PD- AAP-917
ISN: 36507

UNCLASSIFIED

UNITED STATES INTERNATIONAL DEVELOPMENT COOPERATION AGENCY
AGENCY FOR INTERNATIONAL DEVELOPMENT
Washington, D. C. 20523

GRENADA

PROJECT PAPER

EMERGENCY ROAD REPAIR

AID/LAC/P-195

Project Number:543-0007

UNCLASSIFIED

AGENCY FOR INTERNATIONAL DEVELOPMENT

PROJECT DATA SHEET

1. TRANSACTION CODE: A (A = Add, C = Change, D = Delete) — Amendment Number: _____

DOCUMENT CODE: 3

2. COUNTRY/ENTITY: GRENADA

3. PROJECT NUMBER: 543 -0007

4. BUREAU/OFFICE: LATIN AMERICA AND THE CARIBBEAN (LAC) — 05

5. PROJECT TITLE (maximum 40 characters): EMERGENCY ROAD REPAIR

6. PROJECT ASSISTANCE COMPLETION DATE (PACD): MM 02 DD 28 YY 85

7. ESTIMATED DATE OF OBLIGATION (Under 'B.' below, enter 1, 2, 3, or 4)
A. Initial FY 84 B. Quarter 3 C. Final FY 84

8. COSTS ($000 OR EQUIVALENT $1 =)

A. FUNDING SOURCE	FIRST FY B. FX	C. L/C	D. Total	LIFE OF PROJECT E. FX	F. L/C	G. Total
AID Appropriated Total						
(Grant)	(100)	(400)	(500)	(100)	(400)	(500)
(Loan)	( )	( )	( )	( )	( )	( )
Other U.S. 1.						
Other U.S. 2.						
Host Country HOST COUNTRY		26	26		26	26
Other Donor(s)						
TOTALS	100	426	526	100	426	526

9. SCHEDULE OF AID FUNDING ($000)

A. APPROPRIATION	B. PRIMARY PURPOSE CODE	C. PRIMARY TECH. CODE 1. Grant	2. Loan	D. OBLIGATIONS TO DATE 1. Grant	2. Loan	E. AMOUNT APPROVED THIS ACTION 1. Grant	2. Loan	F. LIFE OF PROJECT 1. Grant	2. Loan
(1) ESF		701		0		500		500	
(2)									
(3)									
(4)									
TOTALS				0		500		500	

10. SECONDARY TECHNICAL CODES (maximum 6 codes of 3 positions each)

11. SECONDARY PURPOSE CODE

12. SPECIAL CONCERNS CODES (maximum 7 codes of 4 positions each)
A. Code
B. Amount

13. PROJECT PURPOSE (maximum 480 characters)

To rehabilitate by labor-intensive methods two key primary road segments and continue the OFDA financed road patching program started under Projects 001 and 002, and, in so doing, create employment for 300-400 unskilled workers.

14. SCHEDULED EVALUATIONS
Interim MM 08 YY 84 MM YY
Final MM 12 YY 84

15. SOURCE/ORIGIN OF GOODS AND SERVICES
[X] 000 [ ] 941 [ ] Local [ ] Other (Specify) _____

16. AMENDMENTS/NATURE OF CHANGE PROPOSED (This is page 1 of a _____ page PP Amendment.)

17. APPROVED BY
Signature: William B. Wheeler
Title: Director RDO/Caribbean
Date Signed: MM 09 DD 28 YY 84

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

AID 1330-4 (8-79)

PROJECT AUTHORIZATION

Name of Country: Grenada

Name of Project: Emergency Road Repair

Number of Project: 543-0007

1. Pursuant to Part II, Chapter 4, Section 531 of the Foreign Assistance Act of 1961, as amended, I hereby authorize the Emergency Road Repair Project for Grenada involving planned obligations of not to exceed Five Hundred Thousand United States Dollars (US$500,000) in grant funds over a one year period from the date of authorization, subject to the availability of funds in accordance with the A.I.D. OYB/allotment process, to help in financing foreign exchange and local currency costs for the project. The planned life of the Project is eight months from the date of initial obligation.

2. The Project consists of assistance to the Government of Grenada in rehabilitating two (2) key primary road segments in the St. George's area and continuing the island-wide road patching program started under emergency A.I.D. projects in Grenada.

3. The Project Agreement which may be negotiated and executed by the officer to whom such authority is delegated in accordance with A.I.D. regulations and Delegations of Authority shall be subject to the following essential terms and covenants and major conditions, together with such other terms and conditions as A.I.D. may deem appropriate.

A. Commodities financed by A.I.D. under the Project shall have their source and origin in the Cooperating Country or in the United States (A.I.D. Code 000) except as A.I.D. may otherwise agree in writing. Except for ocean shipping, the suppliers of commodities or services shall have the Cooperating Country or the United States as their place of nationality, except as A.I.D. may otherwise agree in writing.

Ocean shipping financed by A.I.D. under the Project shall, except as A.I.D. may otherwise agree in writing, be financed only on flag vessels of the United States.

B. Conditions Precedent to Disbursement

Prior to first disbursement under the Grant, or to the issuance by A.I.D. of documentation pursuant to which disbursement will be made, the Grantee will, except as the Parties may otherwise agree in writing, furnish to A.I.D. in form and substance satisfactory to A.I.D.

(a) An opinion of counsel acceptable to A.I.D. that this Agreement has been duly authorized and/or ratified by, and executed on behalf of, the Grantee, and that it constitutes a valid and legally binding obligation of the Grantee in accordance with all of its terms;

(b) A statement of the name of the person holding or acting as representative of the Grantee and of any additional representatives, together with a specimen signature of each person specified in such statement; and

(c) Rate schedules for the mechanical equipment to be leased from the central garage unit for use in the Project, such schedules to disclose all components of operational and maintenance costs.

William B. Wheeler
Mission Director
Regional Development Office/
Caribbean

2 July 1984

TABLE OF CONTENTS

		PAGE
I.	Summary	1
II.	Project Rationale and Description	2
III	Cost Estimates	4
IV.	Implementation and Monitoring Plan	5
V.	Assessment and Evaluation	6
VI.	Summaries of Analyses	7
	A. Technical	7
	B. Economic	10
	C. Financial	12
	D. Social Soundness	12
	E. Institutional	13
	F. Environmental	13
VII.	Condition Precedent	14
VIII.	Annexes	
	A. PID Approval Message (State 082022)	
	B. Statutory Checklist	
	C. GOG Request for Assistance	
	D. Initial Environmental Examination	
	E. Cost of Commissioning Emulsion Plant	
	F. Road Segments Identified for Rehabilitation	
	G. Road Segments Identified for Repairs	
	H. Project Activity Map	
	I. Roads Division Organization Chart	
	J. Summary of Roads	
	K. OFDA-Financed Road Patching Activities	

I. Summary

The Project Paper has been prepared based on the guidelines provided in Handbook 3, Chapter 4 concerning projects of $500,000 or less, and in accordance with instructions contained in the PID approval cable (STATE 082022. Annex A).

The proposed Project will (i) continue and expand the island-wide road patching program begun under OFDA-financing, totalling about twenty-eight miles, (ii) rehabilitate by labor-intensive methods two key primary road segments in the St. George's area totalling about two miles. Employment will be provided for three hundred to four hundred unskilled workers. The OFDA-financed projects, which are virtually complete, are considered by both the GOG and AID to be highly successful in terms of road repair and employment generation.

II. Project Rational and Description

Two of the six main objectives established by the Interim Government of Grenada relate directly to this project:

(i) dramatically and immediately reduce unemployment, and
(ii) development of the country's physical and social infrastructure.

U.S. Government FY'84 assistance strategy for Grenada underscores the above objectives giving top priority to mitigating the effects of large-scale unemployment and its potential for creating instability. Unemployment on the island, exacerbated by the economic and social dislocations of recent Governments and by the U.S. intervention, now stands at about 30%. This project has as one of its primary objectives the continuation of employment for three hundred to four hundred unskilled workers.

The deterioration of Grenada's road transport network is perceived by both Grenadian and U.S. officials as a primary impediment to the development of the nation's two major economic sectors - agriculture and tourism. For the last five years, GOG expenditure for maintenance and preservation of the island's road system has been minimal since prior administrations established development priorities such as the Point Salines International Airport which siphoned off a disproportionate share of the national budget and construction capacity. As a result of this neglect, and in part from poor initial design, the majority of the island roads and bridges are in a serious state of disrepair and are inadequate for present traffic volumes.

AID addressed both the critical unemployment situation and the serious deterioration of the primary road network in the two road repair projects, which were undertaken with OFDA financing (See Annex K). Project 001 provided $134,000 for labor intensive patching and improvements on approximately four miles of the Grand Anse Road, the most heavily-travelled road segment on the island. This project was completed by the end of March 1984. Project 002 furnished $285,000 for similar patching and improvements to both running surface and drainage for approximately 61 miles of road in all six Grenada parishes and the island of Carriacou. This project was scheduled for completion the end of April 1984.

These two projects are considered by GOG and U.S. officials to be successful. They provided a dramatic visual and social impact of the U.S. presence for everyone on the island, vastly improved average vehicle speeds and lowered vehicle maintenance costs, and provided jobs for three to four hundred unskilled Grenadians.

The proposed project is comprised of two separate activities. The first is a continuation and expansion of the island-wide road patching program begun under OFDA-financing. This project component will finance running surface and drainage

improvements for approximately 28.7 miles of primary and secondary roads in all six parishes and on the island of Carriacou. It will create employment for approximately 220 unskilled workers.

The second component involves the reconstruction of vital roadway links in the St. George's area - approximately one mile on the Springs-Calivigny Road and approximately the same distance on the Grand Etang Road. These two segments, among the most heavily travelled on the island, are badly deteriorated and in need of extensive repair. Reconstruction will involve extensive surface and drainage improvements including: clearing of roadside brush and drains, repair of all potholes and other surface failures, and placement of a three-inch penetration overlay on the existing 16' wide surface. No changes in alignment or bridge repair will be undertaken. Resurfacing will provide durable and relatively maintenance-free roads for five years. This activity will provide employment for 140 unskilled and 25 skilled workers.

In addition to the OFDA-financed road rehabilitation activities and the work proposed under this project, the USAID is considering rehabilitation of the 10 mile road segment between Gouyave and Sauteurs on Grenada's west coast. This project will tie in to other west coast rehabilitation work connecting St. George's and Gouyave, which is being financed by the Caribbean Development Bank. Another major segment of the primary coastal road system, between St. George's and Grenville, is under reconstruction with financing provided by the European Development Fund, and a final segment, between Grenville and Sauteurs, remains to be financed.

Associated with this project, but not receiving project financing, is the start-up and initial operation of the MOC's new, but unused, emulsion plan located at Grand Mal. The plant, which is of Italian origin and partially financed by an OPEC grant, has been sitting idle since its installation two years ago because of lack of full financing. Commissioning this plant will provide an economical and reliable source of emulsified asphalt, a product used by the MOC instead of cut-back asphalt during the six-month rainy season. Depending on the road surface to be repaired, weather conditions and the type of aggregate, emulsified asphalt produced by the Grand Mal plant or cut-back asphalt (already available in bulk on the island) will be used as binders for the patching and rehabilitation components of the project. Emulsified asphalt uses water as a thinning agent, while cut-back asphalt uses naptha or light oil. Emulsified asphalt thus has better adhesion in wet weather.

Financing for the emulsion plant has been provided through the GOG capital budget, which, in turn, has been supported by AID under the US$5 million Economic Stabilization Grant. Under this Grant U.S.$1.1 million has been allocated by the GOG to agreed-upon items in their capital budget. The EC equivalent of U.S.$71,160 already has been allocated to the emulsion plant to meet initial operation costs estimated to total U.S.$113,630. Start up is anticipated in about six weeks.

III. Cost Estimates

The estimated total cost of all project activities is U.S.$525,600; of this amount AID will be providing U.S.$500,000 for labor, materials, equipment and other direct costs associated with the island-wide patching program and the rehabilitation of the two road segments in the St. George's area. The GOG will be providing the EC equivalent of US$25,600 in the way of salaries, overhead and travelling allowances for project management personnel. A summary financial plan follows:

	AID ($ U.S.)	GOG ($ U.S.)	TOTAL ($ U.S.)
1. Island-wide Road Patching Program			
Labor/Management	59,156	13,990	73,146
Materials	101,116	-	101,116
Equipment (includes fuel)	83,177	-	83,177
Miscellaneous	12,043	-	12,043
	255,492	13,990	269,482
2. Rehabilitation of St. George's Roads (2.0m)			
Labor/Management	49,090	11,610	60,700
Materials	92,684	-	92,684
Equipment (includes fuel)	91,090	-	91,090
Miscellaneous	11,644	-	11,644
	244,508	11,610	256,118
Total	500,000	25,600	525,600

Procurement of all goods and services required will be from local sources and paid for in E.C. dollars. As noted in the technical analysis, if the emulsion plant is not commissioned as planned by the GOG, it could be necessary to procure some quantities of emulsified asphalt from the United States. While this eventuality is unlikely, the Project authorization provides for procurement from the U.S. and Grenada.

IV. Implementation and Monitoring Plan

Road repair work can begin immediately after the signing of the Project agreement. Sufficient stocks of material are on hand to begin both the patching and rehabilitation activities. Rehabilitation of the two St. George's area road segments will require about 18 weeks and all project activities should be completed within six months.

All patching and rehabilitation activities will be managed by the MOC's Road Division, headed by Chief Technical Officer, R. A. Phillips. This Management Organization, shown in Annex I, has performed satisfactorily on the previous road repair programs, and no particular difficulties are expected for this project. Road repair activities will be paid for using an advance/liquidation system for costs incurred in accordance with the approved financial plan. Vouchers will be submitted monthly. Brief reports, summarizing progress, problems and financial status, will also be submitted monthly.

The AID/Grenada Engineer will monitor all project activities and certify payments. RDO/C staff, based in Bridgetown, will provide back-stopping support as necessary.

V. Assessment and Evaluation

A mid-summer assessment of the social and employment impact of project activities will provide data for the development of follow-on road repair projects. The assessment will examine the composition of the unskilled work gangs, wage rates, and alternative employment possibilities. A final evaluation is scheduled for December 1984.

VI. Summaries of Analyses

A. Technical Analysis

1. Island-wide Road Patching Program

The technical aspects of the island-wide road patching program will be largely the same as under OFDA-financed projects. Annex J summaries the various segments which total 28.7 miles.

MOC practice for patching potholes is as follows:

deteriorated areas or holes are squared, and debris and loose material are removed so that the base or ground is exposed;

a tack coat of liquid asphalt is applied to the cleaned surface;

crushed rock (1-1/2 inches or less) is placed in layers not exceeding three inches, with a penetration binder in between the layers, and compacted. (Under certain very wet conditions a lean concrete mixture is used to seal the subgrade up to 1-1/2 inches from the top.) The last 1-1/2 inches is filled with cold mixed asphalt.

the compacted rock surface is treated with a liquid asphalt binder followed by 1/2 inch layer of fines (1/4 inch maximum) rolled again and finally sealed

During the dry season, the liquid asphalt used is RC-250. In the wet season RS-1 (85/100 penetration grade) water-base asphalt emulsion is utilized in order to obtain better adhesion to the moist aggregate. In both instances application is by hand. MOC personnel carefully plan the use of the two types of asphalt to coincide primarily with anticipated moisture conditions.

2. Rehabilitation of St. George's Roads

Because of the traffic volume on the two road segments and their present state of deterioration, their rehabilitation represents a higher level of improvement than was undertaken in the OFDA-financed projects, but one that is felt to be justified and appropriate. Rehabilitation of these segments involves two stages. The first stage is essentially the same process described for the island-wide patching program, excepting the surface fines and the seal coat. In addition, a leveling course will be applied, where necessary, in order to even the surface and remove major depressions. The process consists of an application of tack coat, followed by crushed stone (1 inch maximum) then rolled. The second stage consists of adding to the road surface about 3

inches of structural section by means of (i) addition of two inches of base coarse aggregate (1-1/4 inches to 1/4 inches grading) and rolling, (ii) application of a penetration coat, (iii) adding 3/4 inches crushed stone (1/2 inches or less) and rolling, (iv) application of a seal coat and (v) adding of 1/4 inches filler fines and rolling.

3. Source of Material

RC-250 liquid asphalt is locally available from the Shell Oil Company. Emulsified asphalt (RS-1) will be obtained from the new, but unused, emulsion plant located at Grand Mal scheduled to begin operation soon. (See Section II). Local production is estimated at about EC$150 per drum which contrasts with an imported cost of about EC$203 per drum. The large cost difference between local and imported emulsion is due primarily to the extra cost of transportion.

The commissioning of the emulsion plant is being financed by the GOG and should be accomplished in about six weeks. The services of a technician from the Italian manufacturer are required, and 1000 drums of 85/100 penetration asphalt (the main raw material imput) have already been ordered from stores in Miami with expected delivery time of one month. All other materials are on hand or immediately available from local suppliers. In the unlikely event that the emulsion plant does not get into production as anticipated, it would be necessary for the MOC to import emulsified asphalt (RS-1). Past sources for this product, which is readily available, include the United States.

Aggregates for both components of this project will come from two sources:

(1) The Mt. Hartman crusher produces the high quality aggregates used in construction of the Point Salines Airport. Although the crusher is not currently in operation, a substantial amount of larger aggregates (3/4 inches and above) has been stockpiled and is available. When crushing operations recommence in July for the airport project, additional supplies of this aggregate should become available as runway paving will use primarily the fines.

(2) The Queen's Park quarry near St. George's produces a reddish volcanic cinder which requires slightly more asphalt for a suitable surfacing mixture. This material is in abundant supply, is relatively inexpensive, and has historically provided satisfactory results in road maintenance applications.

The MOC will utilize materials from both these sources in appropriate situations. Specifically the Mt. Hartman aggregates will be used to replace base failures. The volcanic cinder material will be used to provide a dense seal and wearing course. In view of the relatively small amount of

aggregates that will be required in total, the reasonably assured availability of larger size aggregate from the U.S. contractors crushing operations at the Mt. Hartman Quarry, and the abundant supply of Queens Park cinder, there is no serious doubt as to the availability of aggregates for construction.

4. Sources of Equipment

All road maintenance equipment is owned, operated and maintained by the Central Garage Unit, and it is rented to the MOC Roads Division on a fully operated basis. Equipment operators, drivers, and maintenance/repair technicians are employed by the Central Garage. The Canadian International Development Association (CIDA), through a $2.5 million assistance program, is assisting the Central Garage to upgrade the quality and condition of its equipment and to improve its operation and management capabilities.

The MOC has identified the following pieces of equipment which will be required in varying amounts on the various road segments scheduled for patching or rehabilitation.

5 ton tipper trucks
8-10 ton rollers
4 ton rollers
vibrating rollers
2 cu. yd. multicars
1 cu. yd. dumpers
1-1/2 cu. yd. front-end loader.

As a condition precedent to initial disbursement, the GOG will be requested to submit a breakdown of equipment rental charges for US/AID review. Equipment costs are noted for each road segment in Annexes F and G.

5. Road Selection Criteria

Selection of road segments identified for patching or rehabilitation has been made by the MOC on the basis of the following criteria: labor distribution (i.e., areas of most severe unemployment), impact on agricultural production, distribution among parishes, traffic density, and the state of deterioration. Selection criteria for the OFDA-financed projects was handled in the same manner and proved satisfactory.

6. Contracting

Alternatives to having the MOC undertake the work were considered. However, there are no private contractors on the island with the proven capacity to undertake either component of this Project. The total amount of contracting activities is considered too small to interest an external contractor.

7. Gray Amendment

As there will be no technical services procured, there will be no opportunity to use the services of small, disadvantaged or women-owned firms, or for a small business set-aside as an 8(A) award. However, considering the large number of women who will be involved in construction, the spirit of the Gray Amendment will be met.

B. Economic Analysis

Internal rates of return have not been computed for the proposed project. Sufficient economic data do not exist and the effort and cost required to gather such data for a relatively small project would not be justified. Moreover, any time lost in implementing the project by collecting data would severely disrupt the momentum established by the OFDA-financed road repair projects.

Economic benefits to Grenada from the proposed project may be extrapolated from similar activities undertaken in St. Lucia under the Productive Infrastructure Rehabilitation Project (PIR). St. Lucia and Grenada have similar open economies. Both are primarily agricultural, tourism is a significant source of foreign exchange and each states manufacturing sector is still in an early stage of development.

For the PIR, most calculated rates of return on road segments for St. Lucia were roughly 20 percent, auguring well for the economic viability of this project. Road rehabilitation directly benefits an economy through the payment of wages to unemployed or under-employed labor, both skilled and unskilled. In connection with the PIR, calculations were made in St. Lucia of the extent of the benefit of wages paid to road workers to the economy as a whole. The study examined the labor components of seven major elements of road rehabilitation (equipment hire, haulage, materials, labor subcontractors, surface dressing, workshop and overhead) and concluded that approximately 50% of rehabilitation costs can be considered direct benefits. It is likely that similar benefits will result for Grenada and that a significant amount of the proposed project costs will be added to the GDP of Grenada.

One of the objectives of the proposed project is to provide jobs. Open unemployment rates exceed 30 percent and significant underemployment prevails. The proposed project will provide jobs for up to six months for some 360 unskilled and 25 semi-skilled male and female workers. Road crews will be recruited in each of the parishes and on Carriacou to work on road segments in their districts. If recruitment follows the pattern of the OFDA-financed road repair projects, more women will be employed than men. The low wage (E.C.$10 or 12 per day depending on one's duties) and the perception of low social status attached to road work have made road construction work less attractive to men. However, women find the wage scale from road work to better than alternative employment.

The most significant benefits from this project are user cost savings, production gains, and employment generation. In light of (a) the road segments selected, (b) their badly deteriorated state, (c) current traffic volumes including the number and mix of vehicles, (d) time savings for drivers, passengers and cargo and (e) the high cost of vehicle maintenance, a calculation of user costs savings would be expected to show substantial benefits. A number of the road segments to be improved are in the heavily travelled St. George's area, serving large numbers of daily commuters.

The proposed project is expected to have significant positive impact on output in the productive sectors of agriculture, light industry, and tourism. Especially significant will be the anticipated benefits for the agricultural sector which is by far the country's most important. The most important step in improving the quantity of export-quality bananas is to improve the island's road system, as most of the road segments designated for repair are conduits for the movement of bananas, and transport losses from bruised bananas are about 25 percent. Other production benefits should result from decreased transit times for the movement of nutmeg and cocoa, as well as bananas, to the island's only deep-water port at St. George's.

Tourism also should receive a significant boost from better roads. Inadequate facilities, which had been considered a major constraint to tourism development, will be improved by the anticipated October 1984 opening of the Point Salines airport and the proposed construction of 550 tourist class hotel rooms. Finally, an improved road network also will assist in attracting new manufacturing concerns.

Non-specific studies of economic benefits derived from road maintenance activities have been undertaken by several development institutions including the IBRD and the UNDP. These studies assert that the economic benefits related to road maintenance activities are usually higher than those related to new-road construction. The island has an adequate, although neglected, road network. Given the mountainous topography of Grenada, new construction would be very expensive on an absolute per mile basis. The difference in maintenance costs and construction costs derived from site inspections and MOC records substantiate this contention.

While a good portion of project activities involve patching, one-mile segments of both the Grand Etang and Springs Calivingny roads will be rehabilitated. The position of these roads suggests that their rehabilitation will be a viable economic proposition. Both roads are heavily traveled and in need of extensive repair. The Grand Etang road, the major across-island highway, connects the capital city of St. George's and the Pearls airport through high-yielding farms. The Springs Calivigny Road, is a major artery in the southeast, linking St. George's with the East Coast road which is under construction.

C. Financial Analysis

Estimated costs for the road patching component of the project have been compared with those incurred under the OFDA-financed activities and are considered equivalent and reasonable. The major differences are in the cost of broken stones and gravel. Broken stone is now estimated at E.C.$50 per cubic yard, the maximum price the MOC believes it would have to pay if it were forced to purchase stone from the U.S. contractor who will be producing aggregate for Point Salines Airport paving. In all likelihood the MOC can obtain broken stone for approximately E.C.$35 to E.C.$40 per cubic yard. Another difference in cost is seen in the price of gravel - now estimated at E.C.$15 per cubic yard, rather than E.C.$8 per cubic yard in the OFDA-financed projects. This cost increase reflects the use of a superior quality washed gravel that has now become available.

Asphalt for both project components is estimated at E.C.$203 per drum. Estimated costs of producing emulsified asphalt are about E.C.$150 per drum; so some cost savings should result.

Equipment rental costs have been established by the Central Garage Unit. As the equipment rental charges have not yet been provided, a condition precedent to financing will require the GOG to submit to AID the rental charges of mechanical equipment, and to disclose all operating and maintenance costs of the equipment. USAID Grenada will review the GOG report in order to assure that the the costs are reasonable.

Cost estimates for the two one mile road segments planned for rehabilitation have been analyzed together with the quantities of materials, equipment and labor. Cost estimates as well as quantities are considered reasonable.

D. Social Soundness

The social impact of the proposed project will be positive because it will address unemployment which is Grenada's most serious social problem. Roads will be repaired in each parish and on the island of Carriacou; thus the social benefits will be widespread. Communication will be improved between villages, and farmers will have better access to markets. Presently, the poor condition of the roads is a deterrent to agricultural production and marketing.

Recruitment of women to work on roads is compatible with traditional work patterns. Women traditionally work outside the home; over 50% of the working population are women, and 40% of all women are in the labor force. As many as 50% of all households are headed by women who are the primary providers for households averaging five to six persons. For many women, particularly those in rural areas of Grenada, road work is an important source of income. The proposed project will provide continuity in work patterns and needed income.

E. Institutional Analysis

The GOG institution responsible for implementation of the proposed project is the Roads Division of the MOC, which is responsible for the administration, operation and maintenance of approximately 325 miles of the country's road network. The organization plan of the Roads Division, which is headed by the Chief Technical Officer who reports to the MOC Permanent Secretary, is shown in Annex I. The Roads Division includes three Engineering Assistants, each with specific geographical area responsibilities, and eight Road Officers, who serve as construction and maintenance foremen.

Although none of the key personnel in the Division has had any formal engineering training, individually and collectively they are competent and experienced in road construction/maintenance techniques which are time-tested and appropriate for the economic and social conditions in Grenada. As with the previous OFDA-financed road repair projects, this project will rely heavily on these same labor-intensive construction methods.

All road maintenance equipment is owned and maintained by the Central Garage Unit, and is rented to the Roads Division on a fully-operated basis. Equipment currently available includes models from the United States, Canada, Britain, Japan, East Germany, and the Soviet Union. While most of the equipment is in poor condition, the Canadian International Development Agency (CIDA) is assisting in the reorganization and improvement of Central Garage operations. Three technical advisors have been assigned, and objectives are to upgrade the quality and condition of the equipment, place the Garage on a fiscally sound basis, and develop a continuing personnel training program. The $2.5 million CIDA program is expected to continue through 1986.

F. Environmental Analysis

The Initial Environmental Examination (IEE) [See Annex D] recommended a Negative Determination. The project consists of rehabilitation activities rather than new construction, and no long-term negative environmental impacts are expected. Environmental problems associated with the construction work itself will be contained and of short duration.

The IEE was approved with the understanding that coral reefs will not be used as a source of road patching aggregate.

VII. Condition Precedent

As noted in Section VA, the Grantee has not yet furnished rate schedules to AID for equipment to be leased from the Central Garage Unit. Accordingly, as a condition precedent to disbursement the Grantee shall furnish to AID rate schedules for the mechanical equipment to be leased from the Central Garage Unit, such schedules to disclose all components of operational and maintenance costs.

VZCZCGR0640
OO RUEHGR
DE RUEHC #2022/01 0810522
ZNR UUUUU ZZH
O R 210309Z MAR 84
FM SECSTATE WASHDC
TO RUEHGR/AMEMBASSY GRENADA IMMEDIATE 1969
INFO RUEHWN/AMEMBASSY BRIDGETOWN 4374
BT
UNCLAS SECTION 01 OF 02 STATE 082022

AIDAC

E.O. 12356: N/A
TAG: N/A
SUBJECT: GRENADA EMERGENCY ROAD REPAIR PROGRAM

REFERENCE: GRENADA 706

1. THE BUREAU HAS REVIEWED SUBJECT REFTEL PID AND APPROVED THE DEVELOPMENT OF AN ABBREVIATED PROJECT PAPER FOR SUBMISSION TO RDO/C BRIDGETOWN FOR REVIEW AND APPROVAL. IN ACCORDANCE WITH HANDBOOK 3, CHAPTER 4 AN ABBREVIATED PP MAY BE SUBMITTED FOR SMALL PROJECTS OF DOLS 500,000 OR LESS, ALTHOUGH ESSENTIAL SUBSTANTIVE REQUIREMENTS MUST STILL BE MET. THE ABBREVIATED PP SHOULD INCLUDE THE FOLLOWING, WHICH COULD BE ADEQUATELY ADDRESSED IN A DOCUMENT OF SOME 8-12 SINGLE-SPACED PAGES.

--A. PROJECT DATA SHEET

--B. DRAFT PROJECT AUTHORIZATION

--C. PROJECT RATIONALE AND DESCRIPTION. THIS SHOULD INCLUDE A BRIEF SUMMARY OF THE PREVIOUS OFDA-FINANCED ROAD REPAIR ACTIVITIES, THE RATIONALE FOR THE IMMEDIATE PROJECT, ACTIVITIES THAT WILL BE FINANCED, AND RELATIONSHIP TO UPCOMING DOLS 4.5 MILLION ROAD PROGRAM.

--D. COST ESTIMATES. A SUMMARY FINANCIAL PLAN SHOULD INCLUDE COST ESTIMATES FOR IDENTIFIED COMMODITIES, MATERIALS AND EQUIPMENT TO BE PURCHASED, AS WELL ESTIMATES FOR PERSONNEL OR OTHER SUPPORT COSTS.

--E. IMPLEMENTATION AND MONITORING PLAN. THE PP SHOULD SUMMARIZE THE PROPOSED SCHEDULE OF ACTIVITIES AND HOW THEY WILL BE CARRIED OUT. ALTHOUGH COUNTERPART CONTRIBUTION IS NOT REQUIRED FOR THIS PROJECT, THE PP SHOULD DESCRIBE ANY CONTRIBUTION OF PERSONNEL, EQUIPMENT, ETC. BY THE MINISTRY OF CONSTRUCTION (MOC). THE ENTITY OR PERSON RESPONSIBLE FOR PROJECT MANAGEMENT, MONITORING

--F. SUMMARIES OF ANALYSES IN LIEU OF FULL PROJECT ANALYSES ROUTINELY SUBMITTED AS ANNEXES TO THE PP THE MISSION SHOULD USE THIS SECTION TO PRESENT THE FOLLOWING ABBREVIATED ANALYSES

-- (1) TECHNICAL THE PP SHOULD JUSTIFY THE SELECTION OF PROJECT ELEMENTS AND PROVIDE A COMPLETE DESCRIPTION OF THE EQUIPMENT, MATERIALS, PERSONNEL THAT WILL BE FINANCED FOR EACH ELEMENT A DESCRIPTION OF MAJOR OUTPUTS INCLUDING ROADS TO BE REPAIRED AND/OR MILEAGE OF REHABILITATION SHOULD ALSO BE PROVIDED

-- (2) FINANCIAL/ECONOMIC THE PP SHOULD SPECIFY FINANCIAL/ECONOMIC ADVANTAGES OF PROCEEDING WITH AN EMERGENCY ROAD REPAIR PROGRAM AT THIS TIME WITH SPECIAL REFERENCE TO EMPLOYMENT IMPACT COST-EFFECTIVENESS OF PROPOSED APPROACH SHOULD ALSO BE DEMONSTRATED BY ANALYXJNG COMPARATIVE COSTS/KM OF THIS AND ANY ALTERNATIVES WHICH MAY HAVE BEEN CONSIDERED

-- (3) INSTITUTIONAL ANALYSIS A BRIEF STATEMENT OF THE INSTITUTIONAL CAPACITY OF THE MOC EXPERIENCED UNDER PREVIOUS OFDA-FINANCED ROAD REPAIR ACTIVITIES SHOULD BE PRESENTED AND THE MISSION'S ASSESSMENT OF THE MINISTRY'S CAPABILITY TO PROVIDE THE SUPPORT NECESSARY TO CARRY OUT THE PROPOSED PROJECT

-- (4) ENVIRONMENTAL AN IEE IS REQUIRED THIS SHOULD BE SUBMITTED TO AID/W AS SOON AS POSSIBLE SO AS NOT TO DELAY THE REVIEW AND APPROVAL PROCESS ONCE THE PP IS

SUBMITTED TO RDO/C

--G. CONDITIONS. ANY CONDITIONS, COVENANTS OR WAIVERS THAT WILL BE REQUIRED SHOULD BE DESCRIBED

--H. ANNEXES. THE FOLLOWING ANNEXES ARE THE MINIMUM REQUIRED ALTHOUGH THE MISSION MAY WISH TO SUBMIT OTHERS

-- (1) PID APPROVAL MESSAGE

-- (2) STATUTORY CHECKLIST IF THE MISSION HAS ALREADY SUBMITTED A COUNTRY CHECKLIST FOR AN EARLIER FY 84 PROJECT THEN ONLY A PROJECT CHECKLIST IS REQUIRED

-- (3) GRANTEE (GOG) REQUEST FOR ASSISTANCE

2. CONFORMANCE WITH PROVISIONS OF THE GRAY AMENDMENT PRIOR TO AUTHORIZATION OF THIS PROJECT THE PRINCIPAL FIELD OFFICER MUST ASSURE THAT CONSIDERATION HAS BEEN GIVEN IN THE CONTRACT PLANS TO UTILIZING THE SERVICES OF SMALL, DISADVANTAGED AND WOMEN-OWNED FIRMS FOR TECHNICAL SERVICES REQUIRED BY THE PROJECT IF NO U.S. GOODS OR

BT
#2022

NNNN X

VZCZCGR0641
OO RUEHGR
DE RUEHC #2022/02 0810522
ZNR UUUUU ZZH
O R 210309Z MAR 84
FM SECSTATE WASHDC
TO RUEHGR/AMEMBASSY GRENADA IMMEDIATE 1970
INFO RUEHWN/AMEMBASSY BRIDGETOWN 4375
BT
UNCLAS SECTION 02 OF 02 STATE 082022

AIDAC

SERVICES WILL BE PROCURED UNDER THE PROJECT OR IF NO CONTRACT REQUIREMENTS ARE DETERMINED TO BE APPROPRIATE FOR A SMALL BUSINESS SET-ASIDE OR AN 8(A) AWARD THE PROJECT PAPER SHOULD SO INDICATE

3. MISSION IS REMINDED THAT A PROJECT NUMBER HAS NOT YET BEEN RECEIVED FOR THIS PROJECT PLEASE ADVISE AS SOON AS NUMBERS FOR GRENADA PROJECTS HAVE BEEN ASSIGNED SHULTZ
BT
#2022

Listed below are statutory criteria applicable generally to projects under the FAA and project criteria applicable to individual funding sources Development Assistance (with a subcategory for criteria applicable only to loans); and Economic Support Funds

A. GENERAL CRITERIA FOR PROJECT

1.	FY 1982 Apropriation Act Sec. 523; FAA Sec. 634A; Sec. 653(b)	
	(a) Describe how authorizing and appropriations committees of Senate and House have been or will be notified concerning the project;	(a) Congressional notification has been forwarded to Congress
	(b) is assistance within (Operational Year Budget) country or international organization allocation reported to Congress (or not more than $1 million over that amount)?	(b) Yes (not more than $1 million)
2.	FAA Sec. 611(a)(1). Prior to obligation in excess of $100,000, will there be (a) engineering financial or other plans necessary to carry out the assistance and (b) a reasonably firm estimate of the cost to the U.S of the assistance?	(a) Yes (b) Yes
3.	FAA Sec. 611(a)(2) If further legislative action is required within recipient country, what is basis for reasonable expectation that such action will be completed in time to permit orderly accomplishment of purpose of the assistance?	No further legislation action is required
4.	FAA Sec. 611(b); FY 1982 Appropriation Act Sec. 501. If for water or water-related land	N/A

	resource construction, has project met the standards and criteria as set forth in the Principles and Standards for Planning Water and Related Land Resources, dated October 25, 1973?	
5.	FAA Sec. 611(e). If project is capital assistance (e.g., construction), and all U.S. assistance for it will exceed $1 million, has Mission Director certified and Regional Assistant Administrator taken into consideration the country's capability effectively to maintain and utilize the project?	N/A
6.	FAA Sec. 209. Is project susceptible to execution as part of regional or multilateral project? If so, why is project not so executed? Information and conclusion whether assistance will encourage regional development programs.	The project is not appropriate for regional execution
7.	FAA Sec. 601(a). Information and conclusions whether project will encourage efforts of the country to: (a) increase the flow of international trade; (b) foster private initiative and competition; and (c) encourage development and use of cooperatives, and credit unions, and savings and loan associations; (d) discourage monopolistic practices; (e) improve technical efficiency of industry, agriculture and commerce; and (f)	The Project will rehabilitate key sections of the country's national road system and, as such, will directly support a, b, d, and e.

	strengthen free labor unions.	
8.	FAA Sec. 601(b). Information and conclusions on how project will encourage U.S. private trade and investment abroad and encourage private U.S. participation in foreign assistance programs (including use of private trade channels and the services of U.S. private enterprise).	U.S. goods and services will be used in the project as appropriate.
9.	FAA Sec. 612(b), 636(h); FY 1982 Appropriation Act Sec. 507. Describe steps 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 in lieu of dollars.	The host country is contributing staff, equipment, and related support for the project
10.	FAA Sec. 612(d). Does the U.S. own excess foreign currency of the country and, if so, what arrangements have been made for its release?	No.
11.	FAA Sec. 601(e). Will the project utilize competitive selection procedures for the awarding of contracts, except where applicable procurement rules allow otherwise	Yes.
12.	FY 1982 Appropriation Act Sec. 521. If assistance is for the production of any commodity for export, is the commodity likely to be in surplus on world markets at the time the	N/A

resulting productive capacity becomes operative, and is such assistance likely to cause substantial injury to U.S. producers of the same, similar or competing commodity?

13. FAA 118(c) and (d). Does the project take into account the impact on the environment and natural resources? If the project or program will significantly affect the global commons or the U.S. environment, has an environmental impact statement been prepared? If the project or program will significantly affect the environment of a foreign country, has an environmental assessment been prepared? Does the project or program take into consideration the problem of the destruction of tropical forests?

An Environmental Impact Identification and Evaluation was performed with Negative Determination

14. FAA 121(d). If a Sahel project, has a determination been made that the host government has an adequate system for accounting for and controlling receipt and expenditure of project funds (dollars or local currency generated therefrom)

N/A

B. FUNDING CRITERIA FOR PROJECT

1. Development Assistance Project Criteria

N/A

a. FAA Sec. 102(b), 111, 113, 281(a). Extent to which activity will (a) effectively involve the poor in development, by

extending access to economy at local level, increasing labor-intensive production and the use of appropriate technology, spreading investment out from cities to small towns and rural areas, and insuring wide participation of the poor in the benefits of development on a sustained basis, using the appropriate U.S. institutions; (b) help develop cooperatives, especially by technical assistance, to assist rural and urban poor to help themselves toward better life, and otherwise encourage democratic private and local governmental institutions; (c) support the self-help efforts of developing countries; (d) promote the participation of women in the national economies of developing countries and the improvement of women's status; and (e) utilize and encourage regional cooperation by developing countries?

b. FAA Sec. 103, 103A 104, 105, 106. Does the project fit the criteria for the type of funds (functional account) being used? N/A

c. FAA Sec. 107. Is emphasis on use of appropriate technology (relatively smaller, cost-saving, labor-using technologies that are generally most appropriate for the small farms, small businesses, N/A

22

and small incomes of the poor)?	
d. FAA Sec. 110(a). Will the recipient country provide at least 25% of the costs of the program, project, or activity with respect to which the assistance is to be furnished (or is the latter cost-sharing requirement being waived for a "relatively least developed" country)?	N/A
e. FAA Sec. 110(b). Will grant capital assistance be disbursed for project over more than 3 years? If so, has justification satisfactory to Congress been made, and efforts for other financing, or is the recipient country "relatively least developed"?	N/A
f. FAA Sec. 122(b). Does the activity give reasonable promise of contributing to the development of economic resources, or to the increase of productive capacities and self-sustaining economic growth?	N/A
g. FAA Sec. 281 (b). Describe extent to which program recognizes the particular needs, desires, and capacities of the people of the country; utilizes the country's intellectual resources to encourage institutional development; and supports civil education and training in skills required for effective	N/A

participation in governmental processes essential to self-government.

2. Development Assistance Project Criteria (loans Only) — N/A

a. FAA Sec. 122(b). Information and conclusion on capacity of the country to repay the loan, at a reasonable rate of interest.

b. FAA Sec. 620(d). If assistance is for any productive enterprise which will compete with U.S. enterprises, is there an agreement by the 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?

c. ISDCA of 1981, Sec. 724 (c) and (d). If for Nicaragua, does the loan agreement require that the funds be used to the maximum extent possible for the private sector? Does the project provide for monitoring under FAA Sec. 624(g)?

3. Project Criteria Solely for Economic Support Fund

a. FAA Sec. 531(a). Will this assistance promote economic or political stability? To the extent possible, does it reflect the policy directions of FAA Section 102? — Yes.

b. FAA Sec. 531(c). Will assistance under this chapter be used for military, or paramilitary activities? — No.

ANNEX C

Ref. No.
In replying the above Number and date of this letter should be quoted

MINISTRY OF CONSTRUCTION AND PUBLIC UTILITIES,
ST. GEORGE'S
GRENADA, W.I.

APRIL 24, 1984

Mr. James W. Habron
AID Representative (Grenada)
Carenage
ST. GEORGE'S

Dear Mr. Habron:

This letter is to request formally grant assistance for the following activities:

(1) Continuation of the very successful island-wide road patching activities begun under OFDA financing. Patching activities are proposed to be undertaken in each of the six parishes and on the island of Carriacou.

(2) Rehabilitation of approximately one mile of the Springs/Calivigny road between Paddock junction and Cafe junction and about the same distance on the Grand Etang road between Mt. Gay/Tempe junction and Beaulieu.

This assistance will permit us to extend the patching program to additional sections of heavily travelled primary and secondary roads that are in serious disrepair and rehabilitate two vital links in the vicinity of St. George's that have deteriorated to the point where routine maintenance activities are no longer effective.

The economic benefits from these activities have not been calculated, but they should be substantial. There is little question that Grenada's inadequate road infrastructure is hampering our development.

We anticipate your kind response.

Yours sincerely

R.A. PHILLIP
CHIEF TECHNICAL OFFICER

RAP/jb

25

INITIAL ENVIRONMENTAL EXAMINATION

Project Location: Grenada

Project Title: Grenada Emergency Road Repair Program

Funding: FY 84, ESF $500,000

Life of Project:

IEE Prepared by:

Chester A. Teaford
General Engineer

Date:

Recommended Threshold Decision: Negative Determination

Concurrence:

William B. Wheeler
Director
USAID, Regional Development Office/Caribbean

Date:

Chief Environmental Officer, LAC Decision:

Recommendation Approved J. Hester, Chief Environ. Officer, AID/LAC (State 131363) Date 3 May 1984

Recommendation Disapproved _____ Date

Identification and Evaluation

Impact Identification and Evaluation - The following symbols used:

N - No environmental imapct
L - Little environmental impact
M - Moderate environmental impact
H - High environmental impact
U - Unknown environmental impact

LAND USE

	N	L	M	H	U
1. Does the project change the character of the land through:					
a. Erosion	X				
b. Excavation and/or grading		X			
c. Change in animal or plant habitats	X				
d. Modification of land use	X				
e. Increasing concentration/population	X				
2. Potential natural disasters	X				
3. Unplanned roadside activity (e.g. overgrazing)	X				
4. Other factors N/A					

WATER RELATED IMPACTS

1. Does the project change the quality of water through:					
a. Drainage pattern	X				
b. Modification of flood patterns	X				
c. Water table change	X				
d. Salinity modification	X				
e. Pollution of adjacent waters	X				
f. Induce sedimentation of adjacent waters	X				
g. Ecological balance	X				
h. Other factors N/A					

1. Does the project induce atmospheric changes through:				
a. Pollution (during construction e.g. dust		X		
b. Pollution (vehicle generated e.g. dust, exhaust)		X		
c. Air pollution (cargo generated e.g. chemical, asbestos, phosphates, etc.)	X			
d. Noise pollution		X		
e. Other factors N/A				
NATURAL RESOURCES				
1. Does the project change the natural resource balance through:				
a. Planned and unplanned exploitation	X			
b. Utilization of limited resources for construction		X		
c. Other factors N/A				
CULTURAL				
1. Does the project affect the culture through				
a. Changes in traditional cultural values	X			
b. Alter physical symbols	X			
c. Alter traditional modes of transportation	X			
d. Alter traditional living patterns through increased mobility changes in family structure	X			
e. Other factors N/A				

	N	L	M	H	U
SOCIOECONOMIC					
1. Does the project affect socioeconomic conditions through:					
a. Changes in ownership/land values/ tenure	X				
b. Changes in market patterns (local, natural, regional	X				
c. Increase demand of services (e.g. public and private automotive, water supplies, health, etc.)	X				
d. Changes in transportation pattern (cost, cargo)	X				
e. Changes in economic/employment patterns			X		
f. Other factors N/A					
HEALTH					
1. Does the project affect health standards through:					
a. The creation of stagnant water which may result in increased disease vectors	X				
b. Increased carrier mobility (human and/or animal)	X				
c. Dietary changes (introduction of new food products)	X				
d. Increased traffic accidents (human and animal)		X			
e. Other factors N/A					
GENERAL					
1. Does the project have:					
a. International impacts	X				

ANNEX E

COST OF COMMISSIONING EMULSION PLANT

		US$
1.	85/100 Penetration Grade Asphalt (1000 drums, CIF St. George's)	75,000
2.	Kerosene (2,598 gal.)	5,643.
3.	Diesel (1000 gal.)	2,462
4.	Emulsifier (1.3 tonnes)	4,185
5.	Hydrochloric Acid (1.3 tonnes)	1,225.
6.	Calcium Carbonate (0.33 tonnes)	577.
7.	Miscellaneous equipment, repairs and insurance (include installation of kerosene plant, transportation and installation of spare parts.)	6,503.
8.	Housing/living allowance for Italian Technician	1,241.
9.	Working capital (include utilities, miscellaneous labor/transport.	16,791.
		US$113,630.

Materials on hand.

Note: This estimate will cover commissioning of the plant and initial production of 1650 drums of emulsified asphalt.

MINISTRY OF CONSTRUCTION, HOUSING ETC.

U.S. AID ROAD PROGRAMME

ROADS SELECTED FOR PRIORITY REHABILITATION UNDER U.S.A.I.D. ROAD IMPROVEMENT PROGRAMME

SPRING-CALIVIGNY ROAD - 1 Mile - 16' wide
(PADDOCK JUNCTION TO CAFE' JUNCTION)

6 crews @ $3,600 per 18 weeks	$ 64,800.00
Levelling course 1" 261 cu.yds	13,050.00
*Penetration 0.3 G.S.Y. - 2835 or 63 drums @ $203	12,789.00
2" base course broken stone - 521 c.y. @ $50	26,050.00
Gravel wearing course 1" - 261 c.y. @ $15	3,915.00
*Penetration total 1.5 G.S.Y. - 14,080 gals - 313 drums @ $203	63,539.00
150 sacks cement @ $20 per sack	3,000.00
Rental of equipment	105,660.00
Fuel	14,580.00
5% Miscellaneous	15,369.00
	$ 322,752.00

* Part cost to be borne by Emulsion when it comes on stream.

MINISTRY OF CONSTRUCTION, HOUSING ETC.

U.S.A.I.D. ROAD PROGRAMME

ROADS SELECTED FOR PRIORITY REHABILITATION UNDER U.S.A.I.D. ROAD IMPROVEMENT PROGRAMME

GRAND ETANG ROAD - 1 Mile - 16' wide
(MT. GAY-TEMPE JUNCTION TO BEAULIEU)

6 crews @ $3,600 per 18 weeks	$ 64,800.00
Levelling course 1" 261 c.y.	13,050.00
*Penetration 0.3 G.S.Y. - 2835 or 63 drums @ $203	12,789.00
2" base course broken stone - 521 c.y. @ $50	26,050.00
Gravel wearing course 1" - 261 c.y. @ $15	3,915.00
*Penetration total 1.5 G.S.Y. - 14,080 gals - 313 drums @ $203	63,539.00
150 sacks cement @ $20.00 per sack	3,000.00
Rental of equipment	105,660.00
Fuel	14,580.00
5% Miscellaneous	15,369.00
	322,752.00

*Part cost to be borne by Emulsion when it comes on stream.

MINISTRY OF CONSTRUCTION, HOUSING ETC.

U.S.A.I.D. ROAD PROGRAMME

ROADS SELECTED FOR PRIORITY REPAIRS UNDER U.S.A.I.D. ROAD IMPROVEMENT PROGRAMME

ST. JOHN'S/ST. MARK'S

ST. JOHN'S ROAD & BELVIDERE ROAD - 2.0 Miles

2 crews @ $1,200 per week for 12 weeks	14,400.00
Broken stones 150 cu.yds @ $50.00 per c.y.	7,500.00
Gravel 75 cu.yds @ $15.00 per c.y.	1,125.00
Bitumen 100 drums @ $203 per drum	20,300.00
Fuel	4,320.00
Rental of equipment	23,520.00
Miscellaneous 5%	3,558.00
	$ 74,723.00

MINISTRY OF CONSTRUCTION, HOUSING ETC.

U.S.A.I.D. ROAD PROGRAMME

ROADS SELECTED FOR PRIORITY REPAIRS UNDER U.S.A.I.D. ROAD IMPROVEMENT PROGRAMME

GRENVILLE ROAD - 7.0 miles

1 crew @ $1,200 per fortnight for 4 fortnights	$ 4,800.00
Broken stones 45 cu.yds @ $50.00 per c.y.	2,250.00
Gravel 50 cu.yds @ $15 per c.y.	750.00
Bitumen 25 drums @ $203 per drum	5,075 .00
Fuel	720.00
Rental of equipment	5,280.00
Miscellaneous 5%	956.00
	$ 19,831.00

MINISTRY OF CONSTRUCTION, HOUSING ETC.

U.S.A.I.D. ROAD PROGRAMME

ROADS SELECTED FOR PRIORITY REPAIRS UNDER U.S.A.I.D. ROAD IMPROVEMENT PROGRAMME

TOWN OF ST. GEORGE

MORNE JALOUX 2.0 miles

2 crews @ $1,380 per week for 4 weeks	$ 5,520.00
Broken stone 40 c.y. @ $50 per c.y.	2,000.00
Gravel 25 c.y. @ $15.00	375.00
Bitumen 30 drums @ $203 per drum	6,090.00
Fuel	2,000.00
Rental of equipment	7,840.00
Miscellaneous 5%	1,191.00
	$ 25,016.00

MINISTRY OF CONSTRUCTION, HOUSING ETC.

U.S.A.I.D. ROAD PROGRAMME

ROADS SELECTED FOR PRIORITY REPAIRS UNDER U.S.A.I.D. ROAD IMPROVEMENT PROGRAMME

LOWTHERS LANE - ARCHIBALD AVENUE 1.0 Mile

Labour	- 2 crews @ $1,380 per week for 4 weeks	$ 5,520.00
Materials	- Broken stone 40 c.y. @ $50 per c.y.	2,000.00
	Gravel 25 c.y. @ $15	375.00
	Bitumen 30 drums @ $203 per drum	6,090.00
	Fuel	2,000.00
Rental of equipment		7,840.00
Miscellaneous 5%		1,191.00
		$ 25,016.00

MINISTRY OF CONSTRUCTION, HOUSING ETC.

U.S.A.I.D. ROAD PROGRAMME

ROADS SELECTED FOR PRIORITY REPAIRS UNDER U.S.A.I.D. ROAD IMPROVEMENT PROGRAMME

NORTH ST. GEORGE'S

ST. PAUL'S ROAD TO RADIX JUNCTION

TENPE/MT. PARNASSUS - 1.0 Mile

3 crews @ $1,800 per week for 12 weeks	$ 21,600.00
Broken stone 250 c.y. @ $50 per c.y.	12,500.00
Gravel 100 c.y. @ $15.00 per c.y.	1,500.00
Bitumen 150 drums @ $203.00 per drum	30,450.00
Fuel	3,060.00
Rental of equipment	23,400.00
Miscellaneous 5%	4,625.00
	$ 97,135.00

MINISTRY OF CONSTRUCTION, HOUSING ETC.

U.S.A.I.D. ROAD PROGRAMME

ROADS SELECTED FOR PRIORITY REPAIRS UNDER U.S.A.I.D. ROAD IMPROVEMENT PROGRAMME

ST. DAVID'S ROAD

CROCHU-WINDSOR FOREST ROAD
CALIVIGNY-BAILLIES MACOLME 2.7 Miles

2 crews @ $1,200 for 12 weeks	$ 14,400.00
Broken stones 100 c.y. @ $50.00	5,000.00
Gravel 75 c.y. @ $15.00	1,125.00
Bitumen 75 drums @ $203.00	15,225.00
Fuel	3,500.00
Rental of equipment	31,200.00
Miscellaneous 5%	3,522.00
	$ 73,972.00

MINISTRY OF CONSTRUCTION, HOUSING ETC.

U.S.A.I.D. ROAD PROGRAMME

ROADS SELECTED FOR PRIORITY REPAIRS UNDER U.S.A.I.D. ROAD IMPROVEMENT PROGRAMME

GRAND ETANG ROAD - 5.0 miles

1 crew @ $1,200 per fortnight for 4 fortnights	$ 4,800.00
Broken stones 45 cu.yds @ $50.00	2,250.00
Gravel 50 cu.yds @ $15.00	750.00
Bitumen 25 drums @ $203 per drum	5,075.00
Fuel	720.00
Rental of equipment	5,280.00
Miscellaneous 5%	956.00
	$ 19,831.00

MINISTRY OF CONSTRUCTION, HOUSING ETC.

U.S.A.I.D. ROAD PROGRAMME

ROADS SELECTED FOR PRIORITY REPAIRS UNDER U.S.A.I.D. ROAD IMPROVEMENT PROGRAMME

CARRIACOU ROADS

BELAIR AND WINDWARD 1 mile

2 crews for 12 weeks @ $1,200 per week	14,400.00
Broken stones 150 c.y. @ $50.00 per c.y.	7,500.00
Gravel 100 c.y. @ $15.00 per c.y.	1,500.00
Bitumen 100 drums @ $203 per drum	20,300.00
Fuel	3,000.00
Miscellaneous	3,081 .00
	$ 49,781..00

NO RENTALS

MINISTRY OF CONSTRUCTION, HOUSING ETC.
U.S.A.I.D. ROAD PROGRAMME

ROADS SELECTED FOR PRIORITY REPAIRS UNDER U.S.A.I.D. ROAD IMPROVEMENT PROGRAMME

ST. ANDREW'S ROAD - 4 miles
(Poyntzfield Bridge - Paradise Bridge)

4 crews @ $2346.50 per week for 10 weeks	23,465.00
Broken stone - 250 cu.yds @ $50.00 per c.y.	12,500.00
Gravel - 250 cu.yds @ $18.00 per c.y.	4,500.00
Bitumen - 125 drums @ 203 per drum	25,375.00
Fuel	3,857.00
Rental	25,560.00
Miscellaneous 5%	4,763.00
	$ 100,020.00

MINISTRY OF CONSTRUCTION, HOUSING ETC.

U.S.A.I.D. ROAD PROGRAME

ROADS SELECTED FOR PRIORITY REPAIRS UNDER U.S.A.I.D. ROAD IMPROVEMENT PROGRAME

ST. ANDREW'S

NOEL'S HILL - 1 mile

4 crews @ $2,346.50 per week for 10 weeks	$ 23,465.00
Broken stone 250 c.y. @ $50.00 per c.y.	12,500.00
Gravel 250 c.y. @ $18.00 per c.y.	4,500.00
Bitumen 104 drums @ $203 per drum	21,112.00
Fuel	3,941.00
Rental	29,620.00
Miscellaneous 5%	4,757.00
	$ 99,895.00

MINISTRY OF CONSTRUCTION, HOUSING ETC.

U.S.A.I.D. ROAD PROGRAMME

ROADS SELECTED FOR PRIORITY REPAIRS UNDER U.S.A.I.D. ROAD IMPROVEMENT PROGRAMME

ST. PATRICK'S

HERMITAGE ROAD (1.0 mile)

3 crews @ $1,612.50 a week for 8 weeks	$ 12,900.00
Broken stones 180 c.y. @ $50.00 per c.y.	4,000.00
Bitumen 50 drums @ $203 per drum	10,150.00
Cement 100 sacks @ $15.66	1,566.00
Fuel	2,400.00
Rental	15,500.00
Miscellaneous 5%	1,276.00
	$ 47,792.00

MINISTRY OF CONSTRUCTION, HOUSING ETC.
U.S.A.I.D. ROAD PROGRAMME

ROADS SELECTED FOR PRIORITY REPAIRS UNDER U.S.A.I.D. ROAD IMPROVEMENT PROGRAMME

ST. PATRICK'S

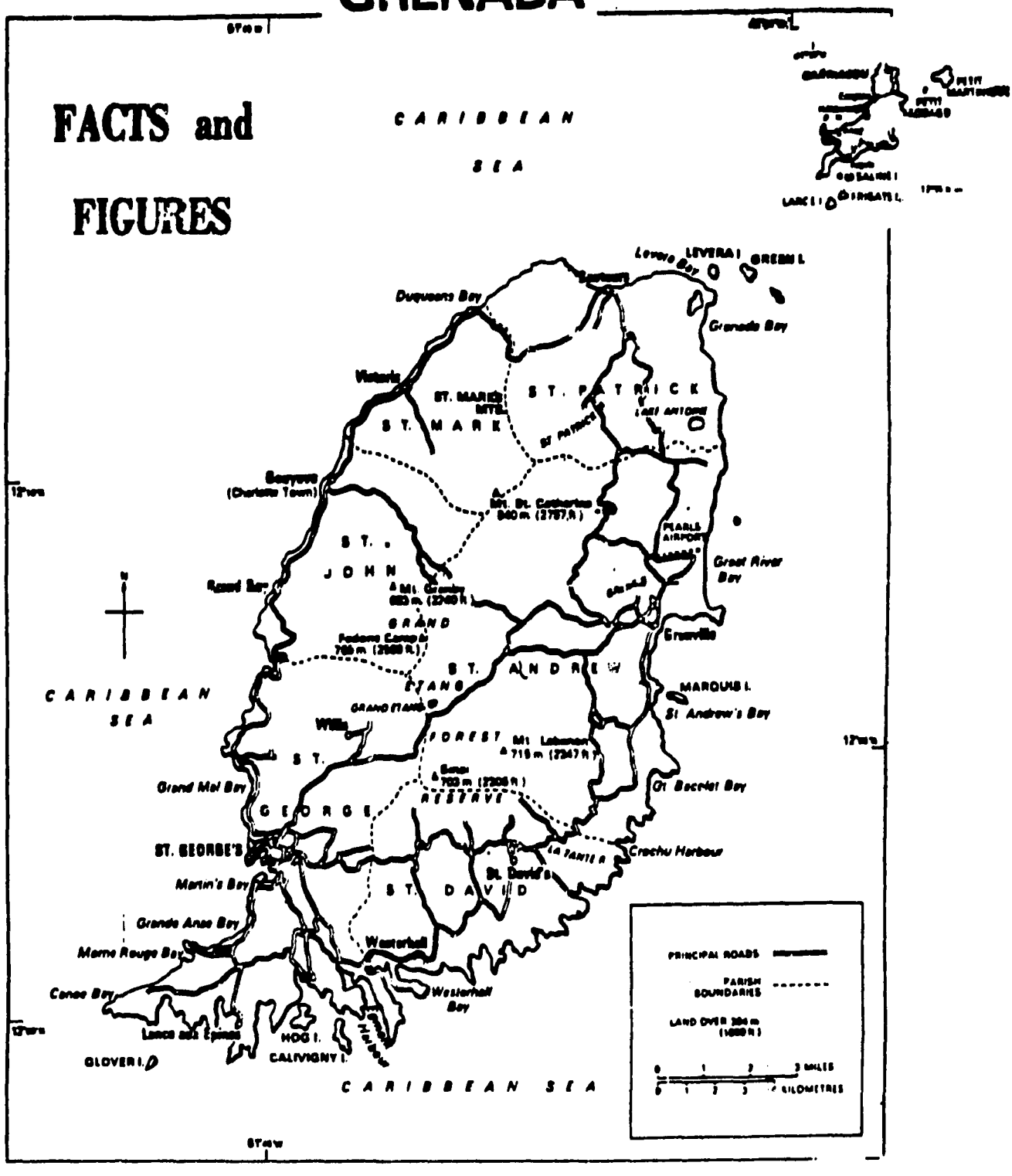
LEVERA ROAD (1.0 mile)

3 crews @ $1,362.50 for 8 weeks	10,900.00
Broken stones 60 c.y. @ $50.00	3,000.00
Bitumen 47 drums @ $203.00 per drum	9,541.00
Cement 70 bags @ $5.66 per bag	1,096.00
Fuel	1,689.00
Rental	13,340.00
Miscellaneous 5%	1,918.00
	$ 41,484.00

PROJECT ACTIVITY MAP

GRENADA

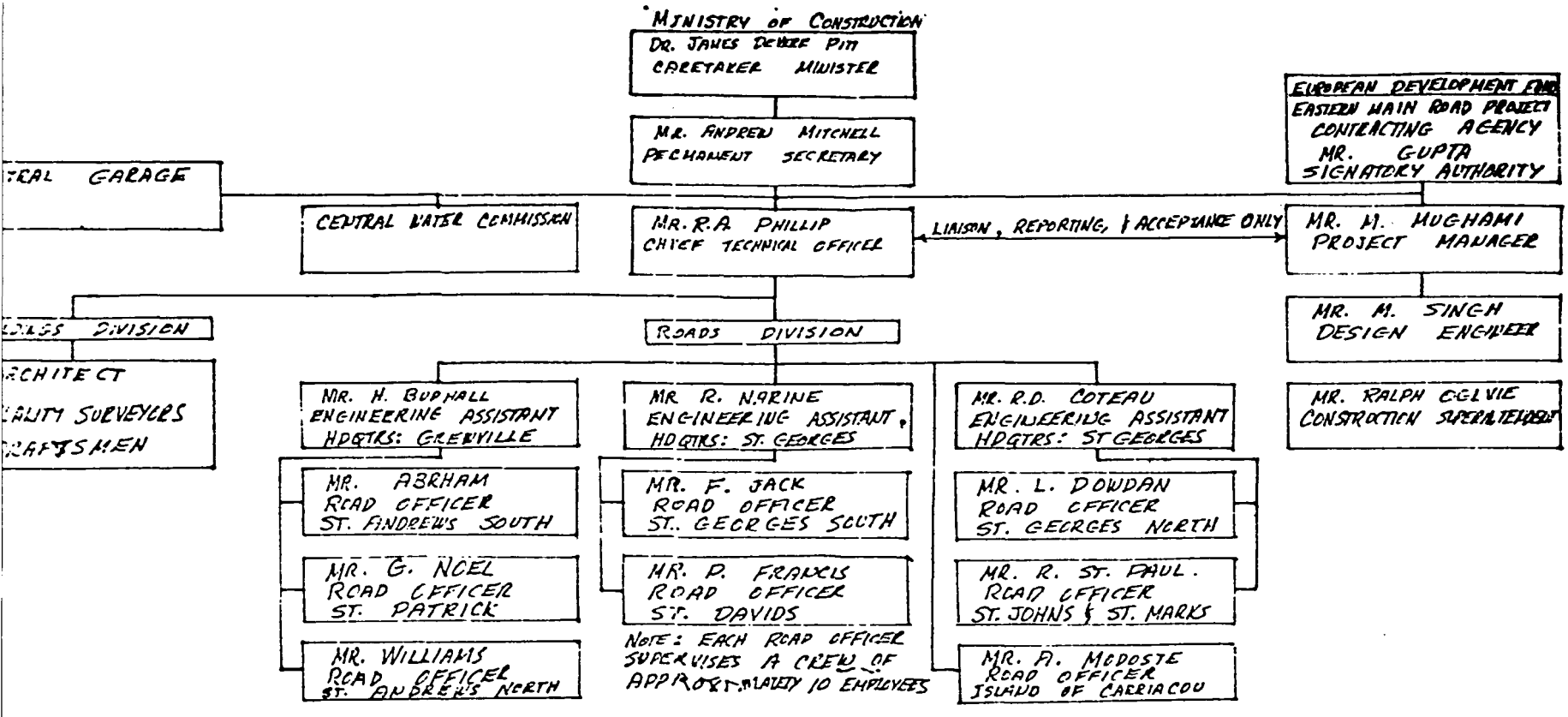
FACTS and FIGURES



Prepared by Central Statistical Office

October 1982

ROADS DIVISION ORGANIZATION CHART



ANNEX I

SUMMARY OF ROADS

Road Patching

Road	Parish	Miles	Cost (EC$)
St. Johns/Belvidere	St. Johns	2.0	$74,723
Grenville	St. Andrews	7.0	19,831
Morne Jaloux	St. George	2.0	25,016
Lowthers Lane/Archibald Ave.	St. George	1.0	25,016
Tempe/Mt. Parnassus	St. George	1.0	97,135
Crochu-Windsor Forest/Calivigny-Bailles Bacolet	St. David	2.7	73,972
Grand Etang	St. George	5.0	19,831
Belair/Windward	Carriacou	1.0	49,781
Poyntzfield Br.-Paradise Br.	St. Andrews	4.0	100,020
Hael's Hill	St. Andrews	1.0	99,895
Hermitage	St. Patricks	1.0	47,792
Levera	St. Patricks	1.0	41,484
		28.7	$674,496

Rehabilitation

Springs-Calivigny (Paddock Junction to Cafe Junction)	St. George	1.0	322,752
Grand Etang (Mt. Gay-Tempe-Beaulieu)	St. George	1.0	322,752
		2.0	$645,504

OFDA-FINANCED ROAD PATCHING ACTIVITIES

Critical road segments were identified for maintenance work by the Ministry of Construction (MOC). Working through the Grenadian District Councils and Roads Division, the MOC recruited over 25 work gangs comprised of 10 to 12 persons each and assigned these gangs to discrete road segments in their respective districts. The work gangs were provided hand tools (wheelbarrows, shovels etc.) by the MOC and supported by a minimum of MOC mechanized equipment (primarily trucks and rollers). The MOC delivered aggregate and asphalt supplies to each work site and provided an experienced foreman to direct the recruited work force. Maintenance work comprised cleaning and filling potholes with aggregate and asphalt mixtures prepared by hand on site, compacting, clearing roadside brush, and opening drainage ditches and culverts. Payment procedures were established by AID utilizing an advance/liquidation procedure. MOC staff provided overall management an administration while AID staff had general oversight of the project.

From a technical standpoint the road patching program can be considered very successful. Some patch failures experienced at the onset were due in part from a lack of proper asphalt, and in some instances from inadequate compaction. In the early days of the program, heavy military traffic continuously utilizing the roads being maintained may have contributed to some failures. The problem of failures was not serious and was overcome with the availability of the proper grade asphalt and greater attention to compacting.

The patching program provided jobs for three to four hundred unskilled workers. These workers were typically mature women, heads of households, whose income were derived from road maintenance work or whatsoever manual, unskilled jobs they could find when road maintenance financing was unavailable. Employment provided by the OFDA-financed projects was thus both substantial and important. It was keyed to the lowest paid sector of the labor force and, as far as can be determined, was completely additive. In spite of the low wages an the difficult job conditions the workers, nonetheless, found the compensation greater than the alternatives.