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PD-AAC-215-131

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

690-22-310-028

CAPITAL ASSISTANCE PAPER

DLC/P-711 and 711/2
612 H-002
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Projs.

Proposal and Recommendations
For the Review of the
Development Loan Committee

612-22-311-153

690-22-312-035

MALAWI: LAKE SHORE ROAD (PHASE II - CONSTRUCTION)

690-22-312-035, 612-22-311-153

690-H-002

690-22-310-046

690-W007

690-22-310-028

612-H-001

690-W-006

AID-DLC/P-711

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Reference Center
Room 1656 33

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

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AID-DLC/P-711
May 23, 1968

MEMORANDUM FOR THE DEVELOPMENT LOAN COMMITTEE

SUBJECT: Malawi: Lake Shore Road (Phase II - Construction)

Attached for your review are the recommendations for authorization of a loan in an amount not to exceed \$7,000,000 to the Government of Malawi to assist in financing the foreign exchange and local costs of goods and services for the engineering and/or construction of portions of the Lake Shore Road Project.

This loan proposal is scheduled for consideration by the Development Loan Staff Committee at a meeting on Wednesday, May 29, 1968.

Rachel C. Rogers
Assistant Secretary
Development Loan Committee

Attachments:
Summary and Recommendations
Project Analysis
ANNEXES I-VII

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LAKE SHORE ROAD, PHASE II (CONSTRUCTION)

May 23, 1968

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MALAWI LAKE SHORE ROAD, PHASE II (CONSTRUCTION) May 23, 1968

SUMMARY AND RECOMMENDATIONS

1. BORROWER: Government of Malawi (GOM)
2. LOAN AMOUNT: \$7,000,000
3. TERMS:
 - Maturity: Forty (40) years including a ten (10) year grace period.
 - Interest: Two percent (2%) per annum for the first ten (10) years; two and one-half percent (2½%) per annum thereafter.
 - Repayment: Principal and interest in United States dollars.
4. COST OF PROJECT:

A.I.D. Loan	\$7,000,000
GOM Contribution	<u>1,750,000</u>
TOTAL	\$8,750,000
5. DESCRIPTION OF PROJECT: The project consists of the construction of two roads totaling 126 miles from Balaka to Salima and Mua to Monkey Bay. The roads are major components of the Lake Shore Road scheme, part of which is under construction.
6. PURPOSE: To finance all of the foreign exchange costs of procurement of materials and services in the United States, and a portion of the local costs required for construction of the project.
7. BACKGROUND OF ACTIVITY: The project which will open a large area for agricultural development and will provide an artery along the western shore of Lake Malawi was first mentioned by the GOM in a conversation between Prime Minister Banda and President Kennedy in October 1963. A subsequent formal request led to an A.I.D.-financed feasibility study, completed in March 1966. At the end of FY 1966 A.I.D. authorized a \$200,000 loan to finance the United States costs of engineering services which were completed in the spring of 1968.

7. EXPORT-IMPORT BANK CLEARANCE: Received May 10, 1966; recleared April 15, 1968.
8. VIEW OF THE COUNTRY TEAM: The Country Team strongly endorses the project. The project is the most important USG activity in the country.
9. STATUTORY CRITERIA: Satisfied. See Annex I.
10. ISSUES: None
11. RECOMMENDATION: Authorization of a loan to the GOM for an amount not to exceed \$7,000,000. (See Annex VII for authorization.)

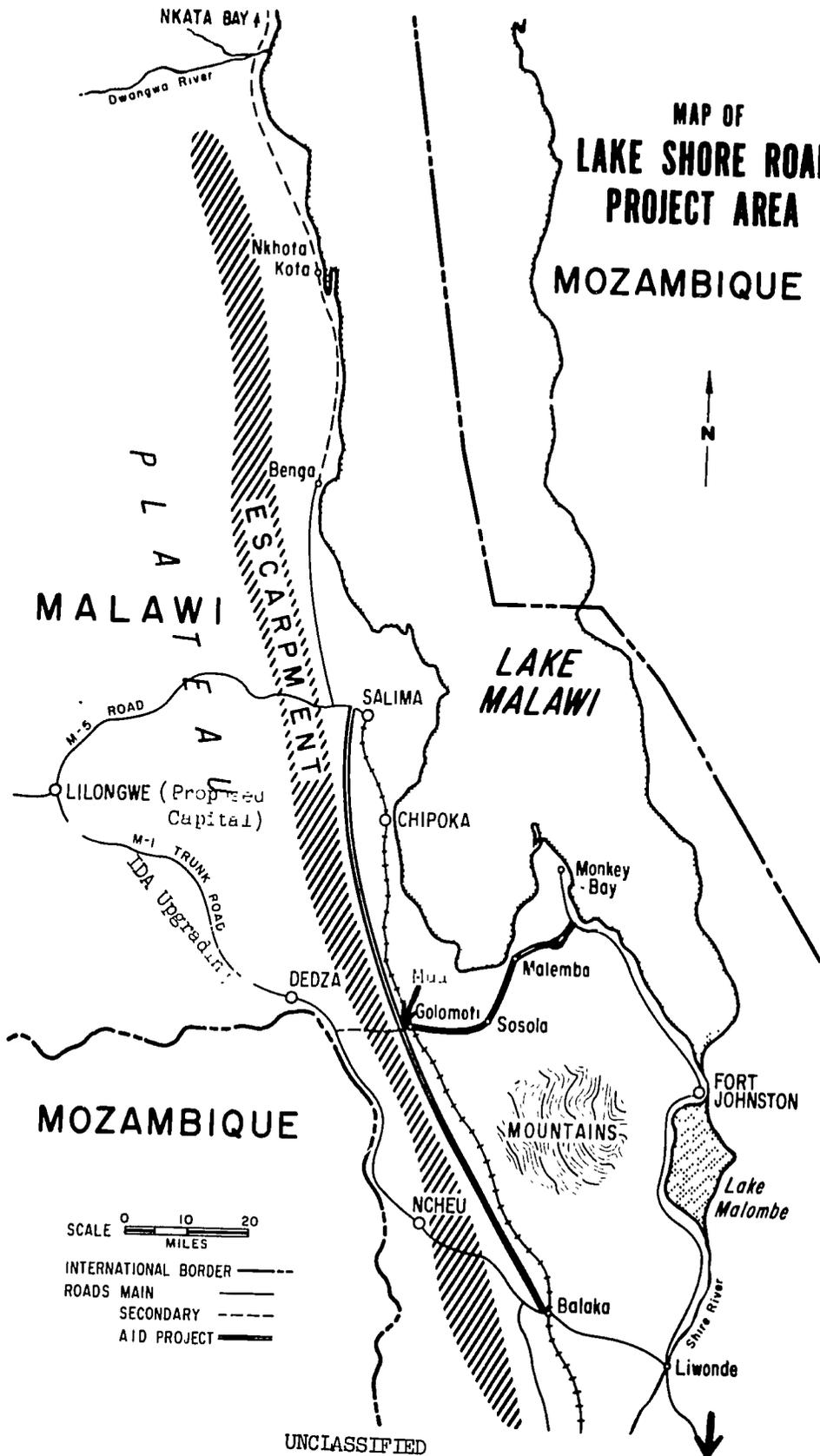
CAPITAL ASSISTANCE COMMITTEE:

Capital Development Officer: Robert J. Berg, AFR/CDF
Counsel: Elliott Weiss, AFR/GC
Desk Officer: Michael DiLegge, AFR/ESA
Engineer: Robert F. Fedel, AFR/CDF/ENGR

AFR/CDF, RJBerg:hk 5/23/68

MAP OF LAKE SHORE ROAD PROJECT AREA

MOZAMBIQUE



MALAWI

LAKE MALAWI

MOZAMBIQUE

SCALE 0 10 20 MILES

INTERNATIONAL BORDER - - - - -
 ROADS MAIN ————
 SECONDARY - - - - -
 AID PROJECT ————

May 23, 1968

CAPITAL ASSISTANCE PAPER

MALAWI LAKE SHORE ROAD, PHASE II (CONSTRUCTION)

A. INTRODUCTION

On June 30, 1966 A.I.D. authorized a \$200,000 loan (612-H-001) to help finance design engineering services for a road along the southern and western shore of Lake Malawi. The loan financing for the project was first raised by Prime Minister Banda during state visits in 1963 and again in 1964. A project Agreement to carry out a full feasibility study was signed on March 3, 1965. The study, completed one year later, formed the basis for an A.I.D. loan for design engineering services. After protracted negotiations with United States firms, design services were contracted with the firm of Tippetts-Abbett-McCarthy-Stratton on May 29, 1967. On June 8, 1967 Prime Minister Banda asked President Johnson for loan assistance to carry out the construction of the project. Subsequent discussions with the GOM have dealt with the possibility of A.I.D. loan assistance for construction of the project by a United States contractor, or failing successful bidding on the project, construction of the project by force account. 1/

B. BORROWER

The borrower will be the Government of Malawi (GOM). The responsibility for the general administration of the road system will be vested in the Roads Department (RD) under the Ministry of Works and Supplies (MWS). The Department is directly responsible for the primary and secondary roads system and for some 400 miles of tertiary roads considered of major importance. The 20 District Councils are responsible for all other roads. The Ministry of Natural Resources is also engaged in road construction in conjunction with particular development schemes; these roads are then turned over to the RD for maintenance.

Construction of main and secondary roads normally is carried out by one of three methods: (i) by the RD with three Road Development Units which are fully mechanized constructing about \$1,000,000 per year in new roads, (ii) by a few local subsidiaries of international construction firms, or (iii) in the case of large projects, by large international firms. Less well-equipped Crop Extraction Units construct feeder roads which are then turned over to local District Councils to be maintained, principally by hand-labor.

1/ Force account denotes that responsibility for construction is with the government's own public works department utilizing its own employees.

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The maintenance of the RD roads (such as the Lake Shore Road) is the responsibility of the Construction and Maintenance Branch, which has separate divisions for the Southern, Central and Northern Regions of the country. All major maintenance operations by the Department are mechanized. Road construction and maintenance equipment is controlled by the Mechanical Engineering Branch of the MWS, which is in charge of all Government plants and vehicles. The Mechanical Engineering Branch has well-installed shops and service facilities for the repair and the maintenance of plant, and covers its expenditures from allocations in the national budget. Equipment for road construction and maintenance is made available by the Branch to the RD at no charge. The Government plans to establish a hire system for equipment, and to develop the Mechanical Branch into a financially autonomous agency capable of covering its expenditures from hire-charge on equipment.

A.I.D. consultants in 1963 and again in 1965, and World Bank staff in 1967, found the quality of both RD maintenance and construction work to be satisfactory. The latest survey of RD work, conducted by the World Bank in connection with a recent IDA loan for road construction, rated the roads maintained by the RD as satisfactory, while the condition of the roads maintained by the District Councils was found to be poor.

Maintenance expenditures on the roads maintained by the RD averaged an estimated U.S. \$1.6 million equivalent per year in the 1962-1966 period. They have been slowly increasing since 1964 and were planned to reach U.S. \$1.8 million equivalent in 1967, or an average of U.S. \$520 equivalent per mile. The specific amounts spent for the maintenance of roads of various types or sections cannot be readily determined as no records to this end are kept. Judged on the average, the maintenance expenditures by the RD appear low but within acceptable limits in relation to the country's transport development. (See Annex III for 611(e) determination.)

C. TECHNICAL ANALYSIS

1. Description of Project. The project is the construction of two roads, totaling 126 miles, from Balaka to Salima and from Mua to Monkey Bay. A map of the country and project area is on page iii. (Annex II provides a detailed discussion of the technical aspects of the project.) The project forms part of a larger scheme to link Zomba in the South with the Northern part of the country via a route along the lake shore. IDA, FRG, and GOM financing is providing for construction of all other segments of the scheme.

The 90-mile Balaka-Salima road will generally follow the location of the existing railroad. The terrain is rolling, open country crossed by numerous water courses. The design will provide a 22-foot gravel roadway on a 38-foot embankment. The road will require 9 two-lane bridges over 20 feet in length.

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The 36-mile Mua-Monkey Bay road will begin about ten miles south of Monkey Bay, across to Malemba on the lake shore, and then run inland to Sosola and Mua in order to avoid a marshy area in the southwest corner of the lake.

The terrain is generally flat. The design will provide an 18-foot gravel roadway on a 30-foot embankment and will include two major bridges.

The GOM has indicated that it intends to add one sand seal coat to the roads immediately after construction and that when possible it will make arrangements to pave the Balaka-Salima road. A.I.D. estimates that the paving will be done before 1975.

Closely related to the project will be the construction of feeder roads linked to the project. This construction will be carried out by the GOM with assistance from the United Kingdom.

2. Construction Plan. After thorough discussion in Malawi and Washington on the various alternatives to constructing the project, the GOM decided to put the project out to bid with United States firms and failing a responsive bid, to construct the project by force account. In December and January 1967-1968 the project was advertised in United States publications and at the same time the GOM sent letters to 160 United States construction firms soliciting their interest in the project. In early February 1968, MWS representatives met in New York with representatives of 24 United States construction firms to ascertain their interest in the project. Prequalification questionnaires were issued to firms responding to these various overtures and firms were prequalified to bid on the project. Bid documents were released April 15, 1968 and tenders are due June 5, 1968. A factor in the release and tender dates has been the timing of bidding on the Great North Road in Tanzania. Tenders on that project are due May 24, 1968. Hopefully United States firms attracted to the Great North Road will interest themselves in the Lake Shore Road.

A.I.D. and the GOM have agreed to set a bid price ceiling of \$7.2 million. A higher bid will be deemed to be unresponsive. Should no acceptable bid be submitted, the GOM plans to construct the project using MWS forces with United States firms providing construction and engineering supervision. Under this fallback plan the GOM intends to request A.I.D. assistance for the United States costs of equipment, material, and personnel. MWS personnel have compiled budgets, equipment, and manpower schedules for construction of the project by force account; these are discussed in Annex II.

As noted above, the MWS has three Road Development Units which have been used for new construction throughout Malawi. Part of their current work involves construction of the northern part of the Lake Shore Road which will connect with the project road. The quality of the Road Development Units' work has been good; however, the Units have never attempted a project the size of the one under consideration. Should the project be constructed by

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force account, the MWS plans to merge two of the Road Development Units (i.e., they do not plan to create a new and thus inexperienced unit) to carry out the construction. The project consultant and A.I.D. believe that with the proper supervision the Units could construct the project. The project is relatively simple construction and it is similar to other roads which the Units have constructed. The only exceptional feature will be a few long bridges.

The major difference between the construction alternatives - construction by United States firm or construction by force account - appears to be the length of the construction period. Utilizing force account would probably result in a three and one-half year construction period versus a two and one-half year construction period under a United States firm. On the other hand it is expected that the Road Development Units will gain valuable knowledge of United States construction methods under the force account alternative. Normally force account work is less expensive than using expatriate firms. Even though A.I.D. estimates that there will be a longer construction period for the force account alternative, it is likely that the total construction cost for the force account alternative will be up to \$500,000 less than the cost for construction by an expatriate firm. Since the earlier completion of the road is desirable from an economic point of view, A.I.D. and the GOM agreed to pursue the bidding alternative first.

3. Engineering Plan. The final design, preparation of the bid package and proposed supervisory engineering services will be furnished by the United States firm Tippetts-Abbett-McCarthy-Stratton (TAMS). Design work has been substantially completed, although following usual practice some aspects of the design will be completed as construction progresses. The GOM has indicated its strong preference to retain the U.S. consultant for supervisory services if the force account alternative is chosen.

4. Technical Soundness. The design plans prepared by Tippetts-Abbett-McCarthy-Stratton (TAMS) were reviewed by A.I.D. and found to be satisfactory. A.I.D. has been closely consulted by the GOM and TAMS on project actions and A.I.D. approval has been given to the project design and to the method of seeking bids and using force account construction in the absence of successful bidding. The cost estimate prepared by TAMS for the bidding alternative appears reasonable, however, the cost estimate by the GOM for the force account alternative has been adjusted upward by A.I.D.

We believe the project to be technically sound. The project meets the requirements of Section 611, Section 611(e), Section 201(b)(2), and Section 201(e)(1) of the Foreign Assistance Act of 1961.

D. ECONOMIC ANALYSIS

1. General.

a. Introduction. Malawi's internal transport system consists of about 6,200 miles of public roads, 290 miles of rail line, water transport on Lake Malawi, and a network of light aircraft services. The country's sole practical

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outlet to the sea is by rail south to Beira, Mozambique on the Indian Ocean, 255 miles from Blantyre. In general, the transport system is in poor condition with notable missing links and inadequate sections.

A significant recent development has been the introduction into parts of the Malawi system of extraordinary Zambian transit traffic, primarily copper and oil products, diverted from Rhodesian routes which were Zambia's traditional access to the sea. This traffic is being carried by road between Zambia and Salima via Lilongwe, thence by railway between Salima and Beira. At present, the volume of this traffic in both directions amounts to about 6,000 tons per month, and may rise to as much as 20,000 tons per month in the foreseeable future. However, the future volume and duration of this traffic are very uncertain.

b. Railway. The Government recently acquired the outstanding equity shares of the formerly private Malawi Railways. The railway is poorly aligned, its permanent road bed has deteriorated, and equipment and rolling stock are largely over-age. A dieselization program is under way and is scheduled to be completed by the end of 1968. Traffic volume is very low at about 600,000 tons per annum (1966). The railway operates at very high average costs -- about 4.2 United States cents equivalent per ton mile on the main line and over United States 5.5 cents per ton mile on the northern extension from Balaka to Salima. These costs compare to about United States 2.6 cents per ton mile for the East African Railway system.

The Balaka-Salima rail line parallels the north-south section of the project. The rail line is uneconomic: its operating costs are high and it is in need of major repairs. The GOM estimates that stop-gap repairs necessary to maintain present standards would cost \$2.8 million, while upgrading the line to appropriate standards would cost \$8.4 million. Because of these high costs and the more appropriate need for a road, the GOM probably will abandon the Balaka-Salima stretch of the railway upon completion of the project and the IDA-financed roads in 1970. The project analysis assumes the abandonment of the rail line by 1975.

Present railway investment plans consist of the construction of a new 110-mile link from the main line eastward through Liwonde to the Mozambique system at Nova Freixo, thus linking Malawi to the new large port of Nacala. The estimated cost of the 73-mile section in Malawi is \$14 million including rolling stock. Negotiations are presently under way with the Union of South Africa for financing the construction of the link.

c. Lake Transport. Lake Malawi, stretching roughly 350 miles along the axis of the country, is a natural waterway for communications between north and south. Nevertheless, lake transport has not been developed. Freight and passenger service on the lake is operated by the railway at a substantial deficit. Operating revenues cover less than half of operating expenses.

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Lake transport is a logical and potentially economic form of transport, particularly for developing the northern parts of the country. A comprehensive study of lake transport, port locations and fleet operations is presently being conducted by the Danish consultants KAMPSAX. The project economic analysis assumes the improvement of lake transport services in 1971.

d. Highway Traffic and Vehicle Fleet. Total motor vehicle population was estimated in 1967 at 19,000 or about one vehicle per every 210 inhabitants, which is average for tropical Africa. Of this total, about 55% are private and government passenger cars, 40% are trucks and buses of all types and 5% are tractor-trailers. Vehicle fleet, fuel consumption, and traffic statistics are fragmentary and make it difficult to derive estimates of past traffic trends. Indications are that the vehicle fleet has been growing at about 7% per year over the 1961-1966 period, made up by a yearly 8% growth for automobiles and 6% for trucks, buses, and tractor-trailers. Gasoline consumption stagnated in the 1960-1963 period reflecting the stagnation of the economy and a general shift to diesel fuels. Since 1964, gasoline consumption has increased by 6% per annum with the rise in economic activity. Diesel consumption for road transport is estimated to have increased at the rate of 6% since 1961, jumping to nearly 9% since 1964. Traffic on the road system is estimated to be growing currently at a rate of 7 - 8% per annum.

2. Project Area. The entire proposed Lake Shore Road will extend from Liwonde (some 50 miles north of Zomba, the administrative capital) to Nkata Bay in Northern Malawi, a distance of about 300 miles. The IDA scheme will improve the road from Zomba through Liwonde to Balaka, at the southern end of the project road. The GOM plans to construct with its own forces that portion of the Road from the northern end of the project at Salima to Nkata Bay; the extreme northern part of the Road is being constructed with German loan assistance.

The project area under the A.I.D.-financed loan (Balaka-Salima and Mua-Monkey Bay) contains about 3,200 square miles and will service about 313,000 people (1967). Population growth in the area is estimated by the Surveys and Research Corporation (SRC) and the GOM to exceed 3% per year. The economy of the area is almost wholly agricultural with subsistence farming predominating. By Malawi standards the land is relatively sparsely settled, largely due to the inaccessibility of the area. The arable land extends from the low hills at the base of the escarpment to the west of the planned road eastward through shallow, sometimes marshy land to the lake. Over 80% of the arable land in the project area is not now in cultivation. The Balaka-Salima section has had more agricultural development and is better suited for cultivation than the Mua-Monkey Bay section. The area along the northern portion of the Road, north of the project, also contains substantial quantities of fertile, undeveloped land.

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Major crops in the project area include medium staple cotton, corn, groundnuts, rice, and tobacco. Evacuation and marketing of crops is handled largely by the GOM's extensive system of Farmers Marketing Board stations. There are over 200 stations in the country, several of which are located in the project area. Marketing Board stations are focal points not only for the collection of crops, but for the dissemination of extension services. But in general, development and evacuation of agricultural production has been severely retarded in the project area due to the absence of a reliable transportation system.

The 36-mile road between Mua and Monkey Bay will connect in the east with the north-south Monkey Bay-Fort Johnston road, approximately seven miles south of Monkey Bay. Monkey Bay is a lake port and recreation area with good beaches and hotels. In the west the road will connect with the Balaka-Salima road below Golomoti at the point where an existing secondary road begins leading west up the escarpment to Dedza on the plateau. As Dedza is on Malawi's principal north-south trunk road (the IDA-financed road) the existing road and the Mua-Monkey Bay road together will compose a lateral route connecting three north-south arteries.

The project area's transportation requirements are currently served by the rail line and by low-standard "district" roads, which provide access to the rail line during the dry season. These roads are unimproved earth tracks and lack permanent stream-crossings. Traffic is low, estimated at under 25 vehicles per day on the principal one which parallels the railroad. Typical of the district roads, a four-wheel drive vehicle is required in using the route between Balaka and Salima during the dry season; during the rainy season the route is usually impassable.

3. Studies. Several studies have had a bearing on the analysis of the project. In 1963 a study of the national transportation needs of Malawi was performed under A.I.D. financing by Surveys and Research Corporation. The same firm was selected to study the entire Lake Shore Road including the project roads. SRC's report, "Economic and Engineering Survey of the Proposed Lake Shore Road, Malawi" was submitted in revised form in March, 1966. In February 1966, the GOM Ministry of Natural Resources published "Malawi Crop Potentials 1965-1985" a summary of various internally and externally - conducted studies on land use and expected agricultural development and surpluses in Malawi. On the basis of this report Professor Arthur Branham, Transportation Adviser to the MWS, has developed with his staff an up-dated revision to the SRC project study.

In addition to the above studies, use has been made of two recent World Bank Reports: "Appraisal of a Highway Project - Malawi" dated January 22, 1968 and "Current Economic Position and Prospects of Malawi" dated November 22, 1967. The IDA highway project is similar to the proposed project in that it is the other planned north-south artery in Malawi. The Lake Shore Road will service the area east of the high Malawi escarpment which runs 20 miles west of the lake. The IDA

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road will serve the area on the escarpment. All planning experts familiar with the area believe that both roads are needed and that neither road can serve the function of the other.

4. Economic Benefits.

a. Introduction. The Capital Assistance Paper (AID-DLC/P-424) which led to the Phase I loan for the project's design engineering services, contained a thorough economic analysis based on the SRC report. As noted above (Section D.3), subsequent GOM and IDA reports have somewhat revised the findings of the earlier March 1966 SRC report. In general these subsequent reports vis-a-vis the SRC report have shown considerably enhanced economic benefits for the Salima-Balaka section of the road and somewhat reduced economic benefits for the Mua-Monkey Bay section of the road. The analysis below constitutes an updated revision of the economic analysis presented in the Phase I Capital Assistance Paper. New data has been added and prices have been adjusted slightly to current (pre-devaluation) levels.

b. Rationale. Several different measures are used in calculating the benefits to be derived from construction of the roads since they are expected to serve both local and transit traffic and also to assist in bringing about development of the areas through which they pass.

Benefits to the project area are measured in terms of user savings to existing traffic plus the incremental income resulting from development in the area, referred to as incremental regional income. In adding these two types of benefits together it is necessary to distinguish between existing traffic -- meaning that traffic which would exist in the areas during the next 20-year planning period if the project roads were not constructed -- and traffic which is expected to result from the new economic activity stimulated by construction of the roads. User savings from the latter traffic may not be counted as benefits from the roads since any such savings are assumed to be reflected already in the incremental regional income figure. Regional income is measured in terms of the value of cash crop and fish production for market and of tourist expenditures.

Benefits accruing to transit traffic are measured in terms of user savings. All such traffic is assumed to originate outside the project area and to transit the full length of whichever of the two roads is used.

c. Incremental Regional Income. The following table summarizes the estimates of the increases in regional income that will result if the roads are constructed. The bases upon which the projections were made are discussed briefly below. Detailed discussion and data are presented in Annex IV. While there will be substantial additional agricultural output due to the road, it is expected that as a result of the opening of the project area for development net input traffic will exceed net output traffic in the project area by a factor of at least 1.25 to 1 until about 1980. This factor has held true in other areas of Malawi newly opened to development. These areas attract farmers whose land has become unproductive and offspring of farmers who have little land to till. The growth of these new areas results in the development of villages

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and towns all of which create needs for substantial inputs of outside commodities and materials. The ratio of new inputs to new outputs gradually levels off and output tonnages then predominate. Thus the output tonnages detailed below are also used as a basis for projecting all traffic (incoming and outgoing) except transit traffic.

INCREMENTAL REGIONAL INCOME
(000)

	<u>Balaka-Salima</u>			<u>Mua-Monkey Bay</u>		
	<u>Road Not Built</u>	<u>Road Built</u>	<u>Incremental Income</u>	<u>Road Not Built</u>	<u>Road Built</u>	<u>Incremental Income</u>
<u>Agricultural Produce</u>						
1962-1964(Average)	\$ 498	\$ -	\$ -	\$ 179	\$ -	\$ -
1972	640	1,110	475	226	287	61
1975	753	1,426	673	277	359	82
1985	916	2,251	1,335	367	535	168
<u>Fish Marketings</u>						
1962-1964(Average)	31	-	-	59	-	-
1972	53	85	32	106	118	12
1975	64	112	48	129	154	25
1985	70	172	102	140	176	36
<u>Tourism</u>						
1962-1964 (Average)	NA	-	-	NA	-	-
1972	38	95	57	13	33	20
1975	76	151	75	26	53	37
1985	189	379	190	66	132	66
<u>Totals</u>						
1962-1964 (Average)	529	-	-	238	-	-
1972	731	1,290	564	345	438	93
1975	893	1,689	796	432	566	134
1985	1,175	2,802	1,627	573	843	270

(1) Agricultural Produce. The principal crops for which increased production is projected as a result of construction of the roads are cotton, corn, and groundnuts. The project area is well suited for the production of these crops and, in addition, has marsh areas suitable for the production of rice. Stable continuation of tobacco production and increases in production of cattle and various staple food crops for the domestic market are also projected.

Cotton production is projected to increase to 5,300 tons by 1975 if the roads are built, as compared with 1,700 tons if the roads are not built. The increase is principally attributable to the expectation that use of new techniques in pesticide spraying will be more widespread and more acreage will be brought under cultivation when feeder roads are provided and extension services expanded.

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Groundnut production in the project area is projected to be 2,400 tons in 1975 if the roads are built, as compared with 1,350 tons if they are not built. Increases are expected to occur principally as a result of putting increased acreage under cultivation and improving growing practices. Total Malawi surplus production (i.e., exports) of groundnuts in 1965 was over 25,000 tons. A doubling of this level of production by 1973 is expected to be marketed without difficulty. The Malawi nut is notable for being particularly suitable for the confectionery trade and enjoys a premium price over oil-bearing nuts.

Rice production is projected to increase to 550 tons in 1975 if the roads are constructed, as compared with 250 tons if they are not. Over one-half the 5,500 tons of rice produced in Malawi in 1965 was exported. The export market is strong for rice and any future surpluses should be marketed without difficulty.

Increases in other cash crops for the domestic market are projected but will account for approximately 20% of the value of the increased production attributable to construction of the roads. Maize is the principal staple and the tonnages projected to be marketed are as large as those of the export crops. Pulses, cattle, and miscellaneous food crops will account for the remainder of the increases in domestic marketings.

(2) Fish Marketings. To date the inadequacies of the roads in the project area have discouraged efforts to increase the marketing of fish. As the southern lake shore from Monkey Bay to Chipoka at present produces significant amounts of fish for market, production is projected to increase if reliable access is provided to the shore.

(3) Tourism. The Lake Malawi area offers significant tourism attractions in that the water is free of diseases, there are good beaches, and the contrasts of the lake shore, escarpment, and plateau are scenic. As both Salima and Monkey Bay are already established recreation areas with beaches and accommodations, modest increases in tourism income are projected for the project area if improved transportation is available. The tourism will be principally from southern and central Malawi and from Zambia. There has been a significant increase in package tours in east and south Africa. It is possible that Malawi, and the project area specifically, will benefit from such tours in the future.

d. User-Savings. Considerable data are available on vehicle operating costs in Malawi and East Africa. The national transportation of Malawi's survey provides detailed information on vehicle operating cost experience in Malawi in recent years. Based upon this information, with heavy vehicle operating costs on bitumen surfaces expressed as 1.0, operating costs on gravel and unimproved earth roads are in a ratio of 1:1.2 and 1:2.0, respectively. The comparable ratios for light vehicle operation are 1:1.3 and 1:1.65. Heavy vehicles are defined as buses and trucks. The ratios for heavy and light vehicles are consistent with Zambian experiences and with data collected by the Road Research Laboratory, an agency of the United Kingdom Ministry of Transport which has conducted extensive research into such costs in Africa since 1960.

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The cost of operating heavy and light vehicles in Malawi on the several types of road surfaces is as follows:

<u>Surface</u>	<u>Heavy Vehicles</u>		<u>Light Vehicles</u>	
	<u>Ratio to Bitumen</u>	<u>Cost/Vehicle Mile</u>	<u>Ratio to Bitumen</u>	<u>Cost/Vehicle Mile</u>
Bitumen	1:1	12.6¢	1:1	9.7¢
Gravel	1.2:1	15.1¢	1.3:1	12.6¢
Unimproved	2.0:1	23.2¢	1.65:1	16.1¢

The savings per mile, therefore, in operating on gravel rather than on unimproved roads is 8.1¢ for heavy vehicles and 3.5¢ for light vehicles. It is anticipated that the GOM will bituminize the Balaka-Salima road by 1975; thus from 1976 on user savings of 10.6¢ for heavy vehicles and 6.4¢ for light vehicles has been applied for that section of the project.

The user-savings counted as benefits to the project are detailed in Annex V. They result from applying the above savings factors to the transit traffic and to the local traffic that would otherwise have had to use the existing roads. Transit traffic is computed on the basis of the SRC report. The GOM believes that new data demonstrated that transit traffic will be substantially higher than the SRC forecast. Unfortunately the GOM data is not specific enough to prove any more than that the SRC assumptions are very conservative. Thus, the transit forecasts may be assumed to be minimal.

e. Traffic Projections. Being largely developmental roads, there are no historical data on traffic in the project area. The method used to project traffic volumes for a given period is to apply the experience of other areas in Malawi that have approximately similar amounts of cash crop marketings moving from them.

The average annual daily truck traffic in such areas has been found to be several times that needed to transport the crop tonnages, since the trucks are used for other purposes than simply moving the crops. A relatively consistent correlation was found to exist, however, between the volume of traffic and the tonnage of cash crop marketings moving on the roads. Plotted on a graph the pattern made by the data for representative areas of Malawi fits a curve which indicates that with higher levels of cash crop marketings the number of truck movements which occur are proportionately less, reflecting increased efficiency resulting from higher loadings. As this graphic relationship has withstood a number of empirical tests, it is used as the basis for projecting truck traffic on the project roads.

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In projecting light vehicle traffic, the proportion of light to heavy vehicle traffic in a similar area is used as a point of departure. Before being applied to the project area, these figures are adjusted to take into account any unusual local conditions that may be reflected in them. The adjusted figures are then, themselves, adjusted to reflect local conditions in the project area. Bus traffic projections are based on comparisons with existing service in Malawi and on interviews with franchised operators.

The following table summarizes the average annual daily traffic projection for the project area for selected years. Detailed calculations are contained in Annex V.

PROJECTIONS OF AVERAGE ANNUAL DAILY TRAFFIC
(Number of Vehicles)

	<u>1972</u>	<u>1975</u>	<u>1985</u>
<u>Balaka-Salima</u>			
Trucks	98	119	146
Buses	4	6	10
Autos	<u>107</u>	<u>204</u>	<u>318</u>
Total	<u>209</u>	<u>329</u>	<u>474</u>
 <u>Mua-Monkey Bay</u>			
Trucks	13	20	34
Buses	2	4	6
Autos	<u>25</u>	<u>57</u>	<u>88</u>
Total	<u>40</u>	<u>81</u>	<u>128</u>

5. Benefit/Cost Computations. As was noted previously, benefits attributed to the construction of the roads include both incremental regional income and user-savings.

The GOM plans to make investments in feeder roads and increased development services -- primarily agricultural extension work -- in the project area as the roads are built and opened for use. As these complementary investments will be important factors in increasing regional income, a portion of the incremental regional income is attributable to them. The amount of the complementary GOM investments is detailed in Annex VI, Page 2. By adding the present value of such investments to the present value of the project roads, detailed in Annex VI, page 1, the value of the combined investment responsible for the increased regional incomes is found (Page 3 of Annex VI). For the Balaka-Salima area the complementary GOM investments are shown to be equal to 7% and 5% of the combined investment when using discount rates of 6% and 12%. For the Mua-Monkey Bay area the proportion of GOM investment to the total is 13% and 9% when using discount rates of 6% and 12%. On the basis of these calculations the incremental income for these areas attributable to the roads alone has been calculated (Page 4 of Annex VI).

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The cost of designing and constructing the roads and the cost factors for maintenance are detailed in Annex II, "Technical Annex." The total cost of the roads is presented in Annex VI, in which the streams of expenditures for both capital and recurrent costs are discounted to 1968 present values of 6% and 12%. It will be noted that paving of the Balaka-Salima Road about 1971 is included in the calculation, although paving may not take place until 1975.

The following table relates the proportions of the benefits and costs of the project roads over the 20-year planning period, 1972-1991, discounted to 1968 present value of 6% and 12%.

1968 Present Value of Benefits and Costs of Project

<u>Benefits</u>	<u>Discounted at 6%</u>	<u>Discounted at 12%</u>
Balaka-Salima	\$14,790,000	\$ 7,224,000
Mua-Monkey Bay	1,860,000	881,000
	<u>\$16,650,000</u>	<u>\$ 8,105,000</u>
<u>Costs</u>		
Balaka-Salima	\$ 5,982,000	\$ 5,353,000
Mua-Monkey Bay	2,268,000	2,042,000
	<u>\$ 8,250,000</u>	<u>\$ 7,395,000</u>
Ratio of Benefits:Costs	2.02:1	1.10:1

6. Internal Rate of Return - Economic Soundness. A calculation of the internal rate of return - that rate of interest at which the present value of the project's costs equal the present value of the project's benefits - yielded a result of 13.4%. (Shown graphically on Page 5, Annex VI) This compares favorably with the cost of capital to the GOM.

After reviewing the economics of the project as summarized in above sections of this paper the Project Committee has concluded that the project is economically sound.

E. FINANCIAL ANALYSIS

1. Financial Requirements. The overall financial requirements for the construction of the project differ for the construction alternatives, i.e. the force account alternative requires less foreign exchange financing. Both of the alternatives assume the use of United States equipment and materials and the use of United States supervisory construction and engineering personnel. The financial requirements for the alternatives are as follows:

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(a) Construction by a United States Firm

	<u>Foreign Exchange</u>		<u>Local Costs</u>		<u>Total</u>
Supervisory Engineering	\$ 600,000		\$		\$ 600,000
Construction	<u>5,338,513</u>		<u>2,811,487</u>		<u>8,150,000</u>
Total	\$5,938,513 (67.9%)		\$2,811,487 (32.1%)		\$8,759,000 (100%)

(b) Construction by GOM Force Account (Per AID/W Estimate)

Supervisory Services

Engineering	\$ 840,000		\$ -		\$ 840,000
Construction	1,050,000		-		1,050,000
Equipment and Materials	2,721,000		1,100,000		4,821,000
GOM Forces and Contingencies	-		<u>1,396,000</u>		<u>1,396,000</u>
Total	\$4,611,000 (68.4%)		\$2,596,000 (31.6%)		\$8,207,000 (100%)

2. Financial Plan. The cost of the first phase of the project design engineering, was borne by A.I.D. and the GOM: \$200,000 (77%) by A.I.D. and \$60,000 (23%) by the GOM. In A.I.D.'s discussions with the GOM on assisting in the financing of the second phase of the project, construction, the following formula has received tentative agreement. Should a United States firm be awarded the construction contract A.I.D. would finance up to 80% of the construction cost, but not over \$7,000,000. A.I.D.'s share would cover all United States costs and a portion, up to 50%, of local costs. Should construction be carried out by GOM force account, A.I.D. has indicated it would be prepared to consider financing United States and local costs of equipment, materials and services and local costs goods and services of privately-owned firms. Under this arrangement U.S. financing would be limited to (i) 50% of the total local costs including GOM force account expenditures and (ii) not more than 80% of the total project costs or \$7,000,000, whichever is less. GOM salary costs would be borne by the GOM through its recurrent and Development Programme accounts. The financial plan for the alternatives is presented below.

Alternative (a) Construction by a United States Firm

	<u>United States Costs</u>		<u>Local Costs</u>		<u>Total</u>
A.I.D.	\$5,938,513 (100%)		\$1,061,487 (38%)		\$7,000,000 (80%)
GOM	-		<u>1,750,000 (62%)</u>		<u>1,750,000 (20%)</u>
Total	\$5,938,513 (100%)		\$2,811,487 (100%)		\$8,750,000 (100%)

Alternative (b) Construction by GOM Force Account

A.I.D.	\$5,621,000 (100%)		\$ 944,600 (37%)		\$6,565,000 (80%)
GOM	-		<u>1,641,400 (63%)</u>		<u>1,641,400 (20%)</u>
Total	\$5,621,000 (100%)		\$2,586,000 (100%)		\$8,207,000 (100%)

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The proposed loan authorization is predicated on the requirements called for under the alternative with the larger amount of United States costs, i.e. alternative (a). The Loan Agreement will be drawn appropriately for the alternative which by that time will have been determined.

3. Local Cost Financing. With its current dependence on U. K. budgetary support, the GOM will have serious problems in financing all of the estimated \$2.8 million of local costs of Phase II construction of the project. Between 1966 and 1969 the U. K. expects to finance about one-third of the GOM recurrent budget and the GOM itself is expected to be able to finance only one-seventh of the development budget. The U. K. is also financing approximately 40% of the proposed \$76,000,000 four-year development budget. The allocation for roads within the total is \$16,000,000. All but \$3.4 million is earmarked for specified priority projects. The \$3.4 million remainder is earmarked for feeder road construction in agricultural producing areas, and it is under this budgetary provision that the Lake Shore Road project would have to be accommodated. The "crop extraction road" program is considered a key area of investment by the U. K. because it offers feeder road prospects of relatively fast pay-out. The entire U. K. contribution to the development budget for roads (\$1.4 million) is earmarked for this program.

The GOM expenditures for the feeder road program related to the IBRD/IDA loan will occur at the same time as would those projected under the A.I.D. project. To finance all of the \$2.8 million of local costs for the A.I.D. project at the same time the IBRD/IDA program is under way would be difficult. The U. K. has consistently noted that with Malawi's budgetary problems it will be essential for external donors to finance local costs of development projects.

4. Other Sources of Financing. The GOM has pursued a policy of presenting specific projects for specific donors, e.g. water transportation services has been the sphere designated for Danish assistance. However, the Lake Shore Road en toto is being financed by four parties - IDA, United States, Federal Republic of Germany (FRG) and the GOM. The International Development Association is providing assistance for construction of a road from Zomba to Lilongwe, some 180 miles; the portion of the IDA project from Zomba to Liwonde (some 30 miles) will form the southern end of the Lake Shore Road. IDA assistance of \$499,000 was granted in 1966 for the design of the IDA project-road. A follow-on 50-year credit of \$11.5 million was granted in February 1968 to assist in construction financing of the road. The total cost of the IDA project is estimated by IDA to be \$13.7 million, thus the GOM financed portion of the project will be about \$1.7 million. (The IDA also granted two other credits to Malawi in February 1968. The credits, totaling \$9.7 million, are for two crop improvement projects. Other proposals are being developed for IDA consideration.) Under 1966 and 1967 loans totaling \$2.5 million the FRG is assisting in the financing of the construction of about 48 miles of roadway at the extreme northern part of the Lake Shore scheme. These loans follow an earlier FRG loan of \$1,225,000 which also was utilized for constructing roads north of the project area. The U. K. continues to provide a substantial amount of annual budgetary assistance to Malawi. These resources are utilized for

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developmental and recurrent expenditures. U. K. funds will be utilized to develop feeder roads in in the project area.

The following is a summary estimate of external assistance covering the 1964-1969 period: West Germany \$15,000,000 in loans; Denmark \$2,100,000 in loans; the United Nations \$1,300,000 in technical assistance; Canada \$700,000 and the Republic of China \$26,000 (U. K. not available, but probably in excess of \$75,000,000). Despite pressures, Malawi has resisted offers of assistance from the U.S.S.R. and Communist China on ideological grounds.

During preliminary negotiations, A.I.D. attempted to interest the GOM in obtaining Africa Development Bank assistance for the construction phase of the project. The GOM gave serious consideration to this suggestion, but it concluded that it could not afford the interest rates ($6\frac{1}{2}\%$) normally charged by the ADB.

By and large, the GOM makes effective use of its channels of foreign assistance. The Project Committee believes that the GOM has nearly maximized the assistance it can get from its potential donors and thus it would be extremely difficult at this time to place the subject project in other hands.

5. Repayment Prospects. The basic economic situation of Malawi remains not strong. Malawi is one of the smallest and poorest countries in Africa. Its population of four million has one of the lowest per capita incomes, in the world -- around \$51. No large mineral resources are available. One-fourth of the male labor force is employed outside the country, mainly in Rhodesia, South Africa and Zambia. The main potential for growth and for revenue lies in agriculture. Even here, the long-run problem is the development of good farm land relative to population growth which is estimated at 3% annually. Malawi is making intensive efforts to increase agricultural yields. There is also some potential for expansion in the industrial sector and several small manufacturing industries have been established in the past two years. Tourism and transit trade from Zambia and between the Eastern and Western Provinces of Mozambique also offer some potential for increasing external earnings. At present Malawi's revenues are derived principally from agricultural exports and import duties on manufactured goods.

Malawi's annual deficit of about \$13-14 million is being met by the U.K. Prospects for reducing this deficit to about \$4,000,000 by 1970 appear encouraging according to the latest estimates.

Malawi's projected economic expansion is estimated at 6-7% annually over the next decade. This rate of growth, however, is contingent on continued political stability, efficient administration and continued external assistance. Financially Malawi is currently dependent upon the United Kingdom. In the 1967 financial year \$12,500,000 was provided in support of her regular expenditures of \$46,300,000; and \$7,000,000 of the \$15,000,000 development budget. In addition to the budget support, the U. K. provided \$11,000,000 in technical assistance grants.

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MALAWI: Lake Shore Road (Phase II - Construction)

For 1968, expenditures on recurrent account are forecast at \$49.2 million. Development estimates provide for a record expenditure of \$19.6 million, of which 50% will be split equally between agriculture and transportation. Education accounts for half the increase over 1967, which has been kept to a minimum to reduce Malawi's budget deficit. Public sector capital expenditure will amount to \$26.4 million--nearly twice as much as in 1967--of which a record \$19.2 million will come from abroad.

Domestic revenue is estimated at \$27.5 million, while \$12.7 million is available from the United Kingdom (including budgetary aid of up to \$7.9 million). Customs duties on alcohol, cigarettes and gasoline were increased, and changes in company taxation mean that nonresident companies will pay proportionately more of their company tax to the Malawi Government and less to the government of the country in which they are registered. In addition, the Brussels system of valuation of imports on the basis of landed cost is to be adopted; for the imports affected by this change it is expected that customs revenue will be increased by about 10%.

Thus, over the short-term, Malawi will be dependent on external support. However, a substantial share of this support is going into long-term social investments which auger well for Malawi's future. Given (1) the agricultural potential of the country; (2) the progress taking place in development; (3) the continued support of the European donors (particularly the U.K.); and (4) the terms of the proposed loan, the Malawi Government should be capable of repaying the loan.

F. Other Factors1. Impact on the United States Economy and Effect on Private Enterprise.

The loan will have a favorable effect on United States business. Procurement of most of the project's equipment, materials and staff services will be of United States source. Malawi has not had the benefit of exposure to United States business and construction techniques; now this opportunity will be provided.

2. Effect on the United States Balance of Payments.

All loan proceeds will be tied to United States procurement of goods and services. In the case of the United States costs, procurement will be reimbursed through loan proceeds; local costs will be reimbursed through use of a Special Letter of Credit for United States purchases.

A.I.D. has had discussions with the GOM on utilizing the anticipated Special Letter of Credit. The GOM understands that the Special Letter of Credit cannot be used to finance UN or Embassy expenses. The GOM Ministries of Finance and Works have expressed the intention of using the Credit for the purchase of materials and equipment for various Government construction projects, including those parts of the Lake Shore project which are to be constructed by the Government. The GOM appears particularly interested in the purchase of construction equipment and culverts for those road projects. Any such purchases would be additional to the existing low level of Malawi purchases in the United States.

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3. Conditions and Covenants.

None

4. Issues.

None

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3. Conditions and Covenants. None.

4. Issues. None.

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May 23, 1968

TECHNICAL ANNEX

A. Description of Project

The project consists of the construction and supervisory engineering for two sections of Malawi's Lake Shore Road System.

1. Balaka-Salima Section. The 90-mile Balaka-Salima section extends in a north-south direction parallel to and west of the existing railroad. The proposed construction will replace a sub-standard existing seasonal road with an engineered all-weather route. There are nine major bridges required for this section. Construction of this section will be to the Malawi Class I design standards consisting of a 38-foot embankment with a six inch gravel wearing surface. This width is such as to be adaptable to future surfacing providing a 22-foot carriageway with two five-foot shoulders. The staged development for this section, providing such surfacing, could be justified on a traffic volume basis in the early 1970s.

2. Mua Mission-Monkey Bay Section. The second section extends easterly from Mua Mission on the Balaka-Salima Road for about 36 miles to a junction about ten miles south of Monkey Bay on the north-south Monkey Bay-Fort Johnston Road. Except for a section of about 12 miles between Mua Mission and Sosolu, the proposed route replaces a poor existing district road. Two major bridges are included in the construction of this section. The road design is in conformance to Malawi Class III design standards consisting of a 30-foot embankment with a six inch gravel wearing surface. This standard ultimately provides an 18-foot carriageway and two three-foot shoulders. Anticipated traffic and benefits do not support bituminous surfacing before 1985.

B. Design Standards

The standards and designs proposed for construction on this project are consistent with design standards adopted by other East African countries. Twenty-two foot carriageway widths and two five-foot shoulders are standard for construction of primary routes (Class I) in the neighboring countries of Zambia, Rhodesia, Tanzania, and South Africa. Design is such as to satisfy a 9,000 pound wheel load, this specification also being consistent with African and United States practice. Materials of construction including cement, steel, and aggregates conform to quality standards adopted for road and bridge construction in the United States. All work will be carried out in accordance with specifications equal to or comparable to those of the American Association of State Highway Officials (AASHO) and American Society of Testing Materials (ASTM).

Bridge designs have been completed to the AASHO HS 20 - 44 specifications. A clear curb-to-curb width of 24 feet and two $1\frac{1}{2}$ foot walkways comprise the bridge cross section.

C. Costs

1. Construction. Following completion of detailed plans and designs, the consulting engineers developed comprehensive construction cost estimates. These cost estimates are itemized in section 4 below. Considering both classes of route design, the construction cost (\$7.2 million) breaks down to about \$57,100 per mile. This per mile cost is consistent with construction experience in Africa where costs vary from \$45,000 to \$65,000 per mile for gravel roads and from \$65,000 to \$100,000 per mile for surfaced routes. The major factors causing the variability of cost are the quantity of bridge and drainage structures required and the extent of earthwork which, in turn, depends upon the terrain encountered along the route.

2. Engineering. The consultant engineers' costs for construction supervision are estimated at \$600,000. These services include provision of six U.S. engineers to supervise construction and carry out the necessary inspections and investigations over the 30-month construction period. Based upon the maximum utilization of all six engineers, over the 30-month period, the average man-month cost is \$3,340 (average annual salary of \$16,500 per man). This average man-month cost is comparable to provision of similar U.S. expertise on other African road projects; e.g., the Tanzania Great North Road supervisory engineering costs average \$3,390 per man-month.

3. Right of Way. Right-of-way costs have not been included in the project calculations above since they presumably are negligible and would be of the order of \$50 per mile or about \$15,000 for the entire 126 mile length.

4. Cost Summary. Project cost data are summarized below, as follows:

	<u>U.S. Costs</u>	<u>Local Costs</u>	<u>Total</u>
Construction:			
1. Preliminary & Mobilization	\$ 643,444	\$ 771,280	\$1,414,724
2. Roadway & Earthwork	2,044,698	858,918	2,903,616
3. Structural	1,018,391	494,126	1,512,517
4. Drainage	825,183	279,163	1,104,346
5. Variability in Cost Estimate-5% (Items 2, 3, and 4)	176,797(68%)	88,000(32%)	264,797
	<u>\$4,708,513</u>	<u>\$2,491,487</u>	<u>\$7,200,000</u>
*6. Contingencies-13%(Items 1-5)	630,000(66%)	320,000(34%)	950,000
	<u>\$5,338,513</u>	<u>\$2,811,487</u>	<u>\$8,150,000</u>
7. Engineering	600,000	--	600,000
Total Project Cost	<u>\$5,938,513(68%)</u>	<u>\$2,811,487(32%)</u>	<u>\$8,750,000</u>

* A contingency item amounting to about 13% of construction cost has been added by AID/Washington to finance indeterminate costs and risks which might arise as a consequence of there being no previous experience of a U.S. contractor working in Malawi.

D. Maintenance

Maintenance costs for the proposed road system were based upon an analysis of studies conducted by the Road Research Laboratory of Great Britain and maintenance costs of similar roads in other East African countries. Since traffic volume has a direct influence on maintenance costs, annual figures for maintenance on the gravel roads proposed in this project vary from \$1,100 to \$1,700 per mile, dependent upon initial and anticipated traffic.

When traffic volumes reach levels of 150 to 200 vehicles per day, the costs of gravel and bituminous surface maintenance are comparable. The estimated cost for double bituminous surface treatment is \$10,000 per mile. This must be evaluated against available maintenance funds in arriving at a determination as to when the resurfacing would be most opportune.

The GOM has indicated its desire to carry out a single surface treatment to the 90-mile Balaka-Salima section immediately after completion. This improvement would add an estimated \$3,000 per mile materials cost to the project or a total of \$270,000. Such an improvement, however, would result in savings of gravel maintenance costs, which otherwise range from \$1,100 per mile per year (including periodic regravelling) for an initial 1972 traffic volume of 209 vehicles per day to \$1,700 per mile per year for volumes of about 329 vehicles per day in 1975. In contrast, maintenance of a bituminous surface for a volume of 329 vehicles per day amounts to about \$200 per mile per year regular maintenance and a \$2,500 per mile resurfacing every five years.

Since the 36-mile Monkey Bay-Mua Mission section has an initial (1972) traffic volume estimate of 40 vehicles per day, the estimated annual maintenance cost would be about \$600 per mile (includes regravelling every five years). This cost would remain relatively constant up to traffic volumes of 150 vehicles per day, which, in the case of this section would not be attained before 1985.

The last summary, included as an attachment to this annex, makes provision for a bituminous surface in 1972 (\$270,000) and \$675 per mile per year maintenance until 1975 when this cost increases to \$690. In 1980 it will reach \$750. The above noted gravel maintenance costs have similarly been included for the Mua Mission-Monkey Bay route section.

E. Alternative Methods of Construction

1. Competitive Bids - U.S. Contractors. The consulting engineering firm of Tippetts-Abbott-McCarthy and Stratton (TAMS), is carrying out design services financed under A.I.D. Loan 612-H-001, prequalified about 19 U.S. contractors to bid on the construction of the Lake Shore Road. Prequalification conferences were held by TAMS in February 1968, at which time GOM public works officials discussed the project with the prospective bidders. The IFB has been issued to the prequalified bidders and the bid opening date is scheduled for June 3, 1968.

2. Construction by GOM Forces. Past experience with U.S. contractors bidding on heavy construction projects in Africa has indicated a reluctance on the part of the contractors to take on additional work. Their submission of tenders has frequently involved bids that exceeded the engineers' estimates. In such cases, engineers' estimates have been verified as to reliability and AID/W concluded that U.S. contractors sometimes place too high a cost for their acceptance of contracts in Africa. This has resulted in many recent cases in A.I.D. establishing a ceiling defining the highest responsive bid. Such action insures that only seriously interested contractors submit bids. This ceiling is usually set through A.I.D. discussions with the project's consulting engineers and host country representatives. In the case of the Lake Shore Road, a ceiling of \$7.2 million has been established by TAMS and GOM and approved by A.I.D./Washington.

In the event that no responsive bid is received -- that is, no responsive bid lower than \$7.2 million--consideration has been given to construction by force account. The GOM now has three operational Road Development Units (RDUs) which have performed satisfactory construction on several major Malawi highway links. One example is the recently completed 48-mile Balaka to Fort Johnston Road which traverses similar terrain to that of the Lake Shore Road route. Additional construction is being carried out by the RDUs in the mountainous coastal region near Kota-Kota.

It is proposed by the GOM that, should force account work be necessary, RDUs 1 and 2 be combined to carry out the work. External assistance will be required to provide equipment, materials, and personnel to provide the staff necessary to supervise and carry out the construction.

The GOM has made estimates of the items of cost for force account construction and these are summarized as follows. The GOM estimated that the job could be accomplished by force account in the same $2\frac{1}{2}$ years required by a contractor, however, A.I.D./Washington believes a $3\frac{1}{2}$ year period is more realistic. The cost summary in section 5 below compares the two force account cost estimates.

1. Equipment. Although much of the equipment now used by the RDUs will be assigned to force account construction; the construction period will require a full spread of equipment which, if work were accomplished by a U.S. contractor, would be generally depreciated over the life of the project. Under these conditions, it should be assumed that a full spread of new construction equipment would be required and similarly depreciated over the force account period. The cost of all this equipment is estimated to be about \$1,800,000, to which must be added parts for both the existing U.S. and new equipment. Based upon the \$7.2 million estimated construction cost, 25%-30% of the cost can usually be considered invested in equipment. The \$1.8 million cost in this estimate is 25% of the construction cost estimate. The lower limit was selected since the GOM would use some existing equipment. All new equipment and parts will be procured in the United States. The equipment cost item, including U.S. shipping costs is listed in section 5.

2. Materials. The proposed design provides for the construction of about \$2.6 million in bridges and drainage structures. Of this estimated cost (prepared by TAMS) A.I.D./Washington estimates that there will be about \$1,000,000 for steel to construct structures and culverts. These materials will be procured in the U.S. Cement would also be an import item.

3. Technical Assistance. Although the GOM has a proven road construction capability in its RDUs, the scope of work to be undertaken for the Lake Shore Road exceeds their present experience in terms of size of project. It is, therefore, necessary that additional expertise be provided. This assistance would be of two types:

a. Supervisory Engineering. The number of U.S. engineers would be similar to that required for contractor construction to insure that proper construction methods and procedures are followed in carrying out the work. This assistance could be provided by a U.S. engineering consultant.

b. Construction Cadre. This type of expertise would be similar to that normally provided by the construction contractor and would include such expertise as construction foremen, equipment mechanics and operators. This assistance could either be provided by a construction contractor or secured on an individual basis from the U.S. construction trade. The GOM manpower estimate as compared to the A.I.D./Washington estimate is:

	<u>GOM</u>	<u>AID/W</u>
General Superintendent	1	1
Mechanical Superintendent	1	1
Earthmoving Superintendent	1	1
Bridge Superintendent	1	1
Cost Accountant	1	1
Heavy Equipment Specialist	2 Mechanic	2
	Foremen	
Heavy Equipment Operators	<u>2</u>	3
	9 Layout Party	<u>2</u>
	Chiefs	12

4. Local Costs. In addition to salaries and wages for the GOM RDU personnel, local GOM financing would be required for: parts of non-U.S. equipment, POL, local transport, subcontracts for local services and miscellaneous materials.

5. Cost Summary - Force Account Alternative

	<u>AID/W Est.</u>	<u>GOM Est.</u>
	<u>3½ Yrs.</u>	<u>2½ Yrs.</u>
a. <u>U.S. Costs</u>		
(1) <u>Equipment: (New)</u>	\$1,800,000	\$ --
Transport (20%)	360,000	1,880,000
Parts, New Equipment (15%)	270,000	470,000
Parts, Existing U.S. Equipment (L.S.)	141,000	141,000
	<u>\$2,571,000</u>	<u>\$2,491,000</u>
(2) <u>Materials:</u>		
Steel	\$1,000,000	\$ 924,000
Other	100,000	--
Transport	50,000	--
	<u>\$1,150,000</u>	<u>\$ 924,000</u>
(3) <u>Technical Assistance:</u>	\$	\$
Engineering Supervision		
6 men @ \$40,000/yr.	840,000	500,000
Construction Cadre		
12 men @ \$25,000/yr.	1,050,000	731,000
	<u>\$1,890,000</u>	<u>\$1,231,000</u>
Subtotal U.S. Cost	<u>5,611,000</u>	<u>4,646,000</u>
b. <u>Local Costs</u>		
Salaries & Wages	\$ 750,000	\$ 528,000
Materials & Camps	350,000	330,000
POL	600,000	412,000
Transportation (Local)	60,000	60,000
Subcontracting & Non-US Parts	90,000	86,000
	<u>\$1,850,000</u>	<u>\$1,416,000</u>
Contingencies (10%)	746,000	NONE
Subtotal GOM Cost	<u>\$2,596,000</u>	<u>\$1,416,000</u>
Total Estimate Force Account Cost	<u>\$8,207,000</u>	<u>\$6,062,000</u>

F. Technical Soundness

In terms of construction by U.S. contractors, the cost estimates prepared by TAMS (see Annex IV) appear reasonable. However, the Force Account alternative is subject to greater cost variations caused by unpredictable conditions during construction. One such condition is the length of time needed for construction. (A.I.D./Washington assumes a 3½ year period compared to the 2½ year period assumed by the GOM) Other conditions which might arise to affect the force account work schedule are:

- 1) Emergency need for alternative use of GOM labor force.
- 2) Delays due to labor inexperience, e.g., training, improper repair maintenance equipment.
- 3) Labor disputes among engineer, contractor, and GOM forces.
- 4) Equipment and parts procurement and utilization.

These conditions are mostly reflected in the length of time required for project completion. The GOM cost estimates for force account work have therefore been increased as follows:

- a) \$659,000 for U.S. technical assistance.
- b) \$434,000 for local costs of salaries, wages, and POL .
- c) \$746,000 to cover a 10% contingency for overruns in quantities and work items.

In view of the many factors affecting construction by force account, the foregoing construction estimate of \$8,207,000 is less reliable than the cost estimate for construction by a U.S. contractor. The two costs are compared below:

	<u>U.S. Contractor</u>	<u>Force Account (AID/W Est)</u>
1. <u>U.S. Costs</u>		
Construction Supervision	\$ 600,000	\$ 1,890,000
U.S. Materials, Labor, Profit, etc.	<u>5,338,513</u>	<u>3,721,000</u>
Total U.S. Costs	\$5,938,513 (68%)	\$5,611,000 (68.5%)
2. <u>Local Costs</u>	<u>\$2,811,487</u> (32%)	<u>\$2,596,000</u> (31.5%)
Total Construction	\$8,750,000	\$8,207,000

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May 23, 1968

COUNTRY TEAM'S FAA 611(e) CERTIFICATION

The following was submitted by cable (Blantyre Priority 2132 - TOAID 398):

"Pursuant to Section 611(e) of the Foreign Assistance Act of 1961 as amended, we, Marshall P. Jones, United States Ambassador to Malawi and Thomas A. Moser, A.I.D. Affairs Officer do hereby certify that in our respective judgements, the Government of Malawi has the capability, both financial and human, to effectively maintain and utilize the capital project proposed for A.I.D. loan financing, i.e. that portion of the Lake Shore Road extending approximately from Balaka to Salima and from Mua Mission to Monkey Bay.

This judgement is based upon the following considerations:

1. The two A.I.D. financed capital projects in Malawi, the Malawi Polytechnic and the Bunda Agricultural College have been fully utilized and well maintained.
2. The standards of road maintenance in Malawi are among the highest in tropical Africa, an opinion which is shared by the A.I.D. Regional Engineering Office/Nairobi.
3. Under the leadership of Dr. Banda, there is no indication that the favorable climate will change.

Certified to May 15, 1968 by: Thomas A. Moser, AAO and Marshall P. Jones, Ambassador."

REGIONAL INCOME PROJECTIONS

Income in the project area is measured in terms of the value of cash crop marketings, fish marketings, and tourist expenditures. Projections have been made for each of these categories on the assumption of the project roads being built or not being built. It is assumed that in the latter case some up-grading of the existing roads would occur over the planning period as a result of local maintenance efforts. Production of cash crops and fish is projected in tons and then valued at current prices, which is the assumption on which all costing of the project has been performed.

1. Agricultural Produce Marketings. In estimating the potential for increased cash crop production in the project area, an inventory of the physical and human resources of the area was made.

Eighty-five percent of the land in the Balaka-Salima and Mwa-Monkey Bay areas were found to be arable but of the arable acreage only 22% of the former and 6% of the latter are under cultivation. As the areas are lightly populated, the density being only 98 and 30 per square mile, respectively, land will not be a limiting factor to development of agricultural production. Feeder roads will be required, however, if increased acreage is to be brought under cultivation. In assessing the capacity of the population to absorb new knowledge and techniques and increase their productivity, the consultants had the benefit of two recent statistical samples of farm households. The samples were taken along the lake littoral and in areas adjacent to the trunk road on the plateau, respectively, each covering 55 farms. Tribal characteristics of the samples were considered to be comparable. The lake littoral households were shown to have roughly one-half the education and cash income of those on the plateau and to have an even lower proportionate level of technical knowledge and resources. This low level of development of the human resources has been taken into consideration in making the production projections.

The consultants' review of institutional resources in the project area considered the overall economic environment within which the economic development is expected to occur. It included specifically the agriculture and fisheries programs of the Ministry of Natural Resources, the GOM marketing board, agricultural credit facilities, and the land tenure system. Special attention was paid to the GOM facilities and plans for training agricultural extension personnel and to its agricultural research program. Estimates were made of the level of GOM development expenditures that could realistically be expected to occur in the project area during the planning period.

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Projections of production of each crop for each area are detailed in the attachment to this Annex. Among export crops cotton is estimated to have the greatest potential. Large production increases over a relatively short period appear possible owing to the fact that it appears feasible for farm families presently producing cotton to increase the average acres under cultivation from one up to five and the average yield from 200-400 pounds an acre to on the order of 1,500 pounds. The principal new input required is the introduction of pesticide spraying techniques. The GOM program for the development of cotton production provides for spraying demonstrations, a service to trace the incidence of pest infestation, and extension centers. Historically, two-thirds of the Malawi cotton production has been exported to Rhodesia and England. Rhodesia has recently become self-sufficient in cotton but the decrease in this market is expected to be offset in part by a newly-established textile mill in Malawi. As Malawi cotton is of high quality, increases in exportable production are expected to be able to compete successfully in the world market.

As with cotton, major increases of groundnut production are technically feasible at modest increased cost if more land is opened up by feeder roads and development services are provided. The Malawi groundnut is a special variety which is popular in the confectionery trade and commands a premium price over varieties used to produce vegetable oil. The world market for this variety is projected as being strong and growing.

Rice production is projected as increasing until 1975 at which time further increases are expected to be limited by lack of additional suitable land on the lake shore which can be exploited without capital investment in water control and irrigation facilities. Approximately one-half the present marketings of rice are exported to Rhodesia, which is considered a large and growing market, but there are numerous markets --in Tanzania and India, to cite two--which are able to absorb far more tonnages of rice than the tonnages now being shipped from Malawi. Rice is also important as a cash crop for the domestic market. The GOM is encouraging increased rice production and is receiving modest technical assistance from Taiwan.

Maize is the principal cash crop expected to be produced for the domestic market. Miscellaneous products such as pulses (beans and peas), casava, sorghum, sesame, and castor are projected to become more widely produced in the project area, especially on farms concentrating on cotton and tobacco production where the diversification they offer is desirable. While Malawi is generally self-sustaining in food production, its margin of safety is narrow and hunger has been widespread during lean years. Therefore, production from the project area for the domestic market is expected to be absorbed without difficulty.

Livestock marketings are projected to increase since there is ample uncultivated land for grazing and since tsetse fly eradication is expected to have been completed about 1970. The southern lake shore is favorably located with respect to the heavily populated Southern Region which is the principal market for meat. This market has historically had to depend heavily upon the plateau as a source. All the projected increases in cattle production will be for the domestic market.

2. Increased Fish Marketings. By providing improved access to the lake shore, the northern part of the Balaka-Salima and Mua-Monkey Bay areas are expected to result in a doubling of the tonnage of fish marketed from the project area during the planning period. Of an estimated 7,000 tons of fish caught annually in Lake Malawi, 15% has been caught along the southwestern shore between Monkey Bay and Chipoka. The poor quality and reliability of the roads upon which the fish must be marketed have discouraged efforts to increase fish marketings. All of the projected production is expected to be marketed within Malawi. The following table illustrates the production projections:

<u>Area</u>	<u>Projections of Fish Production</u>						
	<u>Average Annual 1962 - 1964</u>	<u>Road Not Constructed</u>			<u>Road Constructed</u>		
		<u>1972</u>	<u>1975</u>	<u>1985</u>	<u>1972</u>	<u>1975</u>	<u>1985</u>
		<u>Tonnage</u>					
Balaka-Salima	250	450	550	600	720	970	1,460
Mua-Monkey Bay	<u>500</u>	<u>900</u>	<u>1,100</u>	<u>1,200</u>	<u>1,000</u>	<u>1,300</u>	<u>1,500</u>
Total	750	1,350	1,650	1,800	1,720	2,270	2,960
		<u>Value (000 omitted)</u>					
Balaka-Salima	\$ 31	\$ 53	\$ 64	\$ 70	\$ 85	\$112	\$172
Mua-Monkey Bay	<u>59</u>	<u>106</u>	<u>129</u>	<u>140</u>	<u>118</u>	<u>154</u>	<u>176</u>
Total	\$ 90	\$159	\$193	\$210	\$203	\$266	\$348

3. Tourism. The Lake Malawi area offers significant attractions to tourists. The water of the lake is free of bilharzia and crocodiles and there are a number of attractive beaches. Swimming, sailing, and fishing are all possible. Within an hour's drive from the western shore, the escarpment and plateau offer contrasts in elevation with mountains up to 5,500 feet above the level of the lake, modest game reserves, and attractive scenery.

Due to Malawi's isolation, the near-term economic potential of tourism is modest. Nevertheless, the lake shore is expected to attract significant numbers of tourists from within Malawi and from neighboring countries, especially in the latter part of the planning period. Good beaches and modest hotel facilities presently exist at Monkey Bay and Salima.

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The following table illustrates estimates of the increases in tourism that may result from construction of the overall Lake Shore Road. An expenditure of \$14.00 per tourist per day is assumed.

Tourism Projections

	<u>Road Not Constructed</u>			<u>Road Constructed</u>		
	<u>1972</u>	<u>1975</u>	<u>1985</u>	<u>1972</u>	<u>1975</u>	<u>1985</u>
Number of Tourists Per Day	10	20	50	25	40	100
Total Annual Expenditures (000 omitted)	\$51	\$102	\$255	\$128	\$204	\$511

Most of the increased expenditures will occur in the project area through 1980 with some 20% thereafter being attributable to the Lake Shore north of Salima. The incremental income as allocated to the roads is as follows:

(000 omitted)

	<u>1972</u>	<u>1975</u>	<u>1985</u>
Balaka-Salima	\$57	\$ 75	\$190
Mua-Monkey Bay	<u>20</u>	<u>27</u>	<u>66</u>
	\$77	\$102	\$256

Projections of Agricultural Produce Marketings*

		<u>Balaka-Salima Road</u>					<u>Mua-Monkey Bay Road</u>				
		<u>Volume (Tons)</u>		<u>Value (000 omitted)</u>			<u>Volume (Tons)</u>		<u>Value (000 omitted)</u>		
		<u>Road Not Built</u>	<u>Road Built</u>	<u>Road Not Built</u>	<u>Road Built</u>	<u>Incremental Income</u>	<u>Road Not Built</u>	<u>Road Built</u>	<u>Road Not Built</u>	<u>Road Built</u>	<u>Incremental Income</u>
1972	Cotton	900	3,240	\$120	\$ 435	\$315	553	936	\$ 74	\$127	\$ 53
	Groundnuts	700	1,440	82	167	85	85	144	9	17	8
	Rice	200	360	8	16	13	--	--	--	--	--
	Tobacco	700	700	359	359	--	255	255	131	131	--
	Pulses & Misc.	400	720	28	52	24	170	170	12	12	--
	Maize	1,500	2,880	42	80	38	--	--	--	--	--
	Cattle	20	20	1	1	--	--	--	--	--	--
	Totals	4,620	\$8,630	\$640	\$1110	\$475	1,063	1,505	\$226	\$287	\$ 61
1975	Cotton	1,050	4,170	\$140	\$ 560	\$420	680	1,242	\$ 91	\$168	\$ 77
	Groundnuts	1,000	2,085	115	238	123	340	340	40	40	--
	Rice	250	556	11	28	17	--	--	--	--	--
	Tobacco	700	700	358	358	--	255	255	131	131	--
	Pulses & Misc.	800	1,390	56	97	41	204	270	14	19	5
	Maize	2,000	4,170	56	117	61	--	--	--	--	--
	Cattle	400	695	17	28	11	17	27	--	1	--
	Totals	6,200	13,765	\$753	\$1426	\$673	1,496	2,134	\$277	\$359	\$ 82
1985	Cotton	1,500	7,280	\$202	\$ 979	\$777	1,008	2,079	\$136	\$280	\$144
	Groundnuts	1,500	3,640	171	419	248	630	630	72	72	--
	Rice	250	556	11	28	17	--	--	--	--	--
	Tobacco	700	700	358	358	--	255	255	131	131	--
	Pulses & Misc.	1,000	2,730	70	189	119	315	630	23	44	21
	Maize	2,500	7,280	70	202	132	--	--	--	--	--
	Cattle	800	1,820	34	76	42	42	189	5	8	3
	Totals	8,250	24,006	\$916	\$2251	\$1335	2,334	3,783	\$ 367	\$535	\$ 168

* Omits minor crops

TRAFFIC PROJECTIONS AND USER SAVINGS

As is explained in Section D.4.b the tonnage of cash crop and fish marketings moving on the project roads provides the basis for calculating the traffic projections. The tonnages of local production of such commodities projected in Annex II, "Regional Income Projections" for the Mua-Monkey Bay road are the basis of truck traffic projections for it.

On the Balaka-Salima road transit tonnages must be added to the originating tonnages to provide the basis for truck traffic projections.

The following table illustrates the cash crop tonnages projected to move on the Balaka-Salima road. The Dwangwe River-Nkhota Kota-Salima traffic is from the northern segments of the lake shore road. The "Plateau" traffic is tonnage which originates on the plateau sufficiently close to Salima to make it more economical to use the Balaka-Salima road than roads on the plateau for north-south movements. The Mua-Monkey Bay figure is tonnage which originates on the western half of that road.

Cash Crop Tonnages Moved on Balaka-Salima Road

	(Tons)		
	<u>1972</u>	<u>1975*</u>	<u>1985</u>
Dwangwe River-Nkhota Kota	1,825	2,120	2,400
Nkhota Kota-Dwangwe River	2,700	4,850	7,400
Plateau-Salima	4,000	6,900	10,500
Mua-Monkey Bay	<u>1,505</u>	<u>3,430</u>	<u>5,280</u>
Total Transit Traffic	10,030	17,300	25,580
Balaka-Salima	<u>9,360</u>	<u>14,740</u>	<u>25,470</u>
Total Traffic	19,390	32,040	51,050

These tonnages provide a basis for projecting total traffic tonnages. The total tonnage of transit traffic is estimated to be at least 175% of crop transit tonnage. Input tonnage in the project area will average 125% of output traffic; i.e., total traffic will be 225% of crop tonnages, during the area's developmental period of 1972-1980, thereafter total traffic will be about 175% of the crop tonnages.

The following table illustrates the truck, bus, and light vehicle traffic projected for the project roads according to the method described in Section D.4.b and above.

* Assumes railway line abandoned 1972-1975.

PROJECTIONS OF ANNUAL AVERAGE DAILY TRAFFIC

	<u>1972</u>	<u>1975</u>	<u>1985</u>
<u>Balaka-Salima Road - 90 miles</u>			
<u>Trucks</u>	98	119	146
Local	77	94	118
Incremental	(42)	(55)	(71)
Existing Traffic*	(35)	(39)	(47)
Transit	21	25	28
<u>Buses**</u>	4	6	10
Local	2	2	4
Transit	2	4	6
<u>Light Vehicles</u>	107	204	318
Local	57	114	188
Incremental	(20)	(50)	(80)
Existing Traffic*	(37)	(64)	(108)
Transit	50	90	130
Totals	<u>209</u>	<u>329</u>	<u>474</u>
<u>Mua-Monkey Bay Road - 36 miles</u>			
<u>Trucks</u>	13	20	34
Local	13	20	34
Incremental	(8)	(12)	(21)
Existing Traffic*	(5)	(8)	(13)
<u>Buses**</u>	2	4	6
Local	2	2	2
Transit	-	2	4
<u>Light Vehicles</u>	25	57	88
Local	12	37	48
Incremental	(6)	(21)	(25)
Existing Traffic*	(6)	(16)	(23)
Transit	13	20	40
Totals	<u>40</u>	<u>81</u>	<u>128</u>

* Existing Traffic is that traffic level which it is projected would exist on the present roads if the project were not undertaken.

** Updated projections not available. It should be assumed that these are minimal estimates for the Balaka-Salima segment.

USER SAVINGS*Balaka - Salima

<u>Heavy Vehicle Savings**</u>				<u>Light Vehicle Savings</u>			
<u>Transit</u>	<u>Existing</u>	<u>Savings</u>		<u>Transit</u>	<u>Existing</u>	<u>Savings</u>	<u>TOTAL</u>
<u>Traffic</u>	<u>Traffic</u>	<u>at 8.1¢</u>		<u>Traffic</u>	<u>Traffic</u>	<u>at 3.5¢</u>	<u>SAVINGS</u>
		(000 omitted)				(000 omitted-----)	
1972	23	37	\$160	50	37	\$100	\$260
3	25	39	\$170	56	43	113	283
4	27	40	178	65	48	130	308
1975	29	41	186	74	54	147	333
6	30	42	192	84	60	166	358
7	31	43	197	90	64	177	374
8	32	44	202	96	68	189	391
9	32	45	204	101	73	200	404
1980	33	46	210	106	77	210	420
1	34	47	215	110	81	220	435
2	34	48	218	115	83	227	445
3	35	49	223	119	88	238	461
4	35	50	226	122	92	246	472
1985	36	51	231	124	98	255	486
6	37	52	237	127	104	266	503
7	38	53	242	130	108	274	516
8	38	54	245	133	114	284	529
9	39	55	250	136	119	293	543
1990	40	56	255	138	123	300	555
1	41	57	261	140	126	306	567

* Derived from projections contained in this Annex.

** Trucks and Buses.

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USER SAVINGS*

Mua - Monkey Bay

	<u>Heavy Vehicle Savings**</u>			<u>Light Vehicle Savings</u>			<u>TOTAL SAVINGS</u>
	<u>Transit Traffic</u>	<u>Existing Traffic</u>	<u>Savings at 8.1¢</u> (000 omitted)	<u>Transit Traffic</u>	<u>Existing Traffic</u>	<u>Savings at 3.5¢</u> (000 omitted-----)	
1972	2	5	\$ 7	13	6	\$ 8	\$ 15
3	2	6	9	14	8	9	18
4	2	7	10	15	10	11	21
1975	2	8	11	16	12	12	23
6	2	8	11	18	14	14	25
7	3	9	13	20	16	15	28
8	3	9	13	22	18	17	30
9	3	10	14	25	19	19	33
1980	3	10	14	28	19	20	34
1	3	11	15	31	20	22	37
2	4	11	16	33	20	22	38
3	4	12	17	35	21	24	41
4	4	12	17	37	21	25	42
1985	4	13	18	38	22	25	43
6	4	13	18	39	22	26	44
7	4	14	19	40	23	27	46
8	4	14	19	41	23	27	46
9	4	15	20	42	24	28	48
1990	5	15	21	43	24	28	49
1	5	16	22	44	24	29	51

* Derived from projections contained in this Annex.

** Trucks and Buses.

Cost of Construction (United States Contractor) and Maintenance
(000 omitted)

	<u>Balaka-Salima Road (90 Miles)</u>					<u>Mua Mission-Monkey Bay Road (36 Miles)</u>				
	<u>Construction</u>	<u>Maintenance</u>	<u>Total Cost</u>	<u>Present Value 1968</u>		<u>Construction</u>	<u>Maintenance</u>	<u>Total Cost</u>	<u>Present Value 1968</u>	
				<u>at 6%</u>	<u>at 12%</u>				<u>at 6%</u>	<u>at 12%</u>
1967	\$ 182 ^{1/}	\$	\$ 182	\$ 182	\$ 203	\$ 78 ^{1/}	\$	\$ 78	\$ 83	\$ 87
1968	1,310		1,310	1,310	1,310	525		525	525	525
1969	1,840 ^{2/}		1,840	1,735	1,641	735 ^{2/}		735	693	656
1970	1,580		1,580	1,406	1,259	630		630	561	502
1971	790 ^{3/}	60.6	850.6	714	605	210	21.6	231.6	194	165
1972		60.6	60.6	53	38		21.6	21.6		
1973		60.6	60.6	55	34		21.6	21.6		
1974		60.6	60.6	53	31		21.6	21.6		
1975		62.1	62.1	51	28		21.6	21.6		
1976		62.1	62.1	39	25		21.6	21.6		
1977		62.1	62.1	37	22		21.6	21.6		
1978		62.1	62.1	35	20		21.6	21.6		
1979		62.1	62.1	33	18		21.6	21.6		
1980		67.5	67.5	33	17		21.6	21.6		
1981		67.5	67.5	32	15		21.6	21.6	160	91
1982		67.5	67.5	30	14		21.6	21.6		
1983		67.5	67.5	28	12		21.6	21.6		
1984		67.5	67.5	26	11		21.6	21.6		
1985		67.5	67.5	25	10		21.6	21.6		
1986		75	75				30.5	30.5		
1987		75	75				30.5	30.5		
1988		75	75	129	40		30.5	30.5		
1989		75	75				30.5	30.5	53	16
1990		75	75				30.5	30.5		
1991		75	75				30.5	30.5		
Total		\$7,172	\$7,172	\$5,952	\$5,353		\$2,772	\$2,268	\$2,042	

^{1/}Design engineering (\$260,000)

^{2/}Construction (\$7.2 million) and supervisory engineering. (\$600,000 expended over 1968 to 1971 - 25%, 35%, 30%, 10%, respectively.)

^{3/}Construction, supervisory engineering and G.I. financed bituminous surface treatment (\$270,000).

Complementary GOM Investment
(000 omitted)

	<u>Balaka-Salima Road</u>					<u>Mua Mission-Monkey Bay Road</u>				
	Increased			Present		Increased			Present	
	Feeder Roads	Development Expenditures	Total	Value		Feeder Roads	Development Expenditures	Total	Value	
	<u>1/</u>	<u>2/</u>		<u>6%</u>	<u>12%</u>	<u>1/</u>	<u>2/</u>		<u>6%</u>	<u>12%</u>
1971	\$ 26	\$ -	\$ 26	\$ 23	\$ 18	\$ 26	\$ -	\$ 26	\$ 23	\$ 18
1972	27	40	67	56	43	27	13	40	34	25
1973	27	23	50	40	28	27	14	41	32	23
1974	28	23	51	38	26	28	15	43	32	22
1975	29	24	53	37	24	29	15	44	31	20
1976	21	24	45	30	18	21	16	37	25	17
1977	4	42	46	29	18	4	36	40	25	16
1978	4	25	29	17	10	4	17	21	12	8
1979	4	25	29	16	9	4	18	22	12	7
1980	4	26	30	16	9	4	18	22	12	6
1981	4	26	30	15	8	4	18	22	11	6
1982	4	48	52	24	17	5	18	23	11	5
1983	5	28	32	14	7	5	19	24	11	5
1984	5	28	33	14	6	5	19	24	10	4
1985	5	29	34	13	5	5	19	24	9	4
1986	5	30	35	13	5	5	20	25	9	4
1987	5	43	48	17	6	6	20	26	9	3
1988	5	31	36	12	4	6	21	27	9	3
1989	6	32	38	12	4	6	21	27	8	3
1990	6	33	39	11	4	6	22	28	8	3
1991	6	34	40	11	3	6	22	28	8	2
Total	\$229	\$614	\$843	\$458 ^{3/}	\$268 ^{3/}	\$233	\$381	\$614	\$341 ^{3/}	\$204 ^{3/}

1/Ninety miles of feeder road are expected to be built to each of the project roads at a cost of \$1,680 per mile. Approximately 15 miles will be built each year beginning in 1969.

2/Increased Development Expenditures are over 80% for agricultural extension programs, the remainder being for GOM programs to encourage fish production and tourism. The figures represent estimates of the increases in development expenditures that will occur if the roads are built.

3/The following table illustrates the present values of Complementary GOM Investment as a percentage of the total investment resulting from construction of the Balaka-Salima and Mua-Monkey Bay roads.

Cost of Construction (United States Contractor) and Maintenance
(000 omitted)

	<u>Balaka-Salima Road (90 Miles)</u>					<u>Mua Mission-Monkey Bay Road (36 Miles)</u>				
	<u>Construction</u>	<u>Maintenance</u>	<u>Total Cost</u>	<u>Present Value 1968</u>		<u>Construction</u>	<u>Maintenance</u>	<u>Total Cost</u>	<u>Present Value 1968</u>	
				<u>at 6%</u>	<u>at 12%</u>				<u>at 6%</u>	<u>at 12%</u>
1967	\$ 182 ^{1/}	\$	\$ 182	\$ 193	\$ 203	\$ 78 ^{1/}	\$	\$ 78	\$ 83	\$ 87
1968	1,310		1,310	1,310	1,310	525		525	525	525
1969	1,840 ^{2/}		1,840	1,735	1,641	735 ^{2/}		735	693	656
1970	1,580		1,580	1,406	1,259	630		630	561	502
1971	790 ^{3/}	60.6	850.6	714	605	210	21.6	231.6	194	165
1972		60.6	60.6	48	38		21.6	21.6		
1973		60.6	60.6	45	34		21.6	21.6		
1974		60.6	60.6	43	31		21.6	21.6		
1975		62.1	62.1	41	28		21.6	21.6		
1976		62.1	62.1	39	25		21.6	21.6		
1977		62.1	62.1	37	22		21.6	21.6		
1978		62.1	62.1	35	20		21.6	21.6		
1979		62.1	62.1	33	18		21.6	21.6		
1980		67.5	67.5	33	17		21.6	21.6		
1981		67.5	67.5	32	15		21.6	21.6	160	91
1982		67.5	67.5	30	14		21.6	21.6		
1983		67.5	67.5	28	12		21.6	21.6		
1984		67.5	67.5	26	11		21.6	21.6		
1985		67.5	67.5	25	10		21.6	21.6		
1986		75	75				30.5	30.5		
1987		75	75				30.5	30.5		
1988		75	75	129	40		30.5	30.5		
1989		75	75				30.5	30.5	53	16
1990		75	75				30.5	30.5		
1991		75	75				30.5	30.5		
Total		\$7,172	\$7,172	\$5,988	\$5,353		\$2,772	\$2,268	\$2,042	

^{1/}Design engineering (\$260,000)

^{2/}Construction (\$7.2 million) and supervisory engineering. (\$600,000 expended over 1968 to 1971 - 25%, 35%, 30%, 10%, re-

^{3/}Construction, supervisory engineering and GCM financed bituminous surface treatment (\$270,000). (respectively.)

Complementary GOM Investment
(000 omitted)

	<u>Balaka-Salima Road</u>					<u>Mua Mission-Monkey Bay Road</u>				
	<u>Increased</u>			<u>Present</u>		<u>Increased</u>			<u>Present</u>	
	<u>Feeder</u>	<u>Development</u>	<u>Total</u>	<u>Value</u>		<u>Feeder</u>	<u>Development</u>	<u>Total</u>	<u>Value</u>	
<u>Roads</u>	<u>Expenditures</u>	<u>Total</u>	<u>6%</u>	<u>12%</u>	<u>Roads</u>	<u>Expenditures</u>	<u>Total</u>	<u>6%</u>	<u>12%</u>	
	<u>1/</u>	<u>2/</u>			<u>1/</u>	<u>2/</u>				
1971	\$ 26	\$ -	\$ 26	\$ 23	\$ 18	\$ 26	\$ -	\$ 26	\$ 23	\$ 18
1972	27	40	67	56	43	27	13	40	34	25
1973	27	23	50	40	28	27	14	41	32	23
1974	28	23	51	38	26	28	15	43	32	22
1975	29	24	53	37	24	29	15	44	31	20
1976	21	24	45	30	18	21	16	37	25	17
1977	4	42	46	29	18	4	36	40	25	16
1978	4	25	29	17	10	4	17	21	12	8
1979	4	25	29	16	9	4	18	22	12	7
1980	4	26	30	16	9	4	18	22	12	6
1981	4	26	30	15	8	4	18	22	11	6
1982	4	48	52	24	17	5	18	23	11	5
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1984	5	20	33	14	6	5	19	24	10	4
1985	5	29	34	13	5	5	19	24	9	4
1986	5	30	35	13	5	5	20	25	9	4
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1990	6	33	39	11	4	6	22	28	8	3
1991	6	34	40	11	3	6	22	28	8	2
Total	\$229	\$614	\$843	\$458 ^{3/}	\$268 ^{3/}	\$233	\$381	\$614	\$341 ^{3/}	\$201 ^{3/}

1/ Ninety miles of feeder road are expected to be built to each of the project roads at a cost of \$1,680 per mile. Approximately 15 miles will be built each year beginning in 1969.

2/ Increased Development Expenditures are over 80% for agricultural extension programs, the remainder being for GOM programs to encourage fish production and tourism. The figures represent estimates of the increases in development expenditures that will occur if the roads are built.

3/ The following table illustrates the present values of Complementary GOM Investment as a percentage of the total investment resulting from construction of the Balaka-Salima and Mua-Monkey Bay roads.

Investments in Project Area

Expressed in 1968 Present Value Discounting at 6%

(000 omitted)

	<u>Balaka-Salima</u>	<u>Mua-Monkey Bay</u>
Construction - Maintenance Cost	\$5,982 (92.9%)	\$2,268 (86.9%)
Complementary GOM Investment (per above)	<u>458 (7.1%)</u>	<u>341 (13.1%)</u>
Combined Investment	\$6,440 (100%)	\$2,609 (100%)

Expressed in 1968 Present Value Discounting at 12%

Construction - Maintenance Cost	\$5,353 (95.2%)	\$2,042 (90.9%)
Complementary GOM Investment (per above)	<u>268 (4.8%)</u>	<u>204 (9.1%)</u>
Combined Investment	\$5,621 (100%)	\$2,246 (100%)

ECONOMIC BENEFITS

Balaka-Salima Segment
(\$000 omitted)

Mua-Monkey Bay Segment
(\$000 omitted)

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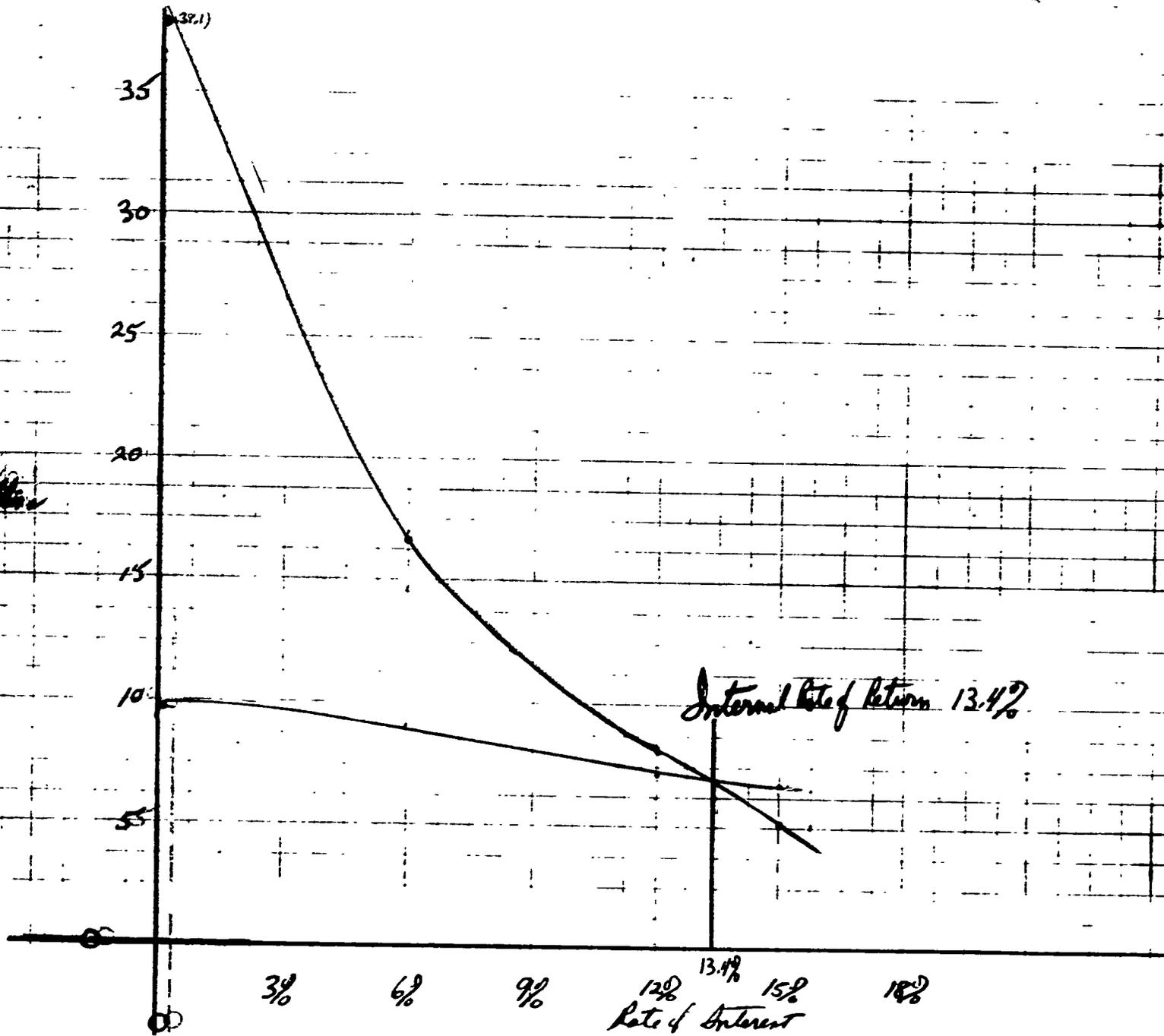
	<u>Present Value</u> (1968)					<u>Present Value</u> (1968)					
	<u>Incremental</u> <u>Income *</u>	<u>User**</u> <u>Savings</u>	<u>Total</u> <u>Benefits</u>	<u>At</u> <u>6%</u>	<u>At</u> <u>12%</u>	<u>Incremental</u> <u>Income *</u>	<u>User**</u> <u>Savings</u>	<u>Total</u> <u>Benefits</u>	<u>At</u> <u>6%</u>	<u>At</u> <u>12%</u>	
1972	\$ 564	\$ 260	\$ 824	\$ 652	\$ 524	1972	\$ 93	\$ 15	\$ 108	\$ 86	\$ 67
1973	641	283	924	690	524	1973	107	18	125	93	71
1974	718	308	1026	723	520	1974	121	21	142	100	72
1975	796	333	1129	751	510	1975	134	23	157	104	71
1976	879	358	1237	776	500	1976	148	25	173	108	70
1977	962	374	1336	790	481	1977	161	28	189	112	68
1978	1045	391	1436	801	462	1978	175	30	205	114	66
1979	1128	404	1532	807	440	1979	188	33	221	116	63
1980	1211	420	1631	811	419	1980	202	34	236	117	61
1981	1294	435	1729	811	396	1981	215	37	252	118	58
1982	1377	445	1822	805	374	1982	229	38	267	118	55
1983	1460	461	1921	801	352	1983	241	41	282	118	52
1984	1543	472	2015	794	328	1984	257	42	297	117	48
1985	1627	486	2113	784	308	1985	270	43	313	116	46
1986	1710	503	2213	775	288	1986	284	44	328	115	43
1987	1793	516	2309	764	268	1987	297	46	343	114	40
1988	1876	529	2405	750	250	1988	311	46	357	111	37
1989	1959	543	2502	736	233	1989	325	48	373	110	35
1990	2042	555	2597	722	216	1990	338	49	387	108	32
1991	2125	567	2692	705	199	1991	352	51	403	106	30
Sub-											
Totals	\$26,750	\$8,643	\$35,393	\$15,248	\$7,492	\$4,448	\$710	\$5,158	\$2,201	\$1,085	
Adjustments ***	-843	-	-843	-458	-268	-614	-	-614	-341	-204	
Total	\$25,907	\$8,643	\$34,550	\$14,790	\$7,224	\$3,834	\$710	\$4,544	\$1,860	\$ 881	
Benefits											

* Includes benefits from Increased Agricultural production, fishing, and tourism as outlined in Annex IV.

** As detailed in Annex V.

*** Adjustments for GOM complementary Investment, See page 3 of this Annex.

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Internal Rate of Return 13.4%

Rate of Interest

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

A.I.D. Loan No.

CAPITAL ASSISTANCE LOAN AUTHORIZATION
Provided from: Development Loan Funds

MALAWI: Lake Shore Road (Phase II - Construction)

Pursuant to the authority vested in the Assistant Administrator for Africa of the Agency for International Development ("A.I.D.") by the Foreign Assistance Act of 1961, as amended, (the "Act") and the delegations of authority issued thereunder, I have received and taken into consideration a certification from the A.I.D. Affairs Officer of USAID/Malawi and the United States Ambassador to Malawi as to the financial and human resources capability of Malawi to effectively utilize the Lake Shore Road Project taking into account, among other things, the maintenance and utilization of projects in Malawi previously financed or assisted by the United States, and I hereby authorize the establishment of a loan pursuant to Part I, Chapter 2, Title I, the Development Loan Fund, to the Government of Malawi ("Borrower") of not to exceed seven million dollars (\$7,000,000) to assist in financing the foreign exchange and local costs of goods and services for the engineering and/or construction of portions of the Lake Shore Road Project subject to the following terms and conditions:

1. Interest Rate and Terms of Repayment. Borrower shall repay the loan to A.I.D. in forty (40) years, including a grace period not to exceed ten (10) years. Borrower shall pay interest on the unrepaid principal and any interest accrued thereon at the rate of (a) two percent (2%) per annum during the grace period and (b) two and one-half percent (2½%) per annum thereafter.
2. Currency of Repayment. Repayment of the loan and payment of interest shall be made in United States dollars.
3. Other Terms and Conditions.
 - (a) Goods and Services financed under the loan shall have their source and origin in the United States or Malawi.
 - (b) Malawi currency costs financed under the loan should not exceed fifty percent (50%) of the non-United States costs of the project.

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- (c) Dollars used to finance goods and services of Malawian source shall be subject to a Special Letter of Credit to limit their use to United States procurement.
- (d) Such other terms and conditions as A.I.D. may deem advisable.

Assistant Administrator for Africa

Date

CHECKLIST OF STATUTORY CRITERIA

Development Loan Fund

The following abbreviations are used:

FAA - Foreign Assistance Act of 1961, as amended by the Foreign Assistance Act of 1967

App. - Foreign Assistance and Related Agencies Appropriations Act, 1968

- *1. FAA §.102. *Assistance wherever practicable consists of U. S. commodities and services furnished consistent with efforts to improve the U. S. balance of payments.* Satisfied. To be covered in the construction contract and loan agreement.
2. FAA §.201(b)(1). *Information and conclusion on availability of financing from other free-world sources, including private sources within the United States.* Satisfied. See Section E.4, Capital Assistance Paper.
3. FAA §.201(b)(2). *Information and conclusion on activity's economic and technical soundness, including the capacity of the recipient country to repay the loan at a reasonable rate of interest.* Satisfied. See Sections C, D, and E, Capital Assistance Paper.
4. FAA §.201(b)(3). *Information and conclusion on existence of reasonable promise activity will contribute to development of economic resources or increase of productive capacities.* Satisfied. See Section D, Capital Assistance Paper.
5. FAA §.201(b)(4). *Information and conclusion on activity's relationship to other development activities, and its contribution to realizable long-range objectives.* Satisfied. See Section D, Capital Assistance Paper.
6. FAA §.201(b)(5). *Country's self-help measures. See Items 23 through 29 re new FAA § 208.* Satisfied. See below.

7. FAA §.201(b)(6). *Information and conclusion on possible effects on U. S. economy, with special reference to areas of substantial labor surplus.* Satisfied. See Section F, Capital Assistance Paper.
8. FAA §.201(b)(7). *Information and conclusion on the degree to which the country is making progress toward respect for the rule of law, freedom of expression and of the press, and recognition of the importance of individual freedom, initiative, and private enterprise.* Satisfied. The juridical system of Malawi guarantees such rights.
9. FAA §.201(b)(8). *Information and conclusion on the degree to which the country is taking steps to improve its climate for private investment.* Satisfied. Malawi has signed an Investment Guarantee Agreement with the U.S. It has established the Malawi Development Corporation which assists and encourages investment.
10. FAA §.201(b)(9). *Information and conclusion on whether or not the activity to be financed will contribute to the achievement of self-sustaining growth.* Satisfied. See Section D, Capital Assistance Paper. The project will contribute to the country's agricultural sector which holds Malawi's potential for self-sustaining growth.
- *11. FAA §.201(b). *Compliance with requirement that funds not be used to make loans to more than twenty countries in any fiscal year.* Satisfied. Malawi is among the twenty countries to receive loans this fiscal year.
12. FAA §.201(b). *Information and conclusion on reasonable prospects of repayment.* Satisfied. See Section E.5, Capital Assistance Paper.
13. FAA §.201(d). *Information and conclusion on legality (under laws of the country and the U. S.) and reasonableness of lending and relending terms.* Satisfied. As a precondition to disbursement of the loan's proceeds, AID will require receipt of a certification from Malawi's Attorney General that the loan is a binding obligation upon Malawi. U.S. laws are met. See Annexes I and III, Capital Assistance Paper.
14. FAA §.201(e). *Information and conclusion on availability of an application together with sufficient information and assurances to indicate reasonably that funds will be used in an economically and technically sound manner.* Satisfied. See Sections A, C, and D of the Capital Assistance Paper.

15. FAA §.201(f). *If a project, information and conclusion whether it will promote the economic development of the requesting country, taking into account the country's human and material resource requirements and the relationship between the ultimate objectives of the project and the country's overall economic development.* Satisfied. See Section D, Capital Assistance Paper.
16. FAA §.201(f). *If a project, information and conclusion whether it specifically provides for appropriate participation by private enterprise.* Satisfied. See Section F.1, Capital Assistance Paper. All agricultural development in the project area is in private hands.
17. FAA §.202(a). *Total amount of money under loan which is going directly to private enterprise, is going to intermediate credit institutions or other borrowers for use by private enterprise, is being used to finance imports from private sources, or is otherwise being used to finance procurements from private sources.* Satisfied. The entire loan amount will finance goods and services from private sources.
- *18. FAA §.207(a). *Information that U. S. assistance places appropriate emphasis on encouraging strong economic, political, and social institutions needed for a progressive democratic society.* Satisfied. This has been the aim of the U.S. assistance program in Malawi.
- *19. FAA §.207(b). *Information that U. S. assistance places appropriate emphasis on programs directed at enabling the country to meet the food needs of its people from its own resources.* Satisfied. A.I.D. programs recognize preponderant need of agricultural development in Malawi. The project will assist the country's agricultural development.
- *20. FAA §.207(c). *Information that U. S. assistance places appropriate emphasis on improving availability in the country of educated manpower by improving education planning and research, training teachers and administrators, developing and constructing educational institutions, and using modern educational technology.* Satisfied. A.I.D. has assisted Malawi's University, Teacher Training Institute, Vocational and Agricultural Training schools.

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- *21. FAA §.207(d). Information that U. S. assistance places appropriate emphasis on programs aimed at malnutrition, disease eradication, slim clearance, water purification, sewage disposal, health education, maternal and child care (including family planning), and other public health assistance. A.I.D. has not directly assisted in these areas. However, USG contribution to international programs provides indirect assistance for such programs.
- *22. FAA §.207(e). Information that U. S. assistance places appropriate emphasis on other development activities including industrial development; growth of free labor unions, cooperatives and voluntary agencies; improvement of transportation and communication systems; development of capabilities for economic planning and public administration; urban development; and modernisation of laws to facilitate economic development. Satisfied. Road construction will increase communication facilities for both people and commerce. All commercial development in the project area is in private hands.
- *23. FAA §.208(a). Information and conclusion on the extent to which the country is taking measures to increase food production and food storage and distribution facilities. Satisfied. Malawi has given appropriate emphasis to increasing food production. Road construction and improving road network will directly contribute. Malawi recently signed 2 loans with IBRD/IDA to develop agricultural schemes.
- *24. FAA §.208(b). Information and conclusion on the extent to which the country is creating a favorable climate for foreign and domestic private enterprise and investment. Satisfied. GOM has signed Investment Guarantee Agreement. GOM consistently has encouraged development of private enterprise.
- *25. FAA §.208(c). Information and conclusion on the extent to which the country is increasing the role of the people in the developmental process. Satisfied. GOM has established a corps of young pioneer groups now actively participating in Malawi's development. Developmental programs have been intended to benefit the general population.
- *26. FAA §.208(d). Information and conclusion on the extent to which the country is allocating expenditures to development rather than to unnecessary military purposes or intervention in other free and independent nations. See also Items 64 and 76. Satisfied. Major budget allocations are to development and recurring non-defense budgets.
- *27. FAA §.208(e). Information and conclusion on the extent to which the country is willing to make contributions of its own to the projects and programs for which assistance is provided. Satisfied. The GOM will make a substantial contribution to this project, and other projects

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- *28. FAA §.208(f). Information and conclusion on the extent to which the country is making economic, social, and political reforms such as tax collection improvements and changes in land tenure arrangements that will enable it to achieve developmental objectives more efficiently and justly.
- Satisfied. Within the limits of the segment of its population in the money economy, a tax system has been established. New lands are developed outside of the traditional tribal holdings. Land tenure is not a major problem in Malawi.
- *29. FAA §.208(g). Information and conclusion (other than above) on the extent to which the country is responding to the economic, political, and social concerns of its people and showing a clear determination to take effective self-help measures.
- Satisfied. GOM has assumed responsibility for local costs of external assistance projects and the 5-year plan is a reasoned response to the needs of Malawi.
- *30. FAA §.209. Information on multilateral assistance and regional programs, including the extent to which U. S. assistance will encourage regional development programs.
- Satisfied. Completion of all segments of the project will involve U.S., U.K., FRG, and IBRD/IDA financing. The project will help complete the region's transport network. Malawi's geo-political setting does not readily lend itself to regional projects.
- *31. FAA §.281. Extent to which the loan will contribute to the objective of assuring maximum participation in the task of economic development on the part of the people of the developing countries, through the encouragement of democratic private and local governmental institutions.
- Satisfied. Some local private procurement is assured under the GOM's contribution. The MWS will be aided by either construction alternative, but particularly by alternative (b).
- *32. FAA §.601(a). Information and conclusions whether loan will encourage efforts of the country to: (a) increase the flow of international trade; (b) foster private initiative and competition; (c) encourage development and use of cooperatives, credit unions, and savings and loan associations; (d) discourage monopolistic practices; (e) improve technical efficiency of industry agriculture, and commerce; (f) strengthen free labor unions.
- Satisfied as to (a), (b), (c), (d), and (e). See Section D, Capital Assistance Paper. There is no information as to (f).
- *33. FAA §.601(b). Information and conclusion on how the loan will encourage U. S. private trade and investment abroad, and how it will encourage private U. S. participation in foreign assistance programs (including use of private trade channels and the services of U. S. private enterprise).
- Satisfied. See Section F.1, Capital Assistance Paper.
- *34. FAA §.601(d). Conclusion and supporting information on compliance with the Congressional policy that engineering and professional services of U. S. firms and their affiliates are to be used in connection with capital projects to the maximum extent consistent with the national interest.
- Satisfied. Only U.S. engineering professional services are being and will be used.

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35. FAA §.602. *Information and conclusions whether loan will permit American small business to participate equitably in the furnishing of goods and services financed by it.* Satisfied. USG competitive bid procedures will be followed.
36. FAA §.604(a); App. §.108. *Compliance with restriction of commodity procurement to U. S. except as otherwise determined by the President and subject to statutory reporting requirements.* Satisfied. See Section F.2, Capital Assistance Paper.
37. FAA §.604(b). *Compliance with restriction that no funds be used to procure bulk commodities at prices higher than the market price prevailing in the U. S. at time of purchase.* Not Applicable.
38. FAA §.604(d). *Compliance with requirement that marine insurance on commodities be purchased on competitive basis or, if the participating country discriminates against any marine insurance company authorized to do business in any State of the United States, that insurance be placed in the U. S.* Satisfied by Loan Agreement.
- *39. FAA §.608(a). *Information as to the utilization of excess personal property in lieu of procurement of new items.* Satisfied. To the extent practicable excess property will be utilized.
40. FAA §.611(a)(1). *Information and conclusion on availability of engineering, financial, and other plans necessary to carry out the assistance and of a reasonably firm estimate of the cost of the assistance to the United States.* Satisfied. See Sections C and E, Capital Assistance Paper.
41. FAA §.611(a)(2). *Necessary legislative action required within recipient country and basis for reasonable anticipation such action will be completed in time to permit orderly accomplishment of purposes of loan.* Satisfied.

42. FAA §.611(b); App. §.101. *If water or water-related land resource construction project or program, information and conclusion on a benefit-cost computation.* Not applicable, however, see Section D, Capital Assistance Paper.
43. FAA §.611(c). *Compliance with requirement that contracts for construction be let on competitive basis to maximum extent practicable.* Satisfied. See Section C, Capital Assistance Paper.
44. FAA §.611(e). *Compliance with the requirement that for all projects estimated to cost in excess of \$1,000,000, the principal officer of AID in the country in which the project is located certify as to the capability of the country (both financial and human resources) to effectively maintain and utilize the project taking into account among other things the maintenance and utilization of projects in the country previously financed or assisted by the U. S. (Such certifications are to be approved by the Administrator or appropriate assistant administrator per Delegation of Authority #75 before assistance is authorized.)* Satisfied. See Annex III, Capital Assistance Paper.
45. FAA §.612(b) and 636(h). *Appropriate steps that have been taken to assure that, to the maximum extent possible, the country is contributing local currencies to meet the cost of contractual and other services and foreign currencies owned by the U. S. are utilized to meet the cost of contractual and other services.* Satisfied. The GOM contribution is the maximum contribution permissible given the country's financial situation.
46. FAA §.619. *Compliance with requirement that assistance to newly independent countries be furnished through multilateral organizations or in accordance with multilateral plans to the maximum extent appropriate.* Satisfied. The GOM is using 4 sources of finance for the entire project road.
47. FAA §.620(a); App. §.107(a) and (b). *Compliance with prohibitions against assistance to Cuba and any country (a) which furnishes assistance to Cuba or failed to take appropriate steps by February 14, 1964, to prevent ships or aircraft under its registry from carrying equipment, materials, or supplies from or to Cuba; or (b) which sells, furnishes, or permits any ships under its registry from carrying items of primary strategic significance, or items of economic assistance.* Satisfied.

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48. FAA §.620(b). *If assistance to the government of a country, existence of determination it is not controlled by the international Communist movement.* Satisfied. Malawi is not a Communist country.
49. FAA §.620(c). *If assistance to the government of a country, existence of indebtedness to a U. S. citizen for goods or services furnished or ordered where such citizen has exhausted available legal remedies or where the debt is not denied or contested by such government or the indebtedness arises under an unconditional guaranty of payment given by such government.* Satisfied. No such indebtedness exists.
50. FAA §.620(d). *If assistance for any productive enterprise which will compete with U. S. recipient country to prevent export to the U. S. of more than 20% of the enterprise's annual production during the life of the loan.* Satisfied. Not applicable.
51. FAA §.620(e)(1). *If assistance to the government of a country, extent to which it (including government agencies or subdivisions) has, after January 1, 1962, taken steps to repudiate or nullify contracts or 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 appropriate steps to discharge its obligations.* Satisfied. Malawi has not taken such steps or actions.
52. FAA §.620(f); App. B.109. *Compliance with prohibitions against assistance to any Communist country.* Satisfied. Malawi is not a Communist country.
53. FAA §.620(g). *Compliance with prohibition against use of assistance to compensate owners for expropriated or nationalized property.* Satisfied. Only project costs will be financed.
54. FAA §.620(h). *Compliance with regulations and procedures adopted to ensure against use of assistance in a manner which, contrary to the best interests of the U. S., promotes or assists the foreign aid projects or activities of the Communist-bloc countries.* Satisfied. Procurement will be in the U.S. or Malawi. The project has no relation to any Communist-bloc project.

55. FAA §.620(i). Existence of determination that the country is engaging in or preparing for aggressive military efforts. Satisfied. Malawi is neither engaging in nor preparing for aggressive military efforts.
56. FAA §.620(i). Information on representation of the country at any international conference when that representation includes the planning of activities involving insurrection of subversion against the U. S. or countries receiving U. S. assistance. Satisfied. The GOM has attended no such conference.
- *57. FAA §.620(j). Existence of a determination that the country has permitted or failed to prevent destruction of U. S. property by mob action or has failed to take steps to prevent a recurrence and to pay compensation. Satisfied. There has been no such action against U.S. property in Malawi.
58. FAA §.620(k). If construction of productive enterprises where aggregate value of assistance to be furnished by U. S. will exceed \$100 million, identification of statutory authority. Not applicable.
59. FAA §.620(l). Consideration which has been given to denying assistance to the government of a country which after December 31, 1966, has failed to institute the investment guaranty program for the specific risks of inconvertibility and expropriation or confiscation. Satisfied. Malawi has signed the Investment Guarantee Program.
60. FAA §.620(n); App. §.107(b); App. §.116. Compliance with prohibitions against assistance to countries which traffic or permit trafficking with North Viet-Nam. Satisfied. No such traffic or trafficking has taken place.
61. FAA §.620(o). If country has seized, or imposed any penalty or sanction against, any U. S. fishing vessel on account of its fishing activities in international waters, information on the consideration which has been given to excluding the country from assistance. Not applicable. Country is land-locked.
62. FAA §.620(p); App. §.117. U. A. R. restriction. Not applicable.
63. FAA §.620(q). Existence of default in payment under any Foreign Assistance Act loan to the country. Satisfied. Malawi is not in default on any FAA loan.

- *64. FAA §.620(s). *Consideration of whether the country is diverting U. S. assistance to military expenditures, or is devoting an unnecessary percentage of its budget for military purposes, or using foreign exchange for military equipment to a degree which materially interferes with its development so as to warrant termination of assistance until such diversion no longer takes place.* Satisfied. It has been determined that Malawi is not expending an unnecessary or excessive portion of its budget for military purposes.
- *65. FAA §.620(t). *Compliance with prohibition on aid if country has severed diplomatic relations with U. S. unless agreements have been negotiated after resumption of relations.* Satisfied. The U.S. and GOM have maintained diplomatic relations since Malawi's independence.
- *66. FAA §.620(u). *Status of the country with respect to its dues, assessments, and other obligations to the United Nations.* Satisfied. Malawi is not in default on its international obligations.
- *67. FAA §.636(i). *Compliance with prohibition on financing non-U. S.-manufactured motor vehicles (except where special circumstances exist and a waiver is authorized).* Satisfied. Such procurement will not be financed.
68. App. §.102. *Compliance with requirement that payments in excess of \$25,000 for architectural and engineering services on any one project be reported to Congress.* Satisfied.
69. App. §.104. *Compliance with bar against funds to pay pensions, etc., for military personnel.* Satisfied. Only project costs will be financed.
70. App. §.106. *If country attempts to create distinctions because of their race or religion among Americans in granting personal or commercial access or other rights otherwise available to U. S. citizens generally, application which will be made in negotiations of contrary principles as expressed by Congress.* Satisfied by Loan Agreement and AID-approved project contracts.
71. App. §.111. *Compliance with existing requirements for security clearance of personnel.* Satisfied.
72. App. §.112. *Compliance with requirement for approval of contractors and contract terms for capital projects.* Satisfied. A.I.D. has or will approve all project contracts.

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73. App. 8.114. *Compliance with bar against use of funds to pay assessments, etc., of U. N. member.* Satisfied. Only project costs will be financed.
74. App. 8.115. *Compliance with regulations on employment of U. S. and local personnel for funds obligated after April 30, 1964 (AID Regulation 7).* Satisfied. Regulation 7 is a part of the proposed construction contract.
75. App. 8.118. *Viet-Nam iron and steel restrictions.* Satisfied. Malawi does not export iron or steel.
76. App. 8.119. *Compliance with reducing assistance by amounts spent for the purchase of sophisticated military equipment in countries other than Greece, Turkey, Iran, Israel, Republic of China, Philippines, or Korea.* Satisfied. Malawi has made no such purchases.
77. App. 8.401. *Compliance with bar against use of funds for publicity or propaganda purposes within U. S. not heretofore authorized by Congress.* Satisfied. Only project costs will be financed.

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73. App. §. 114. *Compliance with bar against use of funds to pay assessments, etc., of U. N. member.* Satisfied. Only project costs will be financed.
74. App. §. 115. *Compliance with regulations on employment of U. S. and local personnel for funds obligated after April 30, 1964 (AID Regulation 7).* Satisfied. Regulation 7 is a part of the proposed construction contract.
75. App. §. 118. *Viet-Nam iron and steel restrictions.* Satisfied. Malawi does not export iron or steel.
- *76. App. §. 119. *Compliance with reducing assistance by amounts spent for the purchase of sophisticated military equipment in countries other than Greece, Turkey, Iran, Israel, Republic of China, Philippines, or Korea.* Satisfied. Malawi has made no such purchases.
77. App. §. 401. *Compliance with bar against use of funds for publicity or propaganda purposes within U. S. not heretofore authorized by Congress.* Satisfied. Only project costs will be financed.