USAID

U.S.A.I.D / ZAMBIA

memorandum

PDBCL057

DATE: 10 June 1996

REPLY TO ATTN OF: Susan Gale, A/Project Manager

Gale

SUBJECT: Project Assistance Completion Report
Regional Transport Development II: Kafue-Lusaka Road Rehabilitation Project 690-0254

TO: Distribution

REF: Final Evaluation Report dated April 1995.

Please find attached for your records, a copy of the Kafue-Lusaka Road Rehabilitation Project Assistance Completion Report, and, a copy of the Final Evaluation Report dated April 1995.

Distribution:

Project Office
Official Project File
Shankar Gupta, Regional Engineering Officer, REDSO/ESA, Nairobi
Craig Noren, PDO, USAID/Zambia
PDO, USAID/Zimbabwe
Controller, USAID/Zambia
AFR/SA, USAID/W, Attn: Meredith Scovill
AFR/DP, USAID/W
AFR/SD, USAID/W
CDIE, USAID/W

REGIONAL TRANSPORT DEVELOPMENT II

ZAMBIA COMPONENT (690-0254)

KAFUE-LUSAKA ROAD REHABILITATION PROJECT

PROJECT ASSISTANCE COMPLETION REPORT

1. Summary/Completion Status:

The rehabilitation of the Kafue-Lusaka Road completes a program of road improvement between Zambia and Zimbabwe which began under Project 690-0209, Regional Transport and Storage Development (in the 1980's). Project 690-0209 rehabilitated two sections of road between Makuti-Chirundu in Zimbabwe and Kafue-Chirundu in Zambia.

With the completion of the Kafue-Lusaka Road Rehabilitation Project, this multi-phased program has improved the road transportation system for traffic destined for intra-regional markets and the Mozambican Port of Beira. This project along with others in the USAID/Zimbabwe, Southern Africa Regional portfolio has contributed to the SADCC transport sector objective of assisting the majority ruled nations of southern Africa to overcome regional transport constraints that constitute a serious obstacle to the region's economic growth and development.

The Kafue-Lusaka Road Rehabilitation Project 690-0254 (KL Road), Grant Agreement was signed on July 27, 1990. The objective of the KL Road Project was the rehabilitation of 53.4 km of road between Kafue and Lusaka. The road was rehabilitated at a cost of $28.840 million. Host Country Contracting Procedures were used in accordance with Handbook 11 requirements. The road rehabilitation work was tendered in two sections. The first section between the Kafue Bridge and Makeni junction, and the second section between Makeni and Lusaka. The contracting sequence follows (for further detailed information see the Final Evaluation attached):

o In 1989 a feasibility study was carried out by John Burrow and Partners.

o The Government of the Republic of Zambia (GRZ) through the Ministry of Works and Supply, Roads Department awarded a contract for final engineering design, spare parts procurement and construction administration services with a value of $3.27 million to the consortium Sheladia, Stanley, Burrow (SSB) in February 1991.

o A construction contract valued at $17.2 million was awarded to Kajima Corporation on April 16, 1992 for the Kafue Bridge to Makeni junction section of the road.

o A construction Contract valued at $5.739 million was awarded to CA Brand for the Makeni to Lusaka section, on December 30, 1993.

The final project evaluation (copy attached) carried out in April 1995 by the REO, REDSO/ESA, determined that the project fully achieved its objectives and was consistent with approved plans and designs.

2. Project Accomplishments/Objectives:

The Kafue-Lusaka Road Rehabilitation Project has accomplished its objectives by relieving capacity constraints on the region's trunk road system through financing technical assistance, training, construction, and the supply of commodities for the rehabilitation and maintenance of the KL Road. The project has assisted in removing existing traffic bottlenecks between Lusaka and Kafue; accommodated projected annual increases in traffic; and, extended the life of the road (by up to 20 years).

3. Progress Towards Achievement of Project Objectives.

The Kafue-Lusaka Road Rehabilitation Project has met its objectives of rehabilitating 53.4 kms of road between the towns of Kafue and Lusaka. One hundred and eight technicians and mechanics have been trained in-country, and four engineers attended a one month course in Tanzania; road maintenance equipment and spares were provided in accordance with the project paper, and GRZ specifications.

4. Adjustments in Project Design

-The reconstruction design of the road was upgraded from a 10 year life specification to a 20 year life specification.

-The original project authorization was for the rehabilitation of 49.5 km of road between Kafue and Makeni. Amendment 2 to the project authorization increased the LOP funding, and allowed for the rehabilitation of a further 3.9 kms of road between Makeni and Lusaka. The lane configuration was redesigned to a six lane divided highway between Makeni and Lusaka and to widen an 11.1 km section of road between Makeni and Chilanga (from 2 to 4 lanes).

5. Post-Project A.I.D. Monitoring

The Final Project Evaluation Report (attached) has recommended the following monitoring activities:

a. Receipt of a debriefing report from Sheladia, Stanley,Burrows (SSB) outlining ongoing and/or pertinent activities for appraisal by the GRZ and USAID.

b. SSB to submit a Project Completion Report relating to the C.A. Brand Contract.

c. USAID/Zambia to follow-up with the Roads Department on matters pertaining to their Operations and Maintenance Procedures both for the Kafue-Lusaka Road as well as for the resurfacing of parts of the Kafue-Chirundu Road.

d. USAID/Zambia to liaise with the Lusaka City Council (LCC) regarding the traffic lights and road lighting on the first 3 kms of the Kafue-Lusaka Road, to ensure that the required maintenance contract for the traffic lights is in place.

6. Review of Data Collection Results and Evaluations Remaining to be Undertaken.

The Regional Engineering Officer (REDSO/ESA) evaluated the project in April 1995, and followed up with a visit in March 1996. No further collections of data or evaluations are envisioned.

7. Lessons Learned

USAID successfully accomplished the project goal of rehabilitating 53.4 km of the KL Road. A problem arose due to the Host Country Contract being denominated partially in Zambian Kwacha. The devaluation of the Kwacha caused a major dispute between the original contractor Kajima and the GRZ regarding payments. Eventually an outside consultant was engaged to determine a fair resolution of the problem. The original contractor was compensated for the loss of income due to the exchange rate fluctuations, however due to this problem the GRZ was unable to negotiate a major change order with the contractor for additional improvements to the road, and the contract had to be split and new tenders were solicited for the 3.9 kms between Makeni and Lusaka. Note: In a country like Zambia, where exchange rate fluctuations are the norm, rather than the exception, any future contracts should be denominated in U.S. Dollars to avoid these problems.

The Conditions precedent/covenants were not fully met before the road rehabilitation commenced. One of the covenants was the resealing of 81 km of road between Kafue and Chirundu. The GRZ only completed 52 km (with USAID provided Local Currency) before running out of funds. The Roads Department sought additional funding from USAID at this point, but USAID determined that the Roads Department of the GRZ had not accounted for the original funds in a proper manner and was therefore unable to release further monies.

A further requirement was that the Roads Department provide "a plan in form and substance, satisfactory to A.I.D. describing the steps it plans to take to ensure proper maintenance of the KL and KC roads after project funded rehabilitation is completed, as well as the schedule of resources to be made available for this purpose." The Roads Department has at the Regional Engineer's level various documents in place regarding road maintenance and operations, however these documents do not address the specific roads in question. In future, all conditions precedent should be met before construction contracts are signed.

A further complication was the malfunctioning traffic and street lights (caused by vandalism) on the first 3 kms of the KL Road. The maintenance of these lights was handed over to the LCC (the lights being within the City limits) in January 1996. Contractual obligations were not met by the maintenance contractors, and responsibility for the malfunctioning lights was in the hands of the Roads Department/Roads Board according to the LCC. During the Regional Engineer's last visit in March 1996, discussions were held with all parties, and LCC agreed to take charge of this issue. The traffic and street lights are now working, and LCC are looking for new maintenance contractors. This matter should have been resolved by SSB in conjunction with CA Brand before their contracts ended.

RECOMMENDATION: The Acting Project Manager recommends that the project status should be changed from "active" to "completed" based on the preceding report and attachments. However, that the recommendations regarding post project monitoring in Item 5. be followed-up on a regular basis, (for at least a six month period), until satisfactorily completed/resolved. All payments have been made according to the USAID/Zambia Controller, however in accordance with contracting procedures, claims can be submitted by contractors for up to 9 months after Project PACD, and on this basis deobligation of remaining funds (approximately $250,000) cannot take place until September 30, 1996.

Attachments:
Final Evaluation: Kafue-Lusaka Road Project (April 95)
A.I.D. Evaluation Summary (Form 1330-5)

clearances:

CNoren, PDO
CWolters, PRM 6/5/96
MGweshe, CONT 6/4/96
RThomas, DEP.DIR

Approval: Joseph F. Stepanek, Mission Director

Date:

ATTACHMENT 1
A.I.D EVALUATION SUMMARY - PART 1

1. BEFORE FILLING OUT THIS FORM, READ THE ATTACHED INSTRUCTIONS.
2. USE LETTER QUALITY TYPE, NOT DOT MATRIX TYPE.

IDENTIFICATION DATA

A. Reporting A.I.D Unit: Mission or AID/W Office USAID/Zambia (ES#)	B. Was Evaluation Scheduled in Current FY. Annual Evaluation Plan? Yes [X] Slipped [ ] Ad Hoc [ ] Evaluation Plan Submission Date : FY 95 Q 3	C. Evaluation Timing Interim [ ] Final [X] Ex Post [ ] Other [ ]

D. Activities Evaluated (List the following information for project(s) or program(s) evaluated; if not applicable, list title and date of the evaluation report.)

Project No.	Project/ Program Title	First PROAG or Equivalent (FY)	Most Recent PACD (Mo/Yr)	Planned LOP Cost (000)	Amount Obligated to Date (000)
690-0254	Regional Transport & Storage - Phase II Kafue-Lusaka Road	FY90	06/30/95	$28,840	$28,840

ACTIONS

E. Action Decisions Approved by Mission or AID/W Office Director Action (s) Required	Name Of Officer Responsible for Action	Date Action to be Completed.
The final assessment of the operation and maintenance functions of the Government and the Republic of Zambia, Road Department in (1) deployment and use of project maintenance equipment, including equipment provided under the earlier Kafue-Chirundu (KC) road extension, and (2) fulfilling covenants to the agreement, including the completion of resealing operations over the KC road extension.	USAID/Zambia with REDSO/ESA Engineering Assistance (attach extra sheet if necessary)	March, 1996 (attach extra sheet if necessary)

APPROVALS

F. Date Of Mission or AID/W Office Review Of Evaluation: (Month) April (Day) 29 (Year) 1995

G. Approvals of Evaluation Summary And Action Decisions:

	Project/program Officer	Representative Of Borrower/Grantee	Evaluation Officer	Mission or AID/W Office Director
NAME (Typed)	Susan Gale	NCDP	CNoren	JStepanek
SIGNATURE	S Gale		Craig Noren	J Stepanek
DATE	3/27/96		3/26/96	3/28/96

AID 1330-5 (10-87) Page 1

ABSTRACT
H. Evaluation Abstract (Do not exceed the space provided)

The project aims to provide 53.4 kilometers (km) of high quality road to the Government of the Republic of Zambia (GRZ) and runs from Lusaka to Kafue. The road extends from Kafue to Chirundu, at the Zimbabwe border, for another 81 kilometers previously constructed with USAID funding. The project has been completed as desiugned and according to specifications, within the planned time frame and budget. USAID funding for the project is $28.84 million.
The final evaluation is provided for in the ProAg following completion of the work and was performed in April, 1995. A mid term evaluation was performed in November, 1993. Both evaluations were performed jointly with REDSO/ESA, USAID/ZAMBIA AND the GRZ Road Department.

Major Findings:
1. The quality of construction of the road is excellent. Several added features including, road marking, traffic lights and improved drainage make it a high class road.

2. Major disputes developed between the original contractor and the HC over payments in view of deteriorating foreign exchange rate fluctuations. The contractor started building claims and putting all sorts of pressure on the HC and TA contractor. The issue was so severe that the HC failed to successfully negotiate a major change order with the contractor for additional improvements. Subsequently the contract had to be split and new tenders were solicited so that a new contractor could be engaged to perform the additional work.

3. An outside consultant was engaged to determine a fair resolution of the problem. The dispute was resolved and the orginal contractor was compensated for the unanticipated foreign exchange rate fluctuations. A major contributing factor to the success of the project was the use of a professional services firm to undertake the complex research and analysis task, and to mediate contractual issues.

4. The GRZ Road Department which has the obligation to operate and maintain the road, could not identify current or planned resources, or a work plan to perform this work.

5. The ProAg covenants specify that the GRZ road department will reseal 81 km of road between Kafue and Chirundu. As of April 1995, the Road Department completed 52 km with USAID provided LC funds. The work stopped at that point. The Road Department has sought additional USAID LC funding to complete the remaining work. USAID found that the Road Department was unable to satisfactorily account for LC funding provided to them under several previous LC agreements, and the Department was unable to take such actions as would be necessry to assure USAID that deficiencies in accounting were corrected and would not be repeated. USAID, therefore, was unable to make further grants to the Road Department, and requested that work be completed within the ordinary GOZ budget.

Lessons Learned:
1. In a country-specific situation, if the local currency is weak and foreign exchange rate against dollar may drop significantly, a dollar value contract can avoid construction disputes, claims and resulting delay in implemenation.

2. The Road Department should have a welll developed road maintenance plan as provided in the ProAg and related doucments.

COSTS			
I. Evaluation Costs			
1. Evaluation Team NAME AFFILIATION	Contract Number OR TDY Person Days	Contract Cost OR TDY Cost (U.S. $)	Source of Funds
Shankar Gupta, REDSO/ESA	10 days	N/A	REDSO/ESA
Abdulaziz Hussen, USAID/Engineer	10 days	N/A	USAID

2. Mission/ Office Professional Staff	3. Borrower/Grantee Professional Staff
Person - Days (Estimate) ____________	Person - Days (Estimate) ____________

A.I.D EVALUATION SUMMARY - PART II

SUMMARY

J. Summary of Evaluation findings, Conclusions and Recommendations (Try not to exceed the three (3) pages provided) Address the Following Items:-

* Purpose of Evaluation and Methodology used
* Purpose of activity(ies) Evaluated
* Findings and Conclusions (relate to questions)
* Principle Recommendation
* Lessons Learned

Mission or Office:	Date This Summary Prepared:	Title And Date of Full Evaluation Report:
USAID/Zambia	October 23, 1995	Kafue-Lusaka Road April 1995.

1. **Project Goal**

The project goal provides a strong foundation for economic growth in the southern Africa regional countries. The goal will be achieved through increased regional exports and extra regional trade as a function of the expanded road with improved reliablitiy and concomitant operational cost savings making regional products more market competitive.

Following completion of the project, 53.4 km of road have undergone major rehabilitation and improvements with USAID funding or $28.84 million this includes, 3.9 km divided six lane highway, 11.1 km four lane highway (4.85 km divided and 6.25km undivided). Approximately 38.3 km remains as a two lane undivided highway. The improved infrastructure will accomodate a projected annual traffic increase of 5 to 7%.

2. **Purpose of Evaluation**

This final evaluation is provided for in the Project Paper after completion of the project. The evaluation provides an independent assessment to USAID/Zambis of the extent to which the project has met the target objectives, and the major findings which relate to long term project sustainability issues and recommended course of actions.

3. **Methodology**

The methodology consisted of 1) a review of project related USAID documents, files, agreements, reports by USAID and involved parties; 2) interviews with USAID project team members, TA contractor team members and GRZ Road Department personnel; and 3) a comprehensive road reconnaissance survey.

4. **Findings and Observations**

The project road has been rehabiitated as designed. As of April 1995, the O&M equipment has been ordered for procurement for a delivery date of June '95. During follow up visit in FY96, the Evaluator will verify the inventory of equipment in additon to assessing annual road performance.

SUMMARY CONTINUATION

The project had tendering problems and major cost related disputes with the original construction contractor. The overall impacts were 1) retendering of the original construction contract and 2) splitting the original construction contract into two separate contracts while implementation was in progress, and bringing in a second contractor. The combination of reasons were (1) Limited competion to Code 941 countries in the first tendering process which brought in only two tenders both exceeding the budget cost. Subsequent retendering was extended to Code 935 countries which drew considerable response and competition from contractors; (2) Unstable local currency (LC) against the U.S. Dollar which discouraged potential contractors from bidding; and (3) the original contractor's hard bargaining stand leading to a major change order with HC for added improvements to the the road.

The project cost was generally contained within the budget. This included about $6 million increased authorization based on the expanded scope of work. In additon, some transfers of funds were made among project budget elements to control and reduce project costs. The project file contains rationale and justification for these actions.

5. Host Country Performance

Although a high quality road has been built with USAID investment of $28.84 million, and is now fully operational under the GRZ Road Department, the latter could not produce a financial and personnel plan of operation and maintenance for effective operation and long term sustainability of the project. The GRZ does have trained manpower who may be qulified to operate and maintain the road. Also, their financial resource allocation in relation to the O&M budget remains questionable.

The ProAg covenants specify that the GRZ road department will reseal 81 km of road between Kafue and Chirundu. As of April 1995, the Road Department completed 52 km with USAID provided LC funds. The work stopped at that point. The Road Department has sought additional USAID LC funding to complete the remaing work. USAID found that the Road Department was unable to satisfactorily account for LC funding provided to them under several previous LC agreements, and the Department was unable to take such actions as would be necessary to assure USAID that deficiencies in accounting were corrected and would not be repeated. USAID, therefore was unable to make further grants to the Road Department, and requested that work be completed within the ordinary GOZ budget.

The Zambian Government states that the KL road is the best in the nation. However, the evaluation recorded that considerable vandalism, theft and destruction have occured to traffic controls, lighting standards and other road related property. These deficiencies have to be corrected, and a mechanism put in place by the GRZ to maintain road-related property.

The following lessons are noted from this project implementation.

1. The HC should have developed an appropriate O&M plan for the road with necessary funding.

2. The HC should have completed resealing of the 81 km of Kafue-Chirundu road as per ProAg and covenants.

3. A 100% U.S. Dollar value contract should be considered for USAID funded construction contracts in the Countries where LC is weak and unstable. Many potential contractors decline to bid, or put a very high bid price on their offer in order to protect their interests against falling local currency rates to the U.S. Dollar. The resulting problems include disputes, construction claims, difficulty to negotiate change order at fair and reasonable price, implementation delay and resulting cost escalation.

4. Where a construction contract is based partly in U.S. Dollars and partly in local currency, a reasonable rationale should be developed on sound and reasonable criteria incorporated in the contract document for adjustments due to the fluctuations of LC exchange rates. This became a major issue for the project and an outside consultant had to be engaged to analyze the problem and offer recommendations for solution. Based on the Consultant's recommendation, the construction contractor received a little over $1 miullion as adjustment for fluctuating LC exchange rates.

ATTACHMENTS

K. Attachments (list attachments submitted with this Evaluation Summary: **always** attach copy of full evaluation report, even if one was submitted earlier; attach studies, surveys e.t.c. from "on- going" evaluation, if relevant to the evaluation report.)

Final Evaluation Report - Kafue Lusaka Road.

COMMENTS

L. Comments By Mission, AID/W Office and Borrower/Grantee on Full Report

MISSION COMMENTS: USAID concurs with the findings of the report. USAID has tentatively scheduled a follow up visit by the REDSO/ESA Engineer, who also performed this evaluation in March-April 1995. During the visit, the REDSO/Engineer will: make a comprehensive assessment of the annual road performance, assess the status of the recommendations addressed in the evaluation report, assess the HC's performance in maintaining the road, assess procurement and use of the project funded equipment, and the HC institutional set up for personnel and financial resources for O&M activities of the road.

KAFUE-LUSAKA ROAD PROJECT
USAID/ZAMBIA PROJECT NO. 690-0254
FINAL EVALUATION REPORT
APRIL 1995

EVALUATION PERFORMED BY
SHANKAR GUPTA, REGIONAL ENGINEER
USAID/REDSO/ESA, NAIROBI, KENYA

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INTRODUCTION

The following is an evaluation of the USAID funded Kafue-Lusaka road rehabilitation project (690-0254). The final evaluation is provided for in the Project Paper upon completion of construction activities. A prior technical evaluation was performed by USAID/ ZAMBIA in November 1993.

The evaluation criteria and parameters are contained in the Lusaka cable 02016. The statement of work is on page 2 of the cable. This evaluation (Section C, subsections 1 through 7) addresses the statement of work in the same chronological order as provided in the cable. The evaluation relates to project design and implementation issues and lessons learned from it.

In course of performing the evaluation from April 15-28, 1995 I met and had discussions with numerous people in USAID, Sheladia/Stanley/Burrow joint venture (SSB), GRZ- Roads Department (RD) and other Agencies. I have visited the the entire section of the project road and the Kafue-Churundu road. Attachment 1 provides a list of people whom I met and had dicussions with. I have also reviewed pertinent information in the project files and documents. This includes Project Paper /Amendment, Grant Agreement/Amendments, Action Memorandums, Project Implementation Letters, Variation Orders, tender evaluation report, SSBs' road rehabilitation completion report of the first section by Kajima, USAID technical evaluation report, and the contract documents.

The draft evaluation was distributed to USAID staff and their comments have been incorporated in the revised text of the evaluation.

I thank the Mission staff for kind hospitality and cordial welcome. It has been a pleasure to have worked with Val Mahan, GDO, Craig Noren, PDO and Abdul Aziz Hussen, PSC Engineer. Their help and assistance have been instrumental in developing the evaluation.

B. Project Overview

The Kafue-Lusaka (KL) road is an imporant link for commerce and trade in the Southern African countries. The 53.4 km road required major rehabilitation because of less than adequate maintenance, excessive vehicle loads and general neglect associated with a lack of emphasis and lack of resources of the GRZ. The project was originally authorized in July 1990 with a funding of $22.840 million. The authorization was increased by $0.5 million by amendment# 1 to a total of $23.340 million. This funding was provided to rehabilitate 49.5 km of the KL road between Kafue and Makeni. Amendment# 2 to project authorization increased the LOP funding by $5.5 million to $28.840 million. The additional funds were provided to rehabilitate the 3.9 km between Makeni and Lusaka into a six lane divided highway and to widen the 11.1 km section between Makeni and Chilanga from two to four lanes. The Project Grant Agreement provides CPs and Covenants which had to be met by the GRZ.

The KL road rehabilitation has been implemented in two separate sections under separate construction contracts.

The first section consisted of 38.3 km of two lane undivided highway between Kafue and Chilanga; 6.25 km of four lane undivided highway between Chilanga and Blue Boar; and, 4.85 km of subgrade between Blue Boar and Makeni in respect of clearing, levelling, compacting, subgrading and compacting subgrade. This length is for four lane divided highway. The remaining work for this length was included in the second section of the road under a separate contract.

The second section consisted of: 4.85 km of four lane divided highway between Blue Boar and Makeni in respect of sub base, base and surface. The subgrade for this section was included in the first section of the road; 3.9 km of six lane divided highway between Makeni and Lusaka; Installation of traffic lights, road signs and deflectors on entire road per design by Consultant.

The rehabilitation work is over and the road is fully operational. The GRZ has accepted the road as provided in the construction contracts. This evaluation reviewed the PP as it relates to logical framework to measure the project outcome.

The PP Amendment I, Annex A, page 3 of 4 in the logical frame work established outputs and means of verfication to measure project implementation. The first three outputs relating to rehabilitation and widening of the road have been fully met or exceeded. The fourth output - "Road maintenance is based on long term performance of the road and can be verified in the year 2000". The current performance fully meet or exceed the criteria obvicusly because it is a brand new road. The fifth output is training and equipment. Altogether 108 technicians and mechanics have been trained in country and 4 Engineers attended the one month course in Tanazania thereby meeting the provisions of the

PP. Concerning road maintenance equipment, as of this time (April 1995) the procurement is still underway. This output should be addressed in a subsequent report following another inspection of the road performance after one rainy season.

C. The Evaluation

The evaluation parameters have been addressed in the same chronological order provided in the Statement of Work by USAID/ZAMBIA. Evaluation comments and/or recommendations have been provided following evaluation parameters as appropiate.

1. Whether all required project implementation actions were carried out in accordance with USAID Handbook 11, Country Contracting and whether project performance has been consistent with approved pland and desaign.

Compliance with HB 11: Based on review of pertinent project records and documents, and the information generated while interviewing people involved with project implementation, the evaluation determined that all project implementation actions conform to the provisions of host country procurement in Handbook 11. The host country procurement relates to (1) design and construction management services (2) construction services and (3) equipment and materials procurement. Where applicable, requred administrative actions were processed and approvals obtained on a case by case basis in order to ensure compliance with the rules and guidelines in HB 11.

Whether project performance is consistent with approved plans and design: The evaluation has established that the project performance fully achieved its objectives and is consistent with approved plans and design. The final design upgraded the project road from Class 1B to 1A, replaced overlays with total reconstruction, installed a number of enhanced safety features, improved the drainage system with added cross culverts and provided bus bays, lay-bys and road markings. The upgrades makes it a high class road. SSB closely monitored the quality of work which involved extensive performance tests. The test results are documented in the SSB completion report of August-1994, and were carried out for earthwork, road bed, sub base, subgrade, concrete, shulder stabilization and surfacing, base course, aggregate - grading and mix, air voids, asphalt concrete and roughness, both before and after rehabilitation work. The test results, properly documented meet or exceed the design critera.

2. Project estimate vs project budget, cash flow, variation order and progress payments to Kajima, Brand and SSB.

Based on the feasibility study of 1989 by John Burrow and Partners, the estimated cost including 10% contingencies of rehabilitating a two lane single carriageway between Kafue and Makeni was $18.50 million. In 1990 when the PP was prepared, the estimated cost was updated to $22.84 million as the authorized grant amount. The updating included cost escalation for revised implementation schedule and other costs items which were not included in the feasibility study.

The road rehabilitation work was awarded in two construction contracts. The first construction contract was signed between GRZ and Kajima on April 16, 1992 for a negotiated price of $17.2 million. The Engineers estimate was about $16.5 milion and was close to the negotiated price. The project budget was realigned between the elements (PIL 19 dated April 13, 1992) primarily to add funds for construction, design and construction management services and contingencies. It should be noted that the project budget was also realigned on previous occasions in order to address the funding requirements between the elements appropiately. The project budget was contained within authorized the grant of $22.84 million. The contract generated 12 variation orders (VO) of which 9 were processed through negotiations while the remaining 3 were determined inadmissible and denied. The total value of the VOs were about $666,000 (Kw233,104,210) based on Kw350=U.S.$100. Through substitution of items in these VOs, the project earned a credit of about $665,000 thereby the net cost of the VOs was about $1,000 (Appendix E-1, SSB monthly progress report- March 1994). The final contract price including an adjustment for VOP was$17.5 million. There was never any cash flow problem in this contract performance. The progress payments are consistent with the scheduled and actual work performed. The contract is fully paid in the amount of $17,500,000. USAID/FM made the last payment on November 15, 1994.

USAID, from tendering experience of the first construction contract, recognized that additional funds were needed to objectively complete the road rehabilitation project. The project authorization was therby increased by $6.0 million (USAID/Zambia - SARP $5.5 million and USAID/Zimbabwe $0.5 million) and the PP was amended in August 1993 with project grant authorization was $28.84 million.

The second construction contract was awarded to C. A. Brand in December 1993 for a bid price of $5.635 million. The Engineers estimate was $4.4 million. PIL No. 28 dated December 29, 1993 provided adequate funding allocation for pertinent project activities. There were three VOs involved in the contract for a total negotiated price of about $400,000. The contract was completed in December 1994 at a cost of $6.05 million. There was no cash flow problem with Brand. Invoice payments are consistent with the contract requirements. Total USAID disbursements to Brand as of April 1, 1995 is $6.045 million. The contract has been fully paid.

The RD-SSB contract was signed in February 1991 for professional engineering services which includes design, construction management and equipment procurement. The original value of the contract was $3.273 million. The contract value was increased under PIL# 19 dated April 13, 1992 by $0.33 million to $3.603 million. Again under PIL# 28 dated December 29, 1993 the contract was amended by adding $ 0.597 million to a total of $4.2 million. These amendments were necesitated to incorporate the supervision of the additional work. SSB had no cash flow problem in performing their contract. USAID disbursements to SSB as of April 27, 1995 is $4.057 million. The last payment date was April 3, 1995. Funds available for payment is about $143,000.

3. **Adequacy of feasibility study, final design, tendering, construction supervision and the current procurement of the road maintenance equipment.**

Feasibility Study

The feasibility study of August 1989, prepared by John Burrow & Partners (Burrow) provides comprehensive data and information, and adequately addresses technical and financial issues which were pertinent to the design and rehabilitation of the K-L road. The information generated, and criteria established in the study have been used as the basis of final design of the road rehabilitation by SSB. The information developed in the study will provide good baseline data for future references.

Final Design

SSB, a joint venture of Sheladia, Stanley and Burrow developed a well perceived final design based on good engineering practices. The design was completed in an expeditious manner which made tendering possible during rainy season of 1991 so that construction could start in the dry season of 1992. Otherwise, rain could stall the construction start up for up to one year. SSB introduced several innovative design ideas to upgrade the criteria established in the feasibility study which enhanced the design of the road. While designs were upgraded simultaneously substitutions were identified as possible trade offs to contain within budgetary restraints. Thus a balance between the variables was maintained. This is reflected in the construction award costs to the conractors and the final cost of completion. A few examples of final design demonstrating good engineering practices (1) Conducting an actual traffic survey to check the data established in the feasibilty study then rationalizing and adjusting the data with the local geo political situation in order to determine a more realistic traffic growth rate projection. The projection was used as the design criteria for road pavement. (2) Determining the class of road to be designed between Chilanga and Kafue by rationalizing the established criteria in the feasibility study. The result dictated that the section of the road must be upgraded from 1B to 1A. Likewise SSB incorporated erosion control, drainage and safety features in the design which stand for good design. According to SSB the life of the designed road pavement is ten years. The written reports in file indicates twenty years base on design modification which used asphalt concrete sealer instead of two layer bitumen. SSB concurred with the contention.

Recommendation: The construction of the road rehabilitation is complete and the Zambia RD has provisionally accepted the road. Now SSB should prepare a completion report addressing pertinent design, construction parameters, issues, life expectancy and required maintenance and operation (O&M) of the road. It will be prudent for SSB to review the RD existing manual of operation and maintenace for the KL road and update and/or develop an O&M manual for long term sustainability of the road. The manual besides technical functions should include records keeping, work orders, inventory and ordering of materials and supplies.

Tendering

The road rehabilitation work was tendered in two sections. The first section between Kafue bridge and Makeni junction required retendering because of lack of adequate response in the first round. Besides CBD announcement, tenders were invited from regional countries through media advertisements. On November 22, 1991 the following two tenders were received out of the five prequalified firms and both tenders exceeded available funds in the project.

Tenderer	Tender Value in U.S. Dollars
Capricorn Construction	$21,960,000
Gulliver Construction	23,445,000

The tenders were rejected and the RD decided for retendering. In part the reasons for high bids were (1) Competition was limited among the Geographic Code 941 countries and (2) Local currency progress payments of 20% each invoice was conceived as less than adequate by the potential tenderers for adjustment of escalated material and labor costs. In order to open competition, USAID approved participation to all 935 category countries in the retendering. A short list of 11 firms was prepared from those who had previously submitted prequalifications but were disqualified because of their 935 origin. On February 7, 1992 six tenders were received out of eleven firms who were invited to participate. The following is a summ6ary of the six tenders.

Tenderer	Value of Tender		
	Z. Kwacha	U.S. $	Xge Rate
Partizanski Put	1,576,135,134	16,933,591	92.7488
Kajima Corporn.	1,624,000,000	17,828,081	91.0922
Cogeferimesit	1,708,386,000	19,031,420	89.7666
Phoenix Vej	1,794,293,331	20,438,703	87.7890
Lendor Overseas	1,927,942,169	25,253,301	90.7126
Fortunato Feder.	2,101,049,376	23,065,073	91.0922

Based on SSBs' evaluation and follow up checks of the tenders, the lowest bidder did not qualify because of inconsistencies in the tender documents in relation to its performance in cononcurrent projects they were constructing in Tanzania. The second lowest bidder, Kajima Corporation was recommended as the most responsible and responsive bidder. In addition to the basic tender, Kajima included an alternative proposal together with a 5% reduction in unit price of most tender items. Following negotiation between the Roads Department, represented by SSB and Kajima, the latter's alternative proposal was modified and accepted by the Roads Department. Finally GRZ signed a contract with Kajima on April 16, 1992 for a value of $17.2 million. In the entire process about five months have been lost between the two rounds of tendering. The situation was unavoidable.

The second section of the road between Makeni and Lusaka was implemented under a separate construction contract awarded to C. A. Brand Ltd (Brand) at a price of $6.0 million. There was an overlap between the two contracts in that Kajima under the first contract rehabilitated 44.45 km of the road between Kafue and Blue Boar and constructed the subgrade of 4.85 km between Bule Boar and Makeni. Brand rehabilitated 3.9 km of the road between Lusaka and Makeni, and in addition constructed the sub base, base and surface of the 4.85 km 2between Makeni and Blue Boar. Originally Kajima contract was based on two lane undivided highway which, subsequent to the award of the contract, was upgraded to four lanes between Chilanga and Makeni. The Roads Department and SSB first conceived that a negotited price with Kajima through a change order would be the logical way to do the upgrading. However, the negotiation failed because Kajima took a hard bargaining stand and demanded higher unit price. Basically they just did not to do it and refused to negotiate. At that juncture the Roads Department decided to invite tenders from short listed firms 8in the Departments 'unlimited category'. These are firms prequalified by the RD and maintained under the category for any construction work. The firms meet the 935 Geographical code requirements. With USAID approval, seven firms were invited to tender of which the following five actually participated.

Tenderer	Tender Vaule in Kwacha (Kw) and $	
Roadmix Ltd	Kw 1,800,923,950	$ 5,281,302
C. A. Brand	1,957,277,450	5,739,817
Murray & Roberts	1,959,571,733	5,746,545
J. J. Lowe Superfos	2,132,365,273	6,253,271
Lendor Overseas Ltd	2,454,648,954	7,198,384

[U.S. $ 1.00 = Zambian Kwacha 341 on 10/15/93]

Based on SSBs' evaluation of the tenders and recommendation for award, C. A. Brand Ltd was the most resonsive and responsible bidder and was awarded the contract.

Construction Supervision

The Roads Department contracted with SSB to provide engineering design and construction management services for the project. In addition, SSB is also Procurement Agent for the road maintenance equipment. To this end SSB has performed in a satisfactory, responsive and professional manner. This resulted in a high quality road rehabilitation work. SSB assigned experienced professionals who effectively monitored progress of work, checked for quality controls and identified potential problems and successfully worked on its resolution. One single example of SSBs' good performance and control is that there has not been any construction dispute or claim by the construction contractors against the Roads Department or other involved Agencies. There were problems with the contractors, specifically with Kajima which frequently threatened of claims and law suits. However, SSB handled the situations in a timely and professional manner thereby avoiding construction disputes and claims which could othertwise cause implementation delay and large claims against the host country. A few other examples to illustrate SSBs' performance:

(1) The construction contracts have been completed in time.
(2) There has not been any major waiver required for material, supply or services, a clear indication of good planning and scheduling. (3) The number of change orders in the two construction contracts is minimal. A total of 12 change order were initiated by the contractors of which 3 were rejected. The remaing 10 were successfully negotiated through substitution of items as trade off which resulted negligible net cost increase. Moreover SSB put tight control on project cost. For every change order requiring additional work, SSB made thorough scrutiny to identify cost effective substitutions so that in the end there was trade off and cost contained measures. (4) Construction monitoring was thorough and comprehensive. Material testing including embankment, base course, and asphaltic concrete surfacing which are pertinent structural components were performed more frequently than provided in the specifications. Tecnical data and narratives of the monitoring activities are documented in the USAID evaluaion of November, 1993.

Comments ; :

Technical: The road rehabilitation work is essentially complete and the road is operational. It will be a good professional practice for the Road Departtment or SSB to survey the road for checks and balances for pertinent design and performance parameters. This evaluation has noticed that certain sections of the road showed minor cracks. Other sections showed waer and tear of asphalt surface, minor depression and settlement. At T junctions where traffic light controls movement of traffic, the left lanes close at the junctions therby making them left turn lanes only. However, the present design does not permit the traffic to turn left until red light turns into green. The simple solution is to post a sign at left corner which will allow traffic to turn left with or without stop. A subsequent road performance inspection should identify any discrepancies in relation to road design and performance, however minor it may be, and its correction.

Financial: SSB contract with the Roads Department is 'cost reimbursible with fixed fee'. Although ceilings can be or was imposed on authorized expenditures, in most cases there will be natural tendency to prolong current activities or bring added elements which will accrue more time for the consultant. This situation is more complicated in host country contract situation where the consultant has more fexibilities to manipulate to its advantage. One way to assess the cost of engineering and construction management services is percentage of construction cost. In this instance the SSB price tag of $4.2 million for a $23.5 million construction contract, the fee comes to 18.3% and is reasonable. The Engineers fee for an overseas contract of this size is between 15 to 20%. .

Road Maintenance Equipment

The revised project budget provides $400,000 for procurement of road maintenance equipment. This activity is currently ongoing. On 21 April, SSB project manager during discussions with the evaluator and USAID/PSC Engineer indicated that equipment under this procurement will be delivered in country by end of May'95. The project grant agreement originally allocated $1.285 million for equipment procurement. Subsequently the Roads Department recommended and USAID concurred to reduce the funding to $400,000. Based on the first round tendering in which bids exceeded the project budget, the Roads Department working closely with SSB was concerned if this could also repeat in the retendering. Moreover, additional work was identified which needed to be implemented. Based on these overiding concerns and necessities. the Roads Department reduced funding for procurement of equipment to $400,000. Their rationale was that under the Kafue - Chirundu road rehabilitation project previously implemented with USAID funding, they received equipment for periodic maintenance which can also be used for the K-L road. Included under this procurement are essential equipment for day to day maintenance. USAID obtained written commitment from the RD to this effect while concurring the revised equipment budget.

Comments:
This evaluation strongly emphasizes that the Roads Department properly perform the O&M activities of the KL road. Deficiencies should be identified through monitoring and corrected appropiately. USAID, as I have been told, has emphasized the matter to the RD via letter and through discussions. USAID efforts should be pursued to make this happen.

4. Quality of road rehabilitation work by Kajima and Brand with respect to approved plans and specifications.

Kajima performed good quality construction work which met or exceeded the construction specifications. The work has been completed on schedule. Kajima mobilized well trained and experienced staff, and adequate equipment in well maintained condition to perform the work. Based on information furnished during the evaluation, Kajimas' construction superintendent had been difficult to deal with. By all accounts it can be politely said that the construction superintendent had a bad mouth. He allegedly used to threat frequently SSB, Roads Department and USAID of filing law suits, claims and stalling work to a halt. However his questionable behavior did not interfere although apprehended on occasions, with the quality of work or its timeliness. In fact Kajima contributed several good ideas at minimal or no cost which enhanced project effectiveness. At staff level the working relationship was good and responsive. Given these drawbacks to deal with the construction superintendent, the Roads Department with USAID concurrence did not invite Kajima to tender the final 3.9 km of the project.

A few criticisms about Kajima on record indicates their negligence to properly maintain the detour signs and opening borrowpits without authorization of SSB or Roads Department as provided in the contract.

Brands' performance under the contract was noticeably different than Kajima. They are good road contractors with good leadership and teamwork. The staff were well trained and experienced. The equipment were in good condition and properly maintained. The construction superintendent maintained good communication with SSB and the Road Department and mutual feedback was routinely maintained. The quality of work performed is good and schedule 6was maintained. There is no criticism about this firm.

Comments: Both contractors peformed good quality work and maintained implementation schedule. Kajima created a lot of hassles primarily due to its controversial construction superintendent. His caustic personality and confrontational attitude surcharged the work environment with suspicion and mistrust. Althoughh he frequently threatened of filing claims and law suits, it did not finally happen and reasonably so. Otherwise the project could be adversely impacted with implementation delay. On the contrary, the South Africa based 8C. A. Brand perhaps had its first major contract in Zambia. They tried to do a good job to establish the firms' credibility and promote business potential. They have demonstrated credible performance.

5. **Performance of the Host Country Road Department in administering the project and USAID PSC Engineer in facilitating the project implementation.**

The successful implementation of the road rehabilitation project is largely due to effective team work of the Road Department, SSB and USAID. The Road Department has a critical shortage of trained and experienced technical, and administrative support staff. The salary and other job incentives are not attractive enough to motivate experienced personnel, as a result of which they quit for outside employment. This situation imposes additional burden on the Director and his Deputy and obviously delays action. The situation worsened when ODA withdrew the three road engineers who were assigned to assist Road Department. Inspite of the shortcomings and weaknesses, Road Department was committed to the subject project and has been cooperating well with USAID with the exception of a very early incident involving the former Deputy Director. The incident (on record in project file) was serious and could be damaging. Through tactful intervention by the USAID Project Officer, the GRZ removed the former Deputy Director from the position and was reassigned elsewhere. Because of the organizational weaknesses, the Road Department is frequently slow although they put their best efforts in responding to requests by USAID or SSB for actions. Their relatio2nship with SSB is cordial and professional. SSB on numerous occasions has provided or performed administrative support functions for Road Department in order to expedite implementation actions. The former Director, who may be back to the position soon is a competent and capable manager.

The USAID/PSC Engineer has performed an outstanding job in facilitating the project implementation. His job was delicate and complex. He had to oversee USAID interest in relation to the significant investment. On the contrary both the construction contractor and the design/construction management firm were host country contracts. Under these circumstances, the PSC Engineer tacitly maintained a proactive role to move the project to a successful completion. He has good ideas and can transform ideas into action. The USAID Project Officer has high professional respect for him. During the two weeks contact, the Evaluator has unhesitatingly determined that the PSC Engineer is a capable professional and good resource. He closely monitored project scheduling, progress and cash flow. The project files are generally in order.

6. **Causes of Variation of prices Dispute between Kajima and the Roads Department and lessons learned out of the dispute.**

At the outset of the tendering process, USAID and AID/W considered potential issues which could develop for local currency payment due to variation of prices (VOP). The variation was foreseen due to unstable local currency and the fluctuating rate of foreign exchange between dollar and Zambian kwacha. Between 1989 and 1991, USAID and AID/W exchanged views on this matter through cables, correspondences and discussions. The issue was whether the contractor could be paid in dollars for the entire contract value! The supporting factors were that (1) the contractor could be from any designated code countries who would be least interested in local currency payment (2) even a Zambian contractor would possibly have least interest for such a high value local currency contract and (3) to effectively address the potential issue of VOP and its adverse impact on project implementation. Subsequently AID/W encouraged USAID that (1) payment in respect of a Zambian contractor would be made in Zambian kwacha and (2) payment for other contractors will comprise 80% in U.S. dollar and 20% in Zambian kwacha to be converted into dollars. In both cases the Zambian official rate of exchange will prevail without any adjustment for market inflation. AID/W rationale against 100% dollar payment was that it could result in a windfall profit to the contractor in a situation where Zambian currency rate was depreciating steadily against stable currencies. Based on this percept, during the first tendering only two bids were received (no U.S. firm) both exceeding available funds in the project. It was believed that in part the reason of high price was that the bidders protected them against weak local currency and poor rate of official exchange. The official exchange rate at the time of tendering in 1991 was $1.00 = Kwacha 91.00 and steadily dropped to 350 during life of the Kajima contract (April 1992 - February 1994).

The feasibility study identified that 80% of the construction activities would involve dollar component while 20% would involve local currency component. In the retendering, the

Regional Legal Adviser assisted in developing clause 70.1 under Addendum No.1 of Tender documents which provided a K factor for adjustment of VOP to be applied to the 20% local currency progress payments. The ceiling was that the VOP adjustment would not exceed 10% of the total contract value.

$$K = 0.35\ LL/LLo+0.4\ FU/FUo+0.15\ BI/BIo+0.1CE/CEo$$

where:LL is current index or price for local labor, FU is fuel, BI is bitumen, CE is cement and RS is reinforcing steel all at the specified time related to the payment considered for adjustment while LLo, FUo, BIo, CEo and RSo represent respectively basic indices (detail information in HB11). The construction contract was awarded to Kajima on this basis. However Kajim2a was uncomfortable with the steadily deterioting value of kwacha against dollar and yen. Worst than that GRZ official exchange rate was not realistic to market value and the higher unofficial black market rate dominated the market values including construction materials pertinent to local currency procurement. While this could easily be foreseen what accrued was that in December 1992, the GRZ abandoned the "official" exchange rate, thus opening questions as how the formula for determination of K should be calculated.

Against this background Kajima claimed that they were losing money from the 20 percent progress payments in local currency. The contract provided that the official exchange rate on the first calendar date of the month will be the basis for local currency progress payment processed during the month. Kajima started building its claim on VOP putting all sorts of pressure on the RD, SSB and USAID. Thus the project developed a major cost related dispute between Kajima and the Roads Department. The RD assisted by SSB maintained continuous dialogue for a negotiated agreement with Kajima so that the progress of work remained uninterrupted. Numerous ideas, rationales and hypotesis were exchanged. At one point Kajima threatened to stop work when the RD under USAID advice informed Kajima to complete the contract while an outside consultant firm would be engaged to anyalyze the issue and recommend solutions. At this point Kajimas' claim on VOP was close to $2 million. USAID then engaged the services of Deolitte & Touche to analyze Kajimas' claim and provide recommendations for a solution. Based on their recommendation that Kajima has a legitimate claim of $934,000 as of December'93, the RD reached a final settlement of $1.1 million with Kajima as of contract completion date of February'94.

Lessons learned:
Judging from a technical point of view, this evaluation believes that a 100% dollar value contract could avoid all the hassles. AID/W rationale of windfall profit as a measure for discouraging 100% dollar payment was possibly short sighted. The implementation objective was to employ a contractor on comptetive basis to complete construction work in a timely and cost effective manner. A 100% dollar value contract could possibly invite more contractor participation, and more competetive price with no risk of local currency impacts. These observations are rationalized by the trail of paperwork of claims filed by Kajima and the significant time and efforts spent by USAID, REDSO, SSB, the outside audit firm and

the Roads Department to address the issues. If the issues were not handled tactfully, Kajima, regardless of win or lose situation, could delay project implementation thus escalating the project cost.

7. Road Department maintenance of Kafue-Chirundu road.

On 18 April, the evaluator and the USAID/PSC Engineer made a site visit of the Kafue-Chirundu road in order to assess the maintenance of the road. The road is 81 km long of which 52 km have been resealed while the other 29 km remains to be done. The quality of resealing work performed in 1991 looks in reasonable condition. Initially the GRZ used its own funds of Kwacha 120 million for the reasealing. Subsequently GRZ requested for, and was approved USAID funding of Kwacha 45 million from local currency funds. GRZ has again requested USAID for more local currency funds in order to complete sealing of the remaining 29 km of the road. USAID has asked for a financial a2udit to be performed by Price Waterhouse 2prior to providing additional funds. There has not been further progress at this point.

The weeds and drains are not cleaned or maintained. There are sections which show signs of shoulder wear, soil erosion and minor surface wear. Overall the road is in reasonably good condition. However, routine maintenance is of imperative necessity for sustainability.

Recommendation: The section of the road between Kafue and Churunda is in reasonably good condition. The reasealing of the remaining 29 km should be performed properly. In addition, surface resealing over selected areas of the road should be performed without delay.

D.. Observation and/or Recommendation

The evaluation makes the following observations and/or recommendations:

A. Under Clause 2.2, page 5 of the RD-SSB contract, the contract terminates after two months from the date of issue of certificate of substantial completion unless terminated under Clause 3 or 4. The certificate of substantial completion of work for the second section of the road by C. A. Brand was issued on/about end of February 1995. Therefore, technically the SSB contract would not exist from end of April. On the contrary, the maintenance equipment procurement is ongoing. In SSB's opinion the procurement will be completed in mid May'95. Possibly it will take more time. USAID needs to look into the matter.

B. Before physical demobilization, SSB should submit a list of ongoing and/or pertinent activities (debriefing report) for appraisal of the Road Department and USAID.

C. SSB has not submitted progress payment invoices for sometime. (FM CHECKING INTO SPECIFICS) They may be asked to submit all invoices so that their account can be closed.

D. SSB has not yet submitted a project completion report, specifically in relation to the C. A. Brand contract.

E. The current PACD is June 15, 1995. USAID/PSC Engineer should take a hard look whether the maintenance equipment, currently under procurement can be completed by the PACD!

F. USAID has financed a high quality road for the GRZ. The sustainability of the road will depend on the RDs' capability and resources for an effective operation and maintenance program. USAID has on several occasions emphasized to the RD to institute an o&m program for the road. USAID may consider to follow up with the RD occasinally to ascertain what is going on! Any deficiency can be addressed as a CP to other USAID funded projects

G. The road should be inspected again in 6 months or after one rainy season to monitor its performance. A checklist should be developed recording the road condition which should be used as a model inspection for subsequent inspections.

ATTACHMENT 1.

List of people interviewed

USAID/Zambia

Val Mahan, GDO
Craig Noren, PDO
Abdulaziz Hussen, Engineer
Bessie Thornicroft, Training Specialist
Mathais M. Gweshe, Controller
John Wiebler, Program Officer

Sheladia, Stanley and Burrow

Wallace Nyrop, Project Manager

GRZ - Roads Department

Jere Mwila, Acting Director
Grananadha DJala, Assistant to the Director

GRZ - Road Board

The Two Members