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LESOTHO HIGHLANDS DEVELOPMENT AUTHORITY

ANNUAL REPORT

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BOARD CHAIRMAN'S STATEMENT 88/89

The Financial year of 1988/89 was the final one of what the Lesotho Highlands Water Project has designated the Engineering Project. It was the phase of the LHWP entailing detailed designs of all the components of the Water scheme, as well as preparation of tender documents for the construction of Phase 1 of the Project.

During the Engineering Project period, which started at the end of 1986, a lot of preparative work was put in hand. This was advance infrastructure, incorporating mainly access roads.

During this time the Lesotho Government amply demonstrated its commitment to the LHWP. First, a selected Development Area (SDA) was formally gazetted for Lower Bokong and one for 'Muela', was being considered.

At the same time the Compensation Policy for the Authority was being studied and vigorously discussed by various institutions of Government for ratification.

Meanwhile the LHDA was finalizing work on the technical preparations for the next phase of the Project — Construction.

Thus we can now confidently say that the Lesotho Government is very nearly ready for the Construction of its most exciting venture thus far — the Lesotho Highlands Water Project.

CHIEF EXECUTIVE'S STATEMENT 88/89

In the last annual report, I mentioned that the Lesotho Highlands Water Project "presents a great challenge with enormous benefits for Lesotho and its people." I am pleased to be able to report that in the intervening year we have moved to meet that challenge and we have also begun to see the realisation of some of the benefits.

Good progress has been made on the various engineering, geotechnical, environmental, financial and related studies in this planning phase of the project. In addition, the construction of the advanced infrastructure commenced, leading to improved access for the people in the highlands region as well as the employment of hundreds of Basotho.

The LHDA recruited many staff during the year in order to prepare itself for the challenges ahead. We also commissioned a project management and organisation study and commenced the development of training programmes. We are confident that our commitment to the recruitment of high quality staff and to a strong training programme will result in a strong organisation capable of dealing efficiently with the task of implementing the project.

The LHDA celebrated its second birthday during the year under review. Although still young in years, it is my belief that the organisation is steadily maturing and laying the basis for a successful future. I would like to express my thanks to the Board, staff and consultants of the LHDA for their efforts in the past year, to the Joint Permanent Technical Commission, to the donor community which is providing assistance to Lesotho and the LHDA on the project, and in particular to the Government of Lesotho for its on-going support in this most important opportunity for Lesotho's development.

1. BACKGROUND

The Lesotho Highlands Development Authority (LHDA) is a statutory body charged with the responsibility to implement that portion of the Lesotho Highlands Water Project (LHWP) which is in Lesotho. The Authority was created shortly after the signing of the Treaty on October 24, 1986 under the LHDA Order No 23, 1986. The Board of Directors and the Chief Executive were appointed, while the Authority comprised only three divisions: Technical, Environmental and Finance Divisions all assigned to carry out the Engineering Stage of the Project. The number of Authority's divisions increased to 11 during 1988/89 by addition of Administration, Capital Finance, Computer Services, Infrastructure, Legal, Public Relations, Training and Water Resources Divisions.

2. INTRODUCTION

During the year under review, the LHDA, the implementing body of the LHWP, employed over 200 people comprising skilled and experienced Basotho and technical assistance personnel from a number of major international firms. In order to accommodate the increased number of staff, office space was acquired in three separate office blocks in downtown Maseru.

In the technical area, the year was one of great activity for the Authority. It represented the peak of the Engineering Stage, during which the design of Phase 1A of the Project was completed. A total of twelve contracts comprising design, supervision and preparation of tender documents were concluded during the year.

The completion of the Engineering Stage meant that the Authority got into a position where it could call tenders for the main construction of the first phase. After several postponements it was finally decided that the tenders were to be called on the 16th October, 1989.

While drawing up detailed designs for the first stage of the Project — Phase 1A — the Authority had to prepare access to the Project area. This was done by way of continuing the building of the all-weather Southern Access Road from Thaba-Tseka to Bokong, the site of Katse Dam, and the paved double-lane Northern Access Road from Pitseng to the same Katse Dam site, crossing the Malibamats'o River twice. Designs for other advance infrastructure works, such

as a network of access roads to different future work areas, as well as the construction of villages at Katse and Botha Bothe, were carried out.

Like many similar projects, the Lesotho Highlands Water Project could have detrimental effects on Lesotho's environment. First signs of such effects were demonstrated by works of advanced infrastructure, notably, the access roads. In the year under review, the environment Division of the LHDA was strengthened. Many studies and surveys were carried out, and the following three plans were drawn up: the Compensation Plan, Natural Environment and Heritage Plan and Rural Development Plan to minimize environmental destruction and to compensate affected communities.

As the Authority reached the peak of the Engineering Stage and advanced infrastructure works, a strong need was felt for broadening the base of its activities. Such broadening of the Authority's activities had to be accompanied by a specialised approach to each problem and activity. Thus, where earlier infrastructure works fell under the Technical Division, the scope of physical works dictated the formation of an independent new Infrastructure Division. Similarly, a new Water Resources Division was created. Another new division thus evolved was the Training Division, and, lastly, was the Capital Finance Division, which was established towards the end of the year.

Communication within and without a big organisation such as LHDA is vital. Thus, in 1988 a Computer Services Unit was established to implement LHDA's information Systems Strategy. It was found necessary, therefore, to acquire the software and appropriate computer equipment to meet the financial and operational systems.

In the past year, the Authority launched an information programme carried on Radio Lesotho every week. A prize winning quiz programme for schools and listeners was also initiated. In addition the Authority started publishing a fortnightly internal newsletter and a quarterly journal which can be purchased at one Loti by the general public. The LHDA staff held numerous pitsos with affected villagers, members of District Development Councils, ministries, educational institutions and church organizations with the sole aim of giving information about the Project.

3. ADMINISTRATION AND PERSONNEL MATTERS

The growth of the Authority necessitated the establishment of a full fledged Administration Division to deal with, among others, the personnel matters.

The Division was expanded to a complement of 23 staff members during the year. It concentrated on recruitment of staff for all divisions instituting studies and committees for the development of proper administration. There are over 200 staff of LHDA of which 27% are expatriate personnel. The local staff is recruited under probationary, temporary or permanent terms, while the expatriates are recruited under Technical Assistance Contracts (TAC).

3.1 General Matters

— Staff benefits include Life Insurance for all LHDA Staff. The arrangement went through the Legal Division which was also charged with the institution of a Pension and Medical Aid Scheme for all staff. The Authority also arranged a Housing Policy for its staff after negotiations with the Lesotho Building Finance Corporation and the requisite agreement was ready for signature during the year under review. A Property Committee made up of members drawn from all divisions was set up to care for, and maintain the LHDA furniture and equipment.

— Due to the marked expansion of LHDA, one more office block had to be leased. This brought the number of LHDA's office blocks to three:

1. Lesotho Bank Tower — occupying approximately 1 232 m² office space fragmented over six floors.
2. Maseru Sun Cabanas — where 954 m² were leased.
3. LPPA office block — where the whole block 355 m² were occupied by LHDA.

— The Authority also rented 30 housing units mostly for its expatriate staff. Thirteen (13) of these staff members refund LHDA for the rent paid. Two houses were sublet during the year.

— Two major contracts were awarded for procurement of office furniture and equipment under the funding by EEC. The first one for M172,681.00 was fully executed, while half of the second one for M203,188.00 was delivered.

— LHDA acquired a stock of 28 vehicles. Of these 15 were acquired during the year. Four (4) 4-wheel drive Toyota twin cabs and four (4) Nissan sedans were bought with LHDA funds. Five (5) Land Rovers were purchased with EEC funds during the year and in February 1989 three (3) used Land Rovers were bought back from Simescol Foraky when their assignment ended. LHDA still has to depend, to a large extent, on rented vehicles averaging ten (10) at a time.

3.2 Studies

The following studies were undertaken during the report period:

- Housing and office accommodation in Maseru and its environs;
- Administration Management Study covering Personnel Management Policy; Procurement Policy; and Office Systems Study;
- Feasibility and Initial Design Study for proposed LHDA headquarters building.

The first two studies were done by Richard Ellis Partnership (Lesotho), — the third by Institute of Development Management and the fourth by Project Managers Sun Studio (Lesotho).

4. STUDIES AND ENGINEERING DESIGNS

The year was one of great activity for the Technical Division. It represented the peak of the Engineering Stage during which the design of Phase 1A of the LHWP was completed. There was a substantial increase in the staff of the Technical Division during the year. From the initial complement of 12 professional staff and 2 support staff, the division increased to 20 professional and 17 support staff. Out of the increase in support staff, 12 were transfers from the Administration Division. Professional staff additions included 3 Technical Assistance Contracts Engineering specialists in dam design, economics and contracts; 3 Basotho engineers, 1 Mosotho economist and 1 administration advisor. At year's end professional staff included 10 TAC-Engineering staff provided by Acres International Ltd of Canada, 8 Basotho and 1 other expatriate under US Peace Corps sponsorship. The activities of the Technical Division during the year can best be summarised under the headings of the various consulting and construction contracts for which the Technical Division is responsible.

4.1 Hydropower Design Contract (Consultant — Gibb Sogreah Joint Venture — UK, France)

The hydropower design contract comprises two stages:
Stage 1

Review of the overall optimisation of the water project and selection of the configuration of the hydropower plant. This stage was essentially complete at the beginning of the year and defined the principal features of the LHWP.

Stage 2

Detail design of the hydropower project and preparation of tender documents. Stage 2 started at the beginning of the year and the design was complete by the end of the year with work well under way on the preparation of the contract documents.

The hydropower project comprises an underground

powerhouse of 72 megawatts capacity and the tailpond formed by the 'Muela dam. The hydropower project was named the 'Muela Hydropower Project during the year. The consultants issued 75 reports to LHDA for review during the year. These reports outlined in detail the design of the project. The viability of the project was confirmed by the economic and financial appraisal memoranda issued towards the end of the year.

The Technical Division participated in two roundtable meetings of donors to Lesotho at which the 'Muela Hydropower Project was presented. These conferences were in Geneva in December 1988 and in Maseru in February 1989.

4.2 Water Transfer Design Contract (Consultant — Lesotho Highlands Consultants — France, UK, RSA)

The contract covers the design of Katse Dam and the Transfer Tunnel supplying water to the hydropower project from the reservoir to be created by Katse Dam. The work on the dam was carried out in Maseru and on the tunnels in Randburg. The selection of a double curvature concrete arch dam with a full supply level at elevation 2 053 metres was confirmed at the beginning of the year. The Consultant

submitted to LHDA a total of 38 design reports and 23 draft volumes of the tender documents during the year. The Consultant undertook two separate model tests of the Katse Dam spillway. The sectional model of the crest of the dam and the stilling basin downstream of the dam was tested in the Consultant's laboratory in Grenoble, France in order to optimise the shape of the dam crest and the depth of the stilling basin. Subsequently a comprehensive model of the dam, the proposed side channel spillway and the river bed extending a distance of 2 km downstream from the dam was tested in the laboratories of the Council for Scientific and Industrial Research (CSIR) in Stellenbosch, RSA. Following the testing at Stellenbosch, it was decided that the side channel spillway will not be implemented and that all floods would be passed over the dam. The shape of the dam was optimised using advanced computerised finite element techniques.

Extensive studies of the transfer tunnel resulted in optimised location of access adits and alignment of the tunnel. It was anticipated that the majority of the 45 km length of the tunnel would be excavated by tunnel boring machines. However the cost comparison of tunnel boring and conventional blasting techniques indicated that there was not a significant advantage for either technique.

Table 1

Environmental Division Studies Implemented 1988/89

Subject	Design and Supervision	Done By
1. Wildlife/Botany	Natural Environmental Section	Environmental Resources Ltd
2. Flora and Fauna of the LHWP	Natural Environmental Section	R Meakins et al (NUL)
3. Small Birds of the LHWP	Natural Environmental Section	P Osborne
4. Wildlife and Transmission Lines	Natural Environmental Section	J Ledger
5. Simulium Biology in the LHWP	Natural Environmental Section	M Chutter
6. Fisheries Biology	Natural Environmental Section	Environmental Resources Ltd
7. Wetland on Northern Access Road	Natural Environmental Section	W Bainbridge et al (Natal Parks Board)
8. Aquatic Weeds	Natural Environmental Section	Environmental Resources Ltd
9. Archaeology	Natural Environmental Section	Environmental Resources Ltd
10. Palaeontology	Natural Environmental Section	Environmental Resources Ltd
11. Public Health	Natural Environmental Section	Environmental Resources Ltd
12. Limnology	Natural Environmental Section	CSIR (M Chutter et al)
13. Drawdown Area of the LHWP	Natural Environmental Section	B Taylor
14. Construction Training	Rural Development Section	Environmental Resources Ltd
15. Marketing	Rural Development Section	Environmental Resources Ltd
16. Rural Enterprises	Rural Development Section	Environmental Resources Ltd
17. Fisheries Development	Rural Development Section	Environmental Resources Ltd
18. Preliminary Sub-Regional Study of the Effects of LHWP Developments	Compensation Section	J Raimondo and S Grindley (University of Cape Town)
19. Compensation Economics	Compensation Section	J Carvalho
20. Socio-Economic Survey of the LHWP	Compensation Section	Compensation Section
21. Impeded Access Study	Rural Development Section	Compensation Section Rural Development Section

Table 2
Environmental Division Studies Planned 1988/89
To Be Implemented 1989/90

Subject	Design and Supervision	Done By
1. Muck Disposal	Natural Environmental Section	University of Cape Town
2. Rural Electrification	Rural Development Section	Environmental Resources Ltd
3. Animal Husbandry/Range Management	Rural Development Section	Environmental Resources Ltd
4. Mountain Horticulture		
5. Village Woodlots	Rural Development Section	Environmental Resources Ltd
6. Tourism	Rural Development Section	Environmental Resources Ltd
7. Reservoir Transport	Rural Development Section	Environmental Resources Ltd
8. Rural Roads	Rural Development Section	Not identified
9. Adjudication Survey	Rural Development Section	Not identified
	Compensation Section	Compensation Section/MICARD
10. Butha Buthe Planning Study		Lands and Surveys
	Compensation Section	Not identified
11. Ha Lejone Planning Study	Rural Development Section	
12. Lower Bokong Planning Study	Rural Development Section	Not identified
	Rural Development Section	Not identified

Therefore the contractors will be allowed to bid either method. It was decided during the year to package the work of construction of the Katse Dam and transfer tunnel into three contracts:

- Katse Dam
- Transfer tunnel south,
- Transfer tunnel north.

4.3 LEC Investment and Tariff Study (Consultant — Oskar Von Miller GMBH-Germany)

The object of this study is to establish a plan for the development of the Lesotho Electricity Corporation (LEC), to ensure that it will be able to distribute the electrical output of the 'Muela Hydropower Project and to generate sufficient revenue from power sales to cover the financing and operating costs of the 'Muela Hydropower Project.

The study included six main tasks.

1. Preparation of a Development Strategy
2. Preparation of a Load Forecast
3. Planning of the Power System Expansion
4. Development of the Investment Programme
5. Recommendations for the Level of Tariffs and Method of Implementation
6. Recommendations for Manpower Training and Technical Assistance

The reports in these areas were submitted during the year. At the end of the year, the final report and recommendations were under review.

4.4 Economic Impact Study of Phase 1A Construction (Consultant — Coopers and Lybrand and Associates — UK)

This study was undertaken during the period from October 1988 to March 1989 with the objective of assessing the benefits to Lesotho which will arise from the construction of Phase 1A of the Lesotho Highlands Water Project and to identify measures which will enable Lesotho to maximise its benefits from the project. The draft report has been discussed with all relevant Lesotho government ministries in order to ensure that its recommendations are practical and can be implemented.

The final report was being completed at the end of the year.

4.5 Design and Supervision of 132 kV Transmission System and Maseru Ring Completion (Consultant — Sogreah — France)

The LHDA, in association with the LEC, is responsible for the construction of the 132 kV Transmission System from the border near Maseru to Maputsoe. This section of the transmission line will have three purposes. Firstly, it will provide power for construction of Katse Dam and the transfer tunnel. Secondly, it will allow LEC to serve new customers in the Maputsoe and Leribe areas. Thirdly, it will become part of the transmission system to supply power from the 'Muela Hydropower Project to Maseru on completion of the project.

Work started on the design of the system in late 1988 and the draft contract documents were submitted to LHDA for review before the end of the fiscal year.

4.6 Design and Supervision of Construction Power Supply System for Katse and Hololo Valley (Consultant — GH Marais — RSA)

This contract deals with the design of the necessary transmission and distribution systems to provide electric power to each of the construction sites of Phase 1A of the project. There are two separate systems, the southern system will be supplied from the 132 kV line at Maputsoe discussed above and the northern sites will be supplied from the existing 88 kV transmission line which was built for the now unused Lets'eng-la-Draai mine.

Design work on these systems started in February 1989.

4.7 Construction Communications System — Design and Supervision of Construction

This contract will cover the design of the communication system required for the construction of the Project. It will also make provision for the data acquisition and control systems which will be in place for the operation of the project. A consultant has yet to be appointed for this contract. The terms of reference were prepared and a shortlist of qualified consultants was under review at the end of the year.

4.8 Design and Preparation of Tender Documents for the Delivery Tunnel in Lesotho (Consultant — Highlands Delivery Tunnel Consultants — RSA)

This work is being undertaken by Trans Caledon Tunnel Authority on behalf of the LHDA. The design is being done by HDTC as part of its overall delivery design contract with TCTA including the sections of the delivery tunnel in the RSA. The design work has been carried out in parallel with the water transfer and hydropower designs and draft contract documents for construction of the Lesotho section of the tunnel were submitted to LHDA for approval prior to the end of the fiscal year. Construction will be done under a Contract to LHDA.

Twenty two design reports were prepared providing details of the project. The delivery tunnel intake will be located in the 'Muela tailpond reservoir. Model testing of this intake has been done by the University of Witwatersrand in Johannesburg.

4.9 Phase 1A Geotechnical Investigations for Hydropower Features (Contractor — Simecsol — Foraky — France, Belgium)

This contract is responsible for the drilling of 4 100 metres of boreholes from which rock samples were taken. In addition trial blasting was done at a proposed quarry site to obtain samples for the production of concrete aggregate. A 600 metre long adit was excavated in order to gain access to the proposed location of the underground powerhouse. Hydrofracture testing was undertaken in the deep

boreholes to determine the state of stress in the rock at the location of the powerhouse and the various tunnels. Work of this contract was completed at the end of the year.

4.10 Geotechnical Investigations for Katse Dam and Water Transfer Tunnel (Contractor — ROGEL — RSA)

For Katse Dam, 3 900 metres of boreholes were drilled and 7 adits with a total length of 500 metres were driven. For the transfer tunnel, 5 900 metres of boreholes were drilled. Rock samples were taken for the design of concrete mixes and extensive special testing was done to determine the durability of the basalt rock which is proposed to be used as concrete aggregate for the dam and tunnel linings. The field investigations were completed by the end of the year, however laboratory testing will continue on the durability of the basalt as aggregate and on the boreability of the basalt to provide information for the design of tunnel boring machines.

4.11 Expert Panel

The second meeting of the Engineering Expert Panel was held in September 1988. It was made up of Messrs P Londe and G Johnson of France, Professor A J Hendron of the USA and Mr C Murdock of Canada. The panel reviewed the design work of the three consultants, water transfer, hydropower and delivery tunnel, in particular the methods proposed for handling the unique geotechnical conditions of the project. No major problems were identified. The panels recommendations have been incorporated into the designs.

4.12 Miscellaneous Studies

In addition to the consultancy and construction contracts listed above, the Technical Division was involved with several other studies and contracts undertaken by other divisions. The Contract Section of the Technical Division has been responsible for the preparation of contract documents for consultancy agreements prepared under all divisions. All variation orders and payments certificates have been approved by the contracts section.

The Technical Division made a significant input to the preparations of terms of reference and the supervision of the Risk Management and Insurance Study which was undertaken under the supervision of the Legal Division. Extensive cooperation was provided to the Environmental Division to ensure that any adverse impacts of the project would be mitigated by proper attention to the designs, to the contract documents and to the supervision of contractors' activities.

There was also substantial involvement with the Capital Finance division and TAC Finance Contract involved in the procurement of finance for both the water transfer works and hydropower works.

5. ADVANCED INFRASTRUCTURE PROJECTS

5.1 General Resumé

During the 1988/9 Financial Year, the Infrastructure Division made substantial progress towards its mission of implementing those Advanced Infrastructure Projects which are necessary to be completed prior to the main contracts commencing towards the end of 1990.

In all, it is anticipated that the Infrastructure Division will need to conclude 21 Construction Contracts, seven (7) Supervision Contracts and 16 Loan Agreements in order to achieve its objective.

The 21 construction contracts consist of four (4) road contracts, one (1) bridge contract, one (1) road rehabilitation contract, a group of five (5) contracts associated with the upgrading of border crossing facilities and two (2) groups of five (5) housing and associated contracts for the construction of facilities at the main construction camps at Katse and Butha Buthe (each of which will consist of an engineering works contract, a group of building contracts and a furniture supply contract). Butha Buthe (each of which will consist of an engineering works contract, a group of building contracts and a furniture supply contract).

During the year three (3) construction contracts were awarded, two (2) supervision contracts and a management services contract. Furthermore, one (1) pre-investment loan for the design and four (4) construction and supervision loans were approved. All the loans for the Advanced Infrastructure Projects have been concluded with the Development Bank of Southern Africa and significant progress towards the appraisal of the loans for the other Advanced Infrastructure Contracts has been made also with the Development Bank of Southern Africa.

5.2 Infrastructure Division Staffing

The Infrastructure Division consists of 15 staff members of which five (5) are expatriates on short term contracts and the remainder are Basotho Senior Engineers, Engineers and support staff.

5.3 Southern Access Road (Contract 105)

The Southern Access Road is 59 km long and extends from Thaba Tseka to Katse. The purpose of the road is to provide access to the Katse Dam Site during the period from July 1987 through October 1990 which is when the Northern Access Road is scheduled to be complete.

The Southern Access Road is being constructed by an LHDA in-house construction unit called SARTT (Southern Access Road Task Team). The construction of the Southern Access Road has a series of stage completion dates which provide a gradually increasing level of service.

During the past year, two (2) critical stages were completed and these were achieved on 15 April 1988 in order to provide access for the construction of the Katse Bridge and also in January 1989 when an all weather access was necessary to the Katse area in order that the contractor for the southern portion of the Northern Access Road could commence mobilisation.

The Southern Access Road will also be used by the contractors associated with the Katse Village and for the early mobilisation of the Katse Dam Contractor. During the year a Management Services Contract was concluded to assist in the management of SARTT and to ensure that all the critical stages of completion were achieved. The Management Services Contract was awarded to FROL/SFE on the 20th August 1988 and includes the supply of 3 construction oriented technical experts together with various other services connected with the installation of large diameter culverts.

Progress on the Southern Access Road has been according to schedule and within the budget constraints and it is anticipated that further stages of completion of the Southern Access Road will be achieved on time and within budget.

5.4 Katse Bridge

The Katse Bridge was designed as a temporary bridge in order to provide access over the Malibatso River during the construction of the Katse Dam. The contract for this bridge was awarded in May 1988 to LTA (Civils) Construction Ltd. The contract was for a contract period of five months and the bridge was completed on schedule by the end of November 1988.

In view of the significance of the completion of this the first construction contract of LHWP, an official opening of this bridge took place in December 1988 by the Honourable Minister of Highlands Water and Energy Affairs. The contract was completed on schedule and without cost over-runs on the contract price.

5.5 Northern Access Road

This road, from Pitseng in the Leribe District to Katse, is being built under two (2) separate contracts designated contracts 103 and 104. Northern Access Road (Contract 103) consists of a 56,5 km bitumen surfaced road from Pitseng to the Malibatso Bridge via Ha Lejone and Mamohau. The Contract also includes the construction of a 5,6 km gravel road leading from the bitumen surfaced road to the Pelaneng Adit. The contract includes the Bolahla Bridge, consisting of a 92 m long four span concrete structure, the Malibatso Bridge, consisting of a 465 m long 10 span concrete bridge, the Pelaneng Bridge consisting of a 115 m long steel bridge, a major culvert and high rock fill at 2 km on the Pelaneng Adit Road and a

major reinforced earth structure at 26 km on the Pitseng to Malibamats'o Bridge Road.

The contract was awarded to LTA Construction (Lesotho) (Pty) Ltd on the 20th of May 1988 and construction started on the 20th June 1988. The original construction period was 24 months. Furthermore, the supervision of construction was awarded to a consortium between Nicholas O'Dwyer and Partners (Lesotho) and Jeffares and Green & Partners (RSA).

After a slow start caused by several factors including the lack of adequate and suitable materials in the quarries originally designated in the tender documents, as well as several construction difficulties encountered on site, the contractors have made significant progress, particularly since December 1988.

The contractor was hampered in the early stages of the contract due to abnormally high rainfall and this has caused the contract period to be consequently extended. Access over the new road and bridges is expected by the end of December 1990 and substantial completion of the whole contract early in 1991.

The contractor's total work force at the end of February 1989 was 643 of which over 80% were Basotho.

The Northern Access Road (Contract 104) consists of a 38 km, bitumen surfaced road from the Malibamats'o Bridge to the Katse Access Road. The contract was awarded to Dumez International on 31st January 1989 and the contractor began mobilising during February 1989.

Furthermore the supervision of construction contract was awarded to a consortium consisting of BCEOM (a French consultant) and Highlands Infrastructure Consultants (HIC), the consortium of RSA consultants responsible for the design of the road.

It is anticipated that completion of this contract will coincide with the availability of access over the Northern Access Road towards the end of 1990.

5.6 Katse Village

The Katse Village consists of an Engineering Works Contract which includes the construction of roads, water supply, temporary electricity supply, sewerage treatment plant, water treatment plant and site levelling associated with a series of Building Contracts for the construction of housing for the supervisory consultants staff and LHDA staff, a lodge, an operations centre, a school, a clinic, an office complex, ablution block, commercial centre, a power house, a workshop and a furniture contract to supply hard furniture for the various buildings in the village.

The Engineering Works Contract went out to tender in November 1988 and the tenders were opened at the end of January 1989. Tender Evaluation had been completed by the end of the year and the award was anticipated by end of April 1989.

The various contracts associated with the building works went out to tender in the middle of January 1989 and

the tenders were received in early March 1989. Tender evaluation has been completed and it was anticipated that the award of these contracts would be made by the end of May 1989.

The Request for Proposals for the supervision of the construction of Katse Village (both engineering works and the various building contracts) was sent out to the shortlisted consultants in November 1988 and the proposals were received towards the end of January 1989. The proposals were evaluated and the award was anticipated by early May 1989.

5.7 Border Crossing Facilities

The Border Crossing Facilities at Maputsoe and Caledonspoort will need to be upgraded in order to handle the increase in traffic which is anticipated to use these crossing facilities due to the LHWP as well as to house the staff required for this increase in traffic and in order that these border posts may remain in operation on a 24 hour basis for LHWP traffic.

A design contract for the planning and design of the upgrading of these border crossing facilities at Maputsoe and Caledonspoort was awarded to a Lesotho firm of consultant architects, Archiplan Studio, in October 1988. This contract was for a six month period during which the planning and design of the upgrading works had to be completed.

Progress on this design contract is according to schedule and it is anticipated that the design and tender documents will be completed by May 1989.

5.8 Rehabilitation of Existing Roads

The roads leading from the border crossings at Maputsoe and Caledonspoort to the various work sites will be required to handle a significant increase in traffic and in particular heavy construction vehicles during the construction of LHWP. In order to handle this traffic and to avoid major rehabilitation works during the period of heavy traffic associated with LHWP it was decided to investigate the condition of these roads.

Consultants were appointed for the design and the testing of these roads and this work was due to commence in May 1989.

5.9 North End Access Roads

In order to gain access to the tunnel adits, from which the transfer tunnels and delivery tunnel will be driven, it is necessary to upgrade certain existing roads and construct certain lengths of new roads in the northern sector of Lesotho.

Construction will commence by September 1989.

5.10 Butha Buthe Village

In order to accommodate the engineers supervising the transfer tunnel contracts and the delivery tunnel contract as well as LHDA staff and the contractors' supervisory and labour staff, it is necessary to plan, design and construct certain facilities at Butha Buthe.

Consultants were appointed for the planning and design of these facilities in February 1989 and it is anticipated that construction of these facilities will commence early in 1990.

6. SOCIAL AND ENVIRONMENTAL MATTERS

By June 1988 the Environmental Division was almost at full strength. To meet its goals, the division was organised into three sections — Compensation, Rural Development and Heritage Sections, Natural Environment and a Cartographic Unit.

(a) The main tasks of the Compensation Section are:

- development and implementation of a compensation policy;
- implementation of a socio-economic census, and other studies essential for a proper understanding of the social and economic life of communities affected by the LHWP;
- preparation and implementation of a compensation plan.

(b) The main tasks of the Rural Development Section are:

- development and application of policies likely to maximise project benefits for project affected communities;
- design and supervision of studies essential for project-affected areas;
- preparation of a Rural Development Plan.

(c) The main tasks of the Natural Environment Group are:

- Consideration of all aspects of the LHWP for their likely impact on the natural environment and on Lesotho's exceptionally rich archaeological and palaeontological heritage;
- design and supervision of studies essential for the preparation of an Environmental Action Plan;
- preparation of an Environmental Action Plan which counters, reduces or mitigates the many negative environmental impacts inevitable in a project of the nature and magnitude of the LHWP.

(d) The main tasks of the Cartographic Unit are:

- preparation of maps;
- storage of maps, aerial photographic materials and remote sensing materials.

6.1 Studies

Throughout the year, the Division was committed to designing, supervising, and in some cases conducting studies that provide the necessary data and expert opinion for satisfactory environmental impact assessment and

appropriate environmental action. Studies completed during the year are 21 in all and appear on Table 1. Twelve more were designed and will be implemented during 1989/90. These appear on Table 2. Information from the completed studies has been used promptly for plans preparation, contract specifications, and civil works design.

6.2 Other Activities

A. Socio-economic census

This proceeded on schedule with a draft report submitted during the year. Analysed information was available for use from October, 1988. The census sets the basic data frame for future compensation and rural development activity. A total of 3 357 and 407 households were enumerated in Katse and 'Muela respectively. Both areas exhibit similar socio-economic characteristics.

B. Compensation Economic Study

The study was done on schedule and it provides an essential economic foundation for costing the Compensation Plan.

C. Preparation and Approval of Compensation Policy

The policy was prepared and approved during the year under review.

The policy is a prerequisite for good relations with persons and communities losing land and property to LHWP activity.

D. Adjudication

Adjudication of affected areas commenced in May, 1988. Estimates of total compensation required have relied on area estimates presented in the feasibility study. However, based on measurements from orthophoto, maps were also available in May 1988 and they provide adequate data for preappraisal.

E. Landuse and Soil Surveys

Landuse planning has been restricted to work done by Physical Planner in the process of planning for construction communities at Katse, Ha Lejone and Botha Bothe. Soil survey proceeded on the basis of 1:20 000 aerial photography available from the Ministry of Agriculture. Progress achieved includes soil descriptions and soil classifications to suborder level for Katse and 'Muela Dam local catchments.

F. Access Study

Fieldwork for Phase 1 of the Access Study proceeded on Schedule. Planning for cross reservoir transport is now proceeding through an engineering consultancy.

G. Regional Planning

With the exception of the Lower Bokong regional study requested by DBSA, regional planning work by the division

has largely been in abeyance. It is not critical for appraisal and pressure of other work has tended to displace this task. More will be done in the coming year when the Lower Bokong, Ha Lejone and Botha Bothe planning studies are done.

H. Determination of Advanced Infrastructure Requirement

This work has been done by consultants to the Technical and Infrastructure Divisions. Environment Division's role has been one of review, advice and consent.

I. Income and Expenditure Study

Following the completion of adjudication, the study was planned to commence in late 1989.

6.3 Monitoring and Implementation

A. House Reconstruction: NAR and SAR

House reconstruction contracts for the Southern Access Road (SAR) and the first part of the Northern Access Road (NAR) were complete in February, 1989, with fourteen (14) houses handed over along NAR and four (4) on SAR. The houses have proved popular with their owners. However, implementation of the road contracts has led to the identification of several extra houses which need replacement.

B. Other Compensation

Land lost to exploration and other construction contracts was measured and compensation paid according to the approved rates. In terms of the compensation policy, people who lost significant areas of arable land received annual compensation payments in the form of grain.

C. Selected Development Areas (SDA)

The Lower Bokong Selected Development Area was formally gazetted in June 1988. In December 1988, the Honourable Minister of the Interior held a Pitso at Katse to explain the implications of the SDA. Terms of reference for an SDA Management were drafted during the year and approved but still await gazettelement. In January 1989, LHDA formally proposed the establishment of a second SDA in the 'Muela area. A response is awaited.

6.4 Compensation issues

— During the year, the LHDA compensated over forty (40) persons who had lost land temporarily due to Lesotho Highlands Water Project activities.

— In order to implement its Compensation Policy the LHDA provided grain to over 260 families which had lost land permanently due to Lesotho Highlands Water Project activities, such as road construction works.

7. PUBLIC AFFAIRS

7.1 Establishment

The Division was established in January, 1988 complementing the already existing Technical, Finance and Environment Divisions.

The Division was manned by a single officer (the present Manager), but by mid-1988 the staff had increased to six. By January, 1989 one more officer was appointed to fill the position of Liaison Officer.

The purpose was to satisfy the much felt need for meaningful participation of Basotho in the Lesotho Highlands Water Project.

7.2 Liaison with public

Following strong public demand and official intervention, the Authority through the Liaison Officer helped in the formation of two indigenous companies for future participation in the Project. These are Metsi Ford Food Catering company and Lesotho Construction Consortium.

7.3 Publications

Several publications were launched and published by Public Relations Division during the year under review. Firstly, an internal Newsletter, "Ka Metsing" (in the water), for dissemination among LHDA three office centres. Secondly, in December 1988, the first brochure to be prepared, designed and produced by LHDA itself, was published. Copies of this brochure were distributed to the round-table donors' conference on Lesotho in Geneva and to the later conferences in Maseru, as well as to all those who requested it both in Lesotho and the RSA. The popularity of this publication justified a reprint.

Thirdly, work was started on the production of LHDA's first quarterly journal, MEHLOLI (translated "Sources"). The journal was officially launched by the Minister of Lesotho Highlands Water and Energy Affairs on the 17th of February, 1989.

7.4 Broadcasts

An informative 15-minute radio programme was launched on the national station Radio Lesotho, in April, 1988.

This programme, broadcast twice every week provides information and education on LHWP.

During the year, a quiz programme, sponsored by the local business community, was launched and it is popularly known as "Thalaboliba" (translated "black fly"). This programme is broadcast once a month.



7.5 Public Meetings and Presentations

Over 3 000 people attended presentations made by the Public Relations Division in conjunction with the Training Officer in all the ten districts of the country. Issues of concern at these presentations were training opportunities for both engineering students and construction skills for people wishing to get employment in the Project.

Audiences addressed included, among others, project affected communities, University lecturers and students, lectures and students of tertiary education institutions, members of District Development Councils and primary and secondary school children.

The most notable of these public meetings was the one held at Ha-Seshote where over 700 horsemen and their chiefs attended one of the largest pitso's addressed by the Division's Manager.

7.6 The additional duty assigned to the Public Relations Division was to arrange for the re-burial of graves along both the Southern and Northern roads. Twelve (12) of these were located at Ha Mofoka Mphosong in the North and eight (8) at Makhoabeng, Khohlo-Nts'o in the South. These reburials were performed in respect of traditional rites which included a removal of an ashdump at Ha Soai over the confluence of Malibamats'o and Matsoku rivers in the South.

8. LEGAL MATTERS

8.1 Amendment of LHDA Order No 23 of 1986

Since its establishment in 1988 the Division was mainly concerned with reviewing the existing National Legislation in order to determine whether there are any areas of conflict between such laws and the provisions of the Lesotho Highlands Water Project Treaty between the Kingdom of Lesotho and the Republic of South Africa.

It was found that there was no legal conflict per se, but that the administrative bottlenecks by some government authorities could hinder the implementation of the Project. For example, the granting of work permits under employment laws, and the granting of residence permits under immigration laws, could be delayed, thereby frustrating contractual progress between LHDA and the expatriates concerned. To avoid this state of affairs, the Division recommended effective consultation between LHDA and Government Ministries.

8.2 Board of Directors

During the year, the Division worked on the amendment of LHDA Order to increase the number of Board of Directors from five (5) to eleven (11). The other significant change brought about by the amendment is that the Minister of Highlands Water and Energy Affairs has now been made the Chairman of the Board of Directors and Board members are entrenched.

8.3 The Scheme for the implementation of Phase 1A

For the purposes of preparing the Scheme for implementation of Phase 1A to be presented before the Minister, the Division was involved in:

- the drawing and drafting of the Maps;
- the listing of co-ordinates delineating the scheme area for major works;
- collecting information about the nature of activities to be performed by the Authority under the scheme;
- finding out how much activity is likely to affect other Government operations within the project area;

The Scheme was presented and passed by the LHDA Board of Directors but still due to be approved by Government.

In the absence of an approved scheme, it became apparent that LHDA's commencement on the works for the Advanced Infrastructure in preparation for the implementation of Phase 1A of LHWP was illegal.

The Division made a research and drew up a strategy for a lawful land acquisition by the Authority. The list of all pieces of land acquired or likely to be acquired by LHDA in different parts of the country was compiled. The process of formalising titles was going on by the year's end.

Compensation Policy and Regulations

The Compensation Policy and Regulations were drafted during the year and are awaiting final approval by the Government.

Conditions of Major Contracts

There are no regulations in respect of Health and Safety in Mining in Lesotho. The Division, therefore, proposed that the Government should draft the Health and Safety Regulations under the Mine Safety Act of 1981. In the meantime, tenderers for major construction works shall be required to submit tenders in respect of Health and Safety conditions which shall be subject to review by LHDA.

Insurances

The LHDA consultants produced a report on Risk Management Strategy with the following recommendations:

- a) that LHDA should take a Principal Controlled Insurance Package;
- b) that the Risk Management Programme be implemented in the design, construction and operational phases.
- c) that LHDA influence the enactment of safety and health legislation in work places;
- d) that the LHDA should have a Risk Management Division that will help implement the risk programme;
- e) that there should be a Risk Management Committee which should consist of LHDA representatives, Brokers, Risk Management Committee, Consultants, the Contractor and other consultants.

9. HUMAN RESOURCES DEVELOPMENT

The past year has seen the establishment of the new Training Division in May/June 1988 and the appointment of two staff members Messrs Peter Sowrey and Retselisitsoe Motlojoa. Over the following few months many visits were made and discussions held with relevant bodies and organisations throughout the country. Included amongst these were most of the vocational training centres, relevant Government Ministries, selected private industries and schools. At the same time talks were held with every Division within LHDA and with its consultants. A great deal of reading of background surveys and reports had to be undertaken to obtain a fuller understanding of the tasks ahead.

Overall the Training Division would appear to have broken considerable new ground in its first year of operation, and has opened the way for greater involvement of Basotho as the Highlands Water Project moves into the Construction phase.

Plans were being prepared for the further development of both professional and technician training to meet future operational needs, and for liaison with the contractors' consortia to develop additional courses for construction workers as project works proceed.

On the home front plans were made for a range of training courses to meet the internal training needs of each LHDA Division. Whilst most overseas courses would require donor funding, finances are available for a wide range of local updating training throughout Southern Africa. It is hoped to undertake a more detailed training needs analysis in coming months.

Plans for additional sponsorship of students to meet future professional and technician requirements of LHDA are well under way, with both ODA and EEC increasing their contributions. It is expected that 15 new students will commence their studies in Sept/Oct 1989 and that a similar number will continue to be added to our stock in the following two or more years. Efforts are also being made to incorporate more industrial training into their courses by utilising sandwich-type courses in future.

In the last quarter of 1988, the Division hosted two training consultants as a result of an EEC-Funded Environmental Study. One, a specialist in Rural Entrepreneurial Development, undertook a study covering the project-affected communities and produced a report outlining the development of a new specialised training centre in the Katse area for which development funding has been proposed. The other, a construction training expert, undertook a detailed study of the possible employment prospects for Basotho labour during the construction of the dams and tunnels for phase 1A of the project.

His studies complemented the earlier work undertaken by the Training division and resulted in a proposal to develop

two regional Civil Construction training units for semi-skilled workers. One, to cover the Northern project works, to be developed around Butha-Butha, and the other to cover the Southern project works at Katse. After their departure at the end of the year, their ideas were further developed into a paper for presentation at a major donors conference which took place in Maseru in February 1989. Subsequent developments have taken place since then, with the co-operation of the country's vocational schools and relevant Government Ministries, and it would now seem likely that Civil construction training projects will start up under the umbrella of two existing vocational training centres in Leribe and Thaba-Tseka. LHDA Training division will co-ordinate the programme and incorporate part of the present SARTT camp at Thaba-Tseka into the plans to develop semi-skilled training units for Lesotho. Applications for the funding of these are presently under way with interest being shown by USAID, UNDP, USCC and ODA.

10. INFORMATION MANAGEMENT SYSTEMS

10.1 A Computer Services Division was established during the year under review. The structure of the Computer Services was drawn and approved. The Division has been able to recruit, so far, five officers: the Manager, Systems Analyst, Programmer, Personnel Secretary and Computer Operator.

10.2 Activities

Following the creation of the Division, the major task of the divisions was to implement LHDA's Information System Strategy (ISS). LHDA then found it necessary to acquire the software and appropriate computer equipment to meet the financial and operational system.

During the report period, the LHDA invited bids for the supply of hardware and software for the following applications:

- Contract Control and Project Management System;
- General Ledger Systems;
- Donor and Financing Agency Funding System;
- Purchasing System;
- Payroll and Personnel System.

A bidders conference was scheduled for June 10, 1988 and closing date for submission of bids was July, 1988. The Division drew up a short-term training programme whose implementation started with Word-processing, Computer Appreciation, Lotus etc.

The contract was finally awarded to GBS with Square One of Maseru and UNISKILLS of Johannesburg as sub-contractors.

10.3 The Acquisition of LHDA Mini Computers

LHDA decided to acquire two mini computers for the following objectives:

- to provide computers that will process applications much faster than the existing Personal Computers.
- Most of the current applications both financial and technical are based on micro software packages like Lotus 123, Paradox, Timeline etc. which are very restrictive on reporting and integration. The mini-computer application provides comprehensive top management reporting and detailed staff and line management reporting which is much easier to use and comprehend.

One mini Computer was planned for installation at the Central Bank Tower to service all LHDA divisions in that building; the second at Maseru Sun Cabanas for use by Technical, Infrastructure, Water Resources and Computer Services Divisions. The Environmental Division, housed at LPPA building, was allotted a Miad 386 computer to meet its needs.

On the acquisition of the mini-computers the Division performed the following activities:

- (a) As the Request for Proposal to be used was drawn up in September, 1987, revision of the Request for Proposal document was undertaken during the year and many structural and divisional changes were effected.
- (b) Put in place the implementation schedule with major emphasis on training, site preparations and recruitment of staff.
- (c) Reviewed the existing rented computer equipment and consequently purchased that which had been on rental for longer than 6 months. This review is undertaken every three months.

10.4 Project Cost Monitoring System (PCMS)

The PCMS was developed within LHDA by consultants employed on contractual basis by LHDA. The consultants were understudied by the Computer Services personnel in the operation of PCMS. On completion and trial runs for three months, the PCMS system was handed over to the Technical Division mainly for operations, while the staff of the Division render maintenance of the system.

10.5 Royalties

The royalty computer programmes were handed over to the Division, and the training was conducted on the operations of the royalties computer programmes. Studies done by the Division included:

- Royalty calculation using LHWP Interim Hydrology and OVTS Stage 2B hydrology.
- A scenario where there is a delay in the commencement of water transfer from Katse Reservoir for both less and more than one year.

— The situation where there is a change in Southern African Customs Union (SACU) rebate factor.

— A computation where Matsoku weir is included in Phase 1.

To meet World Bank requirements, the documentation on royalties was handed over to the Economics division for interpretation and sensitivity analysis.

The Division embarked on writing supplementary programmes to reduce as much as possible, the human intervention element on the computation of the net benefit and royalty rates. These programmes are strictly for use within LHDA to expedite work, but they do not form part of the agreed methodology.

10.6 Labour Department Data Base System (LDDS)

For recruitment purposes on LHWP construction, the LHDA Training Division needed to know the Lesotho Citizen Working Group, especially the ex-miners endowed with skills relevant to the LHWP construction. The Training Division approached the Ministry of Employment, Social Welfare and Pensions for such a listing. It was observed that the Ministry could only be able to provide the listings through the use of a computer. The Computer Services Division was then requested to go ahead with the creation of LDDS.

So far the following operations were completed:

- The creation of screen format for input data and updates and the creation of output formats for detailed reporting and history information reporting for persons who have "certain skills".
- The writing of programmes.

11. WATER RESOURCES DIVISION

The Division was established in mid-1988 to achieve the following objectives:

- Monitoring the measurement of primary or raw water resources data such as hydrometric data, rainfall data, sediment data and water quality related parameters.
- Establishing and monitoring the hydrological data collection and processing programmes in order to develop a long term water resources data base systems of the LHWP.
- Co-ordinating the Division's activities and responsibilities with the JPTC, DWA-BKS, Lesotho Highlands Consultants, Government Ministries and other LHDA divisions.

11.1 The Measurements of the Primary Hydrometric Data

Technical Reports

- A fieldwork manual, Hydrological Field Data Collection Procedures in Lesotho, was published by the

Division in consultation with the Department of Water Affairs, (RSA) and the ministry of Water, Energy and Mining (WEMMIN). The manual outlines procedures that are to be followed during the fieldwork operations. This is to ensure that proper, common and agreed data collection procedures are adopted and implemented in the LHWP. A review on the reliability of the observed daily rainfall data which was transferred to LHDA by DWA/WEMMIN has resulted in the publication of the report, Evaluation of Observed Rainfall Data, by LHDA. The report highlights the problems related to the observed rainfall data used in the Interim Hydrology. This report enables DWA/WEMMIN to make final decisions on the data disparities prior to the use of the data by LHDA in the LHWP.

11.2 Flow Measuring Campaign

— Forty (40) flow measurements were taken during the rainy season, i.e. December to March, on the following hydrometric stations:

- Bokong River at Bokong.
- Malibamats'o River at Ha Lejone
- Senqu River at Koma-Koma
- Malibamats'o River at Paray

The objective was to extend the river rating models at high river stages and to verify the validity of the established river rating model at high flows.

11.3 Sediment Monitoring Network

— Six (6) hydro-sediment stations were selected from the hydrometric network for the continuous monitoring of the suspended sediment on the upper reaches of the reservoirs within the LHWP. So far, about 300 sediment samples were collected in the form of grab, depth integrating and bedload samples on:

- Hololo River at Khukhune
- Bokong River at Bokong
- Malibamats'o River at Ha Lejone
- Senqu River at Koma-Koma
- Senqunyane River at Marakabei
- Senqu River at Whitehill

The programme has also incorporated the collection of some water samples for water quality monitoring.

11.4 Repair and maintenance Work

After the March 1988 floods there was a need to repair the damaged equipment installed in the hydrometric stations within the LHWP in consultation and coordination with DWA/WEMMIN through fieldworks.

For example, repair and maintenance of the water level measuring equipment on the following rivers: Hololo River at Khukhune, Senqu River at Mokhotlong, Malibamats'o River at Ha Lejone together with the reconstruction of the recorder house on Senqu River at Koma-Koma.

11.5 Development of the Water Resources Databases

11.5.1 After acquiring the computer facility with a manageable storage, the Division was able to adopt and develop the following data bases.

— Hydrological database

The hydrological database has the capability of compiling, processing, storing, retrieving and updating the river flow data and the river stage (river level). These were obtained through the measurement of river flow and digitization of the water level charts, respectively. The stage data is still to be checked and compared on routine basis with the Interim Hydrology data.

— Rainfall Database

A menu driven rainfall database called Database/Clicom, was acquired for the processing, storage and retrieval of the raw rainfall data.

LHDA has published a report titled: Processed Raw Rainfall Data that highlights the reliability of the raw rainfall data in relation to time and orographic influences.

— Water Quality/Sediment Database

After launching a sediment monitoring programme within LHWP area, the Division developed a water quality, sediment database for the effective storage and retrieval of the sediment data. The water samples were analysed by the Geography Department of the National University of Lesotho under a special agreement with LHDA.

— Mapping Software Package

A computerised mapping package has been adopted and developed for LHDA needs. The following features in relation to the LHWP area can be plotted automatically on the map of Lesotho:

- The rainfall network with the mean annual runoff data;
- The hydrometric network with the mean annual runoff data;
- The drainage network;
- The dam site catchments together with the delineation of the area extent of the dams' full supply level;
- The 2 500 and 3 000 metres above sea level contour elevations.

11.6 Project co-ordination

The project co-ordination as performed by the Division was achieved through special visits to RSA water schemes (Tugela and Palmiet), seminars conducted by international experts and meetings with DWA-BKS water engineers.

LESOTHO HIGHLANDS
DEVELOPMENT AUTHORITY

**FINANCIAL
REPORT**

LESOTHO HIGHLANDS DEVELOPMENT AUTHORITY

Financial Statements for the year ended
31 March 1989

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DIRECTORS' APPROVAL

The financial statements which appear on pages 23 to 28 were approved by the Board of Directors on 8 September 1989 and are signed on its behalf by:

M M Lebotsa
CHAIRMAN

M E Sole
CHIEF
EXECUTIVE

Report of the Auditors to the Members of the Board of the Lesotho Highlands Development Authority

We have audited the financial statements set out on pages 23 to 28 for the year ended 31 March 1989 in accordance with generally accepted auditing standards.

To the best of our knowledge and belief and on information supplied to us, the financial statements reflect a true statement of the assets and liabilities of the Authority at 31 March 1989.

PEAT MARWICK
CHARTERED ACCOUNTANTS (LESOTHO)
October 10 1989

Balance Sheet at 31 March 1989

	Notes	31 March 1989		31 March 1988	
		M'000	M'000	M'000	M'000
ASSETS EMPLOYED:					
FIXED ASSETS	4		160 022		40 542
CURRENT ASSETS					
Advance Payments		2 320		6 684	
Other Receivables		250		179	
Cash on Deposit at Bank		2 431		2 686	
		5 001		9 549	
CURRENT LIABILITIES					
Contracts Payables and Accruals		35 612		15 442	
Retentions		3 333		1 067	
Other Payables and Accruals		420		751	
Short Term Loan		2 368		—	
		41 733		17 260	
NET CURRENT LIABILITIES			(36 732)		(7 711)
			123 290		32 831
FINANCED BY:					
CAPITAL FUND	5		56 978		18 600
GOVERNMENT OF LESOTHO FUND	6		27 310		13 681
LONG TERM LIABILITIES	7		39 002		550
			123 290		32 831

Notes to the Financial Statements for the Year Ended 31 March 1989

1. COMMENCEMENT OF OPERATIONS

The Authority was established with effect from 24 October 1986 by the Lesotho Highlands Development Authority Order (No 23) of 1986, and commenced operations immediately.

2. DESCRIPTION OF ACTIVITIES

The Authority is entrusted with the responsibility for the implementation, operation and maintenance of the Lesotho Highlands Water Project as defined in the Treaty on the Lesotho Highlands Water Project signed by the Government of the Kingdom of Lesotho and the Government of the Republic of South Africa on 24 October 1986.

The Authority is also conferred with general functions in relation to water resources, electricity, education and training of its employees, monitoring activities and land transactions.

The Authority is presently in the initial stages of the construction of Phase IA of the Lesotho Highlands Water Project.

Construction of this Phase is presently scheduled to be completed in 1996. The principal physical features of Phase IA in Lesotho are as follows:

- (a) A 182 metre high concrete arch dam on the Malibatso river at Katse.
- (b) A 55 km transfer tunnel north from the Katse reservoir to the Hydropower complex at 'Muela.
- (c) A 72 MW underground Hydropower complex at 'Muela.
- (d) A 15 km delivery tunnel north from 'Muela under the Mohokare (Caledon) river which forms the border between the Kingdom of Lesotho and the Republic of South Africa.
- (e) Associated infrastructure, including construction of new roads, upgrading and rehabilitation of existing roads, two new bridges, upgrading of border crossing facilities and river crossings, camps, communications, power supply etc.
- (f) Associated conservation, environmental and rural development activities.

3. PRINCIPAL ACCOUNTING POLICIES

The financial statements are prepared on the historical cost basis and incorporate the following principal accounting policies.

3.1 Capital Work-in-Progress

Costs incurred on the implementation of Phase IA of the Lesotho Highlands Water Project are capitalised and shown as fixed assets on the balance sheet of the Authority. As construction will not be completed before 1996, no depreciation is charged. Cost comprises all attributable costs of bringing the asset or group of assets to working condition for their intended use, and includes inter alia:

- (a) all costs of investigations, surveys, feasibility studies, engineering studies, preparation of designs, construction, construction supervision, procurement and commissioning;
- (b) the establishment and administration costs of the Authority;
- (c) the costs of any land or interest in land, and any improvements to such lands;
- (d) the costs of measures taken in order to ensure that members of local communities in Lesotho are not adversely affected by Project related activities, including compensation paid;
- (e) all finance charges (including interest payments, financing and foreign exchange cover charges and other charges) relating to finance raised to fund capital expenditure.

All costs incurred are apportioned to one or more of the following activities:

- (i) generation of hydro-electric power in the Kingdom of Lesotho ("Hydropower")
- (ii) delivery of water to South Africa ("Water Transfer")
- (iii) ancillary developments in the Kingdom of Lesotho ("Ancillary Developments").

The Government of the Kingdom of Lesotho is, by way of Cost Related Payments, responsible for the costs of the Hydropower and Ancillary Development activities. The Government of the Republic of South Africa is, by way of Cost Related Payments, responsible for the costs of the Water Transfer activities.

3.2 Pre-Establishment Costs

Costs incurred on the implementation of the Lesotho Highlands Water Project prior to the establishment of the Authority on 24 October 1986 have been included in Fixed Assets.



Notes to the Financial Statements for the Year Ended 31 March 1989 (Continued)

3.3 Foreign Exchange

Transactions in foreign currencies are converted to Maloti at the approximate exchange rates ruling at the date of the transaction. Assets or liabilities denominated in foreign currencies are converted to Maloti at the exchange rate ruling at the balance sheet date.

Exchange differences are allocated to the cost of the related activity.

3.4 Cost Related Payments

Cost Related Payments from the Governments of Lesotho and South Africa are recognised and credited to the Capital Fund on the date due for payment.

Cost Related Payments are due for payment when the relevant cost falls due for payment; provided that cost Related Payments may be paid directly to contractors or consultants, or, where costs have been financed by way of loans shall be due for payment at the time such loans become redeemable.

Funds obtained on concessionary terms for the Water Transfer component shall, for the purposes of Cost Related Payments, be deemed to be loans at the interest rate and redemption terms applicable to loans of the International Bank for Reconstruction and Development.

3.5 Royalties

Royalties arising from the Lesotho Highlands Water Project, including advance royalty payments through the Southern Africa Customs Union, accrue to the Government of Lesotho and are therefore not reflected in the financial statements of the Authority.

3.6 Other Income

Other Income arising, such as interest earned, exchange gains and miscellaneous income, is credited to the cost of the activity to which it relates.

4. FIXED ASSETS

Capital Work in Progress

	Balance 1/4/89 M'000	Increases During Year M'000	Balance 31/3/89 M'000
Hydropower			
Administration	1 616	3 607	5 223
Engineering	5 224	13 985	19 209
Environmental.....	10	0	10
Financing.....	(48)	(227)	(275)
	<u>6 802</u>	<u>17 365</u>	<u>24 167</u>
Water Transfer			
Administration	7 984	18 174	26 158
Construction.....	8 199	47 597	55 796
Engineering	15 838	31 470	47 308
Environmental.....	262	335	597
Financing.....	1 457	4 539	5 996
	<u>33 740</u>	<u>102 115</u>	<u>135 855</u>
Total Fixed Assets	<u>40 542</u>	<u>119 480</u>	<u>160 022</u>

	Hydro power M'000	Water Transfer M'000	Total M'000
5. CAPITAL FUND			
Balance at 1 April 1988.....	6 802	11 798	18 600
Transfer from Government of Lesotho, representing Cost Related Payments on Hydropower	17 365	0	17 365
Cost Related Payments on Water Transfer paid directly by the Government of the Republic of South Africa	0	21 013	21 013
Balance at 31 March 1989	<u>24 167</u>	<u>32 811</u>	<u>56 978</u>

Notes to the Financial Statements for the Year Ended 31 March 1989 (Continued)

6. GOVERNMENT OF LESOTHO FUND

	M'000
Balance at 1 April 1988	13 681
Amounts provided by the Government of Lesotho	27 837
<i>Less:</i> Cost Related Payments on Hydropower transferred to Capital Fund	(17 365)
<i>Add:</i> Net Financing Income Accrued	3 157
Balance at 31 March 1989	<u>27 310</u>

The total amount provided by the Government of Lesotho during the period is analysed by original source as follows:

ANALYSIS OF FUNDS PROVIDED BY THE GOVERNMENT OF LESOTHO

	Balance 1 April 1988 M'000	Increases During Year M'000	Balance at 31 March 1989 M'000
European Development Fund	7 161	7 068	14 229
European Investment Bank	1 418	4 743	6 161
Government of France	1 177	1 853	3 030
Government of Lesotho	3 376	1 218	4 594
International Development Association	4 057	11 408	15 465
Overseas Development Administration	593	1 042	1 635
United Nations Development Programme	803	430	1 233
United States Agency for International Development ...	199	0	199
Centre for International Migration	0	75	75
	<u>18 784</u>	<u>27 837</u>	<u>46 621</u>

The terms and conditions on which these amounts have been provided have not yet been determined.

7. LONG-TERM LIABILITIES

Development Bank of Southern Africa

In Respect of	Loan Amount M'000	Balance at 31/3/1988 M'000	Balance at 31/3/1989 M'000
Southern Access Road	18 859	550	18 859
Northern Access Road Northern Portion	106 009	—	18 051
Katse Bridge	3 122	—	2 092
		<u>550</u>	<u>39 002</u>

All loans are repayable over 20 years and bear interest at a rate of 8% per annum. They will be serviced by Cost Related Payments from, and are guaranteed by, the Government of the Republic of South Africa.

8. CAPITAL COMMITMENTS

Capital expenditure contracted for at 31 March 1989 amounted to M 181 139 000. Finance has been secured as at 31 March 1989 to meet all of these commitments.

9. TAXATION

In accordance with section 29(1) of the Lesotho Highlands Development Authority Order (No 23) of 1986, the Authority is not liable to pay any sales tax payable under the Sales Tax Act 1982 or tax on any income or profits from any source payable under the Income Tax Act 1981.

10. INCOME STATEMENT

An Income Statement has not been prepared as all expenditure and related income for the period has been charged to Capital Work-in-progress.



Statement of changes in Financial position for the year ended 31 March 1989

SOURCES OF FUNDS	M'000
Cost Related Payments — Government of Lesotho.....	17 376
— Government of Republic of South Africa.....	21 013
Government of Lesotho Fund.....	13 618
Increase in Long Term Liabilities.....	38 452
Increase in Net Current Liabilities.....	29 021
	<u>119 480</u>
USES OF FUNDS	
Expenditure on Capital Work-in-Progress	
Administration.....	21 781
Construction.....	47 597
Engineering.....	45 455
Environment.....	335
Financing.....	4 312
	<u>119 480</u>
INCREASE IN NET CURRENT LIABILITIES	
Decrease in Advance Payments.....	4 364
(Increase in Other Receivables).....	(71)
Decrease in Cash on Deposit and at Bank.....	255
Increase in Contract Payables and Accruals.....	20 170
Increase in Retentions.....	2 266
(Decrease) in Other Payables and Accruals.....	(331)
Increase in Short Term Loans.....	2 368
	<u>29 021</u>

