LIMPOPO

PROVINCIAL GOVERNMENT

REPUBLIC OF SOUTH AFRICA

LIMPOPO DEPARTMENT OF EDUCATION

(LPED)

INFRASTRUCTURE PLAN 2009 – 2014

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ABBREVIATIONS

ABET	Adult Basic Education and Training
AWP	Annual Work Plan
BAS	Basic Accounting System
CIDB	Construction Industries Development Board
DBSA	Development Bank of Southern Africa
DA	Department of Agriculture
DoE	National Department of Education
DoH	National Department of Health
DORA	Division of Revenue Act
DPW	National Department of Public Works
DWAF	Department of Water Affairs and Forestry
ECD	Early Childhood Development
EMIS	Education Management Information System
FET	Further Education and Training
FTE	Full-Time Equivalent
GET	General Education and Training
GIS	Geographic Information System
IA	Implementing Agent
IDIP	Infrastructure Delivery Improvement Programme
IDT	Independent Development Trust
IMQS	Infrastructure Management Query Station
IRM	Infrastructure Reporting Model
IYI	In-Year Interventions
LDoH	LIMPOPO Department of Health
LDPW	LIMPOPO Department of Public Works
LPED	LIMPOPO Provincial Education Department
LSEN	Learners with Special Educational Needs
MEC	Member of the Executive Council
M&E	Monitoring and Evaluation
MTEF	Medium-Term Expenditure Framework
NEIMS	National Education Infrastructure Management System
OHSA	Occupational Health and Safety Act
O&S	Organisation and Support
PFMA	Public Finance Management Act
PGDS	Provincial Growth and Development Strategy
PREMIS	Provincial Real Estate Management Information System
PPP	Public Private Partnership
PT	Provincial Treasury
SCM	Supply Chain Management
SDA	Service Delivery Agreement
SETA	Sectoral Education and Training Authority
USA	United States of America

SECTION 1: EXECUTIVE SUMMARY

This infrastructure plan seeks to provide both the strategic vision and the operational framework to ensure that the provision of physical infrastructure required for the delivery of schooling in Limpopo is cost effective and appropriate.

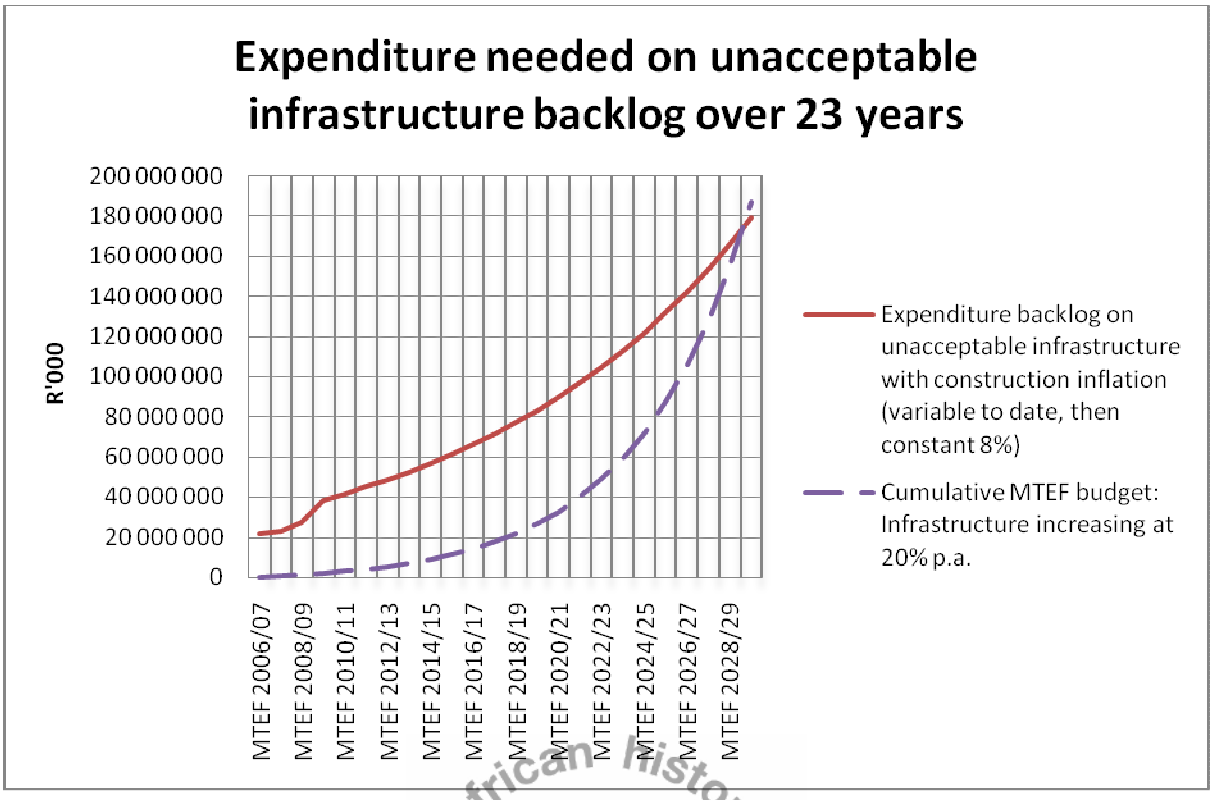
The purpose of the plan is to serve as a management tool and information document, describing, motivating and summarizing the short, medium and long term needs and intentions of the Limpopo Provincial Education Department (LPED) in respect of infrastructure provisioning for the years ahead. This includes an indication of the budgetary implications. It highlights the need for closer interaction between the physical and financial management of the LPED's infrastructure programme, as well as the need for appropriate capacity building and changes to systems and processes to improve efficiency. It illustrates the extent to which current needs exceed the currently available resources. It also illustrates the need for careful management of the situation.

The Infrastructure plan uses the template provided in the IDIP Toolkit. The contents will be revised on a yearly basis.

This plan proposes to address a very large backlog for all 4015 public schools in Limpopo with major investment in the next 20-30 years to make a significant impact on the backlog. Improvements in project management and implementation have improved spending patterns over the past 2 years, demonstrating increased capacity to deliver schools infrastructure in Limpopo. The department has developed a core team of construction professionals, managing implementing agents, professional service providers, contracts and other outsourced resources. Further improvements including an effective PPP initiative are being considered. More innovative procurement and contracting strategies are needed to improve efficiency. Planning has improved significantly; for every project under construction the department must have 3 projects at planning stages.

The total value of the combined backlog for space, building standards and building condition in 2007 Rands is calculated to R 20,75 billion. The current budgetary allocations in no way address the actual needs in terms of education infrastructure to address the backlogs and demand for infrastructure.

It will take an estimated 23 years to address the backlog and provide sufficient classrooms of acceptable condition.



The Department currently makes use of the Department of Public Works, the Education Development Trust, the Department of Water Affairs, the Independent Development Trust and the Department of Minerals and Energy (with Eskom) as implementing agents. The LPED also implements it's own projects.

The organisational structure has been reviewed and the new organogram has been approved. The department has developed a core team of construction professionals, managing implementing agents, professional service providers, contracts and other outsourced resources. The focus of the Chief Directorate is on planning, budgeting, project and programme management, monitoring of implementation, improved life time cost management, usage of buildings; and on improving the internal professional and contractual capacity to manage fixed assets. In line with this, the Service Delivery Agreements (SDA) between LPED and the implementing agents are in place and are revised annually.

Norms and standards for schools infrastructure were approved by cabinet in October 2008. Priorities are determined by comparing the existing situation at Limpopo schools to the national policy guidelines, using the NEIMS system. This gap analysis is combined with the analysis and consideration of local information and community needs, "ground truthing" during the detailed feasibility study stage. Factors influencing future demand include space, standard of buildings and condition of buildings, economic growth in development nodes as per the Limpopo spatial rationale, the projected reduction in the rural population of South Africa, changes in Education policy and the policy of addressing the needs of the very poor, which also requires that attention is given to schools in quintile 1 and 2 areas.

In terms of the South African Schools Act, School Governing Bodies take responsibility for planned and unplanned maintenance and repairs using the schools fund allocation provided by the provincial department. Planned maintenance includes: preventative maintenance,

condition based maintenance and statutory maintenance. Unplanned maintenance includes: breakdown maintenance, emergency breakdown maintenance and incident maintenance.

Guidance documents will be provided to School Governing Bodies with the "Prescripts for the use of schools fund allocations" for the 2009/10 financial year. A training programme is being developed for School Governing Bodies on repairs and maintenance using the schools fund allocation. The recently appointed Circuit Governance Officers will be trained to support schools in maintenance management.

While the schools allocation covers routine planned and unplanned maintenance work, major repairs and maintenance are too expensive for most schools. School governing bodies are encouraged to take out buildings insurance using the schools fund allocation, as provided for in the SA Schools Act.

Budget allocations have been provided to cover the costs for emergency work. A term contract will be established so that the LPED can respond quickly to emergencies, reducing ongoing damage to buildings and inconvenience to learners due to slow response times. In addition a pro-active maintenance program is to be developed to prevent emergencies.

Performance of the plan will be monitored using the improved management and reporting systems being developed as part of the Department's infrastructure delivery improvement program (IDIP). Monthly reports and monitoring meetings will assist with the management of project prioritization and planning, procurement, implementation, maintenance and asset management. Time frames, costs and quality are key elements affecting the success of this implementation program. Existing reporting tools including the TRACKER, IRM, NEIMS and PREMIS will be used to report on key performance areas. The plan will be reviewed at the financial year end, as required by National Treasury.

The accuracy and confidence in the plan will increase as tenders are received with revised cost estimates for the proposed projects. Delivery risks including procurement and delivery time frames, project costs and quality will be managed.

The project lists are included in the Appendices.

SECTION 2: INTRODUCTION

This infrastructure plan seeks to provide both the strategic vision and the operational framework to ensure that the provision of physical infrastructure required for the delivery of schooling in LIMPOPO is cost effective and appropriate.

The plan deals with both the provisioning of new infrastructure as well as the maintenance, rehabilitation and upgrading of existing infrastructure. In addition, the plan deals with the need for and utilization of the infrastructure, as well as with the changing situation in respect of this need and utilization.

This Infrastructure Plan provides a model for dealing with backlogs, addressing needs for new infrastructure as well as maintaining, restoring and upgrading existing buildings. The plan deals with the accommodation related physical infrastructure facilities needs of schools and other educational institutions falling under the jurisdiction of the LPED. It also includes the accommodation needs of the 5 District Offices of the Department.

2.1 Background

The purpose of the plan is to serve as a management tool and information document, describing, motivating and summarizing the short, medium and long term needs and intentions of LPED in respect of infrastructure provisioning for the years ahead. This includes an indication of the budgetary implications.

The format of the plan is in line with the guidelines provided by Provincial and National Treasury and as encompassed in Template 2t01 of the IDIP Toolkit developed by the Construction Industry Development Board (CIDB).

The provision of infrastructure may never be seen as a goal or an end in itself. It should always be seen as merely a means to an end and there should always be clarity on what that end purpose is that needs to be served by the infrastructure. In the case of LPED, the infrastructure is needed for the delivery of schooling in LIMPOPO and it should be dealt with in line with the policies and related guidelines and priorities of both National and Provincial Government. To a considerable extent, these should be encompassed in the Strategic Plan of LPED. However, it is also important to consider the overarching national and provincial priorities at source.

2.1.1 Overarching policy guidelines

2.1.1.1 National and Provincial

In line with National Government's Plan of Action, Asgisa and other policy guidelines, the Provincial Growth and Development Strategy (PGDS) for LIMPOPO include the following strategic objectives:

- Provision of social and economic infrastructure and services that will build sustainable communities.
- Accelerated, labour absorbing economic growth that increases per annum and that will create long-term sustainable jobs and contribute to halving unemployment.

- Sustainable development.
- Enhanced government efficiency and cooperative governance.

2.1.1.2 The LPED's Strategic Plan

The Strategic Plan of LPED needs careful scrutiny:

- The ***vision*** of the Department is:

  A smart service delivery of quality public education, which promotes a dynamic citizenship for socio-economic growth in Limpopo and South Africa.
  We will be at the cutting edge of curriculum delivery and provide access to quality lifelong learning opportunities.
  This will be shaped by the principles of transformation, equity, redress and Ubuntu.

- The priorities as listed in the LPED Strategic Plan are applicable to the current MTEF cycle. The first eight listed priorities have a direct impact on the Infrastructure Plan:
  * Implementation of Revised Norms and Standards for School Funding (No-fee Schools)
  * Implementation of the National Curriculum Statement – GET Band
  * Implementation of National Curriculum Statement – FET Band
  * Teacher Development
  * Expansion of Grade R
  * Strengthening of Special Schools
  * School Safety
  * Quality and Upliftment Programmes (QUIDS UP etc)
  * Expansion of the Education Management Information System
  * Human Resource Systems Development
  * Systemic Evaluation

- In-migration, Infrastructural and Human Resource Development remain key challenges. Departmental plans should respond to these challenges without compromising on the high standards of quality service that have been set. The outcomes of LPED's education programmes and curriculum development should be a key contributor to the social and economic development of LIMPOPO.

- In line with government policy, the main focus of LPED's service delivery programmes should remain the poor and the most disadvantaged. In the next ten years LPED will focus on:
  * Increasing its investment in LIMPOPO's youngest citizens through improved early childhood development centres;
  * consolidating and strengthening the public schools education system so that all children in LIMPOPO, especially the poor, have access to quality education;
  * build the skills of young people through the strengthening of the Further Education and Training (FET) sector, promotion of learnerships for out of school and unemployed youth and working with institutions of higher education to offer support and funding to deserving learners;
  * ensure life long learning through the strengthening of the ABET sector; and

* linking industry, higher education institutions, SETA's and other government departments to match the demands of the growing economy.

- Departmental service delivery includes the following programmes:
  * Public Ordinary Schooling – This involves the provision of ordinary schooling to all learners in LIMPOPO, from Grade R to Grade 12.
  * Independent Schools – This involves the provision of subsidies to independent schools that qualify and to monitor the conditions that are pre-requisites for continued funding.
  * Special Schools Education – This involves the provision of schooling to all learners with special education needs in LIMPOPO, from Grade R to Grade 12 and non-formal education programmes.
  * Early Childhood Development (ECD) – This programme will focus on providing Grade R in state, private and community centres. The programme will also seek to provide ECD programmes for the pre-Grade R learners.
  * Further Education and Training (FET) – This service is to provide pre-tertiary technical and vocational education as part of further education. This service includes the establishment of learnership programmes.
  * Adult Basic Education and Training (ABET) – This service involves the provision of formal Level 1-5 ABET programmes to adults and youth.

- Underpinning all these services above are the following activities:
  * Curriculum development, implementation and support to teachers, learners and management, as well as the assessment of learning. Included here is specialist support to learners in the form of therapists and educational psychologists.
  * Institutional Development and Support to schools through school development planning, subsidies, monitoring institutional performance and monitoring and developing school governance.
  * Human Resource Development – provision of in-service programmes, management development and pre-service bursaries.

2.1.1.3 The LPED's Infrastructure delivery programme

The infrastructure delivery programme endeavors to address the listed priorities through the following goals:

* Ensure equity of access both in physical terms and in terms of quality.
* Address backlogs starting with Class Room Space [New Class Rooms], New Admin Space and essential services like Sanitation, Water Supply and Electricity.
* Provide institutions which include a safe, healthy and stimulating learning and teaching environment in a cost efficient manner that contributes to constructive community development.
* Maintain and repair infrastructure to ensure a healthy and safe environment, whilst protecting State assets.

2.1.2 A variety of needs

The inequities of the past continue to haunt the provision of schooling and education and there is an urgent need to ensure that all children can have access to the new learning fields

which have been introduced into the Further Education and Training (FET) band of the schooling system. Planning to address the needs for specialized infrastructure must be incorporated as an integral part of dealing with backlogs in teaching and learning spaces. Furthermore, serious backlogs in space for school administration, independent research, as well as in safe hygienic sanitation, are realities which need attention.

The facilities used to address special education needs are in need of upgrading and urgent attention to allow for compliance with aspects of legislation related to children at risk, and also to promote the implementation of the intentions of the White Paper dealing with Learners with Special Education Needs.

The provision of adequate and appropriate facilities for ensuring access for all young children to Grade R is both urgent and critical.

In addition to the above, the neglected aspects of the provision of particularly Circuit Offices, which have a critical role in improving the quality of education in Limpopo, deserve greater attention. Furthermore, facilities which allow for on-going Teacher Development programmes deserve greater attention, and are included as part of this plan.

The role of the school in our developing society is changing, and the infrastructure provided can either be a positive or a negative catalyst in communities. The continued application of basic technocratic approaches without consideration of the needs for human development which is de facto a purpose of schooling, will continue to elicit reaction from, rather than participation of the communities of the schools and also the communities in which the schools are situated. A comprehensive new approach and not only a mere technocratic review of norms and standards is needed to address this issue.

2.2 Infrastructure Ownership, Legislation and Stakeholders

2.2.1 Ownership

As indicated above, in its final analysis the physical infrastructure falling under the jurisdiction of the LPED is needed for the delivery of schooling in Limpopo. Some of this land and related infrastructure is owned by the State, whilst other is in private or corporate ownership.

This Infrastructure Plan is relevant for 5 District Offices and 4015 schools, of which 2 were transferred from the North West Province and 163 from Mpumalanga as an outcome of the adjustment in demarcation of provincial boundaries.

A composite list of schools can be provided on request. This is based on the LPED's access to the National Education Infrastructure Management System (NEIMS) and the Provincial Real Estate Management Information System (PREMIS).

A plethora of legislation and regulations determines the speed with which identified land can be occupied for construction purposes. There is an urgent need for the legislation to be analyzed, aligned and rendered more efficient to enhance infrastructure delivery. Likewise, there is an urgent need to rationalize the administration of land earmarked and used for educational facilities falling under the jurisdiction of the LPED.

2.2.2 Legislation

The South African Schools Act 86 of 1996 requires that the Member of the Provincial Executive Council (MEC) for Education of Limpopo provides adequate and appropriate learning space for all learners in Limpopo. This includes children both in the General Education and Training (GET) Band, as well as those in the school-based Further Education and Training (FET) Band.

Various aspects related to the provision of infrastructure are regulated through the Public Finance Management Act (PFMA), 1999 (Act No. 1 of 1999), as amended by Act No. 29 of 1999) and the annual Division of Revenue Act Act 1 of 2007 (DoRA). For example: In terms of the latter, the principles embodied in the Infrastructure Delivery Improvement Programme (IDIP) are required to be implemented.

Practically all legislation applicable to the built environment is relevant to the LPED's provision of physical infrastructure. Of particular relevance to note, amongst others, is the Occupational Health and Safety Act (OHSA).

As indicated above, a plethora of legislation and regulations impacts on the acquisition, utilization and administration of land and there is an urgent need for this legislation and its local administration to be analyzed, aligned and rendered more efficient to enhance educational infrastructure delivery in Limpopo.

Legislation related to schools infrastructure includes:

- Government immovable assets management act (GIAMA)
- Public finance management act (PFMA)
- South African Schools Act (SASSA)
- Occupational Health and Safety Act (OHSA)
- Norms and standards for schools funding (Government gazette)
- Norms and standards for schools infrastructure (October 2008)
- Division of revenue act (DORA)

2.2.3 Stakeholders

In its final analysis, the most important stakeholders in the infrastructure covered in this Plan are the learners and local communities served by this infrastructure. It is proposed that future development strategies should focus strongly on not only the provision of this infrastructure but also on the constructive engagement of these primary stakeholders.

Other key stakeholders in this infrastructure provision and more specifically also in this Infrastructure Plan are:

- The National Department of Education (DoE), responsible for the development of national policies in respect of education;
- The Limpopo Department of Public Works (LDPW) involved as primary Implementing Agent (IA).
- The Limpopo Department of Water Affairs, Limpopo Education Development Trust, Independent Development Trust and ESKOM involved as Implementing Agents (IA).
- Private and public sector donors contributing to the costs of infrastructure at schools.

- The Limpopo Provincial Treasury, responsible for the coordination of funding allocations via the provincial budget and for related budgetary control;
- National Treasury, responsible for the coordinated administration of funding allocations to provinces via DoRA and the Medium Term Expenditure Framework (MTEF);
- The national Department of Public Works (DPW), the Construction Industry Development Board (CIDB) and the Development Bank of South Africa (DBSA), as partners with National Treasury and DoE in the Infrastructure Delivery Improvement Programme (IDIP);
- the Limpopo Office of the Premier, responsible for the coordinated management of the provincial Integrated Development Plan (IDP);
- the Limpopo Department of Local Government and Housing, responsible for the coordinated planning of new housing developments in LIMPOPO;
- the District Offices of LPED, responsible for the coordinated management of educational service delivery in the 5 education districts in LIMPOPO; and
- the School Governing Bodies, responsible for governance issues at individual school level, including repairs and maintenance using the schools fund allocation.

2.2.4 Organizational Structure

The provision and management of physical infrastructure facilities for educational purposes under the jurisdiction of the LPED is the responsibility of the Chief Directorate: Physical Resources under the guidance of the General Manager Physical Resources. This Chief Directorate reports to the Chief Financial Officer who reports to the Head of Department. Reports are however also submitted to the Social Cluster.

The organizational structure (organigram) of the Chief Directorate has been reviewed and restructured. The main focus of these activities is to optimize the work processes in order to improve the efficiency of infrastructure delivery and then design the most effective structure to accomplish their goals. Incumbents are currently being recruited. Capacitation of the incumbents will then follow in line with best practice procedures in collaboration with the IDIP team at the LPED's disposal. Close co-operation with LDPW and PT is anticipated and it is currently being investigated to bring the infrastructure functions of LPED, LDoH and LDPW together under one roof. The aim of which would be to speed up the infrastructure delivery processes and improve the co-ordination between these departments.

Currently, all posts are not filled. This is due to various reasons including recent approval of the new organogram, shortage of technical skills in Limpopo, and slow recruitment processes. In the meantime, the most critical capacity gaps are addressed by the outsourced Operational Support Team and the In-Year Intervention (IYI) facility provided for in the IDIP framework and DoRA. Additional funds will be requested from the DORA allocation for continued support by the outsourced Operational Support Team.

2.3 Plan Framework

As indicated before, the framework and format of this Infrastructure Plan is in line with the guidelines provided by Provincial and National Treasury and as encompassed in Template 2t01 of the IDIP Toolkit (version 4-0) developed by the Construction Industry Development Board (CIDB).

The **Executive Summary** of this current plan is structured in such a way that it can be read and used as a stand-alone document, summarizing the main thrust and implications of the plan, with a specific focus on its relevance to senior decision makers.

Section 2 serves as broad introduction to the plan and covers various introductory aspects, including overall purpose, goals and objectives, relevant legislation and related background, as well as stakeholders and organizational arrangements, plan framework and planning approach and methodology.

Section 3 deals with level of service and covers departmental norms and standards as well as current and desired levels of service. It also addresses the backlogs in provision of classrooms and special facilities in Limpopo.

Section 4 covers demand forecasts as well as a Demand Management Plan.

Section 5 deals with the existing infrastructure situation.

Section 6 addresses the important field of infrastructure asset management.

Section 7 contains the financial requirements resulting from all the information presented in previous sections.

Section 8 outlines the supportive Organizational and Support (O&S) Plan which is considered as an essential addition to the Infrastructure Plan.

Section 9 deals with plan improvement and monitoring.

Finally, **Section 10** summarises the references used in the text and contains all the appendices to the plan.

2.4 Planning Approach and Methodology

2.4.1 Planning Approach

The organogram for the Infrastructure Section has recently been approved. Professional planning capacity will be developed within the LPED Chief Directorate of Physical Resources and the outsourced Operational Support Team.

The model currently used for planning is focused on

- Preserve existing assets through
  - Improved maintenance at schools by the Provincial Department and School Governing Bodies, funded through the schools fund allocation;
  - Renovations and maintenance of dilapidated buildings.
- Relieve severe overcrowding at schools through
  - Additions at existing schools, starting where there are more than 70 learners per classroom;
  - Building offshoot schools where the enrolment at the school exceeds the national limit and the school is overcrowded, starting with schools where there are over 300 excess learners.
- Address schools with mobile classrooms first to release mobile units for re-use at schools experiencing infrastructure emergencies.

- Improving learning capacity and administration capacity by building new laboratories, workshops and admin blocks;
- Improving technical education through the Dinaledi schools program, providing technical facilities at some circuit offices; improvements to the multi- purpose centres, electricity supply to laboratories;
- Improving public health at schools across Limpopo by
    - providing adequate Sanitation at schools. The long term target is 22 learners per toilet as recommended in the national norms and standards. Due to the huge number of non compliant schools, the interim target for Limpopo is 40 learners per toilet, or one toilet for each classroom. The programme focuses first on schools with more than 70 learners per toilet;
    - providing hand wash facilities at all schools;
    - Establishing Water supply at schools; and
- Providing Electricity Supply to computer centers, workshops, laboratories and offices.

At current rates of funding it will take an estimated 20 years to address the backlog for schools infrastructure to meet the national norms of sustainable brick buildings in acceptable condition with 35-40 learners per classroom. As a result planning tends to be reactive: schools with emergencies due to dilapidated buildings, storm damage, fire and severe overcrowding are provided with mobile classrooms and prioritised for infrastructure projects first. Further information and long term project lists are developed using the National Education Infrastructure Management System (NEIMS) and PREMIS data bases to provide data on the standard, condition and space norms for all Limpopo schools, with indicative costs. Indicative costs are calculated from the recorded backlogs and norms and standards.

The NEIMS data was last updated in 2006. Information on projects implemented since 2006 captured in the project and program information management system (TRACKER) was used to update the planning information. Data in the NEIMS will be updated during 2008 and the process to ensure continuous updates is being implemented.

Information on urbanisation, migration and reducing population trends affect the long term projected demand for classrooms. The spatial rationale and population projections were used to guide long term plans.

A comprehensive life-cycle infrastructure asset management and maintenance system/programme is needed for the effective management and maintenance of schools infrastructure in Limpopo on a sustainable basis. This aspect is currently being addressed by and on behalf of LPED and others under the IDIP program.

2.4.2 Planning Methodology

For the first time the Department of Education is able to plan using databases of information on the schools. The flow chart describing the prioritisation process is attached. The proposed new projects have been identified using the following information:

- The National education information management system (NEIMS) which contains detailed information on the numbers of learners and educators, the size, construction and condition of every building at every school in South Africa. This information was updated in 2006, and is currently being updated during 2008.
- The Tracker database which contains detailed information on all projects currently under construction.

- Lists of prioritised projects provided by the Senior District Managers and the ELSEN manager, the list of Dinaledi schools with maths and science centres, lists of schools with temporary mobile classrooms.

During 2008 the data for approx 25% of projects were updated using the "shock treatemtne" update project. For the first time the Professional Service Providers (PSP's) working on all new projects are required to complete NEIMS update forms during project planning and after project completion. During 2009 processes will be implemented to ensure that the databases are updated regularly by Circuit officials in future to facilitate future planning.

The available data was analysed to identify the most needy schools. However the need is much greater than the available funds. Projects have been spread over the 5 years to allow a consistent growth in the scope of work and budget, which will allow implementing agents and contractors to build capacity over time. Overcrowding in classrooms and toilets will remain after the 5 year plan. A steady increase in the budgets is required in the 10 years to come.

For the first time the Department of Education is preparing the Implementation Plan well in advance, leaving enough time for proper project planning. The project lists must still be verified again with the Senior District Managers, as the situation at schools changes. The location of the proposed new schools and offshoot schools will also be verified against the Provincial Growth and Development Strategy to ensure that they are built in areas where the population is growing. Each proposed school will be visited and assessed to confirm the project details. A detailed feasibility study will be prepared for each project, including a cost estimate.

The detailed analysis was compared to the Space Norm Backlog, Standard Backlog and the Condition Backlog from the cost model of NEIMS as described in Appendix M, updated to 15 October 2007.

With the current selection of the Norms and Standards for this Cost Model the total value of this combined backlog in 2007 Rands is calculated to R 20,75 billion. This is a very critical parameter in compiling the action plan as it has a very definite influence on the funding and practical implementation of the plan. The selection of the criteria used in the Norms and Standards section of the Cost Model should be scrutinized and may have a strong influence on future versions of the Infrastructure Plan.

These backlog scores combine technical and financial information into a single index. In the current situation, where the backlog is severe, prioritisation of projects must be based on detailed analysis not on the broad indices these scores provide. The detailed analysis combined with consultation with District and other responsible managers aims to provide best value for money and impact using the limited budget available.

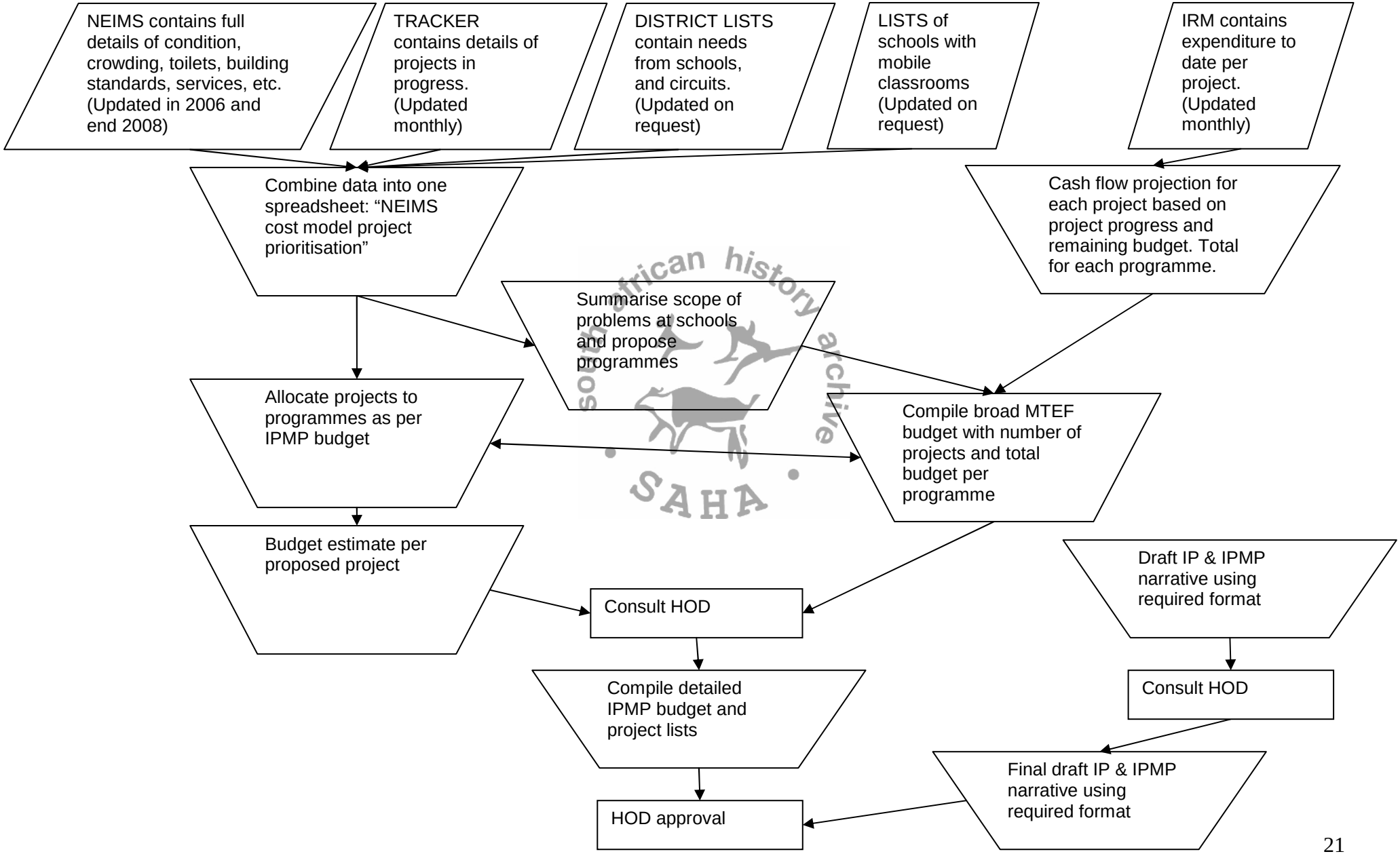
An alternative approach proposed is described in Section 7 the Infrastructure Plan. The basis for this innovative approach and proposal is that the yearly allocations from National Government be used as down payments for a loan from an international source to fund this Infrastructure Plan and eliminate the huge existing backlog, or invite the private sector to build maintain and equip the schools in terms of the norms and standard of the department and rent it to the department based on a fair cost benefit analysis. This proposal will be investigated further to assess its feasibility.

Implementation Instructions and Processes:
These processes are currently being developed in coordination with the implementing agents (LDPW, DWAF, LEDT, IDT, ESKOM and LPED), in accordance with the requirements of the Infrastructure Delivery Improvement Programme (IDIP). The processes are being documented and implemented as progress is made.

Maintenance of Assets:
The information system for managing maintenance is being developed. The first component is the NEIMS, the second is a database detailing major repairs that schools are unable to cover from their own budget, the third is development of support and systems to improve schools based maintenance, and the fourth is to develop a programme based on the available information in PREMIS to initiate a maintenance programme.

These initiatives are described in Section 6.

Figure 1The LPED annual planning process



SECTION 3: LEVEL OF SERVICE

3.1 Learner: Teacher Ratios

At present the intended norms are 1:35 at secondary schools and 1:40 in primary schools. The basic operation ratio is presently 1:33 (2007).

The following table provides the Learner / Teacher ratios for the different types of schools in Limpopo (2007).

School Type	Schools	Learners	Teachers	Learners/Teacher
Primary	2 569	1 029 451	30 672	33.56
Secondary	1 358	690 801	21 651	31.91
Combined	133	51 693	1 715	30.14
GOR	59	3 700	143	25.87
ECD	36	1 602	59	27.15
ELSEN	18	4 906	355	13.82
ABET	2	747	24	31.13
ALL SCHOOLS	**4 175**	**1 782 900**	**54 619**	**32.64**

On average the Learners / Teacher Ratios per school type looks better than the norm which is encouraging. The numbers of class rooms available are not adequate as can be seen in the Space Backlog Norm from the NEIMS cost model.

In this Infrastructure Plan, all these overcrowding problems are being addressed by way of the proposed elimination of classroom backlogs, as dealt with in Section 4.2 below.

Translated into infrastructure norms, a primary school should have a maximum enrolment of 960 children and a secondary school a maximum of 1200 learners.

3.2 Sanitation

Sanitation is currently considered a particularly critical area. Theoretically, according to DoE standards, 1 toilet seats per 22.5 learners is the minimum requirement for primary and secondary schools. The Department of Water Affairs and Forestry (DWAF) recommends and applies a standard of one toilet seat for every 25 learners. Furthermore, at least one disabled access toilet is required at each school, to satisfy requirements of the National Inclusion Policy.

The backlog on Inadequacy or Insufficient Sanitation Facility ("IISF") in terms of national infrastructure norms and standards for education infrastructure is huge. Currently 388 659 learners are affected by the inadequate toilets at 1376 schools. However, of these 1376 schools only 5 schools are currently without **any** toilets. These 5 schools will be provided with sanitation before the elections. Additional toilets for the remaining 1371 schools will be provided over the MTEF period.

Table 1 Situation assessment: Unacceptable sanitation at schools

Challenge	Number of schools	Total number of learners	% of learners with insufficient sanitation facilities	Number of learners with insufficient sanitation facilities
More than 70 learners per toilet or no toilets	251	154 069	75%	115 552
Between 40 and 70 learners per toilet	643	374 055	50%	187 028
Ablutions in very poor and poor condition	323	59 200	370 blocks x 4 toilets x 40 learners	59 200
Inappropriate ablutions in very poor and poor condition	159	26 880	168 blocks x 4 toilets x 40 learners	26 880
TOTAL	**1 376**	**614 204**		**388 659**

SOURCE DATA: NEIMS 2006 UPDATED BY PROJECT LIST AND EMERGENCIES

This situation exposes learners and this department to extremely the following risks:

- The lack of toilets and hand washing facilities is a major contributor to childhood illness, the transmission of diarrhoea and other infections.
- At overcrowded facilities learners are forced to use the toilets during lessons or to leave the school premises. This has a negative impact on learning outcomes, affects discipline in the schools and puts childrens', especially girls', safety at risk when they leave the school grounds.

Proposed action plan

This department has a phased plan to address the backlog. Initiatives include

- Phase 1: Ensure that all schools have some toilets. 5 remaining schools without any toilets will be provided with sanitation as a matter of urgency.
- Phase 2: The national norms and standards specify that one toilet should be provided for every 22 learners. However given the huge backlog, this department's interim target is to provide one toilet for every 40 learners at every school in Limpopo. This approach includes:
    - Replacing dilapidated toilets;
    - Building one toilet for every new classroom built;
    - Building additional toilets and hand basins at schools with insufficient facilities.
- Phase 3: Provide one toilet for every 22 learners as required by the national norms and standards. This approach includes:
    - Building two toilets for every new classroom built;
    - Building additional toilets and hand basins at schools with insufficient facilities;
    - Providing hand basins at every toilet block;
    - Replacing toilets that are not sustainable (e.g. unimproved pit toilets that will fill up) with sustainable toilets (e.g. Enviroloos and Ventilated Improved Pits);
    - Replacing wood, metal and prefabricated toilet blocks with high maintenance costs with more sustainable brick facilities.

At the same time measures are being taken to improve maintenance of existing sanitation facilities.

- School governing bodies receive an annual fund for school maintenance, repairs and other daily management expenses. A training programme has been developed to train School Governing Bodies and School Management Teams on infrastructure repairs and maintenance. This will be rolled out to all schools in Limpopo.
- A manual and training program have been developed, under the DWAF sanitation programme, aiming to improve maintenance and management of sanitation by School Governing Bodies and School Management Teams. This will be rolled out to all schools in Limpopo.
- The proposed establishment of a call centre to help schools with sanitation, water and electrical problems is in progress.
- Procedures for the emptying of Enviroloo, VIP and septic tanks are being streamlined.

Role of DWAF

DWAF has many years of experience in managing sanitation programmes, particularly in integrating health and hygiene awareness with construction, and has made a significant budget contribution over the past years. The Limpopo Departments of Education and Water Affairs meet monthly to review programme progress, and embarked on detailed planning for the 2009/10 sanitation programmes in mid 2008.

Addressing the sanitation backlog requires a huge cash injection over the next 10 years. At the same time this department faces similar challenges in the classroom backlog and poor condition of many schools, also requiring significant budget allocations.

We are extremely concerned at the recent budget cut by DWAF for the schools sanitation programme: the budget for 2008/09 was R17m; the indicative budget for 2009/10 was R23.45m but the revised budget for 2009/10 is now only R1.2m.

Assistance has been requested from DWAF

- Continuation of the planned backlog eradication programme for 2009/10 with a DWAF contribution of R23.45m, as previously indicated by DWAF.
- Implementation of the Department of Education funded programme for 2009/10 on behalf of the Department of Education.
- The design of ablution blocks should be assessed and changed to increase the number of urinals provided and reduce the long term maintenance costs. DWAF, the implementing agent for schools sanitation has been asked to improve designs for reduced maintenance and better value for money.

Table 2 Action plan to reduce unacceptable sanitation at schools

Challenge and proposed programme	Schools to start 2009-10	Schools to start 2010-11	Schools to start 2011-12	Schools to start 2012-13	Schools to start 2013-14	Remaining challenge after proposed 5 year plan
Schools sanitation (Severe overcrowding) 2009/2010 - reduce from 70 learners per toilet to	69	82	97			**0**

Challenge and proposed programme	Schools to start 2009-10	Schools to start 2010-11	Schools to start 2011-12	Schools to start 2012-13	Schools to start 2013-14	Remaining challenge after proposed 5 year plan
40						
Schools sanitation (Overcrowding) - reduce to 40 learners per toilet				400	260	**0**
Schools sanitation (Overcrowding) - reduce to 25 learners per toilet					200	**2189**
Schools sanitation (Dilapidated ablutions) 2009/2010 - replace ablutions in very poor condition		132	200	28		**0**
Schools sanitation (Dilapidated ablutions) - replace ablutions in poor condition				200	300	**340**

3.3 Building Material

Quality of building is determined through detailed specifications of materials and fittings to be used.

Measures will be taken to improve the design, construction and maintenance of roofs in particular to prevent storm damage and other collapse.

Improved monitoring, reporting and management of contractors will result in improved quality of construction.

With the current ever increasing theft and vandalism to obtain "waste" metal, changes are being made to materials specifications to replace metal with alternatives, in order to limit the vandalism for gain which regrettably characterizes so many of our institutions.

3.4 School designs

The current adopted design of new schools is based on what has been built in Thengwe and will be replicated depending on the number of learners in all new flagship schools (new schools and offshoot schools programs) to be built in the new financial year as well as the years to come.

During 2009 the standard drawings will be revised to incorporate changes to the Norms and Standards for Schools Infrastructure approved by Cabinet in October 2008.

The intention is to make the design more environmentally (greening) and energy wise friendly to save in heating and cooling of the buildings as well as making sure there are innovation in providing services such as water and sanitation.

The design of ablution blocks should be assessed and changed to increase the number of urinals provided and reduce the long term maintenance costs.

School designs and specifications are to be improved to prevent storm damage, and reduce maintenance costs. Specific challenges include pest control and roof designs.

3.5 New Curriculum Requirements

While rehabilitation of severely dilapidated and overcrowded schools is the top priority, new curriculum requirements influence the infrastructure plans.

The majority of LPED schools lack even a basic library, and for the new curriculum multimedia resource centers are highly desirable if not essential. To adequately teach the new curriculum, computer facilities are required in rooms in addition to any computer laboratory which a school may have. Furthermore, all Geography learners in Grades 10, 11 and 12 must have access to and be able to utilize a GIS system.

Back up power and permanent energy must be provided for computer centers.

3.6 Norms and Standards

3.6.1 Legislation

Standards and guidelines affecting schools infrastructure are specified in:

1. The South African Schools Act, 1996 (No. 84 of 1996) which has been amended and updated by the addition of the following:
   - Regulations relating to Safety measures at Independent Schools;
   - National Norms and Standards for School Funding;
   - Amended National Norms and Standards for School Funding;
   - Publication of List of No Fee Schools per Province : declaring no fee schools in 2007 for all nine Provinces, which lists the most needy schools and their poverty quintile;
   - Regulations for Safety Measures at Public Schools in Notice No. 1040 in Government Gazette No. 22754 dated 12 October 2001; as well as an Amendment to these Regulations as printed in Government Gazette No. 29376 dated 10 November 2006.
   - Education Laws Amendment Acts include: No 31 of 2007, No. 24 of 2005, No. 1 of 2004, No. 100 of 1997, No. 48 of 1999, No. 50 of 2002, No. 53 of 2000, No. 57 of 2001.

2. The Occupational Health and Safety Act, 1993. (February 2005) and amendment The Facilities Regulations, 2004 defining safety requirements.

3. The National Sport and Recreation Act, 1998 (Act No. 110 of 1998) which has been amended by the National Sport and Recreation Amendment Act, 2007 (Act No. 18 of 2007), as published in Government Gazette No. 30476 dated 16 November 2007.

4. The Construction Industry Development Board Act No. 38 of 2000 and amendments.

5. Revised norms and standards for schools infrastructure approved by Cabinet in October 2008.

3.6.2 National norms and standards approved by Cabinet in October 2008

The comprehensive set of new Norms and Standards developed for DoE by an international team of researchers appointed by the World Bank has been approved by Cabinet (October 2008).

As a result

1. The standard designs for new construction at Limpopo schools must be amended for implementation in 2010/11;
2. These norms and standards must be incorporated into
    a. the CSIR / DPW "accommodation scheduler" sheet reflected in the attached Appendix B;
    b. the NEIMS database reports on space, standard and condition backlogs and related cost models. The report using the previous norms and satandards indicated a required estimated expenditure of R 16,8 billion (to be inflated from 2006) to address the current space backlog of Limpopo schools. This will be studied and verified in the months ahead and appropriate adjustments will be incorporated in the next revision of this Infrastructure Plan.

SECTION 4: DEMAND OR NEED DETERMINATION

4.1 Demand Forecast

In this Infrastructure Plan the main focus is placed on the reduction of the critical backlogs: overcrowding (space backlog), inappropriate structures (standard backlog) and dilapidation (condition backlog). The model currently used for planning is focused on

- Preserve existing assets through
  - Improved maintenance at schools by the Provincial Department and School Governing Bodies, funded through the schools fund allocation;
  - Renovations and maintenance of dilapidated buildings.
- Relieve severe overcrowding at schools through
  - Additions at existing schools, starting where there are more than 70 learners per classroom;
  - Building offshoot schools where the enrolment at the school exceeds the national limit and the school is overcrowded, starting with schools where there are over 300 excess learners;
  - New facilities are prioritised in development nodes as defined in the PGDS.
- Address schools with mobile classrooms first to release mobile units for re-use at schools experiencing infrastructure emergencies.
- Improving learning capacity and administration capacity by building new laboratories, workshops and admin blocks;
- Improving technical education through the Dinaledi schools program, providing technical facilities at some circuit offices; improvements to the multi- purpose centres, electricity supply to laboratories;
- Improving public health at schools across Limpopo by
  - providing adequate Sanitation at schools. The long term target is 22 learners per toilet as recommended in the national norms and standards. Due to the huge number of non compliant schools, the interim target for Limpopo is 40 learners per toilet, or one toilet for each classroom. The programme focuses first on schools with more than 70 learners per toilet;
  - providing hand wash facilities at all schools;
  - Establishing Water supply at schools; and
- Providing Electricity Supply to computer centers, workshops, laboratories and offices.

4.1.1. Population projections

Population statistics show the South African population reducing over the next 42 years. This indicates that overcrowding in schools will reduce, but urbanisation will increase. There may be increased need for hostels at remote schools to attract learners to existing facilities and relieve severe overcrowding at urban schools.

Table 3 Population statistics are from Nationmaster.com (20080625).

Population under 14 years old	29.7%
Population growth rate	-0.46%
Projected population growth rate (Percentage change in projected population between 2000 and 2050)	-25.35

Percentage living in urban areas	57%

Figure 2 Predicted age and sex distribution for the year 2010

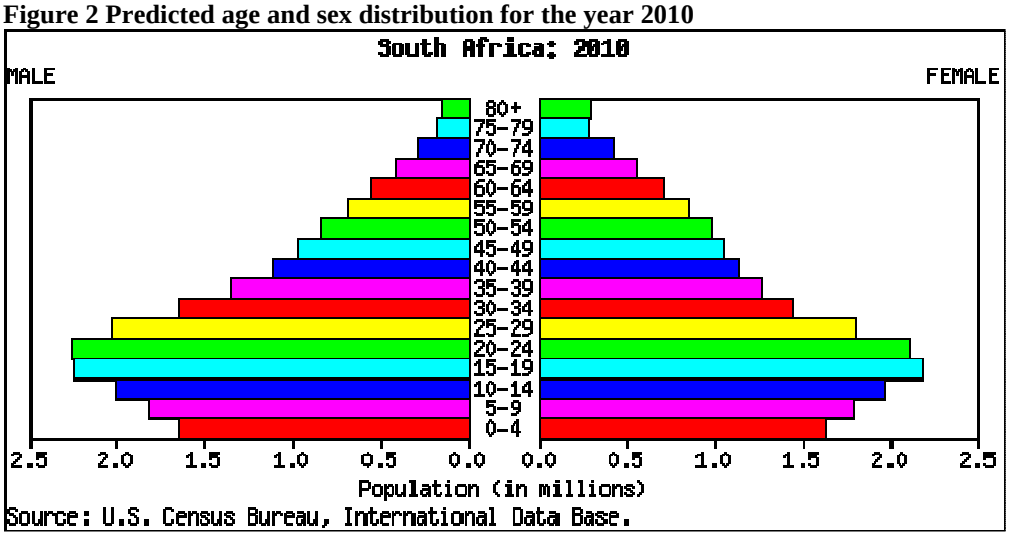


Figure 3 Predicted age and sex distribution for the year 2020

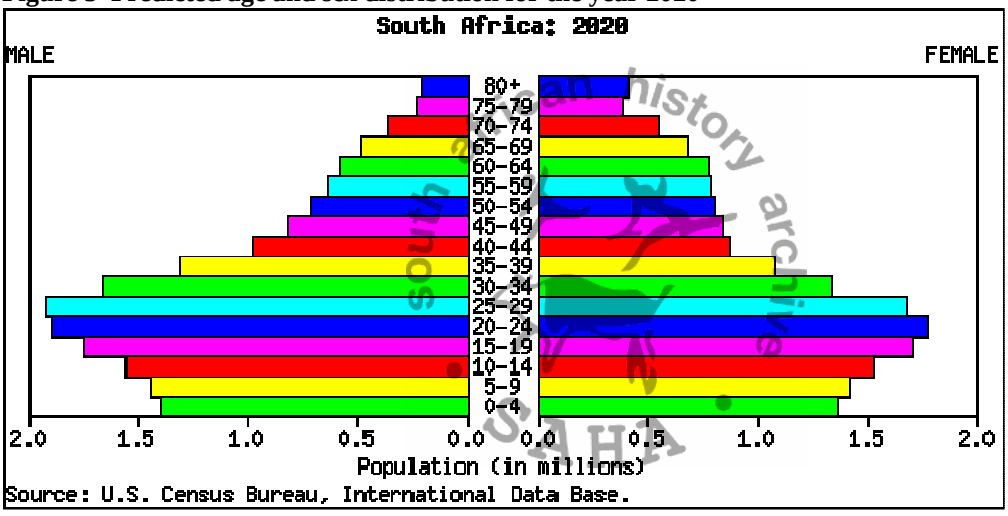
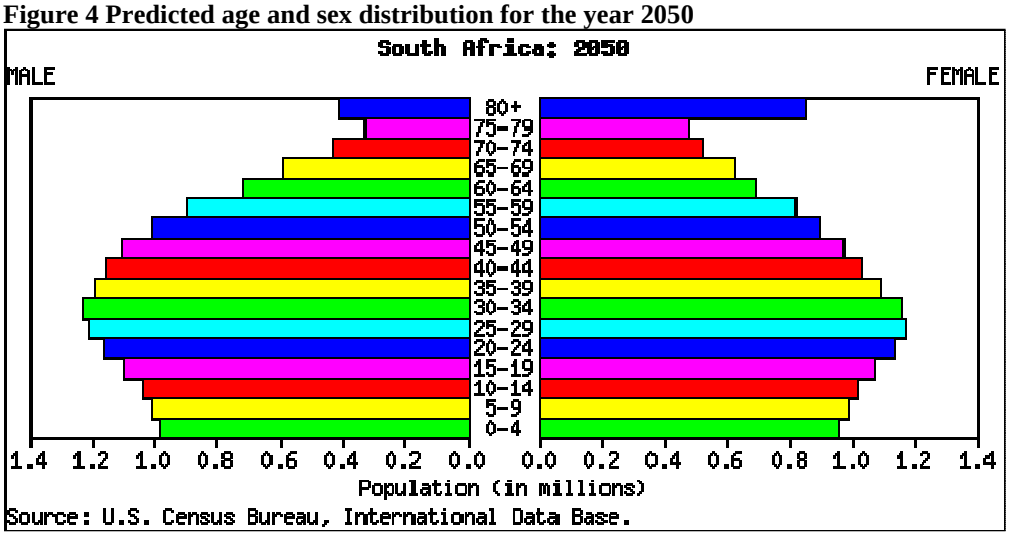


Figure 4 Predicted age and sex distribution for the year 2050



4.1.1. Space Norm Backlog

To ensure maximum access for learners, it will be necessary to make use of a morning and afternoon session at over crowded schools with insufficient classrooms. This will be possible because of the length of the "school day" for primary and secondary schools. Such systems have been found to be both successful and acceptable internationally.

For each space required at schools a norm is set for Primary, Secondary and other Schools. Comparing the actual with the norm, defines the backlog that exist with regard to specific Spaces.

- **General Teaching Spaces**
  - Class Rooms
  - Multi Purpose
- **Specialist Teaching Spaces**
  - Dance / Drama studio
  - Music Room
  - Laboratory
  - Cookery Centre
  - Needle Work Centre
  - Technical Training Centre
- **Learning Area**
  - School Hall
  - Computer Centre
  - Library
- **Ablution facilities**
  - Male
  - Female
  - Disabled
- **Non-teaching Spaces**
  - Office – Principle; Deputy Principle; HOD; General Admin
  - Photo Copy Room
  - Staff Room / Marking Room
  - Counselling / Guidance Room
  - Sick Room
  - General Store / Safe
  - Strong Room
  - Book Room
  - Kitchen – General / Feeding Scheme
  - Tuck Shop

4.1.2. Standard Backlog

Here the material used for the construction of the current infrastructure is compared with the defined Norms and Standards. The Cost Model uses this deviation from the Norms and Standards to calculate the Standard Backlog.

4.1.3. Condition Backlog

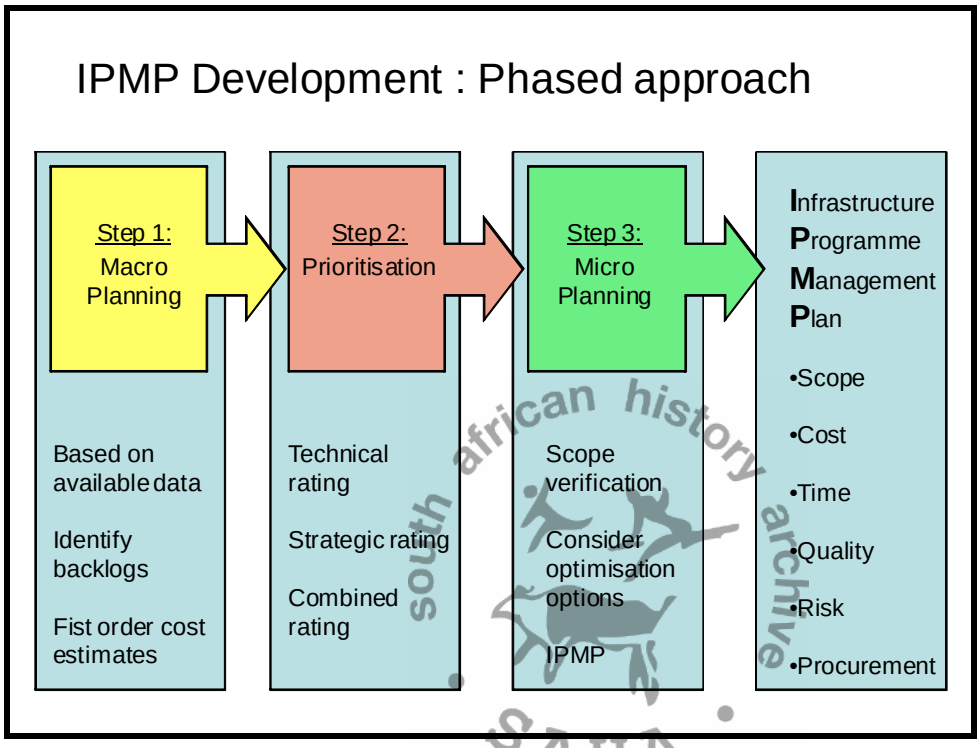
A Code from 1 to 5 is used to define the condition of the infrastructure element that is evaluated. The detail of this code definition is given in the table below. The Cost Model will calculate the Condition Backlog depending on the set criteria of what is acceptable and that which is not acceptable.

Code	Description	Norm	Category in the IP
1	Not functional and 75% to 100% need to be replaced completely	Unacceptable	Very poor condition
2	Partly functional but between 50% and 75% of this element in need of refurbishment.		
3	Partly functional but between 25% and 50% of this element in need of refurbishment		Poor condition
4	In reasonably good condition with less than 25% of this element in need of refurbishment		

5	In good & functional condition with only corrective maintenance required.	Acceptable	Acceptable

More detail is provided in the ***Cost Model Reference Guide: Norms and Standards for PRIMARY SCHOOLS*** attached as Appendix I

Using the Backlog Values calculated as described above in the Prioritization Model depicted in Appendix B gives rise to the Infrastructure Programme Management Plan as presented schematically below.



The above steps formed the basis for this Infrastructure Plan. For this 2009 version of the Infrastructure Plan the Total Scope Backlog of R20.75 billion was used. The data will be validated and revisions will be made in future updates of this Infrastructure Plan.

Of special note is also the significant growth in parts of Limpopo. This can be attributed mainly to mining activity or urbanisation and its impact on LPED's planning will be incorporated in future Infrastructure Plan updates.

4.1.4. Infrastructure plan compared to backlog

The MTEF budget is fully committed for the next 3 years.

With an MTEF budget of R1,200,000,000 per year from 2012 onwards it will take 18 years (2024) to address the backlog.

VARIABLES:

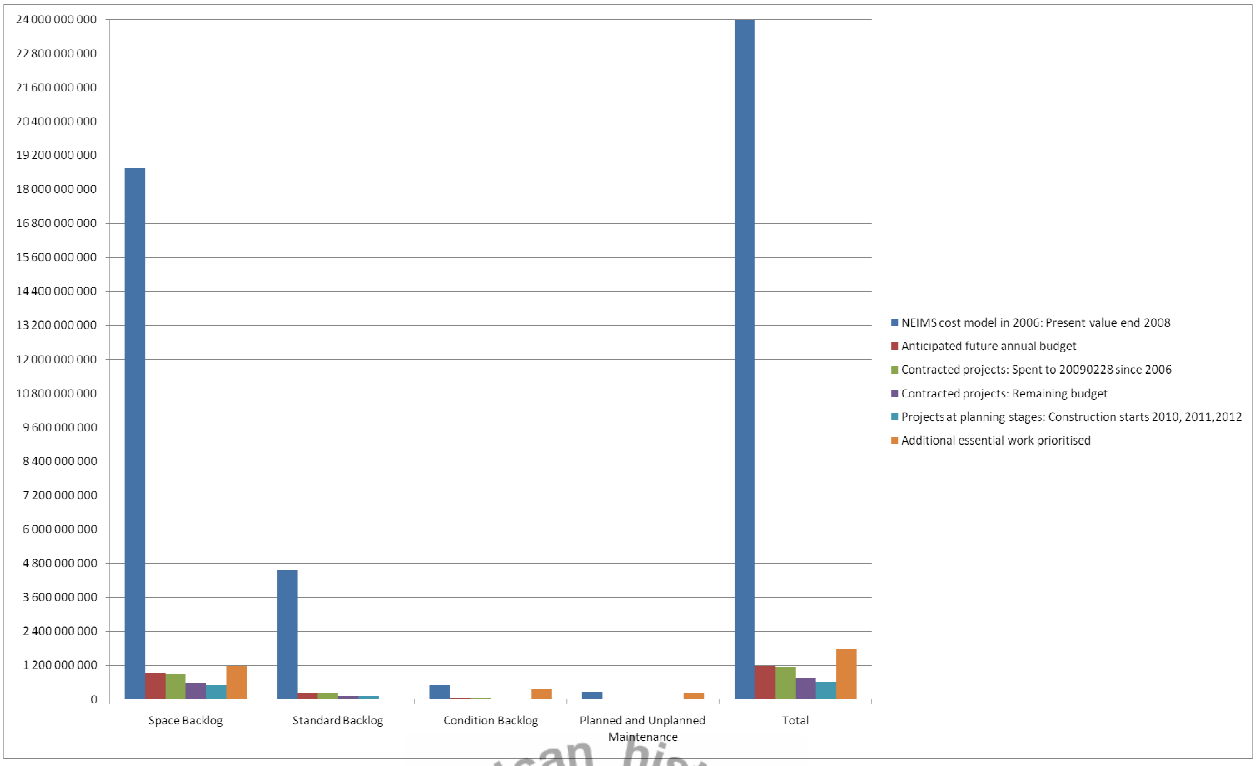
- The annual MTEF allocation is anticipated to average R1,200,000,000 each year.
- Population growth is projected to fall by 25% by 2050 (Nationmaster.com). The South African population declined for the first time by 2% in 2008. This means that

- the backlog will be addressed quicker in areas with declining populations. More accurate population projections are needed per ward/village for future planning.
- However urbanisation will increase to 58% by 2050. Additional facilities will be needed in growth areas, or hostel facilities in underused areas.
- School governing bodies need to use the schools fund allocation for preventative maintenance work to keep assets in acceptable condition.
- Preventative maintenance must be done so that assets don't deteriorate further, increasing the capital budget required.

Table 4 Backlog and infrastructure programmes

	Space Backlog	Standard Backlog	Condition Backlog	Planned and Unplanned Maintenance	Total
NEIMS cost model end 2006	16 828 492 071	3 969 146 936	422 240 068	217 601 986	21 437 481 060
NEIMS cost model in 2006: Present value end 2008	18 746 771 882	4 569 539 947	493 413 276	254 281 194	24 064 006 298
Anticipated future annual budget	934 845 428	227 869 286	24 605 044	12 680 242	1 200 000 000
Contracted projects: Spent to 20090228 since 2006	894 905 989	218 134 017	23 553 842	12 138 504	1 148 732 352
Contracted projects: Remaining budget	564 075 296	137 493 784	14 846 409	7 651 117	724 066 605
Projects at planning stages: Construction starts 2010, 2011,2012	492 895 632	120 143 686	12 972 967	6 685 636	632 697 921
Additional essential work prioritised	1 178 850 000		372 624 548	217 601 986	1 769 076 534
	78%	19%	2%	1%	100%

Figure 5 Backlog and infrastructure programmes



4.2 Classroom Backlogs

In addition to the ongoing growth in needs for additional schools infrastructure linked to migration trends, new policies and curriculum requirements, as well as for new township/housing developments in Limpopo, there is also a serious backlog in the provision of sufficient classroom facilities in many parts of Limpopo.

In this exercise, the first generalized assumption used, is that the total average estimated cost per school is R37 million for schools of which construction will commence in the 2009/2010 fiscal year (with planning and design expenditure, as well as tendering for construction commencing in the 2008/2009 fiscal year), plus 10% annual escalation for schools following in subsequent years. It is also assumed that funding of a new school will on average stretch over three financial years, from commencement of planning, design and contract preparation costs in the first year until conclusion of final completion certificate ("final account") payments in the third year. The above assumed average figures will be refined regularly during the quarterly and annual revisions of this infrastructure development plan and its related cash flow projections and monitoring reports. New research and related annual surveys to refine and update the available information on classroom backlogs will also feed into these regular planning, monitoring and Infrastructure Plan reviews.

In addition to the above, provision was made for the gradual reduction in and even elimination of the use of temporary mobile classrooms to address some of the most urgent classroom needs. The elimination of these classrooms by replacing it with permanent structures should not be seen as additions but rather only as replacements of existing facilities. Mobile classrooms are an expensive temporary solution, with an estimated life of only 20 years. Mobiles should be used in temporary and emergency situations only.

4.3 Special curriculum related requirements

As indicated in Section 3.5 above, the majority of LPED schools lack even a basic library, and for the new curriculum multimedia resource centres are highly desirable if not essential. To adequately teach the new curriculum, computer facilities are required in rooms in addition to any computer laboratory which a school may have. Furthermore, all Geography learners in Grades 10, 11 and 12 must have access to and be able to utilize a GIS system.

4.4 Grade R

To meet the mandate of all children having access to Grade R by 2010, all Public Primary schools should have had the space for at least one Grade R class (40 children).

Should the currently under-funded mandate receive more appropriate funding, it is recommended that a Grade R facility should be provided at each Quintile 1 school first. To then ensure maximum access for learners, it will be necessary to make use of a morning and afternoon session. This will be possible because of the length of the "school day" for this Grade. Such systems have been found to be both successful and acceptable internationally.

4.5 Schools for Learners with Special Education Needs (ELSEN Schools)

Detailed feasibility studies are underway to plan improvements at the 28 ELSEN Schools in LIMPOPO with approximately 4 906 children who are at risk, and need to be taught in a specialized environment. Little attention has been given to the buildings housing these children over the past twenty years. For the safety and proper care of special needs children the infrastructure program must address the backlog in hostels, workshops and classrooms.

4.6 Demand Management Plan

4.6.1 Non-infrastructure solutions

Non-infrastructure solutions available as alternatives to infrastructure-based solutions include:

- Transportation of learners from overcrowded schools to less crowded schools;
- Multiple shifts at the same school site. To ensure maximum access for learners, it will be necessary to make use of a morning and afternoon session. This will be possible because of the length of the "school day" at primary and secondary schools. Such systems have been found to be both successful and acceptable internationally;
- Platoon arrangements where a school uses facilities at another site;
- Division of overly large schools;
- Improving the management of neighbouring schools to attract learners away from over subscribed schools;
- Closure and consolidation of small schools;
- Other management interventions to be determined on a needs basis.

4.6.2 Summary of new works programmes

The proposed 5 year infrastructure plan is included in the table overleaf. However insufficient funds are available in the current economic situation to finance this scenario. As a result the start dates for projects have been delayed as reflected in the detailed MTEF budget tables in the annexure..

Table 5 Ideal 5 year infrastructure plan – delayed due to shortage of funds

	Implementing Agent	Target to solve existing challenges	Percentage of schools affected	Schools to start 2009-10	Schools to start 2010-11	Schools to start 2011-12	Schools to start 2012-13	Schools to start 2013-14	Remaining challenge after proposed 5 year plan
Inflation from 2008									
New Schools - 2009/2010/2011	DoE	**18**	**0%**		3	**3**	**3**	**3**	**6**
Off shoot Schools 2009/2010/2011/2012 - provide offshoots for schools with more than 300 excess learners	DoE	**21**	**1%**			**12**			**9**
Balance learner numbers - provide additional classrooms at neighbouring schools / offshoot schools for schools with more than 100 excess learners	DoE	**59**	**1%**				**29**	**30**	**0**
Condemned and congested schools (Overcrowded schools) - where more than 70 learners per classroom	DPW	**79**	**2%**	0	26	53			**0**
Condemned and congested schools (Overcrowded schools) - where more than 40 learners per classroom	DPW	**1 150**	**28%**				250	250	**650**
Condemned and congested schools (Inappropriate structures) - replace inappropriate structures in very poor condition	DPW	**126**	**3%**	11	40	75			**0**
Condemned and congested schools (Inappropriate structures) - replace inappropriate structures in poor condition	DPW	**474**	**11%**				100	200	**174**

	Implementing Agent	Target to solve existing challenges	Percentage of schools affected	Schools to start 2009-10	Schools to start 2010-11	Schools to start 2011-12	Schools to start 2012-13	Schools to start 2013-14	Remaining challenge after proposed 5 year plan
Condemned and congested schools (Dilapidated schools) - renovate/replace buildings in very poor condition	DPW	**491**	**12%**	15	175	0	301		**0**
Condemned and congested schools (Dilapidated schools) - renovate/replace buildings in poor condition	DPW	**840**	**20%**				50	200	**590**
Refurbishment to Moutse (SDM Cross Boundary) Schools 2009/2010	DPW	**9**	**0%**	9					**0**
Refurbishment: Full Service Schools 2009/2010	DoE	**28**	**1%**	4	3	3	3	3	**12**
Refurbishment to Education Multi Purpose Centers 2009-2012	DoE	**2**	**0%**	2	1	1	1	1	**-4**
Dinaledi Schools - Upgrading & Revitalise Infrastructure 2009/2010	DoE	**48**	**1%**	3	3	6	18	18	**0**
Subtotal: Schools needing teaching space		**3345**		44	251	153	755	705	**1437**
Schools sanitation (Severe overcrowding) 2009/2010 - reduce from 70 learners per toilet to 40	DWAF	**248**	**6%**	54	97	97			**0**
Schools sanitation (Overcrowding) - reduce to 40 learners per toilet	DWAF	**660**	**16%**				400	260	**0**
Schools sanitation (Overcrowding) - reduce to 25 learners per toilet	DWAF	**2 389**	**57%**					200	**2189**

	Implementing Agent	Target to solve existing challenges	Percentage of schools affected	Schools to start 2009-10	Schools to start 2010-11	Schools to start 2011-12	Schools to start 2012-13	Schools to start 2013-14	Remaining challenge after proposed 5 year plan
Schools sanitation (Dilapidated ablutions) 2009/2010 - replace ablutions in very poor condition	DWAF	**360**	**9%**		132	200	28		**0**
Schools sanitation (Dilapidated ablutions) - replace ablutions in poor condition	DWAF	**840**	**20%**				200	300	**340**
Water for schools 2009/2010 - schools without water	DWAF	**271**	**6%**	85	82	104			**0**
Water for schools - Water systems for schools with inadequate water supply	DWAF	**3427**	**82%**			400	500	600	**1927**
Electricity for computer centers, laboratories, workshops, offices	DME	**1592**	**38%**	65	65	65	65	65	**1267**
Subtotal: Schools needing services		**9787**		204	376	866	1193	1425	**5723**

Key ▯ Projects not included in the attached MTEF budget

In addition the Department is implementing additions to 10 existing schools including classroom and administration blocks through the Limpopo Education Development Trust.

The Embassy of Japan is completing two schools: Xikukwana (Mopani District) and Chokwe Primary School (Capricorn district). Facilities include 4 classrooms and 4 toilets at each school.

SECTION 5: EXISTING INFRASTRUCTURE

5.1 Physical Parameters

The existing educational facilities are summarised in the tables below.

Table 6 Education facilities in the Limpopo Province (NEIMS 2007)

Limpopo Province	Total "operational" sites assessed Sum (1-5)	ECD Centres (1)	Ordinary Schools (2)	ELSEN Centres (3)	ABET Centres (4)	Offices (5)
Capricorn	1,048	16	919	10	71	32
Greater Sekhukhune	1,058	24	879	3	119	33
Mopani	885	11	715	1	135	23
Vhembe	1,107	2	968	2	107	28
Waterberg	634	42	541	2	31	18
Total 2006	4,732	95	4,022	18	463	134
% 2006	100.00%	2.01%	85.00%	0.38%	9.78%	2.83%
Total 2000	4,279	0	4,261	18	0	0
% 2000	100.00%	0.00%	99.58%	0.42%	0.00%	0.00%
% change since 2000	N/A	2.01%	-14.58%	-0.04%	9.78%	2.83%
Total 1996	4,168	0	4,157	11	0	0
% 1996	100.00%	0.00%	99.74%	0.26%	0.00%	0.00%
% change since 1996	N/A	2.01%	-14.74%	0.12%	9.78%	2.83%

Table 7 Utilization of school sites: ordinary public schools (NEIMS 2006)

Limpopo Province	Number of "Operational" ordinary public schools				
	"Operational" ordinary public schools assessed Sum (1-4)	Schools operating a single shift on own site (1)	Schools operating multiple shifts on own site (2)	Schools using another site in a "Platoon" arrangement (3)	Public schools on private land in a "Section 14" arrangement (4)
Capricorn	919	804	37	1	77
Greater Sekhukhune	879	853	0	4	22
Mopani	715	682	1	0	32
Vhembe	968	814	0	1	153
Waterberg	541	209	6	6	320
Total 2006	4,022	3,362	44	12	604
% 2006	100.00%	83.59%	1.09%	0.30%	15.02%
Total 2000	4,261	0	0	59	0
% 2000	100.00%	0.00%	0.00%	1.38%	0.00%
% change since 2000	N/A	83.59%	1.09%	-1.08%	15.02%
Total 1996	4,157	0	0	169	0
% 1996	100.00%	0.00%	0.00%	4.07%	0.00%
% change since 1996	N/A	83.59%	1.09%	-3.77%	15.02%

Table 8 Condition of education facilities (NEIMS 2006)

Limpopo	Total "operational" sites assessed	Excellent	Good	Poor	Very Poor
Total 2006	4,750	52%	20%	18%	10%

29% of education facilities are in unacceptable condition.

Table 9 Education facilities that are operational or not in use (NEIMS 2006)

Limpopo Province	Total number of education sites assessed at 15 March 2007 Sum (1-2)	Number of assessed sites that are "not operational" (1)	Number of assessed sites that are "operational" (2)
Capricorn	1,055	7	1,048
Greater Sekhukhune	1,078	20	1,058
Mopani	897	12	885
Vhembe	1,110	3	1,107
Waterberg	684	50	634
Total 2006	**4,824**	**92**	**4,732**
% 2006	**100.00%**	**1.91%**	**98.09%**
No corresponding statistics from the 1996 and 2000 assessments were available.			

Many schools in the province are faced with severe infrastructure challenges. These impact on the quality of education offered. Key challenges are summarised in the table below, with the proposed solution.

Table 10 Situation assessment after completion of existing programmes

Challenge	Number of schools affected	% of Limpopo schools affected	Proposed programmes to address these challenges
Large (More than 300 excess learners)	23	1%	Offshoot schools and New schools. These schools have more than 300 excess learners, well above the required standard of 1200 learners per high school and 960 learners per primary school. Build an offshoot school nearby and renovate the existing school. The needs at neighboring schools and Provincial growth and development strategy inform the location of offshoot schools.
Large (Between 100 and 300 excess learners)	59	1%	Future Offshoot schools and New schools programs. These schools have more than 100 and less than 300 excess learners, well above the required standard of 1200 learners per high school and 960 learners per primary school. Build an offshoot school nearby and renovate the existing school. In the meantime these schools will platoon classes to use the existing facilities effectively.
More than 70 Learners Per Classroom	79	2%	Condemned and congested schools (Overcrowded schools): Add classrooms and toilets to bring down from more than 70 learners per classroom or toilet to 40 learners per classroom or toilet. Renovations as required.

Challenge	Number of schools affected	% of Limpopo schools affected	Proposed programmes to address these challenges
Between 40 and 70 Learners Per Classroom	1 150	28%	Future Condemned and congested schools (Overcrowded schools) programs to add classrooms and toilets to bring down to 40 learners per classroom and 40 learners per toilet. In the meantime these schools will platoon classes to use the existing facilities effectively.
Mud, wood ,metal, prefab buildings with wall or roof in bad condition	126	3%	Condemned and congested schools (Inappropriate structures): Renovations and demolitions as required. Add classrooms and toilets to provide 40 learners per classroom or toilet.
Buildings with wall or roof in bad condition	491	12%	Condemned and congested schools (Dilapidated schools): Renovations and demolitions as required. Add classrooms and toilets to provide 40 learners per classroom or toilet.
SDM backlog in cross boundary areas (also counted in categories above)	127	3%	SDM cross boundary schools: Add classrooms and toilets to provide 40 learners per classroom or toilet. Renovations and demolitions as required.
More than 70 Learners Per Toilet	248	6%	Schools sanitation (Add ablutions urgently): More than 70 learners per toilet, well above the required standard of 21 learners per toilet.
Between 40 and 70Learners Per Toilet	660	16%	Schools sanitation (Add ablutions): More than 40 learners per toilet, well above the required standard of 21 learners per toilet.
Mud, Wood, Metal, Prefab Ablutions In Bad Condition	167	4%	Schools sanitation (Replace and add ablutions): Ablutions in bad repair. The ablutions at these schools are metal, mud, wood or prefab buildings. This programme replaces these ablution blocks. The School must empty the pit (using a honey sucker from the municipality) and demolish the old ablutions using the school allocation.
Ablutions with wall or roof in bad condition	193	5%	Future programs for Schools sanitation (Replace and add ablutions): Ablutions in bad repair. This programme replaces these ablution blocks. The School must empty the pit (using a honey sucker from the municipality) and demolish the old ablutions using the school allocation.
Water for schools without water	272		Complete water installations at all remaining schools prioritized and tested in DWAF projects D and F.
Water for schools with inadequate water	3427		DWAF to complete surveys on these schools and advise on budget and project list by 20080803.
Power to offices and laboratories			Compile list with the Department of Minerals and Energy

Challenge	Number of schools affected	% of Limpopo schools affected	Proposed programmes to address these challenges
New schools to address growing population in line with spatial rationale	6		Build 6 new schools to address the high need in 5 Local Municipalities (Thulamela, Greater Tzaneen, Polokwane, Makhado and Greater Letaba) and in Jane Furse in Makhudutamaga. The needs at neighboring schools and Provincial growth and development strategy inform the location of new schools.
	54		Dinaledi Schools: MEC to advise on Dinaledi schools
			Full service schools: ELSEN manager to advise on Full service schools
Circuit offices	18		Circuit offices: build 35 offices at a rate of 6 per year. 18 remaining. District and circuit officials need accommodation and desks. Aim to build 6 circuit offices per year. One district with 2, the other 4 with one each.
Maintenance backlog	4179	100%	Renovation and maintenance programs where schools are unable to cover the cost of major renovations with the school allocation

5.1.1 Data sources

Data on

- location of schools, usage, condition and building type is available from the NEIMS;
- school assets is available from PREMIS;
- water and sanitation is available from the DWAF web site;
- previous infrastructure projects and programs is available from the IRM (location, scope, physical progress, financial progress, actual expenditure);
- current infrastructure projects is available from the IRM and TRACKER (location, scope, physical progress, service providers);
- education results is available from STATSSA;
- demographic projections are available from NATIONMASTER.COM.

The DoE's newly developed National Education Infrastructure Management System (NEIMS) provides a database with detailed information about each public school in the country. Currently the technical assistants appointed by National Treasury under the IDIP programme in the various provinces are using the information to provide a total picture, rather than the school by school information which is currently accessible to users on the internet.

As is evident from the examples extracted to date, it will be possible to draw up a detailed maintenance programme for the schools in Limpopo once the IDIP team has managed to extract the information in comparative form. Current indications are that this will require the acquisition of special software (IMQS). This is now being arranged.

The regular updating and maintenance of the vast amounts of data contained in the NEIMS database is a matter of concern. Governance officers have been appointed for

each Circuit office (134). Governance officers should be able to basically monitor the conditions of the school infrastructure against the NEIMS database on regular basis after induction courses on infrastructure and training on the NEIMS update procedures. This can then be supplemented with selective monitoring and cross-checking by appropriately experienced technical experts. A concurrent program for data updating is necessary since there has been tremendous infrastructural activities affecting more than 1500 schools in the last three years. This onc-off process is underway.

5.1.2 Provincial demarcation schools

The schools recently incorporated from other provinces require major attention to be brought to minimum standards and condition, requiring repairs, renovations and rehabilitation. Sanitation, security and electricity supply at many of these schools also require urgent attention.

5.1.3 Life-cycle Asset Management

As indicated in Section 2.4 and elsewhere, the development of a comprehensive life-cycle infrastructure asset management system is contemplated as an outflow from the operationalisation of the NEIMS database system and as part of the current IDIP programme.

5.2 Capacity / Performance

5.2.1 Overcrowding in schools

The NEIMS, updated by the TRACKER, show that there are currently a number of schools experiencing severe overcrowding , well above the national norms. According to the SASA this should be addressed by balancing learner numbers across schools in an area, by adding infrastructure to existing schools, and in exceptional cases by building new schools. The proposed 5 year action plan is outlined below.

Table 11 Overcrowding in schools and ideal solution – delayed due to funding shortage

	Target to solve existing challenges	% of schools affected	Schools to start 2009-10	Schools to start 2010-11	Schools to start 2011-12	Schools to start 2012-13	Schools to start 2013-14	Remaining challenge after proposed 5 year plan
New Schools - 2009/2010/2011[1]	18	0%		3	3	3	3	6
Condemned and congested schools (Overcrowded schools) - where more than 70 learners per classroom	79	2%	14	65				0
Condemned and congested schools (Overcrowded schools) - where more than 40 learners per classroom	1 150	28%				250	250	650

[1] 5 local municipalities are very short of classrooms and need at least 25% more classrooms

5.2.2 School size

The NEIMS, updated during 2007, shows that there are currently

- A number of schools that are smaller than the norm. According to SASA this should be addressed through school consolidation, unless the school is too far from other facilities and children would experience difficulty in attending school. These remote small schools may require infrastructure improvements.
- A number of schools that are larger than the norm. According to SASA this should be addressed through revised management structures, unless the school facilities are overcrowded.

Figure 6 School size

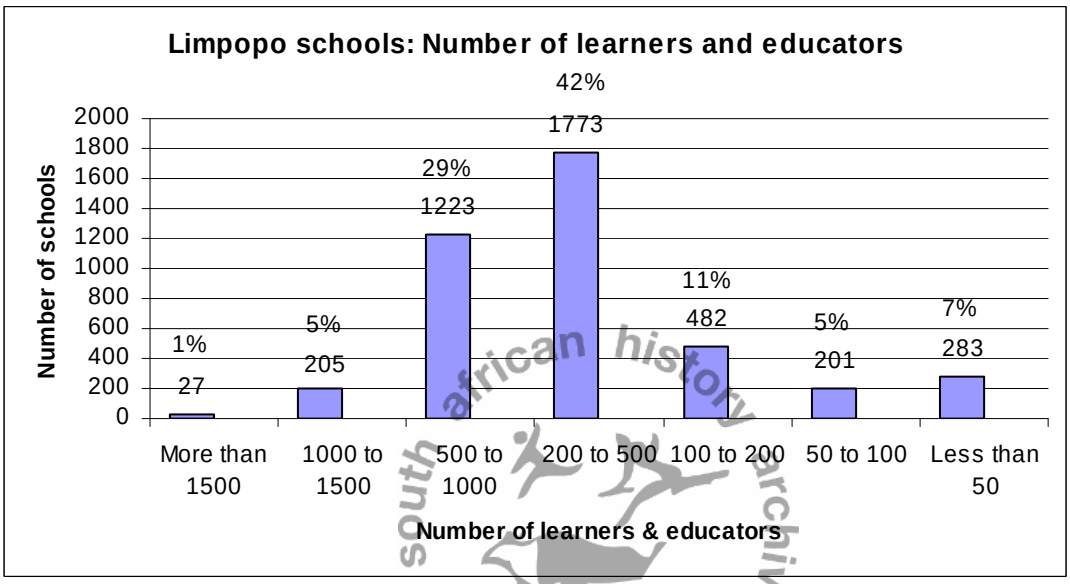


Table 12 Excess learners in schools and ideal solution – delayed due to funding shortage

	Target to solve existing challenges	% of schools affected	Schools to start 2009-10	Schools to start 2010-11	Schools to start 2011-12	Schools to start 2012-13	Schools to start 2013-14	Remaining challenge after proposed 5 year plan
Off shoot Schools 2009/2010/2011/2012 - provide offshoots for schools with more than 300 excess learners	21	1%			12			9
Balance learner numbers - provide additional classrooms at neighbouring schools / offshoot schools for schools with more than 100 excess learners	59	1%				29	30	0
New Schools - 2009/2010/2011[2]	18	0%		3	3	3	3	6

[2] 5 local municipalities are very short of classrooms and need at least 25% more classrooms

5.3 Condition

5.3.1 Condition of school infrastructure

The NEIMS, updated during 2007, shows that there are currently a number of schools are in worse condition than the norm.

Table 13 Schools with buildings in very poor or poor condition and ideal solution – delayed due to funding shortage

	Target to solve existing challenges	% of schools affected	Schools to start 2009-10	Schools to start 2010-11	Schools to start 2011-12	Schools to start 2012-13	Schools to start 2013-14	Remaining challenge after proposed 5 year plan
Condemned and congested schools (Dilapidated schools) - renovate/replace buildings in very poor condition	491	12%	14	78	300	99		0
Condemned and congested schools (Dilapidated schools) - renovate/replace buildings in poor condition	840	20%				50	200	590
Refurbishment to Moutse (SDM Cross Boundary) Schools 2009/2010	9	0%	9					0
Refurbishment: Full Service Schools 2009/2010	28	1%	3	3	3	3	3	13
Refurbishment to Education Multi Purpose Centers 2009-2012	2	0%	2	1	1	1	1	-4
Dinaledi Schools -	48	1%	3	3	6	18	18	0

	Target to solve existing challenges	% of schools affected	Schools to start 2009-10	Schools to start 2010-11	Schools to start 2011-12	Schools to start 2012-13	Schools to start 2013-14	Remaining challenge after proposed 5 year plan
Upgrading & Revitalise Infrastructure 2009/2010								

Condition of all schools was assessed during 2006. The condition of schools will be monitored in the coming years to update the NEIMS by inspecting a proportion of schools each year, and by updating the data after completion of building works.

5.3.2 Building standards: High maintenance building types

The NEIMS, updated during 2007, shows that there are currently a number of schools that have worse building standards than the norm. These schools need major renovations.

Table 14 Schools with inappropriate buildings in very poor or poor condition and ideal solution – delayed due to funding shortage

	Target to solve existing challenges	% of schools affected	Schools to start 2009-10	Schools to start 2010-11	Schools to start 2011-12	Schools to start 2012-13	Schools to start 2013-14	Remaining challenge after proposed 5 year plan
Condemned and congested schools (Inappropriate structures) - replace inappropriate structures in very poor condition	126	3%	14	91	21			0
Condemned and congested schools (Inappropriate structures) - replace inappropriate structures in poor condition	474	11%				100	200	174

5.4 Valuations

The NEIMS database system cost model was used to provide an initial overall picture of the Infrastructure budget required. The cost implications provided in this model give a basic platform from which planning of the needed fiscal support becomes evident. With the current selection of the Norms and Standards for this Cost Model the total value of this combined backlog in 2007 Rands is calculated to R 20,75 billion. The current

budgetary allocations in no way address the actual needs in terms of education infrastructure to address the backlogs and demand for infrastructure.

It will take an estimated 20 years to address the backlog and provide sufficient classrooms of acceptable condition.

These backlog scores combine technical and financial information into a single index. In the current situation, where the backlog is severe, prioritisation of projects must be based on detailed analysis not on the broad indices these scores provide. The detailed analysis combined with consultation with District and other responsible managers aims to provide best value for money and impact using the limited budget available.

An alternative approach proposed is described in Section 7 the Infrastructure Plan. The basis for this innovative approach and proposal is that the yearly allocations from National Government be used as down payments for a loan from an international source to fund this Infrastructure Plan and eliminate the huge existing backlog, or invite the private sector to build maintain and equip the schools in terms of the norms and standard of the department and rent it to the department based on a fair cost benefit analysis. This proposal will be investigated further to assess its feasibility.

5.5 Historical Data

Historical data on

- education standards is available from STATSSA;
- location of schools, usage, condition and building type is available from the NEIMS;
- school assets is available from PREMIS;
- water and sanitation is available from the DWAF web site;
- previous infrastructure projects and programs is available from the IRM (location, scope, physical progress, financial progress, actual expenditure);
- current infrastructure projects is available from the IRM and TRACKER (location, scope, physical progress, service providers).

SECTION 6: ASSET MANAGEMENT – INFRASTRUCTURE

The development of a comprehensive life-cycle integrated infrastructure asset management solution is an important component of the Limpopo Provincial IDIP Log frame and work plan. As a first step in this direction, considerable attention is currently being devoted to the operationalisation of the newly developed NEIMS database system of DoE. The NEIMS provides details on the usage and condition of infrastructure to assist planning. The NEIMS and PREMIS systems developed under the auspices of LPED will form the backbone of LPED's envisaged eventual infrastructure maintenance strategy.

Repairs and maintenance are the responsibility of the School Governing Bodies using the schools fund allocation provided by the Provincial department. Where rehabilitation work is too expensive then the school applies for help from the Provincial department.

In the meantime, maintenance is conducted on a mostly reactive basis, with considerable scope for improvement. In 2009/10 financial year in general maintenance by the provincial department will be focused on serious risks at schools including the former model c schools, on other schools built by partner donors, and on schools with severe maintenance needs that cannot be covered by their schools allocation fund.

In terms of the Service Delivery Agreement (SDA) negotiated earlier in the current year between LPED and LDPW, routine maintenance is a function that was retained by LPED. This is an arrangement that can be revisited in the near future, with the upcoming review of the SDA.

6.1 Routine Maintenance Plan

Except for reactive emergency maintenance, insufficient attention is currently devoted to the proper maintenance of LPED's infrastructure assets. There is an urgent need for a comprehensive routine maintenance plan, which is currently being developed.

The South African Schools Act (84/1996): Amended national norms and standards for school funding (Government Notice 869, GOVERNMENT GAZETTE No. 29179, 31 AUGUST 2006) states "The school allocations are intended to cover non-personnel recurrent items and small capital items required by the school as well as normal repairs and maintenance to all the physical infrastructure of the school …. services relating to repairs and maintenance, including building repair work, equipment repairs and maintenance, light bulbs".

The maintenance plan recognizes the different needs of schools. Where the school governing body has been allocated the relevant SASA Section 21 functions, may carry out their own procurement and deal directly with suppliers and contractors for the relevant budgeted items in accordance with standard procurement procedures. The non-section 21 schools rely on the PED for support for routine maintenance. The former may require maintenance manuals and tools. The latter may require a PED implemented maintenance program to be taken over by the schools over time. Government supports the gradual transfer to the school level of decision-making powers relating to the school allocation.

6.1.1 Maintenance allowances for Section 21 Schools

Funding intended to carry out routine maintenance is currently transferred to Section 21(a) schools, but to date no training has been provided to specifically identified personnel at these schools on preventative and routine maintenance. There is also an urgent need to develop operational policy guidelines and which kinds of maintenance is intended to be covered under these maintenance allowances and which not.

6.1.2 Reactive/Unplanned Emergency Maintenance

School governing bodies are encouraged to take out buildings insurance using the schools fund allocation, as provided for in the SA schools act.

Most of the maintenance currently conducted by LPED is of a reactive emergency nature. This approach has many shortcomings and alternative options are currently under investigation and consideration. Examples of current emergency maintenance activities include roof collapses due to storm damage or termite infestations, collapsing ablution blocks, storm damage to buildings.

Budget allocations have been provided to cover the costs for emergency work. A term contract will be established so that the LPED can respond quickly to emergencies, reducing ongoing damage to buildings due to slow response times. Alternatively each school governing body could take out buildings insurance to cover major infrastructure emergency work. Another options could be to migrate the whole maintenance function to LDPW in terms of the SDA between the two departments.

6.1.3 Training and involvement of school principals, governing bodies and maintenance officers

School principals, governing bodies and maintenance officers take responsibility for routine maintenance and repairs. The recently appointed Circuit Governance Officers will be trained to support schools in preventative maintenance.

Guidance documents will be provided to School Governing Bodies with the Prescripts for the use of schools fund allocations for the 2009/10 financial year.

A training programme is being developed for SGB's on routine repairs and maintenance using the schools fund allocation.

Current gaps in preventative maintenance include

- Eradication of termites and other pests every 3 years. Without this treatment termites destroy buildings.
- Quarterly cleaning, weeding and maintenance of gutters, channels and other storm water drains to prevent flood damage to foundations, paving, buildings, toilets and sports fields. Without this treatment storm water causes severe damage to infrastructure leading to collapse.
- Annual repairs and maintenance of roofs to prepare for the wet season including sealing, fixing and replacing old roof coverings, treating roof trusses, pest control, painting or treating roofs to prevent deterioration, replacement of gutters. Without this treatment the annual summer rains cause severe damage first to roofs and then to the whole building.
- Annual maintenance of ablution blocks. There are four methods to deal with full toilet pits:
    - The municipality can provide a "honey sucker" to empty full pits, or

    - the school can buy enzymes to mix with water to throw into the pit to stimulate digestion, or
    - the school can throw a dead chicken and 2 buckets of water into the pit to stimulate digestion, and
    - the school should never put bleach, Jik or Handy Andy into a toilet as this stops the anaerobic digestion in the pit and causes the pit to fill up fast.
- Annual painting and treatment of outdoor equipment to prevent rust damage to metal work (e.g. goal posts), and rotting of woodwork.
- Preparation and distribution of a standardised maintenance manual for routine school maintenance.

In some cases the implementation of no-fee schools is having an unexpected consequence in that the attitude of the majority of parents at these schools is that they do not participate in any way, and that the State is responsible for all aspects of maintenance and improvements of the school infrastructure and grounds. Any routine maintenance plan should therefore be linked to education and advocacy in school communities, to effectively convey the message that they have a responsibility for ensuring that schools are well maintained, looked after and not vandalised.

6.1.4 Major Maintenance Tasks

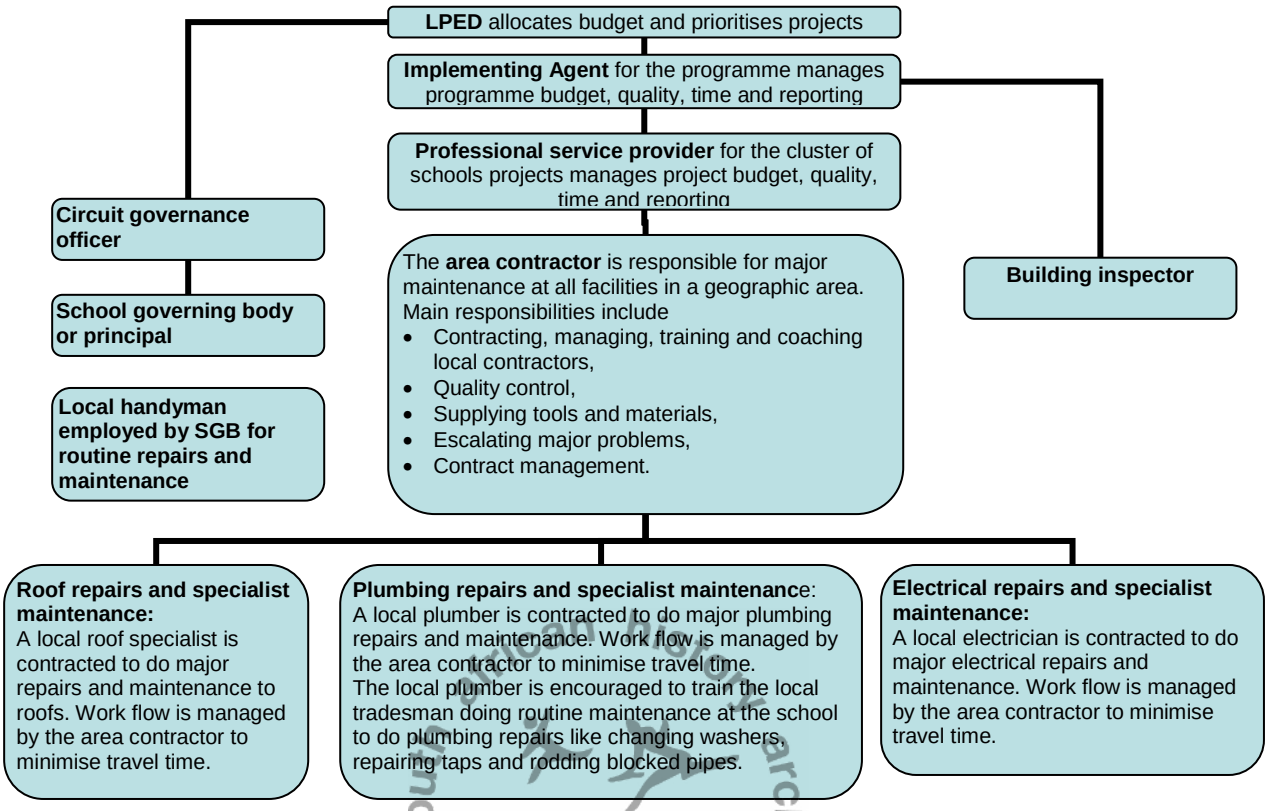
While the schools allocation covers routine maintenance work, major repairs and maintenance are too expensive for most schools. A pro-active maintenance program is to be developed to prevent emergencies. The proposed program incorporates:

- Annual inspection of each school and update of the NEIMS database by the Circuit Governance Officers to ensure advance planning so that major maintenance takes place early to prevent emergencies.
- Ongoing use of the database to prioritise major maintenance projects to prevent severe deterioration and dangerous situations.
- Allocation of sufficient budget to maintain buildings to an acceptable standard.
- Prioritising roof repairs and maintenance. Without a sound roof any other building maintenance is short term.
- Appointment of a term contractor for major maintenance tasks.

In terms of the current SDA between LPED and LDPW, major maintenance tasks, i.e. with cost estimates in excess of R 30 000, is may be referred to LDPW for attention as implementing agent of LPED. In practice, this arrangement still has to be operationalised.

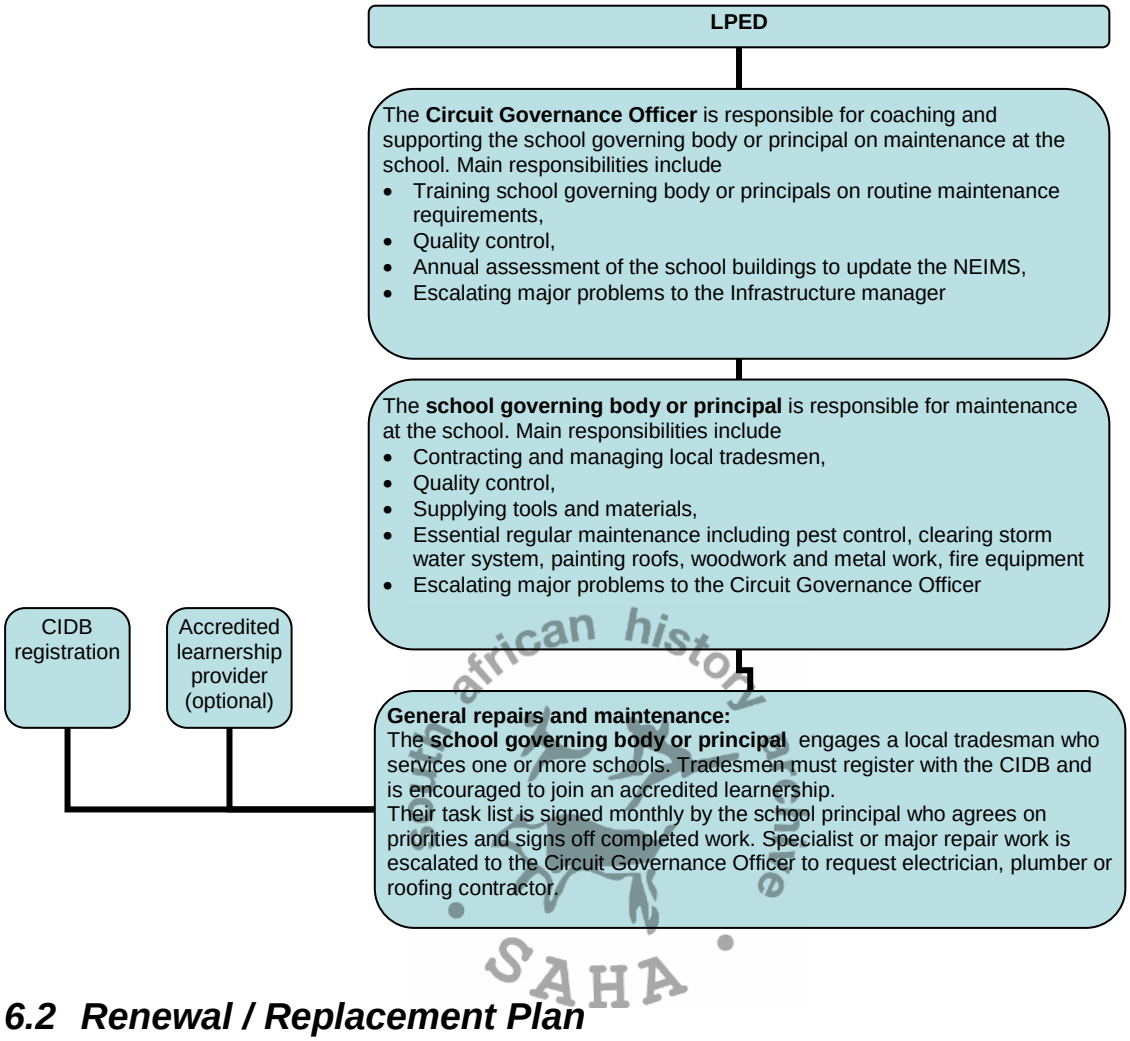
6.1.4 Implementation plan for Emergency and Major Maintenance Tasks

Figure 7: Roles and responsibilities for emergency and major maintenance



6.1.4 Implementation plan for routine Maintenance Tasks

Figure 8: Roles and responsibilities for routine schools based maintenance



6.2 Renewal / Replacement Plan

To date, the identification and prioritisation of most renewal and replacement projects have been dealt with on a somewhat ad hoc basis. In some cases it has been dealt with under the maintenance budget and in others in combination with major rehabilitation and upgrading.

The NEIMS indicates that 28% of school buildings in Limpopo are dilapidated, with 10% in very poor condition.

Table 15 Condition of education facilities (NEIMS 2006)

Limpopo	Total "operational" sites assessed	Excellent	Good	Poor	Very Poor
Total 2006	4,750	52%	20%	18%	10%

The projects in this infrastructure plan focus on buildings that are in very bad condition, as summarised below.

Table 16 Number of schools with buildings in very poor condition

Condition	Number of schools with at least 1 building in very bad condition
Schools with at least one building in very bad condition	491
Of these: at least one inappropriate structure in very bad condition	126
Schools with at least one ablution block in very bad condition	360
Of these: at least one inappropriate ablution block in very bad condition	167

A multi-year program is planned to address this situation. The programme aims to prevent further deterioration through

1. improved school based maintenance,
2. faster response to emergencies,
3. prioritising roof repairs and maintenance,
4. improved quality and design of new roofs.

Relevant programmes include:

- Condemned and congested schools (Inappropriate structures)
- Condemned and congested schools (Overcrowded schools)
- Condemned and congested schools (Dilapidated schools)
- Refurbishment to Moutse (SDM Cross Boundary) Schools 2009/2010
- Refurbishment: Full Service Schools 2009/2010
- Refurbishment to Education Multi Purpose Centers 2009-2012
- Dinaledi Schools - Upgrading & Revitalise Infrastructure 2009/2010
- Schools sanitation (Severe overcrowding) 2009/2010
- Schools sanitation (Dilapidated ablutions) 2009/2010
- Water for schools 2009/2010

The MTEF budget describes the proposed action plan to address the challenges outlined above. The scope of work is limited by the budget available. In summary

Table 17 Proposed action plan – delayed due to shortage of funds

Challenge	Proposed programme	FY 09/10	FY 10/11	Remaining problem
Large (More than 300 excess learners)	Offshoot schools	12	0	11
Large (Between 100 and 300 excess learners)	Offshoot schools	0	0	59
More than 70 Learners Per Classroom	Condemned and congested schools (Overcrowded schools)	0	79	0
Between 40 and 70 Learners Per Classroom	Condemned and congested schools (Overcrowded schools)	0	0	1150

Challenge	Proposed programme	FY 09/10	FY 10/11	Remaining problem
Mud, wood ,metal, prefab buildings with wall or roof in bad condition	Condemned and congested schools (Inappropriate structures)	42	0	84
Buildings with wall or roof in bad condition	Condemned and congested schools (Dilapidated schools)	0	168	323
SDM backlog in cross boundary areas (also counted in categories above)	SDM cross boundary schools	9	0	118
More than 70 Learners Per Toilet	Schools sanitation: Add ablutions urgently	101	103	44
Between 40 and 70Learners Per Toilet	Schools sanitation: Add ablutions	0	0	660
Mud, Wood, Metal, Prefab Ablutions In Bad Condition	Schools sanitation: Replace and add ablutions	0	132	35
Ablutions with wall or roof in bad condition		0	0	193
Water for schools without water	Complete water installations at all remaining schools prioritised and tested in DWAF projects D and F.	271	0	0
Water for schools with inadequate water	DWAF to complete surveys on these schools and advise on budget and project list by 20080803.			
Power to offices and laboratories	Compile list with the Department of Minerals and Energy			
New schools to address growing population in line with spatial rationale	Build new schools to address the 5 high need Local Municipalities (Thulamela, Greater Tzaneen, Polokwane, Makhado and Greater Letaba) and Jane Furse in Makhudutamaga.	3	0	3
	Dinaledi schools	3	2	49
	Full service schools	3	0	
Circuit offices	Build 6 circuit offices per year. One district with 2, the other 4 with one each.	5	6	0
Maintenance backlog	Renovation and maintenance (Partnership schools): Projects have been implemented at these schools by partner donors in the past 8 years. This program aims to renovate and maintain the schools to acceptable standards. Former model C schools were covered in 08-09.	111	0	4066

6.3 Creation / Acquisition Plan

In terms of this Infrastructure Plan, LPED's Creation / Acquisition Plan can be considered to have various components:

- Building of new schools to reduce overcrowding in schools and for the provision of schools associated with new township/housing developments.
- Building additional classrooms, administration blocks and toilet facilities at existing schools to eliminate classroom backlogs.

Urgent needs include:

- Provision of classrooms where there are more than 70 learners per classroom
- Provision of toilets where there are more than 70 learners per toilet
- Provision of new schools in the municipalities experiencing high growth rates: Thulamela, Polokwane and Greater Tzaneen municipalities.
- Provision of offshoot schools where the school is bigger than the required standard, there are more than 300 excess learners at the school and additional classrooms cannot be built at neighbouring schools.

The detailed project lists are attached.

- Projects coloured white started construction during the 2008-2009 financial year
- Projects highlighted in blue are currently under construction. Cash flow is required during 2008-2009 to complete these projects, as many projects span the financial year end.
- Projects coloured green are proposed new projects to start in the 2009-2010 and 2010-2011 financial years.

Table 18 Proposed new projects

Program	Sub program
New Infrastructure:	
Completion of prior multi-year programs	Circuit Offices - Building Works (2007/2008)
	Circuit Offices - Civil Works (2007/2008)
	New Schools (Rural) (2007/2008)
2008-2009 Programs	New Schools (Polokwane)
	New Schools (SDM) (2008/2009)
	Off Shoot Schools (2008/2009)
	Circuit Offices (6 Circuit Offices) (2008/2009)
Proposed new programs	New Schools - 2009/2010/2011
	Off shoot Schools 2009/2010/2011/2012
	Circuit Offices 2009/2010/2011
Replacement / Rehabilitation:	
Completion of prior multi-year programs	SDM cross boundary schools 2007/2008
	Dilapidated schools ph 1 2006/2007
	Dilapidated schools ph 2 2006/2007
	Dilapidated schools ph 3 2006/2007
	Dilapidated schools ph 4 2007/2008
	Dilapidated schools ph 5 2007/2008
2008-2009 Programs	Condemned Schools (2008/2009)
	Condemned Schools (Phase 2) (2008/2009)
	SDM Cross Boundary Schools (2008/2009)
	Refurbishment: Full Service Schools (2008/2009)

Program	Sub program
	Refurbishment to Education Multi Purpose Centers (2008/2009)
	Refurbishment of DoE Warehouses (2008/2009)
	Refurbishment of DoE HQ (2008/2009)
	Dinaledi Schools (2008/2009)
Proposed new programs	Condemned and congested schools (Inappropriate structures)
	Condemned and congested schools (Overcrowded schools)
	Condemned and congested schools (Dilapidated schools)
	Refurbishment to SDM Cross Boundary Schools 2009/2010
	Refurbishment: Full Service Schools 2009/2010
	Refurbishment to Education Multi Purpose Centers 2009-2012
	Dinaledi Schools - Upgrading & Revitalise Infrastructure 2009/2010
	IDT Schools - Upgrading & Revitalise Infrastructure 2009/2010
Providing Services:	
Completion of prior multi-year programs	Schools sanitation 2007/2008
2008-2009 Programs	Water For Schools (2008/2009)
	Electrification of Schools (2009/20010)
Proposed new programs	Schools sanitation (Severe overcrowding) 2009/2010
	Schools sanitation (Dilapidated ablutions) 2009/2010
	Water for schools 2009/2010
Temporary Accommodation	
	Mobile Classrooms
Emergency Renovation & Maintenance	
	Renovation & Maintenance
	Emergency - Storm Damaged Schools
Management Services:	
	Technical Assistance / Support
	EU Supervision
	Annual Planning

The budget approved in March 2009 is insufficient to satisfactorily address the challenges outlined above.

The detailed MTEF budget and project lists are attached.

The proposed implementation plan aims to address the following challenges related to education facilities:

1. Overcrowding: These schools are congested, with more than 70 learners per classroom.
2. Over large schools: These schools are larger than the required standard, with more than 1200 learners in a primary school and more than 960 learners in a secondary school.
3. New administration facilities for circuit and district officials.
4. Dilapidated schools: These schools have buildings that are no longer functional due to major problems with the walls and / or roof.
5. Mud, metal and wood buildings that are in very poor condition.
6. Rehabilitation of schools to meet the needs of disabled learners: Targeted schools are upgraded to accommodate disabled learners.

7. Rehabilitation of education multi purpose centres: Targeted facilities are upgraded to accommodate adult and early childhood development programmes.
8. Upgrading of schools to provide centres of excellence in growth areas forming part of the Provincial Growth and Development Strategy. (Dinaledi schools)
9. Rehabilitating dilapidated administration buildings, including warehouses, circuit and district offices and the head office.
10. Neglected schools in the Sekhukhune cross boundary areas: Schools in the previously disputed cross boundary areas have been neglected over the past 10 years and require further infrastructure investment to bring them up to the normal standard.
11. Provision of water to schools: Many schools have insufficient water to meet the basic hygiene needs of learners.
12. Sanitation for schools: A query was made to the NEIMS, updated in 2006/07, which identifies 7 schools without any toilets and another 946 schools where more than 40 learners use one toilet seat. The required standard is 21 learners per toilet.
13. Electricity for schools to provide backup power supply to science and computer centres. ESKOM is responsible for the primary electrification.
14. Major planned preventative maintenance and repairs, where schools are unable to manage this work using the Schools Allocation.
15. Unplanned and emergency maintenance and repairs, where schools are unable to manage this work using the Schools Allocation.
16. Management services providing technical support for this department to improve infrastructure delivery.

6.4 Projected facilities improvement costs

The data set provides, for the first time, a consolidated set of budgets for strategic education capital and maintenance planning. The sheets bring together information from a condition assessment of schools undertaken by the CSIR using the PREMIS Immovable Asset Management Information System (PREMIS IAMS) with that from the national Department of Education NEIMS programme. A set of far more comprehensive information is available from both the PREMIS and NEIMS teams and project teams.

Where the focus of NEIMS is on information for overall strategic education planning including the need for additional functionality at existing facilities, the PREMIS dataset used focuses more directly on establishing the condition and suitability of existing facilities as well as addressing any risk attached to the ongoing use of the school. The PREMIS data is processed through the system to provide zero or condition based budgets for both planned and unplanned maintenance work as well as any backlog maintenance (repair, rehabilitation and replacement programmes).

These backlog and maintenance budgets from PREMIS have been linked to the need for additional standard classrooms, administration facilities, sanitation facilities (toilets), special classrooms (science laboratories, home economics units) and learning spaces (multi-purpose halls, computer centres and libraries) from NEIMS into a single set of spreadsheets for the province as a whole as well as for each of the five provincial districts.

Budgets have been drawn from the NEIMS and PREMIS data sets and systems as indicated in the Data Definitions section below. As far as possible the budgets have been consolidated in such a way as to provide comparable data. Unless noted otherwise in this

report, all costs and prices shown are indicative only, and are not to be considered as quotations or detailed cost estimates. The cost base date for PREMIS data is the first quarter 2006 and that for the NEIMS data has been adjusted to 2007. All figures exclude Value Added Tax, professional fees, loose equipment and furniture.

Fieldwork for both the PREMIS and NEIMS assessments were undertaken in 2006. Fieldwork was undertaken by teams of assessors using standardised assessment forms and is based on a visual assessment of conditions prevailing at the time of the assessment. Concealed services (e.g. underground or within building cavities) are generally not inspected unless actual or probable failures are evident. No inference as to their condition should therefore be drawn by their exclusion from this report. While every effort was made to ensure accuracy of data through training and quality assurance programmes it is not possible to guarantee accuracy. Changes to condition in the interim between the assessments and the consolidation of these reports would not be covered.

Table 19 Projected facilities improvement costs: Standard Classrooms (to be inflated from 2006)

Municipal District	Number of existing class rooms	Amount for backlog maintenance (repair, rehabilitation, replacement)	Additional class rooms required	Additional class room blocks (4 class rooms/ block)	Amount for additional class room blocks
Capricorn	11 379	R 94 597 701	2 059	635	R 317 991 490
Mopani	9 314	R 67 687 715	2 378	731	R 366 065 794
Sekhukhune	10 826	R 104 893 021	1 673	541	R 270 918 734
Vhembe	11 590	R 133 951 336	2 416	773	R 387 098 302
Waterberg	6 010	R 75 895 473	635	217	R 108 667 958
Province	49 119	R 477 025 246	9 161	2 897	R 1 450 742 278

Table 20 Projected facilities improvement costs: Administration blocks (to be inflated from 2006)

Municipal District	Existing admin-istration space (equivalent block: m2/180)	Amount for backlog maintenance (repair, rehabilitation, replacement)	Additional 1 admin block (where existing is 0 or less than 1)	Amount for additional administration blocks
Capricorn	689.2	R 2 932 874	770	R 467 544 000
Mopani	465.7	R 3 439 502	610	R 370 392 000
Sekhukhune	530.5	R 3 702 851	759	R 460 864 800
Vhembe	417.2	R 3 603 660	872	R 529 478 400
Waterberg	424.9	R 2 898 245	527	R 319 994 400
Province	2 527.6	R 16 577 132	3 538	R 2 148 273 600

Table 21 Projected facilities improvement costs: Sanitation Facilities **(to be inflated from 2006)**

Municipal District	Amount for backlog maintenance (repair, rehabilitation, replacement)	Amount for additional sanitation facilities (blocks of 4 Enviroloo's)
Capricorn	R 5 430 491	R 322 103 040
Mopani	R 4 477 672	R 258 424 320
Sekhukhune	R 5 778 195	R 323 781 120
Vhembe	R 8 537 513	R 340 650 240
Waterberg	R 5 117 632	R 124 001 280
Province	R 29 341 503	R 1 368 960 000

Table 22 Projected facilities improvement costs: Multipurpose Hall / Hall **(to be inflated from 2006)**

Municipal District	Existing or not	Amount for backlog maintenance (repair, rehabilitation, replacement)	Additional 1 multi- purpose hall	Amount for additional multipurpose hall
Capricorn		R 16 025 347		R 1 793 435 004
Mopani		R 10 877 982		R 1 537 584 858
Sekhukhune		R 11 053 689		R 2 029 413 294
Vhembe		R 15 616 011		R 1 972 281 708
Waterberg		R 19 172 204		R 1 271 798 784
Province		R 72 745 234		R 8 604 513 648

Table 23 Projected facilities improvement costs: Library **(to be inflated from 2006)**

Municipal District	Existing library space (equivalent block: m2/214)	Amount for backlog maintenance (repair, rehabilitation, replacement)	Additional 1 library block	Amount for additional library block
Capricorn		R 302 174		R 1 247 855 154
Mopani		R 257 662		R 961 722 762
Sekhukhune		R 119 328		R 1 220 036 727
Vhembe		R 234 280		R 1 284 946 390
Waterberg		R 322 677		R 827 929 375
Province		R 1 236 120		R 5 542 490 408

Table 24 **Projected facilities improvement costs:** Computer Centers **(to be inflated from 2006)**

Municipal District	Existing computer space (equivalent block: m2/214)	Amount for backlog maintenance (repair, rehabilitation, replacement)	Additional 1 computer centre	Amount for additional computer centre
Capricorn		R 205 229		R 985 815 600
Mopani		R 183 083		R 760 336 500
Sekhukhune		R 199 511		R 965 889 540
Vhembe		R 313 023		R 1 017 277 800
Waterberg		R 751 139		R 655 462 500
Province		R 1 651 985		R 4 384 781 940

Table 25 **Projected facilities improvement costs:** Science Laboratory **(to be inflated from 2006)**

Municipal District	Existing science laboratory space (equivalent block: m2/214)	Amount for backlog maintenance (repair, rehabilitation, replacement)	Additional 1 science laboratory block	Amount for additional science laboratory block
Capricorn		R 372 168		R 1 126 921 440
Mopani		R 475 268		R 873 121 245
Sekhukhune		R 153 268		R 1 115 992 245
Vhembe		R 432 477		R 1 176 709 995
Waterberg		R 337 227		R 750 471 390
Province		R 1 770 408		R 5 043 216 315

Table 26 **Projected facilities improvement costs:** Home Economics **(to be inflated from 2006)**

Municipal District	Existing home economics space (equivalent block: m2/214)	Amount for backlog maintenance (repair, rehabilitation, replacement)	Additional 1 home economics block	Amount for additional home economics block
Capricorn		R 141 155		R 1 228 460 245
Mopani		R 69 621		R 945 771 090
Sekhukhune		R 150 875		R 1 199 800 515
Vhembe		R 98 575		R 1 263 633 550
Waterberg		R 225 399		R 814 196 875
Province		R 685 625		R 5 451 862 275

Table 27 **Projected facilities improvement costs:** Potable Water **(to be inflated from 2006)**

Municipal District	Amount for backlog maintenance (repair, rehabilitation, replacement)	Amount for additional potable water
Capricorn	R 5 798 520	R 8 511 387
Mopani	R 1 988 978	R 9 776 960
Sekhukhune	R 2 751 431	R 12 131 783
Vhembe	R 2 033 788	R 9 670 675
Waterberg	R 2 106 029	R 6 744 980
Province	R 14 678 746	R 46 835 785

Table 28 **Projected facilities improvement costs:** Electricity Services **(to be inflated from 2006)**

Municipal District	Existing provision (Eskom, Solar, Generator, None)	Amount for backlog maintenance (repair, rehabilitation, replacement)	Additional service (Eskom, site and building infra-structure)	Amount for additional electricity services
Capricorn		R 5 860 651		R 6 523 175
Mopani		R 5 181 666		R 3 637 414
Sekhukhune		R 6 791 355		R 6 842 820
Vhembe		R 8 062 083		R 2 988 165
Waterberg		R 4 210 796		R 3 903 712
Province		R 30 106 550		R 23 895 286

Table 29 **Projected facilities improvement costs:** Fencing **(to be inflated from 2006)**

Municipal District	Existing provision (Gate, Wire, Palisade, C Palisade, Brick Wall)	Amount for backlog maintenance (repair, rehabilitation, replacement)	Additional require-ment (m)	Amount for additional fencing
Capricorn		R 9 133 166	152090	R 15 208 986
Mopani		R 6 110 482	168428	R 16 842 821
Sekhukhune		R 8 027 760	111867	R 11 186 658
Vhembe		R 6 379 529	80171	R 8 017 101
Waterberg		R 12 892 946	99627	R 9 962 724
Province		R 42 543 883	612183	R 61 218 289

Table 30 **Projected facilities improvement costs: Summary (to be inflated from 2006)**

	Total Capital Budget		**Annual Maintenance**	
Municipal District	Total amount for backlog maintenance (repair, rehabilitation, replacement)	Total amount for additional facilities	Planned maintenance	Unplanned maintenance
Capricorn	R 140 799 475	R 7 520 369 522	R 96 737 795	R 22 384 087
Mopani	R 100 749 631	R 6 103 675 763	R 77 484 444	R 17 733 718
Sekhukhune	R 143 577 624	R 7 629 230 581	R 79 359 830	R 18 415 644
Vhembe	R 179 262 275	R 7 992 752 327	R 90 539 961	R 21 409 347
Waterberg	R 123 909 032	R 4 917 394 035	R 79 138 424	R 18 347 894
Province	R 688 298 037	R 34 163 422 228	R 423 260 455	R 98 290 690

SECTION 7: FINANCIAL SUMMARY

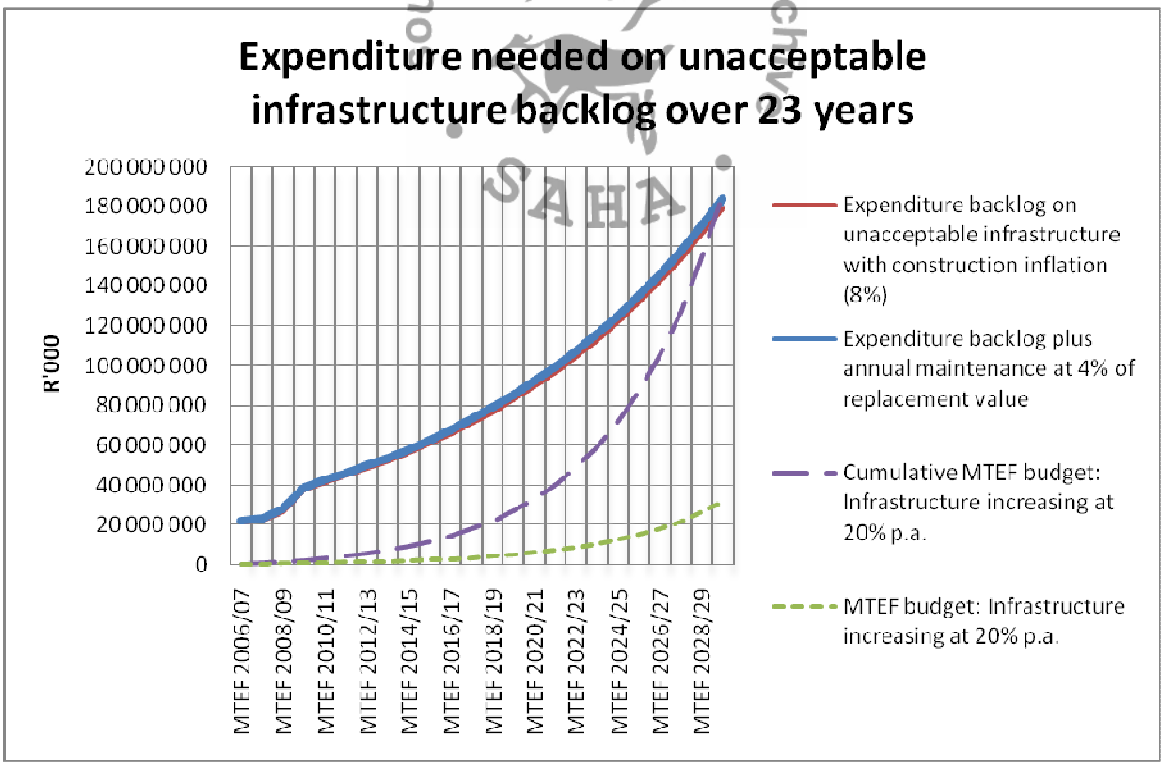
This section summarises the financial requirements resulting from all the information presented in previous sections. In future annual revisions of this Infrastructure Plan, various levels of service / cost scenarios may be included, as plans and planning capacities become more refined and advanced.

7.1 Financial Statements and Projections

This plan proposes to address a very large backlog for all 4015 public schools in Limpopo over 20 years, with major investment in the next 20 years to make a significant impact on the backlog. Improvements in project management and implementation have improved spending patterns over the past 2 years, demonstrating increased capacity to deliver schools infrastructure in Limpopo. Further improvements including an effective PPP initiative are being considered.

The total value of this combined backlog in 2007 Rands is calculated to R 20,75 billion. The current budgetary allocations in no way address the actual needs in terms of education infrastructure to address the backlogs and demand for infrastructure.

It will take an estimated 23 years to address the backlog and provide sufficient classrooms of acceptable condition.



The chart is based on the following assumptions.

	(R'000)						
	MTEF 2006/07	MTEF 2007/08	MTEF 2008/09	MTEF 2009/10	MTEF 2010/11	MTEF 2011/12	MTEF 2012/13
Expenditure backlog on unacceptable infrastructure with construction inflation (8%)	21 437 481	22 509 355	27 011 226	37 815 717	41 597 288	44 925 071	48 519 077
Expenditure backlog plus annual maintenance at 4% of replacement value	21 957 963	23 055 861	27 667 033	38 733 847	42 607 231	46 015 810	49 697 075
MTEF budget: Infrastructure increasing at 20% p.a.	154 000	380 000	609 213	852 873	1 027 500	1 125 352	1 355 769
Cumulative MTEF budget: Infrastructure increasing at 20% p.a.	154 000	534 000	1 143 213	1 996 086	3 023 586	4 148 938	5 504 707
Annual increase in infrastructure budget		147%	60%	40%	20%	20%	20%
Annual Inflation (CPIX)	4.6%	6.5%	8.1%	8.0%	8.0%	8.0%	8.0%
Construction industry inflation	5.0%	20.0%	40.0 %	10.0 %	8.0%	8.0%	8.0%
Annual deterioration of infrastructure without adequate maintenance	4%	4%	4%	4%	4%	4%	4%

The financial projections for the next 5 years are shown in the table overleaf. The projections indicate:

- Cash flow forecasts by year
- Breakdown of expenditure by service groups
- Breakdown of expenditure into routine maintenance, renewal and new works expenditure
- Trends from the previous 2-3 years

7.2 Funding Strategy

Two financial models are presented in this Infrastructure Plan:

1. Using grant finance to address the backlog of dilapidated and overcrowded schools, and provide new facilities;
2. Leveraging grant finance to raise loans to accelerate delivery.

If insufficient grant funding is available to address the backlog of needs then further innovative solutions must be found to address the chronic condition of schools infrastructure in Limpopo. Options to explore include: simplifying school designs to reduce costs, and institutionalising platoon and shift usage of current infrastructure,. In the meantime a focus on improving schools based maintenance and major maintenance aims to protect assets.

7.3 Valuation Forecasts

To cater for the increase in building costs over the 10 year period of this Infrastructure Plan the 2007 Rands necessary to spend in a specific year has been inflated at 30% until construction for the 2010 world cup has been completed, and at 8% per annum thereafter.

7.4 What Are the Key Assumption Made in Financial Forecasts?

The following assumptions have been made:

1. Cost estimates as follows:

Scope of work	Cost estimate	Notes
Classroom blocks to be demolished	0	Salvage contract
Classroom blocks	660 000	
Buildings to be renovated	132 000	
Toilet blocks to be demolished	0	Schools to cover using the Schools allocation
Toilet blocks	110 000	
Admin blocks	660 000	
Classroom blocks - ELSEN	R 750 000	Special classroom design to include toilet and sick bay
Hostel	R 750 000	
Workshop	R 750 000	
Kitchen & dining hall	R 750 000	

The following costs must be added to all cost estimates

- Site establishment
- Contingencies
- Vat
- Professional fees

2. Inflation as follows:

2009-10	2010-11	2011-12	2012-13	2013-14	Further financial years to address the remaining challenge after proposed 5 year plan
1	1.3	1.4	1.6	1.7	1.9

3. Detailed feasibility studies will be conducted for every project, prior to implementation
4. Further projects will be identified to start in 2011 and further financial years to meet this 5 year plan as shown in tables 4 and 31.

Table 31 Financial projections for the proposed 5 year plan – delayed due to shortage of funds

	Av project cost	2009-10	2010-11	2011-12	2012-13	2013-14	Remaining challenge after proposed 5 year plan
Inflation from 2008		**1**	**1.3**	**1.4**	**1.6**	**1.7**	**1.9**
New Schools - 2009/2010/2011	**45 000 000**	0	175 500 000	193 050 000	212 355 000	233 590 500	513 899 100
Off shoot Schools 2009/2010/2011/2012 - provide offshoots for schools with more than 300 excess learners	**30 000 000**	0	0	514 800 000	0	0	513 899 100
Balance learner numbers - provide additional classrooms at neighbouring schools / offshoot schools for schools with more than 100 excess learners	**1 300 000**	0	0	0	59 302 100	67 481 700	0
Condemned and congested schools (Overcrowded schools) - where more than 70 learners per classroom	**1 300 000**	0	43 940 000	98 527 000	0	0	0
Condemned and congested schools (Overcrowded schools) - where more than 40 learners per classroom	**1 300 000**	0	0	0	511 225 000	562 347 500	1 608 313 850
Condemned and congested schools (Inappropriate structures) - replace inappropriate structures in very poor condition	**1 300 000**	14 300 000	67 600 000	139 425 000	0	0	0
Condemned and congested schools (Inappropriate structures) - replace inappropriate structures in poor condition	**1 300 000**	0	0	0	204 490 000	449 878 000	430 533 246
Condemned and congested schools (Dilapidated schools) - renovate/replace buildings in very poor	**500 000**	7 500 000	113 750 000	0	236 736 500	0	0

condition	Av project cost	2009-10	2010-11	2011-12	2012-13	2013-14	Remaining challenge after proposed 5 year plan
Condemned and congested schools (Dilapidated schools) - renovate/replace buildings in poor condition	**500 000**	0	0	0	39 325 000	173 030 000	561 482 350
Refurbishment to Moutse (SDM Cross Boundary) Schools 2009/2010	**800 000**	7 200 000	0	0	0	0	0
Refurbishment: Full Service Schools 2009/2010	**3 500 000**	14 000 000	13 650 000	15 015 000	16 516 500	18 168 150	79 939 860
Refurbishment to Education Multi Purpose Centers 2009-2012	**12 000 000**	24 000 000	15 600 000	17 160 000	18 876 000	20 763 600	-91 359 840
Dinaledi Schools - Upgrading & Revitalise Infrastructure 2009/2010	**40 000 000**	120 000 000	156 000 000	343 200 000	1 132 560 000	1 245 816 000	0
Subtotal: Schools needing teaching space		**187 000 000**	586 040 000	1 321 177 000	2 431 386 100	2 771 075 450	**3 616 707 666**
Schools sanitation (Severe overcrowding) 2009/2010 - reduce from 70 learners per toilet to 40	**250 000**	13 500 000	31 525 000	34 677 500	0	0	0
Schools sanitation (Overcrowding) - reduce to 40 learners per toilet	**250 000**	0	0	0	157 300 000	112 469 500	0
Schools sanitation (Overcrowding) - reduce to 25 learners per toilet	**250 000**	0	0	0	0	86 515 000	1 041 597 343
Schools sanitation (Dilapidated ablutions) 2009/2010 - replace ablutions in very poor condition	**250 000**	0	42 900 000	71 500 000	11 011 000	0	0
Schools sanitation (Dilapidated ablutions) - replace ablutions in poor condition	**250 000**	0	0	0	78 650 000	129 772 500	161 783 050
Water for schools 2009/2010 - schools without water	**250 000**	21 250 000	26 650 000	37 180 000	0	0	0

	Av project cost	2009-10	2010-11	2011-12	2012-13	2013-14	Remaining challenge after proposed 5 year plan
Water for schools - Water systems for schools with inadequate water supply	**250 000**	0	0	143 000 000	196 625 000	259 545 000	916 929 228
Electricity for computer centers, laboratories, workshops, offices	**250 000**	16 250 000	21 125 000	23 237 500	25 561 250	28 117 375	602 879 778
Subtotal: Schools needing services		**51 000 000**	**122 200 000**	**309 595 000**	**469 147 250**	**616 419 375**	**2 723 189 398**
Total		**238 000 000**	**708 240 000**	**1 630 772 000**	**2 900 533 350**	**3 387 494 825**	**6 339 897 064**

Key Projects and budgets not included in the attached MTEF budget

7.5 Proposal to use grants to leverage loans: Financial Statements and Projections

This proposal will be further investigated and a full feasibility study prepared.

As described under paragraph 2.4 the Total Scope Backlog for the 4015 schools in Limpopo were determined as R20.75 billion. (In 2007 Rands)

Even if it were possible to raise the total of R20.75 billion it would not be possible to spend that amount of money in one year with the current capacity at the disposal of LPED.

In this proposal it is recommended that the Total Scope Backlog is prioritised by the Standard Norm Index multiplied by the learner numbers per school. The cumulative values in the prioritised list will then produce the first order of prioritisation based on the indicative costs from the NEIMS Cost Model.

Two scenaria are presented as proposals for implementation and the basic assumptions are given for each below:

Realistic Proposal

- The total R20.75 billion backlog must be addressed in 10 years.
- Years 2008/2009 and 2009/2010 will be used to build and create capacity to increase the yearly expenditure so that the total backlog can be eliminated by 2017/2018.
- In 2010 capacity from the Soccer World Cup infrastructure impetus should become available and should be utilised through PPP initiatives. The effectiveness of these initiatives will determine the real spending capacity in years 3 to 10.
- The model works in 2007 Rands and provides for the selection of an amount spent in year 2 which is double the amount spent in year 1. In year 3 the value of year 2 is doubled and then kept constant for years 3 to 10 so as to eliminate the total of the R20.75 billion.
- The future value of the 2007 Rands for each year is then calculated at a rate of 10% per year. This is taken as the assumed increase per year necessary to complete the work in the following years. These future values determine the funding necessary for the Infrastructure Plan.
- The cumulative Total Scope Backlog in 2007 Rands are then used against the calculated 2007 Rands for each year informing the project list for each year.
- Because the Total Scope Backlog is used as the funds needed, each school addressed in a particular year should be upgraded for all back logs when visited.

Optimistic Proposal

- All the basic assumptions in this proposal are the same as for the ***Realistic Proposal*** except that the expenditure pattern is accelerated in order to save the cash flow on interest to be paid.

- This model also works in 2007 Rands and provides for the selection of an amount to be spent in year 2. Year 1 is calculated to be 50% of year 2 and the outstanding balance of the R20.75 billion is then spread evenly over the next years 3 to 5.
- The future values of these 2007 Rands are then used to determine the funding necessary per year for this proposal.
- It is assumed that an effective PPP initiative will be possible to practically be able to spend this large amount of capital per year.

In both proposals the building of capacity for the LPED and Limpopo Provincial Structures by the PPP consortium is crucial for sustainability and quality.

7.6 Proposal to use grants to leverage loans: Funding Strategy

In both proposals presented in 7.1 it is recommended that the MTEF yearly allocations to LPED be used as down payments for a loan secured internationally. Interest rates internationally are lower than in the RSA and therefore the model has been built on the assumption that it is possible to secure such a long term loan at 6% interest per annum.

A yearly amount is then borrowed and the full yearly MTEF allocation is paid back. This ensures that only interest is generated on the outstanding amount per year. Because of the inflated future values needed up to year 10 and 5 the cumulative loans equals R38,93 billion (***Realistic Proposal***) and R29.87 (***Optimistic Proposal***) respectively.

The total cash flow[3] over the full period of each proposal and sensitivity regarding additional funds from National Government is summarised in the table below:
(Further sensitivity analyses are demonstrated in Appendices E and G.)

	Realistic Proposal	***Optimistic Proposal***
% Additional[4] Grant	Total Cash Flow R(000 000)	Total Cash Flow R(000 000)
0	R 60,704	R 43,985
25	R 59,158	R 43,531
50	R 57,705	R 43,130
75	R 56,251	R 42,729
100	R 54,798	R 42,328

From the sensitivity analysis it is abundantly clear that the sooner a large amount of funds are allocated to address this backlog to build acceptable quality infrastructure the less cash will be needed.

7.7 Proposal to use grants to leverage loans: Valuation Forecasts

To cater for the increase in building costs over the 10 year

[3] The Total Cash Flow represents :
MTEF allocations + Additional Grants + Total payments to amortize the outstanding loan.
[4] The additional grant is calculated as a percentage of the MTEF Allocation.

period of this Infrastructure Plan the 2007 Rands necessary to spend in a specific year has been inflated at 10% per annum. The formula FV = $PV(1+r)^n$ was used where:

- FV is the Future Value in year n
- PV is the value in 2007 Rands and
- r is the rate used for inflating the building costs per annum.

When compiling the project list for each year 2008 Rands were used and then the values were inflated according to the above formula.

7.8 Proposal to use grants to leverage loans: Key Assumptions made in the Financial Models

Here is a summary again of all the relevant key assumptions for the financial models

- The Total Scope Backlog as calculated by the NEIMS Cost Model is the base for the financial needs determination. The sensitivity of this value is described in the following table from the ***Optimistic Proposal***:

Initial Amount		Total Loan	Total Interest	Pay Back Pmt	Total Cash Flow	
R 8,299,871	0.40	R 9,376,630	R 4,482,020	R -1,273,984	R 16,145,652	37%
R 12,449,806	0.60	R 16,206,657	R 7,667,508	R -2,201,965	R 25,425,470	58%
R 16,599,741	0.80	R 23,036,684	R 10,852,988	R -3,129,947	R 34,705,288	79%
R 20,749,677	1.00	R 29,866,710	R 14,038,476	R -4,057,929	R 43,985,106	100%
R 24,899,612	1.20	R 36,696,737	R 17,223,965	R -4,985,911	R 53,264,924	121%
R 29,049,547	1.40	R 43,526,764	R 20,409,445	R -5,913,893	R 62,544,742	142%

Realistic Model:

The Initial Amount (R20.75 billion) is spent over 10 years. Year 2 expenditure is double year 1; Year 3 is double year 2 and 4 to 10 equals year 3.

Optimistic Model:

Year 2 expenditure is double year 1; Year 3 to Year 5 the balance of the Initial Amount is spent.

- The total MTEF allocation per year is used as a down payment and interest is only accrued on the outstanding loan amount.
- Expenditures per year are inflated at 10% per annum from the 2007 Rand values.
- After the Initial Amount has been spent the outstanding balance on the loan is amortised over the next 10 years.
- Various sensitivities on the Total Cash Flow needed in terms of Initial Amount, Additional Funds allocated and Interest rate are shown in the models.

SECTION 8: ORGANISATION AND SUPPORT PLAN

8.1 Human Resources

Currently there is a total under capacity in the LPED structure to manage this accelerated expenditure Infrastructure Plan, due to the large number of vacancies at managerial level. The main constraint to delivery by the department is the shortage of management staff, particularly construction professionals. The current organigram is shown below. Of the 28 management positions only 15 are currently filled. The proposed organigram has 39 management positions and aims to improve delegation and reporting.

In the interim two teams of consultants assist the infrastructure program: the Operational Support team, and the IDIP team. Provision is made for the use of consultants, mainly in the built environment professions such as architects, quantity surveyors, engineers and others, to supplement the shortage of such skills within the Chief Directorate. Expediting could be achieved by way of the IDIP In-Year-Intervention (IYI) facility currently in the process of being activated.

The professional fees budgeted for are in respect of supplementing in-house quantity surveying services, architectural and engineering services required to complete the final accounts of various older projects. The use of consultants will gradually be reduced as and when the required in-house capacity becomes available.

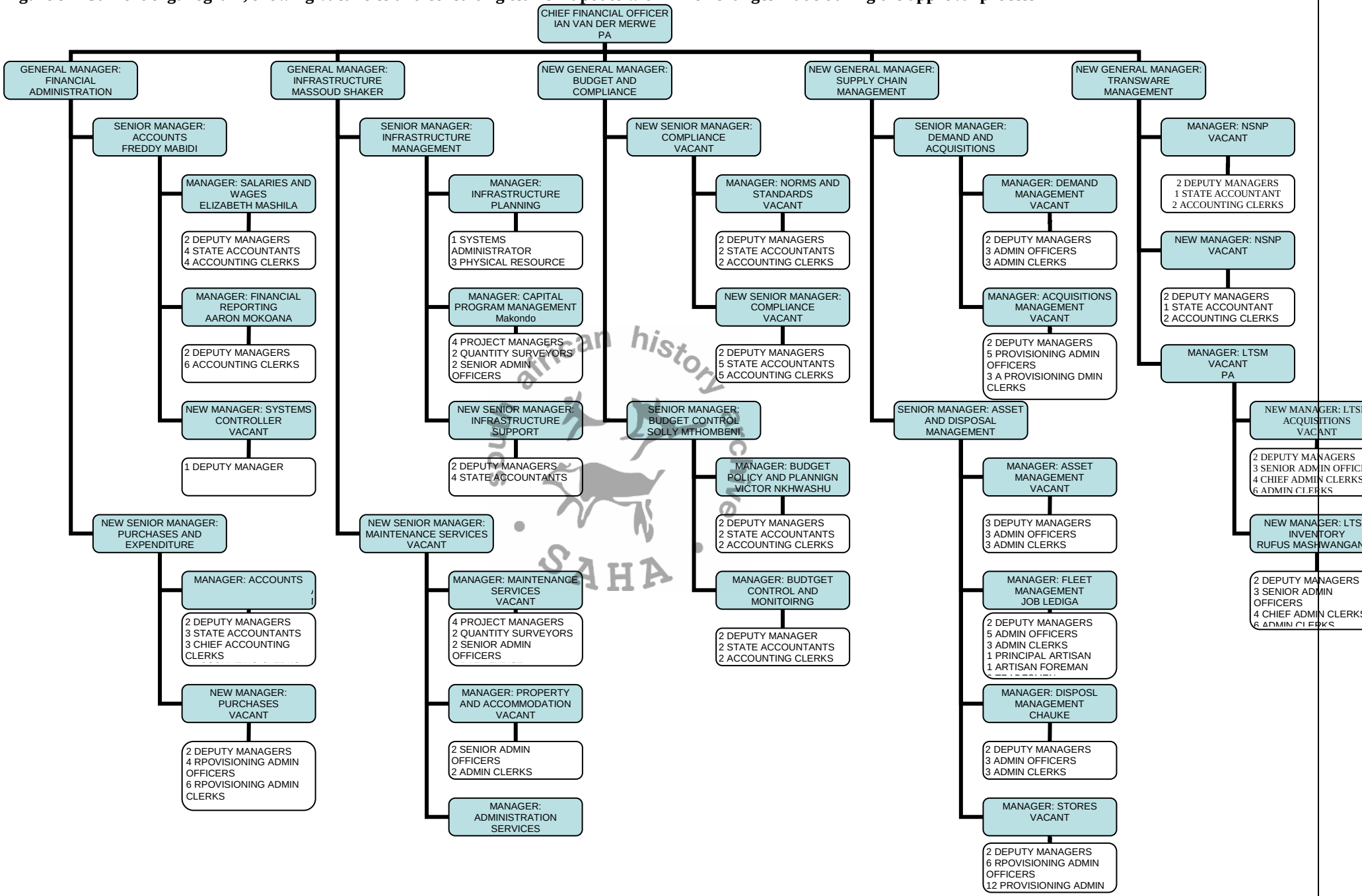
Regardless of the above, there is an urgent need for exploring the options and launching a career planning and development programme for the existing staff in Physical Resources Chief Directorate, including appropriate training programmes in fields such as public sector management, staff supervision and motivation, project management, infrastructure planning, computer literacy, programme monitoring and evaluation (M&E), etc. This will be necessary to equip the staff for their roles and responsibilities in the newly restructured Chief Directorate.

In addition, it is recommended that due attention be given in the months ahead to the prescribed procedures for individual performance evaluation. In this respect, attention should also be given to the inclusion of IDIP related matters in individual performance contracts.

The proposed capacitation process will include the flowing steps, to be implemented concurrently with a consultation process:

- Approved organogram - done
- Recruit staff – in progress
- Evaluate current work processes – in progress
- Re-define processes to achieve the desired results in the most efficient way – in progress
- Align new processes with the organogram to identify gaps – in progress
- Define and assign roles and responsibilities, deliverables and deadlines– in progress
- Monitor delivery: deadlines, quality, cost – in progress
- Management: monitoring + leadership + on-the-job training, coaching and support until the person can do the job fully – in progress

Figure 9 Current organogram, showing vacancies and consulting teams – update with minor changes made during the approval process

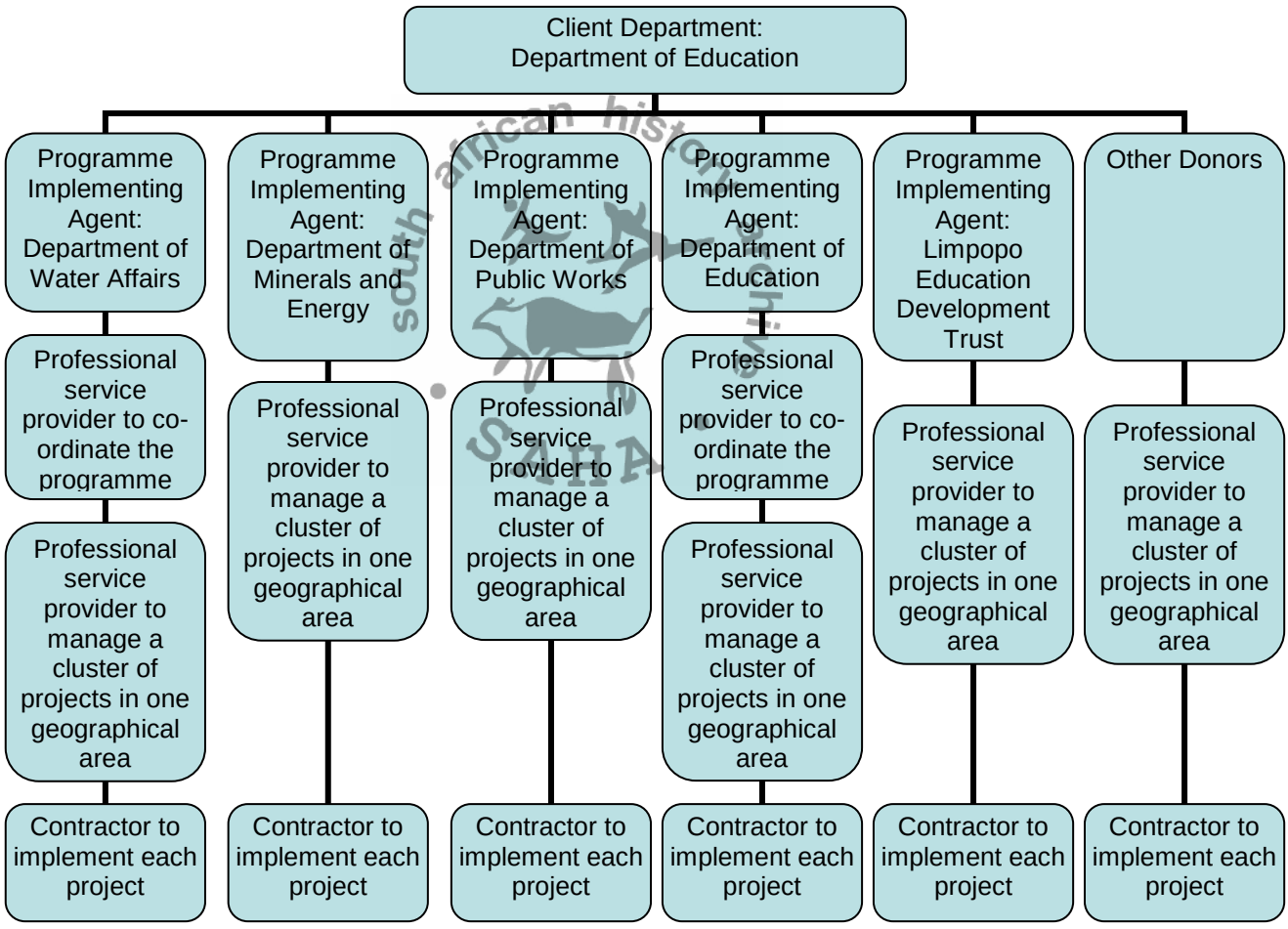


8.2 Organisational

As indicated in Section 2.2.4, the provision and management of physical infrastructure facilities for educational purposes under the jurisdiction of the LPED is the responsibility of the Chief Directorate: Physical Resources under the guidance of the General Manager Physical Resources. This Chief Directorate reports to the Chief Financial Officer who reports to the Head of Department. Reports are however also submitted to the Social Cluster.

Programme Implementing Agents are responsible for project implementation including quality, cost and time management, monitoring and evaluation, contracting and reporting on a programme of projects. Programme Implementing Agents include the Department of Public Works, the Department of Water Affairs, the Limpopo Education Development Trust, the Department of Minerals and Energy, the Department of Education itself and private donors like the Independent Development Trust.

Roles and responsibilities for each programme are structured to ensure competent project and programme management, as shown in the diagram below.



The Department of Education monitors and manages implementation by their implementing agents using regular progress reports, progress meetings and inspections. The reporting and monitoring systems will be improved in the coming years to reduce crisis management.

8.3 Financial

A summary of the projected cash flows for the current and next 10 financial years (i.e. 2008/2009 – 2017/2018) is tabled for the two proposed models below:

1. Grant funding (R'000)

Financial year	Grant funding needed MINIMUM
MTEF 2009/10	R 852 873
MTEF 2010/11	R 1 027 500
MTEF 2011/12	R 1 245 352
MTEF 2012/13	R 1 494 422
MTEF 2013/14	R 1 793 307
Total for 5 years	R 6 413 454
Total to cover backlog	R 24 064 006
Balance after 5 years	R 17 650 552

2. Loan funding

Financial Year	Loan funding: Realistic Proposal[5]	Loan funding: Optimistic Proposal
2008/2009	R 652,133	R 652,133
2009/2010	R 1,434,692	R 1,434,692
2010/2011	R 3,156,322	R 8,416,859
2011/2012	R 3,471,954	R 9,258,545
2012/2013	R 3,819,150	R 10,184,400
2013/2014	R 4,201,065	
2014/2015	R 4,621,171	
2015/2016	R 5,083,289	
2016/2017	R 5,591,617	
2017/2018	R 6,150,779	

For the loan funding proposal, the above projected cash flows are only for the elimination of the Total Scope Backlog as described in section 7. After these the respective outstanding loans should be repaid as shown in the Excel Models which are available on request.

8.4 Systems and Processes

8.4.1 Accounting/Financial Systems

[5] See Appendix D:1 for more detail

Payments/expenditures are affected and recorded via the FINEST and BAS systems of LPED and LDPW and on a monthly basis captured and reflected in the Infrastructure Reporting Model (IRM) returns which are submitted via Provincial Treasury to National Treasury.

The payment systems and processes in the LPED are excessively slow. These regular delays cause project delays and cause contractors, especially the small new contractors, to go out of business.

In addition the lack of payment from mid March to early May each year stops projects and causes contractors severe cashflow and survival problems.

Payment systems need urgent and fundamental restructuring to improve efficiency.

8.4.2 Infrastructure Management Systems

Program management is facilitated using the TRACKER database to track project progress, scope and budgets. This system is continuously improved and will eventually be converted to an online database to be accessed by consultants and LPED staff.

Considerable attention has recently been focused on the operationalisation of the newly developed NEIMS data base system of DoE, in order to assess the validity and practical value of the masses of infrastructure data captured in that system, as well as the practical implications of regularly updating and maintaining the data for effective use in related management systems. An example of the latter is the IMQS system, which LPED is in the process of acquiring.

The eventual development and operationalisation of a full life-cycle infrastructure asset management system for LPED is included in the IDIP Logframe and Annual Work Plan (AWP) of LPED. Preparatory work in this respect has commenced and the fruits of it should be reflected in the 2009 review of this Infrastructure Plan.

8.4.3 Data

Data is available from the following sources:

- location of schools, usage, condition and building type is available from the NEIMS;
- information on school assets is available from PREMIS;
- information on water and sanitation is available from the DWAF web site;
- information on previous infrastructure projects and programs is available from the IRM (location, scope, physical progress, financial progress, actual expenditure);
- information on current infrastructure projects is available from the IRM and TRACKER (location, scope, physical progress, service providers);
- information on education results is available from STATSSA;
- information on demographic projections is available from NATIONMASTER.COM.

Of concern are the practical and financial implications of regularly maintaining and updating all this information. Infrastructure data must be updated regularly to maintain its validity and practical value.

There is a very urgent and dire need for an effective program management information system database within LPED to combine the capabilities of the TRACKER and IRM in a more robust database system.

8.4.4 Information Flow Requirements and Processes

Urgent interventions to improve infrastructure delivery include

- Early planning in line with the IDIP deadlines to allow enough time for detailed feasibility studies and cost estimates to be prepared, and to prevent last minute changes to projects that slow delivery.
- Regular monthly progress meetings with every implementing agent to improve communication and delivery. These meeting focus on progress reports prepared by the implementing agent, challenges and solutions, and infrastructure delivery improvement processes.
- Regular monthly progress meetings within the LPED for all staff impacting on infrastructure delivery. These Departmental Working Groups focus on progress reports prepared by each participant, challenges and solutions, and infrastructure delivery improvement processes. Participants include staff and consultants in the infrastructure, supply chain management, human resources, expenditure and budget units.
- Regular monthly progress meetings by each implementing agent with their Professional Service Providers to improve communication and delivery. These meeting focus on progress reports prepared by the implementing agent, challenges and solutions, and infrastructure delivery improvement processes.
- Improvement of the TRACKER, IRM and NEIMS databases to provide management information.
- Analysis of maintenance challenges to improve designs, maintenance to prevent deterioration of facilities and the resulting emergency situations.
- Review and fundamental changes to the payment approval processes to speed up payment. The payment systems and processes in the LPED are excessively slow. Regular delays cause project delays and cause contractors, especially the small new contractors, to go out of business.

Key information flow requirements include reliable progress and cash flow information on a project by project and programme basis, involving various key individuals from private sector (contractors and consultants), implementing agents and LPED (programme and budget management). The efficiency of this is currently being addressed in various ways, including the arrangement of monthly project progress review meetings, as well as process mapping under the IDIP programme.

The availability and reliability of planning information is another key requirement for the preparation and ongoing management of the Infrastructure Plan. This will have to receive the focused attention of LPED's Physical Resources management in the months ahead, as a follow-up on the current organisational restructuring and in order to put the planning function on the level it requires. Preparation of the revised Infrastructure Plan will be but one of the future focus areas; development of the envisaged life-cycle infrastructure asset management system another.

8.4.5 Standards and guidelines

Standards and guidelines affecting infrastructure implementation systems and processes are specified in:

1. The South African Schools Act, 1996 (No. 84 of 1996) which has been amended and updated by the addition of the following:
   - Regulations relating to Safety measures at Independent Schools;
   - National Norms and Standards for School Funding;
   - Amended National Norms and Standards for School Funding;
   - Publication of List of No Fee Schools per Province : declaring no fee schools in 2007 for all nine Provinces, which lists the most needy schools and their poverty quintile;
   - Regulations for Safety Measures at Public Schools in Notice No. 1040 in Government Gazette No. 22754 dated 12 October 2001; as well as an Amendment to these Regulations as printed in Government Gazette No. 29376 dated 10 November 2006.
   - Education Laws Amendment Acts include: No 31 of 2007, No. 24 of 2005, No. 1 of 2004, No. 100 of 1997, No. 48 of 1999, No. 50 of 2002, No. 53 of 2000, No. 57 of 2001.

2. The Occupational Health and Safety Act, 1993. (February 2005) and amendment The Facilities Regulations, 2004 defining safety requirements.

3. The Construction Industry Development Board Act No. 38 of 2000 and amendments.

4. The Division of Revenue Act, 2007.

5. The Public Finance Management Act, 1999 and subsequent amendments (26 October 2003).

6. The Government Immovable Asset Management Act, 2007.

SECTION 9: PLAN IMPROVEMENT AND MONITORING

As indicated earlier in the text, this is the first Infrastructure Plan prepared by LPED in the new format as prescribed in terms of the Infrastructure Delivery Improvement Programme (IDIP) and as per the guidelines provided in Template 2t01 of the CIDB Toolkit (version 4-0).

It is also a plan that was prepared in the midst of the fundamental organisational restructuring of LPED's Physical Resources Directorate. As such, the current focus is still on the need to build substantial planning, budgeting and monitoring capacity within the Chief Directorate.

The current version of the plan should therefore be seen as a plan still "under construction" and subject to ongoing improvement and refinement in virtually all its components. These improvements will be brought about as and when appropriate in the daily utilisation of the plan as a dynamic management tool and will be consolidated from time to time and reflected in periodic reports, such as the monthly Infrastructure Reporting Model (IRM) returns.

9.1 Performance Measures

Project implementation is monitored using monthly reports on procurement, physical and financial progress. These are currently prepared using the TRACKER spreadsheet hosted by the Department of Public Works, and from the IRM updated monthly by the Department of Education. These systems will be replaced in time by a more robust database, which will produce all the standard reports required.

The Department of Education's building inspector (operational support team) inspects all schools implemented by the Department of Education, and the Department of Public Works project managers inspect schools implemented by the Department of Public Works.

Impact indicators are still to be developed.

9.2 Improvement Programme

The infrastructure delivery improvement program (IDIP) is underway and aims to improve infrastructure delivery through a wide range of interventions. Technical assistants work with the Departments of Public Works and Education.

9.3 Monitoring and Review Procedures

A comprehensive monitoring and reporting system will be developed in the months ahead, as part of the organisational capacity building strategy and IDIP work plan. This will include monthly project and programme review meetings and reports, in close consultation and cooperation with LDPW and the other Implementing Agents.

The newly developed monitoring and reporting system will be integrated as far as practically possible with the proposed life-cycle infrastructure asset management system

that is to be developed in association with the operationalisation of DoE's new NEIMS database system. All these developments will be fully reported on in the 2009 revision of this Infrastructure Plan.

SECTION 10: REFERENCES AND APPENDICES

REFERENCES

- CIDB Toolkit (Version 4-0) - Template 2t01: Infrastructure Plan
- The Presidency : Plan of Action
- Asgisa
- The LIMPOPO Provincial Growth and Development Plan
- The Strategic Plan of the LIMPOPO Department of Education (LPED)
- The South African Schools Act 86 of 1996
- The Public Finance Management Act (PFMA), 1999 (Act No. 1 of 1999, as amended by Act No. 29 of 1999)
- The Division of Revenue Act (DoRA), 2007 (Act 1 of 2007)
- The Infrastructure Delivery Improvement Programme (IDIP)
- The Occupational Health and Safety Act (OHSA)
- The Medium Term Expenditure Framework (MTEF)
- Service Delivery Agreement (SDA) between the LIMPOPO Department of Education (LPED) and the LIMPOPO Department of Public Works (LDPW)
- Department of Education (DoE): Education Management Information System (EMIS)
- Department of Education (DoE): National Education Infrastructure Management System (NEIMS)
- IPMP 2008-2009 and IPMP 2007-2008 Limpopo Department of Education
- Policy speeches of Honorable Dr. Motsoaledi, the MEC for Education, Limpopo Province
- Norms and standards for schools infrastructure (October 2008)
- Prescripts for the use of the schools fund allocation by School Governing Bodies(LDOE)

APPENDICES

APPENDIX A: Identifying and Prioritising Projects for Implementation

APPENDIX B: Proposed Accommodation Scheduler (CSIR)

APPENDIX C: NEIMS Executive Cost Report

APPENDIX D: Cash Flow Required according to the *Realistic Proposal*

APPENDIX E: Sensitivity Analysis for the *Realistic Proposal*

APPENDIX F: Cash Flow Required according to the *Optimistic Proposal*

APPENDIX G: Sensitivity Analysis for the *Optimistic Proposal*

APPENDIX H: Manual: Description and Terms of Reference for Cost Model used in NEIMS

APPENDIX I: Norms and standards: primary schools for the cost model used in NEIMS

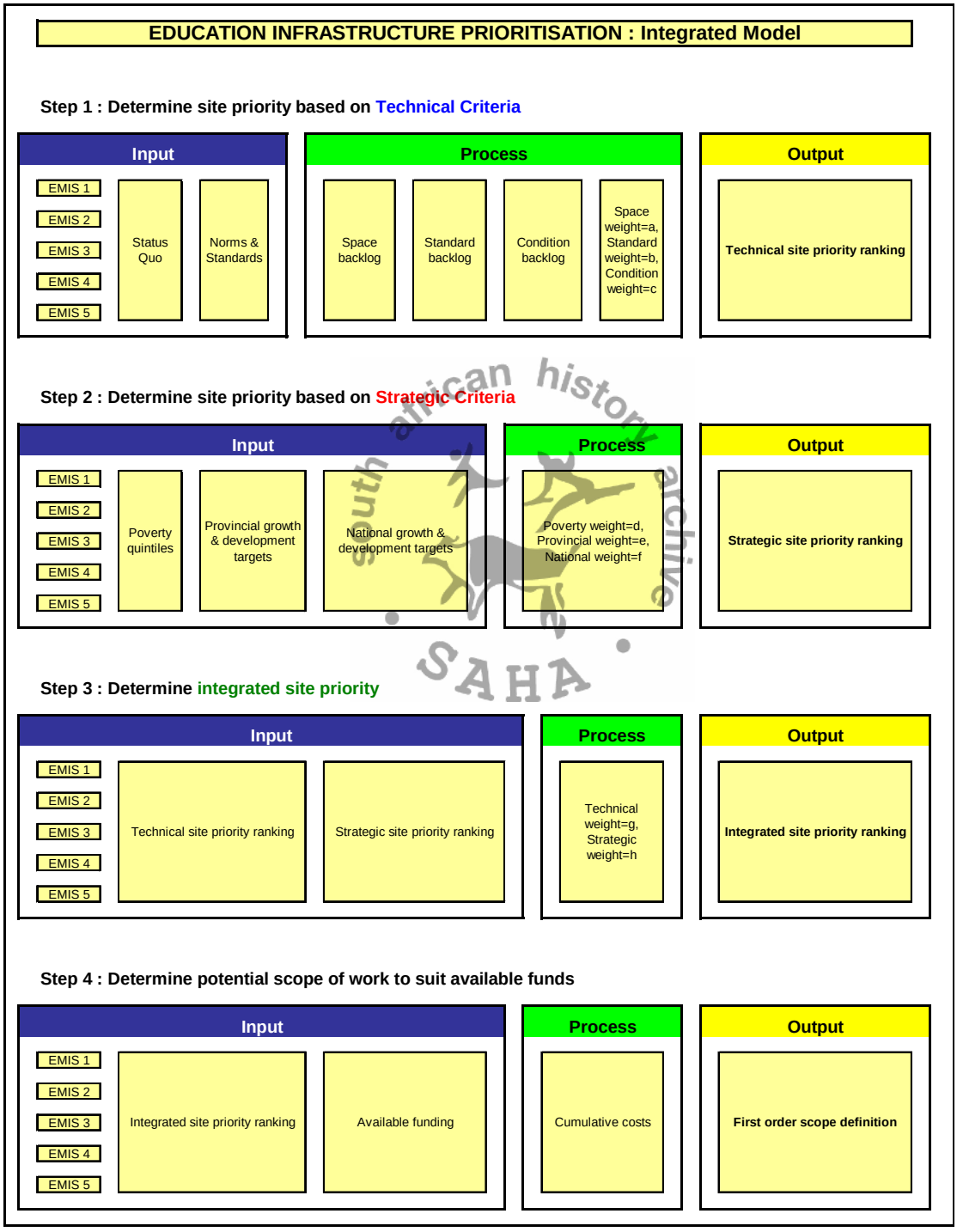
APPENDIX A:

Identifying and Prioritising Projects for Implementation

APPENDIX A:

Identifying and Prioritising Projects for Implementation

The model depicted below indicates how data and information is used to arrive at a list of projects for implementation.



APPENDIX B:

Proposed Accommodation Scheduler (CSIR)

Accommodation Scheduler

School Information

Name of School	**Reiapela Primary School (Example)**
Type of School	**Primary School**

Projected no. of FTEs	**400**	
No. of required teaching/learning spaces		
General	7	70%
Specialist teaching	1	10%
Learning	2	20%

	ITEM	Norms and standards (m^2/FTE) low	Norms and standards (m^2/FTE) high	Predicted area m^2	Predicted area m^2	Compliance with norms and standards (N&S)
1	**GENERAL TEACHING**	**1.1**	**1.3**	**440**	**520**	
1.1	Classrooms excl. storage	2.4		945		
	SUBTOTAL	**2.4**		**945**		no - higher than N&S
2	**SPECIALIST TEACHING**	**0.4**	**0.6**	**160**	**240**	
2.1	Specialist teaching space excl. storage	0.6		220		
	SUBTOTAL	**1**		**220**		yes - within N&S
3	**LEARNING AREA**	**0.2**	**0.4**	**80**	**160**	
3.1	Hall excl. office, kitchen and storage	0.5		190		
3.2	LRC excl. office / storage	0.0		0		
	SUBTOTAL	**0.5**		**190**		no - higher than N&S
4	**NON-TEACHING AREA**	**0.2**	**0.4**	**80**	**160**	
4.1	Classroom storage	0.1		26		
4.2	Specialist teaching storage	0.0		0		
4.3	LRC office and storage	0.0		0		
4.4	Hall office, kitchen and storage	0.0		0		
4.5	Other allocated storage	0.1		20		
4.6	Principal's office	0.0		15		
4.7	Administrative space	0.1		45		
4.8	Staff work area	0.1		35		
4.9	Admin strong room	0.0		3		
4.10	Sick bay area excl. toilets	0.0		0		
	SUBTOTAL	**0.4**		**144**		yes - within N&S
5	**BALANCE**	**0.4**	**0.6**	**160**	**240**	
5.1	Staff toilets	0.0		5		
5.2	Toilet for disabled staff / visitor	0.0		5		
5.3	Learner toilets	0.4		145		
5.4	Toilets for disabled learner	0.0		5		
5.5	All non-allocated storage	0.0		0		
5.6	All internal circulation incl. waiting areas	0.2		70		
5.7	All covered external circulation	0.5		180		
	SUBTOTAL	**1.0**		**410**		no - higher than N&S
	SUBTOTAL	**5**		**1909**		
6	**INFORMAL SOCIAL AREA**	**1.7**		**680**		
6.1	Social / Play Area	1.7		670		
	SUBTOTAL	**1.7**		**670**		no - lower than N&S
7	**SPORTS FACILITIES**	**7.4**		**2960**		
7.1	Garden plots	7.5		3000		
	SUBTOTAL	**7.5**		**3000**		yes - within N&S
8	**PARKING AREA**	**0.3**		**120**		
8.1	Parking	0.3		120		
	SUBTOTAL	**0.3**		**120**		yes - within N&S
9	**GARDEN PLOTS**	**0.3**		**120**		
9.1	Garden plots	0.1		50		
	SUBTOTAL	**0.1**		**50**		no - lower than N&S
	SUBTOTAL	**10**		**3840**		

APPENDIX C:

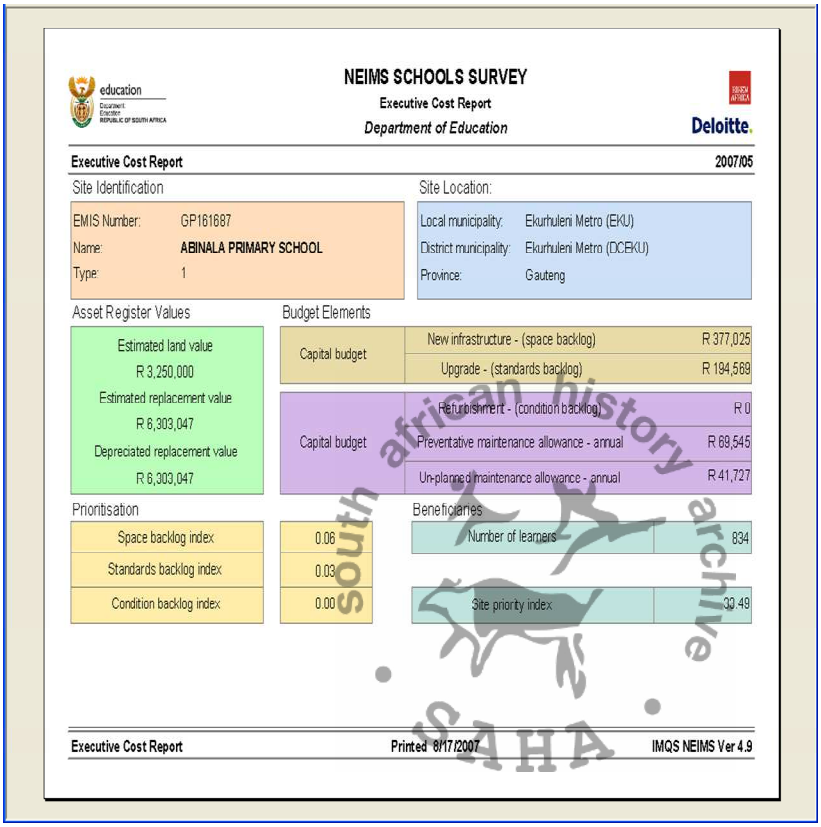
NEIMS EXECUTIVE COST REPORT

APPENDIX C:

NEIMS

EXECUTIVE COST REPORT

education
Department of Education
REPUBLIC OF SOUTH AFRICA



education
Department of Education
REPUBLIC OF SOUTH AFRICA

NEIMS SCHOOLS SURVEY

Executive Cost Report

Department of Education

Deloitte.

Executive Cost Report **2007/05**

Site Identification

EMIS Number:	GP161687
Name:	**ABINALA PRIMARY SCHOOL**
Type:	1

Site Location:

Local municipality:	Ekurhuleni Metro (EKU)
District municipality:	Ekurhuleni Metro (DCEKU)
Province:	Gauteng

Asset Register Values

Estimated land value
R 3,250,000
Estimated replacement value
R 6,303,047
Depreciated replacement value
R 6,303,047

Budget Elements

Capital budget	New infrastructure - (space backlog)	R 377,025
	Upgrade - (standards backlog)	R 194,569
Capital budget	Refurbishment - (condition backlog)	R 0
	Preventative maintenance allowance - annual	R 69,545
	Un-planned maintenance allowance - annual	R 41,727

Prioritisation

Space backlog index	0.06
Standards backlog index	0.03
Condition backlog index	0.00

Beneficiaries

Number of learners	834
Site priority index	39.49

Executive Cost Report **Printed 8/17/2007** **IMQS NEIMS Ver 4.9**

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APPENDIX D:

Cash Flow Required to address the Total Scope Backlog with the *Realistic Proposal*

- The Initial Amount of R20.75 billion is the Total Scope Backlog from NEIMS Data.
- In the first block only 2007 Rands are used.
- A Goal Seek Iteration was performed to make the Backlog Balance zero in year 10 by changing the amount in year 2 so that year 1 is 50% of year 2 and years 3 to 10 are equal and double the amount of year 2.
- Future Values of the 2007 Rand values are calculated with the Formula
  $FV = PV(1+r)^n$
- MTEF allocations were assumed to increase by 5% year on year from year 4 to year 10.

Appendix D: 1

			FV=PV(1+r)^n	$N_2=N_1(1+q)$	
		r =	**10%**	**5%**	= q
Backlog Amount **2007** Rands	Funds applied in **2007** Rands	Backlog Balance [**2007** Rands]	Future Value of Capital per Fin Year	**MTEF Allocations**	
			R 38,182,173		
R 20,749,677	R 592,848	R 20,156,829	R 652,133	**R 583,617**	**2008/2009**
R 20,156,829	**R 1,185,696**	R 18,971,133	R 1,434,692	**R 648,522**	**2009/2010**
R 18,971,133	R 2,371,392	R 16,599,741	R 3,156,322	**R 689,509**	**2010/2011**
R 16,599,741	R 2,371,392	R 14,228,350	R 3,471,954	**R 723,984**	**2011/2012**
R 14,228,350	R 2,371,392	R 11,856,958	R 3,819,150	**R 760,184**	**2012/2013**
R 11,856,958	R 2,371,392	R 9,485,567	R 4,201,065	**R 798,193**	**2013/2014**
R 9,485,567	R 2,371,392	R 7,114,175	R 4,621,171	**R 838,102**	**2014/2015**
R 7,114,175	R 2,371,392	R 4,742,783	R 5,083,289	**R 880,008**	**2015/2016**
R 4,742,783	R 2,371,392	R 2,371,392	R 5,591,617	**R 924,008**	**2016/2017**
R 2,371,392	R 2,371,392	R 0	R 6,150,779	**R 970,208**	**2017/2018**

Appendix D : 2

		R 7,816,336 MTEF Allocation	Additional Grant	R 46,742,066			r = 10%		
							R 38,182,173	R 20,749,677	
		PMT	**0%**	**Loan**	**Outstanding**	**Interest**	**Needed**	**2007 Rands**	
6.00%	1	R 583,617	R 0	R 652,133	R 68,516	R 4,111	R 652,133	R 592,848	
6.00%	2	R 648,522	R 0	R 1,507,319	R 858,797	R 51,528	R 1,434,692	R 1,185,696	2
6.00%	3	R 689,509	R 0	R 4,066,647	R 3,377,138	R 202,628	R 3,156,322	R 2,371,392	2
6.00%	4	R 723,984	R 0	R 7,051,720	R 6,327,736	R 379,664	R 3,471,954	R 2,371,392	1
6.00%	5	R 760,184	R 0	R 10,526,550	R 9,766,366	R 585,982	R 3,819,150	R 2,371,392	1
6.00%	6	R 798,193	R 0	R 14,553,413	R 13,755,220	R 825,313	R 4,201,065	R 2,371,392	1
6.00%	7	R 838,102	R 0	R 19,201,705	R 18,363,603	R 1,101,816	R 4,621,171	R 2,371,392	1
6.00%	8	R 880,008	R 0	R 24,548,707	R 23,668,700	R 1,420,122	R 5,083,289	R 2,371,392	1
6.00%	9	R 924,008	R 0	R 30,680,439	R 29,756,431	R 1,785,386	R 5,591,617	R 2,371,392	1
6.00%	10	R 970,208	R 0	R 37,692,596	R 36,722,388	R 2,203,343	R 6,150,779	R 2,371,392	1
				R 38,925,731					

Payment over 10 years = R -5,289

R 8,559,894 Pre Loan Interest
R 13,961,864 Loan Interest
R 22,521,758 Total interest

APPENDIX E:

Sensitivity Analysis for the *Realistic Proposal*

Financing Cost for Central Government					
% Additional Grant	MTEF Allocations R(000)	Additional Grant R(000)	Loan Repayment R(000)	Total Cashflow R(000)	
0%	R 7,816	R 0	R 52,888	R 60,704	100%
25%	R 7,816	R 1,872	R 49,470	R 59,158	97%
50%	R 7,816	R 3,681	R 46,208	R 57,705	95%
75%	R 7,816	R 5,489	R 42,946	R 56,251	93%
100%	R 7,816	R 7,297	R 39,685	R 54,798	90%

Interest Rate	Total Loan	Total Interest	Pay Back Pmt	Total Cash Flow	
4%	R 35,813,268	R 18,292,920	R -4,865,876	R 56,475,091	93%
5%	R 37,334,625	R 20,359,951	R -5,072,579	R 58,542,128	96%
6%	R 38,925,731	R 22,521,758	R -5,288,760	R 60,703,931	100%
7%	R 40,589,782	R 24,782,669	R -5,514,851	R 62,964,843	104%
8%	R 42,330,108	R 27,147,218	R -5,751,305	R 65,329,389	108%
9%	R 44,150,179	R 29,620,110	R -5,998,595	R 67,802,282	112%
10%	R 46,053,607	R 32,206,261	R -6,257,210	R 70,388,431	116%
11%	R 48,044,157	R 34,910,780	R -6,527,661	R 73,092,950	120%
12%	R 50,125,744	R 37,738,984	R -6,810,482	R 75,921,160	125%

APPENDIX F:

Cash Flow Required to address the Total Scope Backlog with the *Optimistic Proposal*

- The Initial Amount of R20.75 billion is the Total Scope Backlog from NEIMS Data.
- In the first block only 2007 Rands are used.
- A Goal Seek Iteration was performed to make the Backlog Balance zero in year 10 by changing the amount in year 2 so that year 1 is 50% of year 2 and years 3 to 10 are equal and equal to 33% of the Backlog Balance at the end of year 2.
- Future Values of the 2007 Rand values are calculated with the Formula
  $FV = PV(1+r)^n$
- MTEF allocations were assumed to increase by 5% year on year for years 4 and 5.

Appendix F: 1

			FV=PV(1+r)^n	$N_2=N_1(1+q)$	
		r =	10%	5%	= q
Backlog Amount 2007 Rands	Funds applied in 2007 Rands	Backlog Balance [2007 Rands]	Future Value of Capital per Fin Year	MTEF Allocations	
			R 29,946,629		
R 20,749,677	R 592,848	R 20,156,829	R 652,133	**R 583,617**	**2008/2009**
R 20,156,829	**R 1,185,696**	R 18,971,133	R 1,434,692	**R 648,522**	**2009/2010**
R 18,971,133	R 6,323,711	R 12,647,422	R 8,416,859	**R 689,509**	**2010/2011**
R 12,647,422	R 6,323,711	R 6,323,711	R 9,258,545	**R 723,984**	**2011/2012**
R 6,323,711	R 6,323,711	R 0	R 10,184,400	**R 760,184**	**2012/2013**

Appendix F : 2

		R 3,405,816 MTEF Allocation	Additional Grant	R 33,272,527			r = 10%		
							R 29,946,629	R 20,749,677	
		PMT		**Loan**	**Outstanding**	**Interest**	**Needed**	**2007 Rands**	
6.00%	1	R 583,617	R 0	R 652,133	R 68,516	R 4,111	R 652,133	R 592,848	
6.00%	2	R 648,522	R 0	R 1,507,319	R 858,797	R 51,528	R 1,434,692	R 1,185,696	2
6.00%	3	R 689,509	R 0	R 9,327,184	R 8,637,675	R 518,260	R 8,416,859	R 6,323,711	5.33
6.00%	4	R 723,984	R 0	R 18,414,481	R 17,690,496	R 1,061,430	R 9,258,545	R 6,323,711	1
6.00%	5	R 760,184	R 0	R 28,936,326	R 28,176,142	R 1,690,569	R 10,184,400	R 6,323,711	1
6.00%	6			R 29,866,710					
6.00%	7								
6.00%	8								
6.00%	9								
6.00%	10								
			R 0	**R 29,866,710**					
			Payment over 10 Years =	R -4,058					
						R 3,325,898	Pre Loan Interest		
						R 10,712,579	Loan Interest		
						R 14,038,476	Total interest		

APPENDIX G:

Sensitivity Analysis for the *Optimistic Proposal*

Appendix G

Financing Cost for Central Government					
% Additional Grant	MTEF Allocations R(000)	Additional Grant R(000)	Loan Repayment R(000)	Total Cashflow R(000)	
0%	R 3,406	R 0	R 40,579	R 43,985	100.00%
25%	R 3,406	R 770	R 39,356	R 43,531	98.97%
50%	R 3,406	R 1,475	R 38,248	R 43,130	98.06%
75%	R 3,406	R 2,181	R 37,141	R 42,729	97.14%
100%	R 3,406	R 2,886	R 36,034	R 42,328	96.23%

Interest Rate	Total Loan	Total Interest	Pay Back Pmt	Total Cash Flow	
	R 29,866,710	R 14,038,476	-R 4,057,929	R 43,985,106	
4%	R 28,727,451	R 12,490,588	-R 3,903,140	R 42,437,218	96%
5%	R 29,293,194	R 13,259,248	-R 3,980,006	R 43,205,881	98%
6%	R 29,866,710	R 14,038,476	-R 4,057,929	R 43,985,106	100%
7%	R 30,448,072	R 14,828,359	-R 4,136,917	R 44,774,989	102%
8%	R 31,037,349	R 15,629,000	-R 4,216,981	R 45,575,628	104%
9%	R 31,634,613	R 16,440,487	-R 4,298,130	R 46,387,119	105%
10%	R 32,239,936	R 17,262,934	-R 4,380,374	R 47,209,559	107%
11%	R 32,853,390	R 18,096,417	-R 4,463,723	R 48,043,047	109%
12%	R 33,475,048	R 18,941,053	-R 4,548,186	R 48,887,680	111%

APPENDIX H:

MANUAL: DESCRIPTION and TERMS OF REFERENCE for COST MODEL used in NEIMS

APPENDIX H: MANUAL:
DESCRIPTION AND TERMS OF REFERENCE FOR COST MODEL USED IN NEIMS

1. TERMS OF REFERENCE
- Contractual requirements
- Allocation of responsibilities
- Objective of cost model

2. NORMS AND STANDARDS
- Objective of National norms and standards
- Definition of site types
- Proposed National norms and standards
- Backlog definitions

3. ESTIMATING PRINCIPLES
- Land values
- Replacement values
- Depreciated replacement values
- Capital budget estimates
- Maintenance budget estimates
- Geographical variation in rates
- Time variation in rates

4. STEP BY STEP GUIDE TO IMPLEMENTATION OF THE COST MODEL
- Data integrity
- Access to Cost Model
- Interpretation of results
- Filtering of results

5. CAPITAL INVESTMENT PLANNING
- Prioritisation
- Multi-year planning proposals

6. FUTURE UPDATE PROPOSALS
- Changes in rates
- Changes in norms and standards
- Value-add proposals

ANNEXURES:

A. NORMS & STANDARDS

A-1.1 Early Childhood Development Centres
A-1.2 Primary schools
A-1.3 Secondary schools
A-1.4 ELSEN centres
A-1.5 ABET centres
A-1.6 Offices

B. RATES VARIATION

A-2.1 Geographic variation
A-2.2 Time variation

1. TERMS OF REFERENCE

1.1 Contractual requirements

The scope of work on Contract EDO 305 includes the following:

- Assessment of the status quo of infrastructure at education institutions
- Comparison of status quo with minimum norms and standards for infrastructure at education institutions
- Determination of infrastructure backlogs
- Preparing first order of magnitude cost estimates to eradicate these infrastructure backlogs
- Development of Capital Investment Plan for implementation over the next 20 years

1.2 Allocation of responsibilities

The development and maintenance of education infrastructure is a joint responsibility of the National Department of Education and the various Provincial Departments. The table below provides a broad summary of the split in responsibilities:

National Responsibilities (DoE)	Provincial Responsibilities (PED)
• Development of Norms & Standards for school funding • Monitoring the implementation of the Norms & Standards for school funding • Determine reporting formats in consultation with PEDs to monitor the implementation of the Norms & Standards for school funding	• Each Head of Department will be expected to verify that the national norms for school funding are being complied with • Must use systems and software tools that have been made available by the DoE • Inform DoE if PED is unable to comply with the Norms & Standards for school funding
• State must fund public schools from public revenue	• MEC is required to provide sufficient school places • PEDs must budget for "New classroom and other construction allocations"
• Minister to determine norms and standards for the granting of subsidies to independent schools	• MEC may grant subsidies to independent schools
• Ministry of Education does not decide on the amounts to be allocated annually for PEDs	• Provincial governments and legislatures decide on the amounts to be allocated annually for PEDs
• Comprehensive data have been created through the national School Register of Needs and EMIS • Augment provincial data • The MTEF provides a co-operative mechanism for improving the accuracy of budget-related data, and undertaking relevant analytic studies	• Use of provincial data in budgeting and planning • Develop data systems to guide planning and allocations • Be able to demonstrate progress to DoE • Ensure that information is received on time from schools • Provide sufficient information so that school governing bodies can develop their budgets • Must maintain an accurate, prioritised annually updated database of school construction needs • Must undertake annually updated long-term projections of new school construction targets and funding requirements
• The MTEF provides a co-operative mechanism for improving the accuracy of budget-related data, and undertaking relevant analytic studies	• The MTEF provides a co-operative mechanism for improving the accuracy of budget-related data, and undertaking relevant analytic studies
• Must develop computerised public financial and management information systems	• Must acquire the services of skilled staff and implement computer systems and databases

• Grant the "school allocation" to ordinary public schools	• Cover non-personnel recurrent items and small capital items required by the schools as well as normal repairs and maintenance to all the physical infrastructure of the school

From the above it is clear that there is a joint responsibility between the National and Provincial Departments to ensure sufficient infrastructure at education institutions. In general, the National DoE is responsible for the development of norms and standards for funding, the development of computerised information management systems and the monitoring of the implementation of the norms and standards. The PEDs on the other hand, is responsible for the detail planning, budgeting and implementation of projects, while reporting to DoE on progress.

1.3 Objective of cost model

The National Education Infrastructure Management System (NEIMS) is a computerised information management system to guide PEDs in their detail planning. The NEIMS Cost Model will provide first order cost estimates that will assist PEDs to determine budget requirements.

2. NORMS AND STANDARDS

2.1 Objective of National norms and standards

The Bill of Rights in the Constitution of the Republic of South Africa, 1996 (No 108 of 1996) establishes the following: "Everyone has the right-

a) To a basic education, including adult basic education; and
b) To further education, which the state, through reasonable measures must make progressively available and accessible"

A principle of the South African Schools Act, 1996 is "to provide for a uniform system for the organisation, governance and funding of schools".

The basic principles of state funding of public schools derive from the constitutional guarantee of equality and provide that "the state must fund public schools from public revenue on an equitable basis".

The above principles necessitate a set of national norms and standards for the following:

- Minimum acceptable levels of infrastructure
- Prioritisation criteria
- The public funding of public schools

2.2 Definition of site types

For the purpose of the NEIMS Cost Model, the following education site types are defined:

- Ordinary public primary school
- Ordinary public secondary school
- Ordinary public combined school
- Early Childhood Development centre (ECD)
- Adult Basic Education & Training centre (ABET)
- Centre for the Education of Learners with Special Education Needs (ELSEN)
- Circuit and District offices of the provincial departments of education

2.3 Proposed National norms and standards

It was anticipated that national norms and standards for education infrastructure would be available at the inception of Contract EDO 305. Several factors resulted in the delay of the development of such norms and standards.

Interim minimum norms and standards had to be prepared to enable the NEIMS Cost Model to quantify the infrastructure backlogs. Such interim minimum norms and standards are attached as Annexure A.

2.4 Backlog definitions

The following backlogs are defined:

- ***Space backlog*** – The amount of cash required to develop additional space in the appropriate space categories. In all cases where the existing space in a specific category is less than the minimum space required for such category, it is assumed that additional space will be developed.

- ***Standards backlog*** – The amount of cash required to upgrade the current infrastructure to meet the selected norms and standards. In all cases where the existing standard of infrastructure is lower than the minimum norm, it is assumed that the standard will be improved to the minimum norm.

- ***Condition backlog*** – The amount of cash required to refurbish the existing infrastructure to the acceptable condition. In all cases where the existing infrastructure is in a worse condition than the minimum acceptable condition, it is assumed that the infrastructure will be refurbished to the minimum acceptable condition.

3. ESTIMATING PRINCIPLES

3.1 Land values

Education sites are not generally traded. The implication is that there are no reliable records and trends that can be used to estimate the land values. A further complicating factor is the absence of property deeds and a general vagueness regarding ownership and extent of properties.

In view of the above, the following phased approach is proposed to progressively improve the appropriateness of the estimated land values:

- Level 1 : Assume all land to be valued at R1/m²
- Level 2 : Revise land values in the major centres based on typical land values from property analysts.
- Level 3 : Differentiate between properties in urban areas and those in rural areas
- Level 4 : Refine values based on municipal valuation rolls

3.2 Replacement values

The replacement value of immovable assets is defined as the amount of cash that would have to be paid if an equivalent asset was acquired currently. This refers to the estimated amount that will be paid to an appointed contractor and excludes the following costs:

- Demolishment of existing infrastructure
- Professional fees associated with construction of new infrastructure
- Legal costs
- Survey costs

3.3 Depreciated replacement values

The depreciated replacement value of immovable assets is defined as the replacement value minus the condition backlog. This refers to the estimated amount that will be paid to an appointed contractor and excludes the following costs:

- Demolishment of existing infrastructure
- Professional fees associated with construction of new infrastructure
- Legal costs
- Survey costs

3.4 Capital budget estimating principles

The construction cost of a typical school was estimated by means of detailed schedules of quantities. The cost then represents the current (2006) cost in LIMPOPO. From this base, the following variations in costs were prepared:

- Variations for differences in specific descriptions
- Variations for differences in levels of service
- Variations for difference in conditions

3.5 Maintenance budget estimates

There are three broad categories of maintenance:

- Refurbishment – Planned corrective maintenance to restore assets to a satisfactory condition. This is based on the records of unsatisfactory conditions detected during the assessment of the assets. An example of refurbishment is replacement of a portion of the ceiling boards in a room. The cost estimate for refurbishment is based on the construction rates.

- Preventative maintenance – This includes actions undertaken before an asset fails to delay of prevent the occurrence of a known failure mode. An example of preventative maintenance is sewer cleaning programmed on an understanding of the rate of build up of blockages. An annual allowance should be budgeted for preventative maintenance. The cost estimate for planned maintenance is based on a percentage of the estimated replacement value of the asset.

- Un-planned maintenance – This includes corrective work carried out in response to reported problems or defects. An example of un-planned maintenance is the repair of a jammed door lock. An annual allowance should be budgeted for preventative maintenance. The cost estimate for un-planned maintenance is based on a percentage of the estimated replacement value of the asset.

3.6 Geographical variation in rates

Based on the research by the Bureau for Economic Research, the base cost of Gauteng was varied to be applicable in different geographic areas of South Africa.

3.7 Time variation in rates

Based on the research by the Bureau for Economic Research, the current cost (2006), can be varied to be applicable at selected future dates.

4. STEP BY STEP GUIDE TO IMPLEMENTATION OF THE COST MODEL

4.1 Data integrity

The validity of any cost estimate is dependent on the validity of the data it is based on. It is therefore critical that the status of the infrastructure should be updated on a regular basis. Similarly, the currency of the rates tables and indices should be maintained at all times.

4.2 Access to Cost Model

The cost model is part of the Education Infrastructure Management System. It runs on the data transferred from the NEIMS database to the Management system. All people with access to the Management System will have access to the Cost Model.

4.3 Interpretation of results

The Cost Model provides a first order of magnitude of the financing requirements. The accuracy is absolutely dependant on the integrity of the data and the currency of the rates and indices. It is not intended to provide an accurate estimate of the construction cost as such estimate will depend on the final design and local conditions.

4.4 Filtering of results

Costs are calculated per site. The results of the Cost Model forms part of the set of individual site reports. There are options to summarise the Cost Model results per Municipal Ward, Local Municipality, District Municipality, Province and National.

5. CAPITAL INVESTMENT PLANNING

The preamble to the South African Schools Act, 1996 states that:

"…this country requires a new national system for schools which will redress past injustices in educational provision, provide an education of progressively high quality for all learners and in so doing lay a strong foundation for the development of all our people's talents and capabilities…"

"New classrooms and other construction allocations" includes provision for water, electricity, sewage and telephone services on site, and connections to mains services where these are provided to the school site.

The following guidelines for scenario planning are contained in the National Norms and Standards for School Funding (Government Gazette Vol 494, 31 August 2006, No 29179):

Ref.	Guideline for Scenario Planning
1	• Initially estimate the requirements to eliminate backlogs and provide sufficient school places by the target year 2008
2	• The construction of new schools or additional classrooms and learning facilities should be targeted to the neediest population, where "need" is defined in terms of : o Lack of current schools o Overcrowding of existing schools • Need indicators should refer to the number of learners that are out of school or in overcrowded schools • PEDs must develop a ranking of geographical areas from neediest to least needy • Backlogs must be eliminated by starting with the neediest, most crowded areas, and proceeding as quickly as possible down the list of priorities
3	• Preference must be given to: o Facilities serving the compulsory education grades (grades 1-9) o Extensions to existing schools, rather than new schools

Prioritisation of projects can be based on the indices calculated as follows:

- (Space backlog index) = (Space backlog value)/(Estimated replacement value)

- (Standard backlog index) = (Standard backlog value)/(Estimated replacement value)
- (Condition backlog index) = (Condition backlog value)/(Estimated replacement value)

Site priority indices can be calculated, depending on the relative importance of Space, Standard and Condition. Such relative importance can be expressed as a Weighting factor can be identified for Space, Standard and Condition.

- (Site priority index) =
  {[(Space backlog index)*(Space weighting factor)]
  +[(Standard backlog index)*(Standard weighting factor)]
  +[(Condition backlog index)*(Condition weighting factor)]}
  *(Number of people accommodated on site)

6. FUTURE UPDATE PROPOSALS

6.1 Changes in rates

The rates should be verified annually. Cost estimating experts are required to confirm the validity of the rates or to update the rates.

6.2 Changes in norms and standards

The Norms & Standards should be verified annually. This provides a common base for all cost estimates. Experts are required to confirm the validity of the Norms & Standards tables or to revise such.

6.3 Value-add proposals

The following enhancements are proposed:

- Develop functionality to export cost estimates to Excell
- Prepare graphical reports on backlogs:
  - Space backlog
  - Standards backlog
  - Condition backlog
- Prepare infrastructure strategic plan with clear milestones
  - Infrastructure vision
  - Infrastructure strategic targets
  - Allocation of responsibilities
  - Project Implementation Plan
  - Project Management Plan
- Prepare graphical reports on progress:
  - Space backlog
  - Standards backlog
  - Condition

APPENDIX I:

NORMS & STANDARDS: PRIMARY SCHOOLS for the COST MODEL used in NEIMS

Site Development: Water Supply

10.1.1 Specific description (Water source)

Code	Description	Norm
None	No water supply on site	Unacceptable
	Borehole / well on site / rainwater harvesting	Acceptable
	Mobile water tankers	
	Municipal communal stand pipe off site	
	Municipal yard connection on site	

10.1.2 Level of service

Code	Description	Norm
1	No distribution pipe work from the source	Unacceptable
2	Reticulated for drinking purposes	Acceptable
3	Reticulated for vegetable garden	
4	Reticulated for water borne sewerage system	
5	Reticulated for watering of sport fields and gardens	

10.1.3 Condition of current level of service (Reticulation, taps, drinking fountains etc)

Code	Description	Norm
1	Not functional and 75% to 100% need to be replaced completely	Unacceptable
2	Partly functional but between 50% and 75% of this element in need of refurbishment.	
3	Partly functional but between 25% and 50% of this element in need of refurbishment	
4	In reasonably good condition with less than 25% of this element in need of refurbishment	
5	In good & functional condition with only corrective maintenance required.	Acceptable

- Reliability of service

Reliability	< 50%	Unacceptable
	> 50%	Acceptable

Site Development: Electricity Supply

- Specific description (Source)

Code	Description	Norm
None	No electricity supply	Unacceptable
	Generator	Acceptable
	Solar panels	
	Municipal / ESKOM grid connection to site	

- Level of service

Code	Description	Norm
1	No distribution cabling from the source	Unacceptable
2	Reticulated to some or all buildings	Acceptable
3	Reticulated to some or all building as well as to sport facilities	

- Condition of current level of service

Code	Description	Norm
1	Not functional and 75% to 100% need to be replaced completely	Unacceptable
2	Partly functional but between 50% and 75% of this element in need of refurbishment.	
3	Partly functional but between 25% and 50% of this element in need of refurbishment	
4	In reasonably good condition with less than 25% of this element in need of refurbishment	
5	In good & functional condition with only corrective maintenance required.	Acceptable

- Reliability of service

Reliability	**< 50%**	**Unacceptable**
	> 50%	**Acceptable**

Site Development: Sanitation

- Specific description (Disposal)

Code	Description	Norm
None	No municipal service	Acceptable
	Municipal bucket collection	
	Municipal vacuum tankers	
	Municipal sewer connection	

- Reliability of service

Reliability	**< 50%**	**Unacceptable**
	> 50%	**Acceptable**

Site Development: Security

- Specific description (Material)

Code	Description	Norm
	Entrance gate	Acceptable
	Wire fence complete	
	Steel palisade fence	
C Palisade	Concrete palisade fence	
	Solid wall (Brick, block, concrete panels etc)	
Elec Fence	Electric fence	
Acc Control	Access control	

- Level of service (It is assumed that the minimum height of effective fencing is 1.8m)

Code	Description	Norm
1	0-25% of fencing is of required minimum height	Unacceptable
2	25-50% of fencing is of required minimum height	
3	50-75% of fencing is of required minimum height	
4	75-100% of fencing is of required minimum height	
5	The entire fence is of required minimum height	Acceptable

- Condition of current level of service

Code	Description	Norm
1	Not functional and 75% to 100% need to be replaced completely	Unacceptable
2	Partly functional but between 50% and 75% of this element in need of refurbishment.	
3	Partly functional but between 25% and 50% of this element in need of refurbishment	
4	In reasonably good condition with less than 25% of this element in need of refurbishment	
5	In good & functional condition with only corrective maintenance required.	Acceptable

Site Development: Access

- Specific description (Type)

Code	Description	Norm
	No vehicle access	Unacceptable
	Gravel road	Acceptable
	Surfaced road	

Site Development: Communication

- Specific description (Type)

Code	Description	Norm
	No communication system	Unacceptable
	Cellular phone connection	Acceptable
	Land line connection (Telephone)	
	Land line connection (Facsimile)	
2-way Radio	Two-way radio	
	Internet connection	
	Public call box	

Site Development: Sport Facilities

- Specific description (Type)

Code	Description	Size	Norm
	Soccer / Rugby or similar	12 000 m²	Acceptable
	Netball / Basketball or similar	450 m²	
	Hockey	5 500 m²	
	Tennis or similar	700 m²	
	Athletics	20 000 m²	
	Cricket / Baseball or similar	22 500 m²	
S/Pool	Swimming pool	700 m²	

The choice of sport facility rests with the Governing Body. The total space (m²) is determined under the space norms.

- Level of service

Code	Description	Norm
1	Very basic – not levelled and not compacted	Unacceptable
2	Rudimentary facility with some land levelling and compaction	
3	Land levelled and compacted with improved playing surface	Acceptable
4	Top quality facility	

Site Development: Walkways & Paved Areas

- Specific description: Covered walkways

This refers to only those walkways that are covered and that provide access between buildings. This does not include the covered verandas along the edge of classrooms or administration buildings.

Code	Description	Norm
1	Concrete slab	Acceptable
2	Paving bricks	
3	Bitumen surface	

- Level of service : Covered walkways

Code	Description	Norm
	< 0,25 m^2 per learner	Unacceptable
	≥ 0,25m^2 per learner	Acceptable

- Specific description : Paved areas

This refers only to those paved areas that are not covered. This will include walkways that are not covered.

Code	Description	Norm
1	Concrete slab	Acceptable
2	Paving bricks	
3	Bitumen surface	

- Level of service : Paved areas

Code	Description	Norm
	< 2,0 m^2 per learner	Unacceptable
	≥ 2,0 m^2 per learner	Acceptable

- Site access: Disabled persons

Site access path for disabled persons	No	Unacceptable
	Yes	Acceptable

Space Norms

10.1.4 Building space

Space category	Lower limit	Upper limit
General teaching space	1.4 m²/learner	1.6 m² gross/ learner
Specialist teaching space	0.1 m²/ learner	0.3 m² gross/ learner
Learning space	0.4 m²/ learner	0.6 m² gross/ learner
Non-teaching space	0.3 m²/ learner	0.5 m² gross/ learner
Ablutions	0.4 m²/ learner	0.6 m² gross/ learner

Code	Room utilisation	Space category
E01	Classroom	General teaching space
E02	Multi purpose	
E03	Dance / drama studio	Specialist teaching space
E04	Music room	
E05	Laboratory	
E08	Cookery centre	
E09	Needle work centre	
E10	Technical training centre	
A07	School hall	Learning area
E06	Computer centre	
E07	Library	
A01	Office – Principal	Non-teaching area
A02	Office – Deputy principal	
A03	Office – Head of department	
A04	Office – General administration	
A05	Photocopying room	
A06	Staff room / Marking room	
A08	Counselling / guidance room	
A09	Sick room	
A10	General store / Safe	
A11	Strong room	
A12	Book room	
A13	Kitchen – general	
A14	Kitchen – feeding scheme	
A15	Tuck shop	
S01	Male facilities	Ablutions
S02	Female facilities	
S03	Facilities for disabled persons	

No space norms are proposed for accommodation, circulation or pavilions. The gross floor area is equal to the sum of the netto room sizes multiplied by a bulking factor.

10.1.5 Outdoor space

Space category	Space norm
Informal social/play area	1.5 m²/ learner
Sports area	7.4 m²/ learner
Parking	0.3 m²/ learner
Garden plots	0.3 m²/ learner

Building Standards: Walls

- Specific description (Wall finishing)

Code	Description	Norm
	Mud /clay	Unacceptable
	Metal sheet	
	Face brick	Acceptable
	Plastered brick	
	Block brick (cement / soil blocks / concrete)	
Pre Fab	Pre-fabricated panels	
Fibre C	Fibre cement	
	Wood / Timber	

- Level of service

Code	Description	Norm
1	No walls	Unacceptable
2	Rudimentary wall providing some protection against elements	
3	Partly built wall of solid construction	
4	Complete wall with window or door openings but some or all frames missing	
5	Complete wall with door frames, window frames, glazing and doors	Acceptable

- Condition of current level of service

Code	Description	Norm
1	Not functional and 75% to 100% need to be replaced completely	Unacceptable
2	Partly functional but between 50% and 75% of this element in need of refurbishment.	
3	Partly functional but between 25% and 50% of this element in need of refurbishment	
4	In reasonably good condition with less than 25% of this element in need of refurbishment	
5	In good & functional condition with only corrective maintenance required.	Acceptable

Building Standards: Roofs

- Specific description (Roof finishing)

Code	Description	Norm
	Wood	Acceptable
	Thatch	
F Metal	Metal – flat (e.g. corrugated iron)	
P Metal	Metal – pitched (e.g. corrugated iron)	
Fibre C	Fibre cement	
Fibre G	Fibre glass	
	Concrete tiles or slate tiles	
	Concrete slab (level of service will be 4)	

- Level of service

Code	Description	Norm
1	No roof	Unacceptable
2	Beams or trusses	
3	Beams or trusses + purlins	
4	Beams or trusses + purlins + roof covering	Acceptable
5	Beams or trusses + purlins + roof covering + gutters	

- Condition of current level of service

Code	Description	Norm
1	Not functional and 75% to 100% need to be replaced completely	Unacceptable
2	Partly functional but between 50% and 75% of this element in need of refurbishment.	
3	Partly functional but between 25% and 50% of this element in need of refurbishment	
4	In reasonably good condition with less than 25% of this element in need of refurbishment	
5	In good & functional condition with only corrective maintenance required.	Acceptable

Building Standards: Floors

- Specific description (Floor finishing)

Code	Description	Norm
	Mud / clay	Unacceptable
	Metal	
Grano	No floor covering / Grano finish	Acceptable
	Wood	
	Vinyl tile	
	Ceramic tile	
	Carpet	

- Level of service

Code	Description	Norm
1	Natural earth	Unacceptable
2	Compacted earth	
3	Compacted earth + Wood float concrete slab	
4	Compacted earth + Wood float concrete slab + Steel float screed	Acceptable
5	Compacted earth + Wood float concrete slab + Steel float screed + Floor covering	

- Condition of current level of service

Code	Description	Norm
1	Not functional and 75% to 100% need to be replaced completely	Unacceptable
2	Partly functional but between 50% and 75% of this element in need of refurbishment.	
3	Partly functional but between 25% and 50% of this element in need of refurbishment	
4	In reasonably good condition with less than 25% of this element in need of refurbishment	
5	In good & functional condition with only corrective maintenance required.	Acceptable

Building Element Definitions: Ceiling

Specific description (Ceiling finishing)

Code	Description	Norm
None	No ceiling finishing	Acceptable
	Concrete (typical lower storey of multi-storey building)	
	Metal ceiling	
	Fixed wood	
C Board	Fixed composite board	
Fibre C	Fixed fibre cement ceiling board	
	Suspended ceiling	

Level of service

Code	Description	Norm
1	No ceiling finishing or support	Unacceptable
3	Brandering but no ceiling finishing	
2	No ceiling finishing but with Sisolation	Acceptable
4	Brandering + ceiling finishing but no isolation	
5	Brandering + ceiling finishing + isolation	

- Condition of current level of service

Code	Description	Norm
1	Not functional and 75% to 100% need to be replaced completely	Unacceptable
2	Partly functional but between 50% and 75% of this element in need of refurbishment.	
3	Partly functional but between 25% and 50% of this element in need of refurbishment	
4	In reasonably good condition with less than 25% of this element in need of refurbishment	
5	In good & functional condition with only corrective maintenance required.	Acceptable

- Access ramps for disabled persons

Access ramps for disabled persons	No	Unacceptable
	Yes	Acceptable

General Room Services

- Level of service : Security

Code	Description	Space category	Norm
BB	Burglar bars or expanded metal grids installed	• General teaching space • Specialist teaching space • Learning area • Non-teaching area • Ablutions	• 0% • 50% • 50% • 50% • 0%
SD	Security door installed	• General teaching space • Specialist teaching space • Learning area • Non-teaching area • Ablutions	• 0% • 50% • 50% • 50% • 0%
AL	Alarm installed	• General teaching space • Specialist teaching space • Learning area • Non-teaching area • Ablutions	• 0% • 50% • 50% • 50% • 0%

- Level of service : Water Supply

Code	Description	Space category	Norm
Tap	Reticulated for drinking and washing	• General teaching space • Specialist teaching space • Learning area • Non-teaching area • Ablutions	• 10% • 25% • 0% • 10% • 100%
	Full plumbing for toilet flush system	• General teaching space • Specialist teaching space • Learning area • Non-teaching area • Ablutions	• 0% • 0% • 0% • 0% • 0%

- Level of service : Electricity

Code	Description	Space category	Norm
Li	Lighting inside room	• General teaching space • Specialist teaching space • Learning area • Non-teaching area • Ablutions	• 50% • 50% • 50% • 50% • 0%
Po	Plug points inside room	• General teaching space • Specialist teaching space • Learning area • Non-teaching area • Ablutions	• 50% • 50% • 50% • 50% • 0%
Wi	Wiring installed	• General teaching space	• 50%

		• Specialist teaching space • Learning area • Non-teaching area • Ablutions	• 50% • 50% • 50% • 0%

- Level of service : General

Code	Description	Space category	Indicator
	Door broken	• General teaching space • Specialist teaching space • Learning area • Non-teaching area • Ablutions	• 0% • 0% • 0% • 0% • 0%
	Broken window panes	• General teaching space • Specialist teaching space • Learning area • Non-teaching area • Ablutions	• 0% • 0% • 0% • 0% • 0%
CB WB	Chalk board (must be complete and fixed to the wall) Writing board (must be complete and fixed to the wall)	• General teaching space • Specialist teaching space • Learning area • Non-teaching area • Ablutions	• 100% • 100% • 25% • 25% • 0%
PB	Pin board (must be complete and fixed to the wall)	• General teaching space • Specialist teaching space • Learning area • Non-teaching area • Ablutions	• 100% • 100% • 25% • 25% • 0%

Level of service: Sanitation

Code	Description	Indicator
	Bucket system	Unacceptable
	Pit latrine	
VIP	Ventilated Improved Pit Latrine	Acceptable
Enviro	Dry composting system – Enviroloo etc	
Flush - septic	Full water borne system with on-site disposal – septic tank	
Flush - municipal	Full water borne system with municipal sewer connection	