology to its context: the Trust supports water technologies appropriate to the needs, affordability and management capacity of beneficiary communities.

As is noted above, the Trust will support cost-effective water supply options. Project proposals for water provision should be based on consideration of a range of appropriate options and, where appropriate, should present comparative costs of the major options.

There are many dangers in generalising about the value of different water supply technology options without taking the merits of each individual situation into consideration: regional factors play a significant role. Table 1 (Annexure A) presents key aspects and probable cost ranges of the major technology options.

The last column of Table 1 presents Mvula policy in supporting each of these technologies. Consistent with other criteria, the Trust will give priority to technologies which are appropriate to community or local level management.

The Trust considers it the responsibility of project agents to brief communities regarding the pros and cons of different choices in water supply systems (e.g. motorised versus handpumped water supplies in terms of the costs and control implications for operation, maintenance and repairs). The Trust's regional agents will satisfy themselves that a community is aware of the likely operating, maintenance and repair costs before supporting proposals.

5.2. Design Guidelines for Water Supplies

The Trust's Regional Agents must satisfy themselves that the designs for proposed projects are reasonable and viable. Guidelines to assist engineers and agents in the preparation of feasibility and design proposals for Mvula projects are available on request.

5.3. Bulk Water Supply Projects

Bulk water supply schemes, which call for the provision of, or upgrading of major civil works, such as pump stations, pipelines, dams and purification works, may be the most cost-effective method of serving large populations. The complexities of these schemes and their operations and maintenance requirements tend to increase with their size, spatial extent and the number of communities benefiting from them. As noted in Table 1, gravity schemes have

fewer operations and maintenance requirements than diesel or electric motor-driven schemes.

The Trust will support bulk water supply schemes, through grant finance for smaller, less complex schemes that fall within grant financing ceilings; and through loan finance for larger schemes. All schemes must be shown to be cost-effective with adequate and affordable mechanisms for operation and maintenance, and the financial administration of the scheme. In larger schemes the Trust will consider collaborative projects, such that the Trust assists the community through grant support with easily identifiable and community controlled items such as internal reticulation or capacity building.

The objectives of public accountability and sustainability will also be met by directing all funds to locally representative organisations. The distinctive characteristic associated with the Trust's funding will be the community accountability associated with the project.

6. SANITATION

6.1. Stimulating a Demand for Sanitation

While an improved water supply is universally prioritised by communities, sanitation[1] seldom receives attention. Yet poor sanitation is a major contributor to poor public health in South Africa. Improved sanitation is a vital part of Mvula's mandate.

In the absence of a perceived demand for sanitation, the Trust adopts a proactive approach to promotion of this sub-sector, seeking to stimulate demand, while not sacrificing its overriding principle of responding to user initiatives. The Trust will seek to stimulate interest in and demand for improved sanitation by promoting the public health importance of the sector and through social marketing. Where necessary, the Trust will support modest applied research initiatives in this sector and will consider supporting elements of national capacity in low cost sanitation (e.g. technical advice, training, curriculum development, promotion materials).

All water projects funded by the Trust will be reviewed in the course of implementation with a view to stimulating a follow-on sanitation project.

6.2. Household Sanitation

The Trust will provide financial support to individual households in poor and disadvantaged communities (*Ref. Section 3.10*). Where the householder has no long-term rights to the land, such as on a commercial farm, the land owner must provide evidence of adequate security of tenure to householders. The Trust may seek additional contributions from landowners where tenure security is inadequate. No matter who owns the land, the Trust will consider household sanitation improvements both as a preventive health measure and as an educational investment.

6.3. Sanitation at Public Institutions

The Trust will also consider financial support to sanitation at community institutions, especially schools or clinics. Sanitation projects at community institutions require motivation by a community-based or representative organisation (e.g. school committee, parent-teacher association). School and clinic projects should demonstrate a complimentary hygiene education component. The Trust's detailed policy for institutional sanitation is contained in Annexure F.

[1] In this document "sanitation" refers to the safe disposal of human excreta.

6.4. Sanitation Technology Choice

As with water supply, the Trust supports sanitation technology appropriate to the needs, affordability and management capacity of beneficiary communities. The Trust supports cost-effective technologies. Project proposals should consider and present cost analyses of a range of the most suitable options.

Table 3 (Annexure C) presents key aspects and probable cost ranges of the major sanitation technology options. The last column of this table presents Mvula's approach towards supporting each of these technologies.

Sanitation technology costs vary between R50 to R5000 per capita and operating costs have a similar wide range. A major disincentive to sanitation development in the past has been an industry loyalty to and consumer demand for standard, high cost designs. High cost, water-borne solutions are generally neither affordable (particularly in terms of running costs) nor maintainable by poor communities and will not normally be funded by the Trust. The enormous scale of need in South Africa, set against a limited resource base, calls for the adoption of more affordable options.

The technology for an adequate household service in most poor communities in rural or peri-urban areas is a variant of the ventilated improved pit latrine (VIP). There are many types of acceptable VIP's and the Trust will not be prescriptive in deciding the exact design to support but it will encourage designs and approaches which minimise the use of materials and contractors from outside the community. The Trust will evaluate the proposed design and may require a design check and quality control on site. Guidelines for the design of VIP latrines and implementation of sanitation projects are available on request.

The start-up or pilot phase of a sanitation project must incorporate a range of sanitation options of differing costs (*Ref. Section 6.6*). Savings can be achieved by the use of low-cost materials for superstructures, roofs and pedestals, but higher cost options (e.g. cement block walls, moulded plastic pedestals) should also be demonstrated to cater for those who are prepared to pay the difference. The Trust's policy is intended to make good sanitation affordable to the very poor, while still allowing for the construction of a more desirable product for the status minded who can afford it.

6.5. Focus Sanitation Projects in Areas of High Public Health Risk

In order to maximise public health benefits, the Trust should focus proactive sanitation efforts on areas of high population pressure and high public health risk, in particular in peri-urban areas. In other areas the Trust will respond to demand.

6.6. Components of a Sanitation Project

All sanitation improvement projects should include the following components: promotion of health education (including local health personnel), training of local builders and supervisors, setting up procurement and financial arrangements, monitoring and education. To facilitate this all such projects must be split into a *pilot phase* and a *continuation phase.*

The **pilot phase** would normally be considered as complete when the community have established clear, acceptable and affordable sanitation preferences, and when their capacity to manage the continuation of the project with only limited external support is established. Typically such a stage may have been reached after the construction of up to 50 acceptable and affordable latrines at homes in the region, with the community having achieved functional independence for the further running of the project.

In the **continuation phase** the Trust will support only community driven projects where external parties will be required only to maintain a monitoring function. This function will enable reasonable audits to be maintained on the soundness of construction and administration, and on the adequacy of ongoing health education. As a guideline, this monitoring function should not be more extensive than can be accommodated by a budget based on 5% of the ongoing cost of the project.

6.7. Ownership of Latrines

Although its construction solves a public problem, a latrine is and should be regarded as a private asset. The Trust would like to foster private ownership of latrines, as it believes, that this in turn helps to ensure that latrines will be kept clean and well maintained, which will in turn promote good health. To encourage the sense of private ownership the Trust insists that homeowners are at the very least required to give their approval of their latrine before a builder is paid for it. Where possible, the Trust would like to see the homeowner being able to choose and contract his/her own latrine builder as well.

6.8. Acceptability of Final Product

Although the level of the sanitation subsidy is modest, the Trust will not support projects where this is considered as an excuse to condone shoddy construction. Building must be done by builders trained for the purpose, and properly supervised. To make supervision affordable community level supervisors must be trained in the pilot phase. Outside agencies should only perform an overall monitoring role in the continuation phase.

The sanitation subsidy is not to be used to mass produce half built latrines. If owners lack the motivation to complete their latrines, even with simple materials, to a neat and acceptable finish, then the Trust will regard this as

evidence that the fundamentals of the project are not in order and may suspend the project until an improvement is observed.

6.9. Support for Community Health and Solid Waste Disposal

The Trust encourages the establishment of village level health workers, employed by the community, in co-operation with local government programmes, to carry out house to house health education on an ongoing basis. Such workers would be encouraged to undertake home visits to reinforce the basic rules of domestic hygiene, especially just after completion of latrine construction.

The Trust also encourages communities to take the initiative in establishing systems for solid waste removal (domestic and communal).

7. TRAINING AND EDUCATION

7.1. Developing Capacity

A major focus of the Trust's mandate is the development of capacity among local, user-representative, sector bodies. Its primary mechanism for supporting training and education initiatives in these bodies will be via project support.

In the light of the fundamental importance of training for the development of the sector in South Africa, the Trust will also consider direct support for training institutions. Training and educational initiatives at all levels will be considered, providing they are related to the improvement of services for the unserved. To this end, the Trust will support the development of a network of regional training agencies with expertise and capacity for water and sanitation training.

The Trust will support individual training initiatives only in exceptional circumstances, or as part of an overall programme.

7.2. Community-Level Training

The main areas of Trust support for community-level training will be in the fields of:

- Community financial control
- Organisational skill development
- Project management
- Technical skill development
- Health and hygiene education

Community training needs are variable depending on factors such as literacy levels, numeracy skills, previous experience of development projects and experience with Mvula projects in particular. After approval of a project by the Trust, and before any funds can be disbursed, a *training needs assessment,* detailing the training needs for that particular project, must be carried out and a *training programme,* based on the needs assessment, must be provided showing the scope, duration, timing and estimated cost. The Trust will assist with this assessment where necessary.

The content of training must be specific and relevant to the Trust's procedures and project requirements. Off-the-shelf training packages must be used only in so far as they can meet this requirement.

7.3. Eligibility for Training

Members of committees funded by the Trust will be eligible for the training.

The Trust recognises that where committees lack capacity or skills, part of the training should precede the initial disbursements of funds and in these cases the Trust should make provision for pre-project basic training.

Where especially poor and disadvantaged communities do not have the organisational skills to manage larger projects, the respective committee should be supported by the Trust to acquire some skills of management to enable the committee to be in control of the larger projects.

7.4. Training Costs

Training cost ceilings are presented in Section 3.17. Training budgets should be developed from costs of specific activities as described in the training needs assessment and training programmes (*Ref. Section 7.2*).

7.5. Pre-Project Capacity Building and Needs Assessment

From time to time the Trust is approached by communities who have very little organisational skills and no clear statement of their objectives. In such cases the Trust may employ a training agent to work with the community to establish a basic capacity and to carry out a needs assessment. This should be done before feasibility work for a specific project is attempted. This capacity building work is not to be confused with the pre-project training that is described in Section 7.3, which is relevant to the case of a community who already have a defined project with an allocated budget.

7.6. Timing of Training and Follow-up Support

Training activities should ideally be synchronised with project activities so that communities can apply their new skills to their own situations.

Training should be on-going, including follow-up mentoring and support. Allowance should be made for this mentoring to be provided for at least a year after project completion. The resources required for this mentoring will be dependent on the complexity of the project.

7.7. Training Agents and Monitoring of Training

While the Trust favours the use of and support of specialist training agencies, it also recognises that many training activities are most economically and conveniently undertaken by project implementation staff, such as community liaison officers and engineers. In either case the content and effectiveness of training will be monitored by the Trust's regional agents.

7.8. Use of Available Primary Health Care Services

Where effective local primary health care training is available, whether provided by government or a private organisation, efforts must be made to integrate this training into Mvula water and sanitation projects.

To reinforce this aspect of its policy the Trust will support initiatives to train primary health care workers to carry out relevant community-based primary health training.

7.9. Training for Sanitation Projects

The Trust recognises that in the case of sanitation projects the training requirement is heavily skewed towards the beginning of the project. This training should include aspects of health education, sanitation promotion, builder training, contractor development, demonstration latrine building and management capacity building.

For this reason the Trust recommends that its sanitation projects all be divided into two phases: the *pilot* phase, during which the community's capacity to manage the sanitation project is developed; and the *continuation* phase. These phases are described in Section 6.6 of this document.

In the absence of any existing sanitation work in the area which might have already addressed the objectives of the pilot phase, the Trust will allow up to 70% of a sanitation project's training budget to be spent during the pilot phase. The remaining 30% of the training budget is used in the continuation phase, essentially for a monitoring, mentoring and auditing function.

7.10. Training Assistance with non-Mvula Projects

The Trust may consider applications for training from rural and peri-urban communities undertaking water and sanitation projects funded by organisations other than the Trust under the following circumstances: as part of a partnership agreement between the Trust and a regional utility or government agency; or in the case of a deserving community project which does not have any apparent prospects of having this training provided under its present circumstances. The training material in such cases will be customised and specific to the needs of the projects involved.

8. OTHER ISSUES

8.1. Integration of Water, Sanitation and Health Education

Project proposals are encouraged to include components of water, sanitation and health education in order to enhance the health benefits. Projects concentrating on water or sanitation only can be approved, provided they include a health education component, but will be encouraged to develop the other component in subsequent phases. Women in particular (always the mainstays of the communities under discussion) will be able to provide vital initiatives in these component sectors.

When planning sanitation projects, it is important to consider the existing sanitation situation at local public institutions, such as schools and clinics. Projects that include both domestic and institutional sanitation will generally be more efficient and easier to administer than if the two activities are separated.

8.2. Project Feasibility Studies and Pre-Project Activities

The Trust will, in general, not fund feasibility or pre-project activities up front. Project feasibility and pre-project community mobilisation are expected to be undertaken either by the private sector at risk, or by regional authorities or NGOs. The Trust will reduce the risk to these agencies by clearly publishing the Trust's criteria and policies applied to project proposals, and any changes to these criteria. Approved projects may include within their budget payment for pre-project activities, including feasibility studies.

8.3. Innovative Approaches

Projects which seek to apply innovative approaches, to extend the range of water and sanitation options available in South Africa, or which have the potential to contribute significantly to local knowledge or the development of large scale programmes, will be given special consideration for funding. It will be accepted that projects utilising unproven approaches may require contingency finance in the event of having to revert to accepted practice, and additional project monitoring and evaluation capacity.

8.4. Environmental Soundness

All projects supported by the Trust will require a statement on the likely environmental impact of the project. An Environmental Impact Assessment will be required for projects which the Trust considers may have a negative effect on the environment.

8.5. Applied Research

The Trust is not a research funding body. The Trust will, however, consider modest funding for applied research activities of specific and direct significance to the better implementation of its mandate, or on topics of national interest within its mandate.

Adopted: 21 June 1995

8.6. Conferences

The Trust will not fund conferences unless they are specifically part of an Mvula project or operation, or directly related to a priority development.

ANNEXURES

Adopted: 21 June 1995

TABLE 1 - COMPARISON OF DIFFERENT WATER SUPPLY TECHNOLOGY OPTIONS

TECHNOLOGY	PER CAPITA PRICE RANGE	MAIN FACTORS AFFECTING COST	OPERATION AND MAINTENANCE REQUIREMENTS	OTHER NOTES	SUGGESTED MVULA SUPPORT
Spring protection	R50 - R400	• Population served • Typical cost R8000 to R15000/unit • Large community labour contribution possible	Very simple: • Desilting of inlet • Tap/pipe repair	• Many will not use the spring if other traditional sources are closer, causing population served figures to be distorted. • Difficult to evaluate reliability except at the end of the dry season. • Prone to failure in drought. • Some types of spring fail easily. • Too many taps can cause system failure.	• Programmes to develop springs in suitable areas. • Programmes to evaluate springs in dry seasons.
Hand pumps	R75 - R400	• Population served • Depth to water table • % success rate with drilling • Typical cost R8000 to R15000/unit • Limited community labour contribution possible	From simple to difficult, depending on the type of handpump installed: • Replacement of worn bushes, bearings, seals and handles.	• Only for areas with water table less than 80 metres from the surface. • Special equipment needed to remove and service some types of hand pump, making them unsuitable for local maintenance. • Village level operation and maintenance handpumps (VLOM) are still not well known or easy to source in South Africa. • Requires skilled supervision at installation.	• Introduction of quality VLOM handpumps to South Africa or local manufacture. • Programmes to install VLOM handpumps. • Handpump training programmes. • Rehabilitation.
Protected shallow wells	R20 - R300	• Population served • Typical installation cost is approx. R2000 • Large community labour contribution possible	Simple: • Desilting Servicing of simple pumps	• Very few parts of South Africa have aquifiers close enough to the surface for this technology to be applicable. (exceptions: Maputaland; dry river beds.)	• Programmes to build protected shallow wells in suitable areas.
Animal driven pumps	R50 - R400	• Population served, head pumped • Typical installation cost is R20000 • Limited community labour contribution .	More difficult, disciplined care required but typically neglected: • Greasing • Replacing worn bushes, bearings and seals	• Particularly suitable for high rate, short duration pumping as in irrigation schemes. • Neglected option as quality animal pumps are not easily available.	• Support introduction of quality animal driven pumps to South Africa or local manufacture.

TABLE 1 (CONT.)

Solar powered pumps	R150 - R1000	• Population served • Head pumped • Typical installation cost of small pumping installation (10 m^3/d head 10 m) approx. R30000 • Limited community labour contribution .	Minimal: • Occasional replacement of bushes on submersibles • Cleaning of solar panels	• Suitable for low-rate low-head pumping (e.g. 10m3/d to head 10m). • Prohibitively expensive for larger pumping installations.	• Loan finance to cover pump cost where usual subsidy is insufficient. Cost of repayment of loan offset by very low maintenance cost.
Windmills	R50 - R400	• Population served • Depth of water • Typical installation cost is in range R20000 to R30000 • Limited community labour contribution .	More difficult, disciplined care required but typically neglected: • Greasing • Replacement of worn bushes, bearings and seals	• Windmills typically last up to 5 years without maintenance, but last 20 years with maintenance - therefore only applicable in areas where high maintenance capacity is proven. • Prone to damage if not tied back during very high winds.	• Training programmes for areas with significant wind potential (most coastal areas). • Rehabilitation.
Rainwater harvesting	R20 - R400	• Population served • Limited community labour contribution .	Simple but onerous and typically neglected: • Cleaning of gutters • Disposal of first flush	• Needs rain • Needs expensive guttering and roofing • Areas with rainfall limited to a few storms in the year (e.g. Karoo) require expensive storage. • Expensive at household level, most economical for schools.	• Rainwater harvesting programmes at schools in areas where no local programme is in place.

TABLE 1 (CONT.)

Production boreholes	R75 - R400	• Population served • Depth of boreholes - more than 100m requires much more expense • Pumping head - more than 160m requires much more expense • Sustainable yield of boreholes • Large community labour contribution possible if water is reticulated.	More difficult, and critical to project viability: • Replacement of worn bushes, bearings, shafts and seals (needing outside help). • In case of diesel, oil changes, filter changes frequently (typically 250 hours service per change). • Belt changes	• Borehole water is sometimes unpleasant to the taste and is subject to community resistance. • Salt/bad taste is difficult/expensive to improve. • Proper yield test often neglected before selection of pump thus causing holes to fail prematurely. • Special equipment required to remove pumps from holes. • Diesel engines cannot be neglected, and are expensive to run, but give good service if cared for. • Electric motors are more appropriate and reliable but need electricity. Where the Eskom grid is not too far away, the cost of loan financing for electrification may be worth taking on to avoid having to use diesel. Eskom grid extension costs R30000 to R40000 per km.	• Individual projects.
Surface water abstraction - gravity	R50 - R150	• Population served • Length of gravity main pipeline • Treatment required (slow sand filtration only, or horizontal roughing filter and SSF, or coagulation, flocculation sedimentation and sand filtration) • Large community labour contribution .	Simple: • Desilting of intake • Operation and maintenance of treatment plant • Coagulation and flocculation requires chemicals	• Treatment required. • Perennial river/stream required with suitable site for weir. • Long lines may be required to generate sufficient head for distribution or to reach the target community.	

TABLE 1 (CONT.)

Surface water abstraction - pumped	R150 - R1000	• Population served • Economics favour subregional schemes. Very small schemes have uneconomical high per capita operation and maintenance costs. Very large schemes have uneconomical high capital costs. • Pumping head - more than 160m requires much more expense. • Very flat topography requires larger more expensive pipes. • Rocky soil conditions require much more expense. • Large community labour contribution possible, esp. with reticulation. • Treatment required: (slow sand filtration only, or horizontal roughing filter and SSF, or coagulation, flocculation sedimentation and sand filtration)	More difficult, and critical to project viability: • Replacement of worn bushes, bearings, shafts and seals (needing outside help). • In case of diesel, oil changes, filter changes frequently (typically 250 hours service per change) • Belt changes • operation and maintenance of treatment plant • coagulation and flocculation requires chemicals	• Treatment of water required to render bacterially safe. • Note a bulk main passing through a community has not **served** it until storage and branch lines have been built. • Definition of small and large depends on settlement patterns e.g. suitable scale could be 200 to 2000 homes in higher density rural KwaZulu, village or cluster of villages in rural Lebowa. • Diesel engines cannot be neglected, and are more expensive to run, but give good service if cared for. • Electric motors are more appropriate and reliable but need electricity. Where the Eskom grid is not too far away, the cost of loan financing for electrification may be worth taking on to avoid having to use diesel. Eskom grid extension costs R30000 to R40000 per km.	• All elements of more economical schemes up to Mvula subsidy level. • Above subsidy level consider application of loan finance where scheme has a substantial revenue base. • Support **elements** of more expensive schemes, but do not encourage white elephants . • In case of joint funding of more expensive schemes with a regional body concentrate on elements of scheme that fit into Mvula's objective of working closely with communities - i.e. reticulation and capacity building not bulk supply.

TABLE 2: COMPARISON OF SANITATION TECHNOLOGY OPTIONS

SANITATION TECHNOLOGY OPTIONS	PER SITE PRICE RANGE	MAIN FACTORS AFFECTING COST	OPERATION & MAINTENANCE REQUIREMENTS	GENERAL NOTES AND OTHER RELEVANT FACTORS	SUGGESTED MVULA SUPPORT
Basic pit latrine	R400 - R1 500	Ground conditions. Labour employed. Type of superstructure.	Keep surrounding area clean. Relocate pit when full.	<20 persons/ha Generally smell and attract flies	Advisory service. Discourage construction.
Ventilated improved pit (VIP) latrine	R600 - R3 000	Ground conditions. Labour employed. Type of superstructure.	Keep surrounding area clean. Relocate pit when full.	<250 persons/ha Reduces smells and flies. Potential for construction using local materials and labour.	Advisory service. Subsidy for community and public institution projects. Training programmes.
Ventilated improved double pit (VIDP) latrine	R1 000 - R3 400	Ground conditions. Double pit. Superstructure.	Keep surrounding area clean. Swop pits when one is full (2 years). Empty pits	<400 persons/ha May be suitable for schools, public toilets.	Advisory service. Project funding to subsidy level. Training in construction and operation.
Ventilated vault (VV) latrine (Conservancy tank)	R1 200 - R3 600	Ground conditions. Excavation and lining of vault. Superstructure.	Requires regular emptying by tanker to sewage treatment works.	Strongly discouraged. 300-600 persons/ha. High water table, or impermeable ground. Upgradable to septic tank or small-bore level.	Training in construction. Project funding if economically and technically viable.
Basic aqua-privy	R600 - R2 600	Excavation and lining of tank. Superstructure. Soakaway or filter-beds. Soil permeability.	User must fetch water to maintain water seal. Periodic removal of sludge by hand or vacuum pump.	Strongly discouraged <300 persons/ha. Absorptive soils or suitable area for soakaway. Some water nearby.	Training in construction. Project funding to subsidy level, if no other alternative.
Low flush on site aqua-privy systems (LOFLOS)	R800 - R3 100	Excavation and lining of tank. Superstructure. Soakaway. Water supply. Soil permeability.	Periodic removal of sludge by hand or vacuum pump. Maintain soakaway.	Strongly discouraged <300 persons/ha. Absorptive soils. On-site water supply for low water consumption needs.	Training in construction and operation. Project funding up to subsidy level.

TABLE 2 (CONT.)

Pour flush	R1 000 - R3 000	Pour flush pan Lining of leach pits Superstructure Soil permeability Water supply	Swop pits when one is full Removal of sludge from full pits after 2 years	<300 persons/ha Absorptive soils and suitable area for leach pits. Some water nearby.	Training in construction. Project funding if economically and technically viable.
Septic tank (Conventional)	R1200 - R3100	Excavation and lining of tank. Superstructure. Soakaway. Water supply. Soil permeability.	Periodic removal of sludge by hand or vacuum pump. Maintain soakaway.	<200 persons/ha. Suitable for use in areas with adequate water supply and absorptive soils.	Advisory service. Subsidy to convert existing systems. Subsidy for community installations. Training in construction and operation.
Water-borne sewerage systems consisting of one or more of the following elements:		Complexity of systems. Population density.	Closed drainage systems should operate relatively maintenance free. Public education programmes would help.	Suitable for high density populations where economies of scale apply and water supply is adequate.	Project support on merit and within the objectives of the Trust. Education programmes for the urban poor.
a) WC in-house or in community buildings	R100 - R900	Materials for plumbing, fixtures and superstructure.	Regular cleaning. Maintenance of plumbing fittings. Provision of paper.	Trained plumbers required for installation.	Advisory service. Project funding to subsidy level
b) Building drains	R700 - R2300	Depth and hardness of ground. Length of drain.	Cleaning of gullies. Clearing blockages. Replacement of broken covers.	Trained plumbers required to maintain the system.	Subsidise small developments according to means level of common.
c) Sewer reticulation	R600 - R2500	Density of dwellings. Slopes. Township layout.	Periodic inspection and flushing. Removal of debris. Replacement of broken covers.	As above.	Limited funding to connect to existing systems. Loan funding
d) Trunk sewers	R100 - R1000	Length, size. Ground condition. Nature of terrain.	As above.	As above.	Local authority responsibility. Loan funding
Effluent systems, including small- bore sewers	R200 - R2000	Installation of pipelines and control structures.	Relatively maintenance free if properly designed. Desludging of tanks.	Removes effluent from septic tanks, aquaprivies, etc. where ground conditions preclude use of soakaways.	Advisory service. Funding up to subsidy level. Individual projects to eliminate health hazards. Training programmes.

TABLE 2 (CONT.)

Sewage treatment: Oxidation ponds	R300 - R1500	Population served. Plant capacity.	Low maintenance Trained operating and maintenance staff required.	May be suitable for rural institutions with large populations, or where no other technology is suitable.	Education and training programmes. Loan funding for community projects.
Sewage treatment a) Activated sludge b) Bio-filters	R300 - R1500	Population served. Plant capacity.	Skilled operating and maintenance staff required.	Necessary in urban areas with large populations, or where land for ponds is not available.	Local authority responsibility.
Sewage treatment: Wetlands - (Artificial and natural)		Area and depth of filter media. Pre-treatment tanks. Type & source of vegetation. Inlet-outlet structures.	Control of stormwater. Trimming of vegetation, weed control. Monitoring of wetland performance.	Experimental Can be coupled with anaerobic digesters as effective means of effluent treatment. Suitable site needed away from habitable areas.	Funding for community projects.
Biogas digesters	R5000 - R10000	Digester size. Soakaway. Ground conditions.	20% human waste. 60% animal manure. 20% vegetable matter. Regular removal of sludge.	Suitable for labour intensive construction. Purpose-built digesters for use in areas where suit-able feedstock is available.	
Chemical toilets	R2200 - R5000	Manufactured product. Distance to nearest service centre. Quality of units.	Servicing intervals are determined by usage. Requires trained operators. Suits commercial ventures.	Suitable for short periods on hire, e.g. construction sites, community functions. Temporary solution for informal settlements.	
Bucket latrine systems	R500 - R1100	Manufactured products. Tanker service.	Daily removal and cleaning of buckets. Disposal of night-soil.	Unpopular. Difficult to manage. Expensive to operate.	Advisory service. Funding up to subsidy level for replacement. Local authority response.

Notes:
1. In all of the above technologies, it is important that the process of the selected technology is fully understood by the implementing agency as well as the users. Hence the support for education and training programmes.
2. To convert unit costs to per-capita costs it may be assumed that between 6 and 25 persons could share the use of one sanitation unit. To avoid inter-family disputes, the goal should be one unit per family.
3. "Superstructure" includes all above ground construction. i.e. the base-slab, pedestal, enclosure, roof, vent pipe, doors, etc. Where these can be made on site, costs can be reduced.
4. The risk of polluting the local ground and surface water resources is greater with water-using sanitation systems than those where no water is added and pits are not subjected to flooding. This is an important criteria where the communities' water supply may be affected.

TABLE 3: COMPARISON OF DIFFERENT WATER SUPPLY TECHNOLOGY OPTIONS WITH RESPECT TO INITIAL COMMUNITY CONTRIBUTION

TECHNOLOGY	PER CAPITA PRICE RANGE	MAIN FACTORS AFFECTING COST	OPERATION AND MAINTENANCE REQUIREMENTS	8% COMMUNITY CONTRIBUTION	SUGGESTED MAINTENANCE FUND
Spring protection	R50 - R400	• Population served • Typical cost R8 000 to R15 000/unit • Large community labour contribution possible	Very simple: • desilting of inlet	R4 - R32/capita	R200/spring
Hand pumps on borehole	R75 - R400	• Population served • Depth to water table • % success rate with drilling • Typical cost R8 000 to R15 000/unit • Limited community labour contribution possible	From simple to difficult, depending on the type of handpump installed: • replacement of worn bushes, bearings, seals, handles and cylinder.	R6 - R32/capita	R200/pump
Protected shallow wells	R20 - R300	• Population served • Typical installation cost is approx. R2000 • Large community labour contribution possible	Simple: • desilting • servicing of simple bucket pumps	R1-60 - R24/capita	R50/shallow well
Animal driven pumps	R50 - R400	• Population served, head pumped • Typical installation cost is R20 000 • Limited community labour contribution possible	More difficult, disciplined care required but typically neglected: • greasing • replacement of worn bushes, bearings, seals and cylinder	R4 - R32/capita	R200/pump

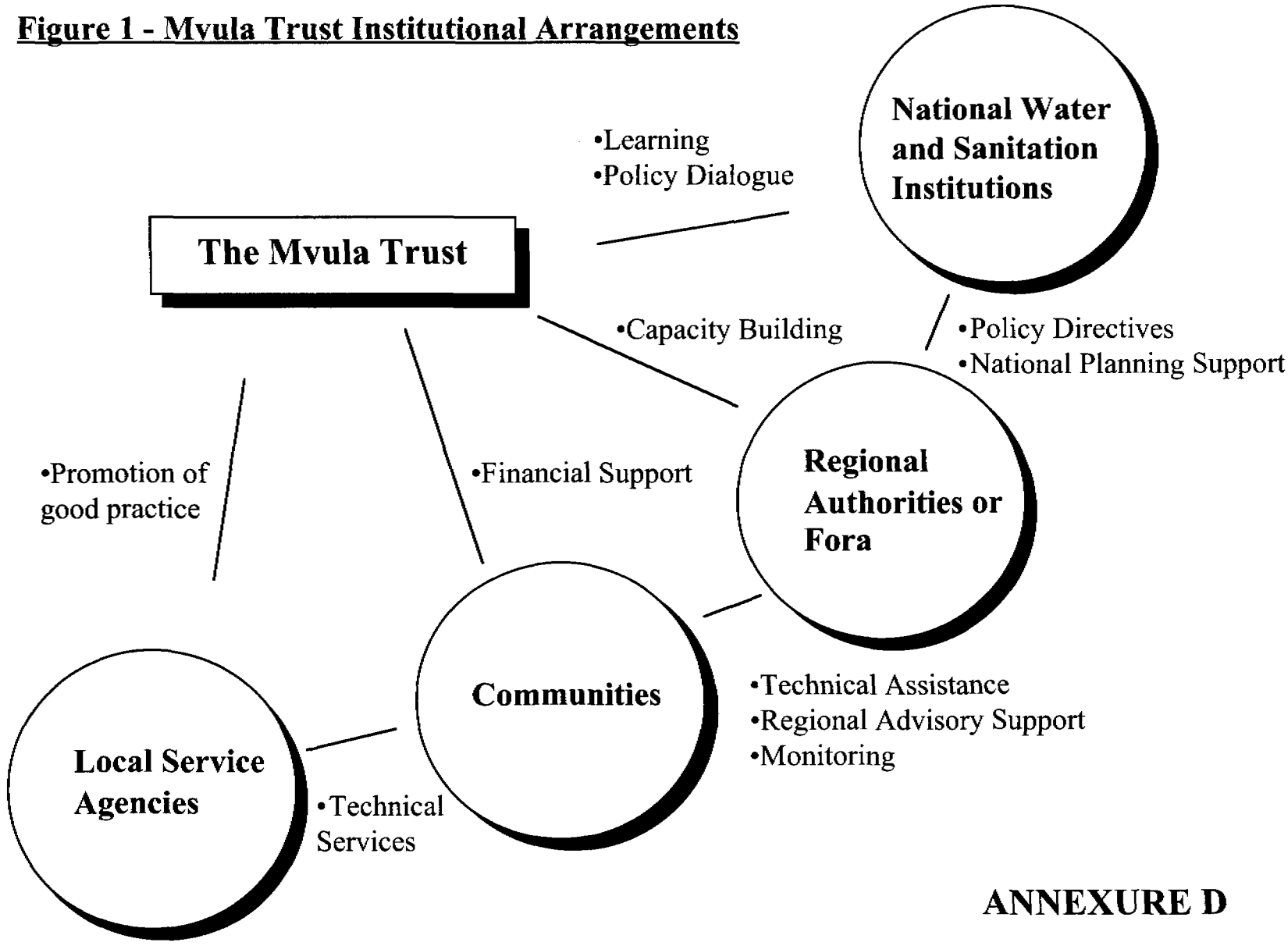
TABLE 3 (CONT.)

Solar powered pumps	R150 - R1000	• Population served • Head pumped • Typical installation cost of small pumping installation (10 m^3/d head 10 m) approx. R30 000 • Limited community labour contribution possible	Minimal: • occasional replacement of bushes on submersibles • cleaning of panels	R12 - R80/capita	R200/pump
Windmills	R50 - R400	• Population served • Depth of water • Typical installation cost is in range R20 000 to R30000 • Limited community labour contribution possible	More difficult, disciplined care required but typically neglected: • greasing • replacement of worn bushes, bearings, seals and cylinder • check and top up oil	R4 - R32/capita	R200/pump
Rainwater harvesting	R20 - R400	• Population served • Limited community labour contribution possible	Simple but onerous and typically neglected: • cleaning of gutters • disposal of first flush	R2 - R32/capita	R100/site
Production boreholes	R75 - R400	• Population served • Depth of boreholes - more than 100 m requires much more expense • Pumping head - more than 160 m requires much more expense • Yield of boreholes • Large community labour contribution possible if water is reticulated	More difficult, and critical to project viability: • Replacement of worn bushes, bearings, shafts and seals (needing outside help) • In case of diesel, oil changes, filter changes frequently (typically 250 hours service per change) • Belt changes	R6 - 32/capita	3 months energy costs + funds for 2 services of pump and engine/motor

TABLE 3 (CONT.)

Surface water abstraction - pumped	R150 - R1000	• Population served • Economies favour subregional schemes. Very small schemes have uneconomically high per capita operation and maintenance costs. Very large schemes have uneconomical high capital costs. • Pumping head - more than 160 m requires much more expense • Very flat topography requires larger more expensive pipes • Rocky soil conditions require much more expense • Treatment required • Large community labour contribution possible, esp. with reticulation.	More difficult, and critical to project viability: • Replacement of worn bushes, bearings, shafts and seals (needing outside help) • In case of diesel, oil changes, filter changes frequently (typically 250 hours service per change) • Belt changes • • Operation and maintenance of treatment plant	R12 - R80/capita	3 months energy costs and funds for 2 services of pump and engine/motor 3 months chemical supplies
Surface water abstraction - gravity	R50 - R150	• Population served • Length of gravity main pipeline • Treatment required (sand filtration only, or coagulation, flocculation, sedimentation as well) Large community labour contribution possible	Simple: • Desilting of intake • Operation and maintenance of treatment plant • Coagulation and flocculation requires chemicals	R4 - R12/capita	Dependent on size of scheme 3 months chemical supplies

Figure 1 - Mvula Trust Institutional Arrangements



ANNEXURE D

ANNEXURE E
DISBURSEMENTS TO CONSULTANTS/IMPLEMENTING AGENTS

The Trust's policy on professional fees, described in broad terms in Section 3.17, attempts to strike a balance between the potentially conflicting requirements of having to spend public funds in as cost-effective a way as possible, while providing sufficient incentive for the consulting engineering profession and development NGOs to become involved in the design and implementation of community managed water and sanitation projects.

The Trust's proposed fee structure is based on the following:

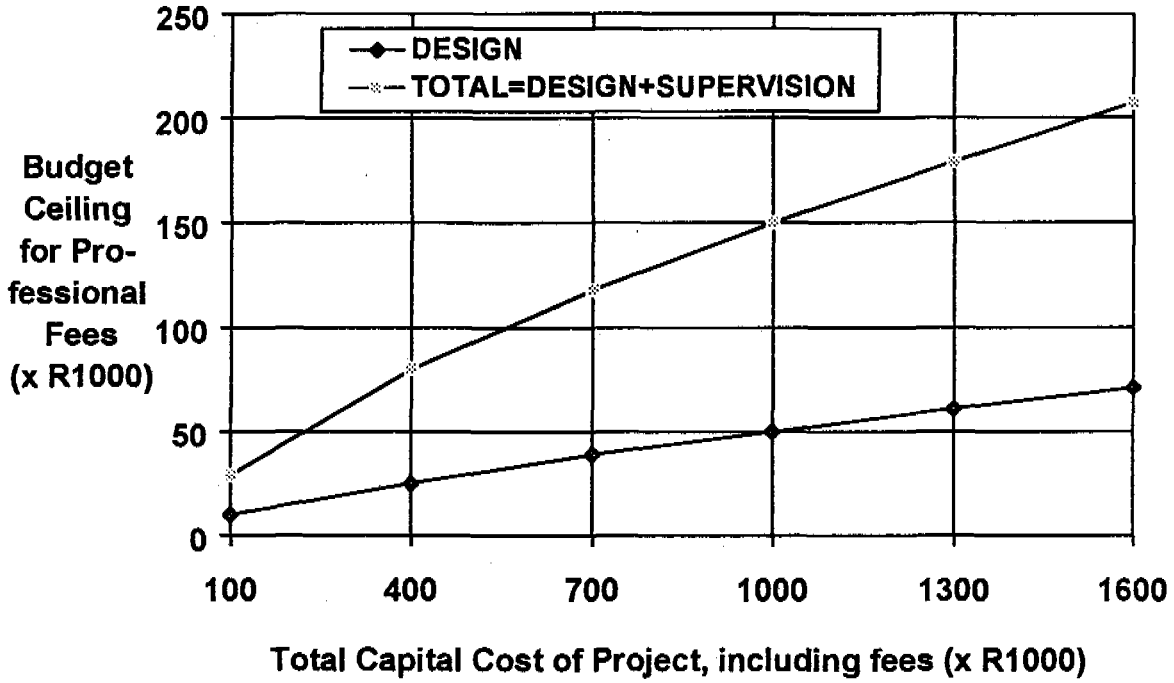
- Parts of the SAACE Standard Model Form 1.
- The experience and input of consultants working on Mvula Trust projects in several provinces.
- The experience of Mvula Trust Regional Agents.

The following table summarises the Trust's policy. Figure E.1 shows the budget ceiling values.

ACTIVITY	COST GUIDE
Pre-project and preliminary feasibility work	Fund on a time cost basis, guideline range R3 000 (simple projects) to R15 000 (more complex projects).
Design (includes surveys, design, drawings, office costs)	Fund at SAACE type hourly rates, but total cost to be determined by scope of work required, not SAACE standard percentages. Typical cost will be 5% to 10% of capital cost of project. Amounts of more than R30 000 will require a detailed motivation.
Site supervision	Fund on a cost plus basis, based on number of trips to project, time spent there and travel costs. Typical cost will be up to 10% of the capital cost. This is the only component which can be increased if the project implementation time has to be extended.
Project management assistance to Committee	Fund on a cost plus basis, as for site supervision. Typical cost will be up to 10% of the capital cost. This item is difficult to separate from on-the-job training.
Training	Fund according to a detailed training needs assessment. Range 5% (experienced Committee or large project) to 20% (more involved training needs or small project), normally R 25-35 000. Costing should take into account both formal and on-the-job training.

FIGURE E.1: GUIDELINE BUDGET CEILINGS FOR PROFESSIONAL FEES

These guidelines are based on "average" conditions, i.e. projects located within 150km of the Implementing Agent's office, which can be expected to progress at a rate which is normal for community managed projects, and which do not require any extraordinary or unusual services.



ANNEXURE F

SPECIFIC POLICIES FOR INSTITUTIONAL SANITATION

1. INTRODUCTION

The purpose of this document is to elaborate on the Trust's Specific Policies with respect to sanitation provision in institutions, particularly schools and clinics. In the case of any conflict, the principles of the Trust's general policies will usually have precedence over particular policies contained in this document.

2. BENEFICIARIES

The Trust's primary task is to provide financial and other support for water supply and sanitation development to poor and disadvantaged South African communities with inadequate access to such services.

This includes institutions serving such communities, particularly schools and clinics, regardless of whether another agency may have the formal responsibility for providing such services at the institution.

Assistance will be provided for the provision of toilets for school pupils and members of the public attending clinics and other rural institutions. Basic sanitation for teachers and staff at clinics will also be considered for subsidy.

3. FINANCIAL ISSUES

Financial support to projects will be provided through organisations which will be encouraged to contract out to local service agencies on a competitive basis for technical and other support.

3.1. Grant Finance

Financial support will be provided in the form of non-refundable grant finance to cover the majority of the costs of an acceptable minimum standard of sanitation for institutions. Additional grant funding for higher levels of service will not be considered by the Trust.

3.2. Mvula Trust Contribution

The capital grant offered by Mvula Trust for institutional sanitation projects will be a maximum of **R1 200 per toilet unit or cubicle.** In exceptional circumstances, where there are particularly difficult physical conditions at the site for instance, this limit may be increased. Well constructed existing facilities, unimproved pit latrines for instance, may be upgraded with Trust assistance.

In addition to assisting with the construction of sanitation facilities for pupils and members of the public using the institution, assistance may also be given for the construction of sanitation facilities for teachers or other staff at the institution. A distinction will be drawn between toilets at the institution that will be used during working hours and toilets for staff living accommodation. The rate of subsidy for domestic sanitation only will be available for toilets serving living accommodation while the higher institution subsidy will be available for toilets at the place of work.

To encourage improved hygiene, the Trust will also support the construction of hand-washing facilities associated with institutional sanitation. The reasonable cost of the provision of hand-washing facilities from an existing water supply will be supported, over and above the costs of the sanitation construction. The maximum level of subsidy provided by the Trust for hand-washing facilities will be determined by the number of toilet seats or compartments provided. The upper limit will be **R4 000 for every ten toilet units or cubicles.** The requirements for a beneficiary contribution will apply to hand-washing facilities.

The provision of a new water supply may be considered as part of a community water supply scheme, in accordance with the Trust's policies.

3.3. Beneficiary Contribution

A beneficiary contribution to the improvements of a minimum of 8% of the capital cost is required in order to obtain Mvula Trust support. This may be in the form of voluntary labour, labour at reduced rates of pay, materials, cash, or any combination of these. This contribution must come from the institutions own resources or from contributions mobilised through a community committee, not from an outside donor. If a technology or standard of construction is selected which costs more than the subsidy plus the institution's minimum contribution, the institution and beneficiaries will be required to find the difference.

3.4. Loan Finance

If the institution and its beneficiaries desire a higher level of service than the basic subsidy will finance, the Trust will consider providing loan funding to cover the additional costs.

3.5. Operation, Maintenance and Repair Fund

The Mvula Trust will only assist with the capital cost of construction. No contribution will be made for operations, maintenance or repair costs other than the performance incentive payments described in Section 3.6. A fund to provide for these expenses shall, as a condition of Mvula Trust assistance, be set up. Contributions to the fund will be made by the institution or users and will be sufficient to cover operations and maintenance costs and will allow for pit emptying or other major expenses and for eventual replacement where necessary.

3.6. Operations and Maintenance Performance Incentive

An operations and maintenance performance incentive will be included in addition to the Mvula Trust's contribution to the capital cost. This will be deposited in the maintenance fund account after a satisfactory system of maintenance is shown to be operating. The incentive levels will be set at 2% of Mvula contribution after six months from the completion of construction and a further 3% after two years.

Inspection of the facilities will have to show that they are being properly used and kept in a hygienic condition. In addition, old and unsatisfactory facilities will have to be either upgraded to an acceptable standard, or be completely demolished, with the pits filled in or made safe and hygienic in some other way.

4. INSTITUTIONAL ISSUES

4.1. Mvula Trust's Role

In addition to providing subsidies for construction, the Mvula Trust may consider assistance in the following areas either directly or through other agencies acting on the Trust's behalf:

- Training of contractors, institution employees, community health committees or voluntary labour
- Designs and technical assistance
- Standard forms of contract

4.2. The Institution's Role

To qualify for Trust assistance, the institution, such as a school or clinic, must, in addition to making its contribution to the cost, fulfil the following requirements:

- Have a functioning body, such as a parent-teachers association or community health committee, that will assume responsibility for the project. This body should include representatives of both the institution's staff and the users.
- Have a project bank account into which funds for the project may be deposited.
- Recruit a local building contractor or mobilise community labour for construction.
- Formulate a system for maintaining the facilities which must be agreed by all parties.
- Provide health and hygiene education to users of the facilities.

4.2.1. Maintenance

All sanitation systems require resources for operations, maintenance and repair. This may be a simple matter of ensuring that facilities are kept clean and in good repair, but may require major inputs from time to time, to desludge pits or tanks for instance. The simplest form of sanitation, single pit VIP latrines, may require complete replacement after the pits are full (see Sections 3.4 and 3.5).

4.2.2. Health and Hygiene Education

The provision of toilets alone will not improve health practices in the community, health and hygiene education is required to ensure that appropriate hygiene behaviour is practised both in the institution and at home.

Where appropriate, each institution must initiate a health and hygiene education programme. The objectives of this programme will be to ensure that the facilities are used correctly and not abused, to promote the construction of improved domestic sanitation and to promote higher standards of hygiene in the home.

In schools there should be a health and hygiene education component introduced into the curriculum. School pupils will also be expected to have a role in cleaning and maintaining the toilets. Knowledge and habits acquired at school not only influence individuals for the rest of their lives, they also influence other members of the family.

At rural clinics it is expected that health and hygiene education will form part of community health care activities.

5. TECHNOLOGICAL ISSUES

5.1. Sanitation Technology Choice

Due to the particular maintenance problems experienced with institutional sanitation facilities, the Trust will usually only assist with the construction of the simplest level of technology that will provide an acceptable and hygienic service. The choice will therefore usually be restricted to VIP latrines and the level of subsidy is set to cover the majority of the cost of this type of sanitation facility. Labour intensive construction which maximises the use of locally available materials will be encouraged.

Water borne systems and aqua privies fail frequently for a variety of reasons, particularly the lack of an adequate and reliable water supply. Where water borne sanitation has been provided but cannot operate, the Trust will consider subsidising the replacement of flush toilets with VIP latrines.

5.2. Levels of Provision

To ensure an equitable distribution of resources, the Mvula Trust will assist with the provision of sanitation provision in accordance with Table 1. This is the minimum level of provision, but the Trust will not assist financially with the construction of larger numbers of facilities than this. Provision will be based on current enrolment or clinic attendance, with no allowance for future growth.

For calculation of the level of subsidy, a urinal with space for up to 9 users at a time will be considered equivalent to one toilet seat.

5.3. Institutional Sanitation in Community Water and Sanitation Projects

It is intended that wherever possible community water supply and sanitation projects will contain provision for institutional sanitation. This will usually be as part of one larger project implemented with Mvula Trust assistance, but the Trust will also contribute to funding sanitation for institutions where other parts of the project are funded by other agencies.

The Trust wishes to encourage projects which combine institutional sanitation with community sanitation. This type of project will have proportionately lower overhead costs while training and health and hygiene education will support both components of the project.

5.4. Hand Washing Facilities

Hand washing facilities should be constructed close to the sanitation facilities to encourage their use after visiting the toilet. The facilities must be designed to minimise waste and proper provision must be made for drainage to avoid the formation of stagnant pools. Drainage may be to a separate soakaway for wastewater only, or it may be into the pit or tank of the sanitation facility, provided that this is designed to accommodate the wastewater flow. To minimise wastage of water, self-closing taps or flow restricters should be installed.

Where there is no existing piped water supply to the institution, the Trust may assist with the construction of rainwater catchment tanks. As an alternative in areas with limited rainfall, tanks may be constructed which are filled by pupils bringing containers of water to school. Larger scale water supply facilities will only be considered for assistance by the Trust where these are part of a larger community water supply scheme.

Table 1: Provision of Sanitation Facilities at Public Institutions

Institution	Sanitation Provision for Males	Sanitation Provision for Females
Nursery Schools and Crèches	**Seats:** 1 for every 20 pupils, rounded up to the next whole number, plus 1	**Seats:** 1 for every 20 pupils, rounded up to the next whole number, plus 1
Primary and Secondary Schools	**Seats:** 1 for every 60 pupils, rounded up to the next whole number, plus 1 **Urinals:** 1 for every 60 pupils, rounded up to the next whole number	**Seats:** 1 for every 30 pupils, rounded up to the next whole number, plus 1
Clinics	**Seats:** 1 for every 100 outpatients, rounded up to the next whole number, plus 1	**Seats:** 1 for every 100 outpatients, rounded up to the next whole number, plus 1
Staff	**Seats:** 1 for every 40 staff members, rounded up to the next whole number **Urinals:** 1 for every 40 staff members, rounded up to the next whole number	**Seats:** 1 for every 20 staff members, rounded up to the next whole number