UNCLASSIFIED

Southern Africa Regional:
Regional Transport and Storage
Development - Phase I (690-0209)

PP Design Team

Alfred Harding, Project Design Officer/Team Leader, AID/W
Don Reilly, Chief Engineer, REDSO/EA
Phil Moeller, Transport Economist (Consultant)

UNCLASSIFIED

ACTION MEMORANDUM FOR THE ASSISTANT ADMINISTRATOR FOR AFRICA (Acting)

FROM: AAA/AFR/DR/John W. Koehring

SUBJECT: Project Authorization

Problem:

Your approval is required for a grant of $990,000 from the Section 531, Economic Support Fund (ESF) appropriation, to the Government of the Republic of Zambia (GRZ) for the Regional Transport and Storage Development project - Phase I (690-0209). It is planned that the entire authorized amount of $990,000 will be obligated in FY 1981.

Discussion:

Transportation linkages between the majority-rule countries of southern Africa have been identified by the Southern Africa Development Coordination Conference (SADCC)* as the most limiting constraint to economic growth and development in the region. Although southern Africa has a relatively sound rail and road system (in the sense that it does not require large-scale expansion), the system is characterized by structural and functional problems caused by destruction, non-use and limited or ineffective maintenance, resulting from security problems in the region, insufficient and unskilled manpower, budgetary constraints and shortages of spare parts. The Salisbury-Chirundu-Lusaka road (which is commonly called and referred to hereafter as the Zim-Zam road) is one of several existing surface transportation routes in southern Africa which has fallen into a state of disrepair for many of the aforementioned reasons.

The SADCC countries have assigned a very high priority to rehabilitation of the Zim-Zam road because of the importance of this direct surface artery link between Salisbury and Lusaka in facilitating the movement of commercial goods and food grains

*Formed in 1979 to serve as the coordinating body for regional development efforts. Member countries are: Angola, Botswana, Lesotho, Malawi, Mozambique, Swaziland, Tanzania, Zambia and Zimbabwe.

sorely needed in Zambia, which can be provided, in part, by Zimbabwe.

AID's regional development strategy for southern Africa has identified transportation as one of the major impediments to economic growth and development within the region. The purpose of this project is to provide assistance in the rehabilitation of the Zim-Zam road. The project has been divided into two phases: Phase I, which is the subject of this project paper will focus on resealing 33 kilometers of specific sections of the road on the Zambia side, between the Kafue River Bridge and the Chirundu Border Post. Phase II, which will be the subject of a separate project paper to be submitted later in FY 1981, will be concerned with rehabilitating approximately 12 kilometers of the road in Zimbabwe and the remainder of the 82 kilometers of the road in Zambia, following the existing road alignment, after the Phase I resealing process has been completed. It is expected that as a result of the decision to divide the project into two distinct phases the Phase I resealing process can be completed before the 1981 (Fall) rainy season in Zambia begins, thus halting further deterioration to the 33 kilometer section of the road and, in effect, reducing total project costs (for Phase I and II) by as much as $7 million. The rehabilitation of the Zim-Zam road will benefit: 1) urban and rural consumers in Zambia, the major clientele for maize and other foods and consumer goods produced in Zimbabwe which will be imported by Zambia for the foreseeable future; 2) farmer groups in Zimbabwe that produce maize for export, and 3) other present and future producers of export goods and commodities in Zimbabwe and Zambia.

In order to accomplish the objectives of Phase I of this activity, a total of $990,000 is being requested for obligation in FY 1981. It also represents the total amount required for the entire Phase I resealing process, 100% of which will be AID-funded. This amount will finance the services of a Code 935 construction firm, which is to perform the work required -- the resealing of 33 kilometers of road.

The GRZ will not be required to make a financial contribution to Phase I of this project since no funds could be allocated to the project within its existing budget in the relatively short period of time in which this project has been developed. However, the GRZ will be providing the field supervision, field lab testing personnel and other technical expertise required to award a host country construction contract.

It has been concluded from the analysis in the project paper that:

1) the project approach is technically and economically sound and socially acceptable;

2) the technical design and cost estimates are reasonable and adequately planned, thereby satisfying the requirements of Section 611(a) of the Foreign Assistance Act of 1961, as amended;

3) the timing and funding of project activities are appropriately scheduled;

4) sufficient planning has been done for the implementation, monitoring and evaluation of project progress, and

5) all statutory criteria have been satisfied.

The Initial Environmental Examination, contained in Annex V of the project paper, has been reviewed and a negative determination has been recommended by the Africa Bureau Environmental Officer.

There is one covenant which requires that:

Following the completion of the work under Phase I of the project, the GRZ will provide for the maintenance of the resealed road sections (ditch clearing, pothole patching, grass cutting, all as required).

Your approval of the following waiver is required:

Source and origin waiver from AID Geographic Code 000 to Code 935 for the procurement of construction materials which have an approximate cost of $150,000. The justification for this waiver is described in Annex III of the project paper.

A separate memorandum (Attachment I), has been sent to the Administrator requesting approval to deviate from Agency policies governing host country contracting as they pertain to: 1) contracting method, 2) advertising and 3) nationality requirements as specified in AID Handbook 11, Chapter 2, Sections 2.3, 2.4 and 2.5 respectively. The Administrator's approval is required because the amount of procurement from selected Code 935 construction firms ($840,000) exceeds your authority.

A Project Review was held on May 26, 1981; there were no unresolved issues. A Congressional Notification is not required since the project appears on page 536 of the FY 1981 Congressional Presentation.

The project will be implemented through a host country contract with a Code 935 construction firm. The GRZ's Road Department will be responsible for preparing IFBs (which will be sent to selected firms); receiving and reviewing proposals; and will make recommendations on the final selection of a contractor to the GRZ's Central Tender Board. The Roads Department will also

be responsible for field supervision and field lab testing required under Phase I of the project. AID/Zambia, with assistance from REDSO/EA and RLA/Mbabane, will review the IFBs and all proposals received as well as the recommendations of the Roads Department on the final selection of a contractor prior to contract award by the Central Tender Board. An AID direct hire project manager who will have the responsibility for monitoring implementation activities under this project has now been identified and is expected to be in Zambia prior to the start of the actual construction work in August, 1981. The responsible AID officer in the field will be the AID/Zambia project manager, and AID/W backstop will be Dianne Blane, AFR/DR/SAP.

There are presently no significant human rights issues in Zambia.

Recommendation:

That you sign the attached Project Authorization, thereby authorizing the Grant and the requested waiver.

Attachments:
1. Memo to Administrator
2. Project Authorization
3. Project Paper

Drafted by: AFR/DR/SAP:AHarding:nb

Clearance:

AAA/AFR/DP:RStacy	RAS	Date	6/2/81
AFR/DR:NCohen		Date	6/3/81
AFR/DR/SDP:BBoyd	BB	Date	6/3/81
AFR/DR/ENG:ATummarello	DRAFT	Date	6/1/81
AFR/DR/SAP:WWolff		Date	6/2/81
GC/AFR:TBork		Date	6/2/81
AFR/SA:MVDagata		Date	6/3/81

4 JUN 1981

JUN 4 12 02 PM '81

EXECUTIVE SECRETARIAT

ACTION MEMORANDUM FOR THE ADMINISTRATOR

THRU: ES

FROM: AA/AFR (Acting), W. Haven North

SUBJECT: Southern Africa Regional: Regional Transport and Storage Development - Phase I (690-0209)

Problem: Your approval is requested to deviate from the Agency policies governing host country contracting as they pertain to: 1) contracting method, 2) advertising and 3) nationality requirements as specified in AID Handbook 11, Chapter 2, Sections 2.3, 2.4, and 2.5 respectively in order to enable the timely selection of a contractor to implement Phase I of the Regional Transport and Storage Development project (690-0209).

Discussion: The Regional Transport and Storage Development project (also known as the Zim-Zam Road project) represents an important component in AID's southern Africa regional strategy. The project will provide for the rehabilitation of the key regional road transportation route between Zimbabwe and Zambia, which will facilitate the movement of commercial goods and food grains between the two countries. Phase I of the project will provide assistance in resealing 33 kilometers of selected portions of the road in Zambia, between the Kafue River Bridge and the Chirundu Border Post. Phase II involves the rehabilitation of approximately 12 kilometers of the road in Zimbabwe, and approximately 49 kilometers of road in Zambia, along the existing road alignment. The resealing process will involve the patching and resealing of the road surface in these selected areas, as well as the repair and rehabilitation of road shoulders to ensure proper drainage along the road and prevent further damage by erosion to the existing roadbed. With your approval of the requested waivers, the resealing work will be completed prior to the start of the fall, 1981 rainy season in Zambia at an approximate cost of $990,000, which will be obligated in FY 1981.

If the resealing effort in Zambia is completed prior to the fall, 1981 rainy season (which begins on/or about November 15) it is estimated that: 1) total project costs (Phases I and II) of rehabilitating the road will be lowered by as much as $7 million; and 2) savings in time and money will also accrue, in the long run, to Zambia and Zimbabwe because they will be able to use a more direct, less costly road between Salisbury and Lusaka for transporting goods. If the resealing effort is not completed

prior to the fall, 1981 rainy season, the cost of the project to AID will exceed current cost estimates by as much as $7 million due to further deterioration of the 33 kilometer portion of the road caused by the heavy rains. The REDSO engineer has determined that such cost savings will result because completion of the resealing by November, 1981, will eliminate the need for complete reconstruction. Thus, a construction services contractor must be selected as soon as possible to realize these cost savings and avoid serious project implementation delays.

Your approval is required because the value of the waiver requested ($840,000 for construction services from selected Code 935 firms) exceeds the authority of the AA/AFR. It was felt that since the project activity is relatively small ($990,000), it does not warrant your attention; therefore, upon your approval of the waivers described herein, I will authorize the project.

The following deviations from the policies set forth in AID Handbook 11, Chapter 2 are required:

A. Contracting Method

AID Handbook 11, Chapter 2, Section 2.3 requires that host country contracts for construction services be awarded through formal competitive bid procedures. AID/Zambia, the chief engineer in REDSO/EA, and the regional legal advisor in Mbabane, Swaziland have found that following widely publicized solicitation procedures would seriously impede attainment of the project's objectives, resulting in increased total project costs and delaying project implementation. Accordingly, we recommend that invitations for bid be distributed to a list of nine firms. AID/Zambia, in cooperation with the Government of Zambia and with the assistance of the chief REDSO/EA engineer, have canvassed the contiguous project area and found that there are nine firms (which includes one U.S. firm presently operating in Malawi) which are capable of responding on a timely basis to an Invitation for Bid, mobilizing their technical expertise and equipment, and completing the required construction prior to the start of the fall rainy season in Zambia on/or about November 15, 1981. Pre-selected firms include three firms operating in Zambia, three in Zimbabwe, and one firm from Yugoslavia, the United Kingdom and the United States (the U.S. firm is currently operating in Malawi). Other than elimination of the advertising requirement, all other formal competitive procedures will be observed (such as public opening of sealed bids, award of the contract to the lowest responsible bidder, etc.). Notwithstanding the absence of advertising, we believe that adequate competition will be obtained by inviting bids from the pre-selected firms. Because the entire contract and implementation process must begin as soon as possible to enable this work to be

completed by mid-November, we believe that the proposed deviation from formal competitive procedures is appropriate.

B. Advertising Rule

AID Handbook 11, Chapter 2, Section 2.4, in furtherance of Section 2.3 (discussed in Part A above), requires that solicitation of proposals be effected through widely disseminated advertising, either local, regional and international publications, or, if the prequalification process is not used, in the U.S. Commerce Business Daily.

A waiver of this rule is required for the following reasons:

1. It is very unlikely that other U.S. firms, or firms included in AID Geographic Code 941 or 935 (other than the nine firms from which proposals would be solicited through selective bidding) would be interested in bidding on a contract for such a relatively small amount (the construction services contract is estimated at $840,000) and could mobilize resources (technical personnel and equipment) to meet the time constraints imposed by this activity.

2. The time delays associated with advertising the Invitation for Bids would cause serious delays in project implementation. Advertising usually requires a minimum of thirty (30) days, and usually forty-five (45) days, to receive responses, and subsequently, proposals. Under the alternative selective bidding process, invitations for bid would be issued on/or about June 3 and received on/or about June 24, in order that a contract can be awarded, actual construction begun, and the activity completed before November 15, 1981.

C. Nationality Rule

AID Handbook 1B, Chapter 5, provides that the authorized source (or nationality) for goods and services procured under a grant financed project (non-RLDC) is the U.S. only. However, this policy may be waived under Section 2.5, of Chapter 2, Handbook 11, in "circumstances which are deemed critical to the success of the project."

There is only one U.S. firm presently operating in the area which may be able to respond in a timely manner. Solicitation of a proposal from this firm only would not provide for competition and would likely result in a bid which exceeds the estimated contract costs, thus seriously delaying project implementation. In addition, we are not certain that the firm can perform within our time limitations. Solicitation of U.S. firms not operating in the area would be a useless exercise since the procurement is too small to attract their interest; and even if they were

interested, they could not mobilize in time to perform the required services.

Solicitation of proposals from firms included in AID Geographic Code 941 (Selected Free World) poses similar problems. Code 941 firms operating outside the region would not be interested in the project because it is too small and would be unable to mobilize in time. In addition, in this part of Africa, there are very few, if any, Code 941 firms. Most firms considered "local" are owned by persons with European citizenship. Some of the pre-selected firms have been operating and have, in some cases, established residency in the southern Africa countries for many years, but they still cannot meet the nationality requirements for Code 941 since nationality is based upon beneficial ownership (i.e., citizenship). It is believed that one or two of the firms resident in Zimbabwe may be Code 941 firms, but we are unable to clearly establish the citizenship of the owners of the firm in the short time frame for this procurement and we do not believe it makes good sense to proceed on mere speculation. It is our judgment that we must seek the Code 935 nationality waiver to insure that the firms solicited are, in fact, of eligible nationality.

Since no U.S. firms (other than the firm already operating in the area) would be interested in this small project, there are probably no firms operating in the area which could qualify as Code 941 firms, and Code 941 firms not located in the area would not be interested or would be unable to mobilize in time for this procurement, we propose that firms of Code 935 nationality be permitted to compete for this contract.

A waiver of the nationality rule to permit the solicitation of proposals from the nine firms which meet the Code 935 country eligibility requirements and are qualified to perform the work is needed for the following reasons:

1) It will ensure maximum competition by permitting solicitation of proposals from among the nine responsible firms.

2) It is likely that there are no other firms which can effectively respond to this request for construction services given the relatively low amount of funding involved and short time frame available for completing the work.

The foregoing discussion clearly shows that there are circumstances which make this waiver "critical to the success of the project." Approval of the foregoing waiver will contribute towards project cost savings of up to $7 million (for Phases I and II), and the work, if it could not be completed before the fall rainy season, will result in major deterioration of the road and rehabilitation will be significantly more expensive.

Recommendation: That, based upon the justifications above and by your signature below, you: 1) approve a deviation from the formal competitive procurement procedure of Handbook 11, Chapter 2, Section 2.3 to permit the use of the selective solicitation; 2) waive the advertising requirements of AID Handbook 11, Chapter 2, Section 2.4; 3) waive the nationality rule covered in AID Handbook 11, Chapter 2, Section 2.5 to permit the procurement of construction services from firms included in AID Geographic Code 935, which have an approximate cost of $840,000 and 4) certify that the interests of the United States are best being served by permitting the procurement of services from free world countries other than the cooperating country and countries included in Code 941.

Approved: J C Wheeler

Disapproved: _____

Date: June 4, 1981

Drafted by: AFR/DR:AHarding(5/29, ext 28818)

Clearance:
GC:JBolton Date 6/4/81
GC/AFR:TBork Date 6/3/81
AAA/AFR/DR:JKoehring Date 6/3/81
AFR/SA:MDagata Date 6/3/81
AFR/DR/SA:WWolff Date 6/3/81
A-AA/SER:JFOwens Date
GC/AFR:EDragon Date 6/7/81
6/4/81

PROJECT AUTHORIZATION

Name of Country/Entity: Zambia

Name of Project: Southern Africa Regional Transport and Storage Development, Phase I

Number of Project: 690-0209

1. Pursuant to Section 531 of the Foreign Assistance Act of 1961, as amended, I hereby authorize the Southern Africa Regional Transport and Storage Development Project, Phase I, for Zambia, involving planned obligations of not to exceed $990,000 in grant funds over a one year period from date of authorization, subject to the availability of funds in accordance with the A.I.D. OYB/allotment process, to help in financing foreign exchange and local currency costs for the project.

2. The project consists of assisting the Cooperating Country to rehabilitate approximatley 33 kilometers of road located on the Salisbury-Chirundu-Lusaka Road between the Katue Bridge and Chirundu, by financing the costs of construction services and commodities.

3. The Project Agreement which may be negotiated and executed by the Principal U.S. Diplomatic Officer or Principal A.I.D. Officer in the Cooperating Country, shall be subject to the following essential terms and covenants and major conditions, together with such other terms and conditions as A.I.D. may deem appropriate.

4.a. Source and Origin of Goods and Services

Goods and services, except for ocean shipping, financed by A.I.D. under the project shall have their source and origin in the Cooperating Country or in the United States except as A.I.D. may otherwise agree in writing. Ocean shipping financed by A.I.D. under the project shall, except as A.I.D. may otherwise agree in writing, be financed only on U.S. flag vessels.

b. Conditions Precedent

Prior to any disbursement, or the issuance of any commitment documents under the Project Agreement, the Cooperating Country shall furnish, in form and substance, satisfactory to A.I.D.: (1) final plans and specifications for the project; and (2) an executed contract for construction services for the project, with a firm acceptable to A.I.D.

c. Covenant

The Cooperating Country shall covenant to maintain resealed road sections. Maintenance shall include ditch cleaning, pothole patching, grass cutting and other maintenance activities as necessary.

d. Waivers

(1) Notwithstanding paragraph 4.a. above, the following waivers have been authorized by the Administrator.

(a) The requirement under Chapter 5, Handbook 1, Supp. B, that firms providing services under a grant have their nationality in the U.S. only is waived to permit procurement of construction services, at an approximate cost of $840,000, from firms which have as their nationality countries included in A.I.D. Geographic Code 935.

(b) The requirement under Section 2.3 of Chapter 2, Handbook 11 that construction services contracts be procured pursuant to formal competitive bid procedures has been waived to permit the use of competitive procedures without the use of formal advertising.

(c) The requirement under Section 2.4 of Chapter 2, Handbook 11 that all host country procurements above $500,000 be advertised in the Commerce Business Daily has been waived.

(2) Notwithstanding subparagraph a. above, I hereby approve the following waiver:

The requirement under Handbook 1, Supplement B, Chapter 5 that commodites procured with grant funds have their source/origin in the U.S. is waived based upon the justification set forth in Annex 3 to the Project Paper to permit procurement of appproximately $150,000 of construction commodities which have as their source and origin countries included in AID Geographic Code 935. It is hereby determined that exclusion of such procurement from Free World Countries other than the Cooperating Country and countries included in the Code 941 would seriously impede attainment of U.S. foreign policy objectives and objectives of the foreign assistance program.

Date: 6/4/81

W. Haven North
Acting Assistant Administrator
for Africa

Clearances

AAA/AFR/DR:WWKoehring _____ Date 6/3/81
AFR/SA:MDagata _____ Date 6/4/81
SER/COM:WJGill by A. Laemmerzahl _____ Date 6/2/81
AFR/DR/SA:WWolff _____ Date 6/3/81
AFR/DR/SA:AHarding _____ Date 6/2/81

GC/AFR:DRCDR:rcj:28818

AGENCY FOR INTERNATIONAL DEVELOPMENT

PROJECT PAPER FACESHEET

1. TRANSACTION CODE: A (A = ADD, C = CHANGE, D = DELETE)

PP

2. DOCUMENT CODE: 3

3. COUNTRY/ENTITY: Southern Africa Regional

4. DOCUMENT REVISION NUMBER: Original

5. PROJECT NUMBER (7 digits): 690-0209

6. BUREAU/OFFICE: A. SYMBOL: AFR; B. CODE: 06

7. PROJECT TITLE (Maximum 40 characters): Regional Transport and Storage, Phase I

8. ESTIMATED FY OF PROJECT COMPLETION: FY 81

9. ESTIMATED DATE OF OBLIGATION: A. INITIAL FY 81; B. QUARTER 3 (Enter 1, 2, 3, or 4); C. FINAL FY 81

10. ESTIMATED COSTS ($000 OR EQUIVALENT $1 =)

A. FUNDING SOURCE	FIRST FY B. FX	FIRST FY C. L/C	FIRST FY D. TOTAL	LIFE OF PROJECT E. FX	LIFE OF PROJECT F. L/C	LIFE OF PROJECT G. TOTAL
AID APPROPRIATED TOTAL	150	840	990	150	840	990
(GRANT)	(150)	(840)	(990)	(150)	(840)	(990)
(LOAN)	(–)	(–)	(–)	(–)	(–)	(–)
OTHER U.S. 1.						
OTHER U.S. 2.						
HOST COUNTRY						
OTHER DONOR(S)						
TOTALS	150	840	990	150	840	990

11. PROPOSED BUDGET APPROPRIATED FUNDS ($000)

A. APPROPRIATION	B. PRIMARY PURPOSE CODE	PRIMARY TECH. CODE C. GRANT	PRIMARY TECH. CODE D. LOAN	E. 1ST FY 81 F. GRANT	E. 1ST FY 81 G. LOAN	H. 2ND FY ___ I. GRANT	H. 2ND FY ___ J. LOAN	K. 3RD FY ___ L. GRANT	K. 3RD FY ___ M. LOAN
(1) ESF				990	–				
(2)									
(3)									
(4)									
TOTALS				990	–				

A. APPROPRIATION	N. 4TH FY ___ O. GRANT	N. 4TH FY ___ P. LOAN	Q. 5TH FY ___ R. GRANT	Q. 5TH FY ___ S. LOAN	LIFE OF PROJECT T. GRANT	LIFE OF PROJECT U. LOAN
(1)					990	–
(2)						
(3)						
(4)						
TOTALS					990	–

12. IN-DEPTH EVALUATION SCHEDULED: MM YY

13. DATA CHANGE INDICATOR. WERE CHANGES MADE IN THE PID FACESHEET DATA, BLOCKS 12, 13, 14, OR 15 OR IN PRP FACESHEET DATA, BLOCK 12? IF YES, ATTACH CHANGED PID FACESHEET. (1 = NO, 2 = YES)

14. ORIGINATING OFFICE CLEARANCE

SIGNATURE: [signature]

TITLE:

DATE SIGNED: MM DD YY

15. DATE DOCUMENT RECEIVED IN AID/W, OR FOR AID/W DOCUMENTS, DATE OF DISTRIBUTION: MM DD YY

AID 1330-4 (3-78)

Regional Transport and Storage (ZIM-ZAM Road - Phase I)

690-0209

TABLE OF CONTENTS

		Page
Preface		1
I.	Summary and Recommendations	
	A. Recommendations	4
	B. Brief Project Description	4
	C. Summary Findings	6
II.	Project Background and Detailed Description	
	A. Background	8
	B. Detailed Project Description	14
III.	Project Analyses	
	A. Technical/Engineering Analysis	17
	B. Financial Analysis	22
	C. Social Analysis	23
	D. Economic Analysis	25
IV.	Implementation Arrangements	
	A. Role of AID	28
	B. Role of GRZ	28
	C. Implementation Schedule	29
	D. Contracting Method	30
	E. Covenants and Waivers	31

Annexes

I. AID/W PID Approval Message

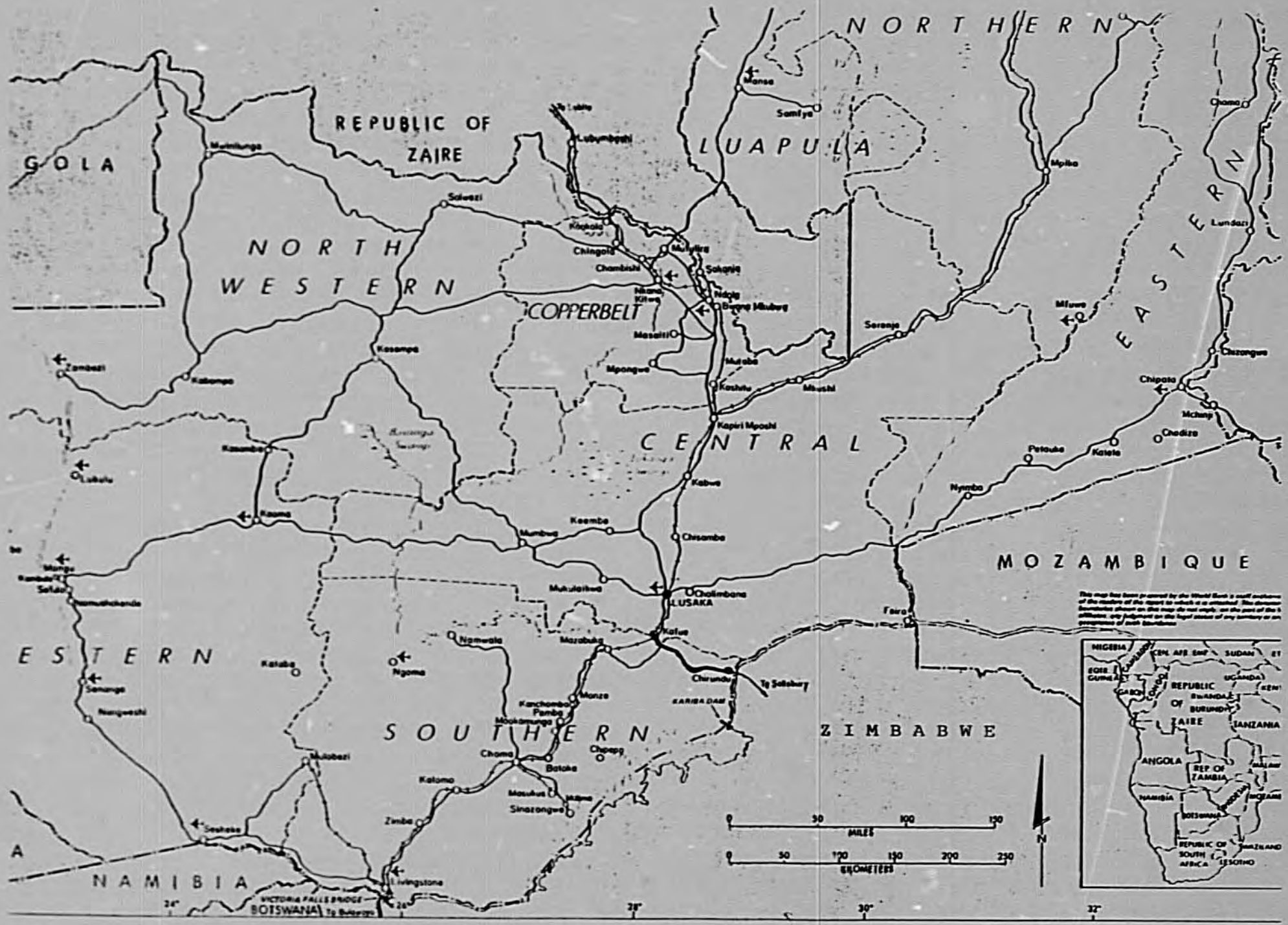
II. GRZ Request for Assistance

III. Waivers and Approvals

IV. Statutory Checklist

V. Initial Environmental Examination

VI. Benefit/Cost Analysis - Phase I



NORTHERN
LUAPULA
REPUBLIC OF ZAIRE
GOLA
NORTH WESTERN
COPPERBELT
CENTRAL
EASTERN
MOZAMBIQUE
ZIMBABWE
SOUTHERN
ESTERN
NAMIBIA
BOTSWANA
Mwinilunga
Solwezi
Lubumbashi
Kaokola
Chingola
Chambishi
Mufulira
Sakania
Ndola
Bwana Mkubwa
Masaiti
Mpongwe
Mutaba
Kashitu
Kapiri Mposhi
Kabwe
Chisamba
Kalimbana
LUSAKA
Kafue
Mazabuka
Chirundu
To Salisbury
KARIBA DAM
Mumbwa
Keemba
Mukulaikwa
Namwala
Ngoma
Kanchomba
Pemba
Monze
Mookamunga
Choma
Batoka
Masukus
Sinazongwe
Kalomo
Zimba
Livingstone
VICTORIA FALLS BRIDGE
To Bulawayo
Kasampa
Kasumbe
Kaoma
Kabompo
Zambezi
Lukulu
Mongu
Kambule
Sefulo
Namushakende
Senanga
Nangweshi
Kataba
Mulobezi
Sesheke
Mansa
Samfya
Mpika
Serenje
Mkushi
Mfuwe
Chama
Lundazi
Chizongwe
Chipata
Mchinji
Chadiza
Katete
Petauke
Nyimba
Feira
MILES
KILOMETERS
N
NIGERIA
CEN. AFR. EMP.
SUDAN
EGYPT
GUINEA
GABON
CONGO
REPUBLIC OF ZAIRE
UGANDA
RWANDA
BURUNDI
TANZANIA
ANGOLA
REP. OF ZAMBIA
NAMIBIA
BOTSWANA
REPUBLIC OF SOUTH AFRICA
LESOTHO

PREFACE

The activity identified in this project paper, i.e., the Kafue-Chirundu-Lusaka Road (Zim-Zam Road) represents the first phase of a two-phase project to assist the Governments of Zimbabwe (GOZ) and Zambia (GRZ) in rehabilitating an important road link between these two countries.[1/] It also represent an important component of AID's program for overcoming southern Africa regional transport problems, which will assist the countries of the region in dealing with the common problems they face in rehabilitating and strengthening their transport systems. The Southern Africa Development Coordination Conference (SADCC)[2/] and the Southern Africa Transport and Communications Commission (SATCC), an entity which is an outgrowth of the SADCC, have assigned a very high priority to this project, and both governments directly involved also support it. Since the Phase I activity will be implemented on sections of the road in Zambia, the GRZ request for assistance can be found in Annex II of this project paper.

The rehabilitation of the Zim-Zam road will facilitate the transport of necessary commercial goods and vital agricultural commodities from Zimbabwe (which has recently experienced surpluses of

---

1/ Generically, the road is referred to as the Zim/Zam road. For the purpose of AID funding, the road is divided into two sections. The portion of the road in Zimbabwe is funded under AID Zimbabwe bilateral programming project 613-0207 (Makuti/Chirundu). The portion of the road in Zambia is funded under AID Southern Africa Regional Programs, project 690-0209 (Regional Transport and Storage Development).

2/ Formed in 1979 and now includes the southern Africa countries of Angola, Botswana, Lesotho, Malawi, Mozambique, Swaziland, Zambia and Zimbabwe and also includes Tanzania.

food grains and has many processed goods needed in Zambia) to Zambia (which has experienced chronic shortages of food grains and processed goods).

The project will be implemented in two phases:

Phase I will assist the GRZ in resealing 33 kilometers of the road on the Zambia side between Kafue and the Chirundu Border Post. This activity must be completed before end October/early November 1981 when the rainy season in Zambia usually begins. The portion of the road to be resealed contains significant surface deterioration and if the re-sealing effort is not completed before the 1981/82 rainy season begins, those sections of the road will rapidly deteriorate to the point of surface failure by the effects of the rains, which will substantially increase the costs of rehabilitating the entire Zambia portion of the road as well as increase the cost of the total project effort. The activities to be carried out under Phase I of the project are the subject of this project paper.

Phase II of the project will provide the resources required to completely rehabilitate the remaining approximately 49 of the total 82 kilometers of the road in Zambia between the Kafue River Bridge and the Chirundu Border Post and approximately 12 kilometers of the road in Zimbabwe between the Chirundu Border post and Makuti. At the present time, rehabilitation of these sections of the road requires pavement strengthening for certain sections and reconstruction of other sections of the road as well as shoulder and drainage work. The majority of road structures will not need replacement. The work to be carried out under Phase II of this project will be discussed in detail in a separate project paper which will be submitted to AID/W for review in July 1981.

The PID for this activity was submitted in April 1981 and was quickly reviewed and recommended for approval by the Project Review Committee. While the PID did not discuss a two-phased approach in the design and implementation of this project, it did stress the urgent need to immediately reseal selected portions of the road on the Zambia side between the Kafue River Bridge and the Chirundu Border Post prior to the October 1981 rainy season as well as the physical deterioration and increased cost implications if the resealing process were not commenced and completed before this time. The Executive Committee for Project Review considered this situation in its meeting on this project in late April 1981 and made the decision to adopt a two-phased approach to the design and implementation of the project. This approach permits AID to respond quickly and effectively to the need for resealing portions of the road in Zambia in Phase I, while simultaneously proceeding with the design and implementation activities necessary for rehabilitation of the remaining select portions of the road in Zambia and Zimbabwe in Phase II It will also facilitate maintaining the integrity of this important regional project.

As a result, this project paper is concerned only with the activities to be performed under Phase I of the project. The design of the project paper for Phase II of the project will commence in June 1981, and the paper will be submitted and reviewed in July 1981. Approval of the Phase I project is projected for August 1981. This Project Paper demonstrates that the Phase II resealing effort is necessary and viable, regardless of the ultimate decision on Phase II.

I. Summary and Recommendations

A. Recommendations

Authorization of a grant of $990,000 for Phase I of the project to the Government of the Republic of Zambia (GRZ) and the following waivers and approvals:

1. Procurement nationality waiver from AID Geographic Code 000 (U.S. only) to Code 935 (Special Free World) for the procurement of construction services which have an approximate cost of $840,000.

2. Procurement source and origin waiver from AID Geographic Code 000 (U.S. only) to Code 935 (Special Free World) for the procurement of construction materials which have an approximate value of $150,000.

3. Waiver of the requirement under AID Handbook 1, Supplement B, Section 12C3b that procurements of construction services under formal competitive procedures be advertised, and authorization to limit the solicitation of bids to 9 locally available firms identified by the design team as capable of providing the services on a timely basis.

B. Project Description

The rehabilitation of the Salisbury - Chirundu - Lusaka (Zim-Zam) road represents an important component in AID's southern Africa regional strategy. The project will provide a vital regional transportation link, a high priority area identified for assistance by the Southern African Development Coordination Conference. The Zim-Zam road is an important surface transportation route between Zimbabwe and Zambia. It facilitates the movement of commercial goods and food grains sorely needed in Zambia which can be provided, in part, by Zimbabwe.

The proposed project (Phases I and II) involves the rehabilitation of approximately 12 kilometers of the road in Zimbabwe, and approximately 82 kilometers of the road in Zambia, along the existing road alignment. Phase I of the project (which is the subject of this paper) will provide assistance to immediately reseal some 33 kilometers of selected critical portions of the road in Zambia, between the Kafue River Bridge and the Chirundu Border Post. The resealing must be completed prior to the beginning of the 1981/82 rainy season in order to prevent the cumulative deterioration and failure of the road surface by the rains. Be resealing prior to the rains, the costs of fully rehabilitating the road will be substantially reduced. (See Economic Analysis section). The resealing process will involve the patching and resealing of the road surface in selected areas and the repair and rehabilitation of road shoulders to ensure proper drainage along the road and prevent further damage by erosion to the existing road. The cost of this work, which must be completed before the start of the rainy season in Zambia, is estimated at $990,000.

As a result of completing the resealing process in Zambia prior to the rainy season, several benefits are expected. They are: (1) total project costs of future (Phase II) rehabilitation of the road can be lowered by as much as $7 million; and (2) savings in time and money will also accrue to the trucking industries, producers/consumers, and the Governments of Zambia and Zimbabwe over using other alternative longer, indirect surface routes between Lusaka and Salisbury for transporting goods.

These and other benefits will be described in more detail in the Economic Analysis section of the project paper.

The resealing effort will be implemented by a U.S. or local firm presently operating in Zambia, Zimbabwe, Malawi or possibly Kenya or Zaire. A Code 935 source and origin waiver for construction services and materials will be required. Invitation for Bids (IFB's) will be prepared and issued by the GRZ (with REDSO/EA and RLA assistance). The GRZ will select a contractor

through its selective bidding process, and a host-country contract will be awarded (see Section IV, Implementation Arrangements) in July 1981. The resealing work will be implemented by the selected contractor, with AID providing technical assistance to monitor implementation activities.

C. Summary Findings

The analyses undertaken in this paper found the project's design to be technically, economically, socially and financially feasible and concluded that the project is ready for implementation.

The need for strengthening transportation linkages between the nine majority-rule nations of southern Africa is critical. The rehabilitation of the Salisbury - Chirundu - Lusaka (Zim-Zam) road will constitute an important component of the U.S. foreign assistance program in southern Africa. The project will also contribute to SADCC's objectives of: 1) reducing external dependence, 2) creating operational and equitable regional integration and 3) mobilizing resources to carry out policies and secure international understanding and support for SADCC's strategy.

Phases I and II of the project retain the same range and general scope of activities as described in the PID. The negative determination requested in the PID, regarding environmental impact, therefore remains valid.

The technical and economic aspects of the proposed project have been closely examined, and despite the accelerated design and implementation schedules for both phases, the project discussed in this paper represents the most technically viable and economically cost-effective response to the need for rehabilitating the road among all other transport alternatives, recognizing both time and funding constraints.

The Southern Africa Transport and Communications Commission (SATCC) - which represents the regional transport interests of the majority rule countries of the region including the Governments of Zimbabwe (GOZ) and Zambia (GRZ) - supports this project and is firmly committed to its timely execution. The project represents the U.S. Government's initial response to a critical need for strengthening regional transport capabilities in southern Africa.

II. Project Background and Detailed Description

A. Background

1. Regional Strategy

The Southern Africa Region, for AID's programmatic purposes, is defined to include the majority-rule countries of Botswana, Lesotho, Malawi, Mozambique, Swaziland, Zambia and Zimbabwe. Angola is also an independent, majority-rule nation within this region; however, AID does not have a development program there at the present time. Of course, any discussions concerning southern Africa must include the Republic of South Africa and the influence it exercises in the region.

The effects of the independence struggles in Zimbabwe have placed a severe strain on the resources of the region but, most especially, have impacted negatively on the regional transport network Border closures and sabotage paired with inadequate maintenance have led to widespread deterioration of the various transport systems in the region. This has resulted in particular problems for the six landlocked countries. Interim solutions have included the use of southern routing through the RSA; but with the internationally recognized independence of Zimbabwe and transport congestion in the RSA, there is a crucial need to re-establish former transport linkages between the landlocked countries and the ports of Mozambique. The situation has been further complicated because several countries in the region have suffered severe droughts and are required to increase their imports of food.

Despite the severe constraints generated by war, drought, and the general state of under-development in the majority-rule nations of southern Africa, there are good reasons to be optimistic about future development trends in the region. In early 1979 the majority-rule nations formed the Southern African Development Coordination Conference. Their objectives are to cooperate in solving regional development problems and lessen external dependence.

While individual member countries have diverse political and economic systems, they also have common problems which hinder growth and development in their countries and in the region. The SADCC countries have identified three major areas for the initial focus of their regional cooperative efforts: transport, agriculture and manpower training. Transportation is viewed by all member countries as the most limiting constraint to development in southern Africa. Although southern Africa has a relatively sound rail and road system (in the respect that it does not require large-scale expansion), the system is characterized by capacity and operational constraints. Deterioration has resulted from war destruction and limited or ineffective maintenance which, in turn, have been caused by security problems, insufficient and unskilled manpower, budgetary constraints and shortages of spare parts and equipment.

The additional costs of transporting goods and the time delays which have resulted from the deteriorating state of the region's transport system have been particularly severe impediments to development for the six landlocked countries, requiring larger inventories but, in fact, usually resulting in commodity shortages and discouraging investment. Since

storage facilities along major regional routes are inadequate, intra-country transport of food and other necessary products has also been severely disrupted, and short-term solutions to the growing food security problem have been further complicated. It is clear to the SADCC countries that cooperation among them is required to determine regional transport priorities and to synchronize investments as well as to harmonize operations of the system.

AID's support of regional efforts in southern Africa complements existing and planned AID bilateral programs. AID's regional activities are a direct response to the needs and priorities of the SADCC countries. The Salisbury - Chirundu - Lusaka (Zim-Zam) road has been specifically identified by the SADCC countries as a high-priority regional activity. Rehabilitation of this important road link is essential because it will provide Zambia with a functional, direct-surface vehicular artery between Lusaka and Salisbury for receiving commercial and consumer goods from Zimbabwe. It will provide Zambia with access to the rail terminus at Zawi, in Zimbabwe, thus enabling Zambia to send and receive goods by rail from other points in the region.

In short, the planning for resources to be devoted to the regional program in southern Africa is consistent with the needs and priorities of the SADCC countries.

2. Zimbabwe

The project is fully consistent with U.S. bilateral aid objectives in Zimbabwe:

- assisting the Government of Zimbabwe (GOZ) in achieving self-sustained equitable growth,

- supporting the creation of a multi-racial democratic nation which will provide stability in the southern Africa region, and

- reconstructing existing infrastructure for immediate impact.

The development of Zimbabwe as a regional economic growth center with the capability to respond to the food (maize) needs of neighboring countries and a manufacturing capacity that offers the alternative of a regional resource will depend, in large measure, on the transport system in the region. The Zim-Zam road project will complement the bilateral program strategy in Zimbabwe in rehabilitating a primary road link which will enable Zambia to obtain the commercial/consumer goods it requires and provide Zimbabwe with additional potential markets for the food (maize) and other manufactured goods which are expected to be produced over the long run by the private sector.

3. Zambia

The AID program in Zambia is clearly focused on assisting the GRZ in realizing their objectives of increasing food production and raising small farmer incomes. The Commodity Import Program loans, which have been provided to the GRZ in each fiscal year since 1977, assist the country in obtaining agricultural commodities and raw materials needed in support of these objectives. Project activities between the U.S. and the GRZ began in FY 1980 with the authorization of two projects designed to develop the GRZ's research and extension capabilities and strengthen their training and planning capacities in agriculture. The PL 480 self-help measures and potential local currency generations will also assist the GRZ in dealing with their chronic food shortages.

It is anticipated, however, that the benefits of these and other donor projects in agriculture designed to assist the GRZ in achieving consistent food self-sufficiency will not be achieved for several years; Zambia, therefore, will need to continue its commercial purchases of food as well as receive imported food aid for the next several years,

most of which will need to be shipped over the Zim-Zam road.

Most of the imported food and much of the on-going commercial cargo essential to the Zambian economy and its development are currently using and will continue to use the Zim-Zam road. This is the most direct route between Salisbury and Lusaka as well as access to the railhead at Zawi which provides a key routing to the ports of Beira and Maputo. The GRZ clearly recognizes the major importance of the road for Zambia's normal commerce with Zimbabwe and other countries in southern Africa and its critical role in the matter of food transport; therefore, the GRZ has placed a very high priority on rehabilitating the road.

4. Other Donors

After the formation of the SADCC in 1979, most of the major donors expressed general interest and indicated their commitment to assist the member countries of SADCC in their endeavors. The subsequent establishment of SATCC, with its focus on regional transport and communications problems, also received the recognition of the international donor community, including the U.S. Government. Rehabilitation of the Zim-Zam road was identified by SATCC as among the regional transport projects accorded highest priority and was presented for donor consideration at the second meeting of SADCC in November 1980. However, no project specific commitment was made by any donor at these meetings.

Since then, the Government of Zimbabwe has received project exploratory teams from the IBRD, the Arab Bank and the EEC, and has presented them with lists of assistance needs for road-network rehabilitation, which have included the Salisbury-Chirundu section of the Zim-Zam road. None of these donors has been forthcoming to date. Similarly, the Government of Zambia has not received any concrete expression of interest in rehabilitation of the Chirundu-Kafue section of the road from any donor;

the possibility of joint donor funding for Phase II is being pursued and would be welcomed by AID for the section in Zambia.

There is an active IBRD loan for road maintenance, equipment, and technical assistance which will impact favorably upon both phases of this project. Problems with recruitment of maintenance staff have to be delayed implementation. AID conferred with the IBRD concerning this situation in April 1981. IBRD is optimistic that the full staff will be on board by September-December 1981, and that its project will proceed on schedule. With this IBRD support, the GRZ will be able to maintain its entire road system, including the sections to be resealed under this project.

B. Detailed Project Description

Background to the Problem.

The hostilities in Rhodesia led to a closure of its borders with Zambia in 1974, and a cessation of traffic and trade between the two countries. However, with the independence of Zimbabwe in 1980, trade and traffic resumed over the two principal transport routes between Zimbabwe and Zambia--the Salisbury-Lusaka (Zim-Zam) road and the road and rail link through Victoria Falls. The minimal maintenance and absence of traffic over the Zim-Zam road during those six years, combined with an upsurge of heavy vehicular traffic since its reopening, have resulted in significant deterioration (ranging from surface cracking to actual failure) over portions of the road.

1. Goal

This project contributes to the regional goal of assisting the majority-rule countries of southern Africa in alleviating the problems that inhibit economic growth and development in the region. One of these problems, namely transportation linkages among the majority-rule nations of southern Africa, ahs been identified by SADCC as the most serious constraint to

economic growth and productivity in the region. As a key regional road link, the Salisbury-Chirundu-Lusaka road is highly important to the present and future growth and stability of the region as well as to that of Zimbabwe and Zambia; this importance is clearly indicated by the high priority placed upon its rehabilitation by SADCC.

2. Purpose

The purpose of this project is to assist in the rehabilitation of the Salisbury-Chirundu-Lusaka (Zim-Zam) road. Phase I of the project will focus on resealing 33 kilometers of specific sections of the road on the Zambian side, between the Kafue River Bridge and the Chirundu Border Post. The surface of the 33 kilometers, if not resealed before the 1981 rainy season, will deteriorate to the point where the road could be closed, and substantially more expensive reconstruction of them would have to be implemented under Phase II. Phase II will be concerned with rehabilitation of approximately 12 kilometers of the road in Zimbabwe and the remaining 49 kilometers of the road in Zambia. At the end of Phase I of this project (November 1981), it is expected that the resealing process on the selected sections of the road in Zambia will be completed, thus halting the serious deterioration which would occur during the 1981 rainy season if no action were taken. It is also expected that, as a result of the resealing process, Phase II of the project can be designed and implemented at a substantially lower overall cost.

The resealing under Phase I must be completed by early November 1981 (the beginning of the rainy season) in order to prevent further cummulative deterioration and road surface failure caused by the rains. By assuring resealing prior to the rains, the total project costs for fully rehabilitating the road will be substantially reduced by as much as $7 million.

Although the resealing process is an interim activity designed to keep the road open and to arrest the problem of physical deterioration of selected portions of the road in Zambia, it is anticipated that this work will reduce the safety hazard and reduce transport operating costs presented by the road in its present condition.

3. Outputs

Over the 33 kilometers of road to be resealed in Phase I, the following outputs are expected:

- potholes will be repaired and damaged portions of the existing pavement edges will be replaced with bituminous material;

- eroded shoulder material will be reshaped and compacted to the original design cross section; and

- a single-wearing course of bituminous spray and chips will be applied.

4. Inputs

AID will provide the following inputs:

- $990,000 and technical expertise needed to assist the Roads Department with all aspects of awarding a host country AID-funded contract for the resealing work to be carried out under this project and,

- short-term technical assistance to monitor the implementation activities under the project.

The Government of the Republic of Zambia will provide the following inputs:

- field supervision and field lab testing to be performed by the Roads Department of the GRZ Ministry of Works and Supply;

- technical expertise required to prepare the bid package, issue IFB's and receive proposals to be performed by the GRZ's Central Tender Board ; and

- GRZ's Roads Department will evaluate proposals and make recommendations (with a review by AID prior to award) to the Central Tender Board for final approval.

III. Project Analysis

A. Technical/Engineering Analysis

The hostilities in Rhodesia led to an eventual closure of its borders with Zambia in 1974, and a cessation of trade between the two countries. However, with the independence of Zimbabwe in 1980, trade and traffic resumed over the two principal transport routes between Zimbabwe and Zambia -- the Salisbury-Lusaka (Zim-Zam) road and the road and rail link through Victoria Falls. The minimal maintenance and absence of traffic over the Zim-Zam road during those six years, combined with an upsurge of heavy vehicular traffic since its reopening, have resulted in significant deterioration of portions of the road.

The Ministry of Roads in Zimbabwe identified 4 segments of the road totaling 12 kilometers which are in need of rehabilitation. These sections require complete reconstruction, because of the loss of strength of the sodic soils below the road surface due to moisture absorption by capillary action. This work will be conducted under Phase II of this project, and will be described in detail in a separate project paper to be submitted later in FY 1981. The Ministry of Works and Supply/Roads Department in Zambia inventoried 82 kilometers of the road from the Kafue River Bridge to the Chirundu Border Post and found that 34 kilometers were in need of resealing (with shoulder and drainage work), 17 kilometers need pavement strengthening (with shoulder and drainage work), and 31 kilometers need complete reconstruction.

The PID team recommended that the 12 kilometers of road identified in Zimbabwe and 82 kilometers of road inventories in Zambia be rehabilitated, as required, along the existing road alignment so that the expected traffic increase on the road could traverse safely. The PID team also

indicated that if the resealing work in Zambia did not commence before the 1982-83 rainy season (beginning March 1983), the resulting deterioration of the road would mean that only 12 kilometers could be resealed, while an estimated 25 kilometers would need strengthening and 45 kilometers would need to be completely reconstructed. The PID team estimated that this could add approximately $3.5 million to the total project costs because of the need for more expensive rehabilitation work; and with inflation and contingency factors added in, the cost of the project would rise by as much as $7 million over the PID cost estimate.

Thus AID/W, in an ECPR meeting on the PID, made a decision to divide the project into two phases: Phase I would be concerned with resealing an estimated 34 kilometers of the road in Zambia, and Phase II would cover pavement strengthening and complete reconstruction of the remaining segments of the 82 kilometers of road in Zambia, and the complete reconstruction of the 4 segments of road in Zimbabwe totaling 12 kilometers.

As stated earlier, the Roads Department inspection of February 18, 1981 recommended that 34 kilometers of the road from Kafue Bridge to Chirundu at the Zimbabwe border be resealed. This section of road was inspected again on May 13, 1981 by the GRZ Roads Department engineers and the USAID/REDSO chief engineer. It is now recommended that 33 kilometers of this road be resealed. (Part of one of the sections previously selected has now been downgraded to the next category and requires pavement strengthening). The 33 kilometers to be resealed under this project are in four distinct sections:

Section R	22 km
Section T	4
Section V	4
Section Y	3
Total	33 km

The section letters represent those portions to be resealed of the alphabetical classification (by road condition) of the 82 kilometer stretch from Kafue Bridge to Chirundu, with Section R starting at the bridge and Section Y ending at Chirundu. The distance from the Kafue Bridge to Chirundu, by the section is:

Section R	20-42 km
Section T	64-68
Section V	72-76
Section Y	79-82

The work to be done is comprised of three separate and distinct tasks, as described below, which are necessary to repair and reseal the existing pavement and replace eroded shoulders on selected sections of the Kafue-Chirundu road. The tasks are:

- to repair potholes and damaged portions of the existing pavement edge with premix bituminous surfacing;
- to replace eroded shoulder material and reshape and compact to original design cross section; and
- to apply a single-wearing course of bituminous spray and chips.

Pavement repair shall consist of repairing potholes and pavement edges with bituminous material in accordance with Section 1500 of the GRZ Ministry of Works, Roads Department Specifications for Roads and Bridges. Potholes shall be excavated and squared off by hand to a depth of from 150 mm to 301 mm as directed by the engineers. (GRZ will provide detailed pothole repair specification in the bid package to be reviewed by USAID/REDSO). Fill material shall consist of compacted select material and bituminous premix surfacing in accordance with the specifications. Edge repair shall be similarly excavated by hand to a depth specified by the Roads Department

field engineer. Fill material shall be premix bituminous surfacing in accordance with Section 1500 of the GRZ standard specification for roads and bridges. Compaction shall be as specified in the specifications and hand or machine rolling/tamping will be as directed by the engineer.

Shoulder repair and replacement shall be in accordance with the GRZ standard specification. (Detailed description is in the bid package reviewed by USAID/REDSO). The Roads Department shall specify and approve borrow pits and materials from them for use by the contractor as shoulder material. Material shall be placed and rolled to specified density and to original design cross section after the edge repairs are completed, inspected and approved by the engineer. Reshaping of ditches will be included.

The application of the single-wearing course of bituminous spray and aggregate chips shall be in accordance with Sections 1504 to 1507 of the standard specifications. Brooms, bituminous sprayers, chip spreaders, rollers and other equipment used in applying the wearing course shall be as described in the specifications. The width to be applied is to match the existing width of the road section being resealed.

Cost Estimates for Resealing Kafue-Chirundu Road

1. Repairs for potholes and pavement edges per km at 2,000/km average.

2. Estimate for regravelling shoulders per km one and a half meters wide each side 100 mm thick volume per km - 1.5 x 2 x .1 x 1,000 - 300 cub. m at 5 cu. m per tipper load - 60 loads per km.

Plant and labor required and cost at rate of 1 km per day from 1978 prices and rates.

A. 5 tippers 4-5 cu. m at 5 x k 9.93 plus 5 x 12 loads x 10 km x 17. 351.65

B. 1 loader 930 k 76.11 plus 8 x 19.09 228.53

C.	1 grader 120 k 65.2 plus 8 x 20.36	228.12
D.	1 dozer D7 k 113.14 plus 8 x 29.14	346.26
	10 laborers at 50 per hour 10 x 8 x 50	40.00
	Sub-total	K1,194.56
	Plus 30 pct to 1981	358.77
	Sub-total	K1,552.93
	Plus 20 pct for supervision	310.59
		K1,863.52
	Rounded to	1,900 k/km

3. Estimate for drainage works per km estimating 1 grader for 1 day per km plus 10 laborers

A.	Grader	220.12
B.	10 laborers	40.00
		268.12
	Plus 30 pct to 1981	80.44
		K348.56
	Plus 20 pct for supervision	69.71
		K418.27
	Rounded to	K420.00/km

4. Estimate for tar spray and chip surfacing

First 39 km distance	K13.664 per km
From 39 to 89 km distance	K14.518 per km
From 89 to 139 km distance	K15.311 per km

5 Total Cost per/km

Potholes and edge repair	2,000 k/km
Regravelling shoulders	1,900
Drainage repair	420
Resealing	15.311
February 1981 price	K19,631 k/km

Escalated from 2-81 to 10-81 at 1.5% per month = 1.13 x K19,631 k/km = K22,183 k/km at $1.22/k - $27,063/km x 33 km - $893,100

Plus 10 percent contingency	89,310
Total Estimated Cost	982,410
Rounded to	$990,000

The Roads Department of the GRZ has prepared an IFB for solicitation of bids for construction of the resealing of the 33 km of road covered by this project. From review of this IFB, it has been determined that adequate technical planning has been done for the proposed work. The Roads Department is capable of administering and supervising the work. The GRZ is capable of soliciting proposals, evaluating them and negotiating a contract based on a formal competitive bidding procedure. The cost estimates for the work to be done are inclusive of all work contemplated and are based on current estimates of cost that include: (1) escalation to mid-point of construction and (2) a provision for contingencies. Accordingly, the REDSO engineer has made a determination that the requirements of Section 611(a) of the FAA have been met.

B. Financial Analysis and Plan

AID's contribution to the resealing activities under Phase I of this project totals $982,410, of which $89,310 represents an allowance for contingencies at a rate of 10% per year. An inflation factor of 1.5% per month for 8 months has been factored into the construction costs of the project. All of the costs associated with Phase I of this project are attributable to construction; no technical assistance, training or commodity costs (other than those associated with materials and personnel required for the resealing construction effort) will be incurred.

The cost estimates for the work to be carried under this activity can be found in Technical Analysis section of the project paper (see Part III A. for detailed cost estimates).

No obligation or expenditure schedules have been developed for Phase I of this project, since the entire amount of $982,410 (rounded to $990,000) will be obligated and expended in CY 1981.

The requirement to commence and complete the planned resealing is an immediate requirement. While the GRZ will be making a significant contribution "in kind", a financial contribution to Phase I is not possible, given the GRZ budget cycle and procedures. It is anticipated that the GRZ will provide a meaningful contribution to the Phase II construction effort. A financial analysis and plan for contribution from AID, the Government of Zimbabwe, and the GRZ will be done for the project paper developed for Phase II of this activity.

C. Social Analysis

The activity to be carried out under Phase I of the project involves resealing approximately 33 kilometers of selected sections of the existing road on the Zambian side, between the Kafue River Bridge and the Chirundu Border Post following the existing road alignment.

The project's principal beneficiary groups will include:

1. urban and rural consumers in Zambia, the major clientele for maize and other foods and consumer goods produced in Zimbabwe which are likely to be imported into Zambia for the near to medium-term;

2. farmer groups in Zimbabwe who produce maize for export, principally in the maize growing region along the road from Sinoia to Makuti;

3. other present and potential producers of export goods and commodities in Zimbabwe and Zambia;

4. an estimated 300 road construction workers during the period of construction, and an additional 60-75 road maintenance workers, providing them with long-term employment benefits; and

5. an undetermined number of persons in related service industries that depend upon the road for their livelihood (e.g., truckers and vehicle servicing outlets).

The area directly serviced by the road in Zambia is sparsely populated, with from 2 to 10 persons per square kilometer. During the hostilities with Rhodesia(now Zimbabwe), much of the population fled the area for safer surroundings. Their return to the area so far has been gradual. Without additional information, it is impossible to estimate even an approximate number of persons who might benefit directly from

the assured access to markets and services which the resealed sections of the road would provide. However, the GRZ is considering locating two new small-farmer development activities in the area (cotton growing and banana cultivation) which would make considerable use of the road by the time the rehabilitation process has been completed. Since the road was already paved before the war, resealing of the road is not expected to substantially enhance the access of government services to this area. Discontinuation of traffic over the road because of failure of some sections, however, would affect such access. The PP analysis for Phase II of the project will examine in somewhat greater detail the social benefits which can be expected to result from the total rehabilitation effort.

D. Economic Analysis

The feasibility of Phase I of the project can be demonstrated on the basis of the resulting savings to the total project cost, the benefit/cost ratios for the alternate assumptions under Phase I, and in terms of the preservation of an essential transport route for Zambia. In each case, the return on investment for Phase I would be individually sufficient to justify assistance. The significance of project sensitivity is considerably reduced as a result of the high return on investment projected.

The implications of resealing the 33 kms of road under Phase I before the onset of the October/November rains are detailed in the technical/engineering analysis of the project. If the work is not completed before the rains, as much as 21 kilometers of road may deteriorate to the point of requiring restrengthening or, in the case of some portions, complete reconstruction. The assessment indicated that the added cost to the project resulting from the failure to reseal before the 1981 rains would be a factor between 6.7 and 7.1 times the cost of Phase I. Calculation of this factor was based on a savings resulting from the resealing of between US$6,605,358and US$7,056,491. The difference is based on whether one adjusts the cost of resealing to October 1981 prices to compensate for the earlier resealing. Other catagories were costed at a mid-life date for the project of September 1983. A breakdown of the calculations is provided in Annex VI . The return on investment represented by these factors is in-an-of itself sufficient alone to justify assistance.

The feasibility of the project can also be demonstrated on the basis of cost/benefit analysis. The calculation of several of the variables necessary for such analysis, however, must be based on projections from, or adjustments of, known data. To compensate for this, feasibility-sensitivity has been tested on the basis of variable ranges for:

- The total number and distribution by weight of heavy vehicle traffic projected for the road;

- A life base of four versus five years for the resealing;

- Varying discount rates, and

- Varying vehicle operating cost rates over the deteriorated road.

Sensitivity was not tested for recurrent maintenance costs as they were regarded as conservative rates to begin with. Inflation was contolled by the use of 1981 prices through out the calculations. Recurrent maintenance costs were increased by 50% to reflect the opportunity costs of limited Zambian government funds.

Benefit/cost ratios calculated for the range of variables expected to be most probable were all in excess of 1/1; the most likely combinations yielded ratios of about 1.4/1. As an example, assuming that the heavy vehicle traffic is divided between 2/3 light and 1/3 heavy trucks with Vehicle Operating Cost (VOC) savings per trip of about US$3.65 and US$9.52 respectively, the benefit/cost ratios are 1.68, 1.62, 1.56 at discount rates of 12, 14. 16% respectively.

The variables providing the greatest degree of sensitivity included:

- If the monthly traffic projections of heavy vehicles used as a base were in error or were not to increase annually by 8%;

- If the mix of heavy vehicles by weight did not match the projections used (i.e., 5 ton and 25 ton categories);

- If the vehicle operating cost savings were not equal to at least US$3.65 per trip for 5 ton trucks or US$9.52 for 25 ton catagories).

No one of these sensitivities was likely in and of itself to counter the feasibility of the project, especially if the resealing were to hold for five years instead of the assumed four years. The calculations did

not, moreover take into account such additional factors as induced traffic, increased government revenues, or social benefits which might result and would increase the feasibility of the project. The feasibility of the project, therefore, is considered sufficiently demonstrated on the basis of cost/benefit ratios alone, to justify assistance. (For a discussion of the sensitivity calculation, see Annex VI.

As has already been stressed in this paper, the Chirundu/Kafue section is a vital road affecting linkage between Zimbabwe and Zambia and impacts on traffic not only from Salisbury but also connecting with the rail head at Zawi (Lion's Den). This is an especially crutic1 link in relation to the food security problems in the region which make it absolutely essential that this route be kept open for import/export traffic. Resealing the 33 kms would reduce, if not eliminate, the chance that this route would be closed or would also reduce the down-time involved in the case of any such closure.

The only alternate road route is via Victoria Falls. The VOC of using this alternate route would be at least twice that of the Chirundu route. The alternate road is highly deteriorated, moreover, and in certain portions has a width equivalent to only about one lane. Not only could the road not handle the required increase in heavy vehicle traffic but it also might deteriorate to the point of being closed as a result of the increased traffic.

Closure of the road routes into the country would affect not only imports of food, but also the import of machinery and spare parts vital to mining, industry, and other economic activities in Zambia. The impact would be especially severe for the transport and commercial sectors. Since rail traffic is already at capacity, it is rejected as an another alternate

routing for the above mentioned commodities. The total impact or cost of import shortages on the Zambian economy cannot be readily calculated, but the ability of the already stressed Zambian economy to carry such additional costs would be difficult.

IV. Implementation Arrangements

A. Role of AID

Implementation of the resealing plans will be through a GRZ-host country contract. Execution of AID mandated responsibilities for monitoring and approving actions associated with the GRZ contract will be carried out by the AID/Representative in Lusaka, in conjunction with REDSO/EA and the Regional Legal Advisor, Mbabane. This team will review the construction bid package before issuance, assist in evaluating the submitted bids and approve the host country contract before it is awarded. AID representatives have concurred in the proposed selected tendering process to be used to expedite resealing before the 1981-82 rains begin.

A direct-hire project manager has been authorized and selected. It is planned that the officer will be in residence in sufficient time to monitor construction and supervision, and certify progress payments. This officer will also participate in the design of Phase II of this project, and manage AID's inputs to the latter phase, as well as this resealing activity. Pending his arrival, implementation scheduling has been assumed by REDSO/EA-Chief Engineer.

B. Role of GRZ

The Roads Department, within the GRZ's Ministry of Works and Supply, will be responsible for preparing the bid package for issuance to the firms selected to bid on the resealing work being carried out under Phase I of the project. Issuance and receipt of proposals will be handled by the GRZ's Central Tender Board. A site visit would be required of all bidders. Evaluation of the proposals and recommendation of a contractor to implement the project will be made by the Roads Department (with a review by AID prior to contract award) and presented to the Central Tender Board for final approval. A host-country contract will be executed by the Roads Department, who will provide in-house contract administration and perform field supervision and field lab testing work; the selected construction

contractor will be requested to provide one standard automobile with fuel and driver for use of the GRZ supervisory force for the period of the contract. This latter requirement will be included in the IFB for Phase I of this project.

C. Implementation Schedule

The actions required and estimated dates are as follows:

Date	Action	Responsible Organization
5/26/81	Central Tender Board, approval of "Selective Bidding"	GRZ
6/1/81	PP approval/authorization	AID/W
6/3/81	Issuance of Invitations for Bids	GRZ (with AID/Zambia, REDSO & RLA review)
6/5/81	Project Agreement Signed	AID/Zambia and GRZ
6/13/81	Site Visit by Potential Contractors	GRZ
6/24/81	Receipt and Review of Bids	GRZ
7/10/81	Contract Award	GRZ
8/10/81	Contractor Mobilization and Construction Begins	Contractor
11/10/81	Construction Completed	GRZ, AID, Contractor

D. Contracting Method

The host-country contractor selection process for the Phase I construction work will be by "selective bidding," which entails solicitation of bids from a selected list of firms which are in the area and are qualified and expected to be responsive to a request for bids on this activity. Firms being considered include 3 from Zambia, 3 from Zimbabwe, 1 from Yugoslavia, 1 from the United Kingdom and 1 from the U.S. (presently doing work in Malawi). These firms will be requested to submit bids based on estimated quantities and specifications to be included in the invitation for bids (IFB's). A site visit will be required by the bidders. A unit price contract by kilometer will be used covering such items as pothole patching,

pavement edge repair, shoulder repair and resealing of existing pavement. The draft IFB has been reviewed by AID/Zambia and the REDSO engineer; the RLA/Mbabane will also review it prior to its issuance. The IFB follows standard GRZ tendering procedures with the exception of the "selective bidding" option mentioned above.

The RLA/Mbabane has provided a list of mandatory AID clauses which will be included in the IFB.

E. Covenants and Waivers

1. Covenants

Because of the GRZ's budget cycle and procedures, limited budget for road maintenance during the implementation period of Phase I and the accelerated time frame for completing the activities under Phase I of this project, a GRZ funding commitment was not requested. However, a commitment by the GRZ for maintenance of the resealed road sections (ditch cleaning, pothole patching, grass cutting, etc.) as a covenant will be included in the project agreement to cover this responsibility.

2. Waivers

The following waivers are requested:

a) a source and origin waiver from AID Geographic Code 941 (Selected Free World) to Geographic Code 935 to permit the solicitation of proposals from nine selected firms who have the qualifications to bid on this activity;

b) a waiver of advertising requirements since proposals will only be sought from the nine selected firms (see Section IV.D, Contracting Method, for details on the "selective bidding" process);

c) a waiver of the host-country contracting requirements of AID Handbook 11, Chapter 2 to permit the use of selective bidding (with the exception of the mandatory AID contract clauses to be identified by

the RLA/Mbabane);

d) a waiver of source and origin requirements to permit the procurement of construction materials which have an approximate value of $150,000 from countries included in AID Geographic Code 935.

The justifications for these waivers can be found in Annex III of the project paper.

Department of State

OUTGOING TELEGRAM

W. Tate

PAGE 01 OF 02 STATE 114885 0253 070839 A106307
ORIGIN AID-35

ORIGIN OFFICE AFSA-03
INFO AAAF-01 AFDP-02 AFDR-06 PPCE-01 PDPR-01 PPPB-03 GC-01
GCAF-01 PPEA-01 GCFL-01 STA-10 FM-02 CMGT-02 CTR-02
ENGR-02 CHG-01 AFDA-01 RELO-01 SM-00 /042 A0

INFO OCT-00 AF-10 EB-08 /053 R

DRAFTED BY AID/AFR/SA:FVTATE:NB
APPROVED BY AID/AA/AFR:WNNORTN
AFR/SA: MV DAGATA
GC/AFR: T BORK
AFR/DP: R STACY
AFR/SA:T MORSE
AFR/DR: J KOEHRING
AFR/SA: S WRIN
AFR/DR: D BLANE
AFR/SA: L POMPA
AFR/DR/ENG:TTUMMURELLO
SER/CM/SD:PCASTEEL
AF/EPS:DWATERMAN

--------------065255 050212Z /12

O 050136Z MAY 81
FM SECSTATE WASHDC
TO AMEMBASSY LUSAKA IMMEDIATE
AMEMBASSY SALISBURY IMMEDIATE
AMEMBASSY NAIROBI IMMEDIATE

UNCLAS STATE 114885

AIDAC, NAIROBI FOR REDSO

E.O. 12065: N/A

TAGS:

SUBJECT: ZIM-ZAM ROAD PID

REF: A) STATE 096865 B) LUSAKA 17.0 C) SALISBURY 1535

1. SUMMARY. SUBJECT PID WAS REVIEWED BY ECPR ON APRIL 23, 1981 AND IS APPROVED FOR PP DESIGN. IF PROJECT IS APPROVED, ZIMBABWE PORTION WOULD BE FUNDED FROM MAKUTI/CHIRUNDU ROAD PROJECT 613-0187; ZAMBIA PORTION WOULD BE FUNDED FROM REGIONAL TRANSPORT AND STORAGE DEVELOPMENT PROJECT 642-0189. DECISIONS TAKEN DURING THE REVIEW ARE SUMMARIZED BELOW FOR CONSIDERATION IN PP DESIGN AND SEPARATE ACTIONS AS SPECIFIED. END SUMMARY.

2. ON APRIL 23 ACTING AA/AFR CHAIRED ECPR TO REVIEW SUBJECT PID. REDSO IS CONGRATULATED ON RAPID AND THOROUGH PID. PRINCIPAL ISSUES DECIDED ARE AS FOLLOWS.

3. SHOULD THE PROJECT BE EXPANDED TO INCLUDE ANOTHER 28 KMS OF ROAD IN ZIMBABWE? ECPR RECOGNIZED THAT PID ADDRESSED ONLY THOSE ROAD PORTIONS THREATENED BY COLLAPSE OF SODIC SOILS AT TIME OF THEIR VISIT. IT WAS AGREED THAT ROAD PORTIONS BEYOND THE TWELVE KMS COVERED IN THE PID) WHICH HAVE BEEN DEFINITELY IDENTIFIED BY SODIC SOIL FAILURES ALSO SHOULD BE SUBSUMED INTO PROJECT. IN ADDITION, GOZ MAY HAVE VALID ARGUMENTS FOR EXTENDING U.S. ASSISTANCE TO RETIREMENT WORK (BRITISH TECHNICAL TEAM FOR REHABILITATION OF A ROAD WITH EXPIRED DESIGN LIFE) ON ALL FORTY KMS. THESE SHOULD BE CONSIDERED BY MISSION AND GOZ AGAINST THE OVERALL DEVELOPMENT NEEDS OF ZIMBABWE. SINCE U.S. FUNDS FOR ZIMBABWE PORTION OF PROJECT ARE TO COME FROM FY 81-82 BILATERAL LEVELS, THE ECPR FELT THAT THE PRIORITY OF ANY WORK BEYOND THE PID-IDENTIFIED 12 KMS SHOULD BE ASCERTAINED FROM THE GOZ AND REFLECTED IN THE

STATE 114885 0253 070839 A106307
PROJECT DESIGN AFTER CONSULTATION WITH AID/W (SEE BELOW).

ACTION: REDSO/REILLY IS REQUESTED TO VISIT ZAMBIA ON/OR ABOUT MAY 18 TO MAY 22 AND THEN PROCEED TO ZIMBABWE ASAP TO UNDERTAKE THE FOLLOWING:

Copy in Annex I.

A) CONFIRM TOTAL NUMBER OF KMS IDENTIFIED TO DATE AS PROBABLY AFFECTED BY SODIC SOIL FILLS (SEE REFTEL C, PARA 2);

B) EXAMINE ARGUMENTS FOR ASSISTANCE TO REHABILITATE THE REMAINING KMS SCHEDULED FOR RETIREMENT:

1) ON THE BASIS OF ECONOMIES OF SCALE

2) ON THE BASIS OF THE EFFECTS OF PROJECTED TRAFFIC

3) ON THE BASIS OF CURRENT OR PROJECTED DETERIORATION OF THE ROAD SURFACE.

ACTION: USAID/SALISBURY AND REDSO/EA ARE REQUESTED TO APPROACH THE MINISTRIES OF ECONOMIC PLANNING AND FINANCE TO ASCERTAIN GOZ PRIORITY (BEFORE PP TEAM ARRIVES) OF FUNDING 12 VS 40 KMS UNDER PROPOSED PROJECT. ALSO, IF AID PARTICIPATES IN THE COST OF REHABILITATING ALL 40 KMS, WOULD ENTIRE AMOUNT OF GOZ FUNDS CURRENTLY PROGRAMMED/BUDGETED FOR THIS ROAD BE REQUIRED?

4. SHOULD AID PROVIDE THE ONLY DONOR FINANCING FOR THIS PROJECT? THE ECPR NOTED THE SIZEABLE COST OF THE ZAMBIAN PORTION OF THE ROAD (DOLS 18-25 MILLION) IN RELATION TO LIMITED (UP TO DOLS 12.5 MILLION) REGIONAL TRANSPORT FUNDS AVAILAPLE DURING FY 81. WE WOULD PREFER NOT TO MORTGAGE FY 82-83 FUNDS BECAUSE IT WOULD RESTRICT OUR ABILITY TO SUPPORT OTHER SOUTHERN AFRICA REGIONAL TRANSPORT NEEDS. OUR PREFERENCE (SEE BELOW) IS TO A) SEEK GRZ FUNDS FOR THE SHORTFALL AND B) ACTIVELY SOLICIT CO-FINANCING WITH OTHER DONORS (ASSUMING GRZ COULD NOT MEET FULL SHORTFALL). AID/W IS WELL AWARE OF THE PROBLEMS OF TIMING AND FUNDING MODALITIES THAT THIS APPROACH IMPLIES, BUT LIMITED U.S. FUNDS SUGGEST SOME MIX OF FUNDS. ACTION: REQUEST USAID/LUSAKA AND SALISBURY COMMENT REGARDING RECOMMENDED APPROACH FOR SOLICITING CONTRIBUTION BY OTHER DONORS, INCLUDING THE APPROPRIATE ROLES OF GRZ/GOZ AND POSSIBLE ROLE FOR SATCC. WE WOULD LIKE TO DISCUSS POSSIBLE COLLABORATION WITH CADA MEMBERS AND OTHER POSSIBLE DONORS (EEC, IBRD, BADEA, JAPAN) AS SOON AS AN AGREED APPROACH IS FORMULATED. IN ANY CASE, WE WOULD RECOMMEND AUTHORIZATION REPEAT AUTHORIZATION OF FULL ZAMBIA REQUIREMENT, IF OTHER DONOR FUNDING NOT YET ARRANGED WHEN PP PRESENTED.

5. WHAT FISCAL CONTRIBUTION CAN THE GRZ BE EXPECTED TO MAKE? GOZ WILL EFFECT SIGNIFICANT CONTRIBUTION THROUGH FIELD WORK, DESIGN, AND SUPERVISION. WHILE THE ECPR RECOGNIZED THAT THERE IS NO LEGAL REQUIREMENT PERTAINING TO THIS REGIONAL ESF PROJECT IT NOTED THAT A SIGNIFICANT GRZ FINANCIAL INVOLVEMENT IS CRITICAL TO THE INTEGRITY OF THE PROJECT. GIVEN THE PRESENT SHORTAGE OF FOREIGN EXCHANGE IN ZAMBIA, HOWEVER, ECPR FELT GRZ WOULD ENCOUNTER DIFFICULTIES NOT ONLY IN FUNDING BUT ALSO IN RAPIDLY IMPLEMENTING THE RESEALING OF THE ROAD AS RECOMMENDED IN THE PID. GIVEN THE SIGNIFICANT TAVING INVOLVED IN THE RESEALING EFFORT AID/W IS PREPARED TO MOVE IMMEDIATELY WITH A LIMITED PP FOR THE RESEALING INSTEAD OF CALLING ON GRZ FOR THIS CONTRIBUTION. SUCH ACTION IS DEEMED APPROPRIATE BOTH BECAUSE OF THE URGENCY INVOLVED IN STABILIZING THE ROAD AND REDUCTION OF ULTIMATE PROJECT COST. WE HOPE THIS ACTION BY AID WILL PROVIDE OCCASION FOR NEGOTIATING A SIGNIFICANT GRZ

Cable 5/15

UNCLASSIFIED

Department of State

OUTGOING TELEGRAM

FINANCIAL CONTRIBUTION TO THE PROJECT.

ACTION: THE ECPR REQUESTS MISSION PURSUE A PROJECT CONTRIBUTION BY THE GRZ ALONG THE FOLLOWING LINES:

A) PLEASE STRESS THE IMPORTANCE OF A SIGNIFICANT CONTRIBUTION BY THE GRZ.

B) PLEASE NOTE THAT GRZ COVERAGE OF RESEALING COSTS AS PROPOSED IN THE PID WAS INTENDED TO SERVE AS A DEMONSTRATION OF GRZ COMMITMENT.

C) RECOGNIZING THE NEED FOR TIMELY ACTION AND RECOGNIZING EXISTING GRZ BUDGETARY CONSTRAINTS, AID IS PREPARED TO PURSUE WITH GRZ DEVELOPMENT OF LIMITED, INTERIM PROJECT TO COVER RESEALING REQUIREMENT.

D) HAVING TAKEN THIS ACTION AID WILL EXPECT THE GRZ, WITHIN THE NEXT TWO YEARS (BEGINNING NOVEMBER 1982 WITH CONSTRUCTION CONTRACT) TO MAKE A SIZEABLE CONTRIBUTION (DOLS 4-6 MILLION) TO THE MAIN REHABILITATION PROJECT. THIS WILL ALLOW THE GRZ TO PLAN AND BUDGET ITS CONTRIBUTION AND TAKE INTO ACCOUNT THE IMPACT OF THE IMF AGREEMENT AND THE IBRD LOAN FOR ROAD MAINTENANCE.

6. CAN THE TIMEFRAME FOR ACCELERATED PROJECT IMPLEMENTATION BE SUPPORTED AS CALLED FOR IN THE PID?

A) PROJECT SAVINGS (DOLS 7.4 MIL) FROM IMMEDIATE RESEALING AND ACCELERATED IMPLEMENTATION WERE NOTED BY ECPR. THESE SHOULD BE REVERIFIED BY PP TEAM. IN THE MEANTIME, AS NOTED ABOVE, ECPR AUTHORIZES IMMEDIATE AID/V DEVELOPMENT OF A SEPARATE PP FOR THE RESEALING.

ACTION: REDSO/REILLY. AS REQUESTED IN PARA 3 ABOVE, REQUEST REILLY ACCOMPLISH FOLLOWING IN RELATION TO A SEPARATE RESEALING PROJECT.

1) RECONFIRM ECONOMY OF PROCEEDING NOW WITH RESEALING.

2) VERIFY GRZ CAPACITY TO MANAGE THE TENDERING/SELECTION PROCESS, INCLUDING WRITING THE IFB.

3) DETERMINE/VERIFY TECHNICAL SPECIFICATIONS, INCLUDING IDENTIFICATION OF SPECIFIC ROAD SECTIONS WHICH WILL BE RESEALED, SCHEDULE FOR TENDERING PROCESS, CONTRACTOR MOBILIZATION AND RESEALING TIME, ETC.

4) VERIFY GRZ CAPACITY TO SUPERVISE RESEALING. RECOMMEND ALTERNATIVE ARRANGEMENTS IF JUDGED NECESSARY.

5) MAKE FAA 611(A) DETERMINATION RE COMPLETENESS OF ENGINEERING DATA AND ACCURACY OF RESEALING COST ESTIMATES.

6) MAKE NATIONALITY DETERMINATION AS TO FIRMS MOST LIKELY TO BID AND DEVELOP/DRAFT WAIVER FOR APPROPRIATE GEOGRAPHIC CODE, AS NECESSARY.

7) SEPTEL FOLLOWS WITH FURTHER DETAILS REGARDING ACTIONS TO BE TAKEN PREPARATORY TO RESEALING.

C) ECPR SUPPORTED ACCELERATED IMPLEMENTATION WHENEVER POSSIBLE BUT THIS CANNOT BE AT THE EXPENSE OF SOUND PROJECT IMPLEMENTATION. PP SHOULD CONTAIN ALTERNATIVE PROPOSALS. PROJECT DESIGN IS SCHEDULED TO BE COMPLETED FOR AUTHORIZATION BY END AUGUST 1981.

7. WHAT SPECIAL REQUIREMENTS WILL BE NECESSARY FOR PROJECT MANAGEMENT? ECPR IS IN FULL ACCORD WITH NEED

FOR ARRANGING PROJECT MANAGEMENT AS EARLY IN PRE-IMPLEMENTATION PROCESS AS POSSIBLE. AID/V REQUESTS THAT UNTIL A PROJECT MANAGER HAS BEEN IDENTIFIED, REDSO FULFILL PROJECT MANAGEMENT RESPONSIBILITIES IN CONJUNCTION WITH AID REP LUSAKA. AID/V HAS INITIATED A SEARCH FOR A DIRECT HIRE PROJECT MANAGER. REQUEST LUSAKA AND REDSO DEVELOP PD AND CABLE SAME TO AID/V ASAP. WE ARE ALSO CONSIDERING TCN, IGC OR PSC COVERAGE AS AN INTERIM MEASURE.

8. WHAT IS THE CAPACITY OF THE GRZ TO MAINTAIN THE ROAD AFTER IT HAS BEEN REHABILITATED? AID/V HAS CONFERRED WITH THE IBRD CONCERNING DELAYED IMPLEMENTATION OF THE LOAN FOR ROAD MAINTENANCE (THIRD HIGHWAY PROJECT). IBRD BELIEVES LONG TIME QUOTE LOG-JAM END QUOTE HAS BEEN BROKEN. IBRD IS OPTIMISTIC THAT FULL STAFF WILL BE ON BOARD BY SEPT-DEC 1981, AND PROJECT WILL PROCEED ON SCHEDULE. AID/V FEELS PROGRESS SHOULD BE VERIFIED BY PP TEAM AND CONTINUOUSLY MONITORED BY FIELD. (MEMO OF IBRD FINDINGS BEING POUCHED).

9. WE BELIEVE ONLY OTHER ISSUE IN PID REQUIRING AID/V GUIDANCE CONCERNED LOAN VS. GRANT FUNDING. AID/V CONCURS WITH POSITION STATED IN PID THAT PROJECT FUNDING SHOULD BE MADE AVAILABLE ON A LOAN BASIS ON AID'S MOST CONCESSIONAL TERMS.

10. ISSUES DEFERRED FOR RESOLUTION IN THE FIELD INCLUDE THE ECONOMIC ANALYSIS AND IMPLEMENTATION CAPACITY OF THE GRZ. AID/V FOLLOW-UP ACTIONS INCLUDE: CONTRACTED SERVICES OF A TRANSPORT ECONOMIST (MOELLER) ARE BEING ARRANGED FOR JUNE TDY FOR ECONOMIC ANALYSIS IN ZAMBIA AND REVIEW SAME IN ZIMBABWE; CONTRACTED ENGINEERING ASSISTANCE IN CONJUNCTION WITH REDSO FOR GRZ APPRAISAL OF CAPACITY OF ROADS DEPARTMENT TO PARTICIPATE IN PROJECT DESIGN, TENDERING, IMPLEMENTATION AND SUPERVISION.

11. AID/V IS CONCERNED ABOUT ACTIONS TO BE TAKEN BY THE GOZ/GRZ IN ADVANCE OF THE ARRIVAL OF THE PP TEAM IN JULY. INCLUDED IN THIS ARE THE ECONOMIC FEASIBILITY STUDY OF THE MAAUTI/CHIBUNDU SECTION TO BE UNDERTAKEN BY THE GOZ AND A TRAFFIC COUNT AND COLLECTION OF DATA ON THE CHIBUNDU/KAFUE SECTION BY THE GRZ IN ADVANCE OF THE ARRIVAL OF TRANSPORT ECONOMIST MOELLER IN EARLY JUNE TO DO AN ECONOMIC APPRAISAL FOR THE ZAMBIAN SECTION OF THE ROAD. THE MINISTRIES ARE REQUESTED TO VERIFY THE STATUS OF SUCH ACTIONS AND PROVIDE ANY RELEVANT COMMENTS. SPECIFIC DETAILS TO FOLLOW IN SEPTEL. SEPTEL ON PP DESIGN GUIDANCE INCLUDING SCHEDULE TO FOLLOW. CLARK

UNCLASSIFIED

ACTION COPY

Department of State

INCOMING TELEGRAM

PAGE 01 LUSAKA 02169 211405Z 7469 010468 AID6898
ACTION AID-35

ACTION OFFICE AFDR-06
INFO AAAF-01 AFFA-01 AFSA-01 STA-10 ENGH-02 CHS-01 AFDA-01
RELO-01 MAST-01 /029 A4 821

INFO OCT-01 /036 W
----------153036 211407Z /34

P 210935Z MAY 81
FM AMEMBASSY LUSAKA
TO SECSTATE WASHDC PRIORITY 7045
INFO AMEMBASSY NAIROBI PRIORITY
AMEMBASSY MBABANE PRIORITY
AMEMBASSY MASERU PRIORITY
AMEMBASSY SALISBURY PRIORITY

UNCLAS LUSAKA 2169

AIDAC

MASERU FOR REILLY AND RLA

NAIROBI FOR REDSO/EA

E.O. 12065: N/A
SUBJ: ZIM-ZAM ROAD, PHASE I RESEALING (690-0209):
GRZ REQUEST

WE JUST RECEIVED THE FOLLOWING LETTER WHICH IS QUOTED FOR YOUR INFO:

QUOTE

MR JOHN PATTERSON
USAID REPRESENTATIVE
EMBASSY OF THE UNITED STATE OF AMERICA
LUSAKA

DEAR MR PATTERSON

RESEALING OF THE KAFUE-CHIRUNDU ROAD
IN ORDER TO PREVENT FURTHER DETERIORATION OF THE KAFUE/CHIRUNDU ROAD, IT IS NECESSARY THAT PORTIONS OF IT WHICH ADD UP TO 33 KM SHOULD BE RESEALED. TO THIS END, I WISH ON BEHALF OF THE GOVERNMENT OF THE REPUBLIC OF ZAMBIA TO FORMERLY REQUEST FOR ASSISTANCE FROM THE UNITED STATES GOVERNMENT IN THE WAY OF A GRANT TO ENABLE US RESEAL THE KAFUE/CHIRUNDU ROAD.

M V SIWALE
PERMANENT SECRETARY
MINISTRY OF WORKS AND SUPPLY

UNQUOTE.
WISNER

ANNEX II.

DAI 21.

UNCLASSIFIED

WAIVERS AND APPROVALS

Required waivers for project implementation exceed the approval authority of the Assistant Administrator for Africa. The waiver package will consequently be submitted to the Administrator for approval concurrent with submission of the Project Paper to the AA/AFR for authorization. Upon authorization of the project and approval of the waivers, the waiver package will be attached as this annex to the Project Paper.

Department of State

OUTGOING TELEGRAM

W. Tate

PAGE 01 OF 02 STATE 114885 0253 070839 AID6307
ORIGIN AID-35

ORIGIN OFFICE AFSA-03
INFO AAAF-01 AFDP-02 AFDR-06 PPCE-01 PDPR-01 PPPB-03 GC-01
GCAF-01 PPEA-01 GCFL-01 STA-10 FM-02 CMGT-02 CTR-02
ENGR-02 CNB-01 AFDA-01 RELO-01 SM-00 /042 A0

INFO OCT-00 AF-10 EB-08 /053 R

DRAFTED BY AID/AFR/SA:FVTATE:NB
APPROVED BY AID/AA/AFR:WNNORTH
AFR/SA; MV DAGATA
GC/AFR; T BORK
AFR/DP; K STACY
AFR/SA;T MORSE
AFR/DR; J KOEHRING
AFR/SA; B WRIN
AFR/DR; D BLANE
AFR/SA; L POMPA
AFR/DR/ENG:TTUMMURELLO
SER/CM/SD:PCASTEEL
AF/EPS:DWATERMAN
----------065255 050212 /12

O 050126Z MAY 81
FM SECSTATE WASHDC
TO AMEMBASSY LUSAKA IMMEDIATE
AMEMBASSY SALISBURY IMMEDIATE
AMEMBASSY NAIROBI IMMEDIATE

UNCLAS STATE 114885

AIDAC, NAIROBI FOR REDSO

E.O. 12065: N/A

TAGS:

SUBJECT: ZIM-ZAM ROAD PID

REF: A) STATE 096465 B) LUSAKA 1738 C) SALISBURY 1525

1. SUMMARY. SUBJECT PID WAS REVIEWED BY ECPR ON APRIL 23, 1981 AND IS APPROVED FOR PP DESIGN. IF PROJECT IS APPROVED, ZIMBABWE PORTION WOULD BE FUNDED FROM MAKUTI/CHIRUNDU ROAD PROJECT 613-0207; ZAMBIA PORTION WOULD BE FUNDED FROM REGIONAL TRANSPORT AND STORAGE DEVELOPMENT PROJECT 698-0209. DECISIONS TAKEN DURING THE REVIEW ARE SUMMARIZED BELOW FOR CONSIDERATION IN PP DESIGN AND SEPARATE ACTIONS AS SPECIFIED. END SUMMARY.

2. ON APRIL 23 ACTING AA/AFR CHAIRED ECPR TO REVIEW SUBJECT PID. REDSO IS CONGRATULATED ON RAPIDAID THROUGH PID. PRINCIPAL ISSUES DECIDED ARE AS FOLLOWS.

3. SHOULD THE PROJECT BE EXPANDED TO INCLUDE ANOTHER 28 KMS OF ROAD IN ZIMBABWE? ECPR RECOGNIZED THAT PID ADDRESSED ONLY THOSE ROAD PORTIONS THREATENED BY COLLAPSE OF SODIC SOILS AT TIME OF THEIR VISIT. IT WAS AGREED THAT ROAD PORTIONS BEYOND THE TWELVE KMS COVERED IN THE PID WHICH HAVE BEEN DEFINITELY IDENTIFIED BY SODIC SOIL FAILURES ALSO SHOULD BE SUBSUMED INTO PROJECT. IN ADDITION, GOZ MAY HAVE VALID ARGUMENTS FOR EXTENDING U.S. ASSISTANCE TO RETIREMENT WORK (BRITISH TECHNICAL TERM FOR REHABILITATION OF A ROAD WITH EXPIRED DESIGN LIFE) ON ALL FORTY KMS. THESE SHOULD BE CONSIDERED BY MISSION AND GOZ AGAINST THE OVERALL DEVELOPMENT NEEDS OF ZIMBABWE. SINCE U.S. FUNDS FOR ZIMBABWE PORTION OF PROJECT ARE TO COME FROM FY 81-83 BILATERAL LEVELS, THE ECPR FELT THAT THE PRIORITY OF ANY WORK BEYOND THE PID-IDENTIFIED 12 KMS SHOULD BE ASCERTAINED FROM THE GOZ AND REFLECTED IN THE PROJECT DESIGN AFTER CONSULTATION WITH AID/W (SEE BELOW).

ACTION: REDSO/REILLY IS REQUESTED TO VISIT ZAMBIA ON/OR ABOUT MAY 18 TO MAY 22 AND THEN PROCEED TO ZIMBABWE ASAP TO UNDERTAKE THE FOLLOWING:

Copy in ANNEX I.

A) CONFIRM TOTAL NUMBER OF KMS IDENTIFIED TO DATE AS PROBABLY AFFECTED BY SODIC SOIL FILLS (SEE REFTEL C, PARA 2);

B) EXAMINE ARGUMENTS FOR ASSISTANCE TO REHABILITATE THE REMAINING KMS SCHEDULED FOR RETIREMENT:

1) ON THE BASIS OF ECONOMIES OF SCALE

2) ON THE BASIS OF THE EFFECTS OF PROJECTED TRAFFIC

3) ON THE BASIS OF CURRENT OR PROJECTED DETERIORATION OF THE ROAD SURFACE.

ACTION: USAID/SALISBURY AND REDSO/EA ARE REQUESTED TO APPROACH THE MINISTRIES OF ECONOMIC PLANNING AND FINANCE TO ASCERTAIN GOZ PRIORITY (BEFORE PP TEAM ARRIVES) OF FUNDING 12 VS 40 KMS UNDER PROPOSED PROJECT. ALSO, IF AID PARTICIPATES IN THE COST OF REHABILITATING ALL 40 KMS, WOULD ENTIRE AMOUNT OF GOZ FUNDS CURRENTLY PROGRAMMED/BUDGETED FOR THIS ROAD BE REQUIRED?

4. SHOULD AID PROVIDE THE ONLY DONOR FINANCING FOR THIS PROJECT? THE ECPR NOTED THE SIZEABLE COST OF THE ZAMBIAN PORTION OF THE ROAD (DOLS 18-25 MILLION) IN RELATION TO LIMITED (UP TO DOLS 12.5 MILLION) REGIONAL TRANSPORT FUNDS AVAILABLE DURING FY 81. WE WOULD PREFER NOT TO MORTGAGE FY 82-83 FUNDS BECAUSE IT WOULD RESTRICT OUR ABILITY TO SUPPORT OTHER SOUTHERN AFRICA REGIONAL TRANSPORT NEEDS. OUR PREFERENCE (SEE BELOW) IS TO A) SEEK GRZ FUNDS FOR THE SHORTFALL AND B) ACTIVELY SOLICIT CO-FINANCING WITH OTHER DONORS (ASSUMING GRZ COULD NOT MEET FULL SHORTFALL). AID/W IS WELL AWARE OF THE PROBLEMS OF TIMING AND FUNDING MODALITIES THAT THIS APPROACH IMPLIES, BUT LIMITED U.S. FUNDS SUGGEST SOME MIX OF FUNDS. ACTION: REQUEST USAID/LUSAKA AND SALISBURY COMMENT REGARDING RECOMMENDED APPROACH FOR SOLICITING CONTRIBUTION BY OTHER DONORS, INCLUDING THE APPROPRIATE ROLES OF GRZ/GOZ AND POSSIBLE ROLE FOR SATCC. WE WOULD LIKE TO DISCUSS POSSIBLE COLLABORATION WITH CADA MEMBERS AND OTHER POSSIBLE DONORS (EEC, IBRD, BADEA, JAPAN) AS SOON AS AN AGREED APPROACH IS FORMULATED. IN ANY CASE, WE WOULD RECOMMEND AUTHORIZATION REPEAT AUTHORIZATION OF FULL ZAMBIA REQUIREMENT, IF OTHER DONOR FUNDING NOT YET ARRANGED WHEN PP PRESENTED.

5. WHAT FISCAL CONTRIBUTION CAN THE GRZ BE EXPECTED TO MAKE? GOZ WILL EFFECT SIGNIFICANT CONTRIBUTION THROUGH FIELD WORK, DESIGN, AND SUPERVISION. WHILE THE ECPR RECOGNIZED THAT THERE IS NO LEGAL REQUIREMENT PERTAINING TO THIS REGIONAL ESF PROJECT IT NOTED THAT A SIGNIFICANT GRZ FINANCIAL INVOLVEMENT IS CRITICAL TO THE INTEGRITY OF THE PROJECT. GIVEN THE PRESENT SHORTAGE OF FOREIGN EXCHANGE IN ZAMBIA, HOWEVER, ECPR FELT GRZ WOULD ENCOUNTER DIFFICULTIES NOT ONLY IN FUNDING BUT ALSO IN RAPIDLY IMPLEMENTING THE RESEALING OF THE ROAD AS RECOMMENDED IN THE PID. GIVEN THE SIGNIFICANT SAVING INVOLVED IN THE RESEALING EFFORT AID/W IS PREPARED TO MOVE IMMEDIATELY WITH A LIMITED PP FOR THE RESEALING INSTEAD OF CALLING ON GRZ FOR THIS CONTRIBUTION. SUCH ACTION IS DEEMED APPROPRIATE BOTH BECAUSE OF THE URGENCY INVOLVED IN STABILIZING THE ROAD AND REDUCTION OF ULTIMATE PROJECT COST. WE HOPE THIS ACTION BY AID WILL PROVIDE OCCASION FOR NEGOTIATING A SIGNIFICANT GRZ

Cable 5115

UNCLASSIFIED

Department of State

OUTGOING TELEGRAM

FINANCIAL CONTRIBUTION TO THE PROJECT.

ACTION: THE ECPR REQUESTS MISSION PURSUE A PROJECT CONTRIBUTION BY THE GRZ ALONG THE FOLLOWING LINES:

A) PLEASE STRESS THE IMPORTANCE OF A SIGNIFICANT CONTRIBUTION BY THE GRZ.

B) PLEASE NOTE THAT GRZ COVERAGE OF RESEALING COSTS AS PROPOSED IN THE PID WAS INTENDED TO SERVE AS A DEMONSTRATION OF GRZ COMMITMENT.

C) RECOGNIZING THE NEED FOR TIMELY ACTION AND RECOGNIZING EXISTING GRZ BUDGETARY CONSTRAINTS, AID IS PREPARED TO PURSUE WITH GRZ DEVELOPMENT OF LIMITED, INTERIM PROJECT TO COVER RESEALING REQUIREMENT.

D) HAVING TAKEN THIS ACTION AID WILL EXPECT THE GRZ, WITHIN THE NEXT TWO YEARS (BEGINNING NOVEMBER 1982 WITH CONSTRUCTION CONTRACT) TO MAKE A SIZEABLE CONTRIBUTION (DOLS 4-5 MILLION) TO THE MAIN REHABILITATION PROJECT. THIS WILL ALLOW THE GRZ TO PLAN AND BUDGET ITS CONTRIBUTION AND TAKE INTO ACCOUNT THE IMPACT OF THE IMF AGREEMENT AND THE IBRD LOAN FOR ROAD MAINTENANCE.

6. CAN THE TIMEFRAME FOR ACCELERATED PROJECT IMPLEMENTATION BE SUPPORTED AS CALLED FOR IN THE PID?

A) PROJECT SAVINGS (DOLS 7.4 MIL) FROM IMMEDIATE RESEALING AND ACCELERATED IMPLEMENTATION WERE NOTED BY ECPR. THESE SHOULD BE REVERIFIED BY PP TEAM. IN THE MEANTIME, AS NOTED ABOVE, ECPR AUTHORIZES IMMEDIATE AID/W DEVELOPMENT OF A SEPARATE PP FOR THE RESEALING.

ACTION: REDSO/REILLY. AS REQUESTED IN PARA 3 ABOVE, REQUEST REILLY ACCOMPLISH FOLLOWING IN RELATION TO A SEPARATE RESEALING PROJECT.

1) RECONFIRM ECONOMY OF PROCEEDING NOW WITH RESEALING.

2) VERIFY GRZ CAPACITY TO MANAGE THE TENDERING/SELECTION PROCESS, INCLUDING WRITING THE IFB.

3) DETERMINE/VERIFY TECHNICAL SPECIFICATIONS, INCLUDING IDENTIFICATION OF SPECIFIC ROAD SECTIONS WHICH WILL BE RESEALED, SCHEDULE FOR TENDERING PROCESS, CONTRACTOR MOBILIZATION AND RESEALING TIME, ETC.

4) VERIFY GRZ CAPACITY TO SUPERVISE RESEALING. RECOMMEND ALTERNATIVE ARRANGEMENTS IF JUDGED NECESSARY.

5) MAKE FAA 611(A) DETERMINATION RE COMPLETENESS OF ENGINEERING DATA AND ACCURACY OF RESEALING COST ESTIMATES.

6) MAKE NATIONALITY DETERMINATION AS TO FIRMS MOST LIKELY TO BID AND DEVELOP/DRAFT WAIVER FOR APPROPRIATE GEOGRAPHIC CODE, AS NECESSARY.

8) SEPTEL FOLLOWS WITH FURTHER DETAILS REGARDING ACTIONS TO BE TAKEN PREPARATORY TO RESEALING.

C) ECPR SUPPORTED ACCELERATED IMPLEMENTATION WHENEVER POSSIBLE BUT THIS CANNOT BE AT THE EXPENSE OF SOUND PROJECT IMPLEMENTATION. PP SHOULD CONTAIN ALTERNATIVE PROPOSALS. PROJECT DESIGN IS SCHEDULED TO BE COMPLETED FOR AUTHORIZATION BY END AUGUST 1981.

7. WHAT SPECIAL REQUIREMENTS WILL BE NECESSARY FOR PROJECT MANAGEMENT? ECPR IS IN FULL ACCORD WITH NEED

FOR ARRANGING PROJECT MANAGEMENT AS EARLY IN PRE-IMPLEMENTATION PROCESS AS POSSIBLE. AID/W REQUESTS THAT UNTIL A PROJECT MANAGER HAS BEEN IDENTIFIED, REDSO FULFILL PROJECT MANAGEMENT RESPONSIBILITIES IN CONJUNCTION WITH AID REP LUSAKA. AID/W HAS INITIATED A SEARCH FOR A DIRECT HIRE PROJECT MANAGER. REQUEST LUSAKA AND REDSO DEVELOP PD AND CABLE SAME TO AID/W ASAP. WE ARE ALSO CONSIDERING TCN, IQC OR PSC COVERAGE AS AN INTERIM MEASURE.

8. WHAT IS THE CAPACITY OF THE GRZ TO MAINTAIN THE ROAD AFTER IT HAS BEEN REHABILITATED? AID/W HAS CONFERRED WITH THE IBRD CONCERNING DELAYED IMPLEMENTATION OF THE LOAN FOR ROAD MAINTENANCE (THIRD HIGHWAY PROJECT). IBRD BELIEVES LONG TIME QUOTE LOG-JAM END QUOTE HAS BEEN BROKEN. IBRD IS OPTIMISTIC THAT FULL STAFF WILL BE ON BOARD BY SEPT-DEC 1981, AND PROJECT WILL PROCEED ON SCHEDULE. AID/W FEELS PROGRESS SHOULD BE VERIFIED BY PP TEAM AND CONTINUOUSLY MONITORED BY FIELD. (MEMO OF IBRD FINDINGS BEING POUCHED).

9. WE BELIEVE ONLY OTHER ISSUE IN PID REQUIRING AID/W GUIDANCE CONCERNED LOAN VS. GRANT FUNDING. AID/W CONCURS WITH POSITION STATED IN PID THAT PROJECT FUNDING SHOULD BE MADE AVAILABLE ON A LOAN BASIS ON AID'S MOST CONCESSIONAL TERMS.

10. ISSUES DEFERRED FOR RESOLUTION IN THE FIELD INCLUDE THE ECONOMIC ANALYSIS AND IMPLEMENTATION CAPACITY OF THE GRZ. AID/W FOLLOW-UP ACTIONS INCLUDE: CONTRACTED SERVICES OF A TRANSPORT ECONOMIST (MOELLER) ARE BEING ARRANGED FOR JUNE TDY FOR ECONOMIC ANALYSIS IN ZAMBIA AND REVIEW SAME IN ZIMBABWE; CONTRACTED ENGINEERING ASSISTANCE IN CONJUNCTION WITH REDSO FOR GRZ APPRAISAL OF CAPACITY OF ROADS DEPARTMENT TO PARTICIPATE IN PROJECT DESIGN, TENDERING, IMPLEMENTATION AND SUPERVISION.

11. AID/W IS CONCERNED ABOUT ACTIONS TO BE TAKEN BY THE GOZ/GRZ IN ADVANCE OF THE ARRIVAL OF THE PP TEAM IN JULY. INCLUDED IN THIS ARE THE ECONOMIC FEASIBILITY STUDY OF THE MAAUTI/CHIRUNDU SECTION TO BE UNDERTAKEN BY THE GOZ AND A TRAFFIC COUNT AND COLLECTION OF DATA ON THE CHIRUNDU/KAFUE SECTION BY THE GRZ IN ADVANCE OF THE ARRIVAL OF TRANSPORT ECONOMIST MOELLER IN EARLY JUNE TO DO AN ECONOMIC APPRAISAL FOR THE ZAMBIAN SECTION OF THE ROAD. THE MINISTRIES ARE REQUESTED TO VERIFY THE STATUS OF SUCH ACTIONS AND PROVIDE ANY RELEVANT COMMENTS. SPECIFIC DETAILS TO FOLLOW IN SEPTEL. SEPTEL ON PP DESIGN GUIDANCE INCLUDING SCHEDULE TO FOLLOW. CLARK

UNCLASSIFIED

ACTION COPY

Department of State

INCOMING TELEGRAM

PAGE 01 LUSAKA 02169 211405Z 7469 010468 AID6898
ACTION AID-35

ACTION OFFICE AFDR-06
INFO AAAF-01 AFEA-03 AFSA-03 STA-10 ENGR-02 CHS-01 AFDA-01
RELO-01 MAST-01 /029 A4 821

INFO OCT-01 /036 W
153036 211407Z /34

Annex II.

P 210935Z MAY 81
FM AMEMBASSY LUSAKA
TO SECSTATE WASHDC PRIORITY 7045
INFO AMEMBASSY NAIROBI PRIORITY
AMEMBASSY MBABANE PRIORITY
AMEMBASSY MASERU PRIORITY
AMEMBASSY SALISBURY PRIORITY

UNCLAS LUSAKA 2169

AIDAC

MASERU FOR REILLY AND RLA

NAIROBI FOR REDSO/EA

E.O. 12065: N/A
SUBJ: ZIM-ZAM ROAD, PHASE I RESEALING (690-0209):
GRZ REQUEST

WE JUST RECEIVED THE FOLLOWING LETTER WHICH IS QUOTED FOR YOUR INFO:

QUOTE

MR JOHN PATTERSON
USAID REPRESENTATIVE
EMBASSY OF THE UNITED STATE OF AMERICA
LUSAKA

DEAR MR PATTERSON

RESEALING OF THE KAFUE/CHIRUNDU ROAD
IN ORDER TO PREVENT FURTHER DETERIORATION OF THE KAFUE/CHIRUNDU ROAD, IT IS NECESSARY THAT PORTIONS OF IT WHICH ADD UP TO 33 KM SHOULD BE RESEALED. TO THIS END, I WISH ON BEHALF OF THE GOVERNMENT OF THE REPUBLIC OF ZAMBIA, TO FORMERLY REQUEST FOR ASSISTANCE FROM THE UNITED STATES GOVERNMENT IN THE WAY OF A GRANT TO ENABLE US RESEAL THE KAFUE/CHIRUNDU ROAD.

M V SIWALE
PERMANENT SECRETARY
MINISTRY OF WORKS AND SUPPLY

UNQUOTE.
WISNER

MAY 21.

UNCLASSIFIED

WAIVER JUSTIFICATION

Problem: The Southern Africa Regional Transport and Storage Development Project (Phase I) will require the procurement of bulk commodities from Code 935 source. AA/AFR (Acting) is requested to authorize such procurement by granting a source/origin waiver from Geographic Code 000 (U.S. only) to Geographic Code 935 (Special Free World).

Facts:

(A)	Cooperating Country	Zambia
(B)	Project	Regional Transport and Storage Development (690-0209)
(C)	Nature of Funding	Grant
(D)	Source of Funding	ESF
(E)	Description of Goods	Bituminous materials and other POL derivative
(F)	Approximate Value	$150,000
(G)	Probable Source	Zambia
(H)	Probable Origin	Republic of South Africa or United Kingdom

Discussion: In accordance with Handbook 1B, procurement of commodities from Code 941 sources and of Code 935 origins under a grant-financed project requires a waiver. Under Handbook 1B, Chapter 5B4b(7) a waiver may be granted if there are "such other circumstances as are determined to be critical to the success of project objectives". The authority to make such a determination and grant a waiver has been delegated to AA/AFR by AID Delegation of authority No. 40.

The Southern Africa Regional Transport and Storage Development project (Phase I) will provide assistance in resealing 33 kilometers of select portions of the Salisbury-Chirundu-Lusaka (or Zim-Zam) road from the Kafue River Bridge to the Chirundu Border Post. The resealing process involves the patching of potholes, repair and/or replacement of road shoulders, reshaping ditches, and repair/replacement of gutters. If Phase I of this project is not completed before the fall, 1981 rainy season in Zambia begins, the costs of Phase II (which involves pavement strengthening and complete reconstruction of the remaining portions of the 82 kilometer road in Zambia and 12 kilometers of

the road in Zimbabwe) could increase by as much as $7 million over present cost estimates. This is because the heavy rains will cause extensive damage to the sections of the road (which now only require resealing) such that more expensive rehabilitation work (such as pavement strengthening and complete reconstruction) will be required on nearly 21 of the 33 kilometers of road.

The work under Phase I of the project will require premixed bituminous material for patching potholes, surfacing and edge repair, and bituminous spray and aggregate chips for the road surface and shoulders. If Phase I is to be successfully completed prior to the fall rainy season in Zambia, an ample supply of these bituminous materials must be on hand for the use of the contractor selected to perform the required work. Since these materials are oil-based products or derivatives, and Zambia has limited capacity for producing them in a timely manner, it may become necessary to procure these materials from South Africa, which appears to be the most reliable source in the region. These commodities could not be procured from other countries in the region included in Geographic code 941 since most of these countries use materials imported from South Africa for the majority of their road work.

Therefore, if Phase I of the project is to be completed prior to the fall rainy season, there must be an ample supply of bituminous materials on hand and ready for use in Zambia. Since 1) the origin of the bituminous materials presently being used in Zambia is probably the Republic of South Africa, 2) other countries in the region included in Geographic Code 941 use similar materials imported from South Africa, and 3) these materials must be available in ample supply from a reliable source, it is requested that the AA/AFR (acting) for the foregoing reasons, find that there are "such other circumstances as are determined to be critical to the success of the project objectives" and approve the requested waiver.

ANNEX IV

STATUATORY CHECKLIST

COUNTRY CHECKLIST

Listed below are, first, statutory criteria applicable generally to FAA funds, and then criteria applicable to individual fund sources: Development Assistance and Economic Support Fund.

A. GENERAL CRITERIA FOR COUNTRY ELIGIBILITY

1. FAA Sec. 116. Can it be demonstrated that contemplated assistance will directly benefit the needy? If not, has the Department of State determined that this government has engaged in a consistent pattern of gross violations of internationally recognized human rights?

   This grant will finance the resealing of approximately 23 km of the Zim-Zam Road, which is the critical route for the movement of grain, food stuffs and general cargo into Zambia. Ultimate beneficiaries will be urban consumers, farmers and an undertermined number of persons in related service industries that depend upon the road for their livelihood.

2. FAA Sec. 481. Has it been determined that the government of the recipient country has failed to take adequate steps to prevent narcotics drugs and other controlled substances (as defined by the Comprehensive Drug Abuse Prevention and Control Act of 1970) produced or processed, in whole or in part, in such country, or transported through such country, from being sold illegally within the jurisdiction of such country to U.S. Government personnel or their dependents, or from entering the U.S. unlawfully?

   No

3. FAA Sec. 620(b). If assistance is to a government, has the Secretary of State determined that it is not dominated or controlled by the International Communist movement?

   Yes, Secretarial determination No. 77-1 dated 10/28/76

4. FAA Sec. 620(c). If assistance is to a government, is the government liable as debtor or unconditional guarantor on any debt to a U.S. citizen for goods or services furnished or ordered where (a) such citizen has exhausted available legal remedies, and (b) the debt is not disputed or contested by such government?

   We are not aware of any such case.

BEST AVAILABLE DOCUMENT

5. FAA Sec. 620(c)(1). If assistance is to a government, has it (including government agencies or subdivisions) taken any action which has the effect of nationalizing, expropriating, or otherwise seizing ownership or control of property of U.S. citizens or entities beneficially owned by them without taking steps to discharge its obligations toward such citizens or entities? — No

6. FAA Sec. 620(a), 620(f), 620D; FY 80 App. Act. Sec. [511, 512 and 513.] Is recipient country a Communist country? Will assistance be provided to Angola, Cambodia, Cuba, Laos or Vietnam? Will assistance be provided to Afghanistan or Mozambique without a waiver? — No

7. FAA Sec. 620(i). Is recipient country in any way involved in (a) subversion of, or military aggression against, the United States or any country receiving U.S. assistance, or (b) the planning of such subversion or aggression? — No

8. FAA Sec. 620(j). Has the country permitted, or failed to take adequate measures to prevent, the damage or destruction, by mob action, of U.S. property? — No

9. FAA Sec. 620(l). If the country has failed to institute the investment guaranty program for the specific risks of expropriation, inconvertibility or confiscation, has the AID Administrator within the past year considered denying assistance to such government for this reason? — Not applicable

10. FAA Sec. 620(o); Fisherman's Protective Act of 1967, as amended, Sec. 5. If country has seized, or imposed any penalty or sanction against, any U.S. fishing activities in international waters. — Not applicable

a. has any deduction required by the Fishermen's Protective Act been made?

BEST AVAILABLE DOCUMENT

b. Has complete denial of assistance been considered by AID Administrator?

11. FAA Sec. 620; FY 80 Appr. Act Sec. [518.] (a) Is the government of the recipient country in default for more than six months on interest or principal of any AID loan to the country? (b) Is country in default exceeding one year on interest or principal on U.S. loan under program for which App. Act appropriates funds?

No

12. FAA Sec. 620(s). If contemplated assistance is development loan or from Economic Support Fund, has the Administrator taken into account the percentage of the country's budget which is for military expenditures, the amount of foreign exchange spent on military equipment and the amount for the purchase of sophisticated weapons systems? (An affirmative answer may refer to the records of the annual "Taking Into Consideration" memo: "Yes, taken into account by the Administrator at time of approval of Agency OYB." This approval by the Administrator of the Operational Year Budget can be the basis for an affirmative answer during the fiscal year unless significant changes in circumstances occur.)

Under the FY 1980 assessment of defense expenditures as required b Sect. 620(s), it was concluded that there is no impediment to consideratio of economic aid to Zambia. FY 1979 data shows that Defense expenditures as a percent of Central Government expenditures we: 0.23%. Military imports as a percent of total imports were 5.51%.

13. FAA Sec. 620(t). Has the country severed diplomatic relations with the United States. If so, have they been resumed and have any bilateral assistance agreements been negotiated and entered into since such resumption?

No

14. FAA Sec. 620(u). What is the payment status of the country's U.N. obligations? If the country is in arrears, were such arrears taken into account by the AID Administrator in determining the current AID Operational Year Budget?

Current

15. FAA Sec. 620A; FY 80 Supp. Appr. Sec. [533.] Has the country granted sanctuary from prosecution to any individual or group

No, not to our knowledge

BEST AVAILABLE DOCUMENT

which has committed a war crime?

16. FAA Sec. 666. Does the country object, on basis of race, religion, national origin or sex, to the presence of any officer or employee of the U.S. there to carry out economic development program under FAA? — No

17. FAA Sec. 669, 670. Has the country, after August 3, 1977, delivered or received nuclear enrichment or reprocessing equipment, materials, or technology, without specified arrangements or safeguards? Has it detonated a nuclear device after August 3, 1977, although not a "nuclear-weapon State" under the nonproliferation treaty? — No

B. FUNDING SOURCE CRITERIA FOR COUNTRY ELIGIBILITY

1. Development Assistance Country Criteria.

a. FAA Sec. 102(b)(4). Have criteria been established and taken into account to assess commitment progress of country in effectively involving the poor in development, on such indexes as: (1) increase in agricultural productivity through small-farm labor intensive agriculture, (2) reduced infant mortality, (3) control of population growth, (4) equality of income distribution, (5) reduction of unemployment, and (6) increased literacy. — Not applicable regarding this grant. However, Zambi Third National Developmen Plan (TNDP) stresses Agricultural and Rural development. The mutual GRZ/AID objectives are to increase food producti and small farm income in conjunction with TNDP strategy.

b. FAA Sec. 104(d) (1): IDC Act of 1979. If appropriate is this development (including Sahel) activity designed to build motivation for smaller families through modification of economic and social conditions supportive of the desire for large families in programs such as education in and out of school, nutrition, disease control, maternal and child health services, agricultural production, rural development, assistance to urban poor and through community-based development programs which give recognition to people motivated to limit the size of their families? — Not applicable. However, see B.1.a. above.

BEST AVAILABLE DOCUMENT

STANDARD ITEM CHECKLIST

A. PROCUREMENT

1.	FAA Sec. 602. Are there arrangements to permit U.S. small business to participate equitably in the furnishing of goods and services financed?	Yes
2.	FAA Sec. 604(a). Will all commodity procurement financed be from the United States except as otherwise determined by the President or under delegation from him?	Yes
3.	FAA Sec. 604(b). Will all commodities in bulk be purchased at prices no higher than the market price prevailing in the United States at time of purchase?	Yes
4.	FAA Sec. 604(c). Will all agricultural commodities available for disposition under the Agricultural Trade Development & Assistance Act of 1954, as amended, be procured in the United States unless they are not available in the United States in sufficient quantities to supply emergency requirements of recipients?	No agricultural commodities are anticipated under this grant.
5.	FAA Sec. 604(d). If the cooperating country discriminates against U.S. marine insurance companies, will agreement require that marine insurance be placed in the United States on commodities financed?	Yes
6.	FAA Sec. 604(e). If offshore procurement of agricultural commodity or product is to be financed, is there provision against such procurement when the domestic price of such commodity is less than parity?	No agricultural commodities are anticipated under this grant.
7.	FAA Sec. 604(f). Are there arrangements whereby a supplier will not receive payment under the commodity import program unless he/she has certified to such information as the Agency by regulation has prescribed?	Not applicable

BEST AVAILABLE DOCUMENT

8. FAA Sec. 608(a). Will U.S. Government excess property be utilized wherever practicable in lieu of the procurement of new items? — Yes

9. MMA Sec. 901(b). (a) Compliance with requirement that at least 50 per centum of the gross tonnage of commodities (computed separately for dry bulk carriers, dry cargo liners, and tankers) financed shall be transported on provately owned U.S.-flag commercial vessels to the extent that such vessels are available at fair and reasorable rates. — Yes

10. International Air Transport. Fair Competitive Practices Act, 1974

If air transporation of persons or property is financed on grant basis, will provision be made that U.S.-flag carriers will be utilized to the extent such service is available? — Yes

B. OTHER RESTRICTIONS

1. FAA Sec. 620(h). Do arrangements preclude promoting or assisting the foreign aid projects or activities of Communist-Bloc countries, contrary to the best interests of the United States? — Yes

2. FAA Sec. 636(i). Is financing prohibited from use, without waiver, for purchase, long-term lease, exchange, or guaranty of sale of motor vehicle manufactured outside the United States? — Yes

3. Will arrangement preclude use of financing:

a. FAA Sec. 114. to pay for performance of abortions or involuntary sterilizations of to motivate or coerce persons to practice abortions? to pay for performance of involuntary sterilizations as method of family planning or to coerce or provide any financial incentive to any person to practice sterilizations? — Yes

b. FAA Sec. 620(g). to compensate owners for expropriated nationalized property? — Yes

	c. FAA Sec. 660. to finance police training or other law enforcement assistance, except for narcotics programs?	Yes
	d. FAA Sec. 662. for CIA activities?	Yes
	e. App. Sec. 103. to pay pensions, etc., for military personnel?	Yes
	f. App. Sec. 106. to pay U.N. assessments?	Yes
	g. App. Sec. 107. to carry out provisions of FAA Sections 209(d) and 251(h)? (transfer to multilateral organization for lending).	Yes
4.	FAA Sec. 201(d). If development loan, is interest rate at least 2% per annum during grace period and at least 3% per annum thereafter? Can the country borrower service the loan on harder than standard development loan terms?	Not applicable

BEST AVAILABLE DOCUMENT

3. Economic Support Fund Country Criteria.

a. FAA Sec. 502B. Has the country (a) engaged in a consistent pattern of gross violations of internationally recognized human rights or (b) made such significant improvements in its human rights record that furnishing such assistance is in the national interest?	No
b. FAA Sec. 533(b). Will assistance under the Southern Africa program be provided to Angola, Mozambique, Tanzania, or Zambia? If so, has President waived prohibition against the assistance by determining that such assistance will further U.S. foreign policy interests?	Statute repealed
c. FAA Sec. 609. If commodities are to be granted so that sale proceeds will accrue to the recipient country, have Special Account (counterpart) arrangements been made?	Not applicable.
d. FY 80 App. Act Sec. [510.] Will assistance be provided for the purpose of aiding the efforts of the government of such country to repress the legitimate rights of the population of such country contrary to the Universal Declaration of Human Rights?	No
e. FAA Sec. 620N. P.L.94-329 Sec. 406. Will EST be furnished to Argentina or Chile?	Not applicable

Annex V

INITIAL ENVIRONMENTAL EXAMINATION

OR

CATEGORICAL EXCLUSION

Project Country: Southern Africa Regional

Project Title: Regional Transport and Storage (690-0209) Phase I

Funding: FY (s) 1981 $ 990,000

IEE Prepared by: D. Reilly, chief Engineer, REDSO/EA, Feb., 1981
Revised 5/28/81, A. Harding, AFR/DR/SAP

Environmental Action Recommended:

Positive Determination _____
Negative Determination X

Approved: AFR/DR/SDP:BBoyd 6/1/81

Concurrence: Martin V. Dagata
~~Director, AFR/SA~~

Clearance: GC/AFR _____ Date 6/1/81

Project Description

Phase I of the project consists of resealing 33 kilometers of selected sections the road on the Zambia side between the Kafue River Bridge and the Chirundu Border Post along the existing road alignment. The existing road is deteriorating rapidly as the result of unusually heavy rains and the lack of maintenance over several years. The fall, 1981 rainy season in Zambia is rapidly approaching, and if the resealing process is not completed before then, the 33 kilometers of road which presently require resealing (which consists of patching potholes, repairing and/or replacing drainage structures, and repairing and/or reconstructing road shoulders) will further deteriorate to such an extent that more expensive rehabilitation work (pavement strengthening and/or complete reconstruction) would be required. If the resealing work is completed before the fall rainy season, it is anticipated that the costs associated with Phase II of the project (which will consist of pavement strengthening and/or complete reconstruction of the remaining sections of the 82 kilometers of road in Zambia, and complete reconstruction of 4 sections of the road in Zimbabwe totaling 12 kilometers) can be reduced by as much as $7.4 million. The resealing process will also facilitate the movement of essential commodities between Lusaka and Salisbury as well as improve access to markets for products. The following is a description of the road segments in Zimbabwe and Zambia:

A. Zimbabwe

The road from Salisbury to the Chirundu Border Post at the Zambezi River is 352 kilometers in length. The last section of the road, from the Zambezi escarpment at Marongora to the Zambia Border at Chirundu, is 40 kilometers in length (km 312 to 352) and crosses soils which contain significant amounts of exchangeable sodium. These sodic soils have been used to fill areas of road and have caused certain areas to deform, resulting in failures of the road.

Rehabilitation of the sections of the road which have failed (totalling 12 km) will involve removal of the sodic material and replacement with suitable fill material. The road would be reconstructed to the same category as the existing road which is a 7-meter surface on a 10-meter formation.

B. Zambia

The road from the Chirundu Border Post to Lusaka is 135 kilometers in length. The section of the road from the Livingstone turn-off just below the Kafue River Bridge to the Border Post was effectively closed to international traffic because of the closure of the border; as a result of hostilities the road was not maintained after 1974. This section of the road is 82 kilometers in length and is in varying stages of distress. AID will finance the rehabilitation and reconstruction of most of the 82 km, depending on the contribution of the GRZ, the timeliness of repair works, and the deterioration expexted to occur between now and the start of reconstruction.

The road to be repaired passes through rolling to hilly terrain in southern Zambia and crosses the Zambezi River flood plain in northern Zimbabwe. The rainfall averages 30 inches per year with heavy rains in December through March period. The area is sparsely populated with from 2 to 10 people per square kilometer.

The soils are problematical in Zimbabwe as discussed above; no special foundation problems will occur in Zambia. The vegetation is savanna near the river, changing to broadleaf deciduous forest with many grassy openings north of the river valley.

Discussion of Environmental Impacts

A. Land Use

The work proposed will not require additional land use since the existing right-of-way will be used. Runoff in the hilly areas is heavy and erosion in certain areas has been a problem. The proposed work will improve the drainage channel and result in reduced erosion. Fill material to be imported will be from existing gravel and borrow pits and it is unlikely that additional land will be used for such purposes.

B. Water Quality

Minimal impact on water quality is expected because no change in natural waterways is anticipated. Drainage will be improved as discussed in A above.

C. Atmosphere

Pollution due to dust can be expected during the reconstruction period, but will not be excessive. Noise and exhaust fumes from the construction effort will not be more objectionable than that being experienced from the heavy goods wagon now using the road. The low population density will further limit the number of disaffected persons.

D. Natural Resources

The project will not cause any inefficient utilization or waste of natural resources in the area. Although the road in Zimbabwe passes through a controlled hunting area, wildlife in the area have adjusted to the existing road and no additional obstruction to their movement will occur. Some dislocation may take place during construction, but the effects will be temporary. Elephant crossings are numerous and are well marked with signs. A national monument protecting a small fossil forest on the Zimbabwe side is already fenced and marked and will not be touched. With the exception of temporary changes, no negative impact on vegetation is anticipated.

E. Cultural:

No additional dilution of cultural patterns will occur as a result of this road improvement.

F. Socio-Economic

Positive changes will result from improved, year-round access of the population to regional markets and government social services. In addition, the population of Zambia, in particular, will benefit by assured accessibility to maize shipped from or through Zimbabwe to Zambia along the route proposed for rehabilitation.

Recommendations for Environmental Action

The proposed improvements of this road will have numerous positive effects of a socio-economic nature, not only on the population within the road's zone of influence, but also in terms of food availability on the population of Zambia, in particular. Other environmental impacts will either be minimally negative (land use), temporarily negative (water quality, atmospherics, natural resources) or neutral (culture). Since the proposed improvements envision utilization of the existing road's right of way, without realignment, the overall impact of the project will not be negative. If any minor realignments are developed during engineering design, the REDSO Regional Environmental Officer will examine the acceptability of the proposed changes to ensure that appropriate corrective measures are incorporated into the final plans and specifications. In view of the preceding a negative determination is requested.

ANNEX VI.

Benefit/Cost Analysis, Phase I (Resealing, Chirundu/Kafue) for the Makuti/Chirundu/Kafue Road, (ZIM/ZAM Highway)

The determination of benefit/cost ratios for the resealing under Phase I of the project was based on the comparison of savings in Vehicle O eration Costs (VOC) and the savings on recurrent maintenance required without resealing compared to the cost of resealing and the recurrent maintenance costs with resealing. Specific benefit/cost ratios were calculated on the basis of discounting the streams of benefits and costs by the opportunity cost of capital in the Zambian economy; a range of opportunity cost rates was used to test for sensitivity. The following assumptions were used in calculating ranges of ratios.

I. The Life of the Project

Resealing a pavement usually gives a life of four to six years without the need for additional resealing or major mainentance. Because maintenance has been neglected a life of only four years was judged most likely; alternate calculations for each assumption were also made for a life of five years.

II. Vehicle Operating Cost (VOC) Savings

VOC savings were calculated on the basis of the number of vehicles per year times the projected savings in VOC for each commercial vehicle type for each year of the project life. The calculation of VOC for Zambia was based on the Appraisal Report of the

IBRD in 1978 for the Third Highway Project.

For the purpose of this analysis passenger VOC was excluded from the calculation. The number of heavy vehicles (Vehicles weighing over 5 tons) report by the GOZ to have passed over the Chirundu border was used as the base for traffic flow (78 a day x 24 days = 1872 a month). The GOZ rates were used because the GRZ could only provide incomplete data for the border post; the rates should be the same in either case so the GOZ rate was used.

The IBRD broke VOC into two classes, trucks of 7 tons and trucks of 25 tons. Specific breakouts of heavy vehicles by weight was not available so VOC savings were calculated for several mixes of light to heavy trucks. Two major assumptions were formed to which these mixes were then applied:

- Assumption A

  Assumption A calculated that the differential resulting from not resealing would be equivalent to a drop from the IBRD VOC for Bitumen Standard Good to Gravel Standard

- Assumption B

  Assumption B calaculated that the differential resulting gtom not resealing would be equivalent to a drop from the IBRD VOC for Bitumen Standard Good to Gravel Standard Good.

Calculation, Assumption A

for trucks of at least 7 tons the VOC increases from K33 per 100 vehicles/km to K50.955= a differential of K17.955

100 V/Km ÷ 33km = 1/3 x K17.9 an additional K5.985 per vehicle for each trip.

K5.985 x 130% to inflate to 1981 prices = K7.7805 x 1.22 for $ conversion = US$9.492 = $9.49.

for trucks of at least 24 tons the VOC increases from K62 per 100 vehicles/km to K93.185 = a differential of K31.185

100 V/Km ÷ 33km = 1/3 x K31.185 an additional K10.395 per vehicle for each trip.

K10.395 x 130% to inflate to 1981 prices = K13.5135 x 1.22 for $ conversion = US$16.486 = $16.49.

A.1 - If the mix is 20% light trucks and 80% heavy, then:

374 x US$9.49 = US$ 3,549.26 a month, or 42,591.12 a year
1498 x US$ 16.49= US$ 24,702.02 a month or US$ 296,424.21 a year
for a total of 339,015.36

A.2 - If the mix is 1/3 light trucks to 2/3 heavy, then:

624 x $9.49 = $5,921.76 a month or 71,061 a year.
1248 x US$ 16.49= US$ 20,579.52 a month or US$ 246,954.24 a year

for a total of 318,015.36

A.3 - If the mix is 1/2 light trucks to 1/2 heavy, then:

936 x US$9.49 = $8,882.64 a month or $106,591.68 a year.

936 x US$16.49 = $15,434.64 or $185,215.68 a year for a total of US$291,807.36

A.4 - If the mix is 2/3 light trucks and 1/3 heavy, then:

1248 x US$9.49 = $11,843.52 a month or $142,122.24 a year.

624 v US$16.49 = $10,289.76 a month or $123,477.12 a year for a total of US$ 265,599.4

NOTE: Calculations used 1872 heavy vehicles a month, based on GOZ figures for Chirundu border post. This figure was considered comparable for Zambia since the only turnoff before Kafue is the Kariba Dam Road which would not draw off much heavy traffic.

Calculation, Assumption B

for trucks of at least 7 tons the VOC increases from K33 per 100 vehicles/km to K40, = a differential of 7K.

100 V/Km ÷ 33 km = 1/3 x K7 = an additional K2.33 per vehicle for each trip.

K2.3 x 130% to inflate to 1981 prices = K2.99 .
K1.22 for $ conversion = US$3.647. (note error of .03 because of rounding)

for trucks of at least 7 tons the VOC increases from K62 per 100 vehicles/km to K80, = a differential of K18.

100 V/Km ÷ 33km = 1/3 x 18 = an additional K6 per vehicle for each trip.

K6 x 130 to inflate to 1981 prices = K7.8 x 1.22 for $ conversion = US9.516

B.1 - If the mix is 50% light trucks to 50% heavy, then:

936 x US$3.647 = $3,413.59 a month or $40,963 a year

936 x US$9.516 = 8,906.97 or $106,883.71 or US$106,883.71 a year for a US$147,846.71

B.2 - If the mix is 2/3 light trucks and 1/3 heavy, then:

624 x US$9.516 = 5,937.98 a month or 71,255,808 a year

1248 x US$3.647 = 4551.456 a month or 54,617.472 a year or a total of US$ 125,873.28

III. Recurrent Maintenance Costs Saved by Resealing

The technical/engineering assessment estimated that the cost of pothole and edge repairs before resealing would be K 2,000 per Km. Additional costs for regraveling and drainage work were also listed at another K 2,300 per km. The first figure by itself is clearly a conservative estimate of the base for recurrent maintenance costs. It was used for the first year and then inflated by 150 percent for the second year; each subsequent year was inflated by 150 percent for the third year, 145.7 percent for the fourth year, and 137.25 percent for the fifth year. These costs were then adjusted by a 50 percent increase for the opportunity costs represented by the limited Zambian Government funds.

IV. Project Cost and Recurrent Mainenance Costs with Resealing

The project cost of US$ 990,000 was used as the first year cost. Maintenance costs for the successive years, mainly shoulder and drainage work, should be minimal , especially in view of the work to be done in association with resealing, but an annual figure of K 150 per km was estimated as a safeguard. This was increased by 50 percent for opportunity cost as in III. and converted to US$ 9,000 for the entire 33 km section. This was held at a fix level through either a four or five year life.

V. Discount Rate

The discount rate for the benefit and cost streams was one of the potential sensitivity issues. The IBRD used 12 percent in 1978. Ratios were calculated, therefore, from 10 percent to 30 percent at 2 percent intervals; selective rates were used to give the range where unity would be approached indicative of the internal rate of return for the project. These have been shown graphically with each set of calculations. The sets of calculations are coded according to assumptions A and B identified in section II.

Table 1 . Calculation of the Savings to Total Project

Costs Resulting from Resealing Proposed Under Phase I.

Catagory	Project Cost Without Resealing	Project Cost With Resealing, Mid-project rate for all catagories	Project Cost with Resealing, adjusted to October 1981 rate
RESEALING	11 Kms	33 Kms	33 Kms
@ US$37,400	US$ 441,400	US$1,234,200	
@ US$27,063. October 1981 Price			893.079
RESTRENGTHENING	26 Kms	18 Kms	18 Kms
@ US$206,650	US$5,372,900	US$3,719,700	US$3,719,700
RECONSTRUCTION	45 Kms	31 Kms	31 Kms
@ US$295,300	US$13,288,500	US$9,154,300	US$9,154,300
TOTAL	US$19,102,800	US$14,108,200	US$13,769,079
Plus 15% A&E	US$21,968,220	US$16,224,430	US$15,832,141*
Plus 15% for Contingencies	US$25,263,453	US$18,658,095*	US$18,206,962*
	DIFFERENCE At a factor of (Compared to Phase I Cost)	US$ 6,605,358 6.67	US$ 7,056,491 7.13

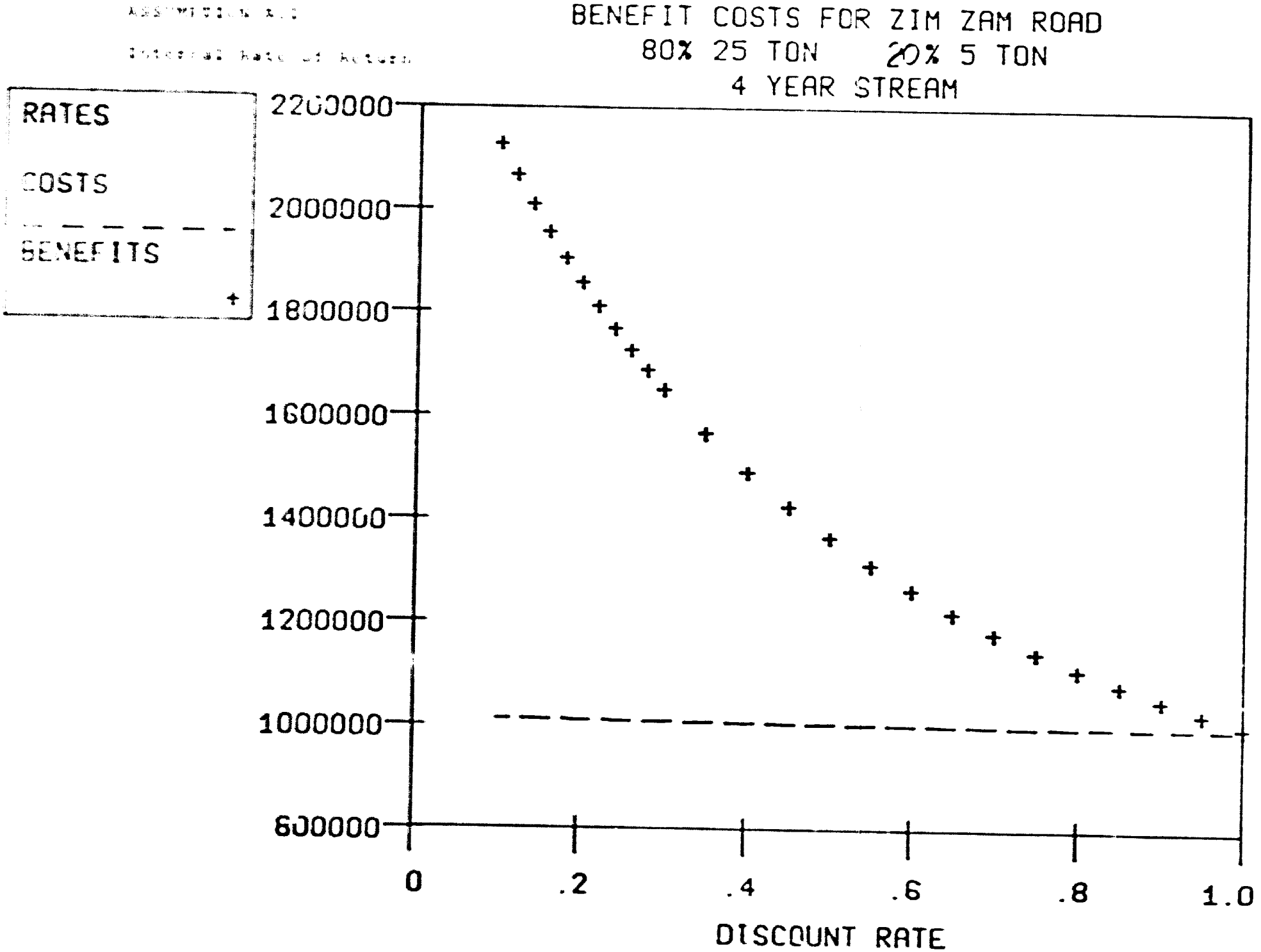
*Rounded to nearest whole US$1

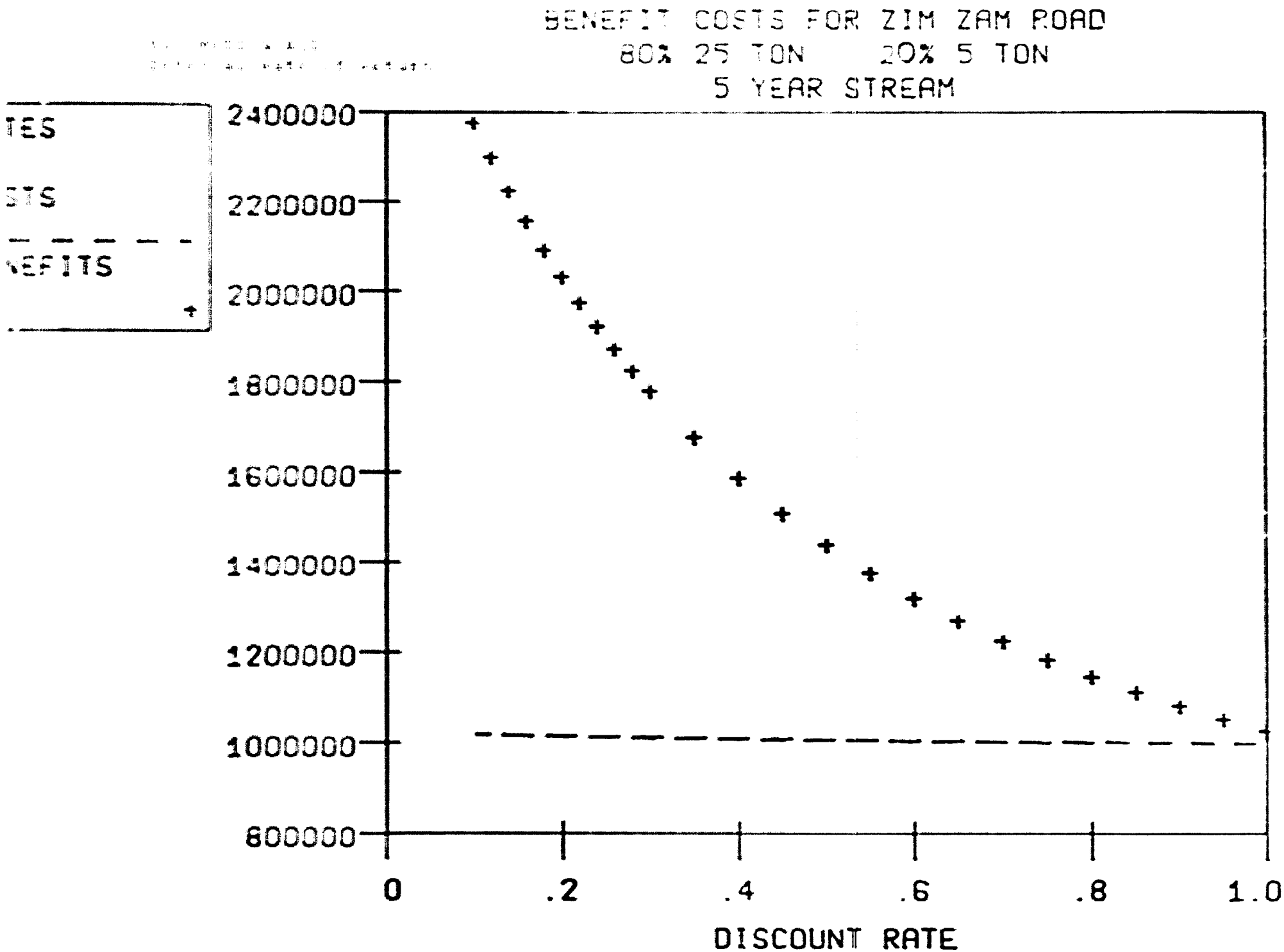
NOTE: This table is based on an adjustment of calculations included in the PID . It assumes the resealing of only 33 Kms of road instead of the 34 Kms in the PID and places the difference of 1 km in the catagory of sections needing restrengthening. Inflation is based on a rate of 1.5 % a month. The Adjustment is based on information in the engineering/technical reassessment.

ASSUMPTION A.1

80% 25 TON AND 20% 5 TON

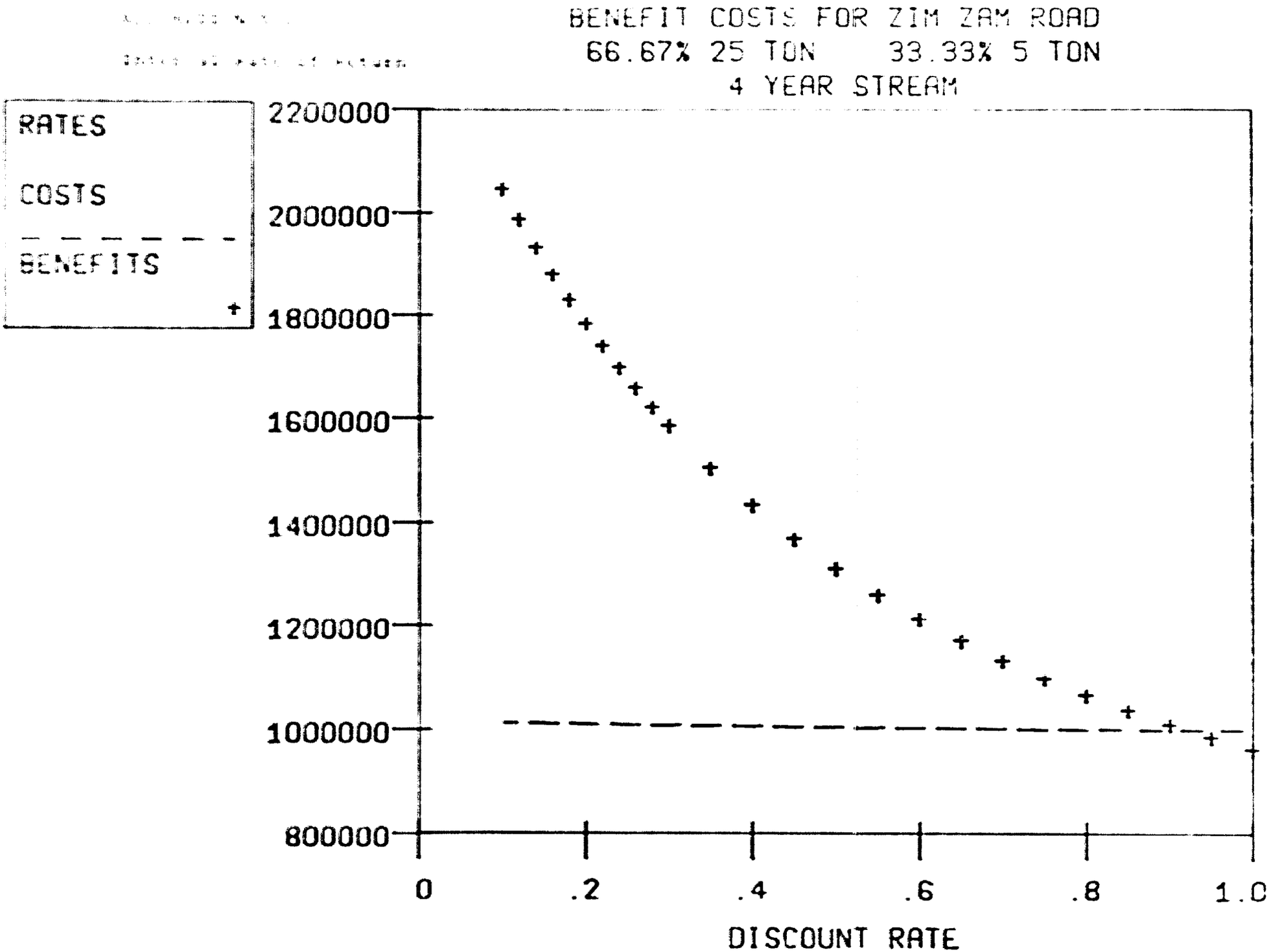
	4 Years			5 Years		
RATE	BENEFITS-4	COSTS-4	B/C RATIO-4	BENEFITS-5	COSTS-5	B/C RATIO-5
.08	2191933	1013194	2.16	2930444	1019809	2.87
.10	2127115	1012382	2.10	2813364	1018529	2.76
.12	2066173	1011616	2.04	2704701	1017336	2.66
.14	2008807	1010895	1.99	2603693	1016223	2.56
.16	1954735	1010213	1.93	2509642	1015184	2.47
.18	1903715	1009565	1.89	2421947	1014210	2.39
.20	1855512	1008950	1.84	2340049	1013299	2.31
.22	1809927	1008380	1.79	2263465	1012443	2.24
.24	1766767	1007832	1.75	2191744	1011638	2.17
.26	1725864	1007311	1.71	2124494	1010882	2.10
.28	1687059	1006816	1.68	2061352	1010169	2.04
.30	1650212	1006345	1.64	2001998	1009496	1.98
.35	1565814	1005263	1.56	1868308	1007972	1.85
.40	1491076	1004300	1.48	1752617	1006643	1.74
.45	1424552	1003440	1.42	1651841	1005476	1.64
.50	1365061	1002667	1.36	1563527	1004444	1.56
.55	1311622	1001969	1.31	1485692	1003529	1.48
.60	1263421	1001338	1.26	1416731	1002711	1.41
.65	1219781	1000764	1.22	1355336	1001978	1.35
.70	1180126	1000240	1.18	1300423	1001318	1.30
.75	1143971	999761	1.14	1251098	1000720	1.25
.80	1110903	999321	1.11	1206614	1000178	1.21
.85	1080568	998916	1.08	1166343	999684	1.17
.90	1052663	998542	1.05	1129760	999233	1.13
.95	1026925	998196	1.03	1096414	998818	1.10
1.00	1003126	997875	1.01	1065922	998438	1.07


BENEFIT COSTS FOR ZIM ZAM ROAD
80% 25 TON 20% 5 TON
4 YEAR STREAM
RATES
COSTS
BENEFITS
2200000
2000000
1800000
1600000
1400000
1200000
1000000
600000
0
.2
.4
.6
.8
1.0
DISCOUNT RATE

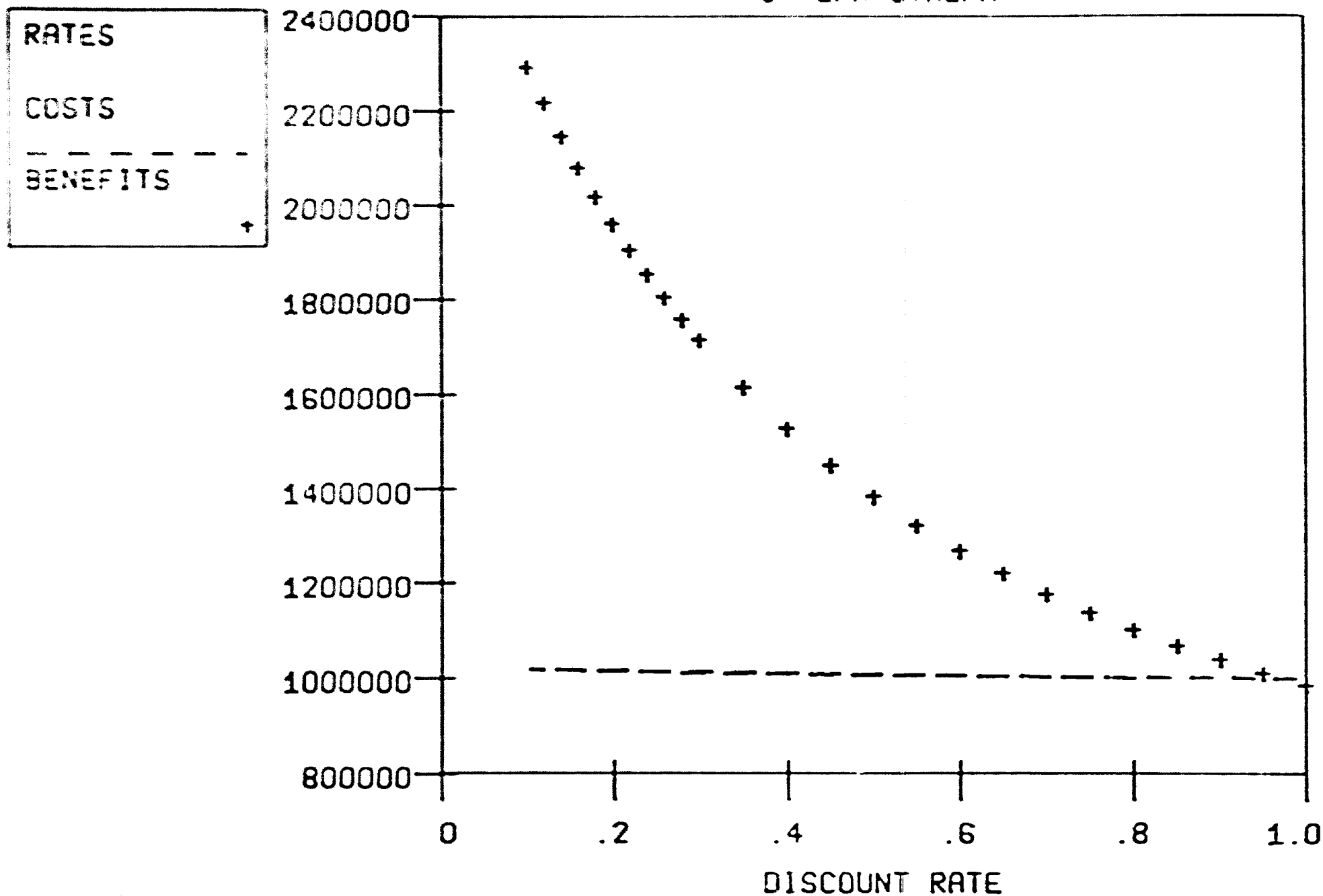

BENEFIT COSTS FOR ZIM ZAM ROAD
80% 25 TON 20% 5 TON
5 YEAR STREAM
TES
STS
NEFITS
2400000
2200000
2000000
1800000
1600000
1400000
1200000
1000000
800000
0
.2
.4
.6
.8
1.0
DISCOUNT RATE

ASSUMPTION A.2

	4 Year			67% 25 TON AND 33% 5 TON	5 Year	
RATE	BENEFITS-4	COSTS-4	B/C RATIO-4	BENEFITS-5	COSTS-5	B/C RATIO-5
.08	2107933	1013194	2.08	2825444	1019809	2.77
.10	2045379	1012382	2.02	2712115	1018529	2.66
.12	1988566	1011616	1.96	2606937	1017335	2.56
.14	1931209	1010895	1.91	2509179	1016223	2.47
.16	1879932	1010213	1.86	2418160	1015184	2.38
.18	1829802	1009568	1.81	2333298	1014210	2.30
.20	1783293	1008958	1.77	2254052	1013299	2.22
.22	1739311	1008380	1.72	2179952	1012443	2.15
.24	1697671	1007832	1.68	2110563	1011638	2.09
.26	1658211	1007311	1.65	2045506	1010882	2.02
.28	1620776	1006816	1.61	1984426	1010169	1.96
.30	1585231	1006345	1.58	1927014	1009496	1.91
.35	1503822	1005263	1.50	1797714	1007972	1.78
.40	1431738	1004300	1.43	1685842	1006643	1.67
.45	1367583	1003440	1.36	1588409	1005476	1.58
.50	1310217	1002667	1.31	1503040	1004444	1.50
.55	1258690	1001969	1.26	1427810	1003529	1.42
.60	1212220	1001338	1.21	1361171	1002711	1.36
.65	1170149	1000764	1.17	1301849	1001978	1.30
.70	1131925	1000240	1.13	1248801	1001318	1.25
.75	1097077	999761	1.10	1201158	1000720	1.20
.80	1065207	999321	1.07	1158196	1000178	1.16
.85	1035974	998916	1.04	1119310	999684	1.12
.90	1009085	998542	1.01	1083989	999233	1.08
.95	984285	998196	0.99	1051797	998818	1.05
1.00	961356	997875	0.96	1022366	998438	1.02


BENEFIT COSTS FOR ZIM ZAM ROAD
66.67% 25 TON 33.33% 5 TON
4 YEAR STREAM
RATES
COSTS
BENEFITS
2200000
2000000
1800000
1600000
1400000
1200000
1000000
800000
0
.2
.4
.6
.8
1.0
DISCOUNT RATE

BENEFIT COSTS FOR ZIM ZAM ROAD
66.67% 25 TON 33.33% 5 TON
5 YEAR STREAM



ASSUMPTION A.3

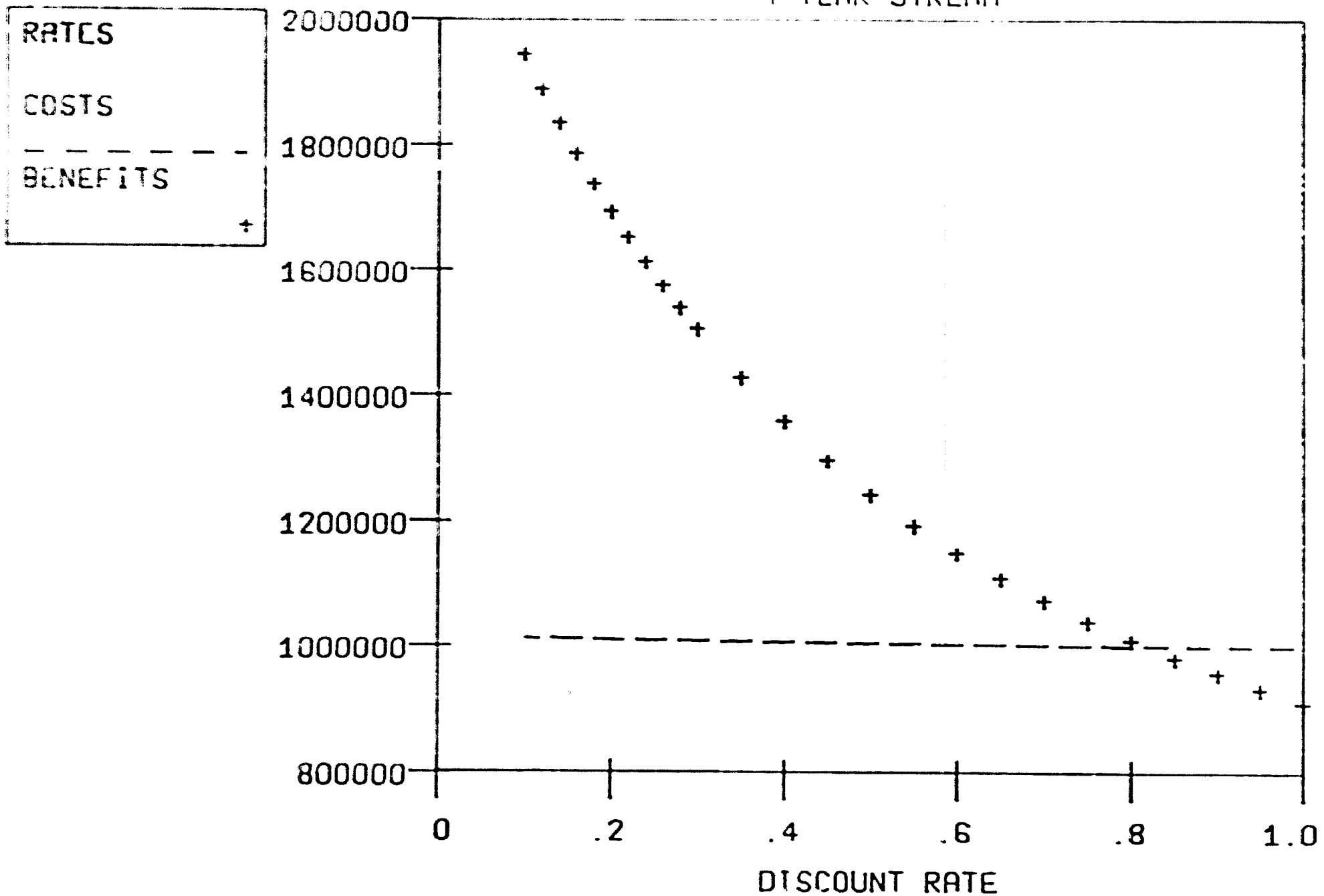
50% 25 TON AND 50% 5 TON

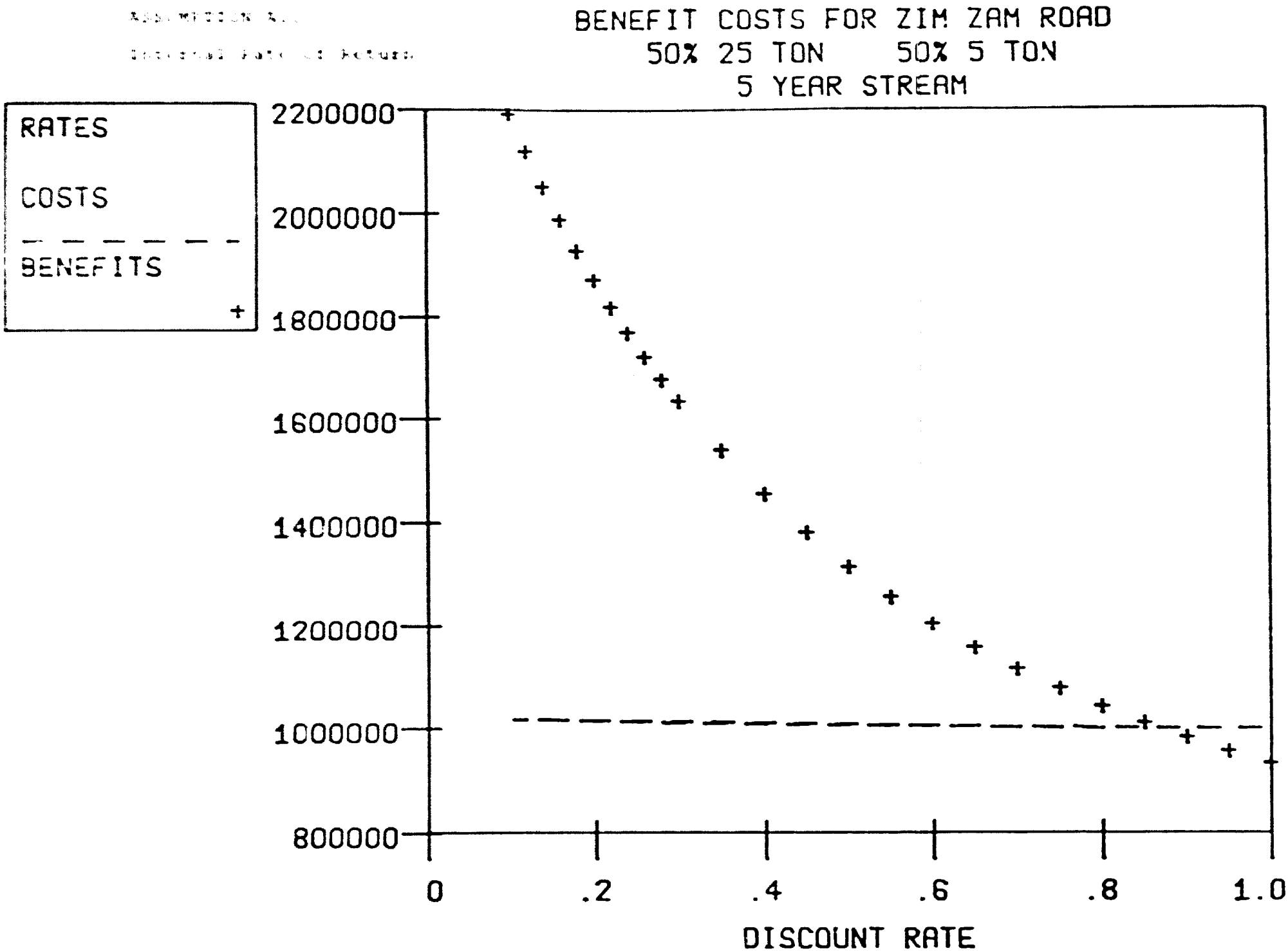
	4Year			5 Year		
RATE	BENEFITS-4	COSTS-4	B/C RATIO-4	BENEFITS-5	COSTS-5	B/C RATIO-5
.08	2003101	1013194	1.98	2694404	1019809	2.64
.10	1943371	1012382	1.92	2585753	1018529	2.54
.12	1887218	1011616	1.87	2484929	1017336	2.44
.14	1834366	1010895	1.81	2391225	1016223	2.35
.16	1784555	1010213	1.77	2303990	1015184	2.27
.18	1737559	1009568	1.72	2222664	1014210	2.19
.20	1693164	1008958	1.68	2146728	1013299	2.12
.22	1651184	1008380	1.64	2075730	1012443	2.05
.24	1611441	1007832	1.60	2009252	1011638	1.99
.26	1573780	1007311	1.56	1946928	1010882	1.93
.28	1538054	1006816	1.53	1888421	1010169	1.87
.30	1504135	1006345	1.49	1833434	1009496	1.82
.35	1426456	1005263	1.42	1709614	1007972	1.70
.40	1357685	1004300	1.35	1602507	1006643	1.59
.45	1296487	1003440	1.29	1509247	1005476	1.50
.50	1241771	1002667	1.24	1427551	1004444	1.42
.55	1192632	1001969	1.19	1355575	1003529	1.35
.60	1148321	1001338	1.15	1291831	1002711	1.29
.65	1108209	1000764	1.11	1235099	1001978	1.23
.70	1071770	1000240	1.07	1184377	1001318	1.18
.75	1038553	999761	1.04	1138832	1000720	1.14
.80	1008178	999321	1.01	1097771	1000178	1.10
.85	980320	998916	0.98	1060612	999684	1.06
.90	954698	998542	0.96	1026867	999233	1.03
.95	931070	998196	0.93	996117	998818	1.00
1.00	909227	997875	0.91	968009	998438	0.97

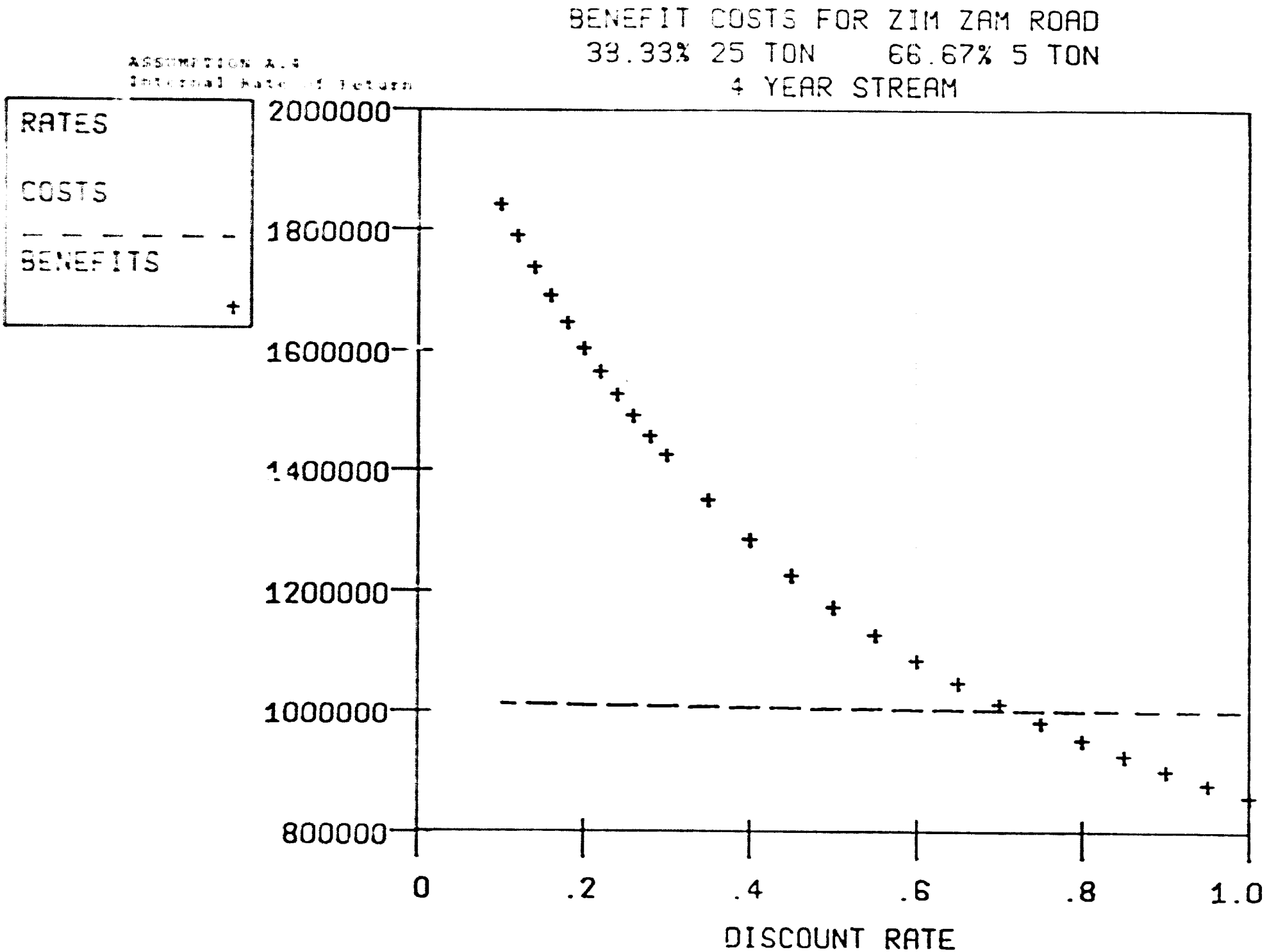
ASSUMPTION A

Internal Rate of Return

BENEFIT COSTS FOR ZIM ZAM ROAD
50% 25 TON 50% 5 TON
4 YEAR STREAM



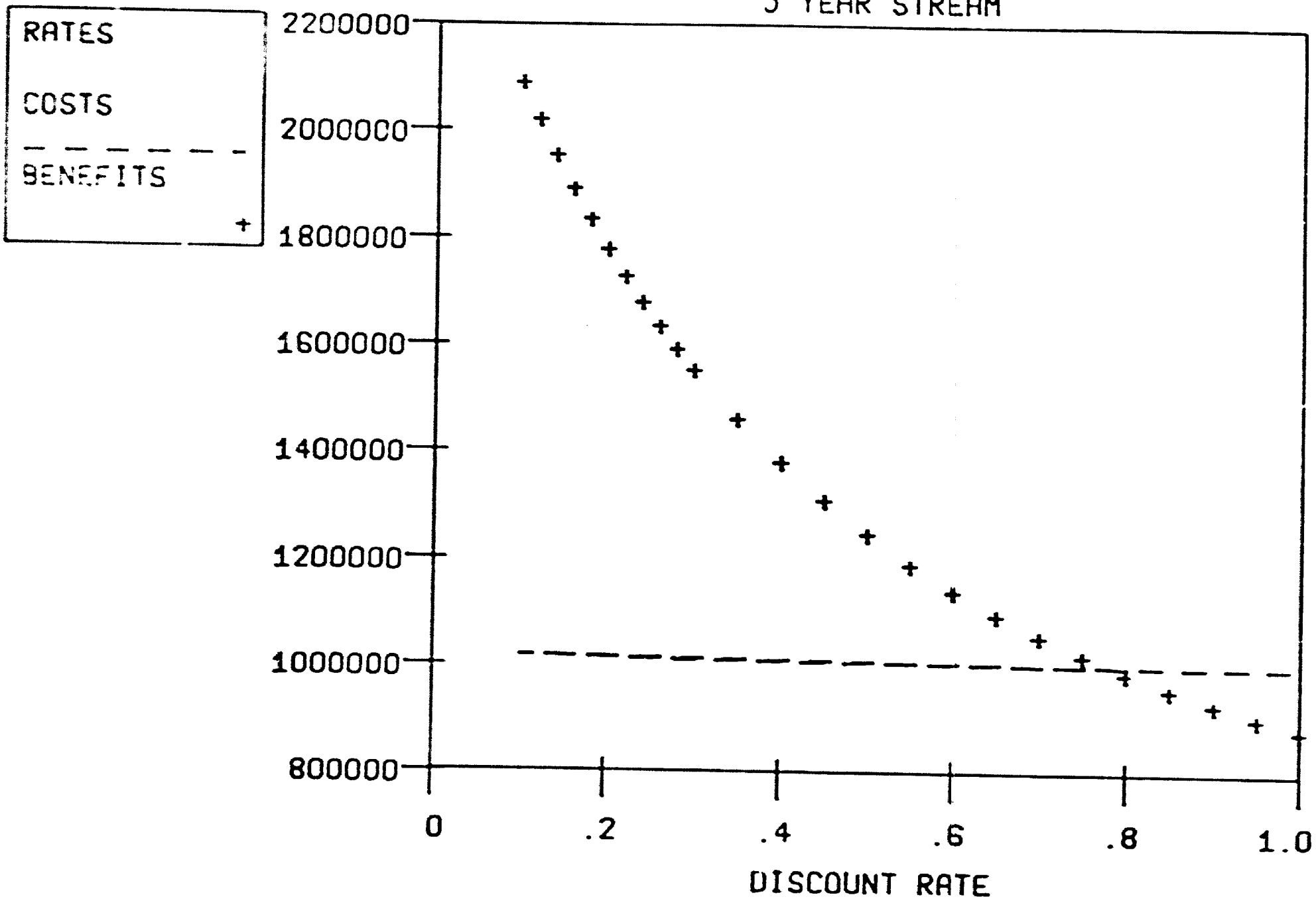

BENEFIT COSTS FOR ZIM ZAM ROAD
50% 25 TON 50% 5 TON
5 YEAR STREAM
RATES
COSTS
BENEFITS
2200000
2000000
1800000
1600000
1400000
1200000
1000000
800000
0
.2
.4
.6
.8
1.0
DISCOUNT RATE


BENEFIT COSTS FOR ZIM ZAM ROAD
33.33% 25 TON 66.67% 5 TON
4 YEAR STREAM
ASSUMPTION A.5
Internal Rate of Return
RATES
COSTS
BENEFITS
2000000
1800000
1600000
1400000
1200000
1000000
800000
0
.2
.4
.6
.8
1.0
DISCOUNT RATE

ASSUMPTION A.2

Internal Rate of Return

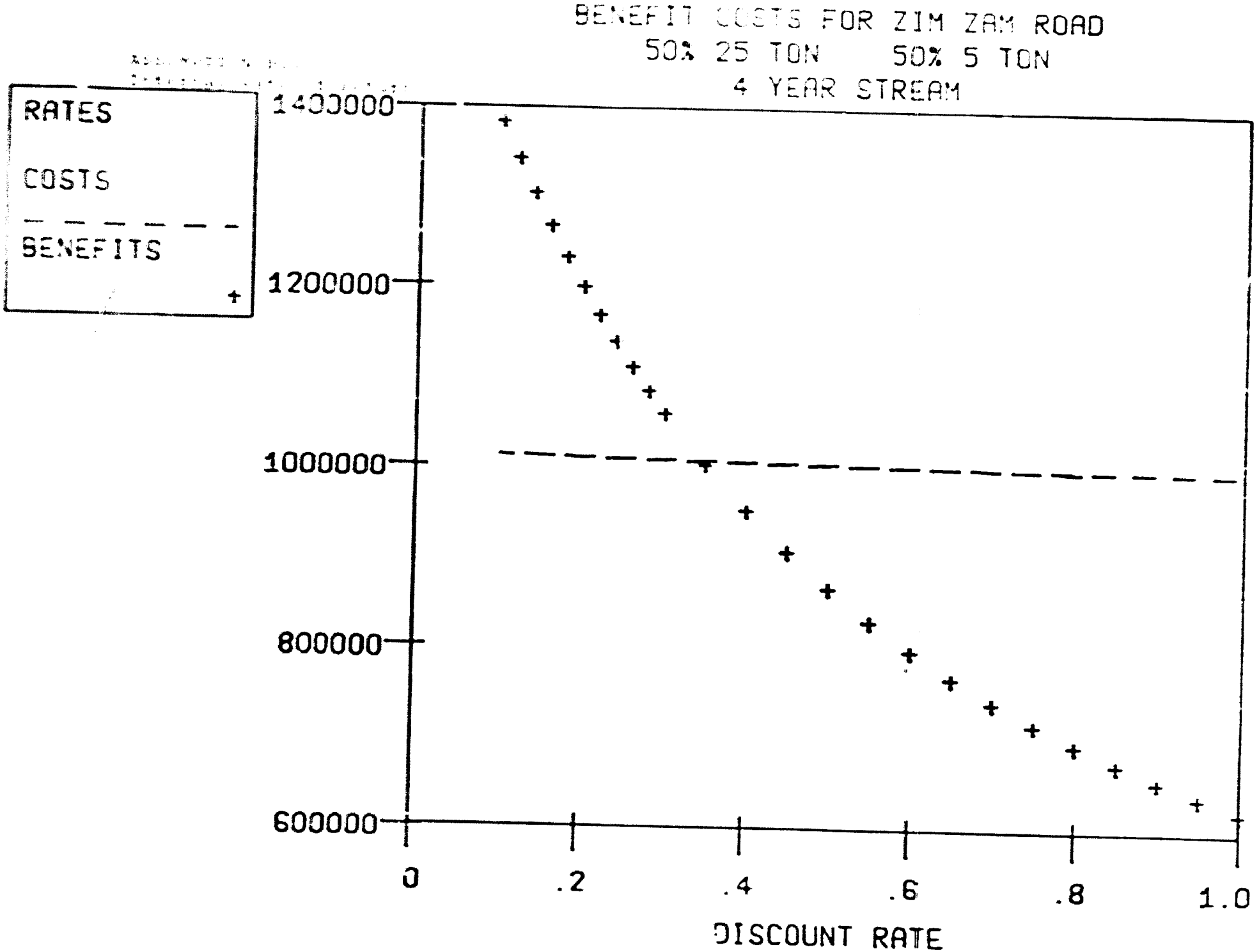
BENEFIT COSTS FOR ZIM ZAM ROAD
33.33% 25 TON 66.67% 5 TON
5 YEAR STREAM

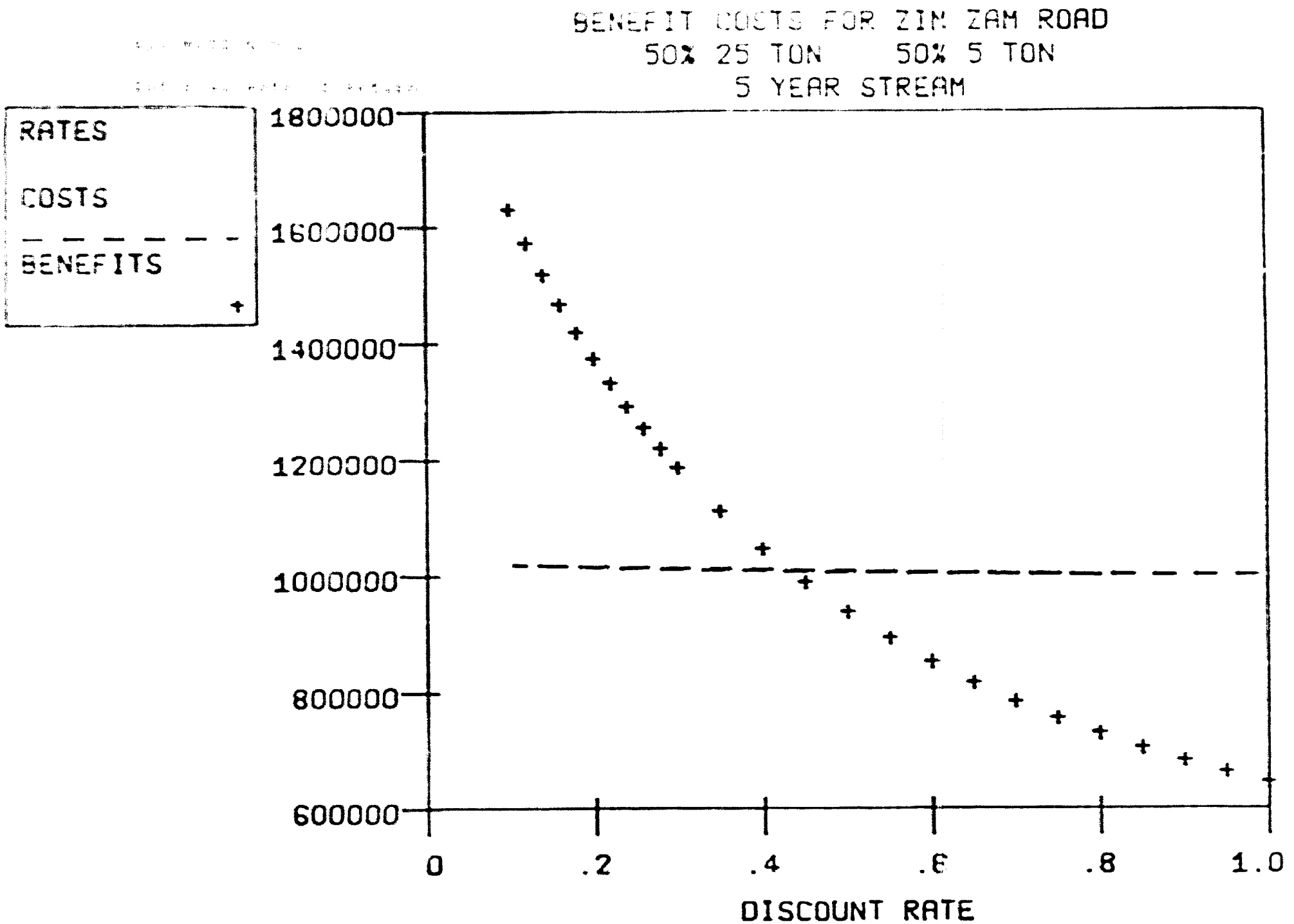


ASSUMPTION B.1

50% 25 TON AND 50%5TON,LOWER VOC

	4 Year			5 Year		
RATE	BENEFITS-4	COSTS-4	B/C RATIO-4	BENEFITS-5	COSTS-5	B/C RATIO-5
.08	1427260	1013194	1.41	1974603	1019809	1.94
.10	1383045	1012382	1.37	1891654	1018529	1.86
.12	1341498	1011616	1.33	1814739	1017336	1.78
.14	1302412	1010895	1.29	1743308	1016223	1.72
.16	1265593	1010213	1.25	1676859	1015184	1.65
.18	1230870	1009568	1.22	1614955	1014210	1.59
.20	1198085	1008958	1.19	1557197	1013299	1.54
.22	1167097	1008380	1.16	1503233	1012443	1.48
.24	1137775	1007832	1.13	1452744	1011638	1.44
.26	1110001	1007311	1.10	1405443	1010882	1.39
.28	1083667	1006816	1.08	1361072	1010169	1.35
.30	1058675	1006345	1.05	1319399	1009496	1.31
.35	1001486	1005263	1.00	1225677	1007972	1.22
.40	950910	1004300	0.95	1144749	1006643	1.14
.45	905951	1003440	0.90	1074405	1005476	1.07
.50	865797	1002667	0.86	1012890	1004444	1.01
.55	829773	1001969	0.83	958785	1003529	0.96
.60	797321	1001338	0.80	910946	1002711	0.91
.65	767974	1000764	0.77	868440	1001978	0.87
.70	741338	1000240	0.74	830496	1001318	0.83
.75	717082	999761	0.72	796478	1000720	0.80
.80	694921	999321	0.70	765857	1000178	0.77
.85	674614	998916	0.68	738186	999684	0.74
.90	655954	998542	0.66	713095	999233	0.71
.95	638761	998196	0.64	690263	998818	0.69
1.00	622680	997875	0.62	669421	998438	0.67


BENEFIT COSTS FOR ZIM ZAM ROAD
50% 25 TON 50% 5 TON
4 YEAR STREAM
RATES
COSTS
BENEFITS
1400000
1200000
1000000
800000
600000
0
.2
.4
.6
.8
1.0
DISCOUNT RATE


BENEFIT COSTS FOR ZIN ZAM ROAD
50% 25 TON 50% 5 TON
5 YEAR STREAM
RATES
COSTS
BENEFITS
1800000
1600000
1400000
1200000
1000000
800000
600000
0
.2
.4
.6
.8
1.0
DISCOUNT RATE

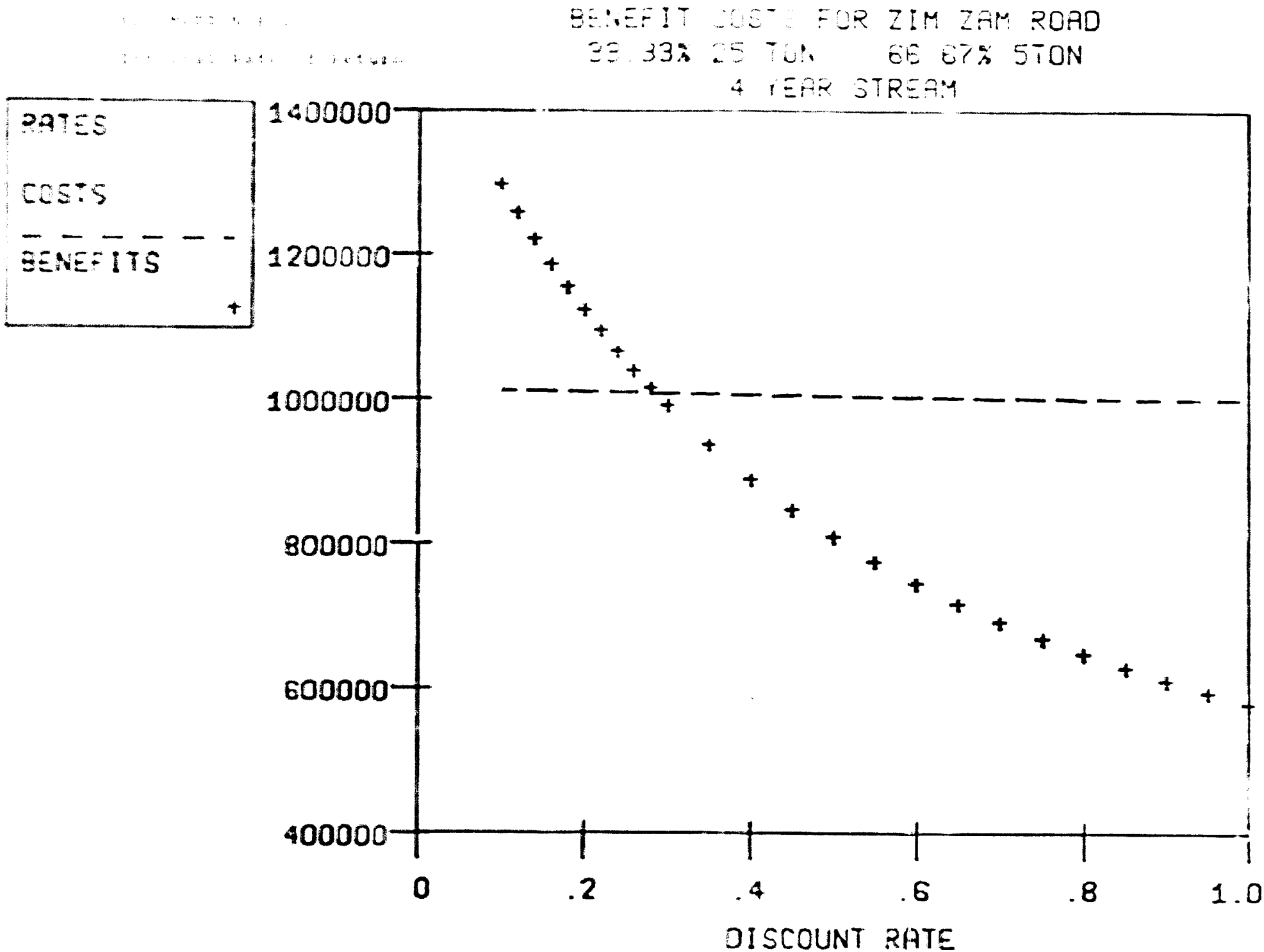
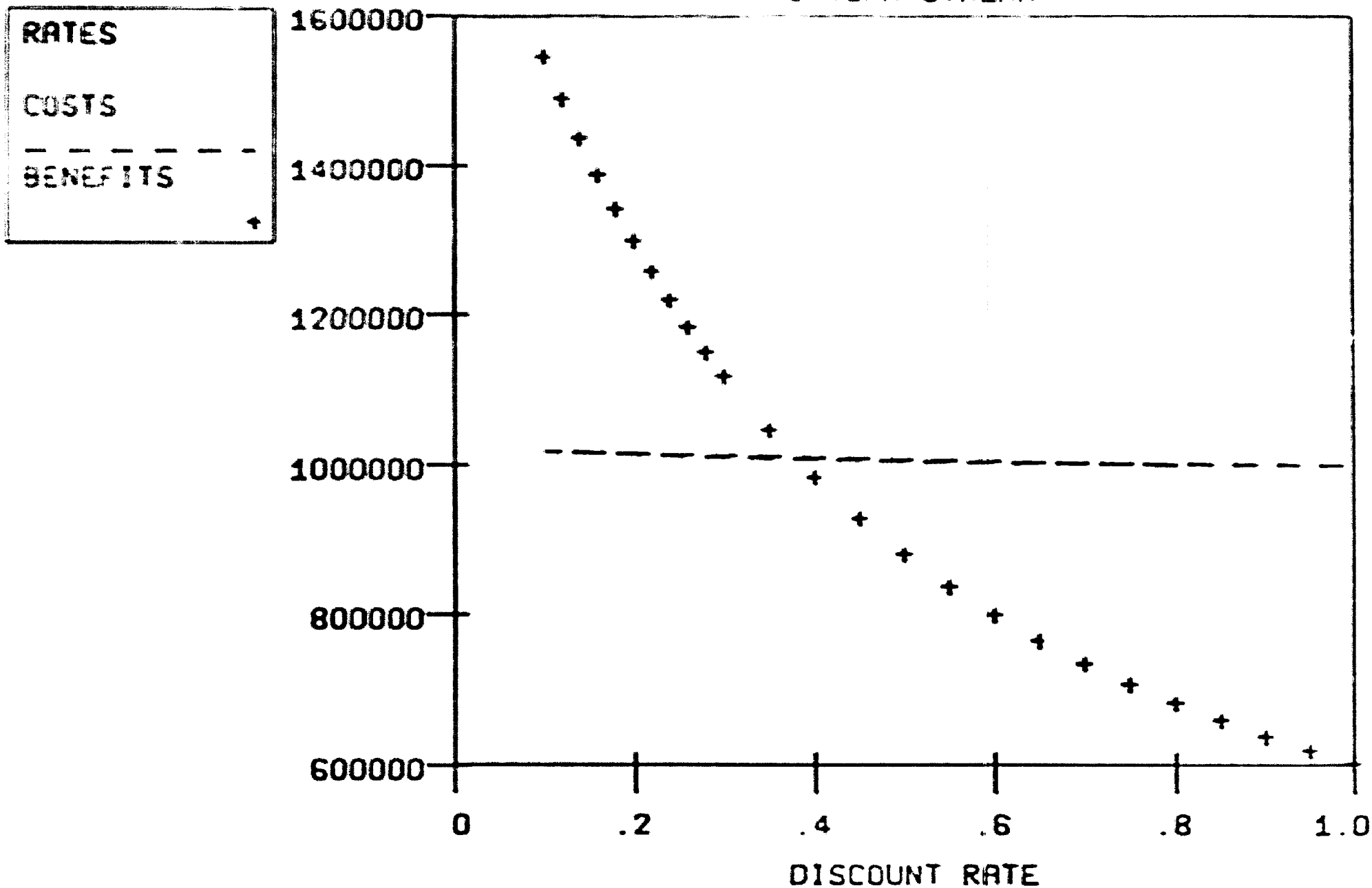
ASSUMPTION B.2

33% 25 TON AND 67% 5 TON. LOWER VOC

	4 Year				5 Year		
RATE	BENEFITS-4	COSTS-4	B/C RATIO-4	BENEFITS-5	COSTS-5	B/C RATIO-5
.08	1339367	1013194	1.32	1864737	1019809	1.83
.10	1297520	1012382	1.28	1785711	1018529	1.75
.12	1258202	1011616	1.24	1712444	1017336	1.68
.14	1221217	1010895	1.21	1644413	1016223	1.62
.16	1186380	1010213	1.17	1581135	1015184	1.56
.18	1153531	1009568	1.14	1522196	1014210	1.50
.20	1122518	1008958	1.11	1467213	1013299	1.45
.22	1093209	1008380	1.08	1415851	1012443	1.40
.24	1065477	1007832	1.06	1367801	1011638	1.35
.26	1039215	1007311	1.03	1322794	1010882	1.31
.28	1014312	1006816	1.01	1280580	1010169	1.27
.30	990683	1006345	0.98	1240940	1009496	1.23
.35	936620	1005263	0.93	1151811	1007972	1.14
.40	888821	1004300	0.89	1074879	1006643	1.07
.45	846342	1003440	0.84	1008034	1005476	1.00
.50	808410	1002667	0.81	949598	1004444	0.95
.55	774388	1001969	0.77	898220	1003529	0.90
.60	743746	1001338	0.74	852810	1002711	0.85
.65	716042	1000764	0.72	812474	1001978	0.81
.70	690903	1000240	0.69	776481	1001318	0.78
.75	668014	999761	0.67	744223	1000720	0.74
.80	647107	999321	0.65	715194	1000178	0.72
.85	627953	998916	0.63	688973	999684	0.69
.90	610356	998542	0.61	665202	999233	0.67
.95	594145	998196	0.60	643578	998818	0.64
1.00	579174	997875	0.58	623846	998438	0.62

DATE: 81-11-18; TIME: 14:00:43.0; CPU TIME: 0001.3 SEC

END


BENEFIT COSTS FOR ZIM ZAM ROAD
33.33% 25 TON 66.67% 5TON
4 YEAR STREAM
RATES
COSTS
BENEFITS
1400000
1200000
1000000
800000
600000
400000
0
.2
.4
.6
.8
1.0
DISCOUNT RATE

BENEFIT COSTS FOR ZIM ZAM ROAD
33.33% 25 TON 66.67% STON
5 YEAR STREAM