

UNCLASSIFIED

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229 p.

6/29/77

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

PROJECT PAPER

HAITI

ROAD MAINTENANCE II

Project Number: 521-0084

LA/DR:77-6

UNCLASSIFIED

AGENCY FOR INTERNATIONAL DEVELOPMENT <b>PROJECT AUTHORIZATION AND REQUEST          FOR ALLOTMENT OF FUNDS PART I</b>	1. TRANSACTION CODE <input checked="" type="checkbox"/> A ADD <input type="checkbox"/> C CHANGE <input type="checkbox"/> D DELETE	<b>PAF</b> 2. DOCUMENT CODE <b>5</b>
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3. COUNTRY ENTITY <b>Haiti</b>	4. DOCUMENT REVISION NUMBER <input type="checkbox"/>
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5. PROJECT NUMBER (7 digits) <input type="checkbox"/> 521-0084 <input type="checkbox"/>	6. BUREAU/OFFICE A SYMBOL <b>LA</b> B CODE <input type="checkbox"/> 5 <input type="checkbox"/>	7. PROJECT TITLE (Maximum 40 characters) <input type="checkbox"/> Road Maintenance II <input type="checkbox"/>
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8. PROJECT APPROVAL DECISION <input checked="" type="checkbox"/> A APPROVED <input type="checkbox"/> D DISAPPROVED <input type="checkbox"/> DL DEAUTHORIZED	9. EST. PERIOD OF IMPLEMENTATION YRS. <input type="checkbox"/> 0 <input checked="" type="checkbox"/> 4      QTRS <input type="checkbox"/>
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10. APPROVED BUDGET AID APPROPRIATED FUNDS (\$000)									
A. APPROPRIATION	B. PRIMARY PURPOSE CODE	PRIMARY TECH. CODE		E. 1ST FY <u>77</u>		H. 2ND FY <u>78</u>		K. 3RD FY <u>79</u>	
		C GRANT	D LOAN	F GRANT	G LOAN	I GRANT	J. LOAN	L GRANT	M. LOAN
(1) F & N	130	060		6,550		1,300		600	
(2)									
(3)									
(4)									
TOTALS				6,550		1,300		600	

A. APPROPRIATION	N. 4TH FY <u>80</u>		O. 5TH FY <u>    </u>		LIFE OF PROJECT		11. PROJECT FUNDING AUTHORIZED		A. GRANT	B. LOAN
	C. GRANT	P. LOAN	R. GRANT	S. LOAN	T. GRANT	U. LOAN	(ENTER APPROPRIATE CODE(S))			
(1) F & N	150				8,600		1 LIFE OF PROJECT			
(2)							2 INCREMENTAL LIFE OF PROJECT		2	
(3)										
(4)										
TOTALS		150			8,600		C. PROJECT FUNDING AUTHORIZED THRU		FY <input type="checkbox"/> 8 <input type="checkbox"/> 0	

12. INITIAL PROJECT FUNDING ALLOTMENT REQUESTED (\$000)	<b>ALLOTTED</b> 13. FUNDS <del>RESERVED FOR XXXXXXXX</del>
A. APPROPRIATION	B. ALLOTMENT REQUEST NO. <u>5</u>
C. GRANT      D. LOAN	TYPED NAME (Chief, SER/EM/XXX) FCD <b>Jean McGill</b>
(1) F & N      6,550	SIGNATURE 
(2)	DATE <b>6/30/77</b>
(3)	
(4)	
TOTALS	

14. SOURCE ORIGIN OF GOODS AND SERVICES	<input checked="" type="checkbox"/> 000 <input type="checkbox"/> 941 <input type="checkbox"/> LOCAL <input type="checkbox"/> OTHER
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15. FOR AMENDMENTS, NATURE OF CHANGE PROPOSED

FOR PPC/PIAS USE ONLY	18. AUTHORIZING OFFICE SYMBOL	17. ACTION DATE MM DD YY	18. ACTION REFERENCE (Optional)	ACTION REFERENCE DATE MM DD YY
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**DEPARTMENT OF STATE**  
**AGENCY FOR INTERNATIONAL DEVELOPMENT**  
WASHINGTON, D. C. 20523

PROJECT AUTHORIZATION AND REQUEST FOR ALLOTMENT OF FUNDS

HAITI:                      Road Maintenance II

Project Number: 521-0084

Pursuant to Part I, Chapter 1, Section 103 of the Foreign Assistance Act of 1961, as amended, I hereby authorize a Grant to Government of Haiti ("GOH") of not to exceed Six Million Five Hundred Fifty Thousand United States Dollars (\$6,550,000) ("Authorized Amount") to help in financing certain foreign exchange and local currency costs of goods and services for a project to improve Haiti's road maintenance system ("Project").

I approve the total level of A.I.D. appropriated funding planned for the Project of not to exceed Eight Million Six Hundred Thousand United States Dollars (\$8,600,000) in Grant funds including the funding authorized above, during the period FY 1977 through FY 1980. I approve further increments during that period of Grant funding up to \$2,050,000, subject to the availability of funds in accordance with A.I.D. allotment procedures. \$6,550,000 of the A.I.D. financing herein approved for the Project will be obligated when the Project Agreement is executed.

I hereby authorize the initiation of negotiation and execution of the Project Agreement by the officer to whom such authority has been delegated in accordance with A.I.D. regulations and Delegations of Authority 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:

I.     Source and Origin of Goods and Services

Except for ocean shipping, goods and services financed by A.I.D. under the Project shall have

their source and origin in Haiti or the United States, except as A.I.D. may otherwise agree in writing. Ocean shipping financed under the Grant shall be procured in the United States.

II. Conditions Precedent to Initial Disbursement

Prior to any disbursement or the issuance of any commitment documents under the Project Agreement, the GOH shall furnish in form and substance satisfactory to A.I.D.:

- A. Evidence that all necessary budgetary commitments of the GOH to the National Highway Maintenance Service ("SEPRRN") according to SEPRRN's current Five Year Plan have been met as of the date of the request for the initial disbursement; and
- B. Evidence of the appointment of a full-time SEPRRN coordinator for the Project to work with A.I.D. and the consulting firm providing technical advisory services.

III. Conditions Precedent to Disbursements for Road Maintenance Equipment

Prior to any disbursement or the issuance of any commitment documents under the Project Agreement to finance road maintenance equipment, the GOH shall furnish in form and substance satisfactory to A.I.D.:

- A. An executed contract for technical advisory services in relation to management of the SEPRRN road maintenance program; and
- B. A plan for preventive maintenance of road maintenance equipment including procedures for systematic replenishment of spare parts and operating supplies and evidence that such plan is being implemented.

IV. Conditions Precedent to Disbursements in Excess of \$2,000,000 for Road Maintenance Equipment

Prior to any disbursement or the issuance of any commitment documents in excess of \$2,000,000 under

the Project Agreement to finance road maintenance equipment, the GOH shall furnish in form and substance satisfactory to A.I.D. evidence that:

- A. A maintenance management and reporting system has been designed and is being implemented;
- B. The Administrative Council for SEPRRN is receiving quarterly reports as required by the Decree of March 3, 1972, which established SEPRRN;
- C. An evaluation of the status of the Project has been completed; and
- D. SEPRRN's current Five Year Plan and operating budget for the period 1975-1980 have been revised after consultations with the firm carrying out the management technical advisory services and have been approved by the GOH and that the GOH has agreed to adjust SEPRRN's operating budget to reflect the revisions.

V. Conditions Precedent to Disbursements for Construction Facilities

Prior to any disbursement or the issuance of any commitment documents under the Project to finance construction of any facilities for SEPRRN's road maintenance operations, the GOH shall furnish in form and substance satisfactory to A.I.D.:

- A. An executed contract for architectural and engineering advisory services and the executed contract required in Section III A hereof;
- B. Evidence that the GOH has acquired title to the land on which said facilities will be constructed; and
- C. Invitation for Bid documents for the construction of said facilities.

VI. Condition Precedent to Disbursements for the Community Action Program

Prior to any disbursements or the issuance of any commitment documents under the Project to finance

the Community Action Program, the GOH shall furnish in form and substance satisfactory to A.I.D. an implementation plan for the Community Action Program based on the results of a completed evaluation of the Agricultural Feeder Roads pilot project.

VII. Conditions Precedent to Disbursements for Offshore or Out of Service Training

Prior to any disbursement or the issuance of any commitment documents under the Project to finance offshore or out of service training, the GOH shall take reasonable measures, satisfactory to A.I.D., to assure that participants in offshore or out of service training return to employment with SEPRRN for a determined period after training and that SEPRRN pays their salaries while they are in training.

VIII. Covenants of the GOH

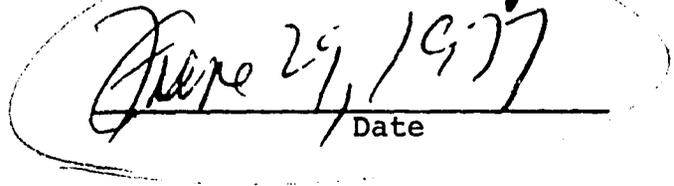
The GOH shall covenant that:

- A. SEPRRN will assign qualified counterpart personnel to work full time with the consultants financed under the Project;
- B. SEPRRN will use the equipment procured under the Project exclusively for road maintenance work;
- C. SEPRRN will recruit sufficient new personnel for the training program and will also select appropriate current personnel for the training program, all of whom will be released from their normal operating duties during training as necessary;
- D. SEPRRN will develop and implement a comprehensive training program under the Project;
- E. The GOH will make its best efforts to eliminate the current dual responsibilities of those

employees assigned to SEPRRN but paid by both SEPRRN and the Secretariat of Public Works, Transportation and Communications, except for district and subdistrict engineers;

- F. The Administrative Council of SEPRRN will make its best efforts to assure compliance with the Decree of March 3, 1972, establishing SEPRRN; and
- G. The GOH will make a study of the needs and advisability of adjusting the fuel tax structure and distribution to increase the amount of funds for road maintenance and report to A.I.D. on the conclusions of the study.

  
Assistant Administrator

  
Date

Clearance:  
DA/LA:DLion   
LA/DR:MBrown   
RGomez   
GC/LA:JKessler   
LA/CAR:WRhodes (draft)  
LA/DP:DErbe (draft)  
LA/GC:TGeiger (draft)

Date 6/24/77  
Date 6/28/77  
Date 6/29/77  
Date 6/28

GC/LA:TLGeiger:JPBittner:LA/DR vc:6/27/77 <sup>3</sup>

JUN 28 1977

ACTION MEMORANDUM FOR THE ASSISTANT ADMINISTRATOR (LA)

FROM: LA/DR, Charles B. Weinberg

Problem: Authorization of Haiti Road Maintenance II Grant.

Discussion: The proposed \$8.6 million grant will assist in financing Phase II of a national highway maintenance program in Haiti. The project will expand and strengthen the capacity of Haiti's National Highway Maintenance Service, SEPRRN, to maintain the country's national and local roads. The project is a key element in the Mission's overall development strategy for Haiti, as an effective transportation network to facilitate the flow of goods and services between urban and rural areas is a necessary pre-condition to increasing agricultural production and providing services to the rural poor. Pursuant to the guidance provided in a recent decision by DA/AID regarding program and project preparation, review and approval procedures (State 141397, dated June 17, 1977), you have the authority to approve projects which do not exceed \$10 million.

The proposed Phase II Program will build upon the accomplishments of the ongoing Highway Maintenance I Program, which provided SEPRRN with the resources necessary to maintain the "backbone" of the road system, that is, the national north and south roads constructed with World Bank and Inter-American Development Bank financing. This project goes beyond the earlier project, however, by expanding SEPRRN's operations throughout the country to the secondary and local road network. Project components and related AID costs are as follows:

- Institutional Strengthening (\$2.13 million): The project will provide technical assistance to strengthen SEPRRN's management and to introduce a maintenance management system which defines the road inventory, service levels, maintenance standards and work activities of the district and subdistrict brigades.
- Training (\$420,000): A training program will upgrade the skills of SEPRRN's managerial and technical staff and provide additional qualified personnel by 1980.

- Community Action Program (\$295,000): Based on experience to be obtained through the Labor Intensive Pilot Project of AID's Agricultural Feeder Roads Program, a Community Action Program involving 40 local communities in labor intensive maintenance work on roads with traffic of less than 50 vehicles per day will be implemented.

- Administrative Operations (\$550,000): The project will construct and equip office and garage facilities in Port-au-Prince to accommodate the increased staff required to manage a nationwide road maintenance organization.

- District and Subdistrict Operations (\$5.45 million): The project will construct and equip one new major district and eight new subdistricts throughout the country to prepare SEPRRN to maintain over 2,000 kilometers of roads by 1981, compared to 1,000 kilometers at present.

The Government of Haiti's (GOH) contribution of \$8,923,000 will fund operating costs of SEPRRN at an increasing rate during this four year project. Costs for the Community Action Program totaling \$485,000 will be shared on an approximate 60/40 basis by AID and the GOH.

As a result of LA Bureau review and approval on February 23, 1977, USAID/Haiti revised the PP to address the following principal points:

- The technical assistance requirements were clarified and a draft scope of work was added as a guideline for requesting technical proposals for long term consultants.

- SEPRRN's manpower and training requirements were further analyzed as a basis for delineating the proposed training program.

- In order to evaluate progress in installing a maintenance management system, interim indicators of progress in institutional development were established and the logical framework was refined.

- The rationale for the proposed mix and composition of equipment, as well as the use of labor intensive techniques in road construction was further clarified.

The LA Bureau's Environmental Committee reviewed the Initial Environmental Examination and agreed with the project analysis that there would be no major environmental

PROJECT PAPER  
HAITI - ROAD MAINTENANCE II  
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A. LEGAL & GENERAL

1. Letter of Application (English translation and French)	8 Pages
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4. FAA 611 (e) Certification.....	1 "
5. Logical Framework .....	1 "
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7. PRP Approval Cable .....	3 "
8. Initial Environmental Examination .....	5 "
9. SEPRRN Decree of March 3, 1972 .....	9 "
10. GOH Transport Project Resources & Commitments 1976-81	1 "
11. State 059010 - Comments on DAEC Review.....	3 "

B. TECHNICAL, ENGINEERING FINANCIAL

1. Construction - Cost Estimates .....	8 Pages
2. Construction - Facilities Design .....	10 "
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4. Equipment - Inventory & Requirements .....	1 "
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6. Road Inventory - Detailed Breakdown .....	7 "
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AGENCY FOR INTERNATIONAL DEVELOPMENT  <b>PROJECT PAPER FACESHEET</b>	1. TRANSACTION CODE <input type="checkbox"/> A = ADD <input type="checkbox"/> C = CHANGE <input type="checkbox"/> D = DELETE	PP 2. DOCUMENT CODE <b>3</b>
	4. DOCUMENT REVISION NUMBER <input type="checkbox"/>	

3. COUNTRY ENTITY <b>HAITI</b>	4. DOCUMENT REVISION NUMBER <input type="checkbox"/>
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5. PROJECT NUMBER (7 digits) <input type="text" value="521-0084"/>	6. BUREAU/OFFICE A. SYMBOL <input type="text" value="LA"/> B. CODE <input type="text" value="3"/>	7. PROJECT TITLE (Maximum 40 characters) <input type="text" value="Road Maintenance II"/>
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8. ESTIMATED FY OF PROJECT COMPLETION FY <input type="text" value="81"/>	9. ESTIMATED DATE OF OBLIGATION A. INITIAL FY <input type="text" value="77"/> B. QUARTER <input type="text" value="2"/> C. FINAL FY <input type="text" value="80"/> (Enter 1, 2, 3, or 4)
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10. ESTIMATED COSTS (\$000 OR EQUIVALENT \$) -						
A. FUNDING SOURCE	FIRST FY			LIFE OF PROJECT		
	B. FX	C. L/C	D. TOTAL	E. FX	F. L/C	G. TOTAL
AID APPROPRIATED TOTAL						
(GRANT)	( 1620 )	( 250 )	( 1870 )	( 7174 )	( 1426 )	( 8600 )
(LOAN)	( )	( )	( )	( )	( )	( )
OTHER U.S. 1.						
OTHER U.S. 2.						
HOST COUNTRY		2523	2523		8923	8923
OTHER DONOR(S)						
TOTALS				7174	10349	17523

11. PROPOSED BUDGET APPROPRIATED FUNDS (\$000)									
A. APPROPRIATION	B. PRIMARY PURPOSE CODE	PRIMARY TECH. CODE		E. 1ST FY <u>77</u>		H. 2ND FY <u>78</u>		K. 3RD FY <u>79</u>	
		C. GRANT	D. LOAN	F. GRANT	G. LOAN	I. GRANT	J. LOAN	L. GRANT	M. LOAN
(1) FN	130	060		6,550		1,300		600	
(2)									
(3)									
(4)									
TOTALS				6,550		1,300		600	

A. APPROPRIATION	N. 4TH FY <u>80</u>		Q. 5TH FY		LIFE OF PROJECT		12. IN-DEPTH EVALUATION SCHEDULED  MM DD YY <input type="text" value="1178"/>
	D. GRANT	P. LOAN	R. GRANT	S. LOAN	T. GRANT	U. LOAN	
(1)	150				8,600		
(2)							
(3)							
(4)							
TOTALS	150				8,600		

13. DATA CHANGE INDICATOR. WERE CHANGES MADE IN THE PID FACESHEET DATA, BLOCKS 12, 13, 14, OR 15 OR IN PRP FACESHEET DATA, BLOCK 12? IF YES, ATTACH CHANGED PID FACESHEET.

1 = NO  
2 = YES

14. ORIGINAL OFFICE CLEARANCE SIGNATURE <b>Scott L. Behoteguy</b>		15. DATE DOCUMENT RECEIVED IN AID/W. OR FOR AID/W DOCUMENTS, DATE OF DISTRIBUTION  MM DD YY <input type="text" value="042576"/>
TITLE <b>Director USAID/Haiti</b>	DATE SIGNED MM DD YY <input type="text" value="042277"/>	

PART I - SUMMARY AND RECOMMENDATIONS

A. RECOMMENDATIONS

The following actions are hereby submitted for AID approval within the Project Paper:

- Grant	\$8,600,000
- Total New AID Obligation	\$8,600,000

B. PROJECT DESCRIPTION

1. Grantee

The Grantee will be the Government of Haiti (GOH) acting through the National Council of Development and Planning (CONADEP), the Ministry of Finance and Economic Affairs (MFA), and the Ministry of Public Works, Transportation and Communications (TPTC). Responsibility for project execution will be assigned to the National Highway Maintenance Service (SEPRRN), a semi-autonomous GOH agency.

2. Project Summary

This four year Phase II Road Maintenance Project aims to strengthen SEPRRN's capability to maintain Haiti's National, Departmental, and Local road network. Through training, the skills of SEPRRN's management, administrative and technical personnel will be upgraded. A maintenance management system which defines the road inventory, service levels, road maintenance standards, work activities of the major District and Sub-district road maintenance brigades and which introduces a programmed budgeting, reporting and evaluation system will be designed and implemented. A training program to provide SEPRRN additional qualified personnel by 1980 will be introduced. The objective will be to assure an efficient road transportation network by strengthening SEPRRN's ability to maintain almost 1000 kms of National, and 1500 kms of Departmental roads and 48 bridges per year by 1980. Based on experience to be obtained through the Labor Intensive Pilot Project of the AID Agricultural Feeder Roads Program, a Community Action Program involving 40 local communities in labor intensive routine and special road maintenance work on 720 kilometers of Departmental and Local roads with less than 50 vehicles per day traffic will be implemented.

Program funds will construct and equip administrative and garage/shop facilities in Port-au-Prince (\$550,000); construct and equip one new major district and eight new sub-district facilities (including hand tools) throughout the country (\$1.45 million); provide road maintenance equipment and spare parts to the maintenance brigades in the four districts and eight sub-districts (\$4.0 million); 30 work years of technical assistance (\$2,130,000) and the training programs (\$420,000). Operating costs totaling \$100,000 for the Community Action Program will be shared on an approximate 50/50 basis by AID and the GOH. The remaining GOH contribution of \$8,733,000 will fund operating costs of SEPRRN at an increasing rate over the project's four year period.

C. SUMMARY FINDINGS

On the basis of the analysis contained herein, the USAID Mission to Haiti concludes that the project is technically, economically, financially, socially and environmentally sound, and recommends that a grant be authorized to the GOH in an amount not to exceed \$8.6 million.

This project meets all applicable statutory criteria (See Annex A, Exhibit 2). The USAID Mission Director to Haiti has certified that Haiti has the capability to effectively utilize the project (Annex A, Exhibit 4).

D. PROJECT ISSUES

The DAEC cable on the results of the PRP review (Annex A Exhibit 7) was written January 12, 1976. In the interim, several changes in design have occurred which have varied some of the program elements. The following represents the major issues addressed in that message as they now relate to the final design:

1. Policy questions with regard to amount of equipment purchased and ability of SEPRRN to implement a road maintenance project:

Sections III, A  
III, C, 1 & 4  
VI, A, 4 & 5  
IV, B

2. Labor/capital intensive alternatives and road maintenance and local community participation:

Sections III, C, 4  
IV, A, 9

1. Economic Analysis:

Section IV, C

4. Responsibilities of TPTC & SEPRRN:

Sections IV, A, 2  
IV, B,

5. Social Analysis:

Sections III, C, 4  
IV, A, 9  
IV, C

As a result of the DAEC review on February 23, 1977 additional comments on the project were developed, as contained in State 059010 (Annex A, Exhibit II) and the PP was subsequently revised to incorporate the changes and additional information requested.

PROJECT COMMITTEE

USAID/HAITI

Raymond Douglass, C/ENG  
Tibor Nagy, D/ENG  
Dean Bernius, A/Program Office  
Frank Bettucci, CAP Impl, Office  
Lea Knott, Program Office

AID/W

Peter Bittner, CAP Dev. Officer  
Michel Demetre, Economic Analyst  
Richard Braida, Economist, DOT

CLEARED IN USAID BY:

Scott L. Behoteguy, Director  
Parke Massey, A/DIR  
John Craig, Program Officer  
Albert Hulliung, Regional Controller  
Ann McDonald, CAP Dev. Officer

COORDINATED WITH GOH

Eng, Fernand Laurin, Minister TPTC & Chairman SEPRRN ADMIN Council  
Eng, Jean E. Pierre, C/ENG TPTC & Member SEPRRN       "       "  
Eng, Raoul Lespinasse,                               "       "       "       "  
Eng, Andre Pierre ,                                 "       "       "       "  
Eng, Raoul Momplaisir, Director General of SEPRRN

## PART II - PROJECT BACKGROUND

### A. THE COUNTRY

The Republic of Haiti, with a total land area of about 11,000 square miles (2.8 million hectares), occupies the western one-third of Hispaniola, second largest island in the Caribbean, with the Dominican Republic occupying the eastern two-thirds. The country is very mountainous, and only 20 percent, or 570,000 hectares, is below an altitude of 600 feet (200 m) and is suitable for cultivation. Of this total, 500,000 hectares are mountainous and suitable principally for production of tree crops such as coffee, mangos and plantain, or for grazing of livestock, mainly goats. Basic food crops are produced on the remaining 370,000 hectares, of which an estimated 125,000 hectares are suitable for irrigation. Existing irrigation systems serve only some 70,000 hectares, half of which is not used in an effective manner due to past hurricane damages, lack of maintenance and improper management.

Although subject to local variation, the country is generally well watered in two distinct rainy seasons. However, due to deforestation of the mountains most of the water is lost through rapid run-off, and severe erosion has and is taking place. Prevailing temperatures vary with elevation and sea breezes temper the tropical heat near the coast. The average annual temperature is 81° F in the lowlands and 76° F in the mountainous interior.

### B. PEOPLE

Haiti is one of the most densely populated countries in the world, with some 4.6 million total and an average density of 420 persons per square mile. The birth rate is 36 per 1000 and death rate 16 per 1000, both substantially higher than other countries in the Western Hemisphere. The average life expectancy is 50, second lowest in the Hemisphere and average per capita income is \$170, which also identifies Haiti as one of the world's least developed countries.

About 70 percent of Haiti's population are small scale farmers living in rural areas poorly served by roads, health facilities and schools. The average farm family has seven persons living on less than 5 acres of land. Only 25 percent of the farms are more than 10 acres in size. The average annual income of the rural population is \$80 and of the small farmer only \$40-50/person.

The nutrition level of the rural Haitian averages 1850 calories per day, or about two-thirds of the recommended minimum, with a corresponding shortage of protein in the diet. The education level is low, with only

10 percent literacy in the rural areas. Government services outside of the capital are practically non-existent and what little health and education is available to the rural Haitian is provided by church groups, missionaries and voluntary agencies.

The great majority of the Haitian population is of African descent, with the remainder (about 10 percent) mulattos of mixed African-Caucasian ancestry. This small group along with European and Arab groups occupy an elite position in the society. French is the official language but is spoken by only about 10 percent of the population. The majority speak Creole, a mixture of French, African dialects, Spanish, English and Dutch.

While the official religion is Catholicism, all faiths are tolerated. A large part of the rural population practice voodooism and apply its teachings to their daily lives. It is one of the strongest influences in rural Haiti, enhancing family solidarity on one hand and mistrust of those outside of the kin group - and especially the urban group - on the other.

#### C. ROAD TRANSPORT AND MAINTENANCE

##### HISTORICAL PERSPECTIVE

Because of the geography, roads have been the principal means of transportation in Haiti. By the time of the American Occupation in 1915 many of the existing roads had lapsed into total disrepair as a consequence of insufficient maintenance. From 1915 to 1933 U.S. Occupation Forces invested considerable efforts in improving existing roads or building new ones. The present basic road system is the result of roads built during the U.S. occupation, rebuilt during the period 1935-1942 by a U.S. contractor and again in part by AID and the World Bank during the period 1956-1962.

Present day road infrastructure improvement efforts began with the World Bank Highway Maintenance and Rehabilitation Loan of \$2.6 million in May 1956. Shortly after the loan was signed the Magloire Administration collapsed and was followed by nearly a year of short-lived provisional governments. Execution of the project floundered until January, 1959 when a Decree was issued setting up a semi-autonomous agency, the "Service Special d'Entretien et d'Amélioration des Routes" (SEAR) to maintain and improve the highway system.

In view of the magnitude of the rehabilitation work then required and the organizational problems involved it became apparent that the best approach would be to commence work in one area and gradually expand. It was agreed that in the first phase, work should be concentrated in the North.

The maintenance and repair of highways in the South was not initially included in the 1956 World Bank project in part due to insufficient resources, but also because AID's predecessor, ICA, had indicated an interest in rehabilitating the Port-au-Prince to Les Cayes highway which runs almost the full length of the Southern Peninsula. By 1962 A.I.D. had taken over the detailed plans and specifications prepared for ICA and indicated its intention to proceed with the first part of the Les Cayes project, from Port-au-Prince, to Brache. (This project was later abandoned by A.I.D., although the GOH did complete a 35 km section from Port-au-Prince to Leogane on its own account. This is now a concrete all-weather road, in good condition though built at great expense).

By October 1965, SEAR was disbanded with its functions and property reverting to the Ministry of Public Works. A new organization with broader objectives was established in September 1966 - "Le Fonds Permanent pour la Construction des Routes Nationales du Nord et du Sud (Permanent Road Fund). Its purpose was the development of the major north and south trunk routes and for the first time, revenue from gas and diesel taxes was earmarked for road maintenance, betterment and construction.

Other programs in the past have provided some equipment or materials for maintenance activities, such as the Cap Haitien based Pote Cole project or the Artibonite Valley Development Organization (both partially A.I.D. financed), but much of this is now worthless or redirected for other purposes. Based on a report and recommendation of OAS expert, the GOH established the Permanent Maintenance Service of the National Road Network (SEPRRN) on March 3, 1972.

A full feasibility study of technical and administrative improvements required by SEPRRN to be effective was made by the French Consulting Firm INGEROUTE under UNDP funding and IDB control was completed in June, 1973. This study served as the basis for AID's Loan 521-L-005/Grant 521-0072 for Phase I of the Highway Maintenance Program.

D. RELATIONSHIP TO DAP AND OTHER AID PROJECTS

The FY 1975 Development Assistance Program (DAP), the June 1974 Rural Sector Analysis and the 1976 Agriculture Sector Assessment have described the uniqueness of Haitian agriculture and the constraints all donors face in increasing agricultural productivity. While a new DAP will be prepared in FY 1977, the areas of concentration are not expected to change, i.e. agriculture, nutrition and health.

During the past 20 years there has been a decline on a per capita basis in the amount of locally grown food. This decline, which is shown in the following table, has only been partially by increases in imports of foodstuffs, such as wheat and vegetable oil.

PRODUCTION OF PRINCIPAL AGRICULTURAL COMMODITIES

( In Thousands of Metric Tons )

	<u>1960</u>	<u>1970</u>	<u>1973</u>	<u>1974</u>	<u>1975</u>	<u>Estimate</u> <u>1976</u>
Corn	227	235	257	204	204	180
Sorghum	183	195	215	134	134	134
Rice	57	74	44	119	108	131
Beans	37	40	20	32	32	32
Banana (Plantain)	155	156	191	191	191	191
Manioc	110	118	137	137	137	137
Sugar Cane	4,952	4,250	4,000	4,000	4,000	4,000

Source: Haitian Ministry of Agriculture as reported by the World Bank.

Correspondingly, population pressures and low income levels have inevitably affected the farmers. Forests have been cut for firewood and charcoal, slopes have been burned for planting food crops, and livestock are forced to graze in areas which are not suitable as pasture. The overall result has been uncontrolled erosion, reducing the productivity of the plains areas because of the floods and deposits of silt and stones which are its byproduct. Currently, the average Haitian receives only about 2/3 of the food that he should get to maintain a normal diet. If income increases so the people will be able to buy more food, the demands upon the agricultural sector will increase substantially. Similarly if the food demands of the existing population increase by 4% each year - a rate which would permit the nutritional deficiency to be overcome after ten years - overall food production will have to be increased by some 7% each year to meet the demand. This is roughly double the increase of food production of recent years. The following constraints impede progress in the agricultural sector;

Poverty - The low absolute level of income constrains the Haitian farmer dramatically. It denies him access to improved technologies, fertilizers, and seeds and limits his risk acceptance. Further, it affects the amount of foodstuffs that can be retained for his own use.

Land Resources - Limited land resources severely hampers increased production. If increases are to be made, they must be done through improved per hectare production. These increases must be accomplished in the face of erosion, confused land tenure arrangements, traditional and inefficient farming practices and small farms which are not efficient in terms of drainage or farming practices.

Transport - The cost of motorized transport, which is principally a function of the condition of the roads, is currently the largest single cost element in the agricultural marketing and input system.

Irrigation - Up to 150,000 hectares are suitable for irrigation. 70,000 has. are presently served by irrigation but only 35,000 hectares are currently in use. The remainder is out-of-service due to inadequate maintenance, poor distribution of water and poor drainage.

Storage - An estimated 30%-40% of grains and beans are lost due to poor storage and lack of storage facilities.

Governmental Policies and Governmental Interest - The largest and overriding constraint was the underlying lack of concern the urban elite and certain elements of the responsible ministries display for the rural population. This lack of concern has a long history going back to the early days of independence and expresses itself in many ways; a lack of publically supported

services in the rural area, and the taxes which are charged to the rural population and which serve to support services which are felt primarily in the urban areas.

The government recognizes it must overcome all these problems if its target to increase the per capita consumption of domestically grown food is to be achieved. The government has recognized in its five year plan, the seriousness of the agricultural problem and what it must do to overcome it. The plan calls for:

- a program for increasing food production by improving irrigation systems and encouraging new farming techniques;
- the establishment of marketing services to improve the efficiency of the marketing and storage system;
- an expanded health system including family planning programs;
- increasing attention to and expansion of all services to the rural poor.

The Road Maintenance II Program proposed herein is an integral part of AID's overall assistance to rural Haiti with special regard to increased agricultural productivity. The overall objective of this project will be to support the overall AID/GOH strategy for improving agricultural production and the production and the provision of services to the rural poor through provision of the physical access necessary to maximize the benefits of these programs to the rural populace of Haiti.

E. THE ROAD TRANSPORT SECTOR

GENERAL

At present, two organizations share the direct responsibility for road and bridge infrastructure in Haiti. These are the Ministry of Public Works Transportation and Communications (TPTC), which has overall responsibility and fulfills the role of a highway department; and the Permanent National Highway Maintenance Service (SEPRRN), an autonomous agency responsible for maintenance of the National Highway System. There are no municipal or departmental authorities responsible for road work. Even in Port-au-Prince, TPTC handles street improvement and maintenance. Traffic regulation, vehicle inspection and licensing are the responsibility of the Police Force, while the General Tax Office cooperates in the collection of revenue from these sources.

TPTC

TPTC has undergone a number of changes since the law of June 2, 1920, which organized the Ministry of Public Works, to the present law of June 17, 1971, which reorganized the Ministry of Public Works, Transportation and Communications. Under this present law, the Minister of TPTC is responsible for the overall control and operations and, as a member of the Cabinet, he answers to the government for TPTC activities. In general terms, the role of TPTC includes the following major elements:

- Planning and programming of road improvements,
- Accomplishing project studies and designs,
- Supervising road construction and/or improvements,
- General coordination and supervision of SEPRRN activities,
- Parallel functions with respect to maritime and air transport.
- Planning the development and improvement of urban areas and rural population centers,
- Design and maintenance of public buildings and public works.

SEPRRN

SEPRRN was created by a decree dated March 3, 1972 and given the responsibility of maintaining the national highway system. It is controlled by a five man

administrative council whose chairman is the Minister of TPTC. Three of the other council members are also now or have been connected to TPTC, therefore, SEPRRN is actually controlled by TPTC. Their resources come from earmarked funds from gasoline and diesel oil taxes and some inputs from the National Counterpart Fund. (See Annex B, Exhibit 10).

#### POLICE

The police are part of the Ministry of Interior and National Defense and are a part of the Haitian Armed Forces. Their duties with respect to the transport sector include traffic control, issuance of drivers licenses, inspection and registration of vehicles and enforcement of traffic regulations. They will work directly with SEPRRN in the control of vehicle weighing stations.

#### FINANCE SERVICES

Three financial services of the GOH have a direct relationship to the transport sector. These are:

1. The General Tax Administration collects taxes.
2. The Ministry of Finance and CONADEP collect budget data prepared by each branch of the government and develop a recommended national budget, which when approved by a Supreme Council of Ministers becomes a law.
3. The National Bank of the Republic of Haiti acts as treasurer to all sections of the government and autonomous agencies.

#### REORGANIZATION OF THE TRANSPORT SECTOR

The recently completed study of the transportation sector(1976) by Louis Berger International, Inc. included an in-depth analysis of the present TPTC organization. Berger found that the present functions of the various services are not clearly defined as a result of ad hoc changes since the 1971 law. Other problems identified are a shortage of well qualified staff to fill key positions and deficiencies in the economic and physical planning capabilities needed to support and manage the National Development Plan. The Berger study presents detailed recommendations on a reorganization of TPTC as an element of an overall National Transportation Council and Transport Boards. The long range plan would place SEPRRN under the Transportation Council.

F. HIGHWAY MAINTENANCE I

1. Project Objectives

The cost of motorized transport, which is principally a function of the condition of the roads, is currently the single largest cost element in the agricultural marketing system. Thus, the inadequacy of the road system tends to reduce the return to the farmer and limits the total amount of commerce that can take place between rural and urban areas.

Accordingly, at the outset of USAID's revised program of assistance to Haiti in 1972 a concerted effort was made to resolve the issue of roads. Based upon many meetings between the UNDP, IDB, IBRD, OAS and AID, planning commenced with TPTC (Ministry of Public Works) and CONADEP (The Government's coordinating agency) to improve the national road network. It was in late 1972 that plans were laid for the IDB to begin construction of the South Road. During the same period the IBRD commenced planning for a reconstruction loan for the North Road. Both undertakings, however, were conditional upon commitment by the Government of Haiti and AID to undertake a major effort in upgrading GOH road maintenance capabilities. As a result, the Government of Haiti created a semi-autonomous entity, the Permanent Maintenance Service for the National Highway Network (SEPRRN). Its name is synonymous with its mandate.

On February 28, 1973, AID Loan 521-L-005 Highway Maintenance I was entered into between the Republic of Haiti and USAID to assist in the development of a road maintenance capability in Haiti. The AID loan and subsequent grant were based upon extensive negotiations and resolutions between AID, the donor agencies and the Government of Haiti.

The original objective of the Phase I program was to provide SEPRRN with the organization and resources necessary to maintain the "backbone" of the national road system, that is the North and South roads being built under IBRD and IDB financing, and to develop a nucleus institution capable of eventually assuming country-wide road maintenance responsibilities.

The AID loan of \$3,700,000 provided funds for (a) technical assistance and training; (b) construction of a central shop facility and training area in Port-au-Prince; (c) district

facilities for road maintenance; (d) procurement of hand and machine tools for said facilities; (e) spare parts; and (f) highway maintenance equipment. However, in view of the heavy commitments that the Government of Haiti was undertaking with various other donors, as well as AID, the loan agreement was amended to \$3,150,000 and the technical assistance and training elements of the AID program were grant funded. The life of Project amount of the grant is now \$2,050,000 and covers the cost of a technical assistance contract with Hoskins-Western-Sonderregger, Inc. to furnish advisors for reorganization and training of SEPRRN personnel and procurement of goods and services through September 30, 1977.

## 2. Project Experience

As a practical matter, over the past two years SEPRRN has been involved in road reconstruction (not maintenance) beyond the basic North-South axis for three principal reasons: (a) to keep critical roads open; (b) maintenance demands on the North and South roads were reduced because these roads were substantially under construction through 1976 and required little assistance; and (c) the GOH felt that on-the-job experience for SEPRRN on very real maintenance and reconstruction problems around the country would be useful during its organization phase. This diversion to reconstruction rather than maintenance did give SEPRRN practical experience in operating equipment, and of course restored a number of impassable roads throughout the country. However, the institutional strengthening of SEPRRN was partially ignored and as a result problems which should have been addressed in Phase I will have to be treated in Phase II. Also, in view of the anticipated assistance of international donor agencies in new road construction (the AID feeder road program and possible IBRD and IDB efforts in the Northern, central and southern peninsulas), and requirements for road betterment and maintenance to complement Haiti's agricultural development efforts over the next five years, an expansion of SEPRRN's capacity is essential.

### Revised Objectives

A five year budget and plan of operations for SEPRRN was developed during 1974/75 by SEPRRN, the Consultant and the Ministry of Public Works. In accordance with this plan and taking into account present resources, SEPRRN's immediate objectives are to maintain 2,500 kms of National and Departmental roads by 1980 and:

- a. Complete construction, equip and staff four principal districts.
- b. Complete construction, equip and staff eight subdistricts.
- c. Complete construction equip and staff the Central administrative and garage facility in Port-au-Prince.

Under the original loan/grant program the GOH agreed to provide SEPRRN with an operating budget of \$780,000 per year and did so in their fiscal years 1973/74 and 74/75. Under the 5 year plan (1975/1980) the GOH agreed to increase SEPRRN's operating budget to maintain 2500 kms of road by 1980 as follows;

<u>FY 75/76</u>	<u>FY 76/77</u>	<u>FY 77/78</u>	<u>FY 78/79</u>	<u>FY 79/80</u>
\$1,174,000	\$1,750,000	\$2,523,000	\$2,798,000	\$3,412,000

The operating budget for the years FY 1975/76 and 76/77 served as part of the GOH counterpart contribution to the Phase I Program, while that for the FY 78/78, 78/79 and 79/80 will serve as a portion of the counterpart for this Phase II program.

### 3. Program Status

AID's relationship with SEPRRN under Phase I has been good. Full commitment of the \$3,150,000 FY 73 loan has been made and as of December 31, 1976, \$1,896,858 has been disbursed. The excess property mechanism, both as a means of conserving loan funds and expediting initial equipment deliveries, filled a need and SEPRRN is desirous of continuing use of this resource in future procurement. SEPRRN has made some progress in developing its organization and operating procedures. Key positions in the organization are now staffed and personnel are receiving training from the technical advisors, although additional assistance is required to further develop management and technical skills. Progress has also been made toward the introduction of operating procedures within SEPRRN, including management reporting and cost accounting systems. These are presently being tested by the central directorate and Port-au-Prince District and will be adjusted as necessary before being used throughout SEPRRN.

Much training remains to be done owing to a chronic shortage of personnel with adequate backgrounds to receive training in the specialized tasks of equipment repair and parts management. The present advisors feel that institutionalized training within and outside of Haiti is required to fill these needs. Top and middle management also require specialized long and short term training in modern maintenance management techniques.

At the present time the procurement phase of the initial project is almost complete. Awards have been made to the extent of \$3.0 million of the \$3.15 million dollar loan. These awards are proportioned approximately 45% for equipment, 12% for repair parts, 39% for facilities and 4% miscellaneous. Equipment deliveries should be complete by May, 1977.

Construction of new workshops started on April 27, 1976, and is presently approximately 55 percent complete. Occupation is scheduled for May, 1977 and the workshops should be in full operation by mid - 1977.

Actual road maintenance/reconstruction operations for the past two fiscal years (ending 9/30/76) were as follows:

	<u>FY 1974/75</u>	<u>FY 1975/76</u>
Actual Operations	\$ 780,000	\$ 950,000

Road maintenance and reconstruction operations fell below projected targets in FY 75/76 because of under funding during the first nine months of the Fiscal Year. Funds received through July, 1976 were approximately \$225,000 below the approved budget level for the same period. This resulted in a funding shortage in excess of 60 percent of the operational budget and road maintenance was carried out at the expense of the orderly procurement of materials, especially some parts. The effect of this was an increasing percentage of non-operational equipment, on the order from 35 to 40 percent of inventory. Due to protracted delivery time for spare parts the effects of earlier funding shortage on equipment availability will persist for several months. The GOH made up the operating budget shortfall in September 1976 and authorized SEPRRN to carry over any unused operating funds into FY 1976/77. Since that time procurement of equipment operating supplies and spare parts has been given a high priority in SEPRRN and the equipment availability situation has improved, although much remains to be accomplished in developing efficient and rapid procurement procedures.

4. Evaluation of Phase I

Recent evaluations <sup>1/</sup> of Phase I draw the following conclusions:

1/ Including an AID funded evaluation in October - November 1976 by Group Seven Associates, Inc.

a. Findings

1. Achievement of Project purpose

- Progress toward achieving the project's purpose of developing a nucleus highway maintenance organization capable of maintaining the national road system is difficult to evaluate because current maintenance activities are often oriented toward reconstruction.
- SEPRRN has a limited capacity for emergency construction. An Intervention Brigade has been organized -- equipment and manpower allocated, and assignments completed. It is more highly mechanized than other work crews with much greater dependence on good equipment and maintenance procedures.
- Many employees continue to have a dual assignment to TPTC and to SEPRRN. There is little desire on the part of TPTC - funded personnel to be dissociated from the TPTC payroll. SEPRRN is a new organization created and financed partially by foreign interests. To the Haitian, its permanence has yet to be proved in contrast to TPTC which is regarded as a firmly established organization.

2. Management

- No comprehensive maintenance management system exists in SEPRRN:
- No operational reports are produced by which to gauge planned versus actual accomplishment, productivity or costs per unit of output. Thus the work potential in the current system is not being exploited.
- No equipment management reports are being generated to monitor costs, utilization factors and downtime.

- Basic maintenance management system elements, such as work activities, service levels, maintenance standards work methods procedure and production standards, have not been adequately defined and implemented throughout SEPRRN.
- The number of managerial functions which are performed by external advisors is extensive. It appears that SEPRRN personnel does not yet have the confidence, initiative, skills, or authority to undertake the more complex tasks.
- The organizational structure is difficult to determine. The lines of authority and communication leave much to be desired for an effective organization.
- The failure or inability to recognize the significance of basic equipment care has contributed to the present situation of 35% - 40% inoperative equipment.

3. Motivation

- The average road maintenance worker is underpaid and in many cases undernourished. He is often forced to seek supplementary employment to augment his salary. The result is often lack of motivation and low productivity.

4. Training

- The training effort has been underestimated. Problems such as student illiteracy and lack of qualified local instructors present serious communications difficulties.
- Not enough emphasis was placed on inservice training and a reward system to recognize superior performance.

5. The Consultant

Personnel turnover and lack of adequate French language capabilities have hampered effective performance; however, the consultant has been instrumental in achieving a partial level of succe

in the institution building of SEPRRN under difficult conditions. SEPRRN is now prepared to some extent for the assignments and responsibilities associated with a major governmental function.

In conclusion, Group Seven regards a road maintenance project or any maintenance project, anywhere in the Third World as being quite ambitious and very difficult, more so than any road construction, health, education or agricultural project. A cultural analysis might point out that the central concept, i.e. "maintenance" has by and large not been culturally inculcated in Third World nationals. The benefits of road and equipment maintenance are much less evident than the benefits of construction of roads, education, health care, etc. Thus a project seeking to build a highway maintenance institution is not an easy task.

b. Recommendations for Improvements

1. Management

- A maintenance management system should be designed to facilitate planning of annual maintenance work programs for each district. A reporting system is also required to determine planned versus actual work program accomplishments, productivity and costs per unit of output. Until this system is installed there exists no solid base for calculation of manpower or equipment resource requirements or for distribution of resources to specific district networks.

2. Training

- A budget item should be included in Phase II for attitudinal training, qualified instructors, facilities and equipment.
- Equipment operator skill training should be upgraded to include first echelon maintenance (basic servicing of a vehicle).
- Special emphasis should be placed on mechanic's qualifications, training and performance. The following should be considered :

- French language technical (e.g. in Togo)
- Local vocational school (e.g. CANADO)
- Full-time advisory team instructors on site working directly with trainees on a maximum of 1 to 5 ratio.
- Provide reward system for superior performance.

3. Phase II Consultant Services

- Require high level French language capability from the Phase II Consultant team leader.
- Have consultants restructure their operation to provide a closer working relationship with SEPRRN counterparts.
- Assure that two advisory road maintenance engineer positions are filled and SEPRRN counterparts are assigned.
- Conduct organization and management seminars for senior SEPRRN personnel to include case study analysis of problem areas.

4. Other Recommendations

- Extend the range of advisory services up to include the Administrative Council and down to the operational mechanic level.
- Include SEPRRN and contractor participation in evaluation plans for Phase II.
- Establish a "methods and control" unit responsible to the Director General with authority to investigate and verify noncompliance incidents or failure of performance.
- Establish a closer identify and responsibility between operator & equipment when the latter is being repaired.
- Separate SEPRRN employees from TPTC payroll.

### PART III - DETAILED DESCRIPTION

#### A. PROJECT STRATEGY

As a result of Highway Maintenance I, SEPRRN has been reorganized and provided with facilities and equipment to maintain a portion of the National and Departmental road network. At present SEPRRN has a full time staff of 600 persons and hires an average of 800 laborers on a full time basis. SEPRRN also has a capital investment of about \$1.5 million in facilities and \$2.0 million in equipment. By 1980 SEPRRN will employ a full time staff of some 1125 employees and 1450 day laborers and capital investment will total \$2.7 million in facilities and \$6.8 million in equipment.

However, experience during the past three years (as highlighted in recent evaluations) has shown that SEPRRN's management capability to effectively plan and operate a road maintenance activity needs further strengthening. Also, in view of increasing road construction/reconstruction activities, expanding agricultural programs, and ongoing or planned health and social service programs, road maintenance requirements will accelerate. In FY 1975/76, SEPRRN maintained about 940 kms of roads. As construction is completed, maintenance demands will increase to 2,100 kms of National and Departmental roads alone in 1980. It is anticipated that some local roads (not presently maintained by SEPRRN) will also be reconstructed and require maintenance as GOH and donor programs in the rural areas expand. Without an improved capability SEPRRN cannot possibly hope to maintain Haiti's total network of almost 4,000 kms at some future date.

The GOH/AID Phase II program will provide technical assistance, training, equipment and facilities to help SEPRRN to maintain 2,500 kms of National and Departmental roads.

With a view toward the maintenance requirements of the 1,500 kms of local roads and in order to moderate the longer term maintenance workload, and resultant resource requirements on SEPRRN, the Phase II Program will also prepare SEPRRN to assist in maintenance of local roads through a Community Action Program.

Beyond the scope of this project, additional technical assistance, training, equipment and facilities will be required from AID and/or other donors. Annex B, Exhibits 4, 5 and 6 show the time phased build up of SEPRRN as relates to equipment, personnel and increasing work load. This project will fund only Lots I and II of equipment as shown in Annex B Exhibit 3. Financing of this project is insufficient to include Lot III equipment, which is not required until FY 79/80. SEPRRN's yearly operating budget will have to be increased. Current budget estimates were prepared in 1975 and will be modified during the early stages of the Phase II Program as SEPRRN's 5 year plan is revised. Other donors have indicated a desire to participate in future programs with AID & SEPRRN, especially in the area of training. A revision of the 5 year plan will be the first step in assessing SEPRRN's longer term requirements.

B. GOAL, PURPOSE, END OF PROJECT STATUS

1. Goal

The road maintenance program will be an important factor in improving the standard of living of the rural poor by integrating them into the mainstream of economic activity and overall development.

2. Subgoal

A functioning road transportation network will facilitate the flow of goods and services between rural and urban areas and to markets or export points.

Raising the absolute level of rural income should be a measure of goal achievement. However, the difficulty of collecting baseline data of sufficient validity obviates at present estimates of increase in small farmer income as an indicator of achievement of goal purpose. A functioning road system will contribute to integrating the rural poor into the mainstream of economic activity. Theoretically, access to markets should promote an increase in agricultural production and sales and a reduction in transportation costs. Investment in rural infrastructure improvement will provide opportunities for employment. All three conditions are factors in increasing rural income.

The goal and subgoal indicators of achievement which follow should be considered within the context of GOH and other donor programs in highway and feeder road construction as well as the road maintenance program.

- an increase in the total kilometers of all-weather roads maintained by SEPRRN from 1,213 km in 1976/77 to 2,390km in 1980/81. An increase of this magnitude constitutes a "functioning road network"
- A reduction in freight rates from 39¢ per ton/km in 1976 to 23¢ per ton/km in 1981.
- 2,000,000 work days of employment generated between 1977 and 1981.

### 3. Purpose

The project will expand and strengthen SEPRRN's capability to maintain Haiti's National and departmental road network and through a community action program initiate activities on local roads.

### 4. End of Project Status

A maintenance management system adapted to SEPRRN's needs and capabilities which defines the road inventory, service levels (road maintenance standards), work activities of the districts, subdistricts and brigades, and introduces a programmed budget and reporting system will be designed and implemented. Top and middle management, foremen, administrative personnel, skilled technicians and laborers will be trained as indicated in the discussion of institutional strengthening and as shown in V. B EVALUATION, Table 3. Appropriate labor intensive techniques will be applied and the community councils' ability to maintain roads with an average daily traffic of less than 50 will be strengthened.

Specifically, at the end of the project

- Four principal road maintenance districts will be operational at Port-au-Prince, Les Cayes, Cap Haitien, and Hinche. In the case of the first three nucleus organizations established under Phase I will be strengthened. The Hinche District will be new under Phase II. These principal districts will control regrading, intervention, hand and bridge brigades and will each be capable of maintaining between 180 km and 220 km by 1980. The principal districts will be able to perform up to fourth echelon maintenance (major repairs) on their equipment.
  
- Eight subdistricts will be operational at Jacmel, Gonaives, Port-de-Paix, Saint Marc, Petit Goave, Jeremie, Mirebalais, and Ouanaminthe. The subdistricts will control regrading and hand brigades and will each be capable of maintaining between 125 km and 150 km of road per year by 1980. Subdistricts will be able to perform third echelon maintenance (minor repairs) on their equipment.

Brigade composition by 1980 will be as follows:

- 13 Regrading brigades will periodically replenish and reshape gravel road and shoulder surfaces, clean side ditches and culverts, cut grass and brush and otherwise maintain 60 km of road per month each.
- 50 Hand brigades, assigned to paved road maintenance, will repair potholes, shape shoulders, clean ditches, and culverts and control vegetation along the roads and otherwise maintain 20 km of new road or 10 km of old road per month each.
- 4 Intervention brigades will be equipped for emergency repairs, i.e., landslides and wash-outs. When not assigned to emergencies, they will perform minor upgrading, an estimated 6 km of deteriorated secondary roads per month each.
- 4 bridge brigades under control of the principal districts will maintain a total of 48 bridges each year.
- 1 signalization brigade will maintain traffic control signs and markings.
- SEPRRN independently preparing yearly operating plans and budgets and other required reports which are acceptable to the Admin. Council.
- An estimated 40 local communities will be involved in performing emergency repair to some 720 kilometers of those departmental and local roads with an average daily traffic count of less than 50 and therefore are not included in the AID feeder road program.

Private Haitian contractors will be utilized when feasible for specialized road maintenance functions (such as asphalt surface sealing) pending expansion of SEPRRN's capability in this area.

#### 5. Outputs

See Part V.B, EVALUATION, Table 2, Project Outputs.

#### 6. Inputs

See Part V.B, EVALUATION, Table 1, Financial Plan, Project Inputs.

## C. PROJECT COMPONENTS

### 1. Introduction - Institutional Strengthening

Overestimating the institutional strength of SEPRRN was one of the shortcomings in the Phase I Program. The key to an effective road maintenance organization in Haiti, and the focus of the Phase II Program will be institution building. As discussed below, technical assistance will be provided to strengthen the managerial and technical skills of SEPRRN personnel. Construction of facilities and procurement of equipment will be time phased, contingent upon certain managerial reforms, thereby facilitating development of an efficient road maintenance organization. Problems of personnel turnover will be attacked by development of new salary scales, a system of bonuses for training achieved or outstanding work and longevity pay.

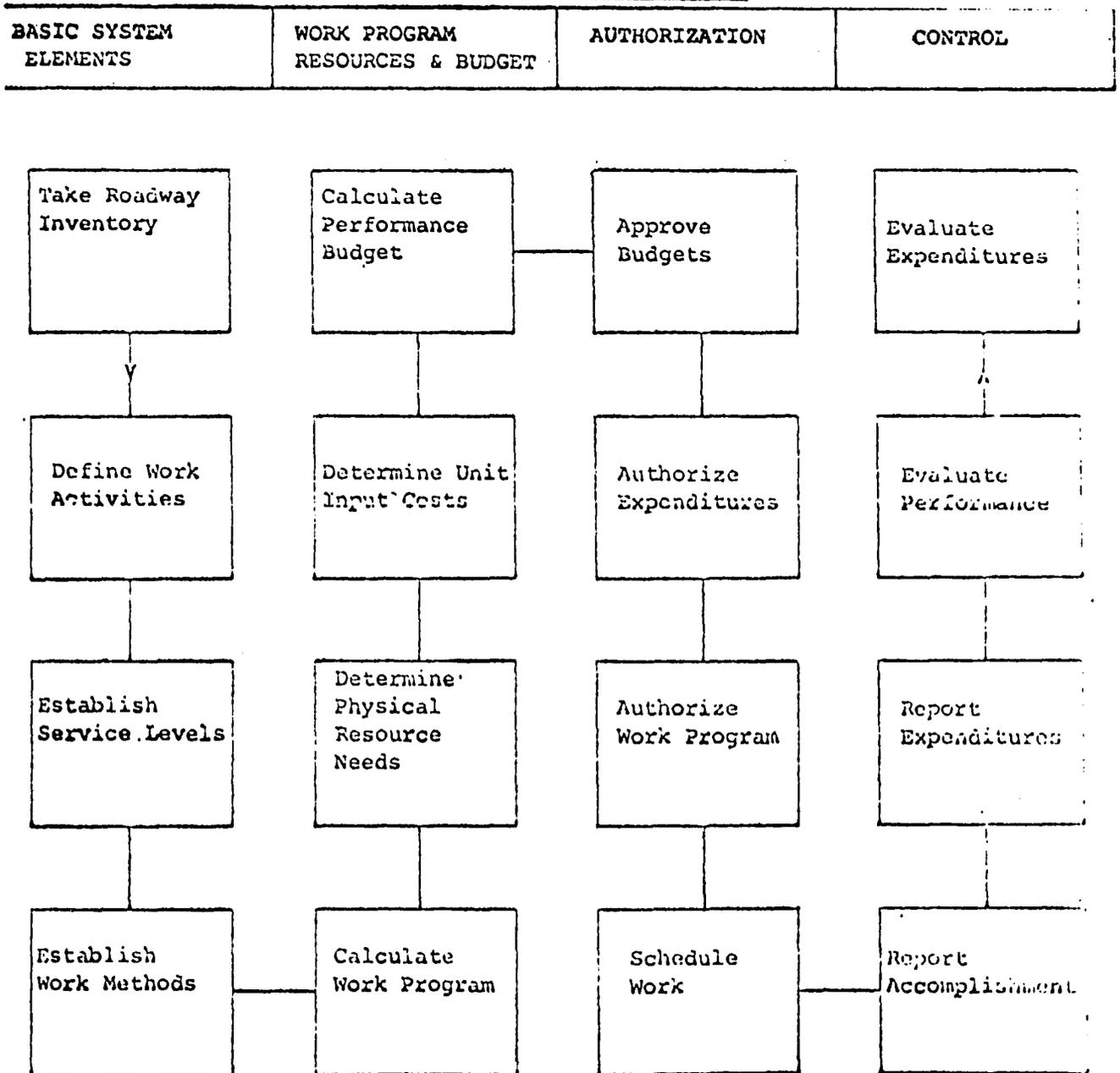
The technical assistance consultant team to be selected will work from the base established by the Phase I consultants. The Phase II team will consist of technicians who perform either: a) advisory roles with assigned counterparts, or b) operational roles with counterparts on a one-to-one basis. Although the variance in roles may appear negligible, there are important differences. A line versus staff role is envisioned.

- The advisory technicians will perform the more traditional role of providing "expert advice" but leaving to the employees of SEPRRN the task of carrying out the job.
- The specialist technician will, with his Haitian Counterpart, fill a specific operational slot in the SEPRRN organization. As discussed in the training plan this specialist will have the authority and responsibility to perform a specific job while training his counterpart to eventually take over the job.
- It is envisioned that the GOH will contract with a US engineering firm with international experience to provide both types of technical assistance, but that the operational specialists will be Haitians recruited from within country if possibly or from the US on a 2 year contract. The scope of work for the team members is presented in Section IV, A, 7, and Annex B Exhibit 12.

2. Maintenance Management System

In advising on the management of expanding SFPRRN operations the present AID funded consultant has introduced several financial management tools (e.g. a cost accounting system). However, recent evaluations point out the need for further management improvement. SFPRRN lacks a comprehensive maintenance management system based on planning, budgeting, and reporting which culminates in the evaluation of planned versus actual performance. The following flow chart illustrates such a system:

MAINTENANCE MANAGEMENT SYSTEM



The chart represents a performance-oriented system designed by the Transportation Research Board\*<sup>1/</sup> which can be adapted to Haitian conditions. Supplementary sheets to the above flow chart (Annex B, Exhibit 7) represent issues which must be considered with SEPRRN at an early stage in Phase II.

The system will facilitate more effective planning and management of SEPRRN by introducing a tangible means of evaluating the cost-effectiveness of SEPRRN's operations. Maintenance activities will be defined, standards and service levels established, work methods and procedures specified, productivity rates set and annual work programs for each District, Subdistrict, and brigade established. Annual road maintenance plans will be rationalized to fit the resources available.

The system will require operational reports to evaluate:

- a) District and Subdistrict operations - planned versus actual number of kilometers of road maintained, productivity of labor intensive and capital intensive maintenance activity and maintenance costs per kms of road maintained, by road type;
- b) Equipment operating costs including maintenance downtime and utilization rates;
- c) Inventories - spare parts levels including reordering levels. In this regard the feasibility of introducing a computerized inventory control system will be examined. (See Section IV, A,6).

The District and Subdistrict will each be operated as independent cost centers responsible for road maintenance within assigned regions, but reporting to Headquarters in Port-au-Prince. Operating within the cost controls established by Headquarters should allow comparison of district operations and facilitate the evaluation of production rates of the brigades.

The March 3, 1972 Administrative Decree creating SEPRRN requires monthly and quarterly reports from the Director General of SEPRRN to the Minister of TPTC and to the Administrative Council on such points as: the state of the road network; the work done during the reporting period; the disbursements made; a detailed inventory on  
\*<sup>1/</sup> NCHRP Report 131, Performance Budgeting System for Highway Maintenance Management

the state of equipment: an evaluation of the efficiency of each District and the work accomplished; and a work plan for the next reporting period. In the past, not all of this information has been reported on a periodic basis, probably because it was not possible to assimilate the information in a timely fashion. Installation of a maintenance management system should facilitate compliance with the decree.

### 3. Training Program\*

The Training program has been intensified during the ongoing Phase I program and current activities include:

In-Country Training. The training ground associated with the Port-au-Prince facility has been very active. SEPRRN instructors have been working with groups of operators from the various districts. Training is being carried out on new loaders and graders plus older large and small bulldozers. A temporary shortage of asphalt in Haiti has prevented training in asphalt patching utilizing the 10 new asphalt kettles and small rollers acquired under Loan financing.

Offshore Training. Four candidates have been selected to attend an intensive short course in welding to be conducted at the Jefferson Davis Vocational-Technical School located at Jennings, Louisiana. The tentative starting date for the 10 week course is May 15. This school was selected because of the availability of French-Creole speaking instructors at the school as well as Creole speaking employees at a nearby motel and restaurant. Phase I Consultant Personnel have visited the school and were impressed with the facilities and the receptiveness of the director in undertaking training of SEPRRN personnel in this state institution.

Off-shore training planning also includes sending another group of maintenance-supervisor trainees to the University of Nebraska during the summer of 1977 for a program similar to that carried out last year. This is in preparation for expansion of SEPRRN into additional districts in CY 1978.

In addition, contacts are being made with various heavy equipment schools in Florida to locate a facility willing to provide a short course for several of the SEPRRN instructors who form the instructor group at the SEPRRN Operator and Crew Foreman Training Ground. This is part of an overall plan to increase the effectiveness and prestige of the training Section. The new Port-au-Prince garage contains provisions for an audio-visual training room with appropriate equipment and materials. The Phase I Consultant is actively involved in

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\*Prepared in part by Robert Shields and J. Ollie Trammel from Multinational Agribusiness Systems, Inc.

the procurement of these items and specialized personnel at the University of Nebraska have been consulted in this respect. Considerable training material is on hand now but projection equipment is presently limited to one slide projector.

Training Manuals. HWS personnel completed printing of the 7th locally produced manual for SEPRRN covering the utilization and maintenance of 10 Ton wrecker trucks. Two additional manuals are presently being printed. These are instructions for utilization and maintenance of three inch water pumps and 165 gallon asphalt kettles.

According to SEPRRN's current five year plan, 4 districts and 8 sub-districts will be operational by 1980 and SEPRRN's personnel will have to be increased from about 1372 in 1977 to about 2564 by 1980. The table below estimates specific manpower requirements on the basis of 12 fully operational districts and sub-districts:

SEPRRN PERSONNEL REQUIREMENTS

	<u>76/77</u>	<u>77/78</u>	<u>78/79</u>	<u>79/80</u>
Central Administration	62	89	95	95
Central Garage/Shops	72	103	103	103
Districts	54	72	72	72
Sub-Districts	42	84	84	84
Sub Total	230	348	354	354
Intervention Brigades	114	171	228	228
Regrading Brigades	250	325	325	325
Hand Brigades	730	1080	1110	1500
Bridges Brigades	48	72	72	96
Signalization Brigades	-	8	8	8
Seal Coat Brigades	-	-	-	53
Sub Total	1142	1656	1743	2210
Total Personnel	1372	2004	2097	2564

Depending upon the results of the Labor Intensive Pilot Project, the preliminary manpower requirements for the follow on Community Action Project are estimated to be 29 SEPRRN personnel and 960 village foremen and laborers.

Very little of the required manpower is available in Haiti at present; nor will enough skilled personnel flow from the existing educational system over the next five years. Recent technical based programs at

the post secondary level have been initiated by the GOH with Canadian, French and UNDP assistance. CANADO has been operational since 1974, and a new National Institute for Vocational Training, sponsored by the French and UNDP was inaugurated in January 1977. However, both of these schools will supply relatively higher level technicians - people who would be production supervisors and plant foremen, and their programs are two to four years long. Other than a few isolated examples in industry and government there are no vocational education programs to produce skilled mechanics, welders, electricians, etc. at the trade school level. Within SEPRRN there is a severe shortage of middle level personnel, not only technicians such as garage managers, and chief mechanics, but also administratively oriented personnel, such as accountants and inventory specialists. The shortage also extends down to the mechanic and equipment operator level.

SEPRRN has a training division, and about 165 technical and administrative personnel received in-service training between September 1974 and September 1976. A total of 103 equipment operators received pre-employment training during the same period, about half of whom were subsequently employed by SEPRRN. Another 47 students were in pre-employment training during October and November, 1976. However, indications are that this phase of the training program requires improvement. Difficulties have also resulted from the low level of literacy, ineffective screening of candidates and an inefficient personnel training system. Trained employees often leave SEPRRN in response to inducement of higher pay in the private sector.

The shortage of qualified personnel and resultant training needs cannot be rectified quickly; it will require a prolonged and continuing effort. CANADO and the National Institute of Vocational Training will be supplying students in the future, but the demand is greater than the supply. With the attention of industry, government and outside donor assistance, trade schools for the post primary and illiterate level will eventually be established, but these programs are several years in the future. In the interim it is planned to strengthen the management training and operational capability of SEPRRN under the Phase II program as follows:

Immediate

4 Specialists will be contracted for a total of 84 work months as counterpart personnel to key SEPRRN employees. These specialists will work on a one to one basis with SEPRRN counterparts in critical operational roles within SEPRRN. If not available in Haiti, there are indications that Haitians presently living in the US would be available on a contract basis and return to Haiti for a one-three year period. The following specialists will be required:

<u>Specialist</u>	<u>Time</u>
Inventory Manager	24 months
Accountant	12 months
Garage Manager	24 months
Chief Mechanic	24 months

It is envisioned that these and other short terms specialists will spend approximately 50% of their time in a training capacity, establishing training requirements, curricula, programs and actual classroom and on the job instruction with the counterpart and his staff. They will design and implement training programs under the overall guidance of a training advisor who is a member of the technical advisory team and who will be working directly with SEPRRN's training division on overall SEPRRN'training programs.

The National Institute of Vocational training, which is adjacent to the new SEPRRN headquarters, has indicated an interest in working with SEPRRN to establish short term in-service courses in the areas of welding, basic mechanics, as well as in developing basic reading skills. At this time it is envisioned that AID and SEPRRN would provide some equipment, classroom facilities and funds for curricula development and instructors as related directly to the SEPRRN program. The Institute would provide additional classrooms and in-country instructors and expertise to develop the necessary curricula and emphasize the training of trainers.

#### Future and Longer Term

Concurrent with establishment of an in-service training capability AID could provide funds to train personnel needed to meet future SEPRRN manpower requirements. In this regard, SEPRRN will begin a scholarship program for secondary level young people to attend 2-4 years of schooling in CANADO or the National Institute for Vocational Training. Upon graduation these students will be required to become employees of SEPRRN for a specific period. The phase II program provides funding for a number of these scholarships during the four year implementation period. Technicians could also be sent to the French or Creole speaking Training Centers in Togo or The U.S. to study technical skills required in a road maintenance organization. As above, students would be bonded to return as employees of SEPRRN. AID could also fund correspondence courses for SEPRRN employees and establish an in-service capability to train supervisors of labor intensive maintenance techniques at the community level. Additional detail is provided in Section IV, A.8.

The Phase II Training Program includes funding as follows:

In country	\$187,000
Off Shore	95,000
Curricula development & Instructors	104,000
Materials, supplies & Equipment	24,000
In-country travel	<u>10,000</u>
Total Cost	\$420,000

#### 4. Community Action Program

The Labor Intensive Pilot Project to be completed in the first year of the Agricultural Feeder ROads Program will study the use of intensive labor on both construction and maintenance of unpaved roads. Questions to be addressed include:

- Efficiency: Cost of labor intensive approach versus production.
- Organizational Framework: Role of SEPRRN and TPTC in relation to Community Councils.
- Administration: Supervision, financing work tasks, logistics, training, etc.

The Pilot Project will test various labor intensive maintenance, ditching and reconstruction alternatives on 200 kms of feeder road at costs ranging from \$700 - 1500 per km. See Annex B Exhibit II.

As a follow-on to this Pilot Project and based on experience obtained in Food for Work road construction/maintenance projects now administered by HACHO, AID will share on a 50/50 basis with the GOH the costs of labor intensive road maintenance approaches in SEPRRN. At this time it is envisioned that the program will concentrate on simple maintenance activities on roads with an average daily traffic count of less than 50 vehicles. Activities will be under the overall direction of SEPRRN and be undertaken through 40 Community Councils, under contract to SEPRRN. The project will provide over 40,000 work days of labor during the three year program.

It should be emphasized that the precise nature of activities, the recruitment and administration of labor crews, payment for work completed, etc. will be subject to the findings and recommendations of the Pilot Project. The GOH is fully in support of efforts to apply labor intensive techniques, not only to reduce the cost of road maintenance, but to create additional rural employment opportunities and increase the local communities involvement and commitment to the public infrastructure program in road construction and maintenance irrigation systems etc. Further, it is expected that labor intensive techniques will reduce future requirements for highway maintenance equipment and the need for additional skilled personnel and funds to maintain it. Based on preliminary estimates it is expected that 720 kms of road can be maintained on emergency basis annually by the last year of the program. Estimated costs are outlined below:

	<u>AID</u>	<u>GOH</u>	<u>TOTAL</u>
Hand Tools & Equipment	\$ 70,000		\$ 70,000
SEPRRN Personnel		\$140,000	\$140,000
Village Personnel	30,000	30,000	60,000
Supplies & Contingency	<u>50,000</u>	<u>20,000</u>	<u>70,000</u>
TOTAL	\$150,000	\$190,000	\$340,000

It is anticipated that payment for road maintenance work done by the communities will be on fixed sum basis. That is, using the fixed amount reimbursement (FAR) approach, a community would be paid for maintaining a given section of road (e.g. 20 kms) to an agreed upon standard. SEPRRN would initially provide engineering and organizational expertise, but thereafter simply contract with the community leaders at a fixed price and make payments as the maintenance progresses. As in the case of the Integrated Agricultural Development Loan, the GOH minimum wage of \$1.30 per day is recommended. Section IV, A, 9, Labor Intensive Analysis, provides further details.

#### 5. Administrative Operations (Port-au-Prince)

SEPRRN Headquarters in Port-au-Prince has responsibility for staffing, payroll, procurement, accounting, training, general administration and control over District and Subdistrict operations. In addition, the headquarters support a central garage for equipment maintenance and major repairs. As operations are expanded throughout the country, equipment maintenance operations will become more decentralized, with each District and Subdistrict responsible for road maintenance within their own regions and lower level equipment maintenance. Radio communications equipment to be procured under Phase II will facilitate a more efficient deployment and control over SEPRRN resources and allow the headquarters to monitor and respond to regional needs.

Facilities to be constructed under the Phase II Program include:

Port-au-Prince Administration Building

Revisions and additions to Central Garage in Port-au-Prince.

##### a) Administration Building

The central administration building would be located on a site adjacent to the Port-au-Prince Central Garage/Shop Facility. Space is required for the following elements of the SEPRRN Administration:

Administrative Council Members	_____	6 persons
Director General and Staff	_____	8 "
Administrative Staff	_____	9 "
Personnel Section	_____	5 "
Budget Section	_____	8 "
Accounting and Control Section	_____	16 "
Technical Director and Staff	_____	18 "
Procurement Section	_____	5 "
Training Section	_____	5 "
Port-au-Prince District Engineer & Staff	_____	4 "
Vehicle Weighing Section	_____	3 "
Signalization Section	_____	3 "
		<hr/>
TOTAL SEPRRN		90

Advisors and Administrative Staff 10 "  
100 persons

Based on an average space requirement of 100 square feet per person an area of 10,000 sq. ft. is needed. A conference room /classroom of 600 sq. ft. will also be required to bring the total building area to 10,600 sq. ft. A two-story Administration Building will be constructed with provisions for future expansion.

Construction will be a reinforced concrete frame with concrete block curtain walls.

b) Revision and additions to Central Garage

Revisions to the central garage facilities constructed under Phase I of the program are necessary in view of the expansion of SEPRRN's responsibilities, with attendant increases in the size of its equipment fleet and spare parts storage capabilities.

- A small office building (720 sq.ft.) will be constructed to house the garage director, garage manager and staff.

- A new building of 6,000 sq. ft. with 9 work bays will be provided to house equipment tune-up bays which will be re-located from Building C of the original Phase I project.

- Modifications to Building C are required to convert 5 tune-up bays to additional spare parts storage, as required to support the existing SEPRRN equipment and that to be

procured under this project. Allowances have been made in both Building C and the tune-up facility for SEPRRN to eventually assume maintenance of TPTC equipment procured for the Feeder Road Project.

6. District and Sub-District Operations

Districts (4)

Sub-Districts (8)

Assigned brigades include:

Assigned brigades include:

Regrading (1)  
Hand (4)  
Intervention (1)  
Bridge (1)

Regrading (1)  
Hand (4)

Garage for Major Repairs

Garage for Minor Repairs

Subdistricts are not "subdivisions" of Districts. The subdistricts will report directly to Port-au-Prince, but will receive equipment repair and intervention brigade support from the larger district garages. One signalization brigade will maintain vertical and horizontal traffic control signs and markings (signal lights, reflective paint, etc.) and will work throughout the country as required, and two Seal Coat Brigades will perform sealing of asphalt roads on a 4-5 year cycle starting in the 5th Year of this program.

Brigade purpose, personnel and equipment requirements and operating costs are detailed in Section IV, A, 4. Average brigade output is as follows:

Average Brigade Output per Month

(13)	Regrading Brigades	60 kms
(4)	Intervention Brigades	6 kms
(50)	Hand Brigades	20 kms new 10 kms old
(4)	Bridge Brigades	1 Bridge

As SEPRRN's operations expand and the brigades gain experience, productivity is expected to increase so that by 1980 the district and subdistricts will be able to maintain between 120 kms and 220 kms of road each. Equipment lists and costs are attached as Annex B, Exhibit 3.

District and sub-district facilities to be constructed under the Phase II Program include:

## Hinche District Facilities

### Sub-districts Facilities (8)

#### a) Hinche District Facilities

Hinche has been named as one of SEPRRN's four principal district offices, will house an intervention brigade and provide equipment support to its associated sub-district. Construction of garage/shop facilities will be based on an adaptation of plans prepared for the Les Cayes Facility under Phase I.

As in other major district facilities a fenced - in gravelled area of 100 meters x 65 meters is required to locate offices, a guard house/generator building, refueling station, garage facility with office, parts storage, service bays, tune-up bays and material storage, a grease ramp, loading ramp and vehicle wash-area. Routine vehicle maintenance and up to fourth echelon repair work will be performed.

#### b) Sub-District Facilities

Construction of a small garage/shop facility at each of the eight sub-district is planned. The concept for sub-district workshops is more or less that of a general service station with facilities for parking, washing, lubrication, defective component exchange, tune up and minor repairs. Where relatively heavy equipment is concerned, however, this requires that a range of tooling, heavy jacks, pullers, etc. be present just to exchange defective components in road maintenance size equipment.

The workshop staff will be small as these shops will not be servicing more than a maximum of 10 vehicles. The staff would consist of a general mechanic, one or two general helpers, a lube man, a part time welder and the usual watchmen, etc.

7. Phase II Construction Summary

A summary of construction costs for the facilities included in Phase II is as follows :

a.	Port-au-Prince Administrative Facility	\$ 358,000
b.	Revisions and additions to Central Garage	
	1) Office Building	20,000
	2) New Repair Bays	54,000
	3) Building C Alterations	3,500
	4.) Zone B enclosure	22,200
c.	Hinche District Facility	180,000
d.	New Sub-District Facility (8)	528,000
	Total Estimated Costs	\$1,165,700*
	Round to	\$1,170,000

\* Includes shop equipment, furniture, office equipment, 10% contingency, and architectural design and inspection fees varying from 6 to 10%, depending upon location. Unit construction costs include an inflation factor of 1% per year over a two year period. Shop equipment includes 7.5% inflation per year.

Annex B, Exhibit 1, provides details on the above cost summary and Annex B, Exhibit 2 , includes related site and building beyond plans.

Land for Construction of Facilities

The GOH will provide the necessary land as a part of their counterpart contribution.

PART IV. PROJECT ANALYSIS

A. TECHNICAL AND ENGINEERING ANALYSIS

1. Haiti's Road Inventory

Haiti's overall road network consists of some 3,724 km of road, of which 1000 km is classified as National roads, 1500 km as Departmental and 1224 km as local. Of these totals some 352 km are paved with asphalt, the remainders are generally of earth, although some have gravel in sections.

Of the total, SEPRRN is now conducting permanent or emergency road maintenance on only some 1213 km. This figure should be raised to 2390 km by 1980.

Annex B, Exhibit 6 provides detailed data on Haiti's present road inventory, as related to SEPRRN's present and anticipated road maintenance activities during the period 1975 - 1981.

a. Current Programs

During the past 3 years approximately 102 kms of national, departmental and local roads have undergone construction/reconstruction activity. Another 1,545 kms are in the current construction program, supported by IBRD, IDB, AID or other donor assistance, as summarized below:

	Const. Completed (Km)	Under Const (Km)	Planned Const. (Km)
<u>National</u>			
IBRD	30	242	272
IDB	30	168	198
French Government	42	-	42
<u>Departmental</u>			
AID Fdr. Rd.		42	940
Other Fdr. Rd.	-	-	93
<u>Local</u>			
AID Coffe Roads	-	20	100

b. GOH Plans for Future Road Programs

The IBRD Rural Development Project in the Northern Plains includes the construction of 93 kms of feeder roads in the Cap Haitien and St. Raphael

area . The construction will be under the auspices of an ongoing World Food Program and will require about 200,000 man/days of labor. Simple equipment and tools will also be provided. The total program (IBRD and GOH) will cost \$13 million, of which \$1.25 million is budgeted for roads.

The IDB is currently programming technical assistance funds to develop feasibility studies on possible future investments in area development schemes in the southern peninsula. This will include consideration of construction and/or reconstruction of up to 250 kms. of possible road links. This proposal is still in a preliminary stage and no loan is contemplated prior to late 1978.

## 2. Relationship to AID Feeder Road Project

### a. Summary

On June 29, 1976, GOH and AID signed Loan and Grant Agreements totalling \$7.4 million to provide the GOH financial and technical assistance for an Agricultural Feeder Road improvement Program. As its contribution, the GOH will furnish \$3.75 million for a total program of \$11,15 million.

The Agricultural Feeder Road project will assist the GOH in the reconstruction of approximately 940 kilometers of rural roads throughout Haiti over a five-year period and provide all-weather access to isolated farming communities and markets. In the process major improvements in TPTC and local private engineering and construction capabilities are expected.

Reconstruction will be accomplished by TPTC force account and private Haitian contractors. An Equipment Leasing Service will be established to facilitate private contractor participation, and a Pilot Project will be carried out to test various labor intensive methods of road reconstruction and maintenance.

Initial conditions precedent have been met and a US Contractor technical assistance team is expected to arrive in February 1977 to work with TPTC to meet subsequent conditions and begin execution of the project.

### b. Relationship to Phase II Maintenance

The Agricultural Feeder Road Project will improve feeder roads, which will enter the SEPRRN Road Maintenance Program as they are upgraded by TPTC and local contractors. Since SEPRRN's current Five Year Plan ( 1975-1980) was prepared prior to finalization of the AID Feeder Road project, it does not take into account the 940 kms of feeder road which will be "coming on stream" between 1977 and 1981. Consequently, the Phase II loan terms will

require that SEPRRN revise its Five Year Plan to take the AID Feeder Road Program and other new programs into account. At the same time inconsistencies in the Five Year Plan will be resolved. Competition may arise between the Road Maintenance II and the Agricultural Feeder Roads Projects through shortage of sufficient qualified engineers, technicians, foremen, equipment operators and mechanics to meet the requirements of both SEPRRN and TPTC during the project's implementation period. However, the long term result will be to the advantage of SEPRRN since TPTC trained personnel will be available to SEPRRN upon completion of the feeder road program. Community level workers who work with TPTC will also have been trained in intensive labor type activities for use by SEPRRN as their maintenance responsibilities expand to encompass completed sections of feeder roads.

It is possible that once SEPRRN has adequately developed its equipment maintenance it will be asked to maintain TPTC and TPTC Leasing Service equipment on a reimbursable basis.

There has been some discussion on the eventual transfer to SEPRRN of equipment procured for the Agricultural Feeder Road project upon completion of that Project. However, this does not appear feasible for three main reasons; 1) The present Ag Feeder Road Program will most certainly be followed-up with a second project to continue the rehabilitation of other sections of the national highway system, or to construct penetration roads, 2) After 5 years of hard use on road construction the equipment will be in such poor condition that its continued service by SEPRRN will not be justified on a economic basis, and 3) Equipment to be used in the Feeder Road Project is generally larger, heavier and more costly to operate than the equipment to be procured for SEPRRN.

### 3. Road Construction and Maintenance Standards

#### a. Weight Limitations

Under the IDB financed South Highway project provisions are being made to provide vehicle weighing stations (fixed and mobile) to control the weight of vehicles using the newly constructed roads. A decree is presently in preparation assigning SEPRRN the responsibility for the operation of these stations. The decree also sets weight limitations as follows:

- Single rear axle load not to exceed 8 tons
- Double rear axle load not to exceed 15 tons
- Front axle load with trailer or semi-trailer not to exceed 5 tons
- Front axle load of vehicle without trailer or semi-trailer not to exceed 8 tons
- Total vehicle weight not to exceed 40 tons.

The maximum size of vehicles is also defined in the decree as is the tables of fines to be applied for infractions to the size and weight limits.

Road Maintenance standards to be met by SEPRRN on reconstructed roads normally will be those required to maintain the original construction design standard of the road.

b. North, South and Jacmel Roads

Construction Standards

These North, South and Jacmel roads were constructed to the following standards:

	<u>North</u>	<u>South</u>	<u>Jacmel</u>
Design Speed (KPH) (Plain/Rolling/mountains)	80/60/40	70/60/40	60/40
Paving Width (M)	6.00/7.00	5.00/9.00	5.50/6.00
Shoulder Width (M)	1.50	1.00	1.00
Minimum Horizontal Curve (M)	200	40m	25m (except, 15m)
Maximum Grade (%)	6%	7%	10%
Exceptional Grade (%)	8%	9%	12%
Design Load (Axle)	12T	12T	12T

Maintenance Standards

Maintenance standards for these roads call for the asphalt surface to be kept free of potholes and irregularities, the shoulders flush with the edges of the asphalt surface to prevent ravelling and sloped to drain, the side ditches to be cleaned of debris and vegetation, the culverts clean, and the headwalls and other concrete or masonry drainage structures in good condition. Further, any slides which occur and other debris on the roads must be removed promptly, the bridges kept clear, any metal painted, and drain holes kept clear. SEPRRN will also maintain vertical traffic signs and keep traffic lines painted.

c. AID Agricultural Feeder Roads Project

Construction Standards

Because of the low average daily traffic count (ADT) the AID feeder roads project does not call for any improvements beyond the following basic restorative work:

- Repair of base and sub-base failures ( removal of unsuitable base/sub-base, and placement of selected material).
- Repair of side slopes

- Repair of damaged drainage structures.
- Restoration of lateral drainage.
- Repair of surface failures and placement of a 5-cm (average) layer of crushed rock surfacing.
- Widening of the traveled way in sections where limited sight distances or traffic considerations make this mandatory (turnouts).
- Clearing of ditches and embankments.

Geometric design parameters to be used in the construction of these roads are as follows:

	<u>Flat</u>	<u>Rolling</u>	<u>Mountainous</u>
Design Speed	60Km/hr	40Km/hr	20Km/hr
Roadway Width	6M	6M	4M
Traveled way Width	4M	4M	4M
Shoulder Width	1M	1M	0
Exceptional Width	6M	6M	3M
Minimum Horizontal Curve	140M	60M	30M
Maximum Grade	6%	8%	12%
Exceptional Grade	-	-	15%
Traverse Slope	3%	3%	3%
Design load (axle)	9T	9T	9T

#### Maintenance Standards

Maintenance standards for these gravel surfaced feeder roads involve regrading as necessary to maintain the road crown, shoulders and ditch lines cleaning of culverts, vegetation control, slide removal, bridge repair and periodic replenishment of gravel surfacing material as required.

#### d. Other Roads

##### Concrete Road

The section of road from Port-au-Prince to Leogane (33 Km) is of concrete and is largely maintained by cleaning and resealing joints and cracks as necessary to assure a water-tight surface. Shoulders, ditches and drainage are kept shaped and clean as for asphalt roads.

### Departmental and Local Gravel and Dirt Roads

Sections of road which have not been reconstructed presently receive only enough attention from SEPRRN to keep them passable. This involves placing gravel in soft spots and passing a grader or, if necessary a bulldozer, over the road to fill in holes and otherwise level the roadbed sufficiently to permit vehicles to pass. Most of these roads do not have a drainage system so they suffer considerable damage during each rainy season.

SEPRRN workplans call for the gradual upgrading of these roads, including the establishment of longitudinal ditches. The SEPRRN budget and work plan do not provide for the placing of culverts or other transverse drainage structures, as this work has always been considered a TPTC responsibility. However, since under the Feeder Roads Project each TPTC construction brigade will have quarry and rock crushing capabilities and prefabricate concrete culvert in various sizes, TPTC could provide SEPRRN with the quantity of pipe and aggregate required to complete the drainage on those roads improved by SEPRRN intervention brigades. Construction of any necessary major drainage structures would be done by TPTC or by contract, with TPTC funding.

By late 1977 results of the AID Feeder Roads Loan pilot project in Labor intensive road maintenance will be known. Also, at present under the AID Small Farmer Improvement Project some 200Kms of road are being constructed by hand labor. When the pilot project conclusions are available, plans for this aspect of road maintenance activity under SEPRRN will be finalized. By 1978 we expect the first contracts between SEPRRN and local community councils to be finalized calling for the maintenance of low volume roads by hand labor provided by the communities.

#### 4. Brigade Operations

##### a. Intervention Brigades

###### Purpose:

Intervention brigades will be used for emergency reconstruction; removal of landslides, repair of washouts, and other work beyond normal maintenance. When not engaged in emergency reconstruction these mechanized brigades will be used as roving construction crews for performing light upgrading to selected sections of road in bad condition.

Composition

<u>Personnel</u>	<u>Cost / Monthly</u>
- 2 Foremen	500.00
- 9 Equipment Operators	1,800.00
- 10 Drivers	1,750.00
- 2 Mechanics	400.00
- 3 Assistant Mechanics	225.00
- 1 Team Chief	150.00
- 30 Laborers	<u>1,200.00</u>
Total:	6,025.00 / brigade

Equipment

- 1 Bulldozer D-6
- 1 Mechanical Shovel or a Front End Loader, wheeled or track
- 2 Motor Graders
- 2 Ten ton rollers
- 1 Back Hoe
- 6 Dumptrucks
- 1 Water Distributer
- 1 Flatbed Truck
- 2 Fuel Storage tanks
- 1 Pick up Truck
- 1 Water pump, 3 inch
- 1 Trailer

Operating Costs

<u>Fuels</u>	<u>Quantity per month</u>
- 1 Bulldozer D-6	1,300 Gals. diesel
- 1 Payloader	500 " " "
- 2 Motor Graders	1,000 " " "
- 2 Rollers 10 t.	500 Gals " "
- 1 Loader	500 " " "
- 6 Dumptrucks	1,800 " Gasoline /month
- 1 Water Truck	300 " " "
- 1 Flatbed Truck	300 " " "
- 1 Jeep	200 " " "
- 1 Pick-up truck	200 " " "
	<hr style="width: 100%; border: 0.5px solid black;"/>
	3,800 Gals. Diesel,
	2,800 Gals. gasoline

Operating Costs

Diesel - 3,800 gals/month	-----\$0.64	-----	\$2,432.00
Gasoline 2,800 gals/month	-----\$0.616	-----	\$1,724.80
Lubricants	-----	-----	768.00
Equipment maintenance costs and other	-----	-----	<u>1,675.20</u>
	Total/Month:		\$6,600.00/Brigade

Total Operating Cost/monthly----- \$12,625.00

Total Operating Cost/Year----- \$151,500.00

Production Rate

The output of each intervention brigade performing light upgrading is estimated to average 300 meters per day, i.e. 6 kms/month.

b. Regrading Brigades

Purpose:

The mechanized regrading brigades shall systematically make a pass over each section of reconstructed road before deformation of the roadbed becomes pronounced. Gravel material will be redistributed over the road surface by a light dozer and grader without special compacting.

The side ditches will also be cleaned with the motor grader making a wide but shallow cut to extend the transversal slope along the road shoulder.

Composition

<u>Personnel</u>	<u>Cost/Month</u>
1 Foreman	250.00
2 Equipment Operators	400.00
2 Drivers	350.00
10 Laborers	390.00
Other costs	<u>210.00</u>
Total/Month	1,600.00/Brigade

Equipment

The 13 Brigades planned will generally include the following equipment, although in some cases a loader / backhoe may also be assigned:

- 1 Light ( D-3) Dozer
- 1 Motorgrader
- 1 2 1/2 Dump truck
- 1 Jeep
- 1 Set Hand Tools

Operating Costs

Fuel	Consumption/Month	
	Diesel	Gasoline
1 D-3 Bulldozer	500 Gal.	
1 Motor Grader	500 Gal.	
1 2 1/2 T Dump Truck		300 Gal.
1 Jeep		200 Gal
Total/Month	1,000 Gal	500 Gal

Operating Costs

Diesel 1,000 Gallons/month	\$0.64	\$640.00
Gasoline 500 Gallons/month	\$0.616	\$308.56
Lubricants		51.44
Equipment Maintenance and other		200.00
Total/Month		1,200.00/brigade
Total Operational Cost/Month		\$2,800.00
Total Operational Cost/Year		\$33,600.00

Production Rate

Production of each reprofiling brigade is estimated to average 60 km/month. It is planned that each section of road will be reprofiled on an average of each 90 days. The exact period will depend on the traffic over the section and condition of the section.

c. Hand Brigades

Purpose

The SEPRRN Hand Labor Brigades will perform the following tasks on reconstructed sections of road

- Removal of earth and vegetation from the roadbed
- Levelling of shoulders
- Cleaning of side ditches

- Cleaning of drainage structures ( pipe and box culverts).
- Planting of vegetation on side slopes
- Control of vegetation on shoulders, ditches and side slopes
- Trimming of bushes and trees obstructing traffic
- Immediate repair of "potholes " in asphalted roadbed.

Composition

<u>Personnel</u>	<u>Cost /Month</u>
3 Team Leaders	450.00
6 Skilled Workers	600.00
1 Driver	175.00
20 Unskilled Laborers	780.00
Other Costs	<u>195.00</u>
Total:	\$ 2,200.00

Equipment

- 1 Asphalt Kettle
- 1 Vibrating Roller
- 1 2 1/2 T Dump Truck
- 1 Set hand tools

Operating Costs

<u>Fuel</u>	<u>Quantity / Month</u>
1 Dump Truck	300/month
1 Vibrating Roller	<u>100/month</u>
Total Gasoline/Brigade:	400/month

Operating Costs

<u>Operating Costs</u>	<u>Cost / Month</u>
Gasoline - 400 Gals / month \$0.616	\$ 246.40
Lubricants	33.60
Costs of Equipment Maintenance	70.00
Materials ( Asphalt - Gravel - Sand- Wood	<u>550.00</u>
Total/ Brigade :	\$ 900.00 / month
 Total Operating Cost / month	 \$ 2,100.00
Total Operating / year	37,200.00

Production Rate

Each hand brigade will be responsible for the permanent maintenance of: 20 Kms of new paved road or 10kms of old paved road per month.

"New road" means entirely reconstructed road, less than five years of age.

d. Bridge Brigades

Bridge brigades will maintain the quality of construction and the hydraulic characteristics of bridges and major drainage structures. The work consists of mowing, clearing vegetation around structures and water channels, gabionage, welding, repair of retaining walls and aprons and painting of metal bridges and repair of structures.

Composition

<u>Personnel</u>	<u>Cost/Month</u>
1 Foreman	\$ 250
2 Drivers	350
1 Team Leader	150
1 Mason	200
1 Painter	200
1 Compressor Operator	200
1 Compressor Operator Assistant	100
1 Welder	200
1 Welder Assistantm,	100
4 Skilled Workmen	400
10 Laborers	390
Total:	\$ 2,540/month

Equipment

- 1 Pick up
- 1 Flat bed Truck
- 1 set of hand tools
- 1 Air Compressor, with accessories
- 1 Welding unit

Operating Costs

Fuels

	<u>Quantity/month consumed</u>	
	<u>Gasoline</u>	<u>Diesel</u>
1 Flatbed Truck	300 Gals	
1 Pick up	200 Gals	
1 Compressor		200 Gals
Total:	500 Gals	200 Gals

<u>Operating Costs</u>	<u>Cost/Month</u>
500 Gallons gasoline \$0.616	\$308.02
200 Gallons Diesel \$0.64	128.00
Lubricants	53.98
Equipment Maintenance	260.00
Materials	<u>1,910.00</u>
Total/brigade	\$2,660.00/month
Total Operating Cost/month	\$5,200.00
Total Operating Cost/year	\$62,400.00

Production Rate

The production of a bridge brigade is estimated to average one bridge per month.

e. Signalization Brigade

Purpose

The SEPRRN Signalization Brigade will perform the following tasks on reconstructed roads where traffic indications have been installed.

- Repairing of horizontal road striping on asphalt roads.
- Cleaning, repainting as necessary and securing of vertical road signs
- Removal of vegetation as necessary to permit signs to be seen.

Composition

<u>Personnel</u>	<u>Cost / Month</u>
1 Foreman	\$ 250.00
1 Operator	200.00
1 Driver	175.00
1 Skilled Workmen	100.00
4 Laborers	<u>160.00</u>
Total:	\$ 885.00

Equipment

1 Flatbed Truck  
1 Jeep  
1 Striping Machine  
1 Set hand tools

Operating Costs

<u>Fuel</u>	<u>Quantity per Month</u>
1 Flatbed Truck	300 Gal/mo. Gasoline
1 Jeep	200 Gal/mo. Gasoline
1 Striping Machine	300 Gal/mo. Gasoline
Total/Month	<u>800 Gal/mo. Gasoline</u>

Operating Costs

Gasoline 800 Gal/mo \$0.64	\$ 512.00
Lubricants	50.00
Equipment Maintenance and Other	<u>100.00</u>
Total Month:	\$ 662.00
Total Operational cost per Month	\$1,547.00
Total Operational cost per year	\$18,564.00

Production Rate

During the life of this project it is estimated that one brigade will be able to maintain signalization on the few road sections containing these features.

f. Seal Coat Brigade

Purpose

A capability which will be eventually required by SEPRRN but not, hopefully before 1980, is for resealing of asphalt paved roads. Therefore, toward the end of the project period Asphalt Sealing Brigades should be formed.

Composition

<u>Personnel</u>	<u>Cost/Month</u>
2 Foremen	\$500.00
5 Operators	1,000.00
5 Drivers	872.00
5 Laborers	<u>200.00</u>
Total:	\$2,572.00

Equipment

- 1 Self Propelled sweeper
- 1 Self propelled chip spreader
- 1/2 Mobile crushing /screening plant
- 1 Bituminous distribution truck
- 1 Front End Loader
- 3 Dump trucks
- 1 Self propelled rubber tire roller
- 1 Tank truck ( 3600 gal)

These brigades would be supported with a plant to mix water based emulsion (colloid mill ), tanks for holding and heating, a 100 Kw generator, necessary transfer pumps and connecting piping.

<u>Personnel include</u>	<u>Cost/Month</u>
1 Foreman	\$250.00
2 Operator	400.00
4 Mechanic and helper	400.00
6 Skilled workman	<u>600.00</u>
	\$1,650.00

Operating Costs

<u>Fuel</u>	<u>Quantity/Month</u>	
	<u>Gasoline</u>	<u>Diesel</u>
1 Sweeper	200	
1 Spreader	200	
1/2 Crushing/ Screening Plant		400
1 Bituminous Dist. Truck		400
1 Front End Loader		500
3 Dump Trucks		900
1 Rubber tired Roller		250
1 Tank Truck (3600 gal)		<u>400</u>
Total	<u>400 gal</u>	<u>2,850 gal</u>

Operating Costs

Gasoline 400 Gal/month @ \$0.64	\$256.00
Diesel 2850 Gal/month @ \$0.616	1,755.00
Lubricants	400.00
Equipment Maintenance and other	900.00
Total/month	<u>\$3,311.00</u>
Total Operating Cost/Month	\$ 7,533.00
Total Operating Cost/Year	\$90,396.00

Production Rate

The output of each seal coat brigade is estimated to average 15 Km. per month or 180 Km/yr. Two brigades will assure coverage of the present and anticipated paved roads at least once every 4 years.

5. Current Equipment Inventory and Future Requirements

a. Equipment-labor mix

Much thought has been given to the mix of labor and equipment to be used by SEPRRN in the accomplishment of their maintenance responsibilities. The resulting composition of the various types of operating brigades reflects a consensus of the opinions of SEPRRN engineers, the Phase I Consultant, USAID Engineers and several TDY Highway Maintenance Specialists, and is considered a minimum of the items of equipment shown for the various brigades (see Annex B, Exhibit IV). The majority is required to support the brigade's operations, ie transport, maintenance and service, personnel support, quarry or prefab pipe plants, generators, etc. Special consideration must be given to equipment selected for the type of terrain through which most of the roads in Haiti pass and for the unpredictable meteorological phenomena in Haiti, whose geographic location places it in the "hurricane path". Moreover, all aspects of highway construction and maintenance do not lend themselves to hand labor alone. Modern practices and procedures must be introduced and associated with all undertakings for the sake of progression and economy reasons. Labor-intensive programs must have logistic support and special equipment for specific objectives e.g. it is not good practice to have a man chipping away with a sledge hammer for removal of a rock 1-½ mts. in diameter without shoes, clothing and protective equipment. The introduction of light drilling equipment to expedite completion of a road specific purpose or mobilization of equipment to cope with emergencies often acquaints the hand laborer with new ways to accomplish the objective. This is training.

The equipment was carefully selected for its versatility in use and economic operations and ease of movement. Consideration was given to all the

options available, and the absolute minimum amount required in size, class and number to accomplish the program is included. The program is such that maximum utilization of each and every piece of equipment on the list will be required at least 95% of the time. Of the total 2564 personnel required for SEPRRN in 1980 some 1800 are hand laborers assigned to the various brigades, primarily the 50 Hand brigades. The number of additional hand brigades which can effectively be used in the program is a direct function of the number of qualified and trained crew chiefs and foremen available to supervise the work. Experience has shown that a crew chief can effectively supervise the activities of 10 laborers, and a foreman is required to supervise each three crews, or 30 men. Transportation of the hand crews, their tools and the foreman is also a limiting factor on increasing the number of hand brigades. Finally, there are only some aspects of road maintenance which can be performed by hand labor and these are non-critical items such as ditch clearing, shoulder repair, clearing and culvert clearing. There is also the problem of disposal of material removed from ditches, which in many locations has to be carried away by truck.

b. Type of Road Maintenance Equipment

Selection of equipment for SEPRRN is based on the various types of activities for which SEPRRN has been assigned responsibility. Since their principal task is maintenance of reconstructed roads, small and light road equipment has been and will continue to be procured to the maximum extent. However, since SEPRRN also has a responsibility to perform minor upgrading of roads and be ready to perform emergency type work, a limited quantity of medium sized bulldozer (D-6 Type) and front end loaders are also required for the intervention brigades. A few selected items of heavy support equipment will also be available in the Central Garage for special and emergency work.

c. Present Equipment Inventory

SEPRRN's present equipment fleet is made up of three classes of equipment as shown in Annex B, Exhibit 4. These include:

Old Rehabilitated SEPRRN Equipment

One of the first tasks under the Phase I project was to inventory the equipment made available to SEPRRN by transfer from TPTC, determine which items should be rehabilitated as a training program for SEPRRN mechanics, and garage personnel, procure spare parts and accomplish the work. Some 18 units of equipment were eventually rehabilitated and have since served to train operators on actual road upgrading/maintenance work.

### Excess Property Equipment

A large part of the Phase I equipment requirements were met by utilization of rehabilitated excess property. The excess property program was to the advantage of the Phase I program in several ways: a) Equipment delivery was expedited by about a year since the usual procurement procedure for equipment was not necessary b) The equipment was built to Military Specifications and of stronger construction than similar modern items, c) the equipment was generally from 10-20 years old of a much simpler design than modern equipment and therefore familiar to local operators and mechanics, and d) The cost was less than half that of new equipment, an important factor in view of the very large increases in cost of equipment during the four year period since Phase I cost estimates were prepared. A total of 90 items of equipment were obtained, plus supporting spare parts.

### New Phase I Equipment

Several lots of new road equipment were procured during Phase I for a total of 64 units, plus spare parts. Experience to date with this equipment has shown that the breakdown rate for the new items has been at least as high as for the items obtained from Excess Property. Maintenance and repair of this equipment has been hampered by the lack of expertise of SEPRRN personnel in the complicated electronic ignition systems, hydraulic systems, etc.

#### d. Equipment to be Retired during Phase II

It is anticipated that the 18 units of equipment rehabilitated under Phase I will be retired from the service of SEPRRN early in Phase II and that some items of Excess Property equipment will also reach the end of their useful economically justified life during this period. Annex B, Exhibit 4 also identifies these items.

#### e. Additional Equipment Required by SEPRRN

##### 1. Road Maintenance and Support Equipment

Annex B Exhibit 4 summarizes the equipment required by SEPRRN to equip the various types of brigades ( intervention, regrading, hand, bridge signalization and seal coat), as well as equipment to be assigned to the Garages. As a rule the older, less dependable road maintenance equipment will be retained in a supporting ( reserve) role while the newer items will be placed with operating brigades. The summary also shows when the equipment is required.

It is envisioned that the items required during FY 76/77 and 77/78 would be procured immediately (Lot I) and those items required in FY 1978/79 (Lot II). Lot III equipment will be procured only if additional funding is available for the project.

Since the World Bank has discussed making a contribution to this project and they are especially concerned with the maintenance of the asphalt paved roads constructed under IBRD financing, their participation in the financing of Lot III equipment, most of which relates to seal coating of asphalt roads, appears to offer an ideal opportunity. Estimated cost of Lot III equipment is \$2,250. as shown in Annex B, Exhibit 3.

f. Shop Equipment

1) Phase I Shop Equipment

Under Phase I items of shop equipment to equip the Central Garage/Shops and Les Cayes and Cap Haitien District Garage/Shops were procured. A limited number of these items were obtained from Excess Property sources and the remainder through procurement of new equipment. The equipment is fairly sophisticated and SEPRRN personnel will require specialized training before being permitted to operate many of the units.

2) Phase II Shop Equipment

. Central Garage/shops

A small amount of additional shop equipment and tools are required to complete the new Tune-up Bays, and spare parts storage bins and shelving are required for the Building C. Modifications.

. Hinche District Facility

The same type of shop/garage equipment as provided for in Phase I for the Les Cayes and Cap Haitien facilities will be procured for the Hinche facility.

. Sub-District Facilities

The sub-district garages will require equipment for lubrication, vehicle cleaning, tire repair, battery service, welding, vehicle tune-up and refueling and tools required to support these services.

g. Office Equipment

A considerable quantity of office equipment such as typewriter, calculators, reproduction machines, intercoms, etc. will be required to supplement

existing SEPRRN inventories and equip the Central Administration Building, Garage Office, District and Sub-District Offices.

h. Communications System

As part of Phase II it is planned to provide a radio network connecting the Central Administration with the 12 District and sub-district offices. This is felt necessary in view of the lack of any other dependable system of communications and the necessity of rapid coordination and action to assure effective use of equipment, prompt repairs to equipment, ordering of spare parts and supplies, etc. A teletype attachment to each unit will provide written confirmation of actions requested and taken - and help assure implementation of an effective management system and controls. The system will also complement other AID projects, i.e. Agricultural Feeder Road Program and help TPTC as well as SEPRRN. The system will be broken into two phases, Lot I for five units to be procured early in the project and lot II for seven units to be procured later if funds are available.

i. Furniture

Office furniture will be required to complement that already available to SEPRRN and equip the new Administration Building district and sub-district offices. The cost of this furniture has been included in the estimates for construction of facilities.

j. Summary of Phase II Equipment Costs

A summary of equipment costs involved in Phase II is as follows:

Road Maintenance and Support Equipment		\$3,960,000.
<u>Shop Equipment</u>		
Central Shop/Garage	\$ 25,000	
Hinche District	60,000	
8 sub-districts	<u>384,000</u>	
		469,000
Office Equipment		35,000
Communications System(Lot I)		<u>266,000</u>
	Total Equipment Cost:	\$ 4,730,000

Annex B Exhibit 3 provides a list of the items of Road Maintenance and Support Equipment with their costs; sub-district shop equipment; and provides a preliminary cost estimate of the Communications System.

## 6. Inventory Control & the Computer

Because of its vital relationship to an efficient functioning of the garage, inventory control and parts management is a high priority consideration for SEPRRN management. At present, modern parts and inventory management is non-existent. Initiation for purchases is largely at the request of the chief mechanic with some input at the level of the technical director. Anticipatory levels of inventory and optimum reorder quantities do not exist, except those minimums shipped initially by manufacturers when equipment is purchased. A knowledge of parts interchangeability is non-existent.

These problems are largely due to the inexperience of the staff and the fact that traditionally this is largely a control function in government agencies, with reliance on local suppliers for stocking. The result is long delays in obtaining needed parts because of time delays in effecting purchase orders and the lead times necessary for delivery from manufacturers if local suppliers cannot supply needed parts.

SEPRRN now stocks some 6,000 different parts for 18 different manufacturers of equipment. This responsibility is expected to quintuple in the next two years.

Provisions will be made in development of the new SEPRRN garage operations to the eventual introduction of a computerized inventory control system to store parts data and signal inventory replenishing. Such systems already in use or are being installed by some Haitian distributors of heavy equipment and vehicles. The "trade off" in increased efficiency with a computerized system is difficult to determine at this time since comparison with a manual system would pre-suppose a level of training and competency which SEPRRN's present salary scale and budget precludes. However, in view of the expected level of SEPRRN's operations such a system seems mandatory at some future time.

A simple computerized inventory control system available in Haiti would presently cost SEPRRN \$750 a month rental plus a \$3,800 fee for shared programming, plus \$0.09 a part line item entry or \$600 for the present SEPRRN parts/inventory. For the first year, therefore, the cost would be \$14,400 with subsequent costs reduced to about \$10,000. The costs should be weighed against the salary requirements of an experienced parts manager now estimated at \$12,000 to \$15,000 per year.

Its justification at a later time with the employment of an experienced manager would have to be calculated against the employment and availability of additional trained staff needed to maintain adequate inventory records and levels when SEPRRN brings its parts inventory up to the operating requirements of its present and future equipment fleet. Added to that is the \$2.0 million worth of TPTC Construction Brigade Equipment and the proposed \$1 million rental fleet to be established under the AID Feeder Road Project. There is a good chance that this equipment will eventually be maintained by SEPRRN. If and when this happens SEPRRN's parts inventory may well comprise some 60,000 to 70,000 line entries. At this level the yearly cost of the computerized system would approximate \$15,000. It could be that at such levels of parts inventory, manual control is not feasible even if SEPRRN does not assume the responsibility for maintenance of the entire TPTC equipment fleet as proposed in the Louis Berger study.

The feasibility of using a computerized system, including answers to the following questions will be examined by SEPRRN and the Consultant in Phase II.

- Compatibility with manual system (if computer is down).
- Experience of Haitian distributors presently using computers.
- Training requirements necessary to maintain the computerized system.
- Displacement of labor.

## 7. Technical Assistance Requirements

### a. Introduction

The grant funded portion of Phase I provided SEPRRN with 24 work years of technical assistance over a three and one half year period. The Phase II Program will provide an additional 30 work years to continue and expand on the previous work by assisting in the design and installation of a maintenance management system, expanding the training program as previously discussed and introducing a labor intensive program. The team will also continue advisory services in specialized fields such as road and equipment maintenance, procurement, budgeting and accounting, personnel, facilities design, road standards and general operations.

### b. Selection of Consulting Firm

There has been criticism that the present consultant team has not been very successful in its advisory role, and has spent too much time in an operational role. Also that the team members do not have the French language capabilities required of advisors, and that the team has not been fully staffed during much of the Phase I period.

All of these criticism are true to some extent. However, as highlighted in recent evaluations, road maintenance programs are difficult to execute and the institutional strengthening required was probably underestimated in Phase I. The scope of work for the Phase II team will be written to consider the previous criticisms, and before a team is selected they will have to demonstrate experience in a similar culture and work environment. At this time it is expected that a contract with one consulting firm will be negotiated and will include the four Haitian operational specialists and labor intensive advisors (either from within country or recruited and brought back from a third country).

c. Composition of Consulting Team

The consulting team will be broken into two groups. (1) advisors, (2) operational specialists.

1) The advisory group will include:

	<u>Work Months</u>
(a) Supervisory Highway Maint. Eng.	48
(b) Highway Engineer	48
(c) Systems Advisor	24
(d) Controller/financial advisor	18
(e) Training advisor	36
(f) Road Maintenance Engineer	24
(g) Road Maintenance Engineer	24
(h) Equipment Specialist	24
(i) Short term specialists	24
SubTotal	<u>270 Months</u>

2) The operational specialists group will include:

(a) Garage Manager	24
(b) Chief Mechanic	24
(c) Inventory Manager	24
(d) Accountant	12
Subtotal	<u>84 Months</u>

Total: 354 Work Months

or 29.5 say 30 Work Years

d) Duties of Team Members

1) Long Term Advisors

a) The Supervisory Highway Maintenance Engineer will be the team leader and advisor to the SEPRRN Administrative Council and Director General in the overall management, coordination and implementation of the Phase II program. He will also assist SEPRRN in the planning of future programs.

b) The Highway Engineer will be the Deputy Team leader and provide advisory services to the Technical Section. He will also supervise and assist Road Maintenance Engineers and District Engineers in the preparation of work programs and budgets and will coordinate the facility construction program.

c) The Systems Advisor will assist the SEPRRN in designing and implementing the maintenance management system.

d) The Controller/Financial Advisor will work closely with the systems advisor to assist SEPRRN in design and installation of appropriate program budgeting, financial and internal audit controls.

e) The Training Advisor will assist the Technical Section in establishing a training program and coordinate the activities of the operational specialists.

f) & g) The Road Maintenance Engineers will assist SEPRRN District and Subdistrict Engineers and Maintenance Supervisors to prepare work plans and budgets, establish equipment maintenance procedures, monitor the activities of district and subdistrict shops and the operations of the various types of road maintenance brigades.

h) The Equipment Specialist will assist SEPRRN Technical and Administrative Sections in setting up programs for operation and maintenance of the equipment and in developing program equipment and spare parts requirements and specifications, and in procurement of the items.

2) Operational Specialists

a) The Garage Manager will assist in the directing and supervising and coordinating all activities of the SEPRRN garage and perform coordination with the technical advisors and SEPRRN headquarters Staff. He will train a SEPRRN counterpart to take over the job at the end of a 2 year period.

b) The Chief Mechanic will assist in establishing and supervising repair and maintenance programs for the SEPRRN equipment fleet and assure that qualified garage personnel are performing in accordance with the program and good practices. He will determine and initiate requests for purchase of spare parts, tools and supplies required by the repair program. He will train a SEPRRN counterpart to take over his job at the end of a 2 year period.

c) The Inventory Manager will assist in directing and supervising the parts department of the Central and District shops, establishing and maintaining inventory levels and internal controls. He will prepare requests for procurement of parts and operating supplies and assume security of material. He will train a SEPRRN counterpart to take over the job at the end of a 2 year period.

d) The Accountant will set up and maintain a cost accounting and control system for the garage. He will train the SEPRRN chief accountant to take over the job at the end of a 12 month period.

e) A draft of the scope of work for requesting technical Proposals for the technical assistance contract is attached as Annex B, Exhibit II.

f) Schedule and Cost of TA Program

Section V, A, 2 shows the time phased periods of service for the various advisors.

g) Cost

<u>Advisory Group</u>	\$1,890,000
(Total of 270 months at average monthly cost of \$7,000 including salaries, overhead, travel, housing, Admin support & miscellaneous).	

<u>Operational Group</u>	\$ 252,000
(Total of 84 months at average monthly cost of \$3,000 including salaries, overhead, travel, housing & miscellaneous).	

Total	\$2,142,000
Round down to:	\$2,130,000

## 8. Phase II Training Program

### a. General

The specific objectives of the Training Program are: 1) to improve the capabilities of SEPRRN management, and 2) to upgrade the technical skills of the highway and equipment maintenance staffs. The program will provide training for about 40 management staff and for 500 technical employees and for new employees who will fill vacancies as SEPRRN expands its operations. The program will provide a multiplier effect as those trained return to the field to train others.

The goal of field training is to upgrade the efficiency of foremen, mechanics and operators of equipment and to teach better preventive maintenance. It is estimated that over the life of the project the downtime of equipment will be lowered about 10% per year to a normal 7-10% downtime. The training will also increase the productivity of the field workers.

The consultant will conduct the training through classroom and practical work for mechanics, operators and highway maintenance foremen and on-job training for management and parts and supplies staff. It is recommended that the consultant recruit both local and expatriate Haitian instructors to conduct the proposed courses.

The curricula will require an adaptation of international manuals for equipment and highway maintenance to fit the Haitian situation. The manuals will be simplified and translated into French. The training will be organized so that the staff trained in French can in turn train in the field in Creole.

Selection for training will start among present employees and some preemployment training will be provided, especially for equipment operators. An examination has already been developed to determine mechanical skills and aptitudes. It is an oral-visual exam for virtual illiterates. This exam will be further refined by the Phase II consultant.

### b. Specific Training Requirements

#### Maintenance and Shop Equipment

Three operators from each of the twelve District/Sub Districts will be trained as trainers for other equipment operators in the Districts/Sub-Districts. The course will include operation and basic preventive maintenance of all equipment used. This training will upgrade present skills and train new employees. Another one hundred personnel will be trained in the field by these operators. Three month courses are planned with qualified Haitian instructors. Training will be given at the Central Training facility.

Diesel/Gas Mechanics

One mechanic from each District/Sub-District will come to the Training Center for three month courses. They will be trained to be trainers upon return to the field. It estimated that they in turn will upgrade skills of 30 District mechanics.

The same contract mechanic will conduct this and the above equipment course.

Highway Maintenance - Foremen/Gang Chiefs

A three month course will be given in Port-au-Prince for twelve persons with classroom instruction and field practice. The two highway maintenance advisors can do some of this training. Provision is made to contract one additional instructor to coordinate this program and prepare a manual of standards and procedures. Personnel trained will return to field to train three hundred or more maintenance personnel.

Parts and Supplies

The Inventory Manager should be able to train his counterpart and Central garage/warehouse staff and will also have to train one or two parts clerks from each of the twelve Districts to have standardized controls and procedures throughout the system. The program will require three months training in the Central Garage.

Vocational School Training

SEPRRN will sponsor within this AID project five students per year in one or more vocational schools in Port-au-Prince. A small allowance will be granted to each student to motivate him to return to SEPRRN. The budget also includes a sum to cover costs of special short training courses furnished by the vocational schools on a need basis.

Accounting

No funds are projected in this category since the Advisor will train one-on-one with a counterpart and with the small staff. Training and procedure manuals should be prepared by Central accounting.

Organization and Management Seminars

Short seminars of one to two weeks will be arranged to train top and middle level managers in decision making, project planning, program

budgeting, and problem solving. Consultant will use case studies on problems. Five from top management and fifteen from middle level management both in the Central Office and from District supervisors, engineers and foremen will participate in these seminars. The consultant would spend approximately two months per year in preparation and conducting of seminars.

#### Community Action

A mix of Community Council leaders and foremen/gang chiefs and supervisors from the Districts will be given training in highway maintenance and motivation in classroom and in field. The SEPRRN training Division and Technical Division will collaborate on program. Funds are provided to employ a local consultant for some of the training. The course will be two months.

#### c. Off-Shore Training

##### Welders

Arrangements have been made under Phase I with a vocational school in Jennings, Louisiana for training of welders in a ten week course with Creole French instruction. Trainees will return to assist as instructors of other staff. This training should be repeated each year.

##### Diagnostic

One mechanic will be selected (for training in each of three years). Training can precede or follow procurement of the equipment. The manufacturers should be responsible for training of personnel before and during installation. Funds are provided for a training fee, travel and subsistence, for one month.

##### Equipment Instructors

Three equipment operators will be sent each year to become trainers of mechanics and operators in SEPRRN's continuing training programs. There is a possibility that arrangements can be made with the same vocational school in Louisiana to provide this training. This will be a six week course.

##### Special Courses

Short-term observation programs of highway maintenance management in the U.S. or other countries will be arranged for four or five top level management of SEPRRN. Six to eight week programs should include consultation with appropriate state and local officials and actual on-site observation.

### Correspondence Courses

Funds are provided for eight selected correspondence courses for management and technical personnel. The contractor will be responsible for supervising these study programs.

The following two tables summarize the Training Requirements and the Financial Plan for the Training Program. The duties of the training advisors on the consulting team are included in the Scope of Work attached as Annex B, Exhibit II.

#### Notes\*

1. Instructors cost based on factor of \$24,000 per year for qualified Haitian instructors.
2. An allowance of \$100 per month is made for each trainee for subsistence and transportation.
3. Eight sets of tools will be provided to the Training Center at \$3,000.
4. This provides a yearly allowance of \$300 per student and \$2000 for special courses prepared.
5. Trainee stipend of \$100 per month plus \$2000 for motivational instructor.
6. Costs based on per diem, travel, tools and \$30 per month tuition charge.
7. Costs based on AID cost factor of approximately \$1800 per month for non-academic and short-term training.

#### 9. Labor Intensive Analysis

##### a) Organization for the Labor Intensive Component

Assuming that the results of the Intensive labor Pilot Project being performed under the Feeder Road project are favorable, an organizational structure to support the labor intensive community action groups will be created within SEPRRN. A director for the Community Action Corps (CAC) will be designated shortly after the results of the labor intensive study findings have been published. At this time SEPRRN will start negotiations with communities in view of establishing annual contracts for maintenance services performed by the communities.

The community action groups will require some training, mostly on-the job instruction to demonstrate the proper use of hand tools and a definition of their tasks, and occasional SEPRRN engineering services to locate proper select material for surfacing and to show the standards of work required.

TRAINING REQUIREMENTS

	<u>1977/78</u>	<u>1978/79</u>	<u>1979/80</u>	<u>1980/81</u>	<u>Total to Be Trained</u>
<u>In Country Training</u>					
Maintenance and Shop Equipment	36	36	36	36	144
Diesel/Gas Mechanics	12	12	12	12	48
Foremen/Gang Chiefs Highway Maintenance	12	12	12	12	48
Parts and Supplies	12	12	12	12	48
Technical-Vocational School	5	10	10	10	35
Accounting	6	6	6		18
Managers-Policy Level O-M Seminars	5	5			10
Managers-Mid Level O-M Seminars	15	15			20
<u>Community Action</u>					
Foremen/Gang Chiefs	30	30	30	30	120
<u>Off-Shore Training</u>					
Welders	4	4	4		12
Diagnostic Mechanics	1	1	1		3
Equipment Instructors	3	3	3		9
Top Level Special Courses	4	4			8
Correspondence Courses	2 courses P.a	2 courses P.a	2 courses P.a	2 courses P.a	8
TOTAL	147	152	128	114	541

Funding Requirements

	<u>1977/78</u>	<u>1978/79</u>	<u>1979/80</u>	<u>1980/81</u>	<u>Total</u>
<u>In-Country</u>					
Maintenance and Shop Equipment	(1,2,3) \$38,000	38,000	12,000	12,000	100,000
Diesel/G s Mechanics	4,000	4,000	4,000	4,000	16,000
Foremen/Gang Chiefs Highway Maintenance	(1,2) 30,000	30,000	4,000	4,000	68,000
Parts and Supplies	(2) 4,000	4,000	4,000	4,000	16,000
Technical-Vocational School	(4) 3,500	5,000	5,000	5,000	18,500
<u>Accounting</u>					
Managers-Policy Level O M Seminars	5,000	5,000			10,000
Managers-Middle Level O M Seminars	15,000	15,000			30,000
<u>Community Action</u>					
Foremen/Gang Chiefs	(5) 8,000	8,000	8,000	8,000	32,000
<u>Off-Shore Training</u>					
Welders	(6) 7,000	7,000	7,000		21,000
Diagnostic Mechanics	(7) 3,400	3,400	3,400		10,200
Equipment Instructors	(7) 6,600	(7) 6,600	6,600		19,800

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Footnotes on page 64



The value of community labor will be reflected in amounts paid villages for road maintenance "piece work". Each village enrolled in the program will be encouraged to create a workteam of 1 foreman and 23 hand laborers. However, the village may wish to distribute the employment among a larger number of persons, so there may be more than 23 hand laborers sharing the proceeds; e.g. there could be 100. SEPRRN would contract with the community and pay a lump sum for work performed - not a daily wage. We have estimated costs of their portion of the project by using the wage rate of \$1.30 per day. In actual practice the various villages may establish their contract amount based on local prevailing wages.

Headquarters of the Community Action scheme will be within SEPRRN headquarters in Port-au-Prince. SEPRRN district representatives will contract with the communities which will, under annual contracts, maintain their respective sections of road. The following step-by-step plan, subject to revision as a consequence of the findings of the pilot project for labor intensive road maintenance, will be implemented in 1978 after review of the Pilot Project:

- 1) Approximately 10 communities in each of 4 SEPRRN Districts will be selected. Contracts will be drawn-up to identify the road section for which the community will be responsible, the maintenance standards required, the level of effort expected of each community, and the amount of compensation to be paid the community. The agreement will provide for payment to the community on a unit price basis for kilometers of road maintained to standard.
- 2) SEPRRN will provide hand tools, instruction in their safe and efficient use, and guidance regarding maintenance standards to be met.
- 3) Each community will be responsible for maintaining and repairing the road way and associated facilities.
- 4) Inspection of the roadways will be made monthly and payments made when the work meets the established standards. The Community will be paid directly by the SEPRRN District representative.

The SEPRRN inspector may recommend to the District engineer that SEPRRN provide special assistance to the community through the assignment of heavy equipment and operators for the upgrading of any particular road section. In this

way, valuable feedback as to road conditions will be guaranteed and rural roads gradually will be upgraded.

- 5) SEPRRN accounts showing moneys received and disbursed for the program will be audited annually.

For SEPRRN to properly carry out this task, personnel and a budget will be required as follows:

Community Action Corps

<u>SEPRRN Employees *</u>	<u>1978</u>	<u>1979</u>	<u>1980</u>
Director (Hdqtrs, Port-au-Prince)	1	1	1
District Chief Inspectors	2	3	4
Inspectors (& Instructors)	10	15	20
Secretary/Bookkeeper	2	3	4

\* May be presently employed and reassigned to this program.

Operational Budget

<u>SEPRRN Personnel.</u>	<u>Unit Cost</u>	<u>1978</u>	<u>1979</u>	<u>1980</u>
Director	\$6,000	\$6,000	\$6,000	\$6,000
Inspectors, District	3,000	6,000	9,000	12,000
Inspectors	1,800	18,000	27,000	36,000
Secretary & Bookkeepers	<u>1,500</u>	<u>3,000</u>	<u>4,500</u>	<u>6,000</u>
TOTALS	\$12,300	\$33,000	\$46,500	\$60,000

Total for 3 years 139.5, round to \$140.000

Value of Community Labor Per Village per Year

1 Foreman	20 days	@ \$2.00/day	\$40.00
23 Laborers	20 days	@ \$1.30/day	<u>\$598.00</u>
TOTAL			\$638.00
Round to \$650.			

Output of Village Labor

	<u>1978</u>	<u>1979</u>	<u>1980</u>
No. of Villages Enrolled	16	30	40
Foremen	16	30	40
Village Leaders	16	30	40
Hand Laborers	368	690	920
Kilometers of Maintained Road	288	540	720

Cost per Village Labor

1978	-	16	X	650	=	10,400	
1979	-	30	X	650	=	19,500	
1980	-	40	X	650	=	<u>26,000</u>	
		Total.				\$55,900	Round to \$60,000

Equipment Requirements

5	ea - 3/4 ton Pick up Trucks		
	@ \$ 9,000 each		\$45,000
20	ea - all terrain Motor bikes		
	@ \$ 650 each		13,000
	Hand tools, 40 kits and 20 Breaker Bars		
	@ \$ 237 per kit		9,480
	@ \$ 18 per BB		360
4	ea - Office typewriters & Supplies		
	@ \$ 290		<u>1,160</u>
			\$ 69,040
			Round to \$70,000

COST SUMMARY

(US \$000)

	<u>77/78</u>	<u>78/79</u>	<u>79/80</u>	<u>TOTAL</u>
No. of Villages	16	30	40	
SEPRRN Salaries	33.0	46.5	60.0	140.0
Village Labor	10.4	19.5	26.0	60.0
Equipment	70.0	-	-	70.0
Fuel oil & Lube	4.0	6.0	10.0	20.0
Subtotal	<u>117.6</u>	<u>72.0</u>	<u>96.0</u>	\$ 290.0
Contingency	-	-	-	<u>\$ 50.0</u>
TOTAL				\$ 340.0

b. Discussion

Tabulating the expected lengths of road under the maintenance plan provided a comparative measure of expected accumulative costs. The number of earth and gravel roads assumed to be maintained by Community Action Corps, amounts to roughly 720 kilometers by the third year, while the total amount to be maintained is 1548 kms.

Using these figures as a measure for comparing other maintenance efforts seems appropriate, considering that previous estimates, mainly those published in the Berger Study and the AID Feeder Road Project Paper, were derived along similar concepts and equal constraints.

In financial terms, the Berger study suggested maintenance cost of \$684 per kilometer for a weekly traffic count of roughly twenty vehicles. The fixed cost per kilometer was assigned at \$425 kms. AID's determination in 1972, based upon the INGEROUTE study, used \$714 km. as the fixed cost.

Roughly twenty-five percent of these costs were attributed to the labor component, something analogous to the Community Action Corps.

The present program compares favorably with these figures since the cumulative amount of roads divided by the undiscounted costs yield the following :

<u>Fixed Cost of Maintenance</u>		
Berger cost (1976)		<u>\$684</u>
INGEROUTE (1972)		<u>\$714</u>
 <u>ADJUSTED COSTS</u>		 <u>LABOR COMP.COST</u>
Berger (1976)	684 x .25	\$ 171/km
INGEROUTE (1976)	714 x (1.06) <sup>4</sup> x .25	\$ 225/km
USAID (Present Program)	\$ (000)	
SEPRRN Salaries	\$138.0	
Village Labor	54.8	
Equip	71.1	
Fuel, oil & Lube	21.5	
Contingency	<u>42.8</u>	
	<u>\$328.2</u>	
1548 km (Accum)		\$ 212/km

In a rough order of magnitude the present program, which emphasizes the labor intensive methods but does not exclude equipment, compares closely with other derivations of maintenance costs. Adding the equipment components to the \$212/km will push the financial cost of maintenance upwards to \$800/km.

c. Jurisdictional Limits of the Community Action Corps

Anthropologists interested in the study of rural markets and development have consistently identified roads and other communicative links as the key factors which facilitate interactions between peasants and townsmen, serving as a development catalyst. Aside from obvious economic motivations, markets in Haiti play an important role in providing a rather loose coalition of townsmen and tradesmen and exchange

place for otherwise isolated villagers. Among other things the Haitian rural (periodic) market may provide a weekly "social gathering" for two or more neighboring villages. The point of this discussion stems from the "pride-ownership" concept that this project hopes to incorporate in the roads and trails that connect these periodic market places.

Based upon the equidistant territorial theory, where neighboring villages would maintain roads "halfway" to the next village, and thereby sustain the jurisdictional limit, this proposal will suggest, that during the initial period of community action project development, SEPRRN will set forth a plan to measure and mark the village limits for each section of the road maintenance scheme. In the near term, labor intensive efforts will be enforced through judgements and empirical determinations until such time that the results of the labor intensive study are available and the recommendations implemented. For the interim analysis, the jurisdictional limit derived between periodic markets and villages has been set at 18 kilometers. Although there will be variance in distances that the workcrews will be required to walk, a town located equidistant would be required to maintain only 9 kilometers in each direction from the center of town.

On the other hand villages which lie at the end of the road chain will be required to maintain ( and will receive compensation for) only the last link or 9 km of road, versus the full 18 km for equidistant villages. (mid-link).

This, then, provides a fair basis for estimating tool requirements and work day efforts until the pilot study for labor intensive road maintenance has been completed.

Crossroads and "T" intersections of road have not been overlooked. In the case of Haiti, population centers at typical crossroads will be greater. Where the average daily traffic is over 50 vehicles the maintenance effort will fall under the jurisdiction of the cognizant SEPRRN District.

d. Costs

1) Labor

The following outline suggests the "interim" arrangement for labor intensive - community contracted services.

1 Foreman -----	\$ 2.00/day
24 Laborers at \$1.25 -----	\$ 30.00/day total
	<u>\$ 32.00/day</u>

At 20 days of work per year =  
20 x 32.00 ----- \$640.00/year for 18 km.  
or \$ 35.56/km/year

2) Tool Costs

The crew should have the necessary tools to keep the ditches clean, fill any potholes and generally keep the roadbed clear of vegetation. Tools should include the following :

15 Shovels	at \$4.00	-----	\$ 60.00
10 picks	" 5.50	-----	55.00
5 hand tampers	" 6.00	-----	30.00
3 Wheelbarrows	" 24.00	-----	72.00
spare handles for picks and shovels		---	<u>20.00</u>
Subtotal 1		-----	\$237.00

However, in areas where slides occur during the rainy season it will be necessary to add sledge hammers and breaker bars to break up boulders prior to removal.

4 sledge hammers (15 lb)	at \$12.00	-----	\$ 48.00
4 breaker bars	" 18.00	-----	<u>72.00</u>
Subtotal 2		-----	\$120.00

Assuming one-half the maintenance crews require this additional equipment, the average additional tool cost per crew is :  
----- \$ 40.00

Average tool Costs

Subtotal 1	-----	\$237.00
½ Subtotal 2	-----	<u>\$ 40.00</u>
TOTAL	-----	<u>\$337.00</u>

Assuming a 3 year life, the annual cost of tools is, \$119.00

## 10. Environmental Analysis

The proposed project involves a mix of capital-intensive and labor intensive road upgrading/maintenance efforts most responsive to the physical/site conditions and the social/cultural patterns for achieving the program goals and objectives within the area of project influence. The various sections of roads in the program are already existing and will be reconstructed to their original standards, with appropriate drainage and gravel surfacing adequate to assure all-weather access to selected and isolated rural areas. Under other programs, disturbances to established sociological patterns will be minimal, because all reconstruction will be done within the present right-of-way limits. Except for birds very little wildlife remains in Haiti. Therefore, the environmental impact on wildlife is negligible. The restoration of drainage ditches and structures (culverts) will improve the natural drainage. Prevention of standing water in potholes, road subsidences and clogged ditches also yields obvious benefits in control of disease vectors, especially malaria which, in Haiti, is still a serious problem.

### a. Physical Aspects

Limited environmental degradation should occur principally during and immediately following reconstruction, when earth movement operations will temporarily disturb natural drainage patterns with some resultant air and sediment pollution. In the rolling hills and mountainous zones, possible land slides, as a result of earth movement, could also create temporary silt and sediment pollution conditions which could affect and upset natural drainage flows.

However, once the roads are reconstructed, maintenance activities should have very little effect on the environment.

### b. Resource Linkage

The improved access routes should provide the incentive for bringing new lands into cultivation. Here again, minor silt and sediment problems could be initially experienced. However, after the lands have been cleared and cultivation is underway, with appropriate soil and land conservation guidance, these problems should become minimized.

### c. Public Health Aspects

With the improved accessibility and the inducement for increased productivity, an increased use of pesticides and fertilizers can be anticipated.

At this time, this potential environmental influence cannot be appropriately identified or quantified. However, its control will require surveillance by the appropriate government authorities, and this will be brought to the attention of the agricultural agency administering the use of these chemicals.

An Initial Environmental Examination for this project is attached on Annex A, Exhibit 8.

F. POLICY ANALYSIS

1. Administrative Decree

The March 3, 1972 Decree (Annex A, Exhibit 9) established SEPRRN as an autonomous organization under the responsibility of the Secretary of State of TPTC and the direction of a five member Administrative Council composed of the Secretary of State of TPTC, a representative of the National Bank of Haiti (BNRH), a representative of the Union of Transport and two additional persons, one of whom can be a foreign technical advisor. The BNRH is responsible for controlling SEPRRN's funds.

Although established as an autonomous organization for the purpose of road maintenance with its own revenues from the fuel tax, SEPRRN in fact has never attained the autonomy necessary to function strictly as a road maintenance organization. For this reason road maintenance has sometimes been slighted in favor of road reconstruction - an activity normally assigned to TPTC. One evaluator said that SEPRRN will not operate effectively unless they are either incorporated within TPTC or completely separate. The recent transport sector study recommends the former on the long term. We support this recommendation, but recognize the need for the keeping of the two activities separate until the institutional capacity of both SEPRRN and TPTC is strengthened.

The Decree also provides for monthly and quarterly reporting by SEPRRN's Director General to the Secretary of State of TPTC and the Administrative Council, respectively. District Engineers must also submit monthly reports to the Director General. This reporting has not taken place on a regular basis probably because the information has not been readily obtainable. Installation of a maintenance management system should facilitate better reporting. In order to carry out the mandate established by the Decree, that is a "Permanent Maintenance Service for the National Highway Network", the project committee recommended that the following reporting requirements be incorporated into the grant Agreement.

- Design and installation of a maintenance management and reporting system.
- Quarterly reports to the Administrative Council.

## C. ECONOMIC ANALYSIS

### 1. Introduction

Two alternatives production mix approaches to SEPRRN road maintenance have been included in this project. The first is a conventional relatively capital intensive technology intended for routine maintenance and emergency repair and, on occasion, upgrading of sections of the National and Departmental road systems. The second is a highly labor intensive technology for application on local feeder roads of low traffic volume. As described herein Haitian conditions seem ideal for the employment of village community council hand labor brigades for the maintenance of earth and gravel surfaced local roads, and the income that villagers will derive from their employment will serve as a multiplying factor in the economic development of the village. Accordingly, a plan is included for implementation of this labor intensive element of the project. However, actual implementation of this or a similar program should be contingent upon favorable results from the Pilot Project in Labor Intensive Road Maintenance, funded under the AID Feeder Roads Project. A final report on the Pilot Project will be available in late 1977, consequently activation of the Community Action Program could begin in early 1978.

A total of 2500 kms of roads will be maintained by SEPRRN in 1980 by a conventional capital intensive mix of machines and labor, although some of these roads will not have been restored to a level of construction and maintenance activities will be of an emergency type.

Of this total, some 940 kms of Departmental or Local Roads, will have been reconstructed through financing provided under the AID Agricultural Feeder Roads loan. The economic feasibility of reconstructing and maintaining these roads was demonstrated in the Feeder Roads Project in which the average benefit / cost ratio was found to be an attractive 1.91.

The benefit/cost ratio was based on dollar cost/km unit price estimates for construction and maintenance. These estimates are now a year old; however, adjustments for inflation are not a factor of concern because benefits were assumed to inflate at the same rate as costs. The highway maintenance equipment required for the maintenance of these roads is included in this project. Its cost is included as depreciation in the estimated cost/km for road maintenance in the Agricultural Feeder Roads Project. Therefore, the feasibility of this production mix has been demonstrated.

## 2. Feasibility of Labor Intensive Methods

A recent study by the World Bank, The Substitution of Labor and Equipment in Civil Construction,\* suggests that :

- 1) Labor intensive methods are technically feasible for a wide range of construction activities and can generally produce the same quality of product as equipment-intensive methods.
- 2) Traditional labor-intensive civil works as observed in the course of the study were inefficient and economically inferior to capital - intensive works except at extremely low wage levels. However, labor productivity can be improved very significantly by the introduction of certain organizational, management and mechanical improvements.
- 3) With superior tools, high incentives, and good management, labor productivity can be improved to the point that labor-intensive methods can be fully competitive with equipment - intensive methods when wages are approximately US \$1.00 per day, assuming 1976 prices for equipment and fuel. For base wages above US \$2.00 per day the economic viability of the labor intensive approach will depend on various factors. Of course, these "break-even wages" would change with changes in the price of equipment and fuel.
- 4) There is considerable scope for increasing labor productivity by the use of available off-the-shelf hardware, and by improvements in the quality of tools. The prospect for developing new "intermediate technologies" for civil construction are limited, however.
- 5) The prevalence of low wage rates (under US \$1.00 per day) merely indicates a greater potential for the use of labor-intensive methods. Adequate organization and management particularly designed for labor-intensive projects are critical considerations in adopting labor-intensive methods on a large scale.
- 6) The availability of an adequate labor supply during construction periods is a much more significant factor than has generally been considered, even in labor-abundant economies. Labor requirements for civil works are quite specific in time and space, and it is therefore not sufficient to have an aggregate stock of surplus labor in a region. The required flow of labor at the construction site when needed is the relevant consideration.

\* I.K. C.G. Harral, B.P. Coukis, IBRD, Washington, D.C. 1976

- 7) The health and nutrition status of construction workers can have a significant effect on worker productivity.
- 8) Alterations of project design can in some circumstances improve the feasibility of using labor-intensive technologies; but any resulting change, or deferral in project benefits, must be explicitly recognized and justified.

While the criteria used in IBRD study cover the broad range of construction activities, it is reasonable to assume that the same general criteria will hold for road maintenance activities.

Conditions in Haiti favor labor intensive road maintenance using improved maintenance techniques. The minimum wage of \$1.30 / day is within IBRD - prescribed limits; there is likely to be an adequate supply of unskilled labor throughout the year wherever needed; and heavy equipment costs in Haiti are probably equivalent to those in most Western Hemisphere countries. Discussions of economic costs which follow include consideration of the costs of skilled operators, administration and management.

#### Shadow Prices and Economic Costs

In Haiti unskilled labor is generally abundant and often unable to find productive employment. At the same time, one will sometime see labor-saving equipment, such as mechanical ditch diggers, being used. An economic evaluation that properly prices unemployed or underemployed labor and scarce foreign exchange spent to purchase, operate, and maintain the ditch digger would probably suggest a preference for ditch digging by hand labor. Of course, for financial reasons the ditch digger was being used while labor remained idle. The construction venture, carried out by a private company, was guided by market prices for the factors of production. The minimum labor wage can make construction by mechanical means less expensive. Difficulties in organizing and supervising large numbers of men to accomplish the task in some minimum time or to meet some quality of construction standards also may have dictated use of the mechanical digger. But from a national economic point of view, the total production of goods and services will be greater if unskilled labor is put to work in activities in which it enjoys the highest comparative advantage; ditch digging would seem to be one of them, and foreign exchange is used for purchasing items for which mechanization has a distinct advantage, such as rotary drills for oil and water wells.

The minimum wage of \$1.30 per day for unskilled labor generally overstates its value to the economy at large, because workers are willing to supply

labor for less pay-as little as 60 cents per day in some rural areas. This situation reflects conditions of disguised unemployment.

Disguised unemployment occurs in situations in which a worker is unemployed for all practical purposes even though he may appear to have a job. This condition exists in Haiti, with the rural "extended family", in which various members of working age remain together and pool their efforts in some common activity. Small-scale farming is a good example. Unemployment exists in an economic sense because tasks are allocated to those of productive age even though fewer family members are really needed to do the work. That is, members could leave the family unit, those remaining could work a bit harder, and the same level of output could be maintained. This condition reduces the value of output per worker below the minimum wage. That is why from an economic standpoint the shadow pricing of rural labor below the minimum wage is a valid concept.

#### The Economic Shadow Rate for Unskilled Labor and the Break-Even Analysis

The foregoing discussion shows the need for an appropriate shadow wage for unskilled labor, to be compared to IBRD guidelines concerning the \$1.00 "Break-Even" daily wage.

The Haitian minimum wage of \$1.30 /day approaches the economic break-even cost of \$1.00. In the Feeder Roads Project it was determined that rural shadow wages are something close to 10% of the national minimum wage. Based upon a determination of alternative employment the unskilled shadow wage was considered to the 10% of the minimum market wage of \$1.30/day i.e. \$0.13 per day.

#### Shadow Price of Skilled Labor

Skilled labor in its various forms, a key component of economic growth, is often in short supply. Development programs are not as effective as they might be because of limited staff experience in planning. Advantage cannot always be taken of foreign loans and grants because government organizations have difficulty in preparing the documents necessary to receive the funds. For those projects that are undertaken, competent managers may not be available to run them, and local entrepreneurs may be lacking for extending the technologies introduced by the project into other areas of the country and into related activities. If more of these types of individuals were available, so the argument goes, economic growth in Haiti would be more rapid than it is.

Shadow wage estimates for skilled labor include those for persons with technical, managerial, and entrepreneurial capabilities. As suggested earlier these forms of skilled labor will be handled as one.

Having established the need for additional personnel of this type, one should question whether the market wage will equal the shadow wage. The market in Haiti is not always able to accurately appraise the value of such individuals, and some of their contribution to society cannot be captured by those who hire them. Moreover, many skilled persons work for the Government and the Government because of limited budgets, is not able to pay them the salaries they could command in the commercial market. For these reasons, the shadow wage for skilled labor may well be above its market wage. That this is particularly true in Haiti is supported by the comparison of wages paid skilled equipment operators by the construction firms building the North and South Roads in Haiti and wages paid by other. These operators were recruited in the local market. Many had been trained by SEPRRN but left for the higher wages offered by the foreign private contractors. They were given additional training by the private contractors and now produce about 33% more work output per day than regular SEPRRN operators. Comparative current wage scales for D-6 operators and chief mechanics are as follows:

Comparative Wages Of Operators and Mechanics  
Haiti 1976

<u>Employer</u>	<u>Monthly Wage</u>
Foreign Road Construction Contractors	\$800 - 900
Haitian Building Contractors	600
SEPRRN/TPTC	200 - 300

To be conservative we have used Haitian contractor wage levels in our comparison and we will assume that the productivity of operators working for Haitian contractor is equal to that of the foreign contractor employees. Under these assumptions we derive the real value of the SEPRRN operators daily output:

Value of SEPRRN operator's output	=	3/4 Haitian Contractor
		employee output
	=	(.75) ( \$600)
	=	\$450
But wage of SEPRRN operators	=	\$250

Therefore shadow wage is 180% of the financial wage.

## D. FINANCIAL ANALYSIS

### 1. Summary of Current Economic Trends

The year 1975 was a turning point for Haiti. While a drought in the northwest and depressed demand for light industrial exports caused a contraction in the first half of the year, a number of new foreign assistance projects and increased manufacturing activity generated better results in the second half, resulting in a net growth rate for the year of close to zero. In 1976, however, production and the growth rate is expected to show an increase of 2.5 - 3.0%. The main stimulus is the rapidly growing foreign assistance effort which amounts to about 9% of the GNP.

The balance of payments deficit became serious in late 1975 when foreign currency reserves were exhausted. The main problem was a growing deficit in the trade account. The outlook for 1976 is better and the balance of payments is expected to be close to equilibrium. The FY 1977 budget is \$106.2 million or 31.4% more than the FY 1976 budget. The budget remains a poor indicator of government finances, however, as extrabudgetary revenues and expenditures account for more than 50% of fiscal activity.

Prices increased by more than 16% in 1975 and appear to be increasing by over 20% in 1976. Similar price increases are expected in 1977. Coffee exports increased in the 1975-76 season from 293,000 bags to 441,000 bags; exports from the 1976-77 harvest are expected to be about 425,000 bags. Other cash crops - sugar, cocoa, and sisal - have been declining for several years and the trend is expected to continue. Light manufacturing is the most dynamic industry in Haiti and output increased by 5% in 1975. It continues to outperform the rest of the economy and growth may approach 8% in 1976. U.S. exports to Haiti increased by 24% in 1975 to \$57.6 million. Shipments should be of similar proportions in 1976 and 1977, although the U.S. share of the market may drop from the 52.8% of 1975. Labor intensive light manufacturing for export continues to offer the best returns for investors. The Government welcomes foreign investors and offers limited five year tax incentives.

### 2. Recurrent Budget Analysis - SEPRRN

The financing of the transportation budget comes from both the general and development budgets, the latter comprised of special accounts that are managed separately and intended to insure the availability of the necessary local counterpart resources for road construction financed by international agencies.

In 1972, the GOH established a Matching Fund For Roads and assigned it five percent of the total tax revenues of the country. This fund, by law, is solely intended for financing counterpart funds to external highway loans.

In addition, in 1972 the GOH earmarked a portion of fuel taxes (\$.22 per gallon for gasoline and \$.04 for diesel) to the Fund. In late 1975, the GOH assigned the Fund an annual increase of \$2.0 million from the bauxite tax for a period of five years. Finally, a special allocation has been made for 1976/77 for "coffee roads" under AID Loan 521-T4006. (Annex A, Exhibit 10)

SEPRRN's operating budget has increased from \$778,000 in FY 74/75 to \$1,750,000 in the current (76/77) fiscal year and is planned to increase to \$3,412,000 in FY 79/80. Through July, 1976 counterpart requirements for the Highway Maintenance I Loan were \$225,000 below the approved budget level for the same period. The deficit was attributed to a shortfall in revenues received from fuel taxes and had to be made up by the National Counterpart Fund. The GOH is studying the fuel tax structure at the present time and it seems possible that a revised rate structure will be needed to provide sufficient counterpart contribution to AID and other donor's road construction and maintenance programs.

### 3. Financial Plan

The total cost of the proposed four year project is estimated at \$17,523,000. The GOH will provide \$8,733,000 (SEPRRN's operating budget for FY's 77/78 - 79/80) and \$190,000 for the Community Action Program, while AID will provide \$8,600,000 in grant funds. The summary Cost Estimate and Financial Plan is given in Table I, a breakdown of SEPRRN's Operating Budget is shown in Table 2, an Input/Output Matrix is shown in Table 3 and the Anticipated Expenditure Schedule is included in Table 4. A more detailed financial plan, broken out by fiscal year, is shown on page 99 of the Section on Evaluation.

TABLE I  
SUMMARY COST ESTIMATE AND FINANCIAL PLAN

	AID		GOH	TOTAL
	FX	LC	LC	
<u>Administrative Facilities</u>				
Construction		458		458
Equipment	45			45
<u>District and Sub-District Facilities</u>				
Construction		708		708
Equipment	460			460
<u>SEPRRN Brigades</u>				
Equipment	3963			3963
<u>Communications System</u>				
Equipment	266			266
<u>Community Action Program</u>				
Vehicles & Hand Tools	100			100
<u>Technical Assistance</u>	2130			2130
<u>Training Program</u>	210	210		420
<u>Community Action Program</u>		50	190	240
Sub-Total:	7174	1426	190	8790
GOH-SEPRRN Operating Budget			8733	8733
Total Program	7174	1426	8923	17523
	41%	8%	51%	100%
Inflation <u>1/</u>				
Contingency <u>2/</u>				

1/ Inflation factor for construction is 10% per year over a two year period. Inflation for equipment is 6% per year over a three year period. Total of approximately \$900,000.

2/ Contingency factor for construction is 10%. Total of approximately \$110,000.

TABLE 2  
SEPRRN OPERATING BUDGET

	75/76	76/77	77/78	78/79	79/80
Administrative Operations					
Personnel	260	280	280	290	304
Materials	80	120	133	143	173
Fuel	60	100	110	115	135
District Operations	<u>774</u>	<u>1,250</u>	<u>2,000</u>	<u>2,250</u>	<u>2,800</u>
TOTAL	1,174	1,750	2,523	2,798	3,412

TABLE 3  
INPUT/OUTPUT MATRIX  
( \$000 )

INPUTS	OUTPUTS				TOTAL
	4 Operational Districts	8 Operational Sub-districts	Operational Headquarters	Community Action Program	
<u>AID</u>					
Technical Assistance	300	300	1400	130	2130
Training	100	53	252	15	420
Operating Costs				50	50
Construction	180	528	458		1166
Equipment	<u>1700</u>	<u>2634</u>	<u>400</u>	<u>100</u>	<u>4834</u>
<u>Sub-Total AID</u>	2280	3515	2510	295	8600
<u>GOH</u>					
Administrative Operations			1683		1683
District Operations	<u>4050</u>	<u>3000</u>			<u>7050</u>
<u>Sub-Total GOH</u>	4050	3000	1683	190	8923
<u>Program Total</u>	6330	6515	4193	485	17523

TABLE 4  
ANTICIPATED EXPENDITURE SCHEDULE

	Year 1	Year 2	Year 3	Year 4	TOTAL
<u>AID</u>					
Facility Construction	250	558	300	58	1166
Equipment	800	1300	2066	568	4734
Community Action Program	-	100	25	25	150
Technical Assistance	720	760	420	230	2130
Training	<u>165</u>	<u>162</u>	<u>55</u>	<u>38</u>	<u>420</u>
Sub-Total AID	1935	2880	2866	919	8600
<u>GOH</u>					
SEPRRN Operating Costs	2523	2798	3412	<u>1/</u>	8733
Community Action Program	<u>-</u>	<u>30</u>	<u>75</u>	<u>85</u>	<u>190</u>
Sub-Total GOH	<u>2523</u>	<u>2828</u>	<u>3487</u>	<u>85</u>	<u>8923</u>
Total Program	4458	5708	6353	1004	17523

1/ Revision of SEPRRN's Five Year Plan will indicate Year 4 contribution.

## E. SOCIAL ANALYSIS

### 1. Beneficiaries

Rural farmers in Haiti have traditionally occupied the bottom rung of the socio-economic ladder. The lack of roads has been a massive hindrance to the rural poor economically, socially and politically. The primary long term beneficiary of this project will be the small rural farmers most of whom can become users of the road system for the first time. This will have a direct influence on marketing of their crops at higher prices, as a means of obtaining improved farm inputs, and as a way of receiving health and other services which will improve their standard of living. The rural farmer can consequently become more involved in the national economic development picture.

For the purpose of this project, the principal beneficiary could be described as the farmer who:

- has land holdings normally less than 1.1 hectares
- uses almost exclusively subsistence technology with a principal input of labor
- has a family cash income of less than \$108 per annum in rural areas
- has little or no access to markets for products because of poor or non-existent roads
- has had little or no contact with new farming techniques or practices, credit or other important production inputs
- has had little, if any, social, education, or health services from the central government
- has had little opportunity to buy commercial or manufactured goods
- has had, because of isolation and poverty, little or no opportunity to obtain any social benefits for himself or his family through visits to educational centers, health and family planning clinics, agriculture farms, etc.

So far any progress which has been made in improving living standards and in building and improving capital infrastructure has been confined almost entirely to the urban minority. If anything, there has been an overall loss in the rural capital investment and rural resource development and an increase in rural unemployment. There is an urgent need to reverse the continuing deterioration of the rural incomes and rural infrastructure.

In no area will roads be more important and the beneficiary more directly the rural poor in Haiti than in the health sector where the situation is indeed bleak. Tuberculosis is one of the most prevalent diseases in the country - particularly serious under Haitian conditions where malnutrition is wide spread. Typhoid is endemic in a number of urban areas, gastro-enteritis is extremely serious, particularly in infants and children. Other diseases such as diphtheria, poliomyelitis, dysentery and malaria, are common.

The epidemiological situation of Haiti can be greatly eased when remote areas of the country are open up by extension of the road network. Further, the access and improved economic conditions that come with the roads should result in an extension of medical care to remote areas.

## 2. General Benefits

Road construction and maintenance programs can make an enormous improvement in the rural sector as they open remote regions previously isolated, increase commercial traffic, stimulate competition, enlarge markets and lower consumer prices on imported goods. Roads will also ensure that more dependable and consistent agricultural assistance and information will be available in, up to now, inaccessible areas. For example, a large section of the Southern Peninsula, containing perhaps 200,000 inhabitants, is virtually inaccessible except by boat. A section of road connecting this area with the rest of Haiti is included in the AID Feeder Road Program. The development and maintenance of an improved road network will:

- encourage donors and other agencies to participate actively in the development of remote agricultural areas;
- enable donor and GOH specialists in all sectors - agriculture, health, education etc. to reach areas which were previously inaccessible;
- enable advisors to reach farmers and villagers on methods for increasing production and improving health and education;
- facilitate work in related areas such as erosion control, health care, construction and improvement of irrigation systems, community development and other related activities;
- lessen regional monopolies and encourage more competitive markets for goods;
- encourage the establishment of smaller commercial shops and increase the number and variety of vendors.

## 3. Indigenous Enterprises

Ancillary beneficiaries will be indigenous enterprises. It has been well noted over the years that private contractors have been somewhat more successful than Government Forces in the maintenance and operation of equipment. Repair facilities and parts warehouses operated by the Government traditionally have been inefficient. By contrast every vehicle operator in Haiti maintains his own vehicle and obtain parts and merchandise almost mysteriously in instances where the Government would fail. Contractors have also been able to avoid many of the cumbersome problems of administration and overhead so often associated with activities that are directly managed by the Government.

For these reasons, a maximum effort will again be provided within the context of this project, as is being done in the Agricultural Feeder Roads Project, to build and utilize private contractor capability for upgrading the roads on a contract and subcontract basis.

#### 4. Urban Migration

One of the most serious problems in Haiti is a growing concentration of people in the cities. The lack of facilities in the rural areas has prompted this migration. At the present time, certain regions are completely isolated during certain portions of the year - cut off from food, medical supplies, and other services which are often needed.

In addition, the lack of schools and inability to attract experienced teachers to remote areas, the lack of medical assistance and the almost total lack of any amenities such as electricity, water and sanitation have further contributed to the desire of the rural poor to move to urban areas where such services are available. With the establishment of a road network it is now anticipated that these services can be more readily brought to the rural areas and the attractiveness of urban migration stemmed.

#### 5. Community Councils

The final group of beneficiaries will be the Community Councils, which are entrenched local institutions located throughout Haiti. Previous AID activities such as HACHO and the coffee project give reason to believe that both their numbers and their activities could be significantly expanded. In the same sense, as noted above for indigenous enterprises, community councils might be assigned various responsibilities (given contracts) and tasks as may be related to road construction/maintenance with Community Action Programs. The income that they would derive from "contract" type responsibilities related to this project will serve to provide additional sources of income for redistribution to members within the community. Also the income derived from such an activity would enhance the councils standing in the eyes of its own community members. The capital base realized from its involvement in the area of road maintenance and construction would assist them in bettering their social conditions locally. Access to an independent revenue would better or create new medical, educational, and other social services in communities where the central government has as yet been unable to provide them. There is reason to believe that these local institutions will actively participate and effectively contribute to the role of road maintenance and reconstruction. Likewise, such institutions, as in the case of indigenous enterprises minimize the administration and management responsibilities that would ordinarily be assumed by the Ministry of Public Works. The Community Councils have proven their capability in this area over the years in projects conducted with the use of PL 480 food provided thru HACHO, CARE, CRS, and CWS.

## 6. The Role of Women

Women have not traditionally been involved in technical-mechanical training in Haiti except perhaps in nursing/medical training. Highway Maintenance in fact does not attract women in the United States. Here in Haiti the two technical-vocational schools have no female students in mechanical and electrical courses. In fact none has applied. The new UN-French sponsored center had 400 candidates for the 64 slots in the first class for December 1976. No women candidates applied. CANADO, The Canadian sponsored school has no females among its students in mechanical-electrical courses. CANADO has about 400 students in day and night sessions.

SEPRRN has one women engineer on its present staff of 12 and will consider qualified applicants. The administration staff is mostly women at the clerical level; there are some women in higher level management. The road maintenance project proposes to program some as foremen or gang chiefs, others in actual road maintenance.

Economic implications for the role of women in the traditional economy are envisaged as a result of this project. Some 22% of the gainfully employed women (compared to only 2% of the men) were engaged in some form of trade in 1970. The number of women in trade increased from 53,000 in 1950 (6½% of the gainfully employed women) to 169,000 in 1970. The increase of women in commerce over the past 20 years, accompanied by a decrease in women employed in agriculture from 82% to 60% of the total (an absolute decline from 684,000 to 454,000 at a time when the population was increasing) suggests that trade provided both economic and social functions.\*

Techniques of women-managed marketing will be somewhat altered. While women are largely in control of rural marketing, the system has demanded a substitution of labor for capital. Commodities have been sold in very small units, ie., kerosene by tiny bottle and matches by the stick because consumers were willing to make extra trips to market at higher unit prices in order to avoid tying up scarce capital in a subsistence economy. With the increase in commerce projected because of these new roads there is expected to be an increase in the amount of goods and income available. It is possible that this increase proportionately increase the amount of sales and earnings for the average women engaged in marketing.

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\* Over 100,000 women left the labor force altogether. The number of men gainfully employed rose by 56,000 but the number of men employed in agriculture remained unchanged at 775,000.

For goods not marketed locally, feeder roads will provide access to cash economy markets for agricultural and possibly cottage industry products. The profitability of small gardens primarily tended by women will be increased because in the absence of roads they planted only that amount that would ordinarily be consumed by the family. With the availability of new markets, there appears to be motivation for the women to cultivate more than the subsistence needs of the family. To the extent that community councils will be engaged in the administration of intensive labor undertakings, female office holders will be given the opportunity to develop their leadership potential.

PART V. - PROGRAM IMPLEMENTATION

A. IMPLEMENTATION

1. Strategy

Phase I began the institutional strengthening needed to prepare SEPRRN for assuming road maintenance responsibilities on the national highway network. Phase II will further strengthen and expand SEPRRN to assume responsibility for maintenance on National, Departmental and, through Community Councils, Local Roads. The role of the technical assistance team will be especially important in view of the training requirements and decentralization through District & Subdistrict expansion.

2. Schedule of Major Events

The Project Performance Tracking System is attached as Annex A, Exhibit 6. A summary of major events is presented in the implementation schedules on the following pages.

3. Disbursement Procedures

For the foreign exchange costs of technical assistance and equipment, normal AID Letter of Commitment procedures will be followed.

For Local Costs, as in the case of Phase I an initial advance will be made to the SEPRRN account with BNRH and SEPRRN will use this advance to pay the local costs of construction and shelf item procurement. The account will be replenished periodically upon request by SEPRRN and submission of evidence of expenditures made.

For disbursement of grant funds for the Community Action Program, costs of village labor will be shared between AID and GOH. A separate bank account will be established to control disbursement of these funds.

As presented in the financial plan, disbursements for the procurement of equipment will be in two Lots. Lot II funds will be released only after SEPRRN demonstrates satisfactory compliance with certain conditions precedent.

4. Contracting Plan

The Contract for the present technical assistance contract expires September 30, 1977. It is envisioned that the GOH will use normal AID notification and selection procedures to obtain these services from a U.S. Consulting firm for Phase II.

PHASE II ROAD MAINTENANCE - PROJECT EXECUTION SCHEDULE

MAJOR ACTIONS	FY 77												FY 78												FY 79												FY 80												FY 81											
	1977												1978												1979												1980												1981											
	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sept	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sept	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sept	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sept	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sept	Oct	Nov	Dec
Prepare PP	XXXX																																																											
Review and Approve PP	XXXX																																																											
Authorize, Prepare, Negotiate & Sign Loan/Grant Agreements			XXXX																																																									
Advertise and select TA Consultant Firm			XXXXX																																																									
COB meet Initial CPs				XXXXX																																																								
Negotiate and Award TA and Contract				XXXXX																																																								
Mobilize TA team					XX																																																							
Screen EMPPOP channels for equip			XXXXXX																																																									
Prepare IFB for Lot I Equipment			XXXXXX																																																									
Issue IFB for Lot I Equipment					XXXXX																																																							
Review bids and awards. Construct for Lot I Equip.						XXXXX																																																						
Delivery of Lot I Equipment							XXXXXXXXXXXXXXXXXXXX																																																					
Prepare design of Phase II Facilities			XXXXXXXXXXXX																																																									
Complete IFB for Const. Admin. Building Lot A			XXXXXX																																																									
Issue IFB for Const. Lot A					XXXXX																																																							
Review Bids and Award Contract for Lot A Construction							XXXXX																																																					
Construction Lot A facility								XXXXXXXXXXXXXXXXXXXX																																																				
Move into Administrative Facility											XXXXX																																																	
Prepare IFB for Central Garage Facilities - Lot B					XXXX																																																							
Issue IFB for Lot B Construction							XXXXXX																																																					
Review bids and Award for Lot B Construction								XXXXXX																																																				

MAJOR ACTIONS	FY 77			FY 78			FY 79			FY 80			FY 81											
	1977			1978			1979			1980			1981											
	Jan	Feb	Mar	Apr	May	June	July	Aug	Sept	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	June	July	Aug	Sept	Oct	Nov	Dec
Construct Lot B facilities							XXXXXX	XXXXXX	XXXXXX															
Develop and Implement Systems Management Plan				XXXXXX	XXXXXX	XXXXXX	XXXXXX	XXXXXX	XXXXXX															
Revise & Update 5 year Plan				XXXXXX	XXXXXX	XXXXXX	XXXXXX	XXXXXX	XXXXXX															
Meet CPS for Lot II Equipment Procurement				XXXXXX	XXXXXX	XXXXXX	XXXXXX	XXXXXX	XXXXXX															
Prepare Lot II Equipment							XXXXXX																	
Issue Lot II Equip IFB										XXXXXX														
Review Bids and Award Lot II Equip Contracts										XXXXXX														
Deliver Lot II Equipment													XXXXXX	XXXXXX	XXXXXX									
Obtain Title to Real Estate for District Facilities				XXXXXX	XXXXXX	XXXXXX																		
Site Adapt S&C District Facility Plans							XXXXXX																	
Prepare IFBs for District Shop Construction Lot C							XXXXXX																	
Issue IFBs for Lot C Construction										XXXXXX														
Review Bids and Award Const. Contracts for Lot C Facility										XXXXXX														
Construction Lot C facilities										XXXXXX	XXXXXX	XXXXXX												
Install Equipment into District facilities & Staff													XXXXXX	XXXXXX										
Establish management systems in Districts													XXXXXX											
Intensive Labor Project							XXXXXX																	
Train Counterparts				XXXXXX																				
Conduct Training Programs				XXXXXX																				
Evaluate Programs										XXXXXX						XXXXXX						XXXXXX		
Audit Program										XXXXXX						XXXXXX						XXXXXX		
Grant Disb. period	XXXXXX																							

PHASE II ROAD MAINTENANCE - TECHNICAL ASSISTANCE SCHEDULE

TEA TEAM	FY 1977												FY 78												FY 79												FY 80												FY 81											
	1977												1978												1979												1980												1981											
	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
ADVISORY GROUP																																																												
Subvt. Highway Maint. Eng.																																																												
Highway Engineer																																																												
Systems Advisor																																																												
Controller/Financ. Analyst																																																												
Training Advisor																																																												
Road Maintenance Engineer																																																												
Road Maintenance Engineer																																																												
Equipment Specialist																																																												
Short Term Specialists																																																												
OPERATIONAL SPECIALISTS																																																												
Garage Manager																																																												
Chief Mechanic																																																												
Inventory Manager																																																												
Accountant																																																												
Training Program																																																												
TOTAL M/M/Year																																																												

## 5. Procurement Plan

The general guidelines contained in AID Handbook 11 will prevail for the procurement of dollar cost equipment, materials, and services. Local currency procurement will be for readily available lumber, cement and reinforcing steel and other miscellaneous off the shelf items. SEPRRN has had an opportunity to improve and develop its procurement capacity during the Phase I Project. However, the consultant will continue to assist SEPRRN to develop its full capability. The consultant will also assist SEPRRN in preparation of procurement specifications and bidding documents for the purchase of equipment and materials for this project.

## 6. USAID Monitoring Requirements

The Mission Engineering Office will have the prime responsibility for monitoring the Phase II Program. Monthly and quarterly reports from SEPRRN and the Contractor will provide the basis for periodic monitoring of the project's progress and problem areas. The Mission staff will make routine visits to the project sites to spot check progress during the construction stages.

### B. EVALUATION

Three periodic evaluations are scheduled to coincide with critical project decisions.

The first evaluation is scheduled for early 1979. This project review occurs at a critical stage in the four-year program. A decision will be made concerning the feasibility of procuring a second tranche of highway maintenance equipment totalling \$2 million. As the release of the second tranche of funding for equipment and facilities is contingent on a revision of SEPRRN's five year plan and on an operational maintenance system, this project review is a major evaluation. Progress in training will be analyzed; road maintenance programs will be compared with earlier established targets; project adjustments will be made as appropriate.

The second evaluation is scheduled for mid-1980. Revision of the five year plan and design and installation of the management reporting system should facilitate the acquisition of interim quantified indicators of performance in such areas as training, community council involvement, district and brigade operations. The degree of progress in these areas will be assessed during this evaluation.

The third evaluation is scheduled for September 1981 at the conclusion of the project. Accomplishments will be compared with original and amended objectives.

Representatives of SEPRRN, AID, and the U.S. consultant team will participate in each evaluation.

- SEPRRN Director General, Technical Director, Administrative Director;
- Representatives of the U.S. consultant team;
- AID Project Manager, AID Program Evaluation Officer.

It is planned that each evaluation be carried out by an evaluation team under an IQC or other short-term contract arrangement. In the interest of continuity, it is preferable that the same team conduct the three evaluations.

The performance of the GOH, and the U.S. consultant firm will be reviewed during each evaluation:

The GOH for

- an adequate annual budget for the operating expenses of an expanding road maintenance program;
- prompt remittances to the operating account throughout the year to preclude project work stoppages;
- cooperation of GOH Ministries, the Central Bank, the Customs, and other GOH entities on which SEPRRN must rely for services and coordination.

SEPRRN for

- development of the annual road maintenance plan as required to meet production targets and implementation of the plan;
- development of permanent inhouse management and technical competence.

The U.S. Consultant Firm for

- effectiveness in providing management and technical personnel to serve with Haitian counterparts;
- participation in the installation and operation of the maintenance management system;
- design, installation, and operation of an effective training program.

Annex B, Exhibit 10 is an outline of principal factors to be considered in evaluating the quantitative and qualitative performance of these parties to the project.

Each evaluation will have both quantitative and qualitative aspects:

Quantitative Aspects

Table 1 is a schedule of inputs over the four years of the project. At each evaluation it will be determined whether these inputs have been delivered by the participating parties in the magnitude specified and on schedule.

Table 2 specifies the expected outputs of the project in quantitative terms by fiscal year. At each evaluation, actual outputs will be compared with target outputs to measure the degree of achievement.

Table 3 is a profile of the training program, indicating by year the number and type of SEPRRN personnel in all categories for whom inservice and formal training are planned during the project.

Qualitative Aspects

The outline of evaluation factors given in Annex B, Exhibit 10 reflects the evaluation approach and findings of the two recent independent appraisals of GOH, SEPRRN, and contractor performance under the Road Maintenance I loan. Encompassing as it does the qualitative aspects of performance, it complements the quantifiable measures of evaluation and provides a more comprehensive measure of project development than would otherwise be the case.

Table 1

FINANCIAL PLAN  
Project Inputs

	1977/78			1978/79			1979/80			1980/81			TOTALS			TOTAL
	AID		GOH	AID		GOH	AID		GOH	AID		GOH	AID		GOH	
	FX	LC	LC	FX	LC	LC	FX	LC	LC	FX	LC	LC	FX	LC	LC	
<b>Facility Construction</b>		250	-	-	558	-	-	390	-	-	58	-	-	1,166	-	1,166
Administrative(458) Districts & subdistricts(208)																
<b>Equipment</b>	800	-	-	1,300	-	-	2,066	-	-	568	-	-	4,734	-	-	4,734
Administrative(45) District & Subdistrict(460) SEPRRN Brigades (3,963) Communications System (266)																
<b>Community Action Programs</b>																
Vehicles & Hand Tools	-	-	-	100	-	-	-	-	-	-	-	-	100	-	-	100
Other	-	-	-	-	-	30	-	25	75	-	25	85	-	50	190	240
<b>Technical Assistance</b>	720	-	-	760	-	-	420	-	-	230	-	-	2,130	-	-	2,130
<b>Training</b>	50	50	-	75	75	-	50	50	-	35	35	-	210	210	-	420
<b>SEPRRN Operating Costs</b>	-	-	2,523	-	-	2,798	-	-	3,412	-	-	1/	-	-	8,733 <sup>2/</sup>	8,733 <sup>1/ 2/</sup>
Subtotal AID	1,870			2,868			2,911			951						
Subtotal GOH		2,523		2,828			3,487			85						
<b>Total Program</b>		4,393		5,696			6,398						7,174	1,426	8,923	17,523
<b>% of Total</b>													41%	8%	51%	100%

**NOTE:** Inflation factor for construction is 10% per year over a two-year period.

Inflation for equipment is 6% per year over a three-year period. Total approximately \$900,000.

Contingency factor for construction is 10%. Total approximately \$110,000.

<sup>1/</sup> Revision of SEPRRN's Five Year Plan will provide 1980/81 contributions.

<sup>2/</sup> For first three years.

Table 2

Project Outputs  
1977-1981

	1976/77	1977/78	1978/79	1979/80	1980/81	TOTAL
Number of Advisors	-	9	10 (+1)	7 (-3)	4 (-3)	
Number of Operational Specialists	-	4	3 (-1)	-(-3)	- -	
Number of Persons Trained/on Board						
Central Administration	62	89 (+27)	95 (+6)	95	95	(+ 33)
Districts	54	72 (+18)	72	72	72	(+ 18)
Sub-districts	42	84 (+42)	84	84	84	(+ 42)
Central garage/Shops	72	103 (+31)	103	103	103	(+ 31)
Brigade Personnel						
Intervention Brigade	114	171 (+57)	228(+57)	228	228	(+114) i
Regrading Brigade	250	325 (+75)	325 -	325	325	(+ 75) i
Hand Brigade	730	1,080(+350)	1,110(+30)	1,500(+390)	1,500	(+770) i
Bridge Brigade	48	72 (+24)	72	96(+ 24)	96	(+ 48) i
Signalization Brigade	8	8	8	8	8	-
Seal Coat Brigade	-	-	-	53(+ 53)	53	(+ 53)
Number of Operational Brigades						
Intervention Brigade	2	3 (+ 1)	4 (+1)	4 -	4	(+ 2)
Regrading Brigade	10	13 (+ 3)	13 -	13 -	13 -	(+ 3)
Hand Brigade	25	36 (+11)	37 (+1)	50 (+13)	50 -	(+ 25)
Bridge Brigade	2	3 (+ 1)	3 -	4 (+ 1)	4 -	(+ 2)
Signalization Brigade	1	1	1	1	1	-
Seal Coat Brigade	-	-	-	2 (+ 2)	2 -	(+ 2)

Table 2 (Continued)

	1976/77	1977/78	1978/79	1979/80	1980/81	TOTAL
<b>Number &amp; % of Facilities Newly Constructed</b>						
District facilities	3	-	1 (+ 1)	-	-	
Sub-district facilities	-	-	8	-	-	
Headquarters Administration Facility	-	1 (+ 1)	-	-	-	
Port-au-Prince Central Garage/Shops	-	-	1 (+ 1)	-	-	
<b>Kilometers National Roads Maintained to established standards within budgetary limitations</b>						
Permanent Maintenance	216	625(+409)	1,196(+571)	1,438(+242)	1,679 (+241)	
Emergency Maintenance	997	627(-370)	490(-137)	323(-167)	711 (+388)	
<b>Total Kilometers National Roads Maintained</b>	<b>1,213</b>	<b>1,252(+ 39)</b>	<b>1,686(+434)</b>	<b>1,761(+ 75)</b>	<b>2,390 (+629)</b>	
<b>Local Roads Maintained by Community Councils</b>	<b>-</b>	<b>288</b>	<b>540</b>	<b>720</b>	<b>720</b>	
<b>Community Councils Enrolled in Program</b>	<b>0</b>	<b>16</b>	<b>30</b>	<b>40</b>	<b>40</b>	
<b>Equipment Procured (% of Totals)</b>	<b>-</b>	<b>50% of Lot 1</b>	<b>100% of Lot 1</b>	<b>80% of Lot II</b>	<b>100% of Lot II</b>	

1/ See Annex A, Exhibit 6, p.3

Table 3

## PERSONNEL TRAINING REQUIREMENTS

	<u>1977/78</u>	<u>1978/79</u>	<u>1979/80</u>	<u>1980/81</u>	<u>Total To Be Trained</u>
<u>Incountry Training</u>					
Maintenance and shop equipment	36	36	36	36	144
Diesel/gas mechanics	12	12	12	12	48
Foremen/Gang chiefs highway maintenance	12	12	12	12	48
Parts and supplies	12	12	12	12	48
Technical-Vocational school	5	10	10	10	35
Accounting	6	6	6		18
Managers-Policy Level O-M seminars	5	5			10
Managers-Mid-level O-M Seminars	15	15			20
<u>Community Action</u>					
Foremen/Gang chiefs	30	30	30	30	120
<u>Offshore Training</u>					
Welders	4	4	4		12
Diagnostic mechanics	1	1	1		3
Equipment instructors	3	3	3		9
Top level special courses	4	4			8
Correspondence Courses	2 courses	2 courses	2 courses	2 courses	
<b>TOTAL</b>	<u>147</u>	<u>152</u>	<u>128</u>	<u>114</u>	<u>541</u>

C. CONDITIONS, COVENANTS AND NEGOTIATING STATUS

1. Conditions Precedent

In addition to the normal conditions, the project committee recommends that the following be included in the project agreement:

a. Conditions Precedent to Initial Disbursement

- 1) That all GOH budgetary commitments to SEPRRN according to the current Five Year Plan have been met to date.
- 2) Appointment of a full time project SEPRRN coordinator to work with AID and the technical consultant.

b. Conditions Precedent to Disbursement for procurement of Lot I Road maintenance equipment

- 1) That a contract for technical advisory services acceptable to AID has been executed.
- 2) That a plan for preventive maintenance of equipment is being implemented and that such a plan includes procedures for systematic replenishment of spare parts and operating supplies.

c. Conditions Precedent to disbursements for procurement of road maintenance equipment in excess of \$2,000,000

- 1) That a maintenance management and reporting system has been designed and installed.
- 2) That the Administrative Council is receiving satisfactory quarterly reports as required in the Decree of March 3, 1972.
- 3) That an evaluation of the programs accomplishments to date has been performed.
- 4) That SEPRRN's current Five Year Plan and operating budget for the period 1975-1980 has been revised in view of the current situations and approved by the GOH, and that the GOH has made a commitment to adjust SEPRRN's future operating budget as necessary to reflect the revised plan and budget.

- d. Conditions Precedent to disbursements for construction of facilities
- 1) That a contract for technical advisory services acceptable to AID has been executed.
  - 2) That the GOH has acquired title of the land on which the facilities are to be constructed.
  - 3) That AID has approved the IFB documents for the construction.
- e. Conditions Precedent to disbursement for the Community Action Program
- 1) Completion of an evaluation of the Agricultural Feeder Roads pilot project and development of an implementation plan based on the results obtained.
- f. Conditions Precedent to disbursement for offshore and out-of-service training
- 1) That SEPRRN will take the necessary measures to assure that participants in an offshore or out-of-service training, program return to Haiti as employees of SEPRRN for a determined period and their salaries will be maintained while in training.

2. Covenants

In addition to the normal covenants the GOH will be requested to covenant the following:

- SEPRRN will assign qualified counterpart personnel to the advisors.
- SEPRRN will use the equipment to be procured under the project for road maintenance work only.
- SEPRRN will recruit sufficient personnel for the training program.
- SEPRRN will release personnel from their operating duties for training as required.
- SEPRRN will develop and implement a comprehensive training program with assistance of technical advisors.

- Except in the cases of District and Sub-district engineers the GOH will make every attempt to eliminate dual responsibilities of those individuals assigned to SEPRRN but paid by both SEPRRN and TPTC.
- The SEPRRN Administrative Council will make every attempt to assure compliance with the requirements of the Decree of March 3, 1972.
- The GOH will study the advisability of adjusting the fuel tax-structure to increase the amount of funds going toward maintenance of the road network.

### 3. Negotiating Status

The program was reviewed and discussed with the Director General of SEPRRN, the Minister and Chief Engineer of TPTC. The PP reflects the understanding and agreements reached during these discussions. No problems are anticipated in negotiating a Grant Agreement.

TRANSLATION

REPUBLIC OF HAITI  
SECRETARY OF STATE FOR FINANCE  
AND ECONOMIC AFFAIRS

No. 1249

Port-au-Prince, February 10, 1977

Mr. Scott L. Behoteguy, Director  
USAID Mission to Haiti  
Port-au-Prince, Haiti

Dear Mr. Director:

As you are aware, the Government of Haiti, with the financial assistance of the IBRD, IDB, French Government and USAID, is currently undertaking a major highway reconstruction program and by 1980 some 1400 kms of National and Departmental roads will have been reconstructed under these programs.

With the Assistance of AID Loan 521-L-005 and Grant, 521-0072, the Government of Haiti has also undertaken to establish a road maintenance capability in SEPRRN to assure that the reconstructed roads will be maintained as required to protect the financial investment of the GOH as well as to assure continued use of the roads. Under this Phase I program SEPRRN has developed a nucleus organization and has been performing maintenance activities on a portion of the road network. However, this nucleus is not yet developed or equipped to be able to maintain the total length of roads included in current programs, let alone those additional sections which will be included in future projects. That is why, in the name of the Government of Haiti, I hereby make a formal request to the Agency for International Development (AID) for assistance in the financing of a second phase of the Highway Maintenance Program to assure the continued development of the SEPRRN organization.

The Phase II program would start immediately upon completion of Phase I (September 30, 1977) and would run for 4 years. It would include:

- 1) Construction and equipping of an Administration Building at the Central Garage site to be used for SEPRRN's Staff headquarters.
- 2) Construction of addition facilities at the Central Garage as required by the expanded program.
- 3) Construction of a fourth major district facility at Hinche.
- 4) Construction of eight sub-district facilities in those districts where there is no major facility.
- 5) Acquisition of additional road maintenance equipment and spare parts required by the expansion of SEPRRN's activities.
- 6) Acquisition of shop equipment required to complete the new facilities.
- 7) Acquisition of a first increment of radio equipment to assure interregional communication between SEPRRN's facilities.
- 8) Provision of some 30 man years of technical assistance to SEPRRN to assure the continued development of that organization, as recommended during evaluation of Phase I of the program.
- 9) Partial funding of a community Action Program to implement the findings of the Pilot Project included in the Agricultural Feeder Road Program for use of local communities in labor-intensive road construction/maintenance work.
- 10) Development and implementation of an intensive training program to assure that present and new SEPRRN personnel will have the expertise required to perform their duties in an effective manner.

Present estimates indicate that the above activities, over a period of four years, will require external financing of some \$6.0 million for the capital goods. The technical assistance and training activities are estimated at \$2.6 million. Accordingly, the GOH requests financial assistance from AID on the most concessional terms possible to cover these costs.

The GOH has already provided the gourde equivalent of \$8.733.000 over the next three fiscal years 1977-78/1978-79/1979-80 in the form of an operating budget for SEPRRN, according to the five year plan. Furthermore, an additional amount of \$190.000 related to the Community Action Program will reach up to \$8.923,000 the GOH liability for the period. However, pursuant to fiscal possibilities, some budgetary adjustments can be considered to allow the SEPRRN to meet all its obligation, which will be dependent of the progress of the National Highway network.

The GOH will also adopt the following measures:

- 1) Land will be provided on which to locate the district shop at Hinche and eight subdistrict shops.
- 2) SEPRRN will appoint a full time project coordinator to work with AID and the technical consultant on this program.
- 3) A Contract for technical advisory services acceptable to AID will be executed.
- 4) A plan for preventive maintenance of equipment will be implemented and such plan will include procedures for systematic replenishment of spare parts and operating supplies by SEPRRN.
- 5) A maintenance management and reporting system for SEPRRN will be designed and installed.
- 6) Periodic evaluations of the programs will be performed.
- 7) Participants in offshore or out-of-service training programs will be required to return to Haiti as employees of SEPRRN for a determined period and their salaries will be maintained while in training.
- 8) SEPRRN will use the equipment to be procured under the loan for road maintenance work only.
- 9) Necessary legal and administrative arrangements will be made to facilitate the tax free importation of project equipment and goods and establish the legal status of U.S. contractor personnel in Haiti.
- 10) Except in the cases of District and Sub-district engineers any TPTC Employee, assigned to SEPRRN, will be entirely discharged of any task in TPTC, in order that he becomes solely consecrated to his SEPRRN function.

- 11) The SEPRRN Administrative Council will watch over the strict observance of all obligations as required in the Decree of August 29, 1973, rectifying the Decree of March 3, 1972, which established SEPRRN.

The Government of Haiti requests prompt and favorable consideration by AID of this request as it represents a major element within the National Development Plan, and the Programs early initiation is necessary to assure SEPRRN's uninterrupted development. It is also directly and related to other Road Programs with the IBRD and IDB.

Sincerely yours,

(Signed)

Engineer Fernand Laurin  
Secretary of State of Public Works,  
Transportation & Communications

(Signed)

Emmanuel Bros  
Secretary of State  
for Finance and  
Economic Affairs



REPUBLIQUE D'HAÏTI

**SECRETARIE D'ETAT DES FINANCES  
ET DES AFFAIRES ECONOMIQUES**

No.....1219

Port-au-Prince, le 10 Février 1977.

Monsieur Scott L. BEHOTEGUY  
Directeur de la Mission USAID/HAÏTI  
Port-au-Prince, Haïti.

Cher Monsieur le Directeur,

Comme vous le savez, le Gouvernement Haïtien, avec l'assistance financière de la BIRD, de la BID, du Gouvernement Haïtien et de la USAID, entreprend pour le moment un grand programme de reconstruction de routes et, vers 1980 quelques 1400 kms de routes nationales et départementales, auront été reconstruites dans le cadre de ces programmes.

Avec l'assistance du Prêt AID-521-L-005 et en Don AID 521-0072, le Gouvernement Haïtien a aussi entrepris, d'établir, avec le SEPRAW, "organisme d'entretien de routes, pour garantir que des routes reconstruites seront entretenues convenablement pour protéger les investissements financiers du GOH aussi bien que pour assurer l'usage continu de ces routes. Conformément au programme de la Phase I, le SEPRAW a développé un noyau d'organisation et a réalisé des travaux d'entretien sur une partie du réseau routier. Cependant, ce noyau n'est pas encore suffisamment développé ou équipé pour être capable d'entretenir le réseau total des routes comprises dans les programmes actuels et encore moins celles qui seront ajoutées dans les futurs projets. C'est pourquoi, au nom du Gouvernement Haïtien, par la présente, je sollicite formellement l'assistance de l'Agence Internationale pour le Développement (AID) pour le financement d'une seconde phase du programme d'entretien de routes en vue d'assurer le développement continu de l'organisation SEPRAW.

Le programme de la Phase II devrait commencer immédiatement après l'exécution de la Phase I (30 Septembre 1977) et serait étalé sur 4 ans. Il comprendrait:

- 1) La construction et l'Equipement d'un bâtiment d'Administration dans l'aire du Garage Central. Il serait utilisé comme quartier général par le haut personnel du SEPRAW.
- 2) La construction de locaux additionnels au Garage Central pour les besoins du Programme élargi.

Mr. Scott L. Dehoteguy -2

10/2/77.

- 3) La construction d'un quatrième district principal à Hinche.
- 4) La construction de huit sous-districts dans ceux des districts où il n'y a pas de grandes facilités.
- 5) L'acquisition d'équipement additionnel d'entretien de routes et des pièces détachées requises par les activités du SEPRAN élargi.
- 6) L'acquisition de l'équipement d'atelier nécessaire pour répondre aux nouvelles obligations.
- 7) L'acquisition d'un premier lot d'équipement de radio pour assurer les communications interrégionales entre le SEPRAN et ses succursales.
- 8) La mise à la disposition du SEPRAN de quelques 30 hommes/années d'assistance technique, pour assurer le développement continu de cette organisation, ainsi qu'il a été recommandé durant l'évaluation et la Phase I du programme.
- 9) Le financement partiel d'un programme d'Action Communautaire pour tirer parti des conclusions du "Projet Pilote" compris dans le Programme de routes secondaires agricoles pour l'utilisation des communautés locales dans un programme d'emploi intensif de main d'oeuvre dans la construction et l'entretien des routes".
- 10) Le Développement et l'exécution d'un programme d'entraînement intensif pour assurer que l'actuel personnel du SEPRAN et aussi le nouveau, auront la formation requise pour remplir leurs tâches d'une manière effective.

Les présentes estimations indiquent que les activités ci-dessus, s'étendant sur une période de quatre ans, exigeront un financement extérieur de quelques 6 millions de dollars, pour les biens essentiels. L'Assistance technique et les activités d'entraînement sont estimées à : 2.6 millions. En conséquence, pour couvrir ces dépenses, le GOM sollicite l'assistance financière de l'AID dans les conditions les plus favorables possibles.

Le Gouvernement Haitien s'est déjà engagé à fournir l'équivalent en gourdes de \$4.733.000.00 représentant le budget de fonctionnement du SEPRAN pour les 3 années fiscales 1977-78/ 1978-79/ 1979-80 conformément au plan Quinquennal. En outre une valeur additionnelle de : \$190.000.00 provenant du Programme d'Action Communautaire portera à : \$4.923.000.00 l'engagement du Gouvernement Haitien pour la période. Cependant selon les possibilités fiscales des ajustements budgétaires pourront être envisagés pour permettre au SEPRAN de faire face à toutes les obligations, lesquelles seront en fonction du développement du Réseau Routier National.

Mr. Scott L. Behoteguy -3

10/2/77.

Le ODH adoptera également les mesures suivantes:

1) Des terrains seront fournis sur lesquels seront construits le garage de district de Hinche et les huit (8) garages de sous-districts.

2) Le SEPRAN désignera un coordonnateur de projet à plein temps pour travailler avec l'AID et le Consultant Technique nommé pour ce programme.

3) Un Contrat pour des services de Conseil Technique, acceptable pour l'AID, sera exécuté.

4) Un plan pour l'entretien préventif de l'équipement sera mis en exécution et ce plan comprendra la procédure à suivre pour le remplacement systématique par le SEPRAN des pièces détachées et autres fournitures.

5) Une administration d'entretien et un système de reporting pour le SEPRAN seront désignés et installés.

6) Des évaluations périodiques des programmes seront faites.

7) Les participants aux programmes d'entraînement à l'étranger ou en dehors du Service seront requis de retourner en Haïti en qualité d'employés du SEPRAN pour une période déterminée et leurs salaires seront maintenus pendant la durée de l'entraînement.

8) Le SEPRAN utilisera seulement pour des travaux d'entretien de routes, l'équipement qui sera procuré dans le cadre du projet.

9) Des dispositions légales et administratives seront prises pour faciliter l'importation en franchise de l'équipement et des fournitures nécessaires au projet et établir le statut légal du personnel contractant américain en Haïti.

10) Excepté dans le cas des Ingénieurs de Districts et de sous-districts, tout employé du Département des T.P.T.C. affecté au SEPRAN sera complètement déchargé de toute tâche aux T.P.T.C. de façon à se consacrer uniquement à sa fonction au SEPRAN.

11) Le Conseil d'Administration du SEPRAN veillera à la stricte observance de toutes les obligations telles qu'exigées dans le Décret Loi du 29 Août 1973 modifiant celui du 3 mars 1972 créant le SEPRAN.

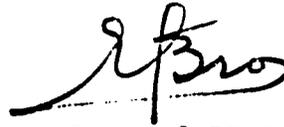
Le Gouvernement Haïtien sollicite de l'AID une prompte et favorable considération de cette requête, vu qu'elle représente un élément majeur dans le Plan de Développement National et que l'exécution de ces programmes est nécessaire pour assurer le développement ininterrompu

Mr. Scott L. Bahotoguy -4

10/2/77.

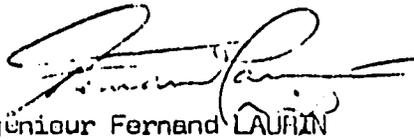
du SEPRAW. Elle est aussi directement liée à d'autres programmes de Routes de la BIRD et de la BID.

Veillez agréer, Cher Monsieur le Directeur, l'assurance de ma considération distinguée.



Emmanuel BRDG

Secrétaire d'Etat des Finances  
Et des Affaires Economiques



Ingénieur Fernand LAURIN  
Secrétaire d'Etat des Travaux Publics  
Transports et Communications

ANNEX A  
Exhibit 2  
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6C(1) - COUNTRY CHECKLIST

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

A. GENERAL CRITERIA FOR COUNTRY

1. FAA Sec. 116. Can it be demonstrated that contemplated assistance will directly benefit the needy? If not, has the Department of State determined that this Government has engaged in consistent pattern of gross violations of internationally recognized human rights?
2. FAA Sec. 481. Has it been determined that the government of recipient country has failed to take adequate steps to prevent narcotics drugs and other controlled substances (as defined by the Comprehensive Drug Abuse Prevention and Control Act of 1970) produced or processed, in whole or in part, in such country, or transported through such country, from being sold illegally within the jurisdiction of such country to U.S. Government personnel or their dependents, or from entering the U.S. unlawfully?
3. FAA Sec. 620(a). Does recipient country furnish assistance to Cuba or fail to take appropriate steps to prevent ships or aircraft under its flag from carrying cargoes to or from Cuba?
4. FAA Sec. 620(b). If assistance is to a government, has the Secretary of State determined that it is not controlled by the international Communist movement?
5. FAA Sec. 620(c). If assistance is to a government, is the government liable as debtor or unconditional guarantor on any debt to a U.S. citizen for goods or services furnished or ordered where (a) such citizen has exhausted available legal remedies and (b) debt is not denied or contested by such government?
6. FAA Sec. 620(e) (1). If assistance is to a government, has it (including government agencies or subdivisions) taken any action which has the effect of nationalizing, expropriating, or otherwise seizing ownership or control of property of U.S. citizens or entities beneficially owned by them without taking steps to discharge its obligations toward such citizens or entities?

All AID projects in Haiti are aimed at the rural poor majority who comprise 95% of the population and whose average per capita income is less than \$100 per year.

Haiti's law regulating the use & control of narcotic drugs was signed in December 8, 1975. It provides stiff penalties for use & distribution of illegal drugs & Haiti cooperates with the U.S. in controlling drug traffic.

No

Yes

There is no evidence that Haiti is so in debted.

There is no evidence that Haiti has taken such actions.

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EXHIBIT 2  
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- A
7. FAA Sec. 620(f); App. Sec. 108. Is recipient country a Communist country? Will assistance be provided to the Democratic Republic of Vietnam (North Vietnam), South Vietnam, Cambodia or Laos? No
  8. FAA Sec. 620(i). Is recipient country in any way involved in (a) subversion of, or military aggression against, the United States or any country receiving U.S. assistance, or (b) the planning of such subversion or aggression? No
  9. FAA Sec. 620(j). Has the country permitted, or failed to take adequate measures to prevent, the damage or destruction, by mob action, of U.S. property? There are no incidences of such action in recent years.
  10. FA Sec. 620(l). If the country has failed to institute the investment guaranty program for the specific risks of expropriation, inconvertibility or confiscation, has the AID Administrator within the past year considered denying assistance to such government for this reason? An investment guaranty agreement with Haiti is in effect.
  11. FAA Sec. 620(o); Fishermen's Protective Act, Sec. 5. If country has seized, or imposed any penalty or sanction against, any U.S. fishing activities in international waters,
    - a. has any deduction required by Fishermen's Protective Act been made? Haiti has taken no such action.
    - b. has complete denial of assistance been considered by AID Administrator? Not applicable.
  12. FAA Sec. 620(q); App. Sec. 504. (a) Is the government of the recipient country in default on interest or principal of any AID loan to the country? (b) Is country in default exceeding one year on interest or principal on U.S. loan under program for which App. Act appropriates funds, unless debt was earlier disputed, or appropriate steps taken to cure default?
    - a) Since rescheduling debts in 1970, Haiti has been current.
    - b) No
  13. FAA Sec. 620(s). What percentage of country budget is for military expenditures? How much of foreign exchange resources spent on military equipment? How much spent for the purchase of sophisticated weapons systems? (Consideration of these points is to be coordinated with the Bureau for Program and Policy Coordination, Regional Coordinators and Military Assistance Staff (PPC/RC).) 10.9% of the \$81 million budget in FY75-76 is budgeted for the armed forces. No equipment breakdown is provided, but most of this sum is for administration. No sophisticated weapons are procured. We are not aware of PL480 sales or development assistance funds having been used to cover military expenses.

ANNEX A  
EXHIBIT 2  
Page 3 of 13

- A
14. FAA Sec. 620(t). Has the country severed diplomatic relations with the United States? If so, have they been resumed and have new bilateral assistance agreements been negotiated and entered into since such resumption? No
  15. FAA Sec. 620(u). What is the payment status of the country's U.N. obligations? If the country is in arrears, were such arrears taken into account by the AID Administrator in determining the current AID Operational Year Budget? The U.N. treasurer informed the U.S. delegation to the U.N. on August 29, 1975 that Haiti had made payments which removed the possibility that the country might lose its vote in the General Assembly because of arrears in its contributions. Haiti is continuing its voting rights and is being granted continued U.N. assistance.
  16. FAA Sec. 620A. Has the country granted sanctuary from prosecution to any individual or group which has committed an act of international terrorism? No
  17. FAA Sec. 666. Does the country object, on basis of race, religion, national origin or sex, to the presence of any officer or employee of the U.S. there to carry out economic development program under FAA? No
  18. FAA Sec. 669. Has the country delivered or received nuclear reprocessing or enrichment equipment, materials or technology, without specified arrangements on safeguards, etc.? No
  19. FAA Sec. 901. Has the country denied its citizens the right or opportunity to emigrate? No
- B. FUNDING CRITERIA FOR COUNTRY
1. Development Assistance Country Criteria
    - a. FAA Sec. 102(c), (d). Have criteria been established, and taken into account, to assess commitment and progress of country in effectively involving the poor in development, on such indexes as: (1) small-farm labor intensive agriculture, (2) reduced infant mortality, (3) population growth, (4) equality of income distribution, and (5) unemployment.
      - (1) Making appropriate efforts to increase food production and improve means for food storage and distribution.
      - (2) Creating a favorable climate for foreign and domestic private enterprise and investment.
    - b. FAA Sec. 201(b)(5), (7) & (8); Sec. 208; 211(a)(4), (7). Describe extent to which country is:
      - b. (1) The GOH has allocated 27% of its 1976 annual development budget to agriculture and has assigned a high priority to agriculture development. This represents a definite awareness of the importance of agriculture to the total country development and is a positive move toward increased commitment in addressing agricultural problems. Within its limited resources and with external assistance the GOH is increasingly providing extension and credit services to farmers and is undertaking research to improve production and marketing.
      - b. (2) The GOH has taken a number of steps to create a favorable investment climate by passing suitable legislation to provide incentives for foreign and domestic investment, has established a special office to facilitate investment and otherwise encourages and cooperates with private enterprise. With US assistance a study is being undertaken for expanding capital markets and domestic investment and enterprises through a proposed Development Finance Corporation project.

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81b

- (3) Increasing the public's role in the developmental process.
- (4) (a) Allocating available budgetary resources to development.  
(b) Diverting such resources for unnecessary military expenditure and intervention in affairs of other free and independent nations.
- (5) Making economic, social, and political reforms such as tax collection improvements and changes in land tenure arrangements, and making progress toward respect for the rule of law, freedom of expression and of the press, and recognizing the importance of individual freedom, initiative, and private enterprise.
- (6) Otherwise responding to the vital economic, political, and social concerns of its people, and demonstrating a clear determination to take effective self-help measures.

c. FAA Sec. 201(b), 211(a). Is the country among the 20 countries in which development assistance loans may be made in this fiscal year, or among the 40 in which development assistance grants (other than for self-help projects) may be made?

d. FAA Sec. 115. Will country be furnished, in same fiscal year, either security supporting assistance, or Middle East peace funds? If so, is assistance for population programs, humanitarian aid through international organizations, or regional programs?

2. Security Supporting Assistance Country Criteria

a. FAA Sec. 502B. Has the country engaged in a consistent pattern of gross violations of internationally recognized human rights? Is program in accordance with policy of this Section?

b. FAA Sec. 531. Is the Assistance to be furnished to a friendly country, organization, or body eligible to receive assistance?

c. FAA Sec. 609. If commodities are to be granted so that sale proceeds will accrue to the recipient country, have Special Account (counterpart) arrangements been made?

- Haitiens are basically a homogenous people whose society is relatively free and politically stable. The basic unit of rural group is the community council. An objective of this project is involvement of local leadership for community action. The GOH has established an official community development program to encourage the formation of community councils, cooperatives, farmers associations, etc., and is actively engaged in community development projects. The GOH is expected to provide trained personnel for essential services and guidance to the target group. The GOH's development budget for 1975-76 is \$37.5 million. This is 114% larger than the amount allocated for 1974-75, which was 22% more than the preceding year.
- 4.b) The GOH had agreed to provide \$73 million over a five year period (1974-79) for development purposes. The GOH is currently working on a new 1976-81 five year plan which is expected to be at a higher level than the previous five year plan.
  - 5) The budget for the department of Interior and National Defense is the largest of the operating ministries. However, included in this total are police, fire protection and other non-military costs. There has been no intervention in affairs of other nations.
  - 6) The GOH has established its intent to undertake reforms in public administration and fiscal management and has requested assistance from AID through an Administrative Improvement Project. Haiti is receiving or has requested assistance from external sources in these and in the social areas. Haiti has a much more open society now than it had several years ago, as evidenced by the recent return of many citizens to the country.
  - 6.c) Development assistance loans & grants will be made.

d) No

Not applicable

" "

" "

6C(2) - PROJECT CHECKLIST

Listed below are, first, statutory criteria applicable generally to projects with FAA funds, and then project criteria applicable to individual fund sources: Development Assistance (with a sub-category for criteria applicable only to loans); and Security Supporting Assistance funds.

CROSS REFERENCES: IS COUNTRY CHECKLIST UP TO DATE? IDENTIFY. HAS STANDARD ITEM CHECKLIST BEEN REVIEWED FOR THIS PROJECT?

I. GENERAL CRITERIA FOR PROJECT.

1. App. Unnumbered; FAA Sec. 653(b)

(a) Describe how Committees on Appropriations of Senate and House have been or will be notified concerning the project;  
(b) is assistance within (Operational Year Budget) country or international organization allocation reported to Congress (or not more than \$1 million over that figure plus 10%)?

Project was included in FY1977 Congressional Presentation at \$4.0 million loan & \$770,000 grant. Notification will be made of increased program/code.

2. FAA Sec. 611(a)(1). Prior to obligation in excess of \$100,000, will there be (a) engineering, financial, and other plans necessary to carry out the assistance and (b) a reasonably firm estimate of the cost to the U.S. of the assistance?

Yes. Preliminary engineering, financial and other plans are included in this PP. The cost estimate of the project is considered sound.

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?

Legislative action required to permit accomplishment of the <sup>program</sup> have been discussed with the GOH and agreed upon in principle. Such actions will be required as a condition of the loan.

4. FAA Sec. 611(b); App. Sec. 101. If for water or water-related land resource construction, has project met the standards and criteria as per Memorandum of the President dated Sept. 5, 1973 (replaces Memorandum of May 15, 1962; see Fed. Register, Vol 38, No. 174, Part III, Sept. 10, 1973)?

Not applicable.

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 the country's capability effectively to maintain and utilize the project?

Yes.

A.

6. FAA Sec. 209, 619. Is project susceptible of execution as part of regional or multi-lateral project? If so why is project not so executed? Information and conclusion whether assistance will encourage regional development programs. If assistance is for newly independent country, is it furnished through multi-lateral organizations or plans to the maximum extent appropriate? No
7. FAA Sec. 601(a); (and Sec. 201(f) for development loans). 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; (c) encourage development and use of cooperatives, credit unions, and savings and loan associations; (d) discourage monopolistic practices; (e) improve technical efficiency of industry, agriculture and commerce; and (f) strengthen free labor unions. The road transport constraint has been identified as a major obstacle to rural development. Improvement in the road network will open up the rural areas to new development, create new markets & discourage monopolistic practices.
8. FAA Sec. 601(b). Information and conclusion 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). Project will encourage private Haitian Contractors (with US equipment) to participate in road maintenance.
9. FAA Sec. 612(b); Sec. 636(h). 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 to meet the cost of contractual and other services. The GOH has approved 5-year budget for the implementing agency. Counterpart contributions for the previous loan (521-7-005) have always been met & undoubtedly will be met in the proposed project.
10. FAA Sec. 612(d). Does the U.S. own excess foreign currency and, if so, what arrangements have been made for its release? No

B. FUNDING CRITERIA FOR PROJECT

1. Development Assistance Project Criteria

- a. FAA Sec. 102(c); Sec. 111; Sec. 281a. Extent to which activity will (a) effectively involve the poor in development, by extending access to economy at local level, increasing labor-intensive production, spreading investment out from cities to small towns and rural areas; and (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?

The project includes a labor intensive program to involve local communities in selfhelp efforts to maintain roads.

E:

b. FAA Sec. 103, 103A, 104, 105, 106, 107. Is assistance being made available: [Include only applicable paragraph -- e.g., a, b, etc. -- which corresponds to source of funds used. If more than one fund source is used for project, include relevant paragraph for each fund source.]

In conjunction with AID's Feeder Road Program (521-T-007) AID & other donor activity in agriculture, road maintenance will help increase the incomes of rural poor by decreasing the cost of transportation. Current estimates are that incomes can be increased by - 70 by decreasing transportation costs - 70.

(1) [103] for agriculture, rural development or nutrition; if so, extent to which activity is specifically designed to increase productivity and income of rural poor; [103A] if for agricultural research, is full account taken of needs of small farmers;

Not Applicable

(2) [104] for population planning or health; if so, extent to which activity extends low-cost, integrated delivery systems to provide health and family planning services, especially to rural areas and poor;

Not Applicable

(3) [105] for education, public administration, or human resources development; if so, extent to which activity strengthens nonformal education, makes formal education more relevant, especially for rural families and urban poor, or strengthens management capability of institutions enabling the poor to participate in development;

Not Applicable

(4) [106] for technical assistance, energy, research, reconstruction, and selected development problems; if so, extent activity is:

(a) technical cooperation and development, especially with U.S. private and voluntary, or regional and international development, organizations;

(b) to help alleviate energy problem;

(c) research into, and evaluation of, economic development processes and techniques;

(d) reconstruction after natural or manmade disaster;

(e) for special development problem, and to enable proper utilization of earlier U.S. infrastructure, etc., assistance;

(f) for programs of urban development, especially small labor-intensive enterprises, marketing systems, and financial or other institutions to help urban poor participate in economic and social development.

PAGE NO. 6C(2)-4	EFFECTIVE DATE November 10, 1976	TRANS. MEMO NO. 3:11	AID HANDBOOK 3, App. 6C
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Annex A  
Exhibit 2  
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(5) [10?] by grants for coordinated private effort to develop and disseminate intermediate technologies appropriate for developing countries.

c. FAA Sec. 110(a); Sec. 208(e). Is the recipient country willing to contribute funds to the project, and in what manner has or will it provide assurances that it will provide at least 25% of the costs of the program, project, or activity with respect to which the assistance is to be furnished (or has the latter cost-sharing requirement been waived for a "relatively least-developed" country)?

Haiti will contribute \$8.4 million to this project from the planned operating budget of the implanting agency. This will be more than the 25% requirement.

d. 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?

Not Applicable

e. FAA Sec. 207; Sec. 113. Extent to which assistance reflects appropriate emphasis on; (1) encouraging development of democratic, economic, political, and social institutions; (2) self-help in meeting the country's food needs; (3) improving availability of trained worker-power in the country; (4) programs designed to meet the country's health needs; (5) other important areas of economic, political, and social development, including industry; free labor unions, cooperatives, and Voluntary Agencies; transportation and communication; planning and public administration; urban development, and modernization of existing laws; or (6) integrating women into the recipient country's national economy.

U.S. assistance in Haiti and elsewhere places emphasis on encouraging economic social and political institutions required for a viable democratic society. One purpose of the project is to develop and strengthen administrative and technical institutions in the GOH. Emphasis will be on development of community groups and institutions to maintain a self-help program. Additional cash income to small farmers is anticipated to enable them to improve their general well being and health and medical standards.

f. 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 civic education and training in skills required for effective participation in governmental and political processes essential to self-government.

Our aspect of this program is to increase the flow of resources to rural areas concerned for increased economic and social benefits. This program provides inputs and service relying on technical assistance for development of local leadership and community action, for major responsibility. It is also looking to appropriate governmental agencies to provide trained personnel and essential services. Women share a large portion and participate actively in the country's national economy, especially in agricultural production and marketing of crops. Women will also be actively engaged in and working on community councils for the communities self-help aspects of this project.

Annex A  
Exhibit 2  
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g. FAA Sec. 201(b)(2)-(4) and -(8); Sec. 201(e); Sec. 211(a)(1)-(3) and -(8). 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; or of educational or other institutions directed toward social progress? Is it related to and consistent with other development activities, and will it contribute to realizable long-range objectives? And does project paper provide information and conclusion on an activity's economic and technical soundness?

An inadequate transportation network has been identified as one of the key constraints in Haiti's future development. Maintenance of this network is essential to facilitate delivery of social services & to provide farm to market roads.

h. FAA Sec. 201(b)(6); Sec. 211(a)(5), (6). Information and conclusion on possible effects of the assistance on U.S. economy, with special reference to areas of substantial labor surplus, and extent to which U.S. commodities and assistance are furnished in a manner consistent with improving or safeguarding the U.S. balance-of-payments position.

The foreign exchange component of the project is 41 %. No adverse efforts on US balance of payments position is expected.

2. Development Assistance Project Criteria (Loans only)

a. FAA Sec. 201(b)(1). Information and conclusion on availability of financing from other free-world sources, including private sources within U.S.

No other free world sources of financing are available.

b. FAA Sec. 201(b)(2); 201(d). Information and conclusion on (1) capacity of the country to repay the loan, including reasonableness of repayment prospects, and (2) reasonableness and legality (under laws of country and U.S.) of lending and relending terms of the loan.

Not applicable

c. FAA Sec. 201(e). If loan is not made pursuant to a multilateral plan, and the amount of the loan exceeds \$100,000, has country submitted to AID an application for such funds together with assurances to indicate that funds will be used in an economically and technically sound manner?

Letter of Application has been received from the GOH.

d. FAA Sec. 201(f). Does project paper describe how project will promote the country's economic development taking into account the country's human and material resources requirements and relationship between ultimate objectives of the project and overall economic development?

Yes as described above.

e. FAA Sec. 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?

Construction (\$1,100,000) & equipment (\$4,834,000) costs will be paid of private enterprises through AID competitive bidding procedures.

f. FAA Sec. 620(d). If assistance is for any productive enterprise which will compete in the U.S. with U.S. enterprise, 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?

The project is not intended for such purposes.

3. Project Criteria Solely for Security Supporting Assistance

FAA Sec. 531. How will this assistance support promote economic or political stability?

Not Applicable.

4. Additional Criteria for Alliance for Progress

[Note: Alliance for Progress projects should add the following two items to a project checklist.]

a. FAA Sec. 251(b)(1), -(8). Does assistance take into account principles of the Act of Bogota and the Charter of Punta del Este, and to what extent will the activity contribute to the economic or political integration of Latin America?

The positive steps taken by the GOH in increasing its annual development budget for economic and social benefits for the Haitian population through increased emphasis on public health, nutrition and assisting small farmer development and poor rural population is encouraging.

b. FAA Sec. 251(b)(8); 251(h). For loans, has there been taken into account the effort made by recipient nation to repatriate capital invested in other countries by their own citizens? Is loan consistent with the findings and recommendations of the Inter-American Committee for the Alliance for Progress (now "CEPCIES," the Permanent Executive Committee of the OAS) in its annual review of national development activities?

Haiti is presently experiencing increase economic development and capital flight is not a present problem. With the return of many Haitians to the country after long absences, capital is also being returned. With the prospects of increased foreign investment and the increasing domestic industrial development, greater opportunities are being offered its citizens. Project is consistent with recommendations of CEPCIES.

Annex A  
Exhibit 2  
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6C(3) - STANDARD ITEM CHECKLIST

Listed below are statutory items which normally will be covered routinely in those provisions of an assistance agreement dealing with its implementation, or covered in the agreement by exclusion (as where certain uses of funds are permitted, but other uses not).

These items are arranged under the general headings of (A) Procurement, (B) Construction, and (C) Other Restrictions.

A. Procurement

- |   |                |
|---|----------------|
| 1. <u>FAA Sec. 602.</u> Are there arrangements to permit U.S. small business to participate equitably in the furnishing of goods and services financed?   | Yes            |
| 2. <u>FAA Sec. 604(a).</u> Will all commodity procurement financed be from the U.S. except as otherwise determined by the President or under delegation from him?   | Yes            |
| 3. <u>FAA Sec. 604(d).</u> If the cooperating country discriminates against U.S. marine insurance companies, will agreement require that marine insurance be placed in the U.S. on commodities financed?  | Yes            |
| 4. <u>FAA Sec. 604(e)</u> If offshore procurement of agricultural commodity or product is to be financed, is there provision against such procurement when the domestic price of such commodity is less than parity?  | Not Applicable |
| 5. <u>FAA Sec. 603(a)</u> Will U.S. Government excess personal property be utilized wherever practicable in lieu of the procurement of new items?   | Yes            |
| 6. <u>MMA Sec. 901(b).</u> (a) Compliance with requirement that at least 50 per centum of the gross tonnage of commodities (computed separately for dry bulk carriers, dry cargo liners, and tankers) financed shall be transported on privately owned U.S.-flag commercial vessels to the extent that such vessels are available at fair and reasonable rates. | Yes            |
| 7. <u>FAA Sec. 621.</u> If technical assistance is financed, will such assistance be furnished to the fullest extent practicable as goods and professional and other services from private enterprise on a contract basis? If the facilities of other Federal agencies will be utilized,  | Yes            |

A7

are they particularly suitable, not competitive with private enterprise, and made available without undue interference with domestic programs?

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

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

Yes

B. Construction

1. FAA Sec. 601(d). If a capital (e.g., construction) project, are engineering and professional services of U.S. firms and their affiliates to be used to the maximum extent consistent with the national interest?

Yes

2. FAA Sec. 611(c). If contracts for construction are to be financed, will they be let on a competitive basis to maximum extent practicable?

Yes. AID Contracting Requirements will be adhered to.

3. FAA Sec. 610(k). If for construction of productive enterprise, will aggregate value of assistance to be furnished by the U.S. not exceed \$100 million?

Not Applicable.

C. Other Restrictions

1. FAA Sec. 201(d). If development loan, is interest rate at least 2% per annum during grace period and at least 3% per annum thereafter?

Yes

2. FAA Sec. 301(d). If fund is established solely by U.S. contributions and administered by an international organization, does Comptroller General have audit rights?

Not Applicable.

3. FAA Sec. 620(h). Do arrangements preclude promoting or assisting the foreign aid projects or activities of Communist-Block countries, contrary to the best interests of the U.S.?

No.

4. FAA Sec. 636(i). Is financing not permitted to be used, without waiver, for purchase, long-term lease, or exchange of motor vehicle manufactured outside the U.S. or guaranty of such transaction?

Procurement of vehicles will be restricted to US source.

Annex A  
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5. Will arrangements preclude use of financing:
- a. FAA Sec. 114. to pay for performance of abortions or to motivate or coerce persons to practice abortions? Yes
  - b. FAA Sec. 620(g). to compensate owners for expropriated nationalized property? Yes
  - c. FAA Sec. 660. to finance police training or other law enforcement assistance, except for narcotics programs? Yes
  - d. FAA Sec. 662. for CIA activities? Yes
  - e. App. Sec. 103. to pay pensions, etc., for military personnel? Yes
  - f. App. Sec. 106. to pay U.N. assessments? Yes
  - g. App. Sec. 107. to carry out provisions of FAA Sections 209(d) and 251(h)? (transfer to multilateral organization for lending). Yes
  - h. App. Sec. 501. to be used for publicity or propaganda purposes within U.S. not authorized by Congress? Yes

Grant 521-0084

PROJECT AUTHORIZATION

Provided from: FAA Section 103

HAITI: Road Maintenance II

Pursuant to the authority vested in the Deputy U.S. Coordinator, Alliance for Progress, by the Foreign Assistance Act of 1961, as amended, and the delegations of authority issued thereunder, I hereby authorize the establishment of a ("Grant") pursuant to Section 103 of said Act to the Government of Haiti ("Grantee") of not to exceed eight million six hundred thousand United States dollars (\$8,600,000) to assist in financing the United States dollar and local currency costs of a project to improve Haiti's road maintenance system ("Project"). The grant shall be subject to the following terms and conditions:

I. Terms and Conditions

- A. Goods, services (except for ocean shipping) and marine insurance financed under the Grant shall have their source and origin in countries included in Code 941 of the A.I.D. Geographic Code Book. Marine insurance may be financed under the Project only if it is obtained on a competitive basis, and any claims thereunder are payable in freely convertible currencies. Ocean shipping financed under the project shall be procured in any country included in A.I.D. Geographic Code 941.

B: Conditions Precedent to Initial Disbursement

1. That all GOH budgetary commitments to SEPRRN according to the current Five Year Plan have been met to date.

2. Appointment of a full time project coordinator to work with AID and the technical consultant.

C. Conditions Precedent to Disbursement for Procurement of Road Maintenance equipment.

1. That a contract for technical advisory services acceptable to AID has been executed.

2. That a plan for preventive maintenance of equipment is being implemented and that such a plan includes procedures for systematic replenishment of spare parts and operating supplies.

D. Conditions Precedent to Disbursements for Procurement of Road Maintenance Equipment in Excess of \$2,000,000

1. That a maintenance management and reporting system has been designed and installed.

2. That the Administrative Council is receiving quarterly reports as required in the Decree of March 3, 1972.

3. That an evaluation of the Program's accomplishments to date has been performed.

4. That SEPRRN's current Five Year Plan and operating budget 1975-1980 has been revised in view of the current situation and approved by the GOH and that the GOH has made a commitment to adjust SEPRRN's future operating budgets as necessary to reflect the revised plan budget.

E. Conditions Precedent to disbursements for construction of Facilities

1. That a contract for technical advisory services acceptable to AID has been executed.

2. That the GOH has acquired title of the land on which the facilities are to be constructed.

3. That AID has approved the IFB documents for the construction.

F. Conditions Precedent to Disbursement for the Community Action Program.

1. That an evaluation of the Agricultural Feeder Roads Pilot Project has been made and a time - phased implementation plan has been developed.

G. Conditions Precedents to Disbursements for Offshore and out-of-service training

1. That SEPRRN will take the necessary measures to assure that participants in an offshore or out-of-service training program return to Haiti as employees of SEPRRN for a determined period and their salaries will be maintained while in training.

H. Borrower Shall covenant:

1. SEPRRN will assign qualified counterpart personnel
2. SEPRRN will use the equipment to be procured under the project for road maintenance work only.
3. SEPRRN will recruit sufficient personnel for the training program.
4. SEPRRN will release personnel from their operating duties for training as required.
5. SEPRRN will develop and implement comprehensive training program.
6. Except in the cases of District and Sub-district engineers the GOH will make every attempt to eliminate dual responsibilities of those individuals assigned to SEPRRN but paid by both SEPRRN and TPTC.
7. The SEPRRN Administrative Council will make every attempt to assure compliance with the requirements of the Decree of March 3, 1972.
8. The GOH will study the advisability of adjusting the fuel tax structure to increase the amount of funds going toward Maintenance of the road network.

I. Negotiating Status

The project shall be subject to such other terms and conditions as A.I.D. May seem advisable.

CERTIFICATION PURSUANT TO

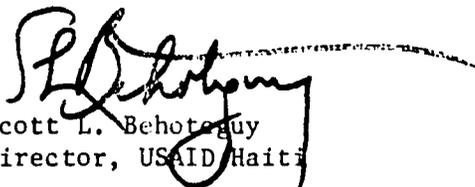
Section 611 (e) of the

FOREIGN ASSISTANCE ACT

As Amended

I, Scott L. Behoteguy, the principal officer of the Agency for International Development in Haiti, do herewith certify that in my judgement, Haiti has both the financial capability and human resources to maintain and utilize effectively goods and services procured under the capital assistance project entitled the Road Maintenance II Project.

This judgement is based upon the record of implementation of AID-financed projects in Haiti and the results of the consultations undertaken during intensive review of this new project.

  
Scott L. Behoteguy  
Director, USAID/Haiti

10 February 1977  
Date

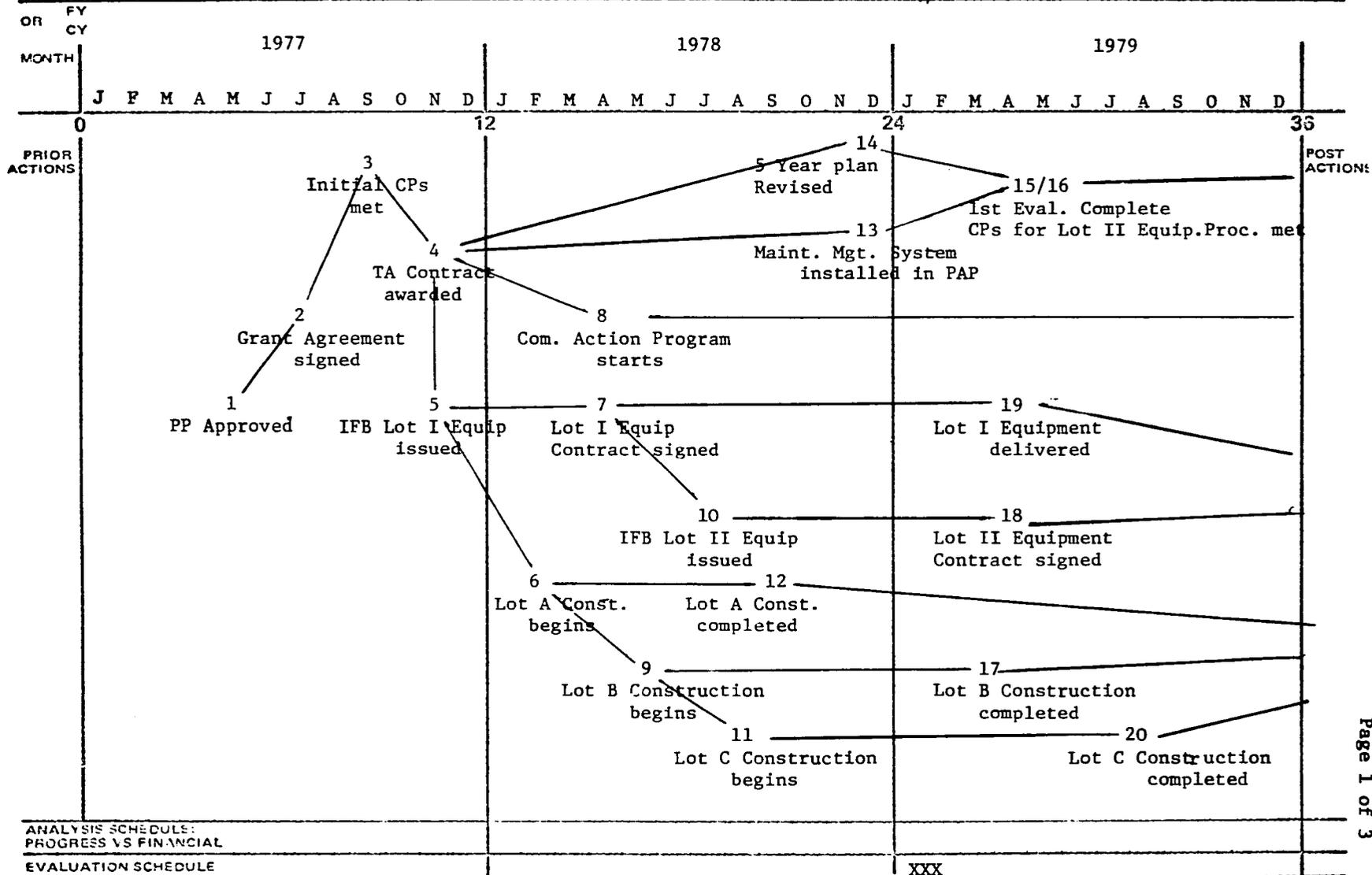
PROJECT DESIGN SUMMARY  
LOGICAL FRAMEWORK

Life of Project: From FY 1977 to FY 1980  
Total U.S. Funding: \$ 600,000  
Date Prepared: April 19, 1977

Project Title & Number: Haiti: Road Maintenance II 521-0084

NARRATIVE SUMMARY	OBJECTIVELY VERIFIABLE INDICATORS	MEANS OF VERIFICATION	IMPORTANT ASSUMPTIONS
<p>Program or Sector Goal: The broader objectives to which this project contributes: (A-1) To improve the standard of living of the rural poor by integrating them into the mainstream of economic and social development.</p> <p>Subgoal: A functioning road transportation network which will facilitate the flow of goods and services between rural and urban areas and to markets and export points.</p>	<p>Measures of Goal Achievement: (A-2) 2,000,000 work days of employment generated between 1977 and 1981.</p> <p>Increase in km of all-weather roads maintained by SEPRRN from 1,213 km in 1976/77 to 2,290 km in 1980/81.</p> <p>Reduction in freight rates from 39c per ton/km in 1976 to 23c per ton/km in 1981.</p>	<p>SEPRRN records of km of roads maintained to all-weather standards on an annual basis.</p> <p>Increased tonnage of agricultural products shipped from areas of SEPRRN maintenance as measured by Ministry of Agriculture.</p> <p>Employment records of SEPRRN.</p> <p>Surveys of local truckers.</p>	<p>Assumptions for achieving goal targets: (A-4) No natural calamities. Prices to small farmers remain favorable. GOH pursues consistent rural development strategy.</p>
<p>Project Purpose: (B-1) Expand and strengthen SEPRRN's capability of maintaining Haiti's national, departmental, and local road network.</p>	<p>Conditions that will indicate purpose has been achieved: End-of-Project status. (B-2) 4 road maintenance districts maintaining 180 km-220 km annually. 6 subdistricts maintaining 125 km-150 km annually. 13 grading brigades operating 50 hand brigades operating 4 intervention brigades operating 4 bridge brigades maintaining 48 bridges each year.</p>	<p>SEPRRN monthly reports on km and types of roads maintained; annual reports. Consultants monthly reports. Surveys of community council road maintenance programs.</p>	<p>Assumptions for achieving purpose: (B-4) GOH makes specified budgetary contributions on schedule. Appropriation salary increases and other incentives are offered SEPRRN employees. Road construction program accomplished as planned.</p>
<p>Project Outputs: (C-1) See Part V.B, Evaluation, Table 2 &amp; 3 Project Outputs.</p>	<p>40 communities able to maintain 720 km of departmental or local roads annually. Equipment downtime reduced from present 30%-40% to 20%-25% at end of 2nd year to 7%-10% at end of 4th year. SEPRRN preparing yearly operating plans. Private Haitian contractors performing specialized road maintenance functions.</p>	<p>(C-3)</p>	<p>Assumptions for achieving outputs: (C-4)</p>
<p>Project Inputs: (D-1) See Part V.B, Evaluation, Table 1, Financial Plan, Project Inputs.</p>	<p>Implementation Target (Type and Quantity) (D-2)</p>	<p>(D-3)</p>	<p>Assumptions for providing inputs: (D-4)</p>

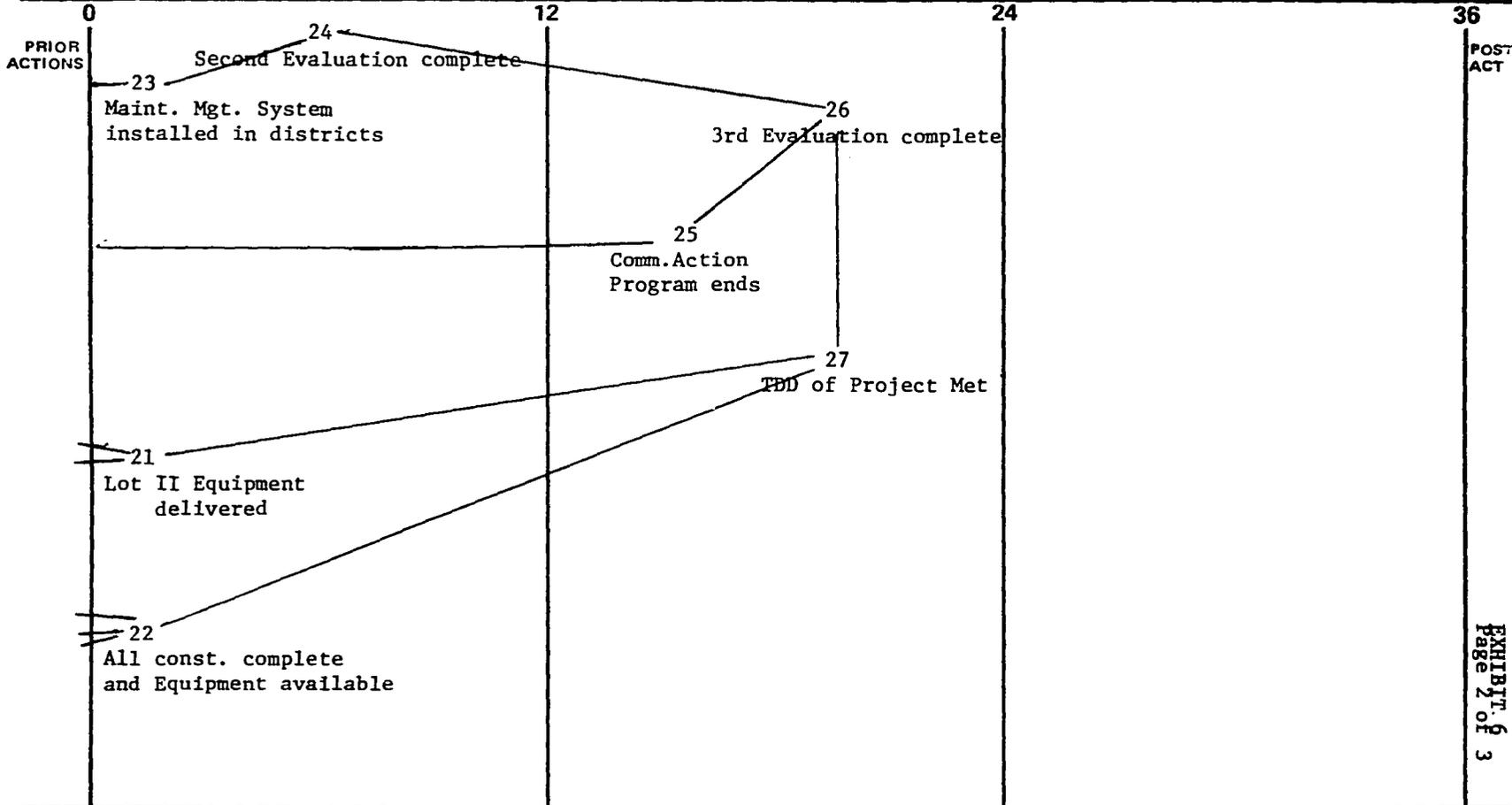
COUNTRY <b>HAITI</b>	PROJECT NO. <b>521-0084</b>	PROJECT TITLE <b>ROAD MAINTENANCE II</b>	DATE <b>4/21/77</b>	<input checked="" type="checkbox"/> ORIGINAL <input type="checkbox"/> REVISION # _____	APPROVED
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CRITICAL PERFORMANCE INDICATOR (CPI) NETWORK

COUNTRY HAITI	PROJECT NO. 521-0084	PROJECT TITLE ROAD MAINTENANCE II	DATE 4/21/77	<input checked="" type="checkbox"/> ORIGINAL <input type="checkbox"/> REVISION # _____	APPROVED
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OR CY	1980												1981																								
MONTH	J	F	M	A	M	J	J	A	S	O	N	D	J	F	M	A	M	J	J	A	S	O	N	D	J	F	M	A	M	J	J	A	S	O	N	D	
	0											12												24												36	



ANALYSIS SCHEDULE: PROGRESS VS FINANCIAL			
EVALUATION SCHEDULE	XXX	XXX	

ANNEX A  
 EXHIBIT 6  
 Page 2 of 3

COUNTRY	PROJECT NO.	PROJECT TITLE	DATE	<input checked="" type="checkbox"/> ORIGINAL	APPROVED
HAITI	521-T-0084	ROAD MAINTENANCE II	4/21/77	<input type="checkbox"/> REVISION # _____	

PROJECT PURPOSE (FROM PRP FACESHEET)

An expanded and strengthened SEPRRN capable of maintaining Haiti's National and Departmental road network.

<u>CPI</u>	<u>Date</u>	<u>Description</u>
25	4/81	Community Action Program ends
26	8/81	Third Evaluation completed

NOTES

A. Procurement of Construction Services

- Lot A includes Port-au-Prince administrative facilities.
- Lot B includes additional Port-au-Prince Central Garage/Shop facilities.
- Lot C includes the additional major district facility and eight sub-district facilities.

B. Procurement of Equipment

- Lot I includes procurement of highway maintenance and shop equipment to meet SEPRRN's requirements through FY 77/78.
- Lot II includes procurement of additional equipment to meet part of SEPRRN's requirements after FY 77/78.

- C. Design and installation of maintenance management system, design of training program, revision of five year plan and the results of the first evaluation will allow firm performance indicators to be established for District and Sub-District operations, brigade productivity, Community Action Program, etc. PPT network will be revised accordingly at this time.

<u>CPI DESCRIPTION</u>		
<u>CPI</u>	<u>Date</u>	<u>Description</u>
1	5/77	PP approved
2	7/77	Loan & Grant Agreements signed with GOH
3	9/77	GOH meets initial conditions precedent
4	9/77	Technical assistance contract awarded
5	9/77	Issue IFB for Lot I equipment
6	2/78	Construction of Lot A facilities begins
7	4/78	Award Contract for Lot I Equipment
8	4/78	Community Action Program begins
9	5/78	Construction of Lot B facilities begins
10	8/78	Issue IFB for Lot II equipment
11	8/78	Construction of Lot C facilities begins
12	9/78	Lot A construction completed
13	12/78	Maintenance Management System installed
14	12/78	5 Year Plan revised
15	4/79	First major evaluation completed
16	4/79	GOH meets CPs for Lot II equipment procurement
17	4/79	Lot B construction completed
18	5/79	Award Contract for Lot II Equipment
19	5/79	Entire Lot I Equipment delivered
20	8/79	Lot C construction completed
21	2/80	Entire Lot II equipment delivered
22	2/80	All Districts and Subdistricts facilities construction completed and equipment in place
23	2/80	Maintenance management system installed in all Districts and Subdistricts
24	6/80	Second Evaluation completed

# TELEGRAM

ANNEX A  
EXHIBIT 7  
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PORT AU PRINCE

ACTION: AID

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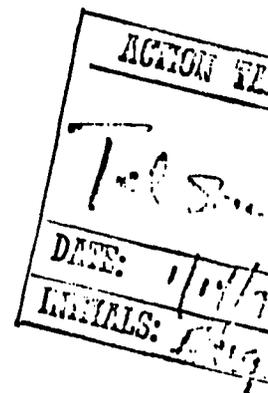
INFO: AMB  
DCM  
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R 122342Z JAN 76  
FM SECSTATE WASHDC  
TO AMEMBASSY PORT AU PRINCE 8252  
BT  
UNCLAS STATE 007445

AIDAC

E.O. 11652: N/A  
SUBJECT: ROAD MAINTENANCE PP AND PRP

REF: STATE 298442 - DEC. 18, 1975



1. THE DAEC REVIEWED AND APPROVED PP EXTENSION AND PRP PROPOSAL SUBJECT TO THE CONSIDERATIONS SET FORTH BELOW:

2. CAPITAL/LABOR INTENSIVE ANALYSIS:

THE PID FOR THE ROAD MAINTENANCE PRP ESTIMATED APPROXIMATELY DOLS 2.3 MILLION (50 PERCENT OF TOTAL PROJECT) WOULD BE SPENT ON EQUIPMENT. BECAUSE OF PAST PRICE INCREASES, THE PRP ESTIMATED THE EQUIPMENT WOULD COST DOLS 2.9 MILLION, OR 75 PERCENT OF TOTAL LOAN FUNDS (INCLUDING CONTINGENCIES). IN LIGHT OF FUEL COSTS AND PERHAPS FOR OTHER REASONS, THE GOH HAS INDICATED CONCERN WITH THE AMOUNT OF EQUIPMENT TO BE PURCHASED. IN VIEW OF THESE CONSIDERATIONS, THE DAEC CONCLUDED THAT LABOR INTENSIVE ALTERNATIVES TO ROAD CONSTRUCTION AND MAINTENANCE SHOULD BE CONSIDERED, AND RECOMMENDED THAT A STUDY OF LABOR INTENSIVE APPROACHES TO NEW ROAD CONSTRUCTION, ROAD IMPROVEMENT AND ROAD MAINTENANCE AS WELL AS COMPLEMENTARY SOIL CONSERVATION/EROSION PROBLEMS SHOULD BE UNDERTAKEN AS SOON AS POSSIBLE, PREFERABLY JAN-FEB 1976. THE RESULTS OF SUCH A STUDY SHOULD BE MADE AVAILABLE TO THE GOH AS A BASIS FOR DESIGNING BOTH THE FEEDER ROADS AND ROAD MAINTENANCE LOANS. AS SUGGESTED IN REFTEL THE STUDY SHOULD BE UNDERTAKEN BY AN INDEPENDENT OUTSIDE CONSULTANT TOGETHER WITH PPC ECONOMIST P. F. MORMANN, AND SHOULD BE ACCOMPLISHED WITHIN THE TIME-FRAME OF TWO-THREE MAN-MONTHS. AID/W IS PREPARED TO DRAFT THE SCOPE OF WORK FOR THIS STUDY AND ARRANGE TO PROCURE QUALIFIED CONSULTANT. PER REFTEL PLEASE ADVISE AS TO APPROPRIATE TIMING OF ARRIVAL. ALSO ADVISE WHETHER FUNDS CAN BE DRAWN FROM EXISTING MISSION ALLOTMENT OR IF AN ALLOTMENT INCREASE IS REQUIRED. UNCLASSIFIED

Classification

OPTIONAL FORM NO. 10  
MAY 1962 EDITION  
GSA FPMR (41 CFR) 101-11.6

# TELEGRAM

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*Classification*

### 3. STATUS REPORT:

THE RECOMMENDATIONS FROM THE PROPOSED LABOR INTENSIVE STUDY SHOULD BE USEFUL IN SUGGESTING MAINTENANCE/ CONSTRUCTION ALTERNATIVES TO THE HIGHWAY MAINTENANCE II AND FEEDER ROADS LOANS AS PRESENTLY PROPOSED. BECAUSE OF THE COMPLEXITY OF THE ISSUES AND THE NEED TO CLARIFY THE GOH COMMITMENT (IN LIGHT OF THE GOH CONCERNS EXPRESSED IN REFTEL VIS-A-VIS THE EQUIPMENT), THE DAEC CONCLUDED THAT A STATUS REPORT WHICH OUTLINES THE PROGRESS OF THE INTENSIVE REVIEW SHOULD BE PREPARED PRIOR TO SUBMISSION OF THE PP FOR THE ROADS MAINTENANCE LOAN. THIS REPORT SHOULD CONSIDER:

--A. THE POLICY QUESTIONS RAISED BY THE GOH WITH REGARD TO THE AMOUNT OF EQUIPMENT PURCHASED, THEIR ABILITY TO FINANCE AND IMPLEMENT THE PROGRAM AND THEIR COMMITMENT TO A ROAD MAINTENANCE PROJECT IN FY 1977;

--B. LABOR/CAPITAL INTENSIVE ALTERNATIVES TO ROAD MAINTENANCE AND RESULTING IMPLICATIONS ON GOH OPERATING COSTS FOR FUEL, SALARIES, EQUIPMENT, SPARE PARTS, ETC. THE REPORT SHOULD CONSIDER THE ALTERNATIVE TECHNOLOGIES AVAILABLE;

--C. THE REPORT SHOULD INCLUDE AN ECONOMIC ANALYSIS WHICH EXAMINES AMONG OTHER THINGS, SUCH FACTORS AS FUEL CONSUMPTION AND COST, PRIVATE/PUBLIC FUEL ALLOCATION;

--D. GOH/SEPRRN CAPABILITY TO IMPLEMENT THE PROGRAM. THE GOH FIVE-YEAR BUDGET OUTLINES FINANCIAL, TRAINING, HUMAN AND PHYSICAL RESOURCE REQUIREMENTS DURING THE PROJECT'S LIFE. INFORMATION PROVIDED IN THE FIVE-YEAR BUDGET SHOULD BE INCORPORATED IN THE STATUS REPORT AND SUBSEQUENT PP. THE REVIEW SHOULD IDENTIFY THE ADMINISTRATIVE ARRANGEMENTS WHICH WILL MAKE THE PROJECT VIABLE AND DISCUSS CENTRAL VS. REGIONAL AND DISTRICT CONTROL OVER MAINTENANCE OPERATIONS;

--E. RESPONSIBILITY OF TPTC AND SEPRRN WITH REGARD TO THE RESPECTIVE ROAD CONSTRUCTION, IMPROVEMENT AND MAINTENANCE REQUIREMENTS SHOULD BE CLEARLY IDENTIFIED. DEFINITION OF RESPONSIBILITY AND OF THE RESPECTIVE FUNCTIONS OF EACH ORGANIZATION IS NEEDED TO ASSURE THAT DUPLICATION OF EQUIPMENT, HUMAN RESOURCES AND ADMINISTRATIVE AND OPERATING FACILITIES IS AVOIDED. THE COORDINATION AND PHASING NEEDED WITH REGARD TO OTHER CONSTRUCTION PROJECTS SHOULD BE CONSIDERED;

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(Form No. 10-67)  
MAY 1962 EDITION  
GSA GEN. REG. NO. 27

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*Classification*

--F. IN RELATION TO PROJECT OUTPUTS, THE REVIEW SHOULD EXPLORE HOW LOCAL COMMUNITIES CAN BE ENCOURAGED TO DEVELOP A SELF-HELP MAINTENANCE CAPABILITY ON COMMUNITY ROADS. FURTHER, AND PER REFTEL, THE REVIEW SHOULD EXPLORE HOW THE PRIVATE CONTRACTING CAPABILITY CAN BE DEVELOPED, E.G., THROUGH PROVISION OF CREDIT TO PURCHASE EQUIPMENT, A LEASING ARRANGEMENT, ETC.

--G. THE SOCIAL ANALYSIS SHOULD BE EXPANDED TO CONSIDER HOW THE PROJECT CAN BEST WORK TOWARD INCREASING RURAL INCOMES, THEREBY LEADING TO AN INCREASE IN THE STANDARD OF LIVING OF THE TARGET GROUP.

4. PER REFTEL, PARA 8, THE MISSION MAY CONSIDER APPLYING A PORTION OF THE GOH COUNTERPART CONTRIBUTION FOR SEPRRN OPERATIONS TO THE FEEDER ROADS LOAN.

5. FY 77 GRANT FUNDING NEEDS FOR THE PP AND PRP WERE REVIEWED AND AS A RESULT FY 77 FUNDING FOR THE PP WAS REDUCED BY DOLS 30,000 TO DOLS 270,000. KISSINGER  
BT

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OPTIONAL FORM NO. 10  
(Form No. 10)  
MAY 1962 EDITION  
GSA GEN. REG. NO. 27

INITIAL ENVIRONMENTAL EXAMINATION

PROJECT LOCATION: HAITI

PROJECT TITLE : Highway Maintenance II

FUNDING : FY 77 - Grant 2,600,000 - Loan 6,000,000

LIFE OF PROJECT : 4 Years

IEE PREPARED BY : Raymond Douglass, USAID/Haiti Engineer and  
Environmental Coordinator, October 4, 1976.

THRESHOLD DECISION: Pursuant to the authority delegated to the Assistant Administrator for Latin America in Delegation No. \_\_\_\_\_ and based upon an Initial Environmental Examination for the proposed, Highway Maintenance II project, I hereby make the following determination and decision:

The proposed action is not an action which will have a significant effect on human environment and is, therefore, an action for which an Environmental Impact Statement or an Environmental Assessment will not be required.

Raymond Douglass

Date October 4, 1976

Concurrence:

J. H. DeLoach  
USAID Director

Date February 10, 1977

Assistant Administrator Decision

Approved \_\_\_\_\_

Date \_\_\_\_\_

Disapproved \_\_\_\_\_

Date \_\_\_\_\_

PART II

Description of Project

This Phase II Highway Maintenance project is a continuation of an initial Phase I, which assisted the GOH to develop and equip a nucleus highway maintenance organization (SEPRRN) capable of assuring maintenance of major North and South Highways once they were constructed under IDB and IBRD loans. Phase two will expand SEPRRN's capabilities to maintain the National Highway system throughout the country. Since the project will be confined to maintaining existing roads it will have virtually no effect on the environment. Nor will it have any adverse sociological aspects or result in migration of the population. Rather by assuring that roads remain usable at all periods of the year and free movement of goods into and out of an area, it will encourage the rural population to increase agricultural production and improve their economic condition. Better, more usable roads will also facilitate the access of government health, welfare and education personnel. Periodic cleaning of roadside ditches and drainage improvements will help control soil erosion and also eliminate stagnant standing pools of water thus reducing mosquito breeding places and the incidence of malaria.

Panel III - IMPACT IDENTIFICATION AND EVALUATION FORM

ANNEX A  
EXHIBIT 8

Impact  
Identification  
and  
Evaluation 2/

Impact Areas and Sub-areas 1/

A. LAND USE

1. Changing the character of the land through:

- a. Increasing the population ----- N
- b. Extracting natural resources ----- N
- c. Land clearing ----- N
- d. Changing soil character ----- N

2. Altering natural defenses ----- N

3. Foreclosing important uses ----- N

4. Jeopardizing man or his works ----- N

5. Other factors

\_\_\_\_\_  
\_\_\_\_\_

B. WATER QUALITY

1. Physical state of water ----- N

2. Chemical and biological states ----- N

3. Ecological balance ----- N

4. Other factors

\_\_\_\_\_  
\_\_\_\_\_

1/ See Explanatory Notes for this form.

2/ Use the following symbols: N - No environmental impact  
L - Little environmental impact  
M - Moderate environmental impact  
H - High environmental impact  
U - Unknown environmental impact

IMPACT IDENTIFICATION AND EVALUATION FORM

ANNEX A

C. ATMOSPHERIC

EXHIBIT 8

- 1. Air additives -----     N
- 2. Air pollution -----     N
- 3. Noise pollution -----     N
- 4. Other factors
- \_\_\_\_\_
- \_\_\_\_\_

D. NATURAL RESOURCES

- 1. Diversion, altered use of water -----     N
- 2. Irreversible, inefficient commitments -----     N
- 3. Other factors
- \_\_\_\_\_
- \_\_\_\_\_

E. CULTURAL

- 1. Altering physical symbols -----     N
- 2. Dilution of cultural traditions -----     N
- 3. Other factors
- \_\_\_\_\_
- \_\_\_\_\_

F. SOCIOECONOMIC

- 1. Changes in economic/employment patterns -----     N
- 2. Changes in population -----     N
- 3. Changes in cultural patterns -----     N
- 4. Other factors
- \_\_\_\_\_
- \_\_\_\_\_

IMPACT IDENTIFICATION AND EVALUATION FORM

EXHIBIT 8

G. HEALTH

- 1. Changing a natural environment -----     N
- 2. Eliminating an ecosystem element -----     N
- 3. Other factors
- \_\_\_\_\_
- \_\_\_\_\_

H. GENERAL

- 1. International impacts -----     N
- 2. Controversial impacts -----     N
- 3. Larger program impacts -----     N
- 4. Other factors
- \_\_\_\_\_
- \_\_\_\_\_

I. OTHER POSSIBLE IMPACTS (not listed above)

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

**PART IV. Discussion, Conclusions and Recommendations**

As part III indicates, and discussed in Part II, there will be no impact on the environment as a result of this project. Therefore, it is recommended that a Negative Determination be made.

DECREE OF MARCH 3, 1972

**Title I Creation of a Permanent Maintenance Service for the  
National Highway Network of Haiti**

**Article 1.** It is created, for the present, an autonomous organism denominated "Permanent Maintenance Service for the National Highway Network."

**Article 2.** The Minister responsible for this autonomous organization is the Secretary of State of Public Works, Transport and Communications.

**Title II Structure of the Permanent Maintenance Service for  
the National Highway Network**

**Article 3.** The Highway Network Service is composed of the following agencies:

- (a) Administrative Council;
- (b) General Directorate;
- (c) Regional Services.

**Sub-Title 1. Re the Administrative Council**

**Article 4.** The Administrative Council of the "Permanent Maintenance Service for the National Highway Network" is composed of five members named for a duration of three years:

(a) The Secretary of State of Public Works, of Transports and Communications who will preside over the aforesaid Administrative Council;

(b) A representative of the National Bank of the Republic of Haiti who will be recommended to the President for Life of the Republic by the Director General of the National Bank of the Republic of Haiti.

(c) A representative of the Union of Transports who will be recommended to the President for Life of the Republic for approval by the Commercial Director of the National Bank of Haiti;

(d) Two persons, of which one can be a foreign technical advisor, who will be designated by His Excellence the President for Life of the Republic.

~~Sub-Title 2.~~ The Directorate

Article 5. The Directorate General of the "Permanent Maintenance Service of the National Highway Network" will definitely be a civil engineer, specializing in bridges and roads. He will be named by His Excellence the President for Life of the Republic on the recommendation of the Secretary of State for Public Works, Transports and Communications.

~~Sub-Title 3.~~ Regional Services

Article 6. It is created in the territory of the Republic (12) twelve regional districts, each of which will be directed by a civil engineer depending directly on the Directorate of the "Permanent Maintenance Service for the National Highway Network." The chiefs of the regional districts will be named by a commission of His Excellence the President for Life of the Republic on recommendation of the Director of the "Permanent Maintenance Service for the National Highway Network."

**Title III Functioning of the "Permanent Maintenance Service  
for the National Highway Network"**

Article 7. The Director of the "Permanent Maintenance Service for the National Highway Network" will establish, in collaboration with the technical services of the Department of Public Works, Transports and Communications, the locating and implanting of the regional districts. He will address at the beginning of each month to the Secretary of State of Public Works, Transports and Communications a detailed report on the state of the entire national highway network, on the nature and importance of the work done in the course of the month past, on the disbursements made and on the state of the mechanical equipment of the "Permanent Maintenance Service for the National Highway Network."

Article 8. The Director of the "Permanent Maintenance Service for the National Highway Network" will address a detailed report to the Administrative Council at the end of each trimester.

This report will include:

- (a) A complete and detailed inventory of the equipment at his disposal;
- (b) An exact and detailed statement of the expenditures entered into and the disbursements made;
- (c) An exact and detailed table of the state of the entire national highway network;
- (d) A copy of the income account of the "Permanent Maintenance Service for the National Highway Network" in the National Bank;

(e) An evaluation of the efficiency of each regional district and of the work done by it;

(f) A trimestral plan of work to be done.

Article 9. At the end of each month, each district engineer must submit a technical report, an administrative report, and a financial report to the Director of the "Permanent Maintenance Service for the National Highway Network" and in addition, he must also submit an inventory of equipment and material of national or foreign origin. The financial report and inventory of the engineer who is chief of the regional district will be countersigned by the Director of the Commercial Department of the National Bank for Port-au-Prince and, for the provincial districts, by the Director of the branches of the National Bank the closest to the seat of the district.

Article 10. The equipment and other material of the "Permanent Maintenance Service of the National Highway Network" may never be used for other purposes than the maintenance and repair of the national highway system. This equipment and materials will always remain under the direct control of the Director of the "Permanent Maintenance Service for the National Highway Network."

Each transfer of equipment and materials from one regional district to another cannot be done without an authorization of the Director of the "Permanent Maintenance Service for the National Highway Network" countersigned by the Secretary of State for Public Works, Transports and Communications.

Title IV Financing of the Permanent Maintenance Service for  
the National Highway Network

Article 11. The "Permanent Maintenance Service for the National  
Highway Network" will be financed by:

(a) 50% of the revenue from the tax of .50 gourdes per  
gallon of gasoline previously furnished to the "Fonds Routier"  
(Highway Fund);

(b) 50% of the revenue from the tax of .20 gourdes per  
gallon of deisel previously furnished to the "Fonds Routier"  
(Highway Fund).

Article 12. The assets and liabilities of the old "Permanent  
Fund for Construction and Rebuilding of the National Routes  
North and South (Fonds Routier) Highway Fund," will be integrally  
transferred after a complete and detailed inventory is made  
under the control of the National Bank to the "Permanent  
Maintenance Service for the National Highway System."

Article 13. The financial resources of the "Permanent Main-  
tenance Service for the National Highway System" will be  
managed by the Directors of the Branches of the National Bank.  
The appropriate amounts to the different districts will be  
put at the disposition of the Chief Engineer of the District  
on presentation of vouchers or other justifying documents  
approved by the Director of the "Permanent Maintenance Service  
for the National Highway Network."

Article 14. The "Permanent Maintenance Service for the National Highway Network" will be able to receive all donations and all loans; they will be able to allocate all existing taxes or those which may be created in the future.

Article 15. The present Decree abrogates all Laws or dispositions of Laws, all Decrees or dispositions of Decrees which are contrary to this one; this Decree will be promulgated and executed with diligence by the Secretary of State of Public Works, Transports and Communications.

Done in the National Palace in Port-au-Prince, the  
3rd of March 1972. 169th Year of Independence.

Jean Claude Cuvalier

by the President

The secretary of State for Public Works, Transports and  
Communications - Engineer Max Bonhomme

The Secretary of State for Finance and Economic Affairs -  
Dr. Edouard Francisque

The Secretary of State for Interior and National Defense -  
Luckner J. Cambronne

DECREE

Decree of March 3, 1972

Considering that it is convenient to assume in a priority manner the maintenance of the existing national highway system to permit the free circulation of goods and people;

Considering that it is convenient to concentrate human and financial resources with a view to realizing the objectives described;

Considering that there exists a danger of duplication of efforts because of the application of the Laws of June 3, 1972, and of September 7, 1971;

Considering that it is convenient as a consequence to re-establish the harmony between the legislative dispositions relating to the maintenance of the national highway system;

Based on the report of the Secretary of State for Finance and Economic Affairs;

DECREE

Article 1. The Decree of September 27, 1966, and the Law of September 7, 1971, creating the management committee of the "Fund for Construction of the National North and Southern Roads" are now and permanently abrogated.

Article 2. The liabilities and assets of the Highway Fund will be transferred to an autonomous organism which will be charged exclusively with maintenance and rebuilding the highways of the Republic.

Article 3. The present Decree abrogates all Laws or dispositions of Laws, all Decrees or dispositions of Decrees, all Decree Laws or dispositions of Decree Laws which are contrary to it, and this Decree will be promulgated and executed with diligence by the Secretary of State for Public Works, Transports and Communication.

Done in the National Palace, Port-au-Prince, 3rd of March  
1972.

169th Year of Independence.

DECREE

Decree of March 3, 1972

Considering that it is convenient to permit the Government to at all times provide the counterpart for financial assistance or foreign technicians who will be obtained in conjunction with construction of the roads;

DECREE

Article 1. There is created in the National Bank of the Republic of Haiti a special account denominated "Natural Counterpart Fund for the Construction of Roads in Haiti."

Article 2. This account will receive 50% of the revenue from a tax of .50 gourdes per gallon of gas and 50% of the revenue from a tax of .20 gourdes per gallon of deisel fuel previously received by the "Highway Fund."

Article 3. The Account will be managed by the National Bank and will serve to assure the financing of the Haitian counterpart relating to all work on highways which can be done with the financial or technical participation of private or public organizations, whether they be national or foreign.

Article 4. The present Decree abrogates all Laws and dispositions of Laws, all Decrees and dispositions of Decrees, all Decree Laws or dispositions of Decree Laws which are contrary and will be promulgated and executed with diligence by the Secretary of State of Public Works, Transports and Communications.

GOVERNMENT OF HAITI TRANSPORT PROJECT RESOURCES AND COMMITMENTS - 1976-81  
(\$000 US)

RESOURCES	1976-77	1977-78	1978-79	1979-1980	1980-81	1976-81 TOTAL
Road Construction Fund <sup>1)</sup>	2,200	2,300	2,400	2,500	2,600	12,000
Matching Funds for Roads <sup>2)</sup>	1,100	1,100	1,200	1,200	1,300	5,900
Coffee Project Special Allo- <sup>3)</sup> cation	135	135	-	-	-	270
Bauxite Allocation <sup>4)</sup>	<u>2,000</u>	<u>2,000</u>	<u>2,000</u>	<u>2,400</u>	<u>2,700</u>	<u>11,100</u>
Total New Resources	5,435	5,535	5,600	6,100	6,600	29,270
Accumulated Resource <sup>5)</sup>	1,800	-	-	-	-	1,800
Other Resources	<u>600</u>	<u>-</u>	<u>-</u>	<u>-</u>	<u>-</u>	<u>600</u>
<u>Total Resources</u>	<u>7,835</u>	<u>5,535</u>	<u>5,600</u>	<u>6,100</u>	<u>6,600</u>	<u>31,570</u>
<u>COMMITMENTS</u>						
Southern Road-Phase I	1,000	-	-	-	-	1,000
Southern Road-Phase II <sup>6)</sup>	1,600	1,000	-	-	-	2,600
Northern Road IV	3,100	800	-	-	-	3,900
Coffee Project Roads	135	135	-	-	-	270
Road Maintenance (SEPRRN) <sup>7)</sup>	<u>1,750</u>	<u>2,500</u>	<u>2,800</u>	<u>3,400</u>	<u>3,700</u>	<u>14,150</u>
<u>Total Commitments</u>	<u>7,585</u>	<u>4,435</u>	<u>2,800</u>	<u>3,400</u>	<u>3,700</u>	<u>21,920</u>
Technical Assistance <sup>8)</sup>	100	300	300	200	200	1,100
Available Local Funds	150	800	2,500	2,500	2,700	8,650
<u>Total Available Project Funds<sup>9)</sup></u>	<u>600</u>	<u>3,200</u>	<u>10,000</u>	<u>10,000</u>	<u>10,800</u>	<u>34,600</u>

1) Gasoline sales tax (\$0.22 US per gallon).

2) 50% for roads is shown.

3) From the matching fund for general development.

4) The bauxite allocation for roads is assumed to increase in 1979-81 to provide adequate transport sector development funds.

5) Special agreement between the Ministry of Finance and Ministry of Public Works and USAID.

6) Assuming an external loan of \$24.0 million and a 13% government contribution.

7) From the SEPRRN 5-year maintenance budget, extrapolated at 10% increase after 1979-80.

8) 40% of estimated total assistance.

9) Assuming that local funds will make up 25% of the total (i.e., 4 times preceding line).

# TELEGRAM

ANNEX A  
EXHIBIT II  
PAGE 1 of 3

PORT AU PRINCE

ACTION: AID

UNCLASSIFIED

170914 MAR 77

INFO: AMB  
DCM  
ECON  
ADM  
CHRON

Classification

ACTION TAKEN	
DATE:	
INITIALS:	

R 170054Z MAR 77  
FM SECSTATE WASHDC  
TO AMEMBASSY PORT AU PRINCE 1065/6  
BT  
UNCLAS STATE 059010

AIDAC

E.O. 11652:N/A  
SUBJECT: ROAD MAINTENANCE II (521-0034) PROJECT

1. THE DAEC REVIEWED THE SUBJECT PP ON FEBRUARY 23, 1977 AND CONCLUDED THAT, ALTHOUGH THE PROJECT WAS BASICALLY WELL DESIGNED, CERTAIN ASPECTS NEEDED FURTHER JUSTIFICATION AND CLARIFICATION PRIOR TO LA BUREAU APPROVAL. WHILE IT IS EXPECTED THAT A SECOND DAEC REVIEW MAY NOT BE NECESSARY, THE MISSION'S PROJECT DESIGN COMMITTEE SHOULD INCORPORATE THE NECESSARY CHANGES INTO A REFINED PP WHICH WILL BE CIRCULATED TO DAEC MEMBERS.

2. TO PROVIDE FOR THE FOUR YEAR DISBURSEMENT PERIOD PROPOSED IN THE PP WHILE SATISFYING SECTION 110(B) OF THE FAA, AID/W WILL PREPARE AN ADVICE OF PROGRAM CHANGE WHICH NOTIFIES CONGRESS OF THE PROPOSED FOUR YEAR DISBURSEMENT PERIOD, SUMMARIZES THE JUSTIFICATION AND DISCUSSES HOST COUNTRY COMMITMENT AND AVAILABILITY OF OTHER DONOR PARTICIPATION IN THE ROAD MAINTENANCE PROGRAM. PRESUMING THE CONGRESS DOES NOT RAISE AN OBJECTION, A FOUR YEAR DISBURSEMENT PERIOD WILL BE PERMITTED.

3. THE PROJECT DESIGN COMMITTEE SHOULD ADDRESS THE FOLLOWING POINTS IN A REFINED PP:

-----A. INSTITUTIONAL STRENGTHENING: RECENT EVALUATIONS POINTED OUT THE INSTITUTIONAL WEAKNESSES OF SEPRRN AND RECOMMENDED CONSIDERABLE ATTENTION BE GIVEN TO STRENGTHENING SEPRRN'S MANAGEMENT AND TRAINING PROGRAM. THE DAEC DISCUSSED THE ADEQUACY OF THE TECHNICAL ASSISTANCE AND TRAINING COMPONENTS - FOCUSING PARTICULARLY ON THE COMPOSITION OF THE TA TEAM AND SEPRRN'S TRAINING CAPABILITY,

US/INT	OFFICE	A	I
		C	R
		T	F
	DIC		
	PEM		
	ENO		
	CONT		
	CAP		
	ENG		
	ADG		
	PIO		
	TEPO		
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Classification

# TELEGRAM

ANNEX A

EXHIBIT II

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*Classification*

ESPECIALLY CONSIDERING THE PERSONNEL TURNOVER, ILLITERACY RATE AND PERSONNEL REQUIREMENTS BY 1982.

THE DAEC CONCLUDED THAT THE PP SHOULD PROVIDE FURTHER DETAIL WITH RESPECT TO THE TA REQUIREMENTS INCLUDING A DISCUSSION OF SEPRRN'S PRESENT MANAGERIAL WEAKNESSES, A GENERAL OUTLINE OF WHAT WOULD BE REQUIRED TO ADAPT THE MAINTENANCE MANAGEMENT SYSTEM MENTIONED IN THE PP TO HAITIAN CONDITIONS, AND SPECIFIC OUTPUTS OR INDICATORS OF ACHIEVEMENT THAT MIGHT BE EXPECTED OVER THE FOUR YEAR PROJECT LIFE; AND A DRAFT SCOPE OF WORK WHICH CAN BE USED AS A BASIS TO REQUEST TECHNICAL PROPOSALS FOR TA.

FOR THE TRAINING PROGRAM, FURTHER ANALYSIS SHOULD BE PROVIDED TO DEMONSTRATE HOW THE TRAINING REQUIREMENTS AND COSTS WERE ARRIVED AT. THE TRAINING PROGRAM PER SE SHOULD BE FURTHER REFINED AND INCLUDE A DISCUSSION OF THE SPECIFIC OBJECTIVES OF SUCH TRAINING AS THEY RELATE TO SEPRRN'S PRESENT WEAKNESSES AND FUTURE MANPOWER REQUIREMENTS IN THE HEADQUARTERS AND BRIGADE STAFFS (E.G. TO PROVIDE 10 QUALIFIED MECHANICS IN EACH OF YEARS 1978, 1979 AND 1980); WHO WILL CONDUCT THE TRAINING; AN ILLUSTRATIVE CURRICULUM; CRITERIA FOR SELECTING MEN AND WOMEN PARTICIPANTS; AND ANY SPECIAL CONSIDERATIONS SUCH AS HOW PROBLEMS IN PERSONNEL TURNOVER, MOTIVATION AND ILLITERACY WILL BE OVERCOME.

A MAJOR CONCERN OF THE DAEC WAS THAT SUFFICIENT ANALYSIS OF THE TRAINING REQUIREMENT BE UNDERTAKEN SO AS TO LAY THE FOUNDATION FOR A TRAINING PROGRAM WHICH COULD BE CONDUCTED BY THE TECHNICAL ASSISTANCE TE;M.

-----3. PROGRAM EVALUATION AND EQUIPMENT NEEDS: THE DAEC CONCLUDED THAT A TWO-PHASED EQUIPMENT PROCUREMENT IS SOUND, BUT THAT IN ORDER TO EVALUATE WHETHER INSTALLATION OF A MAINTENANCE MANAGEMENT SYSTEM HAS ACTUALLY IMPROVED SEPRRN'S MANAGEMENT, INTERIM INDICATORS OF PROGRESS IN INSTITUTIONAL DEVELOPMENT SHOULD BE ESTABLISHED.

THE LOGICAL FRAMEWORK SHOULD ALSO BE REFINED (BY INCORPORATING INFORMATION ALREADY PRESENT IN THE PP) AND INDICATORS OF ACHIEVEMENT AT THE OUTPUT AND END OF PROJECT STATUS LEVEL CLARIFIED.

UNCLASSIFIED

*Classification*

# TELEGRAM

ANNEX A

EXHIBIT II

PAGE 3 OF 3

PAGE 3 STATE 3591010

UNCLASSIFIED

*Classification*

-----C. EQUIPMENT SELECTION: THE PRP GUIDANCE CABLE REQUESTED THAT DURING PROGRAM DEVELOPMENT, VARIOUS LABOR/CAPITAL INTENSIVE APPROACHES TO ROAD MAINTENANCE AND RESULTING IMPLICATIONS ON GOH OPERATING COSTS FOR FULL SALARIES, EQUIPMENT, SPARE PARTS, ETC. BE CONSIDERED. THE PP DOES NOT DISCUSS THE USE OF LABOR INTENSIVE TECHNIQUES OR APPROPRIATE TECHNOLOGY IN SEPRRN'S ROAD MAINTENANCE OPERATIONS ON NATIONAL OR DEPARTMENTAL ROADS. CONSIDERING THE RESULTS AND RECOMMENDATIONS OF THE BERGER STUDY AND THE AID AG FEEDER ROADS ANALYSIS, THE REFINED PP SHOULD DISCUSS THE RATIONALE FOR THE MIX AND COMPOSITION OF THE VARIOUS TYPES OF SEPRRN'S ROAD MAINTENANCE BRIGADES AND THE BASIS FOR THE EQUIPMENT SELECTED. A DISCUSSION OF THE RELATIVE COST AND AVAILABILITY OF MANAGEMENT AND LABOR AS WELL AS SEPRRN'S POLICY TOWARD THE USE OF LABOR INTENSIVE TECHNIQUES AND APPROPRIATE TECHNOLOGY SHOULD BE INCLUDED.

-----D. PARTICIPATION OF WOMEN: THE PP SHOULD DISCUSS THE QUESTIONS RAISED IN PD-66 REGARDING THE ROLE OF WOMEN IN THIS PROJECT. WHAT IS THE PARTICIPATION OF WOMEN IN SEPRRN AND IN COMMUNITY BASED ROAD MAINTENANCE ACTIVITIES? WHAT IS THE DISTRIBUTION OF MEN AND WOMEN IN SEPRRN TRAINING PROGRAMS?

-----E. PRIVATE SECTOR INVOLVEMENT: THE PP SHOULD CLARIFY THE ROLE OF THE PRIVATE SECTOR IN ROAD MAINTENANCE ACTIVITIES; (E.G. EFFORT WILL BE MADE TO INCREASE PRIVATE SECTOR PARTICIPATION IN MAINTENANCE ACTIVITIES WITH SEPRRN).

-----F. COMMUNITY ACTION PROGRAM: THE CONDITION PRECEDENT TO DISBURSEMENT FOR THE COMMUNITY ACTION PROGRAM SHOULD BE CLARIFIED TO INCLUDE AN EVALUATION OF THE PROGRAM. THE CONDITION PRECEDENT TO DISBURSEMENT FOR THE AG FEEDER ROADS PILOT PROJECT AND AN IMPLEMENTATION PLAN BASED ON THE RESULTS OF THE PILOT PROJECT (PRESUMING SUCCESS) BY SEPTEMBER 30, 1978-

-----G. PPT: THE PROJECT PERFORMANCE TRACKING NETWORK SHOULD BE REFINED BASED ON COMMENTS PROVIDED BY PPC AND FORWARDED TO THE MISSION VIA POUCH.

VANCE

b1

MHM

UNCLASSIFIED

*Classification*

Phase 2 Highway Maintenance Grant

Summary of Estimated Construction Costs

a.-	Port-au-Prince Administrative Facility	\$ 358,000
b.-	Revisions and additions to Central Garage:	
	1. Office Building	20,000
	2. New Repair Bays	54,000
	3. Building C alterations	3,500
	4. Zone B enclosure	22,200
c.-	Hinche District Facility	180,000
d.-	New Sub-District Facility (8)	528,000
	Total Estimated Costs	\$ 1,165,700*
	Round to	\$ 1,170,000

\* Includes shop equipment, furniture, office equipment, 10% contingency, and architectural design and inspection fees varying from 6 to 10%, depending upon location. Unit construction costs include an inflation factor of 10% per year over a two year period. Shop equipment includes 7.5% inflation per year.

a- ADMINISTRATIVE BUILDING COST ESTIMATE

BUILDING : 18m x 30m x 2 stories = 1080 m<sup>2</sup> + 72 m<sup>2</sup> ( stairs)  
= 1152 m<sup>2</sup>

PORCH : 6m x 30m x 2 stories = 360 m<sup>2</sup>

GENERAL CONSTRUCTION

1152 m<sup>2</sup> x \$120/m<sup>2</sup> = \$138,240  
360 m<sup>2</sup> x \$ 60/m<sup>2</sup> = \$ 21,600

ELECTRIC CONSTRUCTION

1152 m<sup>2</sup> x \$32/m<sup>2</sup> = \$ 36,864

MECHANICAL CONSTRUCTION

A.C. 1 Ton/23 m<sup>2</sup> = 50 Tons @ \$900/Ton = \$45,000  
Plumbing \$700/Unit x 10 units = \$ 7,000

-----  
\$248,704

Say \$250,000 \$250,000

SITWORK

Grading 5455 m<sup>2</sup> @ \$1/m<sup>2</sup> = \$ 5,455

Paving 800 m<sup>2</sup> @ \$13.75/m<sup>2</sup> = 11,000  
\$ 16,455

Say \$ 17,000  
\$267,000

ESTIMATED CONSTRUCTION COST

\$267,000

26,700

\$293,700

17,600

\$311,300

15,000

11,000

20,000

\$357,300

10% Contingency

6% Architect,s & Inspection Fee

Art Work

Landscaping

Furniture

TOTAL ESTIMATED COST

Say

\$358,000  
\*\*\*\*\*

b- Revisions and Additions to Central Garage1. NEW GARAGE OFFICE BUILDING PORT AU PRINCE

SEPRRN Garage Facility - Same Construction as Building F, PAP

Building 6m x 12m = 72 m<sup>2</sup>

General Construction @ \$120/m <sup>2</sup>	=	\$8,640	
Electrical Construction @ \$32/m <sup>2</sup>	=	2,300	
Mechanical construction L.S.	=	<u>2,100</u>	
		\$13,040	
		Say	\$13,500
Furniture			<u>3,000</u>
			\$16,500
10% Contingency			<u>1,650</u>
			\$18,150
6% Design & Construction Superv. Fees			<u>1,089</u>
TOTAL ESTIMATED COST			\$19,239
	Round to		\$20,000

2. NEW TUNE UP SHOP BUILDING PORT AU PRINCE

SEPRRN Garage Facility - Same Construction as Building A,B &amp; C, PAP

Due to revisions to increase Depot capacity in building "C" a new tune up area is required. It will consist of 9 bays with one bay containing a tool storage area and toilet.

Building 12m x 50m = 600 m<sup>2</sup>

General Construction @ \$60/m <sup>2</sup>	=	\$36,000	
Electrical Construction @ \$15/m <sup>2</sup>	=	9,000	
Mechanical Construction L.S.	=	<u>1,000</u>	
		\$46,000	\$46,000
10% Contingency			4,600
6% Fees			<u>2,760</u>
			\$53,360
TOTAL ESTIMATED CONST. COST	Round to		\$54,000



c. HINCHE DISTRICT FACILITY

There will be a new district facility constructed in Hinche which serves the same function as Cap Haitien and Les Cayes. Due to the location of the town a cost factor of 30 percent over Port-au-Prince costs has been applied. Type of construction will be the same as Les Cayes.

ESTIMATE OF CONSTRUCTION COSTS

Site Minimum Size	100 m x 65 m		
Gravel Surface	5500 m <sup>2</sup> @ \$3/m <sup>2</sup>	=	\$16,500
No cost factor			

DISTRICT BUILDING TO INCLUDE DISTRICT ENGINEERS, DRIVERS, ROOMS AND LOCKER FACILITIES

9 m x 9,70 m = 87,3m <sup>2</sup> @ 120/m <sup>2</sup>	\$10,500
--	----------

GUARD HOUSE-GENERATOR ENCLOSURE

L.S.	\$1,200
------	---------

GAS STATION - INCLUDES CONCRETE SLABS PUMP ISLAND WITH ENCLOSURE AND TWO TANKS AND PIPING

L.S.	\$5,500
------	---------

GARAGE BUILDING - INCLUDES OFFICE, PARTS & TOOL ROOM, SERVICES BAYS, TUNE UP BAYS, AND MATERIAL, DEPOT

55 m <sup>2</sup> Closed @ \$70/m <sup>2</sup>	=	\$3,850
545 m <sup>2</sup> Open @ \$60/m <sup>2</sup>	=	\$32,700

<u>GREASE RAMP</u>	L.S.	\$3,700
--------------------	------	---------

<u>LOADING RAMP</u>	L.S.	\$2,500
---------------------	------	---------

<u>WASH AREA</u>	L.S.	\$2,800
------------------	------	---------

<u>FENCE</u>	265 L.M. Masonry @ \$55/L.M.	=	\$14,575
	65 L.M. Chainline @ \$32/L.M.	=	\$2,080

MECHANICAL AND ELECTRIC - INCLUDES LIGHTING POWER, WATER, SANITARY AND STORM

L.S.	\$20,000
------	----------

<u>SUBTOTAL WITH SITE WORK</u>	<u>\$115,905</u>
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Say	\$116,000
-----	-----------

ANNEX B

Exhibit 1  
Page 6 of 8

SUBTOTAL:	116.000	
	35.000	30% site location
	<hr/>	
	151.000	
	3.000	Furniture
	<hr/>	
	154.000	
	15.400	10% Contingency
	<hr/>	
	169.400	
	10.164	6% Design & Const.Superv.Fees
	<hr/>	
	179.564	TOTAL ESTIMATED COST
Round to:	\$180.000	

d- SUBDISTRICT FACILITIES

Eight subdistrict service facilities will be constructed. Due to the remoteness of these facilities there is a variance in construction costs. The units constructed in Petit Goave, Jacmel, Mirebalais, St. Marc and Gonaives will have a cost factor of 15 percent over costs in Port-au-Prince. The unit in Port-de-Paix will have a cost factor of 30 percent and the units in Ouanaminthe and Jeremie will have a cost factor of 40 percent. These subdistricts will function as service stations for SEPRRN equipment, either working in the area or on permanent assignment to the area. Type of construction will be the same as Les Cayes.

## 1. Estimate of construction costs:

<u>Site:</u>	40m x 40m = 1600 m <sup>2</sup> 40 m minimum dimension Gravel surfacing 1300 m <sup>2</sup> x \$3/m <sup>2</sup> = \$3,900 No cost factor	
<u>Garage Building:</u>	To include office, work bay, toilet, parts and tool storage and material storage. An additional work bay could be added in the future by re-locating the wash area.	
	10m x 10m = 100 m <sup>2</sup> 50 m <sup>2</sup> enclosed space @ \$70/m <sup>2</sup> = \$3,500 50 m <sup>2</sup> open space @ \$60/m <sup>2</sup> = \$3,000	
<u>Guard House - Generator enclosure</u>	L.S.	= \$1,200
<u>Loading Ramp</u>	L.S.	= \$2,000
<u>Wash Area</u>	L.S.	= \$1,200
<u>Grease Ramp</u>	L.S.	= \$3,700
<u>Gas Station:</u>	Includes concrete slab, pump island with enclosure, two tanks and pipings L.S.	= \$4,000
<u>Fence:</u>	120 LM masonry @ \$55/LM = \$6,600 40 LM Chainlink @ \$32/LM = \$1,280	
<u>Mech. Selec.:</u>	Includes lighting, power, water, sanitary and storm L.S.	= <u>\$12,550</u>
	SUBTOTAL WITHOUT SITE WORK	\$39,030
	Say	<u>\$40,000</u>

## 2. Applying cost factor of:

<u>15%</u>		<u>30%</u>		<u>40%</u>	
\$40,000		\$40,000		\$40,000	
<u>6,000</u>	(15%)	<u>12,000</u>	(30%)	<u>6,000</u>	(40%)
\$46,000		\$52,000		\$56,000	
<u>3,900</u>		<u>3,900</u>		<u>3,900</u>	Site Work
\$49,000		\$55,900		\$59,900	
\$50,000	Say	\$56,000	Say	\$60,000	
<u>5,000</u>		<u>5,600</u>		<u>6,000</u>	10% Contingency
\$55,000		\$61,600		\$66,000	Total Site Cost
\$275,000		\$61,600		\$132,000	
(5 sites)		(1 site)		(2 sites)	

3. Summary of Construction Costs (8 sites)

\$275,000	5 Units at 15%
61,600	1 Unit at 30%
<u>132,000</u>	2 Units at 40%
\$468,600	
<u>46,860</u>	10% Architects & Inspection Fee
\$515,460	Tot. Est. Const. Cost

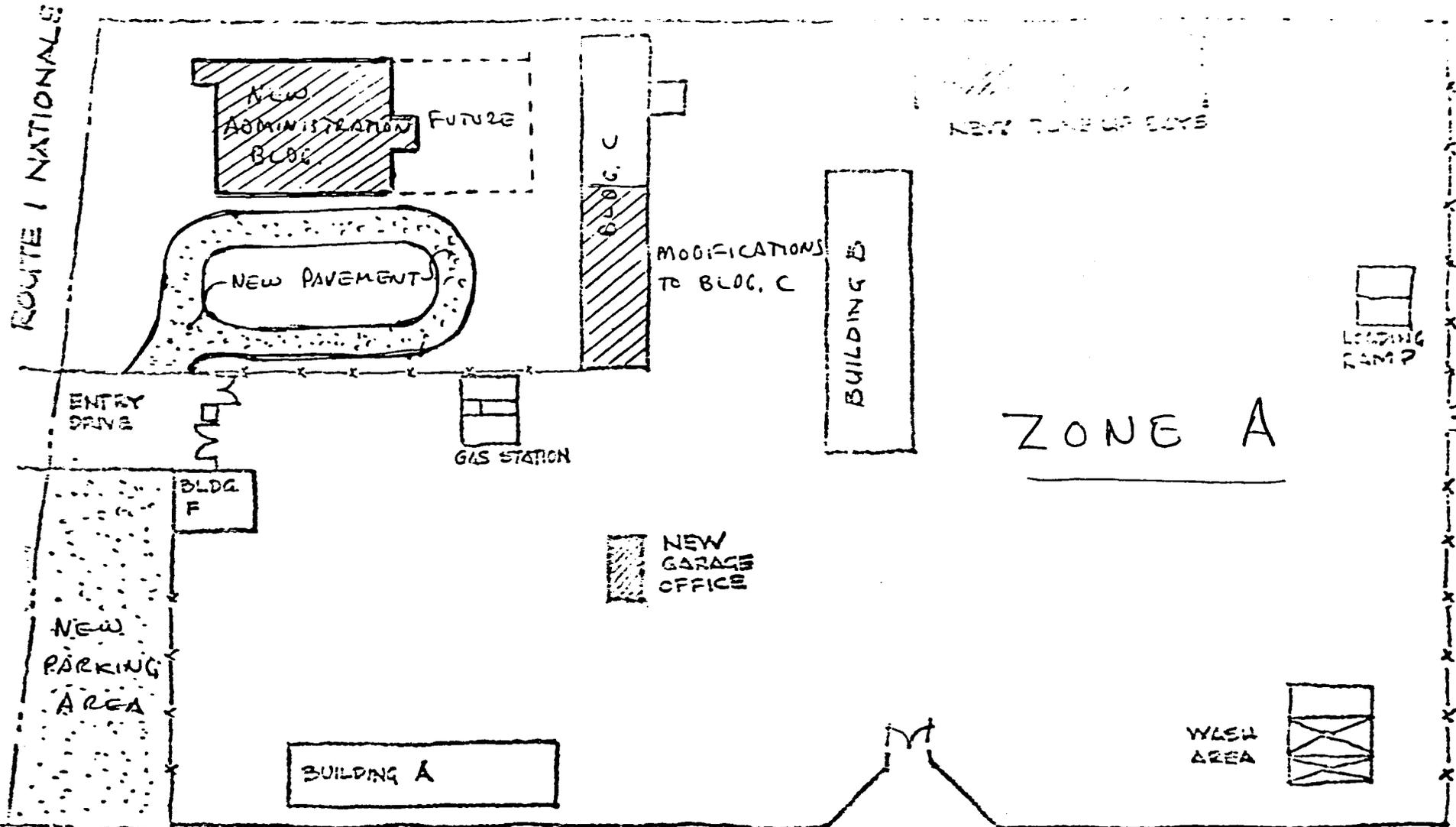
Say = \$516,000

## 4. To the construction cost will be added:

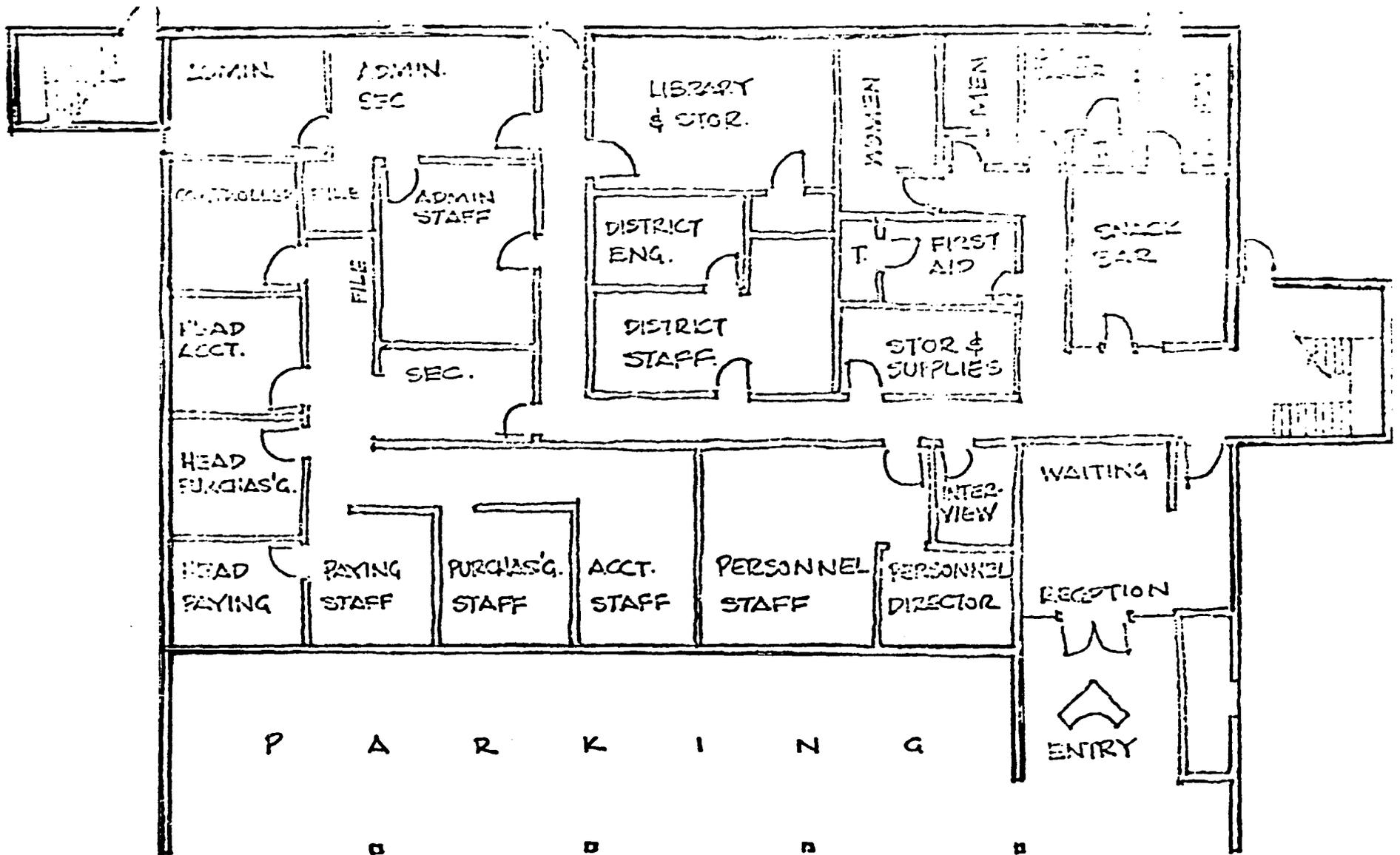
Furniture

8 facilities \$1,500 each = \$ 12,000

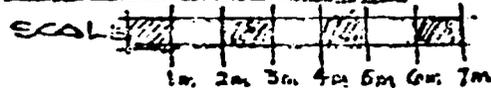
5. Total Estimated Cost for 8 Sub-districts garages \$528,000



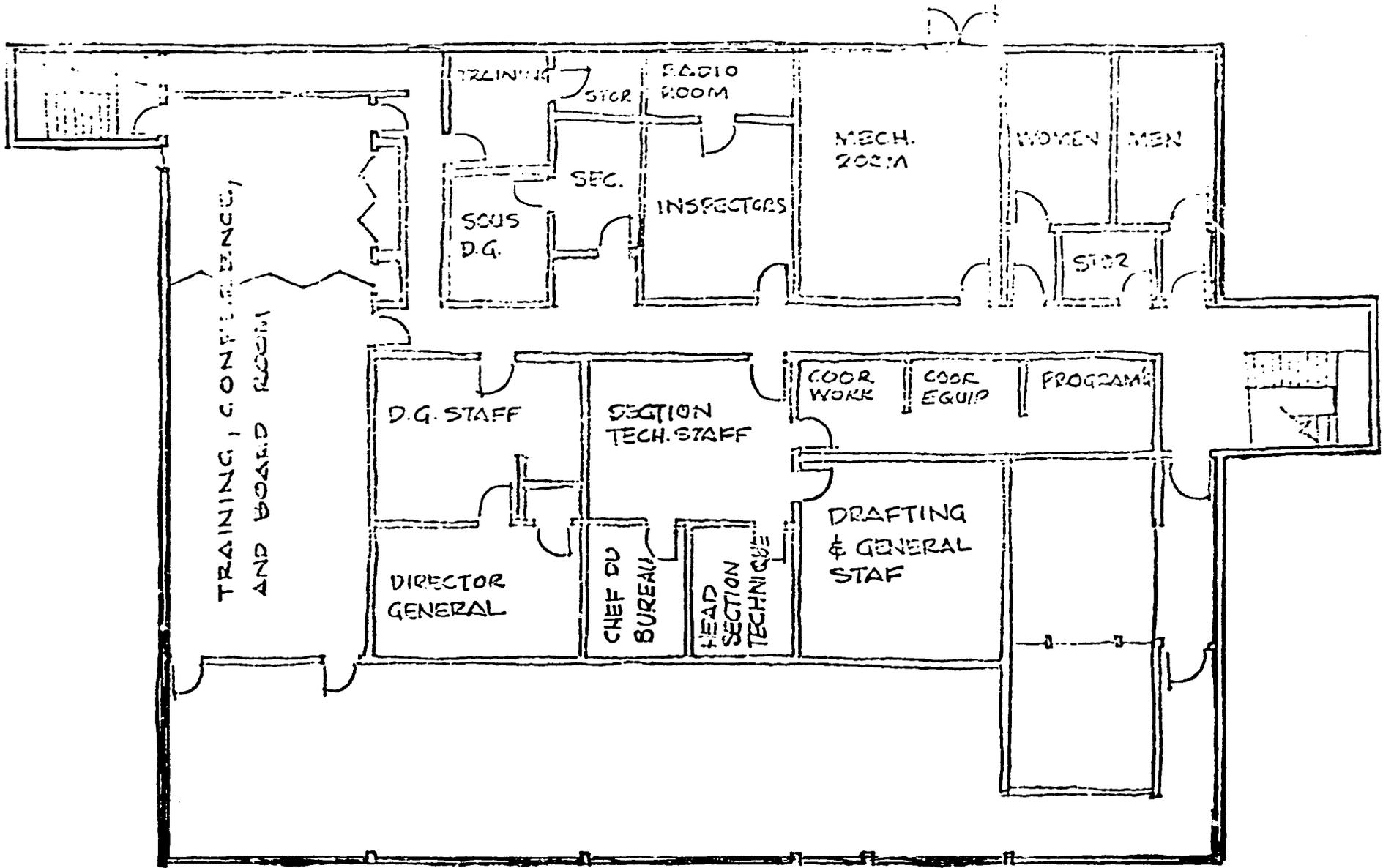
SITE PLAN • SEFRON GARAGE • PORT AU PRINCE  
 SCALE 1/1000



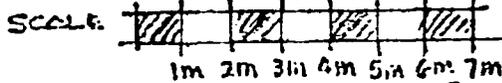
FIRST FLOOR PLAN



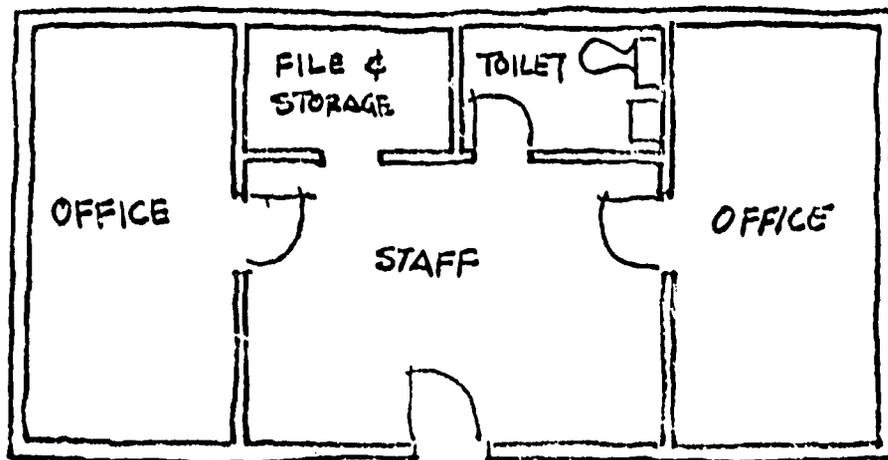
ADMINISTRATION BUILDING FOR S.E.P.R.R.N.  
PORT AU PRINCE



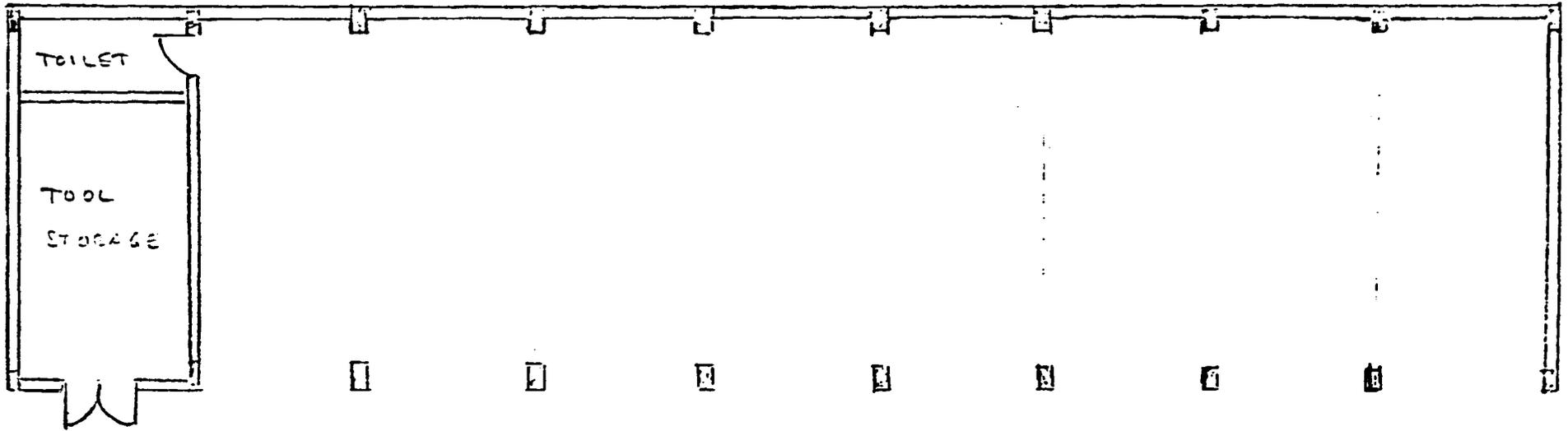
SECOND FLOOR PLAN



ADMINISTRATION BUILDING FOR S.E.P.R.R.N.  
PORT AU PRINCE



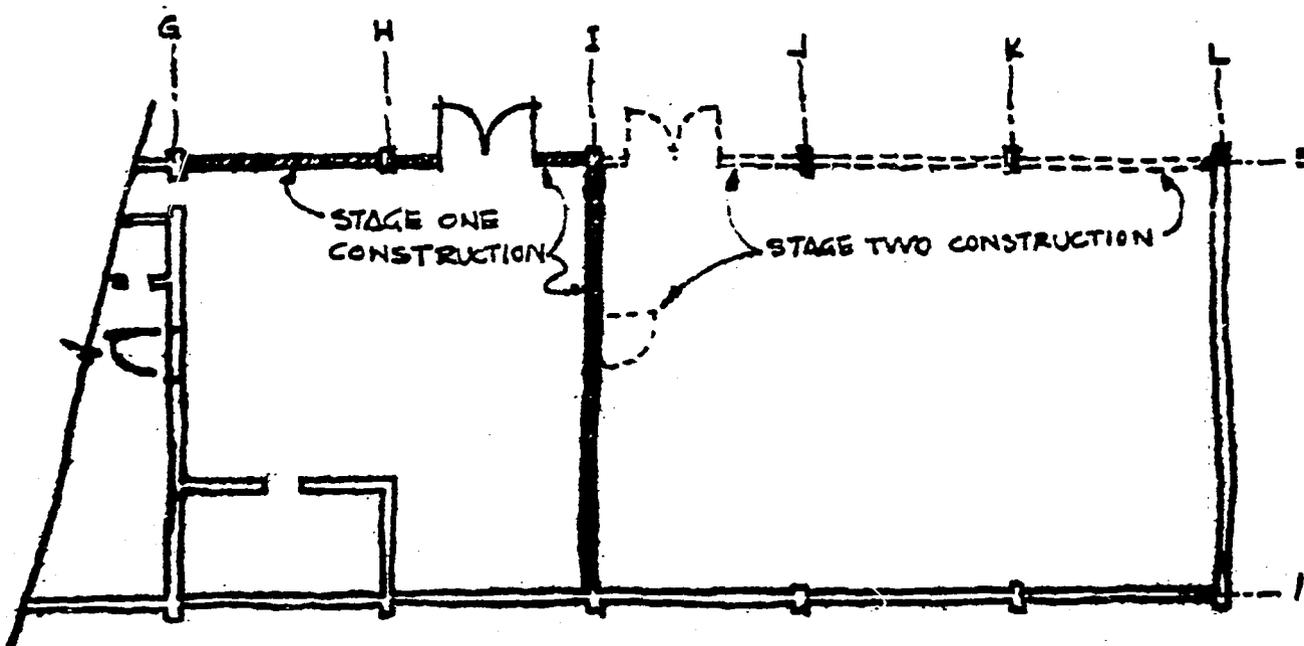
FLOOR PLAN - GARAGE OFFICE  
SEPRREN GARAGE - PORT AU PRINCE  
SCALE 1/100



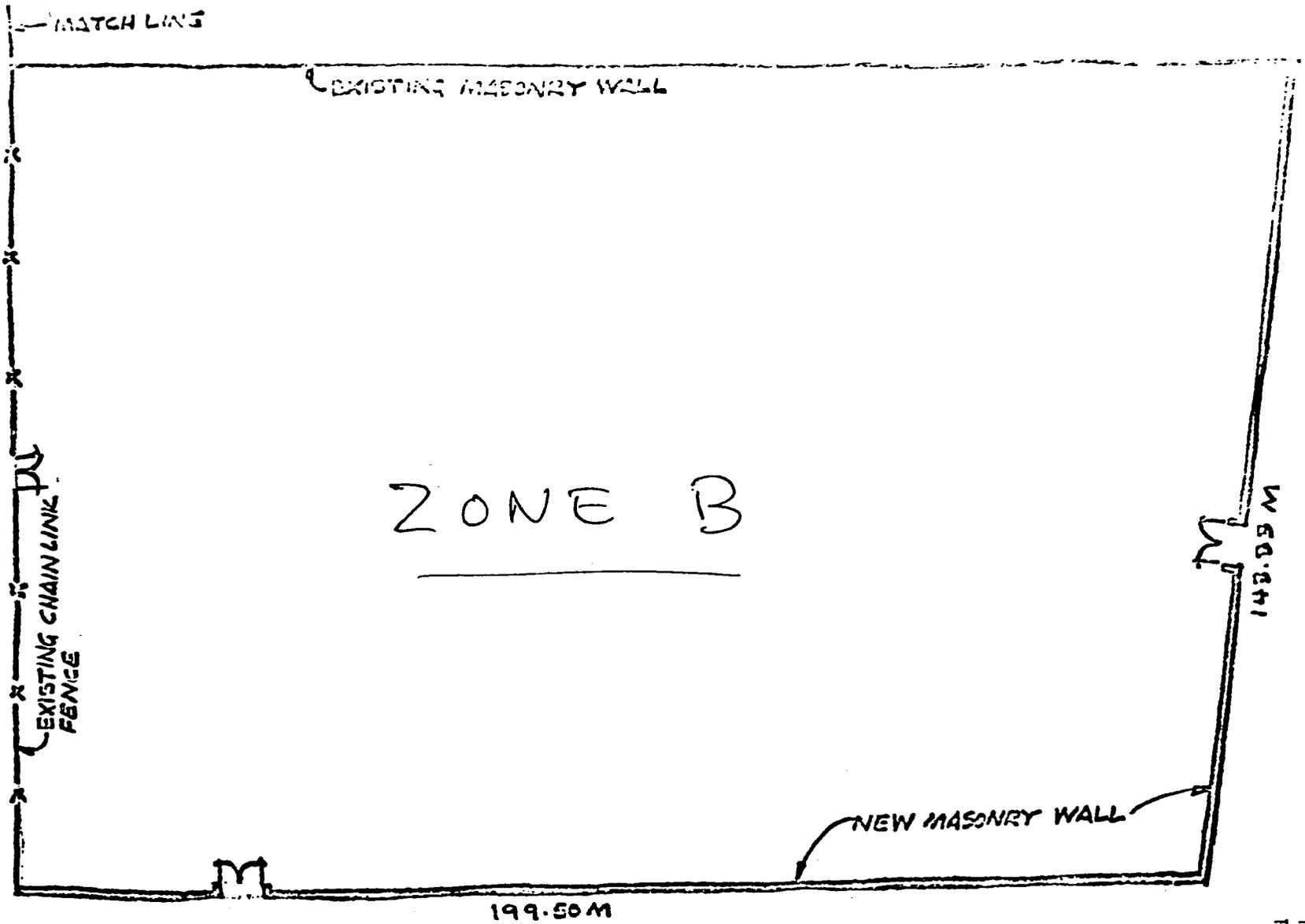
FLOOR PLAN - NEW TUNE-UP BAYS

SEPRIN GARAGE - FORT-AU-PRINCE

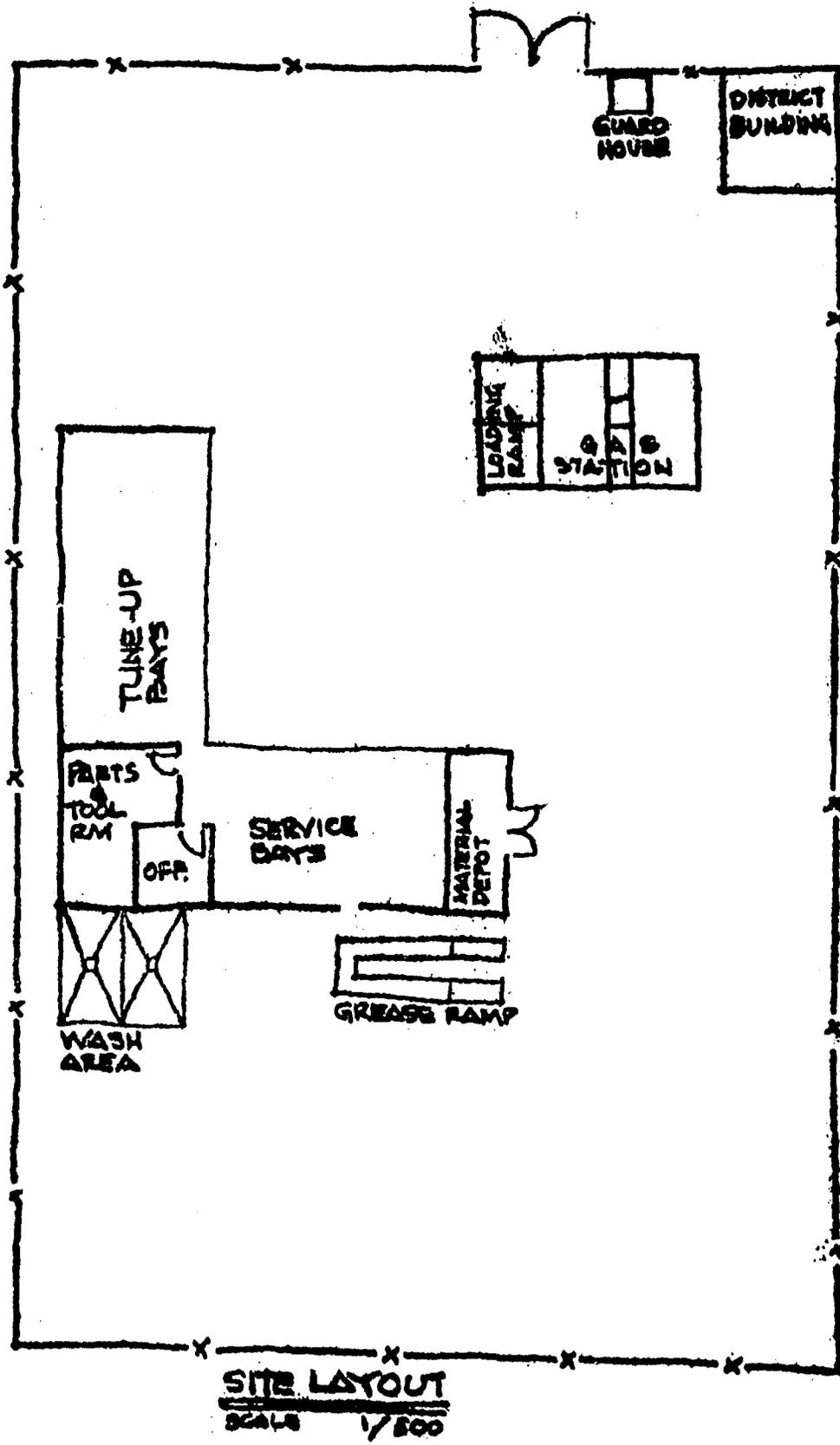
SCALE 1/200



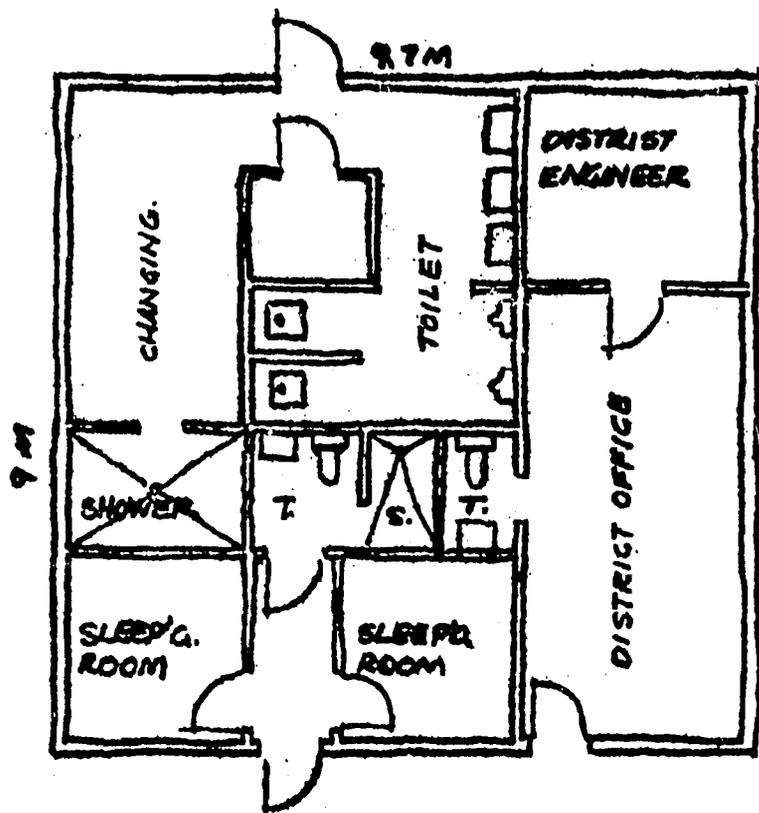
PARTIAL FLOOR PLAN BUILDING 'C'  
SEPRRN GARAGE - PORT AU PRINCE.  
SCALE 1/200



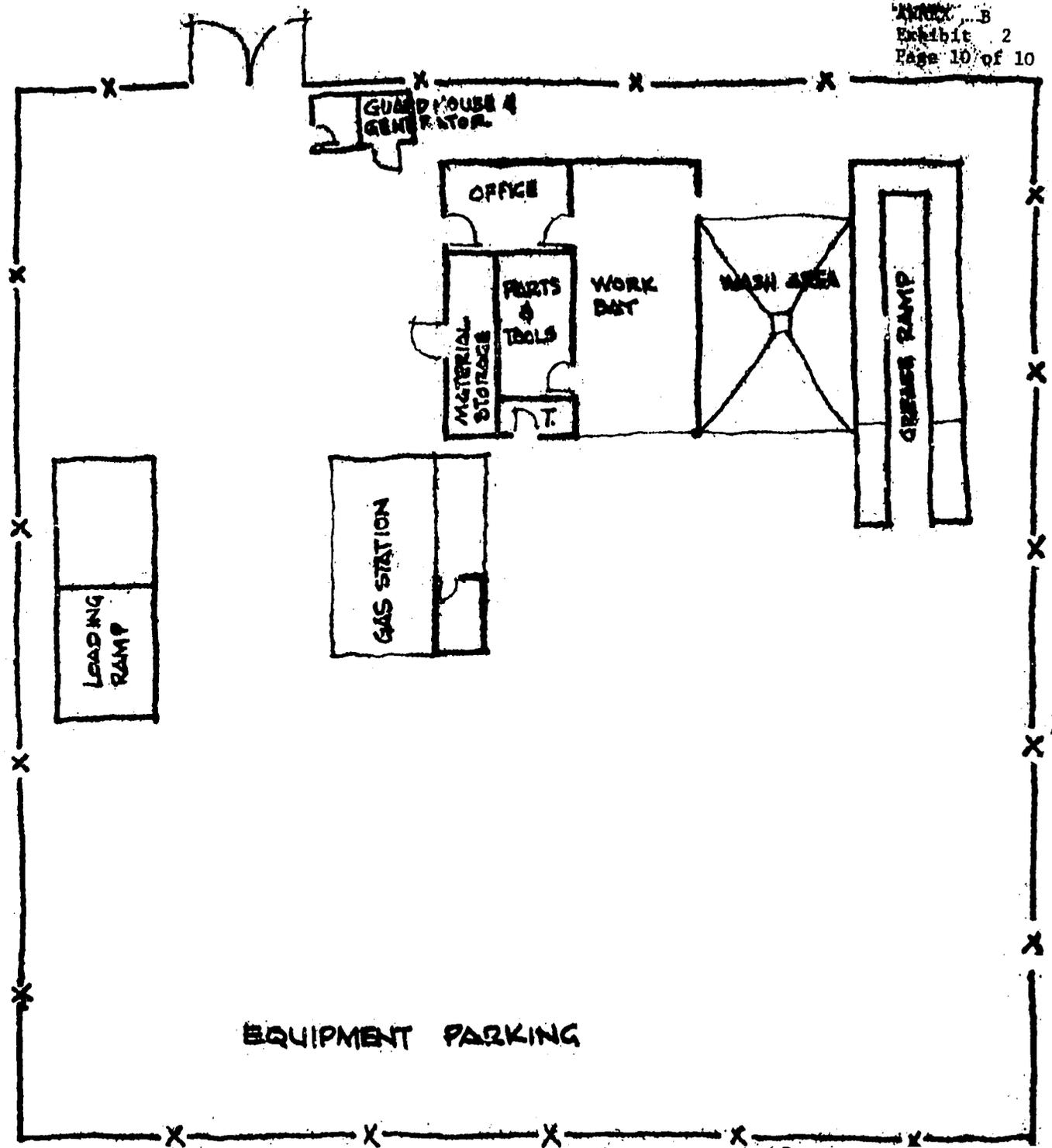
SITE PLAN • SEPRRN GARAGE • PORT AU PRINCE  
 SCALE 1/1000



SEPRRN - HINCHE DISTRICT



DISTRICT BUILDING  
SCALE 1/100



EQUIPMENT PARKING

SITE LAYOUT (SUB-DISTRICT)  
SCALE 1/20

SEPRN SUB-DISTRICT (B)

ANNEX BExhibit 3SUMMARY OF PHASE II EQUIPMENT REQUIREMENTS

An analysis of SEPRRN's equipment requirements through 1980 indicates that the below listed items are required. The equipment is divided into three lots: Lot I includes items required during the period 1976/77 and procurement should be initiated as soon as the funds are available, while Lot II include items not required until FY 78/79, so procurement could be delayed until later. Lot III includes equipment required to accomplish the 5 year plan but for which financing is not available in this project. Details are shown on Exhibit 4 to this Annex.

ITEM	Lot I			Lot II			Lot III		
	Quantity	Unit Price	Total	Quantity	Unit Price	Total	Quantity	Unit Price	Total
D-6 Angle Dozer	1 @	\$65,000	\$65,000	1 @	65,000	\$65,000	2 @	\$65,000	\$130,000
D-3 or D-4 Dozer	3 @	\$32,000	\$96,000	3 @	32,000	\$96,000	3 @	\$32,000	\$96,000
Front End Loader	2 @	\$32,000	\$64,000	3 @	32,000	\$96,000	3 @	\$32,000	\$96,000
Loader/Backhoes	4 @	\$25,000	\$100,000	3 @	25,000	\$75,000	2 @	\$25,000	\$50,000
Graders	4 @	\$42,000	\$168,000	4 @	42,000	\$168,000	3 @	\$42,000	\$126,000
Dump Trucks	15 @	\$20,000	\$300,000	20 @	20,000	\$400,000	14 @	\$20,000	\$280,000
Flatbed Trucks	10 @	\$16,000	\$160,000	15 @	16,000	\$240,000	5 @	\$16,000	\$80,000
Water Tanks 2/Dist. Bar	4 @	\$3,000	\$12,000	5 @	3,000	\$15,000	4 @	\$3,000	\$12,000
Fuel Distribution Trucks	2 @	\$20,000	\$40,000	1 @	20,000	\$20,000	1 @	\$20,000	\$20,000
Lt. Maintenance Trucks	2 @	\$8,000	\$16,000	2 @	8,000	\$16,000	4 @	\$8,000	\$32,000
Lube Service Trucks	2 @	\$28,000	\$56,000	2 @	25,000	\$50,000			
3/4 T Trucks	6 @	\$7,000	\$42,000	3 @	7,000	\$21,000	2 @	\$7,000	\$14,000
Jeeps	5 @	\$6,000	\$30,000	3 @	6,000	\$18,000	2 @	\$6,000	\$12,000
20-30 T Low boy				1 @	20,000	\$20,000			
10 T Tilttop trailers	2 @	\$8,000	\$16,000	1 @	8,000	\$8,000	1 @	\$8,000	\$8,000
315 cfm Air Compressors	1 @	\$14,000	\$14,000	1 @	14,000	\$14,000	1 @	\$14,000	\$14,000
400 gal. Water Trailers				2 @	1,000	\$2,000	2 @	\$1,000	\$2,000
10-12 T 3 Wheel Rollers	1 @	\$20,000	\$20,000	1 @	20,000	\$20,000	2 @	\$20,000	\$40,000
1 T Roller	4 @	\$3,000	\$12,000	8 @	3,000	\$24,000	3 @	\$3,000	\$9,000
Asphalt Kettles	4 @	\$2,000	\$8,000	8 @	2,000	\$16,000	3 @	\$2,000	\$6,000
30 Kw Generators	3 @	\$8,000	\$24,000	2 @	8,000	\$16,000	2 @	\$8,000	\$16,000
45 Kw Generators	1 @	\$10,000	\$10,000	1 @	10,000	\$10,000			
Hydraulic Lifts				1 @	6,000	\$6,000			
Hand Tool Sets	80 @	\$200	\$16,000	70 @	200	\$14,000	72 @	\$200	\$14,400
Road Striping Machine	1 @	\$25,000	\$25,000						
10 T Crane				1 @	15,000	\$15,000			
Mobile Crushers	1 @	\$135,000	\$135,000				1 @	\$135,000	\$135,000
3" Water Pumps	4 @	\$1,000	\$4,000	4 @	1,000	\$4,000	4 @	1,000	\$4,000
Road Sweepers							2 @	8,000	\$16,000
Chip Spreader							2 @	8,000	\$16,000
Bituminous Distributor							2 @	28,000	\$56,000
Rubber Tired Rollers							2 @	20,000	\$40,000

ITEM	Lot I			Lot II			Lot III		
	Quantity	Unit Price	Total	Quantity	Unit Price	Total	Quantity	Unit Price	Total
100 Kw Generators							1 @	\$14,000	\$14,000
3600 Gal. Tank Trucks							2 @	30,000	60,000
2500 Gal. Potable Tanks							4 @	8,000	32,000
Emulsion Mix Plant							1 @	80,000	80,000
<b>Total Equip. Cost</b>	Lot I		\$1,433,000	Lot II		\$1,449,000	Lot III		\$1,510,400
Spare parts (20%)			286,600			289,800			302,080
Cost Equip. & Spare Parts			<u>1,719,600</u>			<u>1,738,800</u>			<u>1,812,480</u>
Shipping Cost (5%)			85,980			86,940			90,624
Total Cost 1977			1,805,580			1,825,740			1,903,104
Inflation -	(1 Year 6%)		108,335	(2 years 12%)		219,089	(3 years 18%)		342,559
Total Estimated Cost			<u>\$1,913,915</u>			<u>\$2,044,829</u>			<u>\$2,245,663</u>
Round to			<u>\$1,900,000</u>			<u>\$2,060,000</u>			<u>\$2,250,000</u>

COMMUNICATIONS EQUIPMENT

PRELIMINARY COST SUMMARY - COMPLETE SYSTEM INSTALLATION

I. <u>DESCRIPTION</u>	<u>FIXED OR PER SITE COST</u>	<u>5 SITES</u>	<u>12 SITES</u>
Major Radio/Antenna Equipment	\$27,329./site	\$136,645.	\$327,948.
II. Secondary Equipment/Maintenance Spares	950./fixed 5,553./(2-5 Sites)	6,503.	17,609
III. Freight Costs	75./fixed 3,025./Site	15,201.	36,378.
IV. Complete Installation Costs	16,597./fixed 10,273./site	67,962.	139,873.
V. Major Maintenance Costs	2,000./Quarter fixed 440./site/quarter	16,800.	29,120.
	TOTAL COST 5 SITES	\$243,111.	
	TOTAL COST 12 SITES	\$550,928	
VI. Profit Margin for Budgetary Estimates 10% of totals not to include fixed freight	5 SITES 12 SITES	\$ 22,791. \$ 51,455.	
	GRAND TOTAL COST 5 SITES (Including Budgetary Profit Margin) 12 SITES	\$265,902. \$602,383.	
	ROUND TO	\$605,000.	

SUMMARY - EQUIPMENT FOR ONE SUB-DISTRICT WORKSHOP

Lube Equipment	\$2,375
Cleaning Equipment	7,100
Tire Repair	1,415
Battery Service	800
Welding Facilities	7,400
Vehicle Tune Up	105
Refueling Facilities	5,300
Tooling	9,500
Air Compressor 5 H.P.	1,100
Portable Lube Trailer	<u>4,000</u>
ONE SHOP TOTAL. (rounded)	<u>\$39,000</u>
Escalation 7.5%/year x 2 years (15%)	<u>5,950</u>
	44,850
Shipping Costs (5.5%)	<u>2,467</u>
	\$47,317
Round to	\$48,000

ANALYSIS OF SEPRRN EQUIPMENT REQUIREMENTS BY 1980

ANNEX F

EXHIBIT 4

Page 1 of 1

ITEM DESCRIPTION	Garages	4 ea Interv. Brigades	13 ea Regrad. Brigades	50 ea Hand Brigades	4 ea Bridge Brigades	1 ea Signaliz. Brigades	2 ea Seal Coat Brigades	Total Equip Req'd	Rehabed Equip on Hand	EXPROP from Phase I	New from Phase I	Total Equip Inventory	To Be Retired During LOP	Addition. Equip Required	YEAR PHASE II EQUIP REQ'D			
															76/77	77/78	78/79	79/80
D-8 Dozer	1							1	1	-	-	1	-	-	-	-	-	-
D-7 Dozer	1							1	1	1	-	2	1	-	-	-	-	-
D-6 and TD18 Dozers		4						4	3	-	-	3	3	4	-	1	1	2
D-4 or D-3 Dozers			13					13	-	-	-	4	-	9	1	2	3	3
Front End Loader		4	6					12	1	2	2	5	3	8	-	2	3	3
Loader/Backhoes		4	7					11	2	-	4	6	2	9	2	2	3	2
Grader		4	13					17	5	3	6	14	8	11	2	2	4	3
Dump Truck		24	13	25				68	-	4	25	29	10	49	5	10	20	14
Flatbed Truck		4		25	4	1		34	1	7	-	8	4	30	5	5	15	5
Water Distributor		4	13					17	2	-	4	6	2	13	2	2	5	4
Fuel Dist. Truck		4						4	-	1	-	1	1	4	1	1	1	1
Maintenance Truck	4	4						8	-	8	-	8	8	8	-	2	2	4
Lube & Service Truck		4						4	-	4	-	4	4	4	-	2	2	-
Shop Truck	1							1	-	1	-	1	-	-	-	-	-	-
1/4 T Truck		4	13		4			23	-	10	-	10	10	11	3	3	3	2
Jeep	10	4				1		15	10	-	-	10	5	10	2	3	3	2
5 T Tractor	2							2	-	1	-	1	-	-	-	-	1	-
20-10 T Lowbed	2							2	-	1	-	1	-	-	-	-	1	-
10 T Tilttop Trailers		4						4	-	-	-	-	-	4	-	1	1	1
12-18 T Flatbed Trailers	1							1	-	1	-	1	-	-	-	-	-	1
115cfm Air Compressors					4			4	-	1	-	1	-	3	-	1	1	1
5 T Wrecker	1							1	-	1	-	1	-	-	-	-	-	-
Elec. Arc Welder					4			4	-	2	4	7	3	-	-	-	-	-
500 Gal. Water Trailer		4						6	-	4	-	4	2	4	-	-	2	2
5-4 T Roller (2 wheel)		4						4	-	6	-	6	-	-	-	-	-	-
10-12 T Roller (3 wheel)		4						4	-	-	-	-	-	-	-	1	1	2
1 T Roller				25				25	-	-	10	10	-	15	2	2	8	3
Asphalt Kettle				25				25	-	-	10	10	-	15	2	2	8	3
30 Kw Generator	8							8	-	1	-	1	-	7	-	3	2	2
45 Kw Generator	5							5	-	3	-	3	-	2	-	1	1	-
Hydraulic Lift	4							4	-	-	2	2	-	2	-	-	1	-
Hand Tool Set		4	13	50	4	1	2	74	-	-	-	-	148	222	30	50	70	72
Road Striping Machine						1		1	-	-	-	-	-	1	-	1	-	-
10 T Crane	1							1	1	-	-	1	1	1	-	-	1	-
Liquid Transporters	4	8						12	-	12	-	12	12	-	-	-	-	-
3 T Forklift	1							1	-	1	-	1	-	-	-	-	-	-
5ea Shop Trucks (AMB)	2							2	-	2	-	2	2	-	-	-	-	-
Mobile Crushers	1							2	-	-	-	-	-	2	-	1	-	1
3" Water Pump		4	13					17	-	-	5	5	-	12	-	4	4	4
Road Sweepers								2	2	-	-	-	-	2	-	-	-	2
Chip Spreaders								2	2	-	-	-	-	2	-	-	-	2
Bituminous Distributor								2	2	-	-	-	-	2	-	-	-	2
Rubber Tired Roller								2	2	-	-	-	-	2	-	-	-	2
100 Kw Generator								1	1	-	-	-	-	1	-	-	-	1
Tank Trucks (3600 gal)								2	2	-	-	-	-	2	-	-	-	2
Skid Mtd. Tanks (2500 gal)								4	4	-	-	-	-	4	-	-	-	4
Transfer Pumps								2	2	-	-	-	-	2	-	-	-	2
Emulsion Mix Plant								1	1	-	-	-	-	1	-	-	-	1

ANNEX BExhibit 5PERSONNEL REQUIREMENTS FOR SEPRRN

A.	<u>SUMMARY</u>	<u>75/76</u>	<u>76/77</u>	<u>77/78</u>	<u>78/79</u>	<u>79/80</u>
	Central Administration	47	62	89	95	95
	Central Garage/Shops	69	72	103	103	103
	Districts	19	54	72	72	72
	Sub-districts	4	42	84	84	84
	<u>Sub-Total</u>	<u>139</u>	<u>230</u>	<u>348</u>	<u>354</u>	<u>354</u>
	Intervention Brigades	57	114	171	228	228
	Regrading Brigades	149	250	325	325	325
	Hand Brigades	300	730	1080	1110	1500
	Bridge Brigades	24	48	72	72	96
	Signalization Brigades	-	-	8	8	8
	Seal Coat Brigades	-	-	-	-	53
	<u>Sub-Total</u>	<u>530</u>	<u>1142</u>	<u>1656</u>	<u>1743</u>	<u>2210</u>
	<u>TOTAL PERSONNEL</u>	<u>669</u>	<u>1372</u>	<u>2004</u>	<u>2097</u>	<u>2564</u>

PERSONNEL REQUIREMENTS FOR SEPRRN  
CENTRAL OFFICES, GARAGES AND DISTRICTS

Personnel Requirements for Central Administration (1975/76 to 1979/80)

B. 1-	<u>SUMMARY</u>	<u>75/76</u>	<u>76/77</u>	<u>77/78</u>	<u>78/79</u>	<u>79/80</u>
	Admin. Council Members	6	6	6	6	6
	Dir. General & Staff	4	5	8	8	8
	Administrative Staff	5	7	9	9	9
	Personnel Section	3	4	5	5	5
	Budget Section	4	6	8	8	8
	Account. & Control Section	8	10	14	16	16
	Tech. Director & Staff	8	10	14	18	18
	Procurement Section	3	4	5	5	5
	Training Section	2	4	4	4	4
	PAP Dist. Eng. & Staff	4	4	4	4	4
	Vehicle Weighing Section	-	1	8	8	8
	Signalization Section	-	-	3	3	3
	<u>TOTALS</u>	<u>47</u>	<u>62</u>	<u>89</u>	<u>95</u>	<u>95</u>

ANNEX BExhibit 52- Personnel Requirements for Central Garage/Shops (1975/76 to 1979/80)

SUMMARY	75/76	76/77	77/78	78/79	79/80
Direction	5	5	6	6	6
Operators	7	7	10	10	10
Drivers	7	7	10	10	10
Mechanics & Helpers	15	18	22	27	27
Electricians	3	3	6	6	6
Welders	3	3	5	5	5
Skilled Workmen	15	15	20	20	20
Administrative Staff	2	2	4	4	4
Service and Labor	12	12	20	20	20
TOTALS	69	72	103	103	103

3- Personnel Requirements for Districts (1975/76 to 1979/80)

SUMMARY	75/76	76/77	77/78	78/79	79/80
Engineers (TPTC-SEPRRN)	3	3	3	4	4
Maint. Supervisors	-	3	4	4	4
Driver, Mechan.&Helpers	3	12	16	16	16
Skilled Workmen	4	12	16	16	16
Administrative Staff	2	6	8	8	8
Laborers	4	12	16	16	16
TOTALS	19	54	72	72	72

4- Personnel Requirements for Sub-Districts (1975/76 to 1979/80)

SUMMARY	75/76	76/77	77/78	78/79	79/80
Engineers (TPTC-SEPRRN)	4	4	6	8	8
Maint. Supervisors	-	4	8	8	8
Drivers	-	2	4	4	4
Mechanics & Helpers	-	8	16	16	16
Skilled Workmen	-	8	16	16	16
Administrative Staff	-	8	16	16	16
Laborers	-	8	16	16	16
TOTALS	4	42	84	84	84

C. PERSONNEL REQUIREMENTS FOR SEPRRN BRIGADES1. Number of Brigades by Type-1975/76 To 1979/80

	1975/76	1976/77	1977/78	1978/79	1979/80
BRIGADE TYPE					
INTERVENTION	1	2	3	4	4
REGRADING	7	10	13	13	13
HAND LABOR	10	25	36	37	50
BRIDGE	1	2	3	3	4
SIGNALIZATION	-	1	1	1	1
SEAL COAT	-	-	-	-	2

2. Number and Type of Personnel in Each Type of Brigade

	INTERVENTION	REGRADING	HAND	BRIDGE	SEAL COAT
FOREMEN	2	1		1	3
OPERATORS	9	2		2	12
DRIVERS	10	2	1	2	10
MECHANICS & HELPERS	5				2
MASON				1	
PAINTERS				1	
WELDERS				2	
SKILLED WORKMEN			6	4	6
TEAM LEADERS	1		3	1	2
LABORERS	20	10	20	10	20
TOTAL PERSONNEL	57	15	30	24	53

3. Personnel Requirements for Intervention Brigades (1975/76 to 1979/80)

	1975/76	1976/77	1977/78	1978/79	1979/80
FOREMEN	2	4	6	8	8
OPERATORS	9	18	27	36	36
DRIVERS	10	20	30	40	40
MECHANICS & HELPERS	5	10	15	20	20
TEAM LEADERS	1	2	3	4	4
LABORERS	30	60	90	120	120
TOTAL	57	114	171	228	228

4. Personnel Requirements for Regrading Brigades 1975/76 to 1979/80

	1975/76	1976/77	1977/78	1978/79	1979/80
FOREMEN	7	10	13	13	13
OPERATORS	14	20	26	26	26
DRIVERS	14	20	26	26	26
MECHANICS					
MASONS					
PAINTERS					
WELDERS					
SKILLED WORKMEN					
TEAM LEADERS					
LABORERS	114	200	260	260	260
TOTAL	149	250	325	325	325

5. Personnel Requirements for Hand Brigades 1975/76 to 1979/80

	1975/76	1976/77	1977/78	1978/79	1979/80
FOREMEN					
OPERATORS					
DRIVERS	10	25	36	37	50
MECHANICS					
MASONS					
PAINTERS					
WELDERS					
SKILLED WORKMEN	60	130	216	222	300
TEAM LEADERS	30	75	108	111	150
LABORERS	200	500	720	740	1000
TOTAL	300	730	1080	1110	1500

6. Personnel Requirements For Bridge Brigades 1975/76 to 1979/80

	1975/76	1976/77	1977/78	1978/79	1979/80
FOREMEN	1	2	3	3	4
OPERATORS	2	4	6	6	8
DRIVERS	2	4	6	6	8
MECHANICS					
MASONS	1	2	3	3	4
PAINTERS	1	2	3	3	4
WELDERS	2	4	6	6	8
SKILLED WORKMEN	4	8	12	12	16
TEAM LEADERS	1	2	3	3	4
LABORERS	10	20	30	30	40
TOTAL	24	48	72	72	96

7. Personnel Requirements for Signalization Brigades 1975/76 to 1979/80

	1975/76	1976/77	1977/78	1978/79	1979/80
FOREMEN	-	-	1	1	1
OPERATORS	-	-	1	1	1
DRIVERS	-	-	1	1	1
SKILLED WORKMEN	-	-	1	1	1
LABORERS	-	-	4	4	4
TOTAL	0	-	8	8	8

8. Personnel Requirements for Seal Coat Brigades- 1976/77 to 1979/80

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	1976/77	1977/78	1978/79	1979/80
FOREMAN	-	-	-	3
OPERATORS	-	-	-	12
DRIVERS	-	-	-	10
MECHANICS & HELPERS	-	-	-	2
SKILLED WORKMEN	-	-	-	6
TEAM LEADERS	-	-	-	2
LABORERS	-	-	-	20
TOTAL	-	-	-	53

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**HAITI ROAD MAINTENANCE PLAN (FY 76 - FY 80)**  
(Showing Program Growth Over Time)

ROAD DESCRIPTION	ROAD TYPE	KM	TOTAL KM	DISTRICT OF SUBDISTRICT	KILOMÈTERS MAINTAINED BY FISCAL YEAR						COMMENTS
					FY 75/76	FY 76/77	FY 77/78	FY 78/79	FY 79/80	FY 80/81	
<b><u>NATIONAL ROUTES</u></b>											
#100 Port-au-Prince - Gonaives - Cap Haitien	Asphalt		272			(197R)	272	272	272	272	
Port-au-Prince - Montrouis	Asphalt	75		P-au-Prince	67	75					
Montrouis - Saint Marc	Asphalt	14		Saint Marc							
Saint Marc - Pont l'Estere	Asphalt	46		Saint Marc							
Pcnt l'Estere - Gonaives	Asphalt	34		Gonaives							
Gonaives - Ennery - Plaisance	Asphalt	56		Gonaives							
Plaisance - Limbe - Cap Haitien	Asphalt	47		Cap Haitien							
#125 Cap Haitien - Fort Liberte			56								
Cap Haitien - Limonade - Trou du Nord	Gravel	32		Cap Haitien	32E	32E	(32R)	32	32	32	
Trou du Nord - Ca Fort Liberte	Gravel	24		Cap Haitien	24E	24E	(24R)	24	24	24	(Probable IBRD reconstruction in 1977/78
#150 Carrefour Joffre - Port de Paix	Gravel		77	Gonaives							" " "
Carrefour Joffre - Gros Morne	Gravel	27		Gonaives	27E	27E	(27R)	27	27	27	
<b><u>Sections to be improved under AID Fdr.Rd.Ln.</u></b>											
Gros Morne - Bassin Bleu	Gravel	22.2		Port-de-Paix	22.2E	(22.2R)	22.2	22.2	22.2	22.2	
Bassin Bleu - Port de Paix	Gravel	27.8		Port-de-Paix	27.8E	27.8E	(27.8R)	27.8	27.8	27.8	
#200 Port-au-Prince - Les Cayes			198								
Port-au-Prince - Leogane	Concrete	33		P-au-Prince	33	33	33	33	33	33	
Leogane - Miragoane	Asphalt	61		Petit Goave	-	(61R)	61	61	61	61	
Miragoane - St. Michel du Sud	Earth	8		Petit Goave	-	(8R)	8	8	8	8	
Vieux Bourg d'Aquin - Les Cayes	Earth	55		Les Cayes	55E	55E	(55R)	55	55	55	
St. Michel du Sud- Vieux Bourg d' Aquin	Earth	41		Les Cayes			(41R)	41	41	41	
#225 Carrefour Dufort - Jacmel	Asphalt		42	PAP/Jacmel	-	(42R)	42	42	42	42	
SUB TOTALS -Maintained Sections					100	108	438	645	645	645	
Emergency Maintenance					189	166	-	-	-	-	
Under Reconstruction					-	330	207	-	-	-	

1/ Figures w/an E (20E) denote road section on which SEPRR is performing emergency maintenance.

2/ Figures in brackets ( \_R) denote year of road section reconstruction, during which no road maintenance occurs on designated rock section.

ROAD DESCRIPTION	ROAD TYPE	KM	TOTAL KM	DISTRICT OF SUBDISTRICT	KILOMETERS MAINTAINED BY FISCAL YEAR						COMMENTS	
					FY 75/76	FY 76/77	FY 77/78	FY 78/79	FY 79/80	FY 80/81		
<b>DEPARTMENTAL AND LOCAL ROADS</b>												
<b>Feeding Into National #100</b>												
#109 Pont Sonde - Deschappelles	Earth	24	430	St. Marc	-	(24R)	(24R)	24	24	24		
Local Bon Repos - Beudet	Earth	7		P-au-Prince	7E							
#112 Savanne Desdunes - Dessalines	Gravel	30		Gonaives	30E	30E	(30R)	30	30	30		
#113 Gonaives - Mole St. Nicolas	Earth	106		Gonaives	106E	106E	106E	106E	106E	106E	106E	
<b>Feeder Roads in Plaine du Nord Area (IBRD)</b>												
Route 100 - Acul du Nord	Earth		53.5	Cap Haitien			(53.5R)	53.5	53.5	53.5		
Acul du Nord - Duty												
Duty - Grison Garde												
Grison Garde - Guilleron												
Guilleron - Robillard												
Robillard - Breda												
Acul du Nord - Plaine du Nord												
Plaine du Nord - Dot												
Dot - Moustique												
<b>Miscellaneous Roads</b>												
<b>Sections to be Improved under AID Fdr.Rd.Ln</b>												
#306 St. Michel de l'Attalaye - Ennery	Earth	24		Gonaives	-	-	-	-	-	-		
#112 Rte.Riv.Artibonite-Gros Chaud.-Peye	Earth	14.1		St. Marc	-	-	-	(14.1R)	14.1	14.1		
Local Marmelade - Vieux Depot	Earth	15.0		Gonaives	-	-	-	-	-	(15R)		
#116 Pilate - Plaisance	Earth	15.9		Cap Haitien	-	-	-	-	(15.9R)	15.9		
#117 Le Borgne - Limbe	Earth	24		Cap Haitien	24E	24E	24E	24E	(24R)	24		
<b>SUBTOTALS-Maintained Sections</b>					-	-	-	208	122	162		
<b>Emergency Maintenance</b>					167	160	130	130	106	106		
<b>Under Reconstruction</b>						24	108	34	40	15		

ROAD DESCRIPTION	ROAD TYPE	KM	TOTAL KM	DISTRICT OF SUBDISTRICT	KILOMETERS MAINTAINED BY FISCAL YEAR						COMMENTS
					FY 75/76	FY 76/77	FY 77/78	FY 78/79	FY 79/80	FY 80/81	
#250 Les Cayes - Jeremie Poste Avance - Beaumont	Earth	25.8	130	Les Cayes	-	-	-	-	-	-	
<u>Sections to be improved under AID Fdr.Rd.Ln.</u>											
Les Cayes - Camp Perrin	Gravel	22.2		Les Cayes	22.2E	22.2E	(22.2R)	22.2	22.2	22.2	
Ca Avocat - Ca Charles	Earth	16.2		Les Cayes	-	16.2E	16.2E	16.2E	(16.2R)	16.2	
Ca Charles - Roseaux	Earth	14.1		Jeremie	-	14.1E	14.1E	(14.1R)	14.1	14.1	
Roseaux - Jeremie	Earth	14.4		Jeremie	14.4	14.4E	14.4E	14.4E	(14.4R)	14.4	
#300 Port-au-Prince - Hinche - Cap Haitien Croix des Bouquets - Mirebalais Gde. Riv. Nord-Barriere Battant-Cap Haitien Milot - Cap Haitien	Asphalt Earth Gravel	39 25 17	216	P-au-Prince Cap Haitien	39 25E 17	39 25E 17	39 (25R) 17	39 25 17	39 25 17	39 25 17	(Probable IBRD reconstruction in 1977/78)
<u>Sections to be Improved under AID Fdr.Rd.Ln.</u>											
Mirebalais - Thomonde	Asphalt	37.8		Mirebalais	13	20	(37.8R)	37.8	37.8	37.8	
Thomonde - Hinche	Gravel	16.2		Hinche	-	16.2E	16.2E	(16.2R)	16.2	16.2	
Pignon - St. Raphael	Earth	15		Cap Haitien	-	-	-	(15.R)	15	15	Under Recons- truction by IBRD
St. Raphael - Dondon	Earth	12.5		Cap Haitien	-	12.5E	12.5E	(12.5R)	(12.5R)	12.5	
Dondon - Gde. Riviere du Nord	Earth	13		Cap Haitien	-	13E	13E	(13.R)	13	13	
NATIONAL ROUTES TOTAL KMS			991								
SUBTOTALS											
-Maintained Sections					83	76	56	103	199	227	
Emergency Maintenance					47	119	73	30	-	-	
Under Reconstruction					-	-	85	58	43	-	

ROAD DESCRIPTION	ROAD TYPE	KM	TOTAL KM	DISTRICT OR SUBDISTRICT	KILOMETERS MAINTAINED BY FISCAL YEAR						COMMENTS
					FY 75/76	FY 76/77	FY 77/78	FY 78/79	FY 79/80	FY 80/81	
<b>Feeding Into National #125</b>											
#121 Diber - Ouanaminthe	Earth	7		Ouanaminthe	-	7E	(7R)	7	7	7	(Probable IBRD reconstruction in 1977/78)
#125 Ca Fort Liberte - Diber	Earth	9		Ouanaminthe	-	9E	(9R)	9	9	9	
Local Ouanaminthe - Mont Organise	Earth	32		Ouanaminthe	-	32E	(32R)	32	32	32	
<b>Feeding Into National #150</b>											
#151 Jean Rabel - Mole St. Nicolas	Earth	31		Port-de-Paix	31E	31E	31E	31E	31E	31E	
#151 Jean Rabel - Morne Chretien	Gravel	8.1		Port-de-Paix	8.1E	(8.1R)	8.1	8.1	8.1	8.1	
#151 Morne Chretien - Port de Paix	Earth	34		Port-de-Paix	34E	34E	34E	34E	34E	34E	
#116 Pilate - Gros Morne	Earth	17		Port-de-Paix	-	-	-	-	-	-	
#152 Port-de-Paix - Anse a Foleur	Earth	25		Port-de-Paix	-	-	25E	25E	25E	25R	
<b>Feeding Into National #200</b>											
#206 Anse a Veau - Petit Trou de Nippes	Earth	17	330	Petit Goave		15E	15E	15E	15E	15E	(Probable IDB reconstruction in 1977/78)
#213 Port Salut - Les Cayes	Gravel	26		Les Cayes	26E	(26R)	26	26	26	26	
#208 Mouillage Fouquet -Vieux Bg. d'Aquin	Earth	33		Les Cayes	-	-	-	-	-	-	
Local Cavaillon - Les Cayes	Earth	18		Les Cayes	8E	8E	8E	(8R)	8	8	
Local Cavaillon - Changieux - L'Asile	Earth	31		Les Cayes	-	-	-	-	-	-	
Local Chantal - Houc	Earth	30		Les Cayes	30E	30E	(30R)	30	30	30	
Local Cavaillon - Baraderes	Earth	38		Jeremie	(38R)	(38R)	38	38	38	38	
<b>Other</b>											
Local L'Asile - Anse a Veau	Earth	23		Petit Goave	-	-	-	-	-	-	
Local L'Asile - Aquin	Earth	16		Les Cayes	-	-	-	-	-	-	
#213 & Local- Tiburon -Coteaux-Port Salut	Earth	86		Les Cayes	-	-	-	-	-	-	
<b>Sections to be Improved under AID Fdr.Rd. Ln</b>											
#206 Anse a Veau -Pte.Riviere de Nippes	Earth	11		Petit Goave	-	11E	11E	11E	11E	(11R)	
#206 Pte. Riviere de Nippes - Miragoane	Earth	16		Petit Goave	-	16E	16E	16E	(16R)	16	
Local Baint - Trouin	Gravel	38.7		Petit Goave	-	38.7E	38.7E	38.7E	(38.R)	38.7	
Local Trouin - Ca Fauche	Gravel	11		Petit Goave	-	11E	11E	(11R)	11	11	
Local Camp Perrin - Ca Kanse - Les Cayes	Gravel	22.2		Les Cayes	22.2E	22.2E	(22.2R)	22.2	22.2	22.2	
Local Cotes de Fer - Ca Moussignac	Earth	43.3		Petit Goave	-	-	-	-	-	(43.3R)	
<b>SUB TOTALS -- Maintained Sections</b>											
Emergency Maintenance					-		72	172	191	246	
Under Reconstruction					159	245	190	171	116	80	
					38	72	100	19	54	54	

ROAD DESCRIPTION	ROAD TYPE	KM	TOTAL KM	DISTRICT or SUEDISTRICT	KILOMETERS MAINTAINED BY FISCAL YEAR						COMMENTS
					FY 75/76	FY 76/77	FY 77/78	FY 78/79	FY 79/80	FY 80/81	
<b>Feeding Into National #225</b>											
Local Seguin - Mare Rouge	Earth	12	180	Jacmel	-	-	-	-	-	-	
Local Seguin - Marigot	Earth	27.2		Jacmel	-	-	-	-	-	(27.2R)	
Local Marigot - Cayes Jacmel	Earth	8.2		Jacmel	-	-	-	(8.2R)	8.2	8.2	
Local Cayes Jacmel - Jacmel	Earth	15.9		Jacmel	-	-	-	-	(15.9R)	15.9	
#204B Jacmel - Baintet - Cotes de Fer	Earth	60		Jacmel	-	-	-	-	-	-	
<b>Feeding Into National #250</b>											
<u>Sections to be improved under AID Fdr. Rd. Ln.</u>											
#218 Pestel - Corail - Ca Charles	Earth	36.8		Jeremie	18E	36.8E	36.8E	36.8E	(36.8R)	36.8	
#220 Dame Marie - Moron	Earth	25.6		Jeremie	-	-	25.6E	25.6E	25.6E	(25.6R)	
#220 Moron - Jeremie	Earth	20.7		Jeremie	20.7E	20.7E	20.7E	20.7E	(20.7R)	20.7	
Local Crochu - Jeremie	Earth	18		Jeremie	-	-	-	(18.R)	18	18	
Local Pestel - Carrefour Avocat	Earth	23.6			-	-	23.6E	23.6E	23.6E	(23.6R)	
Local Planned Penetr.Rd; Baraderes - Pestel	Gravel	20		Jeremie	-	-	(20R)	20	20	20	
<b>Feeding Into National #300</b>											
#124 Carrefour du Mort- Quartier Morin -Trou Nord		22		Cap Haitien	22E	22E	22E	22E	22E	22E	
#109 Mirebalais - Verrettes	Earth	49		Mirebalais	-	24E	24E	24E	24E	24E	
<u>Sections to be improved under AID Fdr. Rd. Ln.</u>											
#305 Frontiere - Belladere	Gravel	4.5		Mirebalais	4.5E	4.5E	(4.5R)	4.5	4.5	4.5	
#305 Belladere - Lascahobas	Gravel	33.4		Mirebalais	33.4E	33.4E	33.4E	(33.4R)	33.4	33.4	
<b>SUBTOTALS - Maintained Sections</b>											
Emergency Maintenance			-		-	-	-	25	84	158	
Roads Under Reconstruction					99	141	187	154	96	-	
					-	-	25	60	73	76	

ROAD DESCRIPTION	ROAD TYPE	KM	TOTAL KM	DISTRICT OF SUBDISTRICT	KILOMETERS MAINTAINED BY FISCAL YEAR						COMMENTS
					FY 75/76	FY 76/77	FY 77/78	FY 78/79	FY 79/80	FY 80/81	
#305 Lascahobas - Dini	Gravel	5.4		Mirebalais	5.4E	5.4E	5.4E	5.4E	(5.4R)	5.4	
#305 Dini- Mirebalais	Gravel	17.0		Mireb lais	17.0E	17.0E	17.0E	(17.0R)	17.0	17.0	
#102 Belle nse - Nan Fougere	Earth	17.9		Jacmel	-	-	-	-	-	(17.9R)	
#102 Nan Fougere - Thiotte	Earth	10.0		Jacmel	-	-	(1.0R)	10	10	10	
#102 Thiotte - Savane Bourrique	Gravel	33.9		Jacmel	33.9E	(33.9R)	33.9	33.9	33.9	33.9	
#102 Savanne Bourrique - Fonds Parisien	Gravel	21.6		P-au-Prince	-	21.6E	(21.6R)	21.6	21.6	21.6	
#102 Fonds Parisien - Ganthier	Gravel	11.1		P-au-Prince	11.1E	11.1E	11.1E	(11.1R)	11.1	11.1	
#102 Ganthier - Croix des Bouquets	Gravel	18.0		P-au-Prince	18.0E	18.0E	(18.0R)	18	18	18	
Local Baron - Gde. Riviere du Nord	Earth	17.3		Cap Haitien	-	-	-	-	-	(17.3R)	
Local Cerca Carvajal - Route 300	Earth	11.7		Hinche	-	-	-	(11.7R)	11.7	11.7	
Local Cornillon - Manneville	Earth	20		P-au-Prince	-	-	-	-	-	-	
Local Manneville- Thomazeau	Gravel	4.0		P-au-Prince	-	(4R)	4	4	4	4	
Local Thomazeau - Ca Thomazeau	Gravel	10.2		P-au-Prince	-	(10.2R)	10.2	10.2	10.2	10.2	
#307 St. Raphael - St. Michel	Earth	16.0		Hinche	-	-	-	-	-	-	
#306 Hinche - St. Michel - Ennery	Earth	63.0		Hinche	-	-	-	-	-	(15.R)	
#306 Hinche - Thomassique - Cistilleur	Earth	60		Hinche	-	-	-	-	-	-	
<u>Other Roads</u>											
#101 Kenscoff - Petionville-Port-au-Prince	Asphalt	27		P-au-Prince		27	27	27	27	27	
#101 Kenscoff - Furcy	Earth	5		P-au-Prince		5	5	5	5	5	
#102E Thiotte - Anse a Pitre	Earth	32		Jacmel		-	-	-	-	-	
<u>Sections to be improved under AID Fdr. Rd.Ln.</u>											
Houck - Ca Joute	Gravel	4.0		Les Cayes	4E	4E	4E	(4.R)	4	4	
Ca Joute - Port Salut	Gravel	13.4		Les Cayes	13.4E	(13.4R)	13.4	13.4	13.4	13.4	
Savanette - Nan Goave - Dini	Earth	18		Mirebalais	-	-	-	-	(18.R)	18	
Baptiste - Belladere	Earth	21		Mirebalais	-	-	-	-	(21.R)	21	
Frontiere - Fonds Parisien	Gravel	9.6		P-au-Prince	9.6E	9.6E	9.6E	(9.6R)	9.6	9.6	
SUBTOTALS - Maintained Sections					32	32	59	143	197	241	
Emergency Maintenance					79	121	47	5	5	-	
Roads Under Reconstruction					-	27	84	54	44	51	

ROAD DESCRIPTION	ROAD TYPE	KM	TOTAL KM	DISTRICT OF SUBDISTRICT	KILOMETERS MAINTAINED BY FISCAL YEAR						COMMENTS
					FY 75/76	FY 76/77	FY 77/78	FY 78/79	FY 79/80	FY 80/81	
<b>TOTALS</b>											
Kms of Road Maintained by Fiscal Year:											
Permanent Maintenance					215	216	625	1196	1438	1679	
Emergency Maintenance					739	997	627	490	323	711	
Total Roads Maintained					954	1213	1252	1686	1761	1890	
Roads Under Reconstruction by FY						453	609	204	254	196	
Total Roads in Plan by FY					954	1666	1861	1890	2015	2086	
Kms Asphalt/Concrete Roads to be Maintained after 1980/81 - 616 Kms										1063	
Kms Gravel Roads to be Maintained in 1979/80										1259	
Kms Earth Roads to be Maintained										211	
Kms Road to be Maintained by Each District											
Port-au-Prince -		263	kms								
Les Cayes -		423									
Cap Haitien -		300									
Hinche -		155									
Jacmel -		239									
Gonaives -		249									
Port-de-Paix -		165									
St. Marc -		123									
Petit Goave -		244									
Jeremie -		200									
Mirebalais -		161									
Ouanaminthe -		48									

MAINTENANCE MANAGEMENT SYSTEM

	HQ	FIELD
<u>ROAD SYSTEM INVENTORY</u>		
a. Has a road feature inventory been taken?	x	x
b. If so - by whom?	x	x
- when?		
- how accurate is it?		
- how is it being used?		
c. Are the road features classified? How?	x	x
<u>ACTIVITIES</u>		
a. What maintenance activities are being performed?	x	x
b. Have they been explicitly defined and circulated to Districts?	x	x
c. Which are the most significant activities and what approximate proportion of the workload do they account for.	x	x
d. Do all Districts uniformly perform these activities?	x	x
e. Obtain an activity list.	x	x
<u>SERVICE LEVELS</u>		
a. What levels of service exist?	x	x
b. How were they set?	x	x
c. Do different levels of service exist for different classes of features?	x	x
d. Are service levels	x	x
- explicit?		
- uniform?		
- codified?		
e. Obtain service level documentation	x	x
<u>WORK METHOD</u>		
a. Have work methods been codified?	x	x
b. Have they been standardized	x	x
c. How were they set?	x	x
d. Have they been communicated to the field?	x	x
e. Are crew and equipment complements defined?	x	x
f. Have reasonable production rates been estimated?	x	x
g. Obtain documentation.	x	x
<u>WORK PROGRAM</u>		
a. Do annual work programs exist? In what form?	x	x
b. How were unit quantities arrived at?	x	x
c. If work programs do not exist, how is system workload arrived at?	x	x
<u>RESOURCE REQUIREMENTS</u>		
a. What criteria are used to allocate resources of	x	x
- manpower?		
- equipment?		
- material?		
b. What is the District and crew distribution?	x	x

RESOURCE REQUIREMENTS, continued

c. What worker problems exist	x	x
- lack of training? education?		
- motivation?		
- transportation to work site?		
- compensation? (low? lacking?)		
- unavailability?		
- seasonality?		
d. What is the equipment distribution?	x	x
e. What equipment problems exist	x	x
- insufficient in numbers? mix?		
- inadequate maintenance? cannibalization?		
- spare parts problems? gas,oil,tires,etc.?		
- warehousing?		
- garage facilities and placement?		
- training of operators? mechanics?		
- lack of foreign exchange?		
f. What material problems exist?	x	x
- lack of hot mix?		
- bitumen?		
- graded stone and chips?		
- cement?		
- sand and gravel?		
- warehousing?		

RESOURCE COSTS

a. What costing system exists for costing inputs of	x	
- manpower?		
- equipment?		
- material?		
b. What costing system exists to cost	x	
- maintenance activities and output?		
- equipment utilization and rental recoveries?		
- crushing plant production?		
- asphalt plant production?		
- sign, culvert, etc. production?		

1. PERFORMANCE BUDGETS

a. Are maintenance budgets routinely prepared?	x	x
- how?		
- using what criteria?		
- with what District participation?		
b. What is budget review and approval process?	x	
How long does it take?		
c. After approval, is budget control	x	x
- centralized? at what level?		
- decentralized? to what level?		
- mixture?		

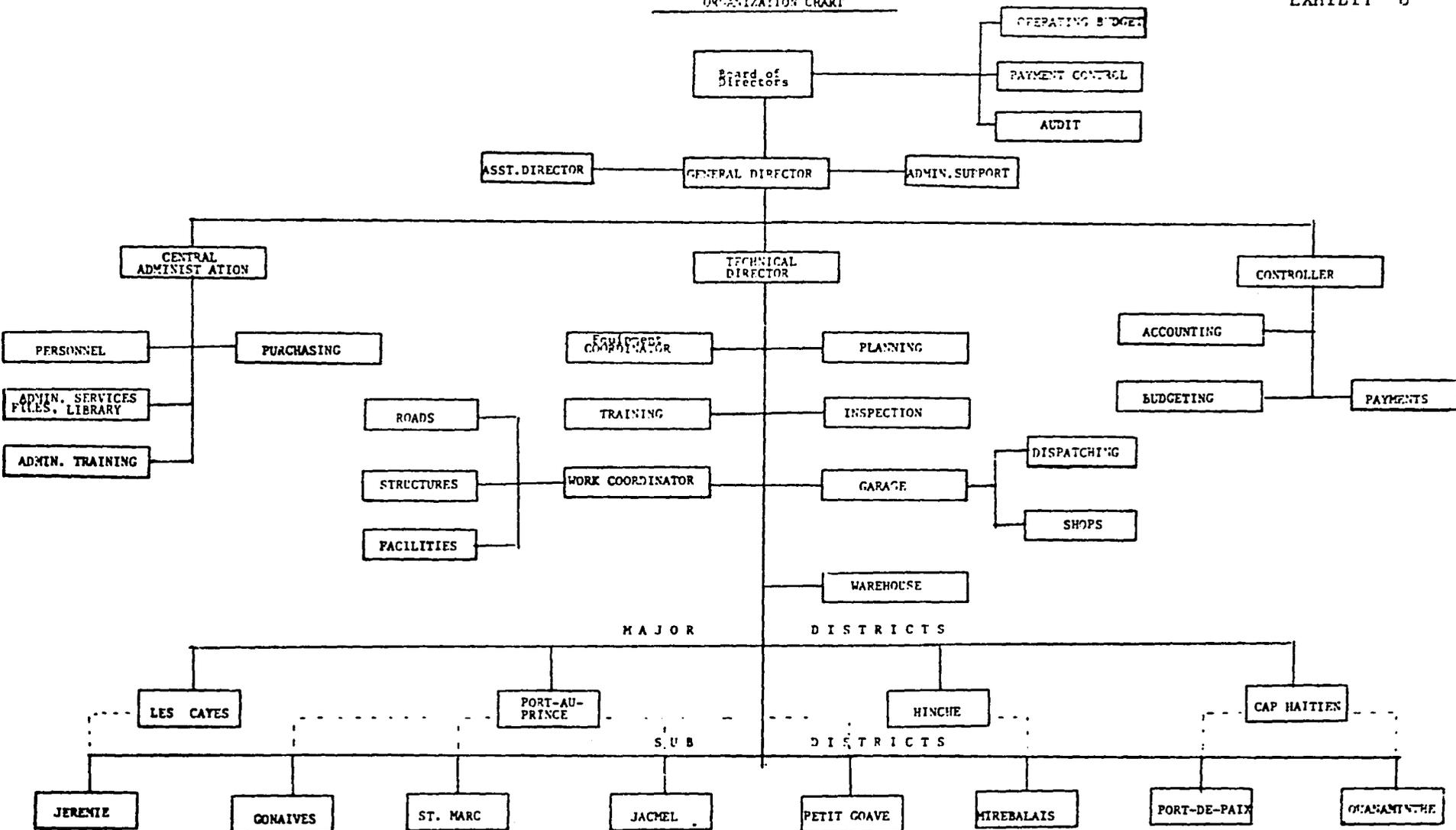
	HQ	FIELD
<u>WORK AUTHORIZATION AND CONTROL</u>		
a. How is work authorized?	x	x
- according to work program?		
- left to District Engineer's discretion?		
- left to Foreman's discretion?		
b. Is work scheduling practised?	x	x
- on what criteria?		
- with what lead time?		
c. Is planned accomplishment compared to actual accomplishment?	x	x
d. Is productivity monitored?	x	x
<u>FISCAL CONTROL</u>		
a. Do budgetary status reports exist?	x	x
- in what form?		
- to what level?		
b. What action is taken to restrain overspending or to recognize it?	x	x
c. Are commitments recognized in the system?	x	x

PERMANENT MAINTENANCE SERVICE OF THE NATIONAL ROAD NETWORK

ANNEX 2

EXHIBIT 8

ORGANIZATION CHART



REPUBLIQUE D'HAÏTI  
PROJET PLANIFICATION DES TRANSPORTS

INVENTAIRE DES ROUTES  
CARTE DES TRONÇONS

ECHELLE 1:500,000

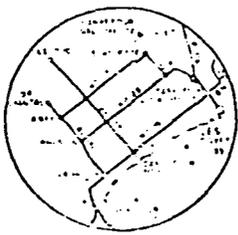
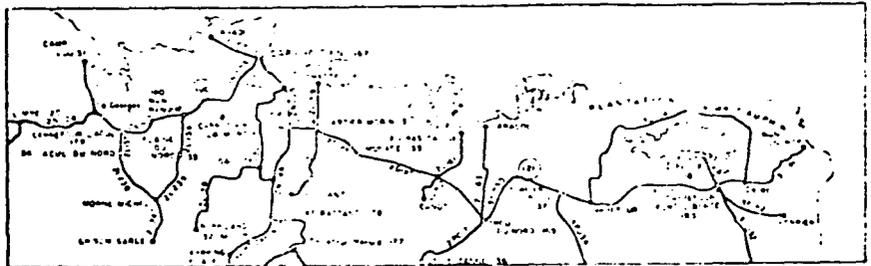
LEGENDE

- 100 M. DE LARGEUR
- 50 M. DE LARGEUR
- 20 M. DE LARGEUR
- 10 M. DE LARGEUR
- 5 M. DE LARGEUR
- 2 M. DE LARGEUR
- 1 M. DE LARGEUR
- 0.5 M. DE LARGEUR
- 0.2 M. DE LARGEUR
- 0.1 M. DE LARGEUR
- 0.05 M. DE LARGEUR
- 0.02 M. DE LARGEUR
- 0.01 M. DE LARGEUR
- 0.005 M. DE LARGEUR
- 0.002 M. DE LARGEUR
- 0.001 M. DE LARGEUR
- 0.0005 M. DE LARGEUR
- 0.0002 M. DE LARGEUR
- 0.0001 M. DE LARGEUR
- 0.00005 M. DE LARGEUR
- 0.00002 M. DE LARGEUR
- 0.00001 M. DE LARGEUR
- 0.000005 M. DE LARGEUR
- 0.000002 M. DE LARGEUR
- 0.000001 M. DE LARGEUR

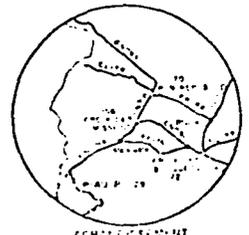
**ROAD MAINTENANCE II - SEVERAL DISTRICTS**

⊕ ——— MAJOR DISTRICTS & LIMITS  
 △ ——— SUB-DISTRICTS & LIMITS

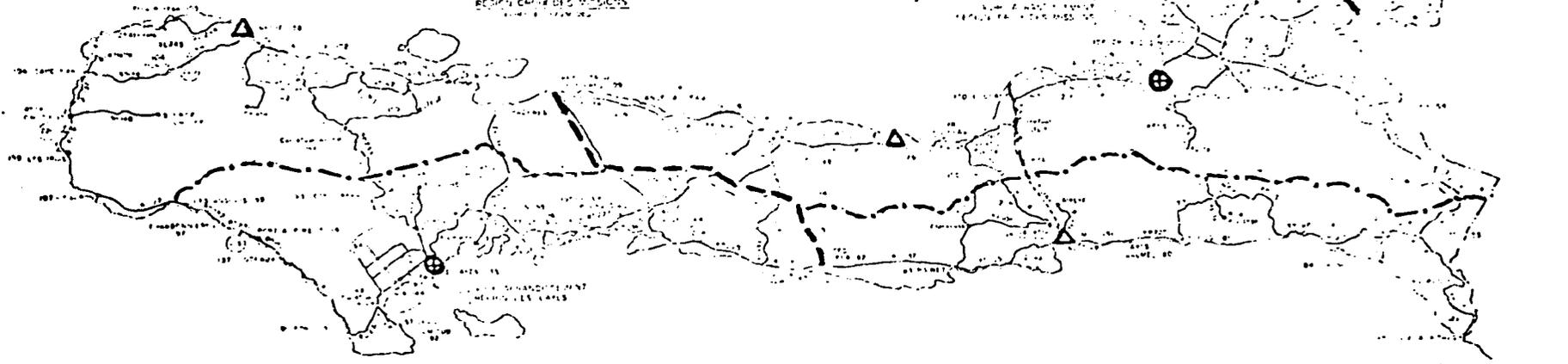
AGRANCISSMENT  
DE LA CAP HAÏTIEN  
ECHELLE 1:500,000



AGRANCISSMENT  
REGION LES CAYES  
ECHELLE 1:500,000



AGRANCISSMENT  
REGION CAP HAÏTIEN  
ECHELLE 1:500,000



HAITI

**Subject: Highway Maintenance Loan II; Evaluation of Project  
Implementation**

Outline of Evaluation Factors

- 1.0 SEPRRN
  - 1.1 Overall Objectives
  - 1.2 Planning Capability
  - 1.3 Administration
    - 1.3.1 General
    - 1.3.2 Personnel
  - 1.4 Training
  - 1.5 Field Performance
    - 1.5.1 General
    - 1.5.2 Maintenance
    - 1.5.3 Reconstruction
    - 1.5.4 Emergency Repairs
    - 1.5.5 Field Work Force
  - 1.6 Equipment Maintenance and Management
- 2.0 GOH Performance
  - 2.1 Allocation of full budget
  - 2.2 Increasing budget
  - 2.3 Other support
- 3.0 U.S. Consultant Performance

DETAIL

1.0 SEPRRN

1.1 SEPRRN Overall Objectives

- .1 Establish a highway maintenance organization capable of maintaining the national; departmental; local road system.
- .2 Reconstruct roads
- .3 Maintain roads.
- .4 Emergency road repairs
- .5 Enforce regulations
  - Traffic control
  - Axle loading control
- .6 Establish efficient work procedures and performance standards.
- .7 Apply labor intensive techniques.

1.2 Planning Capability

- .1 Have roads to be maintained, by District, been identified?
- .2 Annual workplan and budget
  - Road maintenance and improvement
  - Equipment maintenance
  - Work priorities
  - Budget adequate to cover program costs?
  - Are annual work program, resource requirements, unit input cost and performance budget elements adequately rationalized?

- What criteria are used to allocate resources of :

- manpower?
- equipment?
- material?

- Is a work program articulated by each activity in work units for each district?

.3 Coordination of road maintenance and improvement with other developmental activities.

.4 Do new roads enter the maintenance schedule?

1.3 Administration

1.3.1 General

.1 Organizational Structure

.2 Managerial talent and depth; exposure to equipment management concepts; practical management experience. Sufficiency of middle managers- the group below the policy making levels who organize, execute, direct, and control on a day-to-day basis.

.3 Relationship with TPTC.

.4 Are SEPRRN and TPTC payrolls separate?

.5 Coordination of activities with TPTC ; with other developmental efforts.

.6 Administrative effectiveness

.7 Fiscal Control.

- Is adequate cost accounting system installed?

-- Do budgetary status reports exist?

- in what form?

- to what level?

- What action is taken to restrain overspending or to recognize it?

- Are commitments recognized in the system?

.8 Stockroom inventory records and operations

.9 Purchasing and Contracting Capability

- Do installed purchasing procedures and

practices ensure timely ordering and receipt of equipment, tools and spare parts?

- Establishing requirements and specifications for equipment.
- Performing procurement function
- Are staff being trained in procurement of equipment?

.10 Are reporting systems established to measure actual performance against standards?

### 1.3.2 Personnel

- .1 Are SEPRRN administrative personnel assigned full time to their positions and funded entirely from the SEPRRN budget?
- .2 SEPRRN personnel should have no duties with other agencies or departments.
- .3 Retirement plan
- .4 Are there adequate numbers of qualified mechanics and equipment operators?
- .5 Are hand laborers motivated?
- .6 Are managers responsible and dedicated?
- .7 Technical and administrative skills - Are top and middle level skills adequate?
- .8 Foreman level supervision; quality
- .9 Recruitment and retention of personnel; professional staff and workers.
  - .1 Is compensation adequate to attract good people?
  - .2 Are conditions adequate to retain them, e.g. management practices recognition, advancement, group spirit?
  - .3 Methods of employee recruitment.

### 1.4 Training

- .1 Curriculum
- .2 Training Techniques

- .3. Training of SEPRRN management in modern maintenance management techniques.
- .4 Training of SEPRRN staff in procurement and contracting.
- .5 Has training been designed to accommodate students low in ability and literacy?
- .6 Imovativeness of approach
  - .1 Appropriate inservice training programs
  - .2 Incentives built into training program; award system contingent upon achievement
- .7 Training Programs
  - .1 Preparation
  - .2 Implementation
    - All district engineers, supervisors, foremen and gang chiefs should be given training, specifically directed to their levels. In numbers they might amount to:
      - 10 - 12 district engineers
      - 10 - 12 maintenance supervisors
      - 20 - 30 foremen
      - 100-150 gang chiefs
    - Upgrading of equipment operator skills; mechanics skills
  - .8 Motivational Training (attitudinal training)
  - .9 Instructors
    - .1 Sufficient in number
    - .2 Qualifications adequate?
- 1.5 Field Performance
  - 1.5.1 General
    - .1 Achievement v.s. Targets.
      - Surface patching
      - Earth control
      - Surface shaping

- Maintenance of roads
- Upgrading of roads
- .2 Productivity by work item; cost per unit of output
- .3 Cost per km., by road type.

#### 1.5.2 Maintenance

- .1 Kms. of road maintained annually, by road type
- .2 Maintenance activities being performed. Proportion of the workload each accounts for.
- .3 Frequency of maintenance activities.
- .4 Are established road service levels being met?
- .5 Frequency that roads routinely maintained are closed down by causes other than slides.
- .6 Maintenance activities accomplished with maximum use of labor rather than equipment?

#### 1.5.3 Reconstruction

#### 1.5.4 Emergency Road Repairs

#### 1.5.5 Field Work Force

- .1 Organizational structure satisfactory?
- .2 Number of trained personnel adequate for all equipment operator and mechanic positions? Are chauffeurs available?
- .3 Field equipment adequate?
- .4 Out of total work crews planned, how many have been activated?
- .5 Operational reports for road maintenance management
- .6 Productivity of work crews.
- .7 Is followup of work crew assignments made by SEPRRN personnel?
- .8 Labor intensive maintenance

- Is the ratio between labor and capital optimal in view of the abundance of unskilled labor?

.9 Work methods and procedures.

- Have work methods been codified?
- Have they been standardized?
- How were they set?
- Have they been communicated to the field?
- Are crew and equipment complements defined?
- Have reasonable production rates been estimated?
- Is work programming uniformly practised?  
Advance scheduling of work crew activities.
- Is work authorized according to the work program?
- Is work scheduling practised? With what lead time?
- Is planned work compared to actual accomplishment?

1.6 Equipment Maintenance and Management

- .1 Is training in equipment maintenance and spare parts control adequate?
- .2 Are spare parts inventories maintained at proper levels?
- .3 Are sufficient mechanics and stockmen available?
- .4 Are SEPRRN staff making equipment repair decisions?
- .5 Are equipment maintenance procedures adhered to?
- .6 Equipment management
  - Allocation of equipment to Districts
  - Utilization factors; flexibility in assignment
  - Downtime

- Percentage of equipment maintained in operable condition.
- Are appropriate operational reports generated for equipment management?

## 2.0 GOH Performance

- 2.1 Allocation of full budgets; avoidance of shortfalls.
- 2.2 Provision for increased budget. Ability of GOH to mount and support a greatly expanded maintenance effort.
- 2.3 Other support; top-level government endorsement of the road maintenance function.
- 2.4 Efforts of GOH ministries to modernize archaic procedures which inhibit SEPRRN performance.

## 3.0 U.S. Consultant Performance

- .1 Develop organizational structure for optimal work performance of the road maintenance function.
  - Create 4 principal district organizations.
  - Create 8 sub-district organizations.
  - Establish 4 bridge maintenance brigades
  - Evaluate the existing organization and work procedures and advise the leadership on questions of organization, budgeting and priorities.
- .2 Establish levels of road improvement and maintenance
- .3 Specify labor/equipment mixes optimal for specific road maintenance tasks, (by District, if appropriate)
- .4 Devise workplan and performance standards for accomplishment of targets. Provide work program for each principal district.
- .5 Construct system for measuring and reporting work progress and performance against objectives.
- .6 Prepare plans and specifications for shops, their equipment, and road maintenance equipment; help prepare bid invitations, and assist in procurement.

- Purchase additional highway maintenance equipment
  - Construct central HQ facility for SEPRRN at Port-au-Prince.
  - Construct principal district garage/office at Hinche.
  - Construct 8 sub-district facilities.
- .7 Advise leadership on activating and operating maintenance shops.
- .8 Determine necessary equipment repairs and replacements.
- .9 Provide administrative and technical training
- Develop and implement a program of training in modern maintenance management systems, directed to executives, managers, engineers, supervisors, foremen and gang chiefs.
  - Provide intensified training of equipment specialists.
  - Generate materials and procedures suitable for the technical training of illiterates.
  - Review existing AID manuals in French and adapt for Haitian use.
- .10 Advise the Director General on administrative and financial procedures for operation of SEPRRN.
- .11 Prepare plans for stockroom records and procurement procedures.
- .12 Consultant recruitment of consultant team members.
- supervisory highway engineer (24 mos.)
  - equipment specialist (24 mos.)
  - administration/accounting advisor (24 mos.)
  - short term assistant (12 mos.)

- .13 Consultant team turnover
- .14 Consultant intra-team relationships.
- .15 Language capabilities of the Consultant staff.
- .16 Physical arrangement of Consultant with SEPRRN counterparts.
- .17 Communication and working relationships between the Consultant and Haitian SEPRRN staff members

Relationship to pilot study on use of Intensive Labor for Road Construction and Maintenance

Another direct relationship of the TPTC and SEPRRN programs is the Pilot study on the use of Intensive Labor included in the Agricultural Feeder Road project. The Pilot project will study use of intensive labor on both construction and maintenance of unpaved roads and any results will be applied to both projects.

Details on the Pilot Project are as follows:

- (a) Haiti, like many developing countries suffers from the underutilization of its labor force. This underutilization, particularly in rural areas, not only represents a loss of production to the country, but also creates immense hardship on workers and their families. Productive paid work is a sure and desirable means of placing income in the hands of workers.

It is widely recognized that a major possibility in the short term for providing productive work for large numbers of persons is in the construction sector, especially in operations or tasks in which earthmoving is an important feature. It is also recognized, however, that employing large numbers of men, particularly those who are untrained, in road construction or maintenance is not without its own particular set of problems and possible costs.

A pilot project on the use of intensive labor techniques in road construction/maintenance and how use of labor intensive methods may be increased is a part of this Feeder Road Program. The pilot project should provide operational answers to the following problems:

- (1) Efficiency: While employment creation is an objective, it is clear that unless workers are employed as productively as possible the end result may be a drain on resources rather than an addition to them. The possibilities for labor-intensive (LI) maintenance of roads at a cost that is not excessive in relation to alternatives need to be explored.
- (2) Administration: Critical to the success of an extensive rural road maintenance/construction program are sound administrative procedures. Problem areas requiring consideration include questions relating to finance, choice of work tasks, training of supervisors and work force, recruitment of work force, storage and movement of equipment and materials, methods of payment, and interaction between the different levels of the organizations engaged in road maintenance. Development of training materials for road-gang supervisors is an additional purpose of the project because of the critical role of the team leaders in overall worker productivity.
- (3) Organizational Framework: This is an issue of critical

importance in the relation between the central government and local institutions. An LI road maintenance/construction program requires a significant degree of decentralization if it is to be effective. In Haiti at the village level, Community Councils have been active by themselves and also with assistance from private voluntary agencies in undertaking a variety of local activities such as feeder road construction and maintenance. The question of determining an effective working arrangement between central government agencies responsible for road maintenance/construction and local institutions which can execute the work requires intensive investigation.

- (b) In order to clarify the types of questions raised above and preparatory to a possibly expanded LI road construction/maintenance program, the pilot project will consist of two parts: one part will aim at providing experience for development of a larger LI road maintenance program by performing road reconstruction and maintenance activities such as cleaning drainage ditches and filling pot holes on approximately 100 kms of rural roads using labor-intensive methods over a 9-month period. In addition, a separate program of LI excavation of drainage ditches and construction of hand-laid masonry head-walls will be undertaken. The work will be coordinated by TPTC, with the work to be undertaken with SEPRRN as part of its maintenance activities, and/or with the TPTC Construction Brigades. The analytical element of the pilot project will develop data on worker productivity for a variety of road maintenance tasks and total costs for the different activities to be performed. Specifically, productivity and cost data will be collected on both equipment and labor-intensive technologies for similar tasks and environmental conditions for purposes of cost comparison. The study will also include preparation of administrative procedures and plans for organizational changes required to carry out a large scale labor-intensive road maintenance program. On certain roads, maintenance will be carried out with force account workers hired directly by TPTC or SEPRRN; on others, an effort will be made to work through Community Councils to hire local personnel.

(c) Selection of Project Roads: Three road maintenance/construction situations in Haiti present the best opportunities for employment of LI techniques -- in terms of the needs of the Haitian economy. These are:

- Criterion 1. Conventional manual maintenance only, on a completed road. The road may be on any system: main, secondary or feeder.
- Criterion 2. Ditching and/or completion of stone headwalls and lateral drains to bring to completion an otherwise completed road. The road may be on any system: main, secondary or feeder.
- Criterion 3. Maintenance/construction on feeder or secondary roads, using personnel who have a direct personal stake in completion and maintaining the road.

Current estimates are that the pilot project will cover the following tasks:

- Criterion 1. 40 km
- Criterion 2. 100 km
- Criterion 3. 60 km (to be selected by the project team)

Total kilometers of road presently selected for the LI maintenance/construction project thus number 200. Based on the present cost of labor in Haiti estimates are that the costs for the type of work involved will be approximately \$700 per km for criterion 1 and 3. The number of drainage structures per km make it difficult to give a figure for criterion 2 but should not exceed \$1500/km.

SCOPE OF WORK FOR TECHNICAL ASSISTANCE CONTRACT

A. Description of the Project

The project will assist the Government of Haiti in the continued development of a Highway Maintenance organization (SEPRRN) capable of maintaining Haiti's National, Departmental and local road network.

The skills of SEPRRN's management, administrative and technical personnel will be upgraded. A maintenance management system which defines the road inventory, service levels, road maintenance standards, work activities of the major District and Sub-district road maintenance brigades and which introduces a program budgeting, reporting and evaluation system will be designed and implemented. A training program to provide SEPRRN additional qualified personnel by 1980 will be introduced. The objective will be to assure an efficient road transportation network by strengthening SEPRRN's ability to maintain almost 1000 kms of National, and 1500 kms of Departmental roads and 48 bridges per year by 1980. Based on experience to be obtained through the labor Intensive Pilot Project of the AID Agricultural Feeder Roads Program, a Community Action Program involving 40 local communities in labor intensive maintenance work on local roads with less than 50 vehicles per day traffic will be implemented.

Program funds will construct and equip administrative and garage facilities in Port-au-Prince; construct and equip one new major District and eight new Sub-district facilities throughout the country; provide road maintenance equipment and spare parts to the maintenance brigades in the four districts and eight sub-districts; finance 30 work years of technical assistance and the training program. Costs for the Community Action Program will be shared by AID and the GOH. GOH contribution will fund operating costs of SEPRRN and the Community Action Program over the project's four year period.

B. Composition of Consulting Team

It is anticipated that the consulting team will be broken into two groups. (1) advisors, (2) operational specialists.

## 1) The advisory group will include:

	<u>Work Months</u>
(a) Supervisory Highway Maint. Eng.	48
(b) Highway Engineer	48
(c) Systems Advisor	24
(d) Controller/financial advisor	18
(e) Training advisor	36
(f) Road Maintenance Engineer	24
(g) Road Maintenance Engineer	24
(h) Equipment Specialist	24
(i) Short term specialists	<u>24</u>
Sub-Total	270 months

## 2) The operational specialists group will include:

(a) Garage Manager	24
(b) Chief Mechanic	24
(c) Inventory Manager	24
(d) Accountant	<u>12</u>
Sub-Total	84 months

TOTAL 354 Work Months

C. Duties of Team Members1. Long Term Advisors

- a. The Supervisory Highway Maintenance Engineer will be the team leader and advisor to the SEPRRN Administrative Council and Director General in the overall management, coordination and implementation of the Phase II program. He will also assist SEPRRN in the planning of future programs.
- b. The Highway Engineer will be the Deputy Team Leader and provide advisory services to the Technical Section. He will also supervise and assist Road Maintenance Engineers and District Engineers in the preparation of work programs and budgets and will coordinate the facility construction program.

- c. The Systems Advisor will assist the SEPRRN in designing and implementing the maintenance management system.
  - d. The Controller/Financial Advisor will work closely with the systems advisor to assist SEPRRN in design and installation of appropriate program budgeting, financial and internal audit controls.
  - e. The Training Advisor will assist the Technical Section in establishing a training program and coordinate the activities of the operational specialists.
  - f & g. The Road Maintenance Engineers will assist SEPRRN District and Subdistrict Engineers and Maintenance Supervisors to prepare work plans and budgets, establish equipment maintenance procedures, monitor the activities of district and subdistrict shops and the operations of the various types of road maintenance brigades.
  - h. The Equipment Specialist will assist SEPRRN Technical and Administrative Sections in setting up programs for operation and maintenance of the equipment and in developing program equipment and spare parts requirements and specifications, and in procurement of the items.
2. Operational Specialists
- a. The Garage Manager will assist in the directing and supervising and coordinating all activities of the SEPRRN garage and perform coordination with the technical advisors and SEPRRN headquarters Staff. He will train a SEPRRN counterpart to take over the job at the end of a 2 year period.
  - b. The Chief Mechanic will assist in establishing and supervising repair and maintenance programs for the SEPRRN equipment fleet and assure that qualified garage personnel are performing in accordance with the program and good practices. He will determine and initiate requests for purchase of spare parts, tools and supplies required by the repair program. He will train a SEPRRN counterpart to take over his job at the end of a 2 year period.

- c. The Inventory Manager will assist in directing and supervising the parts department of the Central and District shops, establishing and maintaining inventory levels and internal controls. He will prepare requests for procurement of parts and operating supplies and assume security of material. He will train a SEPRRN counterpart to take over the job at the end of a 2 year period.
- d. The Accountant will set up and maintain a cost accounting and control system for the garage. He will train the SEPRRN chief accountant to take over the job at the end of a 12 month period.

D. Implementation of the Program

1. Organization

The technical assistance team assigned to the project will be selected and organized so that the individual capabilities and expertise of the team members are utilized in the most effective manner to implement the requirements of the project. The work effort will be coordinated taking into account the interdependencies between work elements and the need for mutual support in all phases of the project. All members of the team will provide training to local personnel in the form of instruction, formal and informal, and by example, through efficient accomplishment of the necessary tasks.

2. Project tasks

Implementation of the program will be accomplished by means of a series of specific tasks as follows:

- a. Assistance will be provided to SEPRRN Management in planning and implementing the development of the SEPRRN organization, and assure the timely implementation of all elements of this program.
- b. Assistance to be provided in the Planning and Design of the construction program will include prequalification and selection of local consultants, development of design standards and requirements, specifications, estimating and on-ground technical implementation procedures.

- c. Assistance in Procurement of equipment and spare parts will include the development of lists of items required by the program, determination of priorities, preparation of contract bidding documents and technical specifications, estimates and schedules.
- d. Assistance in Contract Management in relation to the facilities construction and equipment procurement programs will be provided to SEPRRN, including the development of adequate bidding procedures, contractors prequalification, selection, contract award and contract implementation.
- e. Assistance in the implementation of the Community Action Program will include a comparison of different mixes of labor-equipment construction techniques and costs and an analysis of the effects on socio-cultural aspects of introducing labor intensive projects in local villages and communities.
- f. Assistance in Cost Analysis and Budgeting will include the development of cost analysis procedures and guidelines for the control of costs so that budgeting procedures are kept responsive to actual requirements. Help will also be given in developing an internal audit capability within SEPRRN.
- g. Assistance in Accounting will be provided to assure that fiscal management and cost accounting procedures for road maintenance activities, construction of facilities, equipment procurement and replacement, and the various elements of the organization are developed and maintained.
- h. Assistance will be provided in developing and implementing a Management Information System to monitor and control all aspects of the organizations operations including equipment operating and repair costs, spare parts inventories, construction management, equipment procurement and general costs.
- i. Assistance will be given to the SEPRRN Technical Section and District Engineers in the development of annual work programs and budgets, scheduling of the various brigades and implementation of recommended construction management procedures.

- j. Assistance will be provided in setting up procedures at the Central Garage and shop facility to assure maximum effectiveness and control of equipment maintenance and repair operations.
- k. Assistance will be provided in revising and updating the SEPRRN 5 year operating plan and budget to reflect changes since the original program was prepared.
- l. Assistance will be provided in developing on the job training for equipment mechanics and operators, work order clerks, supply, warehouse and other garage administrative personnel.
- m. The consulting Team will present a detailed work program and schedule by the end of the fourth month after mobilization. With the work program will be submitted the Consultants recommendations as to the numbers and types of counterpart personnel that should be assigned to carry out the program and to receive training.
- n. All tasks will be carried out with a dual purpose, one to implement the required tasks in a timely manner and within budgeted costs, and two to maximize the training of local personnel.

3. Training Program

Assistance will be provided in developing and implementing a comprehensive training program for all SEPRRN personnel, present and new. Some of the features of this program are:

a. In Country

The in-country Training Program will upgrade skills and train some 500 present and new SEPRRN employees: Training will be provided for:

- (1) Maintenance and Shop Equipment Operators
- (2) Mechanics
- (3) Highway Maintenance Personnel
- (4) Parts and Supply Staff

- (5) Accounting Staff
- (6) Top and Mid-Level Management
- (7) Trainers for the Community Action Program

b. Off Shore

Off-shore the Training Plan will include programs for an additional 40 SEPRRN specialists such as:

- (1) Welders
- (2) Diagnostic Mechanics
- (3) Preventive Maintenance Instructors
- (4) Short-Term Programs for Management of Maintenance Systems.
- (5) Correspondence Courses

The consultant will have the responsibility for recruiting qualified Haitian instructors for the in-country courses and for recruiting other instructors as needed for this Training Program. All arrangements for off-shore training will be made by the Consultant.

c. Training Manuals

Training manuals in French will be developed. Selected personnel will be trained in the central facilities to instruct other field personnel and therefore instructors will be selected who have experience as teachers. There is a need to train hundreds of field workers so the training manuals will be adaptable for use in Creole in field training.

- d. The Training Advisor as counterpart to the SEPRRN Training Director will assist as the coordinator for all training activities in SEPRRN. He should be carefully selected and should preferably have overseas experience as an instructor.