DEPARTMENT OF STATE
AGENCY FOR INTERNATIONAL DEVELOPMENT
Washington, D.C. 20523

CAPITAL ASSISTANCE PAPER

Proposal and Recommendations
For the Review of the
Development Loan Committee

BOTSWANA - SHASHI PROJECT

AID-DLC/P-915 REVISED

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DEPARTMENT OF STATE
AGENCY FOR INTERNATIONAL DEVELOPMENT
Washington, D.C. 20523

AID-DLC/P-915 REVISED

June 18, 1970

MEMORANDUM FOR THE DEVELOPMENT LOAN COMMITTEE

SUBJECT: Botswana - Shashi Project

Attached are the recommendations for authorization of a loan in an amount not to exceed $6,500,000 to the Government of Botswana for relending to the Botswana Water Utilities Corporation (WUC) to finance foreign exchange and local currency costs for procurement of water pipe, valves, fittings and related commodities and services, to be utilized in the construction of the water transmission line portion of an infrastructure project in support of a mining operation in Botswana.

This paper has been classified LIMITED OFFICIAL USE at the request of the Bureau for Africa.

This loan proposal was discussed by the Development Loan Staff Committee at a meeting on Wednesday, June 17, 1970.

Rachel C. Rogers
Secretary
Development Loan Committee

Attachments:
- Summary and Recommendations
- Project Analysis
- ANNEXES I-X

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BOTSWANA - SHASHI PROJECT

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SUMMARY AND RECOMMENDATION

BOTSWANA - SHASHI PROJECT

1. Borrower: Government of Botswana (GOB)

2. Amount: $6,500,000

3. Loan: A. Maturity: Forty (40) years, including a ten-year grace period.

   B. Interest: 2% per annum during the grace period, 3% per annum thereafter.

   C. Repayment: Interest and principal payable in U.S. dollars.

4. Financing Plan: (millions of dollars)

IBRD	24.7
Canadian International Development Agency	16.9
Denmark	2.7
A.I.D.	6.5
GOB (from U.K. grant)	.8
Total	51.6

5. Project Description: The project consists of the construction of infrastructure facilities to support a proposed copper/nickel mining development in northeast Botswana. The infrastructure will consist of power, water, and transport facilities, together with a mining township and medical facilities.

6. Purpose of the Loan: To finance the U.S. and local costs of a contract to supply pipe (including valves, fittings and specials) of a water transmission line. Because of its limited budget position, the GOB is not making a contribution to the A.I.D. segment of the project.

7. Project Justification: The project is a prerequisite to the exploitation of the known mineral resources which will provide an important source of general income and government revenue contributing towards Botswana's development.

8. Export-Import Bank Clearance: Received April 2, 1970

9. Country Team Views: The Country Team strongly supports this project.

10. Conditions: 1) Establishment of a Water Authority or some similar governmental body in which responsibility and control for the Shashi Project water system will be vested. 2) Prior approval by A.I.D. of the terms of the GOB sub-loan of the A.I.D. loan to the governmental body responsible for the Shashi water system.

11. Recommendation: Authorization of a loan to the Government of Botswana of $6,500,000 in accordance with the draft authorization included as Annex X.

CAPITAL ASSISTANCE COMMITTEE MEMBERS

Capital Development Officer:	AFR/CDF: Peter J. Bloom
Counsel:	GC/AFR : Charles Gladson
Engineer:	AFR/CDF: Charles Thompson
Desk Officer:	AFR/ESA: Frank Scordato

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BOTSWANA - SHASHI PROJECT

I. INTRODUCTION

A. Description. The Shashi project consists of the construction of infrastructure facilities to support a copper/nickel mining development in northeast Botswana. The infrastructure will consist of power, water and transportation facilities together with a mining township and medical facilities. A.I.D. proposes to finance as a separate component of the project the supply of pipe and valves for the water transmission line which will run about 50 miles from a dam to be built at Shashi to the mining operation and township at Pikwe. (See MAP, Annex III, Figure 1.)

B. Background. Botswana is an arid landlocked country in southern Africa with a population of about 630,000 and an area of some 232,000 square miles. It is bounded by Rhodesia, Zambia, South Africa and South West Africa. The economy is based on cattle raising and subsistence agriculture. Industry is virtually non-existent apart from an abbatoir and meat canning factory in the south. The principal export is beef and its by-products which account for over 90% of the total. In 1966, the G.N.P. was estimated at $55 million and per capita income at $95.

Bamangwato Concessions Ltd. (BCL, a mineral exploration company which is to become the mining company) commenced a mining exploration operation in 1960 in the Selebi-Pikwe and Matsitama areas of northeast Botswana. Copper/nickel deposits of about 28 million tons were subsequently proven in the Selebi-Pikwe area with a further probable reserve of about 12 million tons. Reserves of about 8 million tons were proven in the Matsitama area.

In 1967 the United Nations Development Program (Special Fund) granted the Government of Botswana (GOB) $357,000 (later increased to $361,800) to carry out a feasibility study of power, water and transport facilities needed to support the development of the copper/nickel mining project. The IBRD (hereinafter called the Bank), acting as the executing agent, engaged the British firm of Sir Alexander Gibb and Partners (Gibb) as consultant to undertake the required study.

The consultant's report was distributed in January 1969 and a supplementary report, taking into consideration a later decision by BCL to refine the copper/nickel matte outside Botswana and to defer development of the Matsitama deposits, was distributed in July, 1969. The town planning report for Pikwe township, which was financed by the United Kingdom, Ministry of Overseas Development and also prepared by Gibb, was distributed in January, 1969. A report on the health aspects of the project was prepared by the World Health Organization (WHO).

The GOB asked the Bank to assist in financing the infrastructure project and to take the leading role in contacting other possible donors in order to obtain full financing for the project.

In order to meet BCL's timetable to commence mining operations in February, 1973, it was necessary to commence engineering design and construction of essential preliminary works prior to final arrangements on financing the overall project in order to ensure that the necessary power, water and transport facilities would be available by that date. Accordingly, IDA and the GOB signed an IDA credit in December, 1969 in the amount of $2.5 million to cover 100% of the cost of these services and works.

A.I.D. first became involved in this project in December, 1966 when a delegation from the GOB requested A.I.D. to finance a pre-investment survey for the Shashi Project. At that time A.I.D. advised the GOB that legislative restraints prevented A.I.D. from fully financing the project, but that A.I.D. could share in the financing with other donors. As indicated above, this was ultimately undertaken by the UNDP without A.I.D. participation.

At a meeting between Seretse Khama, President of Botswana and the Secretary of State on April 2, 1969, the Shashi Project was once again discussed. Khama was advised that the U.S. was interested in participating in the financing of the project and upon being approached by the Bank, would consider how U.S. assistance could be provided. The U.S. again expressed an interest in participating in this project during an April, 1969 meeting between the A.I.D. Deputy Assistant Administrator and the GOB's Permanent Secretary, Ministry of Development Planning.

During the latter part of 1969, A.I.D. had a number of discussions with the Bank on possible approaches for A.I.D. participation in the project. A.I.D. reviewed the Gibb feasibility study and concluded that it could best consider financing the water transmission line, a type of project similar to others that A.I.D. had financed in Africa. The Bank was advised accordingly and in February, 1970, a delegation from the GOB met with A.I.D. to discuss the possibility of A.I.D. financing the water transmission line. On March 17, 1970, the GOB made formal application for A.I.D. assistance on this project.

C. Borrower. The Borrower is the GOB. The GOB is severely limited in staff and expertise to administer a multipurpose project of this nature. In recognition of this situation the GOB will establish a management unit to administer the construction of this infrastructure project. Steps are now being taken to recruit suitable staff for the management unit with the assistance of a management selection agency. The accounting and junior staff requirements will be met by means of secondment of staff from government offices. The unit will operate as an independent unit under the Ministry of Development Planning with liaison to the GOB's governmental structure through a Project Coordinating Officer. This person is an ex-GOB official who has been engaged on the project since the commencement of the feasibility study and has been appointed by the Bank on contract and loaned to the GOB. He will be attached to the Ministry of Development Planning.

Concurrently with the formation of the management unit the GOB plans to establish national power and water authorities which will be designated respectively the Botswana Power Corporation (BPC) and the Water Utilities Corporation (WUC). The BPC and WUC will be responsible initially for the operation of the Southern Botswana power and water facilities only (Gaberone and Lobatse). The power and water facilities included in the infrastructure project will be handed over to these authorities for operation after commissioning. The GOB has asked for Canadian Technical Assistance to help with the formation and organization of the two authorities and a program of training for operating staff.

As and when completed other aspects of the infrastructure project (township, hospital, health center, road and rail facilities) will be handed over to the appropriate GOB Ministry. On completion of the whole project, the management unit will be dissolved.

D. Relationship of the Project to A.I.D.'s Objectives in Botswana. The objectives of our aid program to Botswana are contained in the Secretary of State's policy statement of March 26, 1970 concerning "U.S. and Africa in the 1970's." In support of our general stand for peaceful and evolutionary advance toward the goals of racial equality and self-determination in Africa and to help free the smaller independent states south of the Zambesi from the predominant influence of minority-dominated states adjoining and surrounding them, the U.S. will seek, in cooperation with other donors, to provide alternative sources of assistance to these states toward their development. The proposed project, by exploiting the country's known major mineral resources and providing an important source of general income and government revenue, will contribute significantly towards Botswana's development and self-sufficiency. In its design, emphasis has been given to the use of local sources of power as well as other features of self-reliance vis-a-vis South Africa.

Botswana is part of the South African customs and monetary area; it has no central bank and its banks are administered from South Africa. These arrangements and the country's geographical position link it closely to developments in South Africa. While accepting the economic ties as to a large extent unavoidable, the GOB is anxious to reduce its dependence on South Africa wherever possible. It has been engaged in negotiations with South Africa with a view to improving the country's position under the Customs Agreement and is keeping the monetary arrangements under review.

The project is particularly consistent with our general strategy in that the U.S. is participating on a multilateral basis in its financing as one of several donors, with the Bank taking the lead in providing project financing and coordination.

E. Export-Import Bank Clearance. The Export-Import Bank concluded on April 2, 1970 that the project was more appropriate for A.I.D. financing.

II. TECHNICAL ANALYSIS

A. Provision for Design, Procurement and Construction. The detailed design, plans, specifications and contract documents for the water transmission line (including valves, fittings and specials) will be prepared by Gibb, the consulting firm which is also handling the design and supervision of construction of all other features of the project. American Water Works Association specifications will be used throughout.

It is anticipated that reinforced concrete cylinder pipe (prestressed) will be supplied by a U.S. firm which will set up a plant in Botswana and manufacture the pipe on the project site using U.S. steel and cement and local aggregate. However, bids will also be invited from U.S. suppliers for cast iron, ductile iron, steel and asbestos cement as alternate materials to determine the lowest price for the pipe. Firms will have to prequalify to be eligible to bid and a prequalification notice has been published.

Inspection of the pipe, if reinforced concrete, will be performed (as manufactured) by Gibb in Botswana. If a proposal to supply pipe made from one of the alternate materials is selected, inspection will be made at the nominated U.S. manufacturing facility by a duly authorized representative of the Gibb firm.

The contract for the supply of the pipe will be a fixed unit price contract. The schedule calls for issuance of bids in mid-July, 1970, a contract to be awarded in September, and full delivery to be completed by June, 1972.

Laying of the pipeline will be accomplished under a separate contract from the pipe procurement. Financing of the installation contract will be from proceeds of the Bank loan and inspection and supervision of construction will be by Gibb.

See Annex III for additional technical details of the complete infrastructure project.

B. Technical Soundness. The preliminary plans for the project as prepared by Gibb have been reviewed and are satisfactory. The cost estimate is as follows:

Estimated Project Costs
(millions of dollars)

	Foreign	Local	Total
Power Station and Transmission	13.84	1.55	15.39
Water Supply	8.93	2.90	11.83
Transmission line (with valves and fittings)	4.90	.90	5.80
Installation of transmission line and pumping station	.35	.89	1.24
Other	3.68	1.11	4.79
Transportation	2.06	0.77	2.83
Township and Hospital	8.06	1.89	9.95
Contingencies	3.98	1.04	5.02
Subtotal	36.87	8.15	45.02
Administration and Training	0.10	0.60	0.70
Engineering (including $1.2 million refinanced from IDA credit)	3.32	0.41	3.73
Total Construction Cost	40.29	9.16	49.45
Interest during Construction	2.21	-	2.21
GRAND TOTAL	42.50	9.16	51.66

The estimate includes provision for the cost of salaries, wages and administration of the project during the construction stage, for the operation of the Pikwe township services during construction, for staff training and for the operation of the power and water facilities for the six month period immediately preceding commissioning during which the proposed statutory authorities would be building up their staffs. (See Annex IV for a more detailed cost estimate.)

The Gibb report specifies the following lengths of pipe for the trunk main:

Diameter	Material	Length
24"	Concrete cylinder pipe	10.8 miles
27"	Asbestos cement	11.9 miles
31"	Asbestos cement	27.0 miles

Since the AID-financed pipeline will be supplied by a U.S. contractor and 27" and 31" pipes are non-standard in the U.S., these two sizes will be replaced by 30" pipe. This substitution is acceptable since the head loss in the equivalent length of 30" pipe is slightly less than combination of the 27" and 31". The estimated cost of the pipeline, valves, fittings and specials is $5.8 million. The foregoing cost estimate is based on preliminary cost estimates of several potential suppliers. This estimate is considered reasonable as compared with bids received on a previous A.I.D.-financed project of a similar nature. Allowing a 12% contingency factor, a loan of $6.5 million will be required.

After a review of the Gibb reports and of an appraisal report and analysis by the Bank, it has been determined that the project is technically feasible, that a reasonable firm cost estimate is available and that the project meets the technical requirements of the Foreign Assistance Act of 1961, as amended.

III. ECONOMIC ANALYSIS

The infrastructure facilities to be financed under this project are essential to support the copper/nickel mining development at Selebi-Pikwe. At present there is no mining industry nor any form of industrial activity in the area to be developed and no existing infrastructure. The justification of the infrastructure project, therefore, is inextricably linked to the mining project and the benefits it is expected to bring to the Botswana economy. The water-transmission line to be financed by A.I.D. is an integral part of the whole infrastructure project. It is not practical to make an independent economic study of the pipeline, for its economic feasibility is dependent on the feasibility of the project as a whole.

A. Mining Project

1. Description. The mining operation will be conducted by BCL which is presently an exploration company holding prospecting rights in certain areas of Botswana. The GOB and BCL have agreed that BCL will become a mining company and receive a lease to develop the Selebi-Pikwe ore bodies in return for which it will give 15% of its shares to the GOB without other charge. There is a significant U.S. interest in BCL through the majority shareholding of Botswana Roan Selection Trust, Ltd. (BRST), a company virtually all of whose shares are owned directly or indirectly by American Metal Climax, Inc. (AMAX) and individual American shareholders. The additional capital will be obtained through a long-term loan to BCL by a consortium of German banks headed by Kreditanstalt fur Wiederaufbau (KFW) and through a rights offering to the shareholders of BRST, said offering to be fully underwritten by AMAX.

The ore will be treated in a conventional crushing and concentration plant to provide material for smelting. Water for steam generation, ore processing and for the mining township will be delivered from Shashi Dam 50 miles distant through a 24"/30" pipeline.

This same source will also provide water for Shashi siding, Tonota and Francistown. Electricity will be generated at Pikwe mine (60 MW) using coal mined at Morupule located about 60 miles southwest of Pikwe. The coal will be hauled by road for a distance of 7 miles to the nearest railhead (Palapye). From that point it will go on the main rail line to Seruli (40 miles). Thereafter it will be shipped on a new railway spur which will be constructed from Seruli to Pikwe (37 miles). Electricity from the Pikwe power plant will be transmitted by a single circuit 66 KV line to Shashi Dam (for pumping) and on to Francistown.

At Pikwe mine the "flash smelting process" will be used to produce copper/nickel matte with sulphur as a byproduct. A sizeable amount of waste heat steam will be produced from the sulphur recovery process. This will be delivered to the electric generating plant thereby reducing the consumption of coal accordingly. The sulphur will be sold to South Africa and delivered by rail. The matte will be shipped to Port Nickel, La., where it will be further refined in a plant owned by AMAX. The contract was awarded to AMAX following competitive bidding and contains sufficient provisions to ensure an "arms length" relationship between the closely related companies. The refined metals (copper, nickel, and cobalt) will be shipped by boat to the Federal Republic of Germany for sale under a long-term contract. Section III.A.3 below presents details on the marketing arrangements. (Also see Annex V for a flow diagram of the mining operation.)

2. Project Costs. The estimated cost of the mining project is as follows:

	Millions of Dollars
Exploration to end of 1969	$10.5
Exploration after 1969	1.5
Engineering	6.5
Pre-production costs 1970/73	8.4
Mine equipment and development	14.0
Concentration plant	5.6
Smelter plant	17.8
Ancillary services	5.3
Housing	5.5
Cost of capital issues	0.4
Price escalation	9.8
Physical Contingencies	4.2
Total	$89.5
Interest during construction	10.5
TOTAL	$100.0

The above estimate based on BCL's calculations is considered by the Bank to be accurate and reliable. An additional $3.22 million included in the above estimate was added by the Bank to account for estimated higher costs of salaries during construction, added administrative expenses and of the smelter. Costs for the mine and plant were estimated by BCL from detail drawings and independently corroborated by Bechtel Co., a U.S. construction firm. Housing estimates were based on quotations from building contractors in Botswana. A contingency of 10% is allowed for plant, equipment and engineering and 5% is included for price escalation.

3. Sales Market and Prices. BCL will sell two-thirds of its nickel and all of its copper under a 15-year contract to Metallgesellschaft (MG) of Germany. This sales contract will provide security for the KFW loan to BCL. The remainder of the nickel will also be sold in Germany but for BCL's own account. The price basis of the BCL/MG contract is the price at which major producers sell in the Federal Republic of Germany; in the case of nickel this is presently the price of the International Nickel Company of Canada, Ltd., and in the case of copper a price equivalent to that of the London Metal Exchange.

There is some uncertainty concerning the long-term price outlook for nickel and copper. BCL has assumed a long-term price of $1.30 per lb. for nickel (including a 2¢ per lb. freight charge to Germany) which represents the current price. The Bank has used this figure as an upper level for purposes of appraisal. The Bank indicates that while the price should remain at this level through the mid-70s, large new mines are expected to come into production at that time which could lead to a softening of the price. Accordingly the Bank also made an appraisal using a nickel price of $1.30 at the beginning of operations (1973) reducing gradually to $1.10 over five years. It was considered highly improbable that the price could fall below this lower level in the foreseeable future.

In the case of copper prices BCL has used a long-term estimate of $.50 per lb. which is below the present producer level of $.70 per lb. The Bank used the $.50 per lb. as an upper level figure for appraisal purposes, and used a figure of $.43 per lb. as a lower level which is the figure used for other recent Bank group mining projects based on projections of increased copper supply.

The cobalt and sulphur prices used by BCL, which are $2.38 per lb. and $30.80 per short-ton respectively are considered reasonable by the Bank. The former prices are guaranteed in the AMAX refining contract and the latter has been established during BCL's recent negotiations with South African purchasers with whom long-term contracts are now being arranged.

4. Financial Projections. The following table summarizes the financial projections based on BCL's estimate of price and based on alternative lower price figures as estimated by the Bank. These

are shown more fully in Annex VI.

YEAR	1973	1975	1979	1985	1988	1989-99
		(millions of dollars)				
CASE I (lower level metal prices)						
Net Sales	2.48	57.29	54.53	42.62	43.81	43.81
Operating Cost	12.66	43.02	41.27	33.80	33.24	33.24
Taxes & Royalties to GOB 1/	-	2.19	2.25	1.86	4.96	4.96
Dividends	-	9.80	2.52	7.00	5.74	5.60
CASE II (upper level metal prices)						
Net Sales	6.92	61.26	63.27	49.42	50.82	50.82
Operating Cost	13.68	42.78	41.10	33.92	33.39	33.39
Taxes & Royalties to GOB 1/	-	3.10	3.73	6.90	7.76	7.76
Dividends	-	14.00	11.17	9.10	10.22	9.66

Based on the projections summarized above, the Bank calculated the internal rate of return (IRR) of the mining development to range from 11.7% to 17.4%. Costs are treated as capital costs and operating costs including refinery charges and replacements while the benefits are the sales revenues. The upper rate represents a reasonable assumption that shareholders, including the GOB, could expect in trying to determine the financial return that the mining project could yield. The lower price level may be considered more prudent for a lender in order to determine the ability of BCL to adequately service its debt even under less favorable circumstances.

5. Conclusion. The Bank calculated the IRR required to meet all BCL's costs including service of loans but excluding dividends on the equity at 5.3%. Nickel and copper prices that would result at this breakeven point would average 95¢ per lb. and 37¢ per lb. respectively. It is highly unlikely that the price of the metals could fall to these levels. Accordingly, even at an IRR of 11.7%, the mining project is viable and profitable. In view of this and BCL's willingness to proceed plus the considerable benefits to Botswana (to be discussed) the mining project provides adequate justification for the construction of the associated infrastructure.

1/ Includes minimum guarantee of $1.05/per annum under royalty payments.
million

B. Infrastructure Project

1. Description. The infrastructure project will provide power, water, transport, township and medical facilities to support the mining project.

a. Power. A 60 megawatt (MW) power station comprising four 15 MW units will be located at Pikwe. The power station will operate primarily on local coal mined at Morupule which is about 69 miles south of Pikwe, but in addition will be designed to make use of waste heat steam from the mining company's smelter. The Anglo-American Corporation will install the coal mining facilities at its own expense and recover the cost through the price charged for coal. A 66 kilovolt (kv) single circuit transmission line is to be erected from Pikwe to Francistown via Shashi to supply the water pumping load at Shashi and to provide a bulk supply of electricity to Francistown.

b. Water Supply. The water facilities will comprise an earth dam on the Shashi River creating a reservoir just northeast of Shashi from which a pipeline approximately 50 miles long (the A.I.D.-financed segment of the project) will be constructed to deliver 7 million imperial gallons per day (IMgd) to the mining area. A primary water treatment plant will be built at Shashi, together with pumping stations. At Pikwe, there will be a filtration plant for water to be supplied to the town, reservoirs, distribution and other ancillary works. See Annex III, Figure 3 for an estimate of the demand for water.

c. Roads and Railway. Road works comprise a gravel road between Seruli and Pikwe, a distance of about 37 miles, and the upgrading of 46 miles out of the 52-mile Seruli-Francistown road to gravel standard. The railway will comprise a 37-mile spur from the main line at Seruli to Pikwe.

Coal will be transported by road from the coal mine at Morupule to the railroad, a distance of 7 miles. It is presently proposed that this road will be constructed and the transportation equipment provided by the Anglo-American Corporation which will mine the coal. It is possible that after further examination of the proposal, the GOB may conclude that an alternative which is a 7-mile rail spur would be the most economic solution. In this case, the cost of the infrastructure project and the proposed Bank loan would be increased by about $250,000.

d. Township and Medical Facility. Pikwe township will provide housing and other services and social facilities in connection with the mining development and infrastructure project. It is to be located some 2 miles from Pikwe between Pikwe and Selebi and will be designed for an initial population of some 10,000, growing to 25,000 by 1980.

The principal medical facilities comprise a 48-bed township health center at Pikwe and a 350-bed hospital located in Francistown to serve Pikwe and other locations in northeast Botswana.

One of the township service reservoirs, temporary treatment plant, pumping equipment and part of the local township water distribution system all of which are required during the construction stage are being financed by the GOB through a U.K. grant-in-aid. The estimated cost of this work is $830,000.

BCL will provide the financing and be responsible for the erection of housing for the use of its personnel. The cost which is estimated to amount to $5.5 million has not been included in the infrastructure project.

2. Financial Structure of Infrastructure Facilities

a. Power and Water Corporations. The power and water facilities constructed under the infrastructure project will be turned over for operation to a Botswana Power Corporation and a Water Utilities Corporation which the GOB proposes to establish. The Bank intends, during negotiations, to obtain GOB assurance that these corporations will be required to maintain separate accounts for the operation of the project power and water facilities. The Bank will seek covenants in a form of an undertaking which the corporations, after their formation, would give to the GOB for submission to the Bank, and which would include agreements on maintenance of separate accounts, a minimum rate of return, auditing of financial statements, debt limitation, insurance, sound management, cooperation and exchange of information with the Bank. Such procedure will be satisfactory to A.I.D. as assurance of the proper establishment and operation of these corporations.

The Bank has included in its financing provision for administration and training for the proposed Water Utilities Corporation. About 50 positions are contemplated including 7 to 10 at a senior staff level to be headed by an Engineer-Manager. It is proposed that the Engineer-Manager be employed about one year prior to the commissioning of the water system with the additional personnel to be added over the course of the following six months. It is expected that the full staff complement of the WUC will be employed for training purposes during the six months prior to commissioning. The Bank will fund the staff and training activities until the water system goes into operation, and begins to earn revenues. Training is to take place at the existing Gaberone/Lobatse water system which is believed to be adequate for this purpose.

In addition to the above, the Bank will finance management consulting services to assist in the organizational planning and preparation of an accounting system for the WUC. These services will be available prior to the commissioning of the water system and will extend for a period (not yet determined) after the water system goes into operation.

A.I.D. has reviewed the provision being made for the establishment and operation of the proposed WUC and is satisfied that adequate steps are being taken for the operation of the Shashi water system.

The Bank has also provision in its financing for administration and training for the proposed Power Corporation. The GOB has asked the Canadian Government for technical assistance in the selection of staff and the introduction of a training program.

The GOB will re-lend the funds from the Canadian, Bank and A.I.D. loans to the Power and Water Corporations. The Bank projects that the GOB's re-lending terms will be at $8\frac{1}{2}\%$ repayable over 25 years. As a condition of the loan, A.I.D. will require its approval of the re-lending agreement to the WUC.

The principal customer for both power and water will be the mining company, and the Bank will require the GOB and BCL to conclude long-term sales contracts which the GOB will assign to BPC and WUC when these corporations are formed. The Bank intends these to be signed as conditions of effectiveness of the Bank loan. These sales contracts will also be a prerequisite to any disbursement under the A.I.D. loan.

The terms of the power and water sales contracts have not yet been negotiated. It is expected that BCL will commit itself to take and pay for a stated quantity of power and water per year for a period of 25 years which is the approximate life of the mine based on proven and probable reserves. The contract will provide that the price to be paid by BCL for water will be determined on the basis of amortizing actual construction costs and operating costs including a rate of return on gross fixed assets expected to be 9-10%. The sales price will be subject to annual review and adjustment to reflect the actual operating costs of the corporations. A.I.D. has held meetings with the Bank and will continue to consult with the Bank and the GOB on the final establishment of the rate structure of the WUC, but will generally let the Bank take the lead in these negotiations.

b. Township, Health and Hospital Facilities. The GOB and BCL have tentatively agreed that 75% of the "common costs" of the Pikwe Township will be charged to BCL and that BCL will repay these costs to the GOB on an annual annuity basis at 8% interest over 25 years.

This will mean an annual payment to the GOB of about $284,000. The Bank is suggesting that in light of present interest rates, the interest rate should be no less than 10%. This will provide an annual payment of about $335,000. The Bank will require an agreement between BCL and the GOB with respect to payment of common costs of the township satisfactory to it prior to the effectiveness of the Bank loan. The remaining "common costs" of the township, presently estimated at about $1.0 million are allocable to the central government, the township government, the Power and Water Corporations and the persons who will be attracted to the town for private business and employment.

The costs of running the regional hospital to be built at Francistown will be met from the central government budget.

c. Roads and Railways. The amounts to be spent by the GOB for the railway branch from Seruli to Pikwe plus an interest allowance on the GOB's investment will be recovered through a special tariff. The basis for this tariff has not yet been specified but should provide for a 10% return on the GOB's investment.

The costs of maintaining the roads built under the project will exceed the revenues to be received from fuel and vehicle taxes and duties, and the difference will be met from the Central Government budget.

C. Benefit Analysis

As indicated above, the justification of the infrastructure project is tied to the mining project and the benefits it is expected to bring to the Botswana economy.

1. Benefits of Mining Project. The best measure of the economic impact of the mining project on Botswana would be its contribution to the GNP, but it is not possible to estimate this owing to lack of the necessary data on the economy. The broad significance of the mining venture for Botswana may be indicated, however, by a few key figures. It involves an estimated investment over three years equivalent to $89.5 million (excludes $10.5 million spent on exploration up to the end of 1969) which compares with new capital investment in Botswana over the three year period 1964-66 (the latest period for which figures are available) of under $30 million. The GNP in 1966, the latest year for which an estimate is available, was $55 million.

Annual revenues from the sale of the minerals produced, all of which will be exported, based on the lower price levels of copper and nickel are estimated to average $55 million in the first ten full years of operation and about $43 million in the subsequent years. Net revenue is estimated to vary between $9 million and $16 million in the first ten years and $11 million in later years. The GOB direct share over this revenue in the form of royalties, company taxation and dividends averages $3 million during the first ten years and $5.8 million for the subsequent years (See Annex VI.)

Based on estimated higher price levels of copper and nickel, annual revenues are estimated to average about $62 million in the first ten years of operation and about $50 million in subsequent years. The GOB share averages $6.6 million over the first ten years and $9.2 million for the subsequent years. (See Annex VII.)

The significance of these figures may be gauged by comparing them with the Government's present ordinary revenues (excluding the U.K. grant-in-aid), which was some $10 million in 1968/69, against recurrent and development expenditures totalling nearly $22 million. At present Botswana depends heavily on external aid, mainly from the U.K., to balance its budget. The copper/nickel mine, taken in conjunction with a diamond mining development going into operation in early 1971, should progressively reduce the need for external budgetary support.

The mine will provide direct employment for about 2,000 people, including 1,700 Botswana citizens, and the latter figure is likely to rise as Botswana citizens become capable of taking over jobs for which expatriates will be required initially. In addition, the coal mine at Morupule, which will be developed to supply the power station and copper/nickel mine, will provide direct employment for nearly 300 more Botswana citizens. To these figures should be added the employment attributable to the infrastructure and the accompanying expansion of government services, as well as the indirect employment which will arise. According to a GOB estimate, the total number of jobs for Botswana citizens created directly and indirectly by the mining venture plus infrastructure will amount to about 3,500 in 1974, rising to 5,300 by 1980. These figures compare with a total labor force in paid employment of 28,000 in 1968.

The successful establishment of the mining venture will lay the foundation for further development in northeast Botswana. Promising new ore bodies have already been located in the area and the prospects that one or more new mines will be opened in the 1970's will be considerably enhanced once the Selebi-Pikwe operation and associated infrastructure are established. The creation of an integrated public power system and water supply, the improvement of transportation and the availability of coal from Morupule may be expected to encourage additional industrial development in the area, leading to accelerated economic growth and further diversification of the economy.

2. Rate of Return

a) Mining and Infrastructure Projects. The Bank calculated the internal rate of return on the mine plus infrastructure at 9% using its conservative appraisal. (See Annex VIII The internal rate of return based on the mining company's projections of its cost and revenues, which contemplates the higher copper and nickel prices, is 15%. In calculating these rates of return, expenditures on exploration prior to 1970, amounting to $10.5 million has been included in the capital costs of the mine. From an economic point of view, however, this item represents sunk costs which may be legitimately ignored in the calculation. By excluding this cost the rates of return were calculated at 10% and 17% respectively. The Bank concluded that the lower figure was marginally acceptable bearing in mind that the real return to the economy is likely to be higher, since this figure is based on the money cost of imports rather than their social opportunity costs and allows no credit for the multiplier effect of the associated expenditure.

A.I.D. has reviewed the Bank's calculations and analysis and concurs in its conclusion that the project is economically justified. Therefore the project satisfies the provisions of Section 201 (b) 2 of the FAA.

b) Infrastructure Project Alone. The Bank made a separate calculation of the internal rate of return on the infrastructure project alone, treating as benefits the projected direct government revenues in the form of the royalties, taxes and dividends payable to the GOB by the mining company, plus the estimated revenues from the infrastructure facilities, less the increase in government ordinary expenditure attributable to the infrastructure. This showed a return of 9.5% using the Bank's conservative figures on the mining costs and revenues. In addition to the direct revenues from the mining company however, there will be additional benefits to the GOB in the form of extra yield from personal income tax and customs revenues. Allowing for these items, the Bank calculated the internal rate of return on the infrastructure project at nearly 12% which it considered adequate. Based on the higher sales projections, the Bank calculated this rate at nearly 18%.

In calculating the above rates of return on the infrastructure, the Bank indicated that only the development of the power loads attributable to the Selebi-Pikwe mine, Pikwe township, Francistown and Shashi pumping have been taken into account. No allowance has been made for any new industrial loads which might develop in the forseeable future, such as for rock ash and gypsum production in the Shashi area. The emergence of such additional power demands leading to earlier utilization of the full capacity of the power station would result in somewhat higher rates of return than indicated above.

The above analysis still does not take into account the sizable increase in activity associated with the project which through the multiplier effect will have a strong impact on the entire Botswana economy.

IV. FINANCIAL ANALYSIS

A. Financing Plan. The present financing plan for the project is as follows (See Section II. B. for cost estimates).

Financial Plan
(millions of dollars)

Source	Amount
IBRD	24.7
Canadian International Development Agency	16.9
Denmark	2.7
A.I.D.	6.5
GOB (from U.K. grant)	.8
Total	51.6

The A.I.D. Loan will finance the supply of pipe for the water transmission line. A.I.D. will finance 100% of the costs of pipe supply which is in accord with the formula whereby all donors are financing 100% of the segments of the project with which they are associated. It is proposed that A.I.D. approve a loan for $6.5 million to the GOB for 40 years including a ten-year grace period with interest at 2% per annum during the grace period and 3% per annum thereafter. The percentage of local cost financing would depend on the method by which pipe is supplied. If the pipe is manufactured in the U.S. and shipped to Botswana, local costs will be insubstantial. If a U.S. firm sets up a plant in Botswana to manufacture the pipe, the U.S. cost of the contract still will run at least 80% of the total cost. Under the latter procedure, the estimated A.I.D. financing would provide $5.3 million for U.S. costs and $1.2 million for local costs.

The Canadian Loan will finance the power generating and transmission facilities. Its terms are 50 years, including a 10 year grace period, and at no interest. The Canadian Government has already authorized its Loan.

The Danish Loan, which will finance the hospital and health facilities, will be for 25 years, including a seven year grace period, and will also be at no interest.

The GOB will utilize a U.K. grant to finance the cost of essential preliminary works in connection with the township water supplies.

The Bank Loan, which will finance those aspects of the infrastructure project not financed by other donors, will have a term of 25 years, including a three year grace period, will carry a 7% interest charge and capitalize interest during construction.

A condition precedent to disbursement under the A.I.D. loan will be that all financing necessary for the mining and infrastructure is available and that conditions required for disbursement are satisfied.

The Bank will receive a guarantee of its loan to the GOB. MG, which has a sales contract with BCL will guarantee 40% of the Bank's loan. The remaining 60% will be guaranteed by AMAX. Neither Canada, Denmark or A.I.D. will seek a guarantee for their loans and will look to the general revenues of the GOB for repayment.

A Trust Agreement will be negotiated among the Bank, BCL, KFW and the GOB. Under the terms of the Agreement, all the sales revenues to BCL from the mining operation will go into a trust from which payments will be made to: 1) KFW for debt service on its loan to BCL; 2) the GOB township account; 3) GOB tax account; 4) GOB royalty account; 5) the WUC; and 6) the BPC. The residual amount under the trust will then be distributed to BCL. Funds under items 2 through 6 will go to the GOB general revenues to be available for debt service.

There will also be a Master Agreement setting out the rights and obligations of BCL and the GOB vis-a-vis each other. This Agreement is currently being negotiated.

All of the infrastructure loans will be made to the GOB, but the concessionary terms will not be passed on to the benefit of the mining company and others who will be served by the revenue earning phases of the project. As indicated above agreement will be required whereby the GOB will charge conventional loan terms for its re-lending to the proposed Power and Water Corporations. Commercial principles will be followed for the tariffs of these Corporations and the special railway tariff which will recover the government's investment in the branch line to Pikwe. Except for a small amount allocable to the Central Government, the costs of the township will be recovered through local taxes, special annuity payments by BCL, rents, power and water charges, and proceeds from the sale or leasing of land.

B. Waiver of Special Letter of Credit.

It is proposed that use of a Special Letter of Credit (SLC) procedure for financing any local costs be waived and direct dollar purchases of local currency be utilized instead. The GOB budget which is strongly supported by external assistance (primarily U.K.)

does not have available funds to provide payment of local costs. As indicated above, all donors are providing 100% financing. The hardship that would be imposed on the GOB budget by use of a SLC, the administrative effort necessary to establish and monitor such a procedure and the relatively small amount of local currency financing involved warrant waiver of the SLC procedure.

Under M.O. 1457.1 a waiver of A.I.D. commodity financing requirements is permitted when it is not feasible to apply them. In cases where the annual level of expenditures for local costs are anticipated to exceed $500,000, as may be the case on this project, M.O. 1457.1, IV. B. provides that the direct purchase of local currency or provision of dollars to the borrower must be approved by the Administrator. In light of the reasons cited above, it would be infeasible to apply A.I.D. local cost financing procedure and, therefore, a waiver will be required to permit direct purchase of all local currency needed for the A.I.D. financed segment of project.

C. Repayment Prospects

1. Financial Position of the GOB. The Central Government Budget has been characterized by annual deficits on current account and reliance on external aid for development expenditure. Current deficits and development expenditures have been covered primarily by external grants and loans.

Central Government Finances
(Millions of Dollars)

	1963/64	1964/65	1965/66	1966/67	1967/68	1968/69 (estimates)
Current Revenue	4.76	6.16	7.56	8.68	7.98	9.80
Current Expenditure	8.96	10.50	12.74	15.40	17.64	18.06
Current Deficit	(4.20)	(4.34)	(5.18)	(6.72)	(9.66)	(8.26)
Development Expenditure	2.52	6.16	8.40	9.66	5.32	3.70
Total Deficit	(6.72)	(10.50)	(13.58)	(16.38)	(14.98)	(12.04)
Financing of Deficit						
U.K. grants	5.88	7.56	10.64	12.04	12.60	11.20
Other grants		0.14	0.14	0.42	0.98	
Foreign Loans		0.98	1.54	3.08	1.40	1.20
Domestic Loans	0.70	1.40	1.40	0.70		
Drawing on Reserves (+ = drawing)	+0.14	+0.42	-0.14	+0.14		-0.36

While current revenues have approximately doubled over the five years 1963/64 to 1968/69, current expenditures during this period increased at about the same pace and, consequently, the current deficit has widened. Total expenditures in any given year have essentially been governed by the amount of budgetary aid made available by the U.K. Any substantial reduction of the current deficit will be dependent upon the prospective mining developments.

As of December 31, 1968 Botswana's external public debt, including undisbursed amounts, totalled $10.9 million. Debt service payment on this in 1968 was $690,000. Future payments on the existing external public debt are estimated at $618,000 in 1970, $643,000 in 1975 and $477,000 in 1980.

Projections for recurrent revenues and expenditures have been made excluding the effect of the mining operation. Increased revenues would come chiefly from growth in custom revenues, duties on South African liquor, and domestic and export taxes. The GOB has estimated that recurrent outlays arising from development expenditures unrelated to mining projects would increase by $350,000 per year until 1976 and $560,000 per year thereafter. The GOB expects an increase of 4% per year for recurrent expenditures not connected with new development projects. This may be taken as a first assumption (A). A second assumption (B) would project an increase of 7% which appears more realistic in light of past expenditure trends. In the absence of mining projects, on expenditure assumption A, the recurrent deficit would remain fairly constant throughout the 1970's at an average of about $11.2 million. On expenditure assumption B, the deficit would increase steadily from $10.6 million in 1970/71 to $22.4 million in 1980/81. (See Annex IX.)

2. Debt Service. Debt service payments on the existing public debt and under the various loans for the infrastructure project are as follows:

Year	Existing Debt Service	Infrastructure Debt Service	Total
	(millions of dollars)		
1970	.62	-	-
1975	.64	2.35	2.99
1980	.48	2.50	2.98
1985	.47	3.12	3.59
1990	.47	3.12	3.59
1995	.47	3.12	3.59

3. GOB Revenues from Mining Project. Total revenues accruing to the GOB through taxes, royalties and dividends from 1974-1999, the projected life of the mine are estimated at $111 million

based on the lower estimates of copper and nickel prices and $208 million based on the upper level prices. In the former case, the annual revenues average $3 million during the first ten years and $5.8 million in subsequent years. In the latter case, annual revenues average $6.6 million over the first ten years and $9.2 million in subsequent years. (See Annex VII.)

4. Revenues from Infrastructure Project. Estimated yearly revenues from the infrastructure facilities are as follows:

	Millions of Dollars
Botswana Power Corporation	1.95
Water Utilities Corporation	1.35
Township and Water Annuity	.39
Railway Surcharge	.22
Housing Rents	.11
Total	4.02

These payments will continue for at least a 25 year period.

5. Conclusion. Projected revenues from the mining company based on either price level of the metals plus projected revenues from the infrastructure facilities are adequate to cover the debt service incurred under the loans for the infrastructure plus the existing public debt and to provide a substantial increase to the GOB's general revenues. Additional revenues will accrue from the exploitation of diamond resources which is under way. Promising new ore bodies have already been located. Based on these projections, there are reasonable prospects for repayment of the loan.

D. Availability of Other Sources of Financing. The British Government has been providing a substantial amount of assistance to Botswana to finance its development program and part of recurrent expenditures. U.K. grant assistance has amounted to approximately $60 million between 1963 and 1969. (See Section IV. C. 1.) The British Government has announced it will provide up to $12.3 million in budgetary aid and $10.6 million in development aid to Botswana for a three year period beginning April 1, 1970. In 1964 IDA made a credit to the then Bechuanaland Protectorate for $3.6 million for a road project.

This is a multi-donor project with financing being provided by the IBRD, Canada and Denmark as well as the U.S. (See Section IV. A.) Of the $100 million BCL is providing for the mining operation, $5.5 million is included for housing in the township. To the best of A.I.D.'s knowledge, no interest in the project has been forthcoming from other world sources. The Export-Import Bank stated on April 2, 1970 that it had no interest in the project.

V. IMPLEMENTATION

A. Implementation Schedule. The following is a proposed project implementation schedule showing the sequence of pertinent events for the A.I.D. financed portion of the project (water transmission main):

Date	Action
May 1970	Advertisement for prequalification of bidders
June 1970	Loan authorized
July 1970	Draft loan agreement submitted to GOB
July 1970 (45 days for preparation)	Pre-qualifications received by GOB
July 1970	GOB submits pre-qualification data with recommendations for A.I.D. approval
July 1970	A.I.D. approves pre-qualification of firms
July 1970	GOB submits bid package for A.I.D. approval
July 1970	A.I.D. approves bid documents-bid package sent to pre-qualified firms
August 1970	Loan agreement signed
Sept. 1970 (60 days for preparation)	Bids opened by GOB
Sept. 1970	GOB submits analysis and recommendation for award for A.I.D. approval
October 1970	GOB submits request for L/Com
October 1970	A.I.D. approves award
October 1970	Contract signed
October 1970	A.I.D. approves signed contract
October 1970	GOB satisfies conditions precedent
October 1970	L/COM opened and L/Credit issued
Nov. 1970 - March 1971	Contractor ships material and mobilizes plant
March 1971 - June 1972	Contractor manufactures pipe
December 1972	Last disbursement

See Annex III Fig. 4 for the proposed implementation of other aspects of the infrastructure project plus the mining project.

Meetings will be held in June between the participants in the mining venture and the GOB on the time schedule for the project. There may be some delays in the implementation schedule pending the outcome of these negotiations.

B. Contracting Procedures. Competitive bidding, on a unit price basis, will determine the award of a single A.I.D. financed contract for the supply of the pipe, valves, fittings and specials required for the water transmission main. Bidding will be open only to prequalified U.S. suppliers.

VI. OTHER CONSIDERATIONS

A. Impact on the U.S. Economy. This loan does not conflict with any U.S. business interests. It will benefit the U.S. economy through the restriction of the major share of financing to the procurement of goods and services of U.S. source and origin. The contract financed under this loan will be with a U.S. firm.

B. Effect on U.S. Balance of Payments. The loan will have a minimum adverse effect on the U.S. balance of payments as at least 80% of the loan will be used to finance the cost of U.S. goods and services which would not be procured from the U.S. in the absence of A.I.D. financing.

C. Effect on Private Enterprise. The loan funds finance a contract with a private U.S. firm.

D. Investment Guaranty. AMAX has requested political risk insurance from the A.I.D. Office of Private Resources for its equity interest in BCL and the interest of eligible portfolio shareholders. This request is currently under consideration.

E. Ecology. The Bank reports that the GOB has recognized the need to control as much as possible the unfavorable consequences of the type of rapid industrialization that is to take place and has already taken steps to minimize them. Consideration has been given to the location of the town relative to the smelter and power station. The township is being designed to minimize the dangers of overcrowding and the government intends to take measures preventing the conditions leading to the growth of slum conditions; particular attention is being paid to sanitation and sewerage. Adequate recreational areas in the form of open spaces and parks are planned.

The dam which is to be constructed at Shashi will create a lake which is to be used as a recreational area. The reservoir will be fenced in order to prevent pollution.

BCL recognizes the potential hazards from air pollution and intends to adopt a type of stack and build its main stack to a height that will minimize these hazards.

ANNEX I

June 18, 1970

CHECKLIST OF STATUTORY CRITERIA
DEVELOPMENT LOAN FUND

Many of the questions require only yes or no answers. Others, however, must be answered more fully. In those cases, a specific reference to explicit discussion of the matter in the loan paper will suffice. But where the loan paper does not deal explicitly with a matter that clearly requires more than a yes or no response, sufficient response must be made to indicate that the matter has been appropriately considered.

The following abbreviations are used in the checklist:

FAA - Foreign Assistance Act of 1961, as amended, incorporating amendments effected by the Foreign Assistance Act of 1968.

App. - Foreign Assistance and Related Agencies Appropriations Act, 1969.

Space for answers is provided in the margin to the right of each question. This form must be made a part of the Capital Assistance Paper.

I. COUNTRY PERFORMANCE

A. Progress Towards Country Goals

1. FAA §§201(b)(5), 201(b)(7), 201(b)(8), 208. Discuss the extent to which the country is:

(a) Making appropriate efforts to increase food production and improve means for food storage and distribution.

Botswana provides extension services for both livestock and agriculture to improve methods of animal husbandry and crop production. GOB has encouraged simple storage methods and marketing cooperatives and through the National Development Bank provides credit to support both livestock and agriculture activity.

(b) Creating a favorable climate for foreign and domestic private enterprise and investment.

The National Development Bank (est 1964) provides loans to, among others, new business ventures. An Industrial Development Act passed in 1968 organizes licenses of manufacturers. The Mines and Miners Act of 1967 was passed to ensure that mineral resources are adequately exploited. *

(c) Increasing the people's role in the developmental process.

Economic development efforts by the GOB reflect its determination to meet its people's aspirations. This project will create numerous jobs for Botswanans.

* The GOB is planning to establish a National Development Corporation which will provide management and capital and attempt to interest investors in specific projects.

BEST AVAILABLE

(d) Allocating expenditures to development rather than to unnecessary military purposes or intervention in other free countries' affairs.	There is no direct expenditure for military purposes. About 8% of the estimated 1969/70 budget is allocated for internal security which is primarily for the police. Estimated development expenditures for 1969/70 are about $\frac{1}{2}$ of recurrent expenditures.
(e) Willing to contribute funds to the project or program.	The GOB is providing funds through a U.K. grant. The GOB budget does not permit a substantial contribution to the project - See Section IV.C.1.
(f) Making economic, social, and political reforms such as tax collection improvements and changes in land tenure arrangement; and making progress toward respect for the rule of law, freedom of expression and of the press, and recognizing the importance of individual freedom, initiative, and private enterprise.	Tribal Lands Act of 1968 passes land from chiefs to Tribal Land Boards providing representation in the allocation procedure. Over the past several years tax reforms have provided for taxing Africans and non-Africans alike and giving a greater allocation of taxes to local authorities. The GOB is strongly opposed to South Africa's racial policies but maintains amicable relations because of its economic ties. The GOB is receptive to outside private investment to assist in the exploitation of its resources.
(g) Responding to the vital economic, political, and social concerns of its people, and demonstrating a clear determination to take effective self-help measures.	The GOB is committed to development and appears to be willing to carry out institutional and racial reforms necessary to achieve this. However, the GOB is heavily dependent on external and (primarily British) on both its development and recurrent budgets.

B. *Relations with the United States*

1. *FAA §620(c). Is the government indebted to any U.S. citizen for goods or services furnished or ordered where: (a) such citizen has exhausted available legal remedies, including arbitration, or (b) the debt is not denied or contested by the government, or (c) the indebtedness arises under such government's, or a predecessor's unconditional guarantee?*	No such indebtedness is known to exist.
2. *FAA §620(d). If the loan is intended for construction or operation of any productive enterprise that will compete with U.S. enterprise, has the country agreed that it will establish appropriate procedures to prevent export to the U.S. of more than 20% of its enterprise's annual production during the life of the loan?*	Not applicable.

3. *<u>FAA §620(e)(1)</u>. Has the country's government, or any agency or subdivision thereof, (a) nationalized or expropriated property owned by U.S. citizens or by any business entity not less than 50% beneficially owned by U.S. citizens, (b) taken steps to repudiate or nullify existing contracts or agreements with such citizens or entity, or (c) imposes or enforced discriminatory taxes or other exactions, or restrictive maintenance or operation conditions? If so, and more than six months has elapsed since such occurrence, identify the document indicating that the government, or appropriate agency or subdivision thereof, has taken appropriate steps to discharge its obligations under international law toward such citizen or entity? If less than six months has elapsed, what steps if any has it taken to discharge its obligations?*	No.
4. *<u>FAA §620(j)</u>. Has the country permitted, or failed to take adequate measures to prevent, the damage or destruction by mob action of U.S. property, and failed to take appropriate measures to prevent a recurrence and to provide adequate compensation for such damage or destruction?*	No.

5. FAA §620(l). Has the government instituted an investment guaranty program under FAA 8221(b)(1) for the specific risks of inconvertibility and expropriation or confiscation?

Yes.

6. FAA §620(o): Fisherman's Protective Act of 1954, as amended, Section 5. Has the country seized, or imposed any penalty or sanction against, any U.S. fishing vessel on account of its fishing activities in international waters? If, as a result of a seizure, the U.S.G. has made reimbursement under the provisions of the Fisherman's Protective Act and such amount has not been paid in full by the seizing country, identify the documentation which describes how the withholding of assistance under the FAA has been or will be accomplished.

Not applicable.

7. FAA §620(q). Has the country been in default, during a period in excess of six months, in payment to the U.S. on any FAA loan?

No.

8. FAA §620(t). Have diplomatic relations between the country and the U.S. been severed? If so, have they been renewed?

No break in relations with the U.S.

9. App. §106. Describe any attempt made by the country to create distinction because of race or religion in granting personal or commercial access or other rights otherwise available to U.S. citizens generally.

None.

C. Relations with Other Nations and the U.N.

1. FAA §620(i). Has the country been officially represented at any international conference when that representation included planning activities involving insurrection or subversion directed against the U.S. or countries receiving U.S. assistance?

No, as far as known.

2. FAA §§620(a), 620(n); App. §§107(a), 107(b), 116. Has the country sold, furnished, or permitted ships or aircraft under its registry to carry to Cuba or North Viet-Nam items of economic, military, or other assistance?

No, as far as known.

3. FAA §620(u); App. §114. What is the status of the country's U.N. dues, assessments, or other obligations? Does the loan agreement bar any use of funds to pay U.N. assessments, dues, or arrearages?

The Loan Agreement will restrict the use of loan funds to the project. Botswana is current on U.N. dues and assessments.

D. Military Situation

1. FAA §620(i). Has the country engaged in or prepared for aggressive military efforts directed against the U.S. or countries receiving U.S. assistance?

No, as far as known.

2. *<u>FAA §620(s)</u>. What is (a) the percentage of the country's budget devoted to military purposes, and (b) the amount of the country's foreign exchange resources used to acquire military equipment? Is the country diverting U.S. development assistance or P.L. 480 sales to military expenditures? Is the country diverting its own resources to unnecessary military expenditures? (Findings on these questions are to be made for each country at least once each fiscal year and, in addition, as often as may be required by a material change in relevant circumstances.)*	There is no direct expenditure for military purposes. About 8% of the 1969/70 budget is allocated for internal security which is primarily for the police. To the best of our knowledge no foreign exchange resources have been used for military procurement. The answer to the second and third questions is no.
3. *<u>FAA §620(v); App. §119</u>. Has the country spent money for sophisticated weapons systems purchased since the statutory limitation became effective? If so, identify either (a) the documentation which describes how the withholding of an equivalent amount of A.I.D. assistance has been or will be accomplished, or (b) the Presidential determination that such purchase is important to the national security of the U.S. so that no withholding is necessary.*	No.

II. CONDITION OF THE LOAN

A. General Soundness

-- *Interest and Repayment*

1. *FAA §§201(d), 201(b)(2). Is the rate of interest excessive or unreasonable for the borrower? Are there reasonable prospects for repayment? What is the grace period interest rate; the following period interest rate? Is the rate of interest higher than the country's applicable legal rate of interest?*

The loan terms are low and reasonable. See Section IV.B. for prospects of repayment. The grace period interest rate is 2%, followed by a 3% rate for the duration of the loan. Answer to the last question is no.

-- *Financing*

1. *FAA §201(b)(1). To what extent can financing on reasonable terms be obtained from other free-world sources, including private sources within the U.S.?*

See Section IV.D. Need for lenient terms excludes consideration of private U.S. sources.

-- *Economic and Technical Soundness*

1. *FAA §§201(b)(2), 201(e). The activity's economic and technical soundness to undertake loan; does the loan application, together with information and assurances, indicate that funds will be used in an economically and technically sound manner?*

Satisfied. See Section II.

2. *FAA §611(a)(1). Have engineering, financial, and other plans necessary to carry out assistance, and a reasonably firm estimate of the cost of assistance to the U.S., been completed?*	Yes. See Section II and IV.A.
3. *FAA §611(b); App. §101. If the loan or grant is for a water or related land-resource construction project or program, do plans include a cost-benefit computation? Does the project or program meet the relevant U.S. construction standards and criteria used in determining feasibility?*	Yes to both questions. See Section III.C.
4. *FAA §611(e). If this is a Capital Assistance Project with U.S. financing in excess of $1 million, has the principal A.I.D. officer in the country certified as to the country's capability effectively to maintain and utilize the project?*	Yes. See certification attached as Annex II.

B. *Relation to Achievement of Country and Regional Goals*

-- *Country Goals*

1. *FAA §§207, 281(a). Describe this loan's relation to:*

a. *Institutions needed for a demoractic society and to assure maximum participation on the part of the people in the task of economic development.*	No direct relation. Indirectly Botswanans will participate by working in jobs created by this project under a private enterprise.

b. *Enabling the country to meet its food needs, both from its own resources and through development, with U.S. help, of infrastructure to support increased agricultural productivity.*	No direct relationship. Indirectly the mining development which this infrastructure project supports will provide the GOB with additional resources to use on projectsdirected toward increased agriculture activity, a goal to which the GOB is committed.
c. *Meeting increasing need for trained manpower.*	This project will train manpower for operation of infrastructure facilities. The mining operation will increase the available job supply.
d. *Developing programs to meet public health needs.*	One component of the overall infrastructure project is a hospital at the mining township.
e. *Assisting other important economic, political, and social development activities, including industrial development; growth of free labor unions; cooperatives and voluntary agencies; improvement of transportation and communication systems; capabilities for planning and public administration; urban development; and modernization of existing laws.*	This project will support a large industrial development and provide facilities for additional industry including improved communication, transportation and urban development through the creation of a township.
2. <u>*FAA §201(b)(4)*</u>. *Describe the activity's consistency with and relationship to other development activities, and its contribution to realizable long-range objectives.*	This project will provide budgetary resources to be utilized in expanding educational facilities and agricultural services. It will assist the GOB to become self-sufficient in meeting its recurrent expenditures and provide funds for development activities.

3. <u>FAA §201(b)(9)</u>. *How will the activity to be financed contribute to the achievement of self-sustaining growth?*	This project's economic benefit will greatly assist the country in meeting its recurrent budget expenditures. Over the long run, it will provide facilities to permit further growth.
4. <u>FAA §201(f)</u>. *If this is a project loan, describe how such project will promote the country's economic development, taking into account the country's human and material resource requirements and the relationship between ultimate objectives of the project and overall economic development.*	See Section III.C.
5. <u>FAA §201(b)(3)</u>. *In what ways does the activity give reasonable promise of contributing to development of economic resources, or to increase of productive capacities?*	See Section III.A and C.
6. <u>FAA §281(b)</u>. *How does the program under which assistance is provided recognize the particular needs, desires, and capacities of the country's people; utilize the country's intellectual resources to encourage institutional development; and support civic education and training in skills required for effective participation in political processes.*	For comment, see item II.B.1 of this checklist.

7. *<u>FAA §601(a)</u>. How will this loan encourage the country's efforts to: (a) increase the flow of international trade; (b) foster private initiative and competition; (c) encourage development and use of cooperatives, credit unions, and savings and loan associations; (d) discourage monopolistic practices; (e) improve technical efficiency of industry, agriculture, and commerce; and (f) strengthen free labor unions?*

Goals a, b, and e will be assisted by this project. See Section III. This project is not applicable to the other sub-sections.

8. *<u>FAA §202(a)</u>. Indicate the amount of money under the loan which is: going directly to private enterprise; going to intermediate credit institutions or other borrowers for use by private enterprise; being used to finance imports from private sources; or otherwise being used to finance procurements from private sources.*

All the loan funds will be used to finance procurement from private enterprise. See Section IV. A.

9. *<u>FAA §611(a)(2)</u>. What legislative action is required within the recipient country? What is the basis for a reasonable anticipation that such action will be completed in time to permit orderly accomplishment of purposes of loan?*

Creation of a water authority. This will be a condition of the loan. The GOB has drafted legislation for the creation of a Water Utilities Corporation.

-- *Regional Goals*

1. *FAA §619. If this loan is assisting a newly independent country, to what extent do the circumstances permit such assistance to be furnished through multilateral organizations or plans?*	This is a multilateral project. See Section IV. A.
2. *FAA §209. If this loan is directed at a problem or an opportunity that is regional in nature, how does assistance under this loan encourage a regional development program? What multilateral assistance is presently being furnished to the country?*	First question is not applicable. See Section IV. D.

C. *Relation to U.S. Economy*

-- *Employment, Balance of Payments, Private Enterprise*

1. *FAA §§201(b)(6); 102, Fifth. What are the possible effects of this loan on U.S. economy, with special reference to areas of substantial labor surplus? Describe the extent to which assistance is constituted of U.S. commodities and services, furnished in a manner consistent with improving the U.S. balance of payments position.*	See Sections II., IV A and VI B. The project will not relate to U.S. areas of labor surplus.

2. *FAA §§612(b), 636(h). What steps have been taken to assure that, to the maximum extent possible, foreign currencies owned by the U.S. and local currencies contributed by the country are utilized to meet the cost of contractual and other services, and that U.S. foreign-owned currencies are utilized in lieu of dollars?*

It is deemed inappropriate to attempt to use U.S.-owned foreign currency in lieu of dollars to pay cost of U.S. goods and services. U.S.-owned local currency is not available. The GOB is fully dependent on external sources for its development budget. See Section IV. C.

3. *FAA §601(d); App. §115. If this loan is for a capital project, to what extent has the Agency encouraged utilization of engineering and professional services of U.S. firms and their affiliates? If the loan is to be used to finance direct costs for construction, will any of the contractors be persons other than qualified nationals of the country or qualified citizens of the U.S.? If so, has the required waiver been obtained?*

The contractor on the A.I.D. segment of the project will be U.S. Answer to the second question is no.

4. *FAA §608(a). Provide information on measures to be taken to utilize U.S. Government excess personal property in lieu of the procurement of new items.*

Excess property deemed not suitable for this project in view of the nature and use of the material to be supplied.

5. *FAA §602. What efforts have been made to assist U.S. small business to participate equitably in the furnishing of commodities and services financed by this loan?*

The Agency Advertisement requirements will be complied with.

6. *<u>FAA §621</u>. If the loan provides technical assistance, how is private enterprise on a contract basis utilized? If the facilities of other Federal agencies will be utilized, in what ways are they particularly suitable; are they competitive with private enterprise (if so, explain); and how can they be made available without undue interference with domestic programs?*	Not applicable.
7. *<u>FAA §611(c)</u>. If this loan involves a contract for construction that obligates in excess of $100,000, will it be on a competitive basis? If not, are there factors which make it impracticable?*	Yes.

-- *<u>Procurement</u>*

1. *<u>FAA §602(a)</u>. Will commodity procurement be restricted to U.S. except as otherwise determined by the President?*	Commodity procurement will be either U.S. or from Botswana. See Section II. A.
2. *<u>FAA §604(b)</u>. Will any part of this loan be used for bulk commodity procurement at adjusted prices higher than the market price prevailing in the U.S. at time of purchase?*	No.

3. *FAA §604(e). Will any part of this loan be used for procurement of any agricultural commodity or product thereof outside the U.S. when the domestic price of such commodity is less than parity?*	Not applicable.

D. *Other Requirements*

1. *FAA §201(b). Is the country among the 20 countries in which development loan funds may be used to make loans in this fiscal year?*	This is a multi-donor project and falls within the policy of providing assistance.
2. *App. §112. Does the loan agreement provide, with respect to capital projects, for U.S. approval of contract terms and firms?*	The loan agreement will so provide.
3. *FAA §620(k). If the loan is for construction of a productive enterprise, with respect to which the aggregate value of assistance to be furnished will exceed $100 million, what preparation has been made to obtain the express approval of the Congress?*	Not applicable.

4. *FAA §§620(b), 620(f); App. §109(b). Has the President determined that the country is not dominated or controlled by the international Communist movement? If the country is a Communist country (including, but not limited to, the countries listed in FAA §620(f)) and the loan is intended for economic assistance, have the findings required by FAA §620(f) and App. §109(b) been made and reported to the Congress?*	Botswana is not a communist or communist dominated country.
5. *App. §109(a). Will any military assistance, or items of military or strategic significance, be furnished to a Communist nation?*	No.
6. *FAA §620(h). What steps have been taken to insure that the loan will not be used in a manner which, contrary to the best interest of the United States, promotes or assists the foreign aid projects of the Communist-bloc countries?*	The loan agreement will restrict use of the loan funds to the project.
7. *App. §118. Will any funds be used to finance procurement of iron and steel products for use in Viet-Nam other than as contemplated by §118?*	Not applicable.
8. *FAA §636(i). Will any part of this loan be used in financing non-U.S.-manufactured automobiles? If so, has the required waiver been obtained?*	No.

9. FAA §§620(a)(1) and (2), 620(p); App. §117. Will any assistance be furnished or funds made available to the government of Cuba or the United Arab Republic?	No.
10. FAA §620(q). Will any part of this loan be used to compensate owners for expropriated or nationalized property? If any assistance has been used for such purpose in the past, has appropriate reimbursement been made to the U.S. for sums diverted?	No. The loan agreement will prohibit such use.
11. FAA §201(f). If this is a project loan, what provisions have been made for appropriate participation by the recipient country's private enterprise?	Loan funds will be restricted to procurement from a U.S. source.
12. App. §104. Does the loan agreement bar any use of funds to pay pensions, etc., for persons who are serving or who have served in the recipient country's armed forces?	The loan agreement will restrict the use of funds to this project.

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AID-DLC/P-915

ANNEX II

611 e Certification

The following was received per Mbabane 269:

> "I, Charles P. Campbell, Regional Activities Coordinator - Principal AID Officer of OSARAC, do hereby certify that in my judgment the Government of Botswana shall have the capability and resources to soundly operate and maintain a water transmission line, materials for which are to be procured under the proposed AID loan. This water transmission line is part of a larger infrastructure project which is to be financed by the IBRD and other donors as well as AID. This is AID's first capital development loan in Botswana, therefore, it is not possible to take in account maintenance and utilization of other AID loan financed projects."

June 18, 1970

Technical Details on Infrastructure Project

A. Project Features

The project consists of the construction of infrastructure facilities to support a proposed copper-nickel mining development which is to be located in Northeast Botswana (see map fig. 1). The principal elements of the project are as follows:

1. Steam-electric generating plant located at Pikwe ore mine.
2. Electric transmission lines from Pikwe mine to Shashi Dam and on to Francistown.
3. Shashi Dam, primary water treatment plant and pumping station.
4. Trunk water main from Shashi Dam to Pikwe mine.
5. Shashi siding water main, treatment plant and reservoir.
6. Francistown trunk water main.
7. Water treatment plant and reservoirs at Pikwe mine.
8. Road reconstruction from Seruli to Francistown (using 45 of 53 miles of existing road).
9. Railroad spur from Seruli (on mainline) to Pikwe mine.
10. Road from Seruli to Pikwe mine.
11. Road from Palapye to Morupule coal mine.
12. Mining township.
13. Medical facilities.

A.I.D. participation will be limited to the procurement of pipe, valves, fittings and specials for the water transmission main which is approximately 50 miles in length.

B. Technical Evaluation

1. Steam electric generating plant located at Pikwe mine.

In spite of the fact that the importation of electric power from South Africa is more economical than local steam power generation, the GOB has decided to adopt the latter method for supplying electricity to the project because of the following:

a. For reasons of security in order to avoid power shut offs due to political disorders, etc.

b. In order to develop a natural resource (coal) which will give employment to residents of the Shashi area thereby strengthening the local economy.

Similar reasoning was used in adopting the use of local coal from the mine at Morupule which is less economical than importing it from

Rhodesia. After consideration of several alternatives for electric power generation using local coal, the most advantageous was found to be a power station located at Pikwe owned and operated by a proposed power authority. This station would entail the use of four 15 mw generators and three 15 mw boilers. The turbo-generator sets would be designed for steam conditions at 600 psi and 900° F. They would be integrated with the mine to make use of approximately 13 mw of waste heat steam from the sulphur recovery operation. The estimated cost of the power station is $16.9 million.

2. Electric transmission line.

With the generating station located at Pikwe, the only transmission loads are at Shashi, 50 miles distant, and Francistown, 20 miles further. For this scheme 66 kv is the lowest practicable nominal transmission voltage that can be used. Thus, a single circuit 66 kv line over the whole route was chosen. This should give adequate continuity of supply up to 1980. The estimated cost of the transmission line is $1.4 million.

3. Shashi Dam, primary water treatment plant and pumping station.

After hydrologic studies of seven dam sites it was decided that the Shashi site had the most favorable characteristics and could easily produce the required yield. The drainage area above the Shashi site is 1,390 sq. mi. and the estimated mean annual runoff (using a factor of 4.4%) is 60,000 ac. ft. In order to supply the average daily water demand in 1980 of 7 mgd, a gross storage capacity of 68,000 ac. ft. will be required. The adopted design calls for an earth fill dam having a maximum height at the spillway crest of approximately 33 ft. and a length of 8,770 ft. Present plans include a spillway 1,000 ft. long which will pass a 200 year flood of 120,000 cfs. with a maximum depth on the crest of 12 ft. This is a smaller flood than would normally be adopted; however, bearing in mind the fact that a sizeable length of the embankment has been designed as a breaching section, the spillway capacity is deemed satisfactory.

It appears that adequate quantities of impervious fill, random fill, gravel, riprap, and concrete aggregate are available in the general vicinity of the dam.

Groundwater was considered as a possible source of supply for the mining complex; however, due to the lack of knowledge of the expected safe yields, it was decided unwise to place any reliance on groundwater for the quantities that will be required.

It is proposed to install a pumping station to deliver water to Pikwe (via a 50 mile transmission main) and a primary treatment plant near Shashi Dam which is capable of supplying a maximum seasonal daily demand of 10 mgd. The treatment plant of the same capacity will have facilities for plain sedimentation, mechanical strainers and chlorination. Water will be raised from the river to the treatment plant by a separate pumping station (200 kw). The estimated cost of the dam, pumping stations and treatment plant is $4.3 million. Figure 2 is a schematic chart showing the principal features of the entire water system. Figure 3 is a table showing estimated water requirements.

4. Trunk water main from Shashi Dam to Pikwe.

See Section II. B of the main paper.

5. Shashi siding water main, treatment plant and reservoirs.

The capacity of the Shashi siding water main will be 0.6 mgd. with a treatment plant (potable standards) of the same capacity. The service reservoir will hold 0.6 mg (maximum daily requirement in 1980).

6. Francistown trunk water main.

The capacity of the Francistown main will be 1.1 mgd. This will be sufficient to supply estimated demands up to 1980. The estimated cost of the main is $712,000.

7. Water treatment plant and reservoirs at Pikwe mine.

At Pikwe there will be treatment facilities for potable water having a capacity of 2.9 mgd. plus a separate facility for providing industrial water (non-potable standards) with a capacity of 5.0 mgd. The following service reservoirs will be required to meet peak demands at Pikwe:

Purpose	Capacity
For mineral processing and cooling	5.0 mg
For potable water	2.9 mg
Total	7.1 mg

All of the above figures are based on maximum daily requirements in 1980. The estimated cost of these features is $731,000.

8. Road from Seruli to Francistown.

After the investigation of several alternatives, it was decided to improve 46 of the existing 53 miles of the road from Seruli to Francistown. This would bring the entire section up to all weather standards. The estimated cost is $672,000.

9. Railroad spur from Seruli to Pikwe.

This spur, which is approximately 37 mi. in length, has an alignment (nearly a straight line) between Seruli (the nearest manned station on the Rhodesia Railways main line) and the Pikwe mine. The spur will be built to Rhodesian Railway standards and would be manned and operated by that organization. The estimated cost is $1.2 million.

10. Road from Seruli to Pikwe mine.

This is an existing road which will be improved. The cost of this work is estimated at $742,000.

11. Road from Palapuye to Morupule coal mine.

This road, which is approximately 7 miles in length, will connect the proposed Morupule coal mine with Palapye, the nearest station on the mainline of the Rhodesia Railways. The road will be constructed and paid for by the Anglo American Corporation who will operate the coal mine.

12. Mining Township.

Technical details on the mining township, which is to be financed by the BCL, are not available. However, based on data furnished by the IBRD, it will initially provide facilities for 10,000 persons with a gradual increase to 25,000 by 1980. The estimated cost excluding BCL housing is $6.4 million. BCL will provide an additional $5.5 million for housing for its employees.

13. Medical Facilities.

Provision will be made for a 48 bed medical unit at Pikwe and a 350 bed hospital at Francistown. The estimated cost of these facilities is $2.7 million.

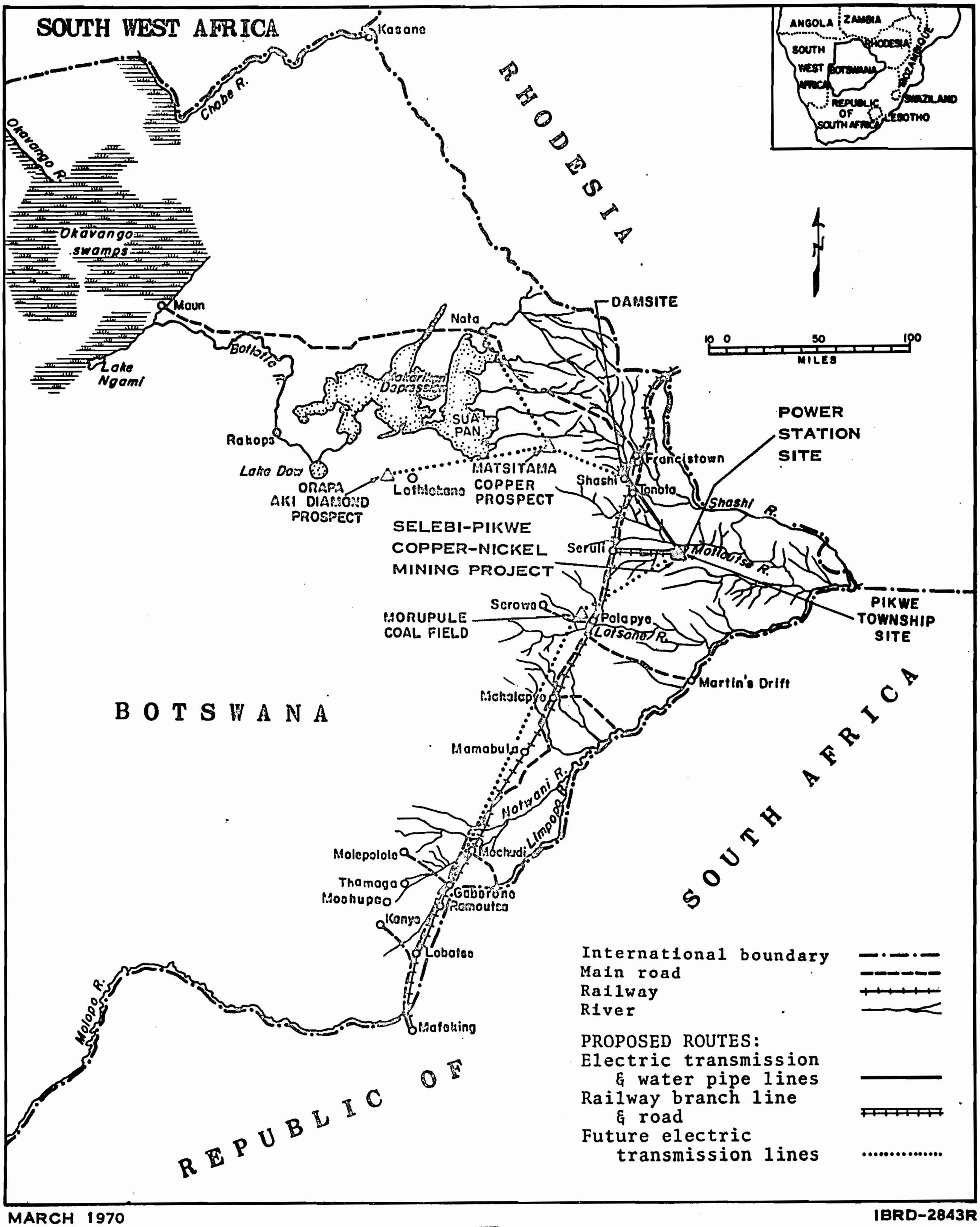
C. Project Implementation

The proposed construction schedule for the infrastructure features of the Shashi complex is as follows:

Item	Construction Period
Electric Power Supply	
Pikwe Power Station	September 1970 - July 1972
Transmission Lines	August 1970 - July 1972
Water Supply	
Shashi Dam	June 1970 - December 1971
Pikwe Trunk Water Main	November 1970 - August 1972
Treatment Plant & Reservoirs	February 1971 - January 1972
Transportation	
Seruli - Francistown Road	August 1970 - July 1971
Seruli - Pikwe Rail Spur	February 1971 - July 1972
Palapuye - Morupule Road	February 1971 - July 1972

A bar graph showing the construction schedule for the entire project, including the mining complex, is given in Figure 4.

BOTSWANA
PROPOSED INFRASTRUCTURE FACILITIES

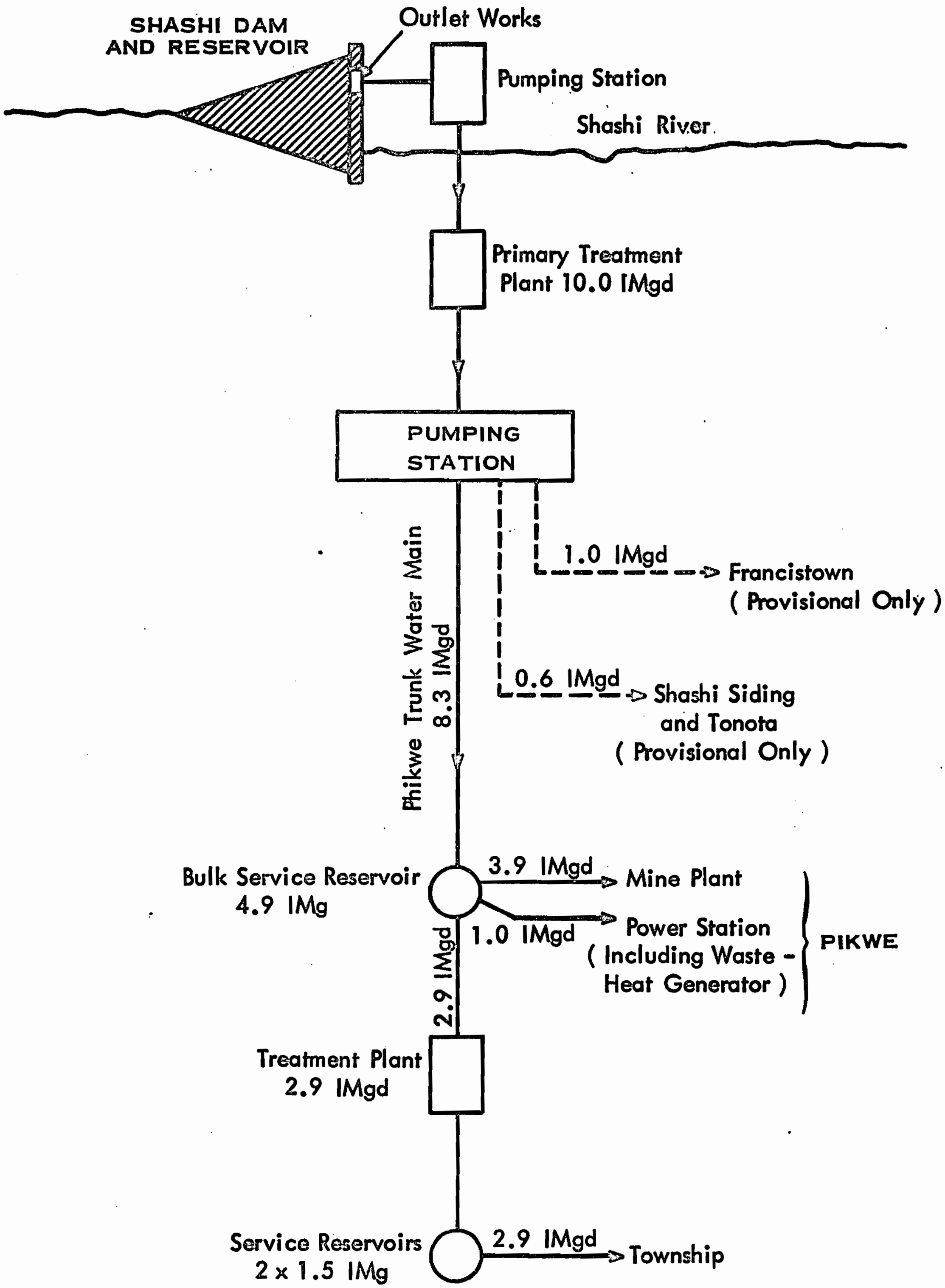


MARCH 1970

IBRD-2843R

AID-DLC/P-915
ANNEX III
Figure 2

BOTSWANA
INFRASTRUSTURE PROJECT WATER SUPPLY SYSTEM



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BOTSWANA

INFRASTRUCTURE PROJECT

ESTIMATED WATER REQUIREMENTS

UNIT : IMgd

	1973		1976		1980	
	Average	Maximum Seasonal	Average	Maximum Seasonal	Average	Maximum Seasonal
Pikwe Town	.31	.62	.84	1.68	1.18	2.36
"unaccounted for"	.08	.15	.21	.42	.30	.59
Total "Town"	.39	.77	1.05	2.1	1.48	2.95
Mining Company	2.75	3.25	3.0	3.54	3.33	3.93
Power Plant and Waste Heat Generator	.77	.81	.84	.93	.94	1.04
Total "Industry"	3.52	4.06	3.84	4.47	4.27	4.97
Pipeline losses	.19	.24	.24	.33	.29	.39
Total Pumped from Shashi to Pikwe	4.10	5.12	5.13	6.9	6.04	8.31
Shashi Siding *	(.44)	(.58)	.45	.6	.47	.64
Francistown *	(.21)	(.63)	.32	.84	.42	1.05
Required from Shashi Works	4.1	5.1	5.90	8.34	6.93	10.00

This table does not include any data about Morupule demand since the Coal Mine would be the only consumer.

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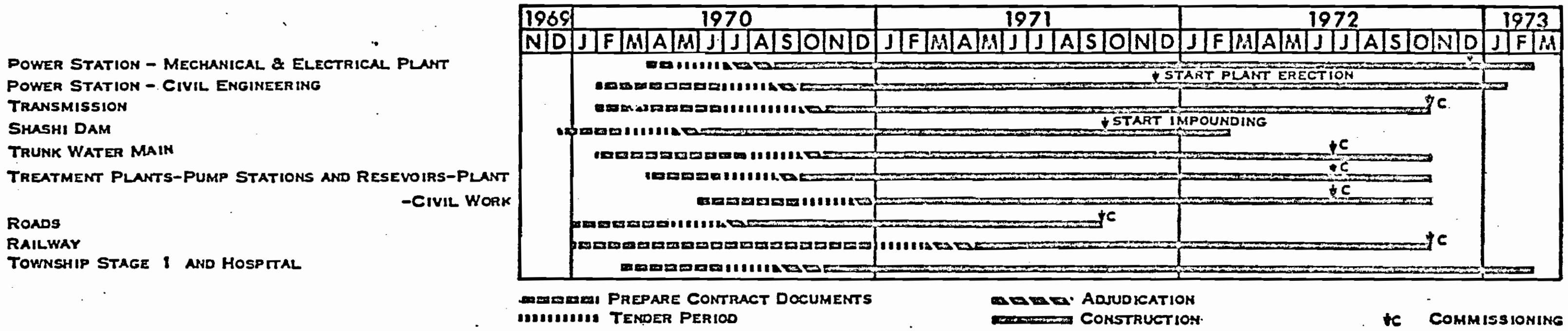
* Provisional only - not to be connected before 1975.

ANNEX III
Figure 4

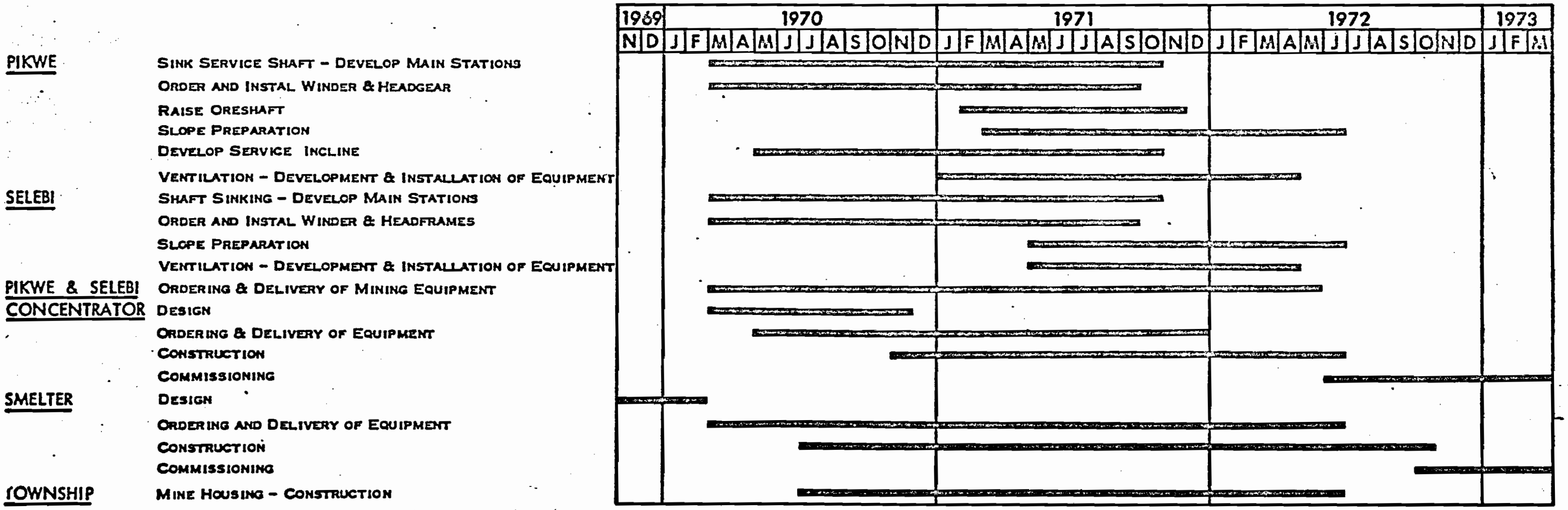
BOTSWANA: SHASHI RIVER INFRASTRUCTURE PROJECT

INFRASTUCTURE AND MINING CONSTRUCTION PROGRAM

INFRASTRUCTURE PROJECT



MINING PROJECT



NOTE. Installation of Engineering services would proceed during the construction period

June 18, 1970

SUMMARY OF COSTS

Description	Foreign	Local	Total
	(thousands of dollars)		
Power Station			
Building & other civil works	1,827	658	2,485
Mechanical equipment	5,964	504	6,468
Electrical equipment	4,886	322	5,208
Station diesel set	84	14	98
Transmission system	1,078	56	1,134
Subtotal	13,839	1,554	15,393
Contingencies at 10%	1,383	154	1,537
Total 1/	15,222	1,708	16,930
Water Supply			
Shashi Dam works	2,975	861	3,836
Pikwe trunk main	5,320	1,894	7,214
Pikwe treatment plant, second service reservoir & pump station	420	70	490
Morupule water supply	210	70	280
Subtotal	8,925	2,895	11,820
Contingencies at about 15%	1,187	506	1,693
Total 2/	10,112	3,401	13,613
Roads and Railway			
Seruli-Pikwe gravel road	560	182	742
Seruli-Francistown (road upgrading)	455	217	672
Seruli-Pikwe railway branch line (irrecoverables only)	861	336	1,197
Palapye-Morupule railway branch line (irrecoverables only)	182	42	224
Subtotal	2,058	777	2,835
Contingencies at 15% (to include road maintenance study)	308	116	424
Total	2,366	893	3,259

1/ Power facilities to be financed by the Canadian International Development Agency.

2/ Cost of trunk main and valves (excluding laying) amounting to US$6.5 million equivalent to be financed by USAID.

Description	Foreign	Local	Total
	(thousands of dollars)		
Township & Hospital			
Township (less BCL housing)	5,138	1,285	6,423
Hospital & Health Center 3/	2,240	462	2,702
Subtotal	7,378	1,747	9,125
Contingencies at 15%	1,106	263	1,369
Temporary water supply and preliminary water distribution works 4/	686	140	826
Total	9,170	2,150	11,320
Project Construction Cost	36,870	8,152	45,022
Administration & Training	98	602	700
Engineering design of water and power facilities to be refinanced from Credit 172-BT	1,148	56	1,204
Additional Engineering costs	2,170	350	2,520
Total	40,286	9,160	49,446
Interest During Construction	2,210	-	2,210
TOTAL	42,496	9,160	51,656

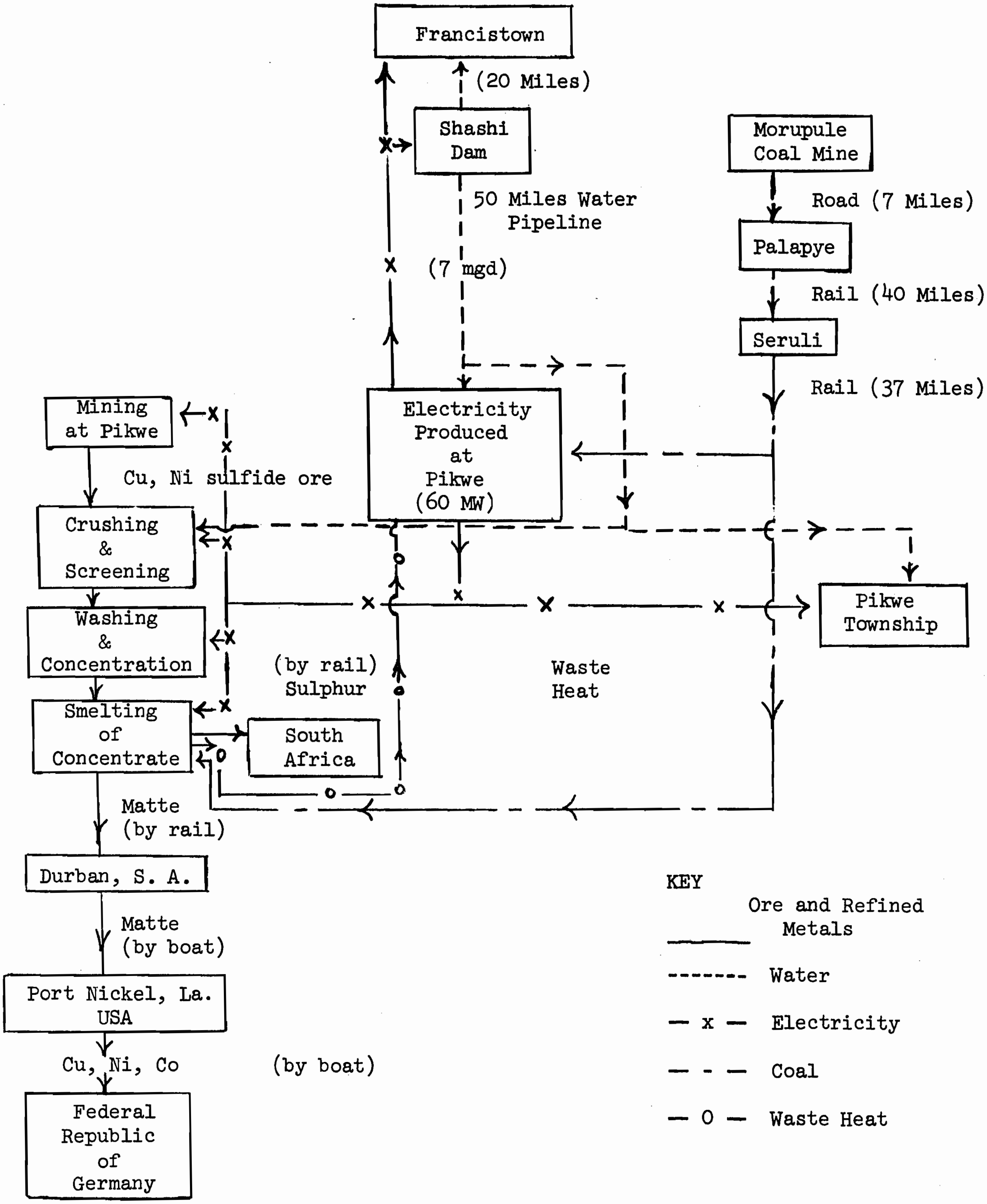
3/ Hospital and health center to a cost not exceeding US$2.7 million equivalent to be financed by the Danish Government or other financing agency.

4/ Temporary water supplies and part of Pikwe township water reticulation estimated to cost US$0.826 million financed by the Government through a UK grant-in-aid.

AID-DLC/P-915 ANNEX V

June 18, 1970

Flow Diagram
Shashi River Mining Complex



CASE I

BOTSWANA

BAMANGWATO CONCESSIONS LTD.

ESTIMATED INCOME STATEMENTS, 1973 - 1999

	1973	1974	1975	1976	1977	1978	1979	1980	1981	1982	1983	1984	1985	1986	1987	1988/99
Production																
Ore Mined (million tons)	0.87	1.93	1.93	1.93	1.93	1.93	1.93	1.93	1.93	1.93	1.93	1.58	1.58	1.58	1.58	1.58
Matte Produced (tons)	18,000	39,600	39,600	39,600	39,600	39,600	41,800	41,800	41,800	41,800	41,800	32,200	32,200	32,200	32,200	32,200
Sales of Ni and Cu	3%	89%	100%													
Ni (thousand lb.)	1,000	27,340	30,737	30,737	30,737	30,737	30,737	30,737	30,737	30,737	30,737	24,259	24,259	24,259	24,259	24,259
Cu (thousand lb.)	1,200	32,760	36,989	36,989	36,989	36,989	40,992	40,992	40,992	40,992	40,992	30,912	30,912	30,912	30,912	30,912
Prices of Ni and Cu																
Ni ($ per lb.)	1.30	1.30	1.25	1.20	1.15	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10
Cu ($ per lb.)	0.43	0.43	0.43	0.43	0.43	0.43	0.43	0.43	0.43	0.43	0.43	0.43	0.43	0.43	0.43	0.43
Income from Sales							(in thousands of Rands)									
Ni	929	25,387	27,444	26,346	25,248	24,150	24,150	24,150	24,150	24,150	24,150	19,061	19,061	19,061	19,061	19,061
Cu	369	10,062	11,361	11,361	11,361	11,361	12,590	12,590	12,590	12,590	12,590	9,494	9,494	9,494	9,494	9,494
S at R22 per sh. ton	500	2,750	2,750	2,750	2,750	2,750	2,750	2,750	2,750	2,750	2,750	2,310	2,310	2,310	2,310	2,310
Co at $2.38 per lb.	16	469	527	527	527	527	558	558	558	558	558	428	428	428	428	428
Total Income	1,814	38,668	42,082	40,984	39,886	38,788	40,048	40,048	40,048	40,048	40,048	31,293	31,293	31,293	31,293	31,293
Less: 3% of Ni and Cu payable MG	39	1,063	1,164	1,131	1,098	1,065	1,102	1,102	1,102	1,102	1,102	857	857	857	857	-
Sales Revenue - Net	1,775	37,605	40,918	39,853	38,788	37,723	38,946	38,946	38,946	38,946	38,946	30,436	30,436	30,436	30,436	31,293
Operating, freight and other expenses	14,890	18,200	18,200	18,200	18,200	18,200	18,293	18,293	18,293	18,293	18,293	17,482	17,482	17,482	17,482	17,482
Refinery Charges	202	5,505	6,198	6,198	6,198	6,198	6,441	6,441	6,441	6,441	6,441	4,996	4,996	4,996	4,996	4,996
Replacements	250	500	500	500	500	500	500	500	500	500	500	400	400	400	400	400
Interest on KFW loan	2,096	4,193	4,193	4,087	3,669	3,249	2,831	2,411	1,993	1,572	1,152	733	315	-	-	-
Interest on short term loans (9%)	-	765	864	864	864	864	864	864	864	864	864	864	864	864	864	864
Interest on shareholders' advances (8%)	400	800	800	800	720	640	560	480	400	320	240	160	80	-	-	-
Inventory Adjustment	(8,800)	1,200	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Total costs	9,038	31,163	30,755	30,649	30,151	29,651	29,489	28,989	28,491	27,990	27,490	24,635	24,137	23,742	23,742	23,742
Net income subject to royalty	(7,263)	6,442	10,163	9,204	8,637	8,072	9,457	9,957	10,455	10,956	11,456	5,801	6,299	6,694	6,694	7,551
Royalty at 7.5%	-	483	762	690	648	605	709	747	784	822	859	435	472	502	502	566
Income tax	-	-	810	851	799	747	875	921	967	1,013	1,059	537	583	702	2,477	2,794
Net income after royalty and tax	(7,263)	5,959	8,591	7,663	7,190	6,720	7,873	8,289	8,704	9,121	9,538	4,829	5,244	5,490	3,715	4,191
Repayment of KFW loan			4,300	4,300	4,300	4,300	4,300	4,300	4,300	4,300	4,300	4,300	4,300			
Repayment of shareholders advances			1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000			
Long term Debt service Coverage																
Net income after royalty and tax		5,959	8,591	7,663	7,190	6,720	7,873	8,289	8,704	9,121	9,538	4,829	5,244			
Add back interest on KFW loan		4,193	4,193	4,087	3,669	3,249	2,831	2,411	1,993	1,572	1,152	733	315			
Total		10,152	12,784	11,750	10,859	9,969	10,704	10,700	10,697	10,693	10,690	5,562	5,559			
Debt service on KFW loan		4,193	4,193	8,387	7,969	7,459	7,131	6,711	6,293	5,872	5,452	5,033	4,615			
Debt service coverage (times)		2.4	3.0	1.4	1.3	1.3	1.5	1.6	1.7	1.8	1.9	1.1	1.2			

1 Rand = $1.40

SOURCE: IBRD Report, June 5, 1970

BOTSWANA

BAMANGWATO CONCESSIONS LTD.

ESTIMATED INCOME STATEMENTS, 1973 - 1999

	1973	1974	1975	1976	1977	1978	1979	1980	1981	1982	1983	1984	1985	1986	1987	1988/99
Production																
Ore Mined (million tons)	1.21	1.93	1.93	1.93	1.93	1.93	1.93	1.93	1.93	1.93	1.93	1.58	1.58	1.58	1.58	1.58
Matte Produced (tons)	24,900	39,600	39,600	39,600	39,600	39,600	41,800	41,800	41,800	41,800	41,800	32,200	32,200	32,200	32,200	32,200
Sales of Ni and Cu	10%	95%	100%													
Ni (thousand lb)	3,333	29,183	30,737	30,737	30,737	30,737	30,737	30,737	30,737	30,737	30,737	24,259	24,259	24,259	24,259	24,259
Cu (thousand lb)	4,000	34,968	36,989	36,989	36,989	36,989	40,992	40,992	40,992	40,992	40,992	30,912	30,912	30,912	30,912	30,912
Prices of Ni and Cu																
Ni ($ / lb)	1.30	1.30	1.30	1.30	1.30	1.30	1.30	1.30	1.30	1.30	1.30	1.30	1.30	1.30	1.30	1.30
Cu ($ / lb)	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50
(in thousands of Rands)																
Income from Sales																
Ni	3,095	27,098	28,541	28,541	28,541	28,541	28,541	28,541	28,541	28,541	28,541	22,526	22,526	22,526	22,526	22,526
Cu	1,429	12,488	13,210	13,210	13,210	13,210	14,640	14,640	14,640	14,640	14,640	11,040	11,040	11,040	11,040	11,040
S at R22 per sh. ton	500	2,750	2,750	2,750	2,750	2,750	2,750	2,750	2,750	2,750	2,750	2,310	2,310	2,310	2,310	2,310
Co at $2.38 per lb	53	501	527	527	527	527	558	558	558	558	558	428	428	428	428	428
Total Income	5,077	42,837	45,028	45,028	45,028	45,028	46,489	46,489	46,489	46,489	46,489	36,304	36,304	36,304	36,304	35,304
Less 3% of Ni & Cu payable MG	136	1,188	1.253	1,253	1,253	1,253	1,295	1,295	1,295	1,295	1,295	1,007	1,007	1,007	1,007	
Sales Revenue - net	4,941	41,649	43,775	43,775	43,775	43,775	45,194	45,194	45,194	45,194	45,194	35,297	35,297	35,297	35,297	35,304
Operating, freight and other expenses	15,000	18,200	18,200	18,200	18,200	18,200	18,293	18,293	18,293	18,293	18,293	17,482	17,482	17,482	17,482	17,482
Refinery charges	672	5,875	6,198	6,198	6,198	6,198	6,441	6,441	6,441	6,441	6,441	4,996	4,996	4,995	4,996	4,996
Replacements	250	500	500	500	500	500	500	500	500	500	500	500	500	500	500	500
Interest on KFW loan	2,096	4,193	4,193	4,087	3,669	3,249	2,831	2,411	1,993	1,572	1,152	733	315	-	-	-
Interest on short term loans (9%)	250	873	873	873	873	873	873	873	873	873	873	873	873	873	873	873
Interest on Shareholders' advances (8%)	300	600	600	600	540	480	420	360	300	240	180	120	60	-	-	-
Inventory Adjustment	(8,800)	1,200	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Total Costs	9,768	31,441	30,564	30,458	29,980	29,500	29,358	28,878	28,400	27,919	27,439	24,704	24,226	23,851	23,851	23,851
Net Income subject to royalty	(4,827)	10,208	13,211	13,317	13,795	14,275	15,836	16,316	16,794	17,275	17,755	10,593	11,071	11,446	11,446	12,453
Royalty at 7.5%		766	991	999	1,035	1,071	1,188	1,224	1,260	1,296	1,332	794	830	858	858	934
Income Tax	-	462	1,222	1,232	1,276	1,320	1,465	1,509	2,410	6,392	6,569	3,920	4,095	4,235	4,235	4.603
Net Income After Royalty & tax	(4,827)	8,980	10,998	11,086	11,484	11,884	13,183	13,583	13,124	9,587	9,854	5,879	6,145	6,353	6,353	6,411
Repayment of KFW loan	-	-	-	4,300	4,300	4,300	4,300	4,300	4,300	4,300	4,300	4,300	4,300	-	-	-
Repayment of Shareholders' Adv.	-	-	-	750	750	750	750	750	750	750	750	750	750	-	-	-
Long-Term Debt Service Coverage																
Net Income after Royalty and Tax		8,980	10,998	11,086	11,484	11,884	13,183	13,583	13,124	9,587	9,854	5,879	6,145			
add back interest on KFW loan		4,193	4,193	4,087	3,669	3,249	2,831	2,411	1,993	1,572	1,152	733	315			
Total		13,173	15,191	15,173	15,153	15,133	16,014	15,994	15,117	11,159	11,005	6,612	6,460			
Debt Service on KFW loan		4,193	4,193	8,387	7,969	7,549	7,131	6,711	6,293	5,872	5,452	5,033	4,615			
Debt Service Coverage (times)		3.1	3.6	1.8	1.9	2.0	2.2	2.4	2.4	1.9	2.0	1.3	1.4	-	-	-

1 Rand = $1.40

SOURCE: IBRD Report, June 5, 1970

CASE I

BOTSWANA

BAMANGWATO CONCESSIONS LTD.

ESTIMATED SOURCES AND APPLICATIONS OF FUNDS - 1973 - 1999

(in thousands of Rands)

	Construction Period	1973	1974	1975	1976	1977	1978	1979	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989/89	TOTAL (Simple)	TOTAL (Discounted at 8%)
SOURCES																				
Net Income after Royalty and Tax		(7,263)	5,959	8,591	7,663	7,190	7,620	7,873	8,289	8,704	9,121	9,538	4,829	5,244	5,490	3,715	4,191	4,191		
Provisions for Replacement		250	500	500	500	500	500	500	500	500	500	500	400	400	400	400	400	400		
Accruals of Royalties		-	483	762	690	648	605	709	747	784	822	859	435	472	502	502	566	566		
Accruals of Taxes		-	-	810	851	799	747	875	921	967	1,013	1,059	537	583	702	2,477	2,794	2,794		
Increase in Trade Credits		1,800																		
Increase in Short Term Loans		8,500	1,200																	
Shareholders' Advances		10,000																		
Equity	29,000																			
KFW Loan	43,000																			
	72,000	13,287	8,142	10,663	9,704	9,137	8,572	9,957	10,457	10,955	11,456	11,956	6,201	6,699	7,094	7,094	7,951	7,951		
APPLICATIONS																				
Capital Cost of Project	68,984																			
Stores and Spare Parts	1,870																			
Increase of Assets																				
Capitalized Interest		2,096																		
Prospecting		320																		
Improvement in housing			500	500	500	500														
Repayment of KFW Loan					4,300	4,300	4,300	4,300	4,300	4,300	4,300	4,300	4,300	4,300	-	-	-			
Expenditure for Replacement			250	500	500	500	500	500	500	500	500	500	500	400	400	400	400	400		
Payment of Royalties		750	750	750	750	750	750	750	750	750	750	750	750	750	750	750	750	750	20,250	8,885
Payment of Taxes					810	851	799	747	875	921	967	1,013	1,059	537	583	702	2,477	2,794	43,075	12,435
Increase (Decrease) in Inventory		8,800	(1,200)																	
Increase (Decrease) in Receivables		740	2,380										(740)							
Dividend Payments		-		7,000	1,800	1,800	1,800	2,500	3,000	3,400	3,900	4,375	-	5,000	5,700	3,200	4,100	4,000	91,575	34,810
Repayment of Shareholders' Advances					1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	-				(15% = 13,736) 1/	(15% = 5,221)
Increase (Decrease) in cash	1,146	581	5,462	1,913	44	(564)	(577)	160	32	84	39	18	(668)	(5,288)	(339)	2,042	224	7		
	72,000	13,287	8,142	10,663	9,704	9,137	8,572	9,957	10,457	10,955	11,456	11,956	6,201	6,699	7,094	7,094	7,951	7,951		

1/ Government share of dividends is 15% which, added to royalty and taxes makes R77,061,000 over the 26-year mine life.

1 Rand = $1.40

SOURCE: IBRD Report, June 5, 1970

CASE II

BOTSWANA

BAMANGWATO CONCESSIONS LTD.

ESTIMATED SOURCES AND APPLICATIONS OF FUNDS - 1973 - 1999

(in thousands of Rands)

SOURCES	Construction Period	1973 (11 months)	1974	1975	1976	1977	1978	1979	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989/99	TOTALS (Simple)	(Discounted at 8%)
Net Income after Royalty and Tax	-	(4,827)	8,980	10,998	11,086	11,484	11,884	13,183	13,583	13,124	9,587	9,854	5,879	6,145	6,353	6,353	5,911	5,911		
Provisions for Replacement	-	250	500	500	500	500	500	500	500	500	500	500	500	500	500	500	500	500		
Accruals of Royalties	-	-	766	991	999	1,035	1,071	1,188	1,224	1,260	1,296	1,332	794	830	858	858	934	934		
Accruals of Taxes	-	-	462	1,222	1,232	1,276	1,320	1,465	1,509	2,410	6,392	6,569	3,920	4,096	4,235	4,235	4,508	4,508		
Increase in Trade Credits	-	1,600	-	-	-	-	-													
Increase in Short Term Loans		9,700	-	-	-	-	-													
Shareholders Advances		7,500	-	-	-	-	-													
Equity	29,000	-																		
KFW Loan	43,000	-																		
	72,000	14,423	10,708	13,711	13,817	14,295	14,775	16,336	16,816	17,294	17,775	18,255	11,093	11,571	11,946	11,946	12,953	12,953		
APPLICATIONS																				
Capital Cost of Project	68,984																			
Stores and Spare parts	1,870																			
Increase of Assets																				
Capitalized interest		2,096	-	-	-															
Prospecting		320	-	-	-															
Improvement in Housing		-	500	500	500	500	-	-	-	-	-	-	-	-	-	-	-	-		
Repayment of KFW Loan		-	-	-	4,300	4,300	4,300	4,300	4,300	4,300	4,300	4,300	4,300	4,300	-	-	-	-		
Expenditure for Replacement		-	250	500	500	500	500	500	500	500	500	500	500	500	500	500	500	500		
Payment of Royalties		750	750	750	750	791	1,071	1,188	1,224	1,260	1,296	1,332	794	830	853	858	934	934	25,710	11,075
Payment of Taxes		-	-	462	1,222	1,232	1,276	1,320	1,465	1,509	2,410	6,392	6,569	3,920	4,096	4,235	4,235	4,508	91,031	28,950
Increase (Decrease) in Inventory		8,800	(1,200)	-	-	-														
Increase (Decrease) in Receivables		2,450	950	160	-	-							(750)							
Dividend Payments		-	3,500	10,000	5,500	5,800	6,775	7,975	8,500	7,775	3,300	4,700	1,930	6,500	6,400	6,350	7,300	5,900	168,205 1/ (15%=25,230)	68,700 (15%=10,305)
Repayment of Shareholders' Advances					750	750	750	750	750	750	750	750	750	750						
Increase (Decrease) in Cash	1,146	7	5,958	1,339	295	422	103	303	77	1,200	5,219	281	(3,000)	(5,229)	92	3	(15)	11		
	72,000	14,423	10,708	13,711	13,817	14,295	14,775	16,336	16,816	17,294	17,775	18,255	11,093	11,571	11,946	11,946	12,953	12,953		

1/ Government share of dividends is 15% which, added to royalty and taxes makes R141,971,000 over the 25 year mine life.

1 Rand = $1.40

SOURCE: IBRD Report, June 5, 1970

~~LIMITED OFFICIAL~~ USE

CASE I

BOTSWANA

BAMANGWATO CONCESSIONS LTD.

ESTIMATED BALANCE SHEETS

As of January 1, 1973 and December 31, 1973 - 99

(Thousands of Rands)

	Jan. 31 1973	Dec. 31 1973	1974	1975	1976	1977	1978	1979	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989/99
ASSETS																		
Current Assets																		
Cash and Bank Balance	1,146	1,727	7,189	9,102	9,146	8,582	8,005	8,165	8,197	8,281	8,320	8,338	7,670	2,382	2,043	4,085	4,309	4,316
Accounts Receivable		740	3,120	3,120	3,120	3,120	3,120	3,120	3,120	3,120	3,120	3,120	2,380	2,380	2,380	2,380	2,380	2,380
Inventory		8,800	7,600	7,600	7,600	7,600	7,600	76,00	7,600	7,600	7,600	7,600	7,600	7,600	7,600	7,600	7,600	7,600
Stores and Spare Parts	1,870	1,870	1,870	1,870	1,870	1,870	1,870	1,870	1,870	1,870	1,870	1,870	1,870	1,870	1,870	1,870	1,870	1,870
Prepayment of Royalties		750	1,017	1,005	1,065	1,167	1,312	1,353	1,356	1,322	1,250	1,141	1,456	1,734	1,982	2,230	2,414	2,598
Total Current Assets	3,016	13,887	20,796	22,697	22,801	22,339	21,907	22,108	22,143	22,193	22,160	22,069	20,976	15,966	15,875	18,165	18,573	18,764
Fixed Assets																		
Fixed Assets	68,984	71,400	71,900	72,400	72,900	73,400	73,400	73,400	73,400	73,400	73,400	73,400	73,400	73,400	73,400	73,400	73,400	73,400
Less Repayment of KFW Loan	-				4,300	8,600	12,900	17,200	21,500	25,800	30,100	34,400	38,700	43,000	43,000	43,000	43,000	43,000
Fixed Assets after Debt Repayment	68,984	71,400	71,900	72,400	68,600	64,800	60,500	56,200	51,900	47,600	48,300	39,000	34,700	30,400	30,400	30,400	30,400	30,400
Total Assets	72,000	85,287	92,696	95,097	91,401	87,139	82,407	78,308	74,043	69,793	65,460	61,069	55,676	46,366	46,275	48,565	48,973	49,164
LIABILITIES AND EQUITY																		
Current Liabilities																		
Accounts Payable		1,800	1,800	1,800	1,800	1,800	1,800	1,800	1,800	1,800	1,800	1,800	1,800	1,800	1,800	1,800	1,800	1,800
Short Term Loans		8,500	9,700	9,700	9,700	9,700	9,700	9,700	9,700	9,700	9,700	9,700	9,700	9,700	9,700	9,700	9,700	9,700
KFW Maturities due within 1 year				4,300	4,300	4,300	4,300	4,300	4,300	4,300	4,300	4,300	4,300					
Accruals for Income Tax				810	851	799	747	875	921	967	1,013	1,059	537	583	702	2,477	2,794	2,794
Total Current Liabilities		10,300	11,500	16,610	16,651	16,599	16,547	16,675	16,721	16,767	16,813	16,859	16,337	12,083	12,202	13,977	14,294	14,294
Provisions for Replacement		250	500	500	500	500	500	500	500	500	500	500	400	400	400	400	400	400
Long Term Loans:																		
KFW Loans (less one year maturity)	43,000	43,000	43,000	38,700	34,400	30,100	25,800	21,500	17,200	12,900	8,600	4,300	-	-	-	-	-	
Equity and Shareholders' Advances																		
Shareholders' Advances		10,000	10,000	10,000	9,000	8,000	7,000	6,000	5,000	4,000	3,000	2,000	1,000	-	-	-	-	
Share Capital	29,000	29,000	29,000	29,000	29,000	29,000	29,000	29,000	29,000	29,000	29,000	29,000	29,000	29,000	29,000	29,000	29,000	29,000
Accumulated Net Income		(7,263)	(1,304)	7,287	3,650	4,740	5,360	7.133	8,622	10,026	11,447	12,785	8,939	9,883	10,373	8,388	9,379	9,470
Less: Dividends Paid				(7,000)	(1,800)	(1,800)	(1,800)	(2,500)	(3,000)	(3,400)	(3,900)	(4,375)	-	(5,000)	(5,700)	(3,200)	(4,100)	(4,000)
Total Equity and Shareholders' Advances	29,000	31,737	37,696	39,287	39,850	39,940	39,560	39,633	39,622	39,626	39,547	39,410	43,239	33,883	33,673	34,188	34,379	34,470
Total Liabilities	72,000	85,287	92,696	95,097	91,401	87,139	82,407	78,308	74,043	69,793	65,460	61,069	55,676	46,366	46,275	48,565	48,973	49,154
Current Ratio		1.3	1.8	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3
Long Term Debt / Equity Ratio		58/42	53/47	49/51	46/54	43/57	39/61	35/65	30/70	25/75	18/82	10/90	-	-	-	-	-	

1 Rand = $1.40

SOURCE: IBRD Report, June 5, 1970

BEST AVAILABLE

CASE II

BOTSWANA

BAMANGWATO CONCESSIONS LTD.

ESTIMATED BALANCE SHEETS

As of January 1, 1973 and December 31, 1973-99
(Thousands of Rands)

	Jan. 31 1973	Dec. 31 1973	1974	1975	1976	1977	1978	1979	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989/99
ASSETS																		
Current Assets																		
Cash and Bank Balance	1,146	1,153	7,111	8,450	8,745	9,167	9,270	9,573	9,550	10,850	16,069	15,350	13,350	8,121	8,213	8,215	8,200	8,211
Accounts Receivable		2,450	3,400	3,560	3,550	3,550	3,550	3,560	3,560	3,560	3,550	3,560	2,810	2,810	2,810	2,810	2,810	2,810
Inventory		8,800	7,600	7,600	7,600	7,600	7,500	7,600	7,600	7,600	7,600	7,500	7,600	7,500	7,600	7,600	7,500	7,500
Stores and Spare Parts	1,870	1,870	1,870	1,870	1,870	1,870	1,870	1,870	1,870	1,870	1,870	1,870	1,870	1,870	1,870	1,870	1,870	1,870
Prepayment of Royalty		750	734	493	244	-	-	-	-	-	-	-	-	-	-	-	-	
Total Current Assets	3,016	15,023	20,715	21,973	22,019	22,197	22,300	22,603	22,580	23,880	29,099	29,380	25,630	20,401	20,493	20,495	20,380	20,491
Fixed Assets																		
Fixed Assets	68,984	71,400	71,900	72,400	72,900	73,400	73,400	73,400	73,400	73,400	73,400	73,400	73,400	73,400	73,400	73,400	73,400	73,400
less repayment of KFW Loan	-	-	-		4,300	8,600	12,900	17,200	21,500	25,800	30,100	34,400	38,700	43,000	43,000	43,000	43,000	43,000
Fixed Assets after Debt repayment	68,984	71,400	71,900	72,400	68,600	64,800	60,500	56,200	51,900	47,600	43,300	39,000	34,700	30,400	30,400	30,400	30,400	30,400
Total Assets	72,000	86,423	92,615	94,373	90,619	86,997	82,800	78,803	74,580	71,480	72,399	68,380	60,330	50,801	50,893	50,895	50,380	50,891
LIABILITIES & EQUITY																		
Current Liabilities																		
Accounts Payable		1,800	1,800	1,800	1,800	1,800	1,800	1,800	1,800	1,800	1,800	1,800	1,800	1,800	1,800	1,800	1,800	1,800
Short Term Loans		9,700	9,700	9,700	9,700	9,700	9,700	9,700	9,700	9,700	9,700	9,700	9,700	9,700	9,700	9,700	9,700	9,700
KFW Maturities due within 1 year				4,300	4,300	4,300	4,300	4,300	4,300	4,300	4,300	4,300	4,300	-	-	-	-	-
Accruals for Income Tax		-	462	1,222	1,232	1,276	1,320	1,465	1,509	2,410	6,392	6,569	3,920	4,096	4,235	4,235	3,608	3,608
Total Current Liabilities		11,500	11,962	17,022	17,032	17,076	17,120	17,265	17,309	18,210	22,192	22,369	19,720	15,596	15,735	15,735	15,108	15,108
Provisions for Replacement		250	500	500	500	500	500	500	500	500	500	500	500	500	500	500	500	500
Long Term Loans:																		
KFW Loan (less one year maturity)	43,000	43,000	43,000	38,700	34,400	30,100	25,800	21,500	17,200	12,900	8,600	4,300	-	-	-	-	-	-
Equity & Shareholders' Advances																		
Shareholders' Advances	-	7,500	7,500	7,500	6,750	6,000	5,250	4,500	3,750	3,000	2,250	1,500	750	-	-	-	-	-
Share Capital	29,000	29,000	29,000	29,000	29,000	29,000	29,000	29,000	29,000	29,000	29,000	29,000	29,000	29,000	29,000	29,000	29,000	29,000
Accumulated Net Income	-	(4,827)	4,153	11,651	8,437	10,121	11,905	14,013	15,321	15,645	13,157	15,411	12,290	12,205	12,058	12,011	12,572	12,183
Less: Dividends Paid	-	-	(3,500)	(10,000)	(5,500)	(5,800)	(6,775)	(7,975)	(8,500)	(7,775)	(3,300)	(4,700)	(1,930)	(6,500)	(6,400)	(6,350)	(7,300)	(6,900)
Total Equity & Shareholders' Advances	29,000	31,673	37,153	38,151	38,587	39,321	39,380	39,538	39,571	39,870	41,107	41,211	40,110	34,705	34,658	34,661	34,272	34,283
Total Liabilities	72,000	86,423	92,615	94,373	90,619	86,997	82,800	78,803	74,580	71,480	72,399	68,380	60,330	50,801	50,893	50,895	50,380	50,891
Current Ratio		1.3	1.7	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3
Long Term Debt/Equity Ratio		57/43	54/46	50/50	47/53	43/57	40/60	35/65	30/70	24/76	17/83	9/91	-	-	-	-	-	-

1 Rand = $1.40

SOURCE: IBRD Report, June 5, 1970

GOB REVENUES FROM MINING PROJECT
(Millions of Dollars)

	1974	1975	1976	1977	1978	1979	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989-99
CASE I - (Based on estimated lower level metal prices)																
Royalty1/	1.05	1.06	1.05	1.05	1.05	1.05	1.05	1.09	1.15	1.20	1.05	1.05	1.05	1.05	1.05	1.05
Income Tax2/	-	1.13	1.19	1.12	1.05	1.20	1.29	1.36	1.41	1.48	.75	.81	.98	3.47	3.91	3.91
Dividends3/	-	1.47	.38	.38	.38	.53	.63	.71	.82	.92	-	1.05	1.20	.67	.86	.84
Total	1.05	3.66	2.62	2.55	2.48	2.78	2.97	3.16	3.38	3.60	1.80	2.91	3.23	5.19	5.82	5.80
CASE II - (Based on estimated higher level metal prices)																
Royalty1/	1.07	1.39	1.40	1.46	1.50	1.67	1.71	1.76	1.82	1.86	1.11	1.16	1.20	1.20	1.31	1.31
Income Tax2/	.65	1.71	1.72	1.79	1.85	2.06	2.11	3.37	8.95	9.20	5.49	5.74	7.34	7.34	6.45	6.45
Dividends3/	.73	2.10	1.15	1.22	1.42	1.67	1.79	1.62	.69	.99	.41	1.37	1.34	1.34	1.53	1.45
Total	2.45	5.20	4.27	4.47	4.77	5.40	5.61	6.75	11.46	12.05	7.01	8.27	9.88	9.88	9.29	9.21

1/ 7.5% of profits before taxes including minimum guarantee of $1.05 million per year

2/ 40% of net income after deduction of royalties and a capital expenditure allowance

3/ Represents 15% of BCL's projected dividend distribution which is the GOB % equity in BCL

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ANNEX VIII

BOTSWANA

INFRASTRUCTURE PROJECT

Rate of Return on Mining Project plus Infrastructure Project

Rand 1,000

Year ending March 31	Capital Costs Mine	Capital Costs Infrastructure	Running Costs Mine	Running Costs Infrastructure 2/	Revenues Mine	Revenues Infrastructure 3/	Extra 4/ Customs Revenue	Total Costs	Total Revenues
1970	10,500 1/	100						10,600	
1971	14,800	6,654		132				21,586	
1972	23,400	16,490		220				40,110	
1973	17,100	11,294	2,238	218			680	30,850	680
1974	1,000	1,350	14,990	1,714	11,380	101	2,070	19,054	13,551
1975			21,345	1,783	38,218	135	1,430	23,128	39,783
1976			22,088	1,860	40,700	153	170	23,948	41,023
1977			22,088	1,931	39,641	176		24,019	39,817
1978			22,088	2,002	38,523	193		24,090	38,716
1979			21,722	2,069	38,146	224		23,791	38,370
1980			21,924	3,820	38,946	257		25,744	39,203
1981			21,924	2,067	38,946	282		23,991	39,228
1982			21,924	2,133	38,946	322		24,057	39,268
1983			21,924	2,187	38,946	354		24,111	39,300
1984			21,318	2,244	36,636	390		23,562	37,026
1985			19,668	2,276	30,436	390		21,944	30,826
1986			19,568	2,307	30,436	390		21,875	30,826
1987			19,568	2,341	30,436	390		21,909	30,826
1988			19,568	2,377	30,693	390		21,945	31,083
1989			19,568	2,414	31,293	390		21,982	31,683
1990			19,568	2,453	31,293	390		22,021	31,683
1991			19,568	2,494	31,293	390		22,062	31,683
1992			19,568	2,537	31,293	390		22,105	31,683
1993			19,568	2,579	31,293	390		22,147	31,683
1994			19,568	2,624	31,293	390		22,192	31,683
1995			19,568	2,671	31,293	390		22,239	31,683
1996			19,568	2,720	31,293	390		22,288	31,683
1997			19,568	2,771	31,293	390		22,339	31,683
1998			19,568	2,824	31,293	390		22,392	31,683

1/ Includes R7.5 million pre-1970 exploration expenditure
2/ Including additional Government recurrent expenditure
3/ Revenues from sale of power to Francistown
4/ Extra customs revenue resulting from infrastructure imports under customs revenue sharing agreement with South Africa.

1 Rand = $1.40 SOURCE: IBRD Report, June 5, 1970

Rate of Return - (a) including pre-1970 exploration expenditure - 9.0%
(b) excluding pre-1970 exploration expenditure -10.0%

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Annex IX

Projection of Recurrent Budget Deficit 1/

(millions of dollars)

	1970/71	71/72	72/73	73/74	74/75	75/76	76/77	77/78	78/79	79/80	80/81
Revenue	10.5	11.3	12.3	13.3	14.4	15.7	16.9	18.5	20.0	21.7	23.5
Expenditure (Assumption A)	20.6	21.8	23.0	24.2	25.5	26.7	28.3	29.8	31.5	33.2	34.9
Deficit (Assumption A)	10.1	10.5	10.7	10.9	11.1	11.0	11.4	11.3	11.5	11.5	11.4
Expenditure (Assumption B)	21.1	23.0	24.9	26.9	29.1	31.4	33.9	36.7	39.6	42.6	45.9
Deficit (Assumption B)	10.6	11.7	12.6	13.6	14.7	15.7	17.0	18.2	19.6	20.9	22.4

1/ Excluding revenues from, and expenditures related to, prospective mining developments.

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ANNEX X
Project No.
A.I.D. Loan No.

CAPITAL ASSISTANCE LOAN AUTHORIZATION

Provided from: Development Loan Funds
Botswana - Shashi Project

Pursuant to the authority vested in the Administrator of the Agency for International Development (hereinafter called "A.I.D.") by the Foreign Assistance Act of 1961, as amended, and the delegations of authority issued thereunder, I hereby authorize the establishment of a Loan pursuant to Part I, Chapter 2, Title I, the Development Loan Fund, to the Government of Botswana ("Borrower"), for relending to the Botswana Water Utilities Corporation (WUC), of not to exceed Six Million Five Hundred Thousand Dollars ($6,500,000) to finance foreign exchange and local currency costs for procurement of water pipe, valves, fittings and related commodities and services, to be utilized in the construction of the water transmission line portion of an infrastructure project in support of a mining operation in Botswana. This Loan is subject to the following terms and conditions:

1. Interest and Terms of Repayment.

   Borrower shall repay the Loan to A.I.D. in U.S. dollars within forty (40) years from the date of the first disbursement under the Loan, including a grace period of not to exceed ten (10) years. Borrower shall pay to A.I.D. interest at the rate of two percent (2%) per annum during the grace period and three percent (3%) per annum thereafter.

2. Other Terms and Conditions.

   a. Commodities and services financed under the Loan shall be procured from the United States or Botswana.

   b. As a condition precedent to disbursement under the loan, A.I.D. shall approve the terms of the Borrower's sub-loan of the A.I.D. loan to the Water Utilities Corporation.

   c. The Loan shall be subject to such other terms and conditions as A.I.D. may deem advisable.

____
Assistant Administrator for Africa

____
Date