

**CAPITAL ASSISTANCE PAPER**

**Proposal and Recommendations  
For the Review of the  
Development Loan Committee**

**HAITI - HIGHWAY MAINTENANCE**

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A.I.D.  
Reference Center  
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AID-DC/P-1077

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

UNCLASSIFIED

AID-DLC/P-1077

February 16, 1973

MEMORANDUM FOR THE DEVELOPMENT LOAN COMMITTEE

SUBJECT: Haiti - Highway Maintenance

Attached for your review are the recommendations for authorization of a loan in an amount not to exceed \$3,700,000 to the Government of Haiti to assist in financing the United States dollar and local costs of purchasing highway maintenance equipment and shop equipment and facilities necessary for an adequate highway maintenance program, and of related technical assistance.

Please advise us as early as possible but in no event later than close of business on Friday, February 23, 1973, if you have a basic policy issue arising out of this proposal.

Rachel R. Agee  
Secretary  
Development Loan Committee

Attachments:

Summary and Recommendations  
Project Analysis  
ANNEXES I-VIII

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February 16, 1973

HAITI HIGHWAY MAINTENANCE

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February 16, 1973

SECTION I - SUMMARY AND RECOMMENDATIONS

A. BORROWER

The Borrower will be the Republic of Haiti (GOH), acting through the Ministry of Finance (FinMin), National Bank of the Republic of Haiti (BNRH), and Ministry of Public Works (MPW). Responsibility for project execution will be assigned to a quasi-autonomous agency of the MPW, The Permanent Maintenance Service for the National Highway Network (SEPRRN).

B. AMOUNT OF THE LOAN

The loan is not to exceed \$3,700,000 of which \$500,000 may be spent for approved local currency costs\*. The loan will be disbursed in two phases, the first tranche of \$3,050,000 available for technical assistance, training equipment, workshop construction, hand and machine tools, spare parts and some heavy maintenance equipment. The second tranche of \$650,000 will be available for procurement of maintenance equipment and spare parts.

C. PURPOSE OF LOAN

The proposed loan is intended to assist in the establishment of an effective highway maintenance service. Haiti's road network has deteriorated to the point that it has become a formidable obstacle to development. The movement of people and goods has been severely restricted, resulting in a fractionalized society and a stagnant economy. By supporting a national road maintenance program which focuses primarily on the national highways, an important step is taken to resolve a major infrastructure problem. GOH commitment of resources for road maintenance will allow significant expansion of the GOH's road rehabilitation program by encouraging the confidence of other international lending agencies. The IDB and IBRD have indicated their intention to consider major reconstruction loans for national Routes 100 and 200 if a maintenance capability is developed.

D. FINANCIAL PLAN

Consolidated Financial Plan Summary  
(U.S.\$000)

	1973	1974	1975	1976	TOTAL
GOH					
LC	640	320	320	320	1,600
FX	--	--	--	--	--
AID					
LC	270	195	25	10	500
FX	530	1,595	945	130	3,200
TOTAL	1,440	2,110	1,290	460	5,300

\* 1 Gourde = \$0.20 U.S.

This loan fits squarely within AID Haiti program goals in that one result of an efficiently maintained national highway system should be considerable improvement in agricultural marketing, facilitating rural production in reaching urban areas. It may also be anticipated that the increased commerce and communication will improve the rural standard of living.

#### E. BACKGROUND

The present road system essentially consists of the two main trunk roads which connect the northern and southern peninsulas with the capital Port-au-Prince (Routes 100 and 200), other national roads which connect less developed interior areas with these truck routes, and a number of departmental roads, the entire network amounting to some 1,800 kilometers of which an estimated 186 kilometers are paved. (For purposes of this loan paper and the definition of the road network to be maintained by SEPRRN, some 1,500 kilometers of secondary rural roads have not been included.)

Most existing roads were built during the occupation of Haiti by U.S. Marines (1915-1934) and have not had much continuous maintenance since that time. In 1956 the World Bank financed a highway maintenance service loan but did not follow up with an anticipated second loan in the early 1960's when it became apparent that the government was not serious about operating an efficient service. Equipment was diverted to other uses throughout the country, and once broken down, was not repaired.

In 1968 an OAS road maintenance expert began analyzing road conditions and maintenance problems in Haiti and based on his recommendations the GOH passed a Decree in March 1972 establishing a quasi-independent maintenance authority (SEPRRN), attached to the MPW. In December 1972, the first draft of a UNDP grant financed study of a "Permanent Maintenance Service for the National Highway Network" by a French consulting firm, Ingeroute, was released and this firm's general approach was accepted by the Haitian Government in January 1973. These two reports, the OAS and Ingeroute studies, constitute the basis for the maintenance project presented in this paper.

#### F. INTERESTS OF OTHER FINANCIAL AGENCIES

The ExIm Bank, IDB, and IBRD have indicated no interest in financing this project. Other free world financing is not available on reasonable terms.

G. STATUTORY CRITERIA

All Statutory Criteria of the U.S. Foreign Assistance Act of 1961, as amended, have been met. (See Annex II.)

H. COUNTRY CLEARANCES

The Country Team has concluded that this proposed loan is an integral part of the Team's top priority in the Rural Development sector with its ultimate focus on bettering the condition of the rural poor, and directly contributes to the realization of basic development objectives in Haiti.

I. ISSUES

1. Past Misuse of Maintenance Equipment and Funds

The inadequate maintenance of national departmental roads is to a considerable extent the result of an inadequate level of appropriated funds, insufficient maintenance of machinery, and diversion of funds, personnel and equipment to new road construction and other public works projects. The GOH has indicated its intention of adequately budgeting funds for maintenance. The condition precedent which addresses the question of counterpart funds should be considered as reflecting sufficient GOH concern and interest, particularly in the context of GOH budgetary constraints. To ask for more funds would press the Haitians beyond their fiscal capacity to handle companion road projects planned by the IDB and the IBRD. Further, given the three year framework of this loan proposal, the amount requested from the GOH for annual operating costs should represent the maximum absorptive level of a steadily growing maintenance organization. The assurance spelled out in the condition precedent should safeguard the actual availability of the necessary funds. The Haitian Government is fully aware that support for, and successful development of, a maintenance capability is a pre-condition to the road reconstruction loans being considered by IDB and IBRD.

As to insufficient maintenance of machinery we have attempted to provide ample technical assistance in the form of equipment maintenance supervisors who will first instruct the mechanics of SEPRRN in the fundamentals of equipment care and then oversee the application of these methods in an on-the-job training program.

The matter of diverting existing funds, personnel and equipment to new road construction and public works projects, is a problem dealt with in the conditions precedent and covenants. One covenant states that AID-financed equipment shall not be used for purposes other than routine maintenance and road betterment. Furthermore, GOH counterpart funds for annual operating costs are to be deposited in a separate account, distinct from any subaccounts of the MPW. As for personnel, to the degree feasible, field employees will be transferred completely to SEPRRN as the needs of the program develop. Realistically this duality of function will be difficult to change in the near term because of traditional employment practices and the feeling that there is not enough work for one full time man strictly in maintenance, nor is there budgetary resources to support two. The effect of the technical advisors in creating an increased awareness of the complexities of maintenance problems strengthened by their right to recommend the timing of the procurement of AID-financed equipment should influence the GOH to change its policy.

Finally, the tranche approach to the loan - dividing the equipment procurement in two stages - with much of the equipment in the last tranche should give AID substantial leverage in obtaining any GOH performance modifications felt necessary.

## 2. Funding Local Currency Costs

Treated elsewhere in this paper is a detailed discussion of the Haitian economy and public sector spending and resources. However described, Haiti has clearly one of the poorest economies in the hemisphere and one of the lowest public revenue bases. While the economy is expected to improve accompanied by commensurate increases in public revenue, it will in no way match the anticipated increased local currency needs of essential infrastructure projects now being planned. The immediate need for a sizeable amount of local currency for construction of the major central shop facility argues forcefully for approval of this request. The central workshop in Port-au-Prince, some construction in the districts for workshop areas, and the local currency component of technical assistance costs, constitute the full extent of local cost financing required. The annual burden of operating costs, i.e., salaries, fuel, administrative expenses and the like will be carried entirely by the GOH.

### 3. Selection of the Technical Advisors

Three alternatives can be considered in providing the technical assistance component of the loan: The BPR, a private consultant, or AID direct hire employees. These possibilities must be viewed in light of the special nature of the Haitian situation. First, the Decree establishing the Maintenance Authority reserves a place on the Administrative Council for a technical advisor representing the lenders. Second, this project represents the initial AID loan activity in Haiti for over a decade, and unforeseen problems are likely to be encountered similar to those faced in the 1960s with the inception of programs in other Latin countries. Third, the tasks assigned to the technical advisors will require skills of instructor and shirt-sleeve worker, procurement specialist, linguist, and diplomat. Fourth, the AID Mission in Haiti is very small and housing and other backstopping services are very difficult to furnish. Within this framework a private consultant would seem best suited for this task so long as one with the necessary qualifications can be found. While they offer less flexibility and USG expertise, they can take care of their own administrative requirements, maintain independence of action, and allow AID to carry out its monitoring function without becoming embroiled in daily operational matters.

#### J. LOAN ADMINISTRATION

The GOH has had limited overseas contracting experience, therefore, notwithstanding the outcome of the issue regarding technical assistance, technical assistance contracts will be negotiated by AID and executed by AID, the GOH and the consultants selected. Other than the aforesaid, this loan will require no unusual disbursement or procurement procedures, and standard AID regulations will be followed. With the exception of the indicated local currency costs, all procurement, technical assistance and training will be procured from countries included in AID Geographic Code 941.

#### K. RECOMMENDATIONS

It is recommended that a U.S. \$3.7 million loan to the GOH be authorized, subject to the following terms and conditions:

1. Repayment of the loan by the GOH within forty (40) years of the date of disbursement, including a ten (10) year grace period. Interest rate of two percent (2%) will be charged during the grace period, and three per cent (3%) thereafter. Interest and principal will be repaid in U.S. dollars in semi-annual installments.

2. Other Terms and Conditions

a. The loan will be disbursed to the borrower both in U.S. dollars and Haitian Gourdes, which are freely convertible with dollars and have a value of 1 Gourde = \$0.20. Up to the equivalent of \$500,000 will be made available to the borrower by AID in Gourdes.

b. Procurement of equipment, training and technical assistance under the loan will have source and origin in countries included in AID Geographic Code 941.

An outline of the remaining conditions precedent and covenants of the loan agreement follows. This outline has been signed by the Minister of Finance.

I. CONDITIONS PRECEDENT TO DISBURSEMENT FOR PHASE I

A. Condition Precedent to Disbursement for Technical Assistance, Training Aids, Temporary Training Area, and Spare Parts for Existing Equipment.

1. Standard conditions precedent following signing of the Loan Agreement.

2. AID will be provided with a copy of the executed contract between the GOH and the technical advisor, both previously approved by AID.

B. Conditions Precedent to Disbursement for Construction, Maintenance Equipment or Other Remaining Goods and Services Described in Phase I of the Project. The GOH Shall Provide Satisfactory Evidence of:

1. Provisions for the \$780,000 estimated annual operating budget of SEPRRN and evidence of operating funds not less than ten per cent (10%) of said amount deposited in the SEPRRN account in the National Bank of Haiti available for such purpose. The GOH shall assure the continued allocation of such funds and maintenance of the minimum balance throughout the project period.

2. As to SEPRRN, removal of all liabilities incurred prior to March 31, 1972, by previous maintenance entities.

3. Availability of suitable land for construction of the new central workshop, and Les Cayes auxiliary workshop.

II. CONDITIONS PRECEDENT TO DISBURSEMENT FOR PHASE II PRECEDENT TO DISBURSEMENT FOR ANY EQUIPMENT, OTHER GOODS AND SERVICES DESCRIBED IN PHASE II OF THE PROJECT:

A. The GOH, AID and technical advisors will meet and review project performance after the first fifteen months of project execution to determine if progress has been satisfactory.

B. SEPRRN will have developed a maintenance plan which establishes an order of road priorities and maintenance execution.

C. The budgetary allocation specified for maintenance of roads under the AID project has been made available as needed, has been used for the intended purpose, and that neither the funds nor the equipment have been diverted to other operations, unless otherwise agreed. This evidence will be supported by audit carried out by an independent certified public accountant approved by AID.

D. SEPRRN agrees to take the necessary steps to implement the recommendations resulting from the post-fifteen month review.

III. COVENANTS

A. The GOH covenants to permanently assign qualified managers, technicians, operators and mechanics to SEPRRN, and to take such reorganization steps or make reductions in personnel as recommended by the UNDP/IDR study, and approved by the AID technical advisors and GOH.

B. The GOH covenants that Project equipment shall not be used for other than maintenance of roads, which excludes road construction, except in emergency cases where prior AID approval is obtained in writing.

C. The GOH intends to give its full support to the maintenance program, and will give priority to the maintenance of the National Routes 100 and 200.

D. The GOH covenants that labor intensive maintenance techniques will be emphasized in the development of the maintenance authority, to the degree feasible and consistent with national road requirements.

E. The GOH covenants that it shall jointly hold a formal review and evaluation of the project with AID one year after the first review described in the Conditions Precedent to Disbursement for Phase II, and annually thereafter until the Loan is fully disbursed.

K. PROJECT COMMITTEE:

Loan Officer

R. Seifman, LA/DR, AID/W

Engineer

Gardner, ENGR/OPNS, AID/W

Siglin, ENGR/OPNS, AID/W

Economist

LA/DR, AID/W

Program Officers

AID/Maiti

AID/W

## SECTION II - DETAILED DESCRIPTION OF THE PROJECT

### A. Background

The Republic of Haiti occupies the western part of the Island of Hispaniola, with the eastern part of the island occupied by the Dominican Republic. Haiti is surrounded on three sides by water: the Atlantic Ocean to the North, the Caribbean Sea to the South and the Gonaives Gulf to the West. It resembles the shape of pliers with two jaws pointing toward the West, enclosing the Island of Gonaives, and is generally very mountainous. Because of the topography, roads have been historically the principal means of transportation. In colonial times they were the primary means of transport because the broken Haitian coastline required ships to travel excessive distances to serve port towns, and railway construction was too expensive given the level of inter-regional domestic commerce. 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 energy in improving road conditions or building new ones. The present road system is the result of road construction during that period and a much smaller amount of construction since. Frequent hurricanes and difficult hydraulic conditions contributed to rising maintenance costs so that very little regular maintenance occurred in the post-Occupation period until the World Bank provided assistance in 1956.

Present day road infrastructure improvement efforts began with the World Bank Highway Maintenance and Rehabilitation Loan of \$2.6 million in May 1956. (World Bank Loan 141-HA.) The loan was intended to provide a three year program to organize, equip and train an organization to rehabilitate and maintain the national highway system. Shortly after the loan was signed and a consulting firm engaged by the GOH, the Magloire Administration collapsed and was followed by nearly a year of short-lived provisional governments. Elections were finally held in October 1957 and a new government took office the following month. Following the appointment of a new Minister of Public Works it was hoped that the project would have new impetus in meeting its stated objectives. However, the execution of the project continued to lag and after over two years of operation, the only alternative to cancellation of the loan was approval of a proposal that some autonomy be given the maintenance organization within the Ministry of Public Works. In January 1959, a Decree was issued setting up a semi-autonomous agency, the "Service Special d'Entretien et d'Amelioration des Routes" (SEAR) to

maintain and improve the highway system. This step which was recommended by the World Bank's consultant (TECHINT), as a means of insulating the highway organization from interference with its personnel, funds and equipment, had hitherto been strongly resisted by the GOH.

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 rather than attempt to start operations all over the country at the same time. It was agreed that in the first phase, work should be concentrated in the North. In accordance with this plan the central shop at Port-au-Prince and three district shops at St. Marc, Gonaives and Cap Haitien were built and equipped, and maintenance forces trained. In 1962 after near full disbursement of the World Bank loan, a second loan proposal of U.S. \$9.0 million was presented to the Bank for continuation of the project for an additional three years and expansion of the program into the Southern Peninsula, but this proposal was not approved.

The maintenance and repair of highways in the South was not initially included in the World Bank project in part due to insufficient resources, but also because 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, the organization created for the World Bank project, 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 called "Le Fonds Permanent pour la Construction des Routes Nationales du Nord au Sud." (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.

In 1968 UNDP/FAO took over the responsibilities of the Ministry of Public Works for maintenance and rehabilitation in the Les Cayes area, viewing this activity as an integral part of their agricultural demonstration project in the Southern Region, begun in August 1967 (SF/HA-13). All road construction or maintenance equipment previously used by the Ministry of Public Works for the Les Cayes region was given to FAO at the inception of the program and in addition, FAO grant-funded additional equipment. (Since the program's inception, 30% of FAO's credits have been used for major road repair and 10% for improvement of service roads.) Considerable improvement of the overall road system was achieved, and despite heavy rains and floods the road between Les Cayes - Port-au-Prince was kept open most of the time.

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. In March 1972, based on the report of the OAS expert, the GOH created a new institution for road maintenance separate from road construction, and divided the fuel tax revenues of the abolished Road Fund equally between the two purposes. SEPRRN is that maintenance authority established by the Decree, and the institution which will receive our development assistance.

#### B. Borrower, Executing Ministry and Principal Entities

1. Ministry of Finance (Borrower) - The Ministry of Finance is the appropriate authority in the Haitian Government for incurring obligations on behalf of the GOH. The Finance Ministry's role with regard to this loan will be primarily to assure the necessary counterpart contributions and repayment of principal and interest. As presently conceived, it will leave the primary responsibility for implementation of the loan to the Minister of Public Works and the National Bank of Haiti (BNRH).

2. Ministry of Public Works (Executing Ministry) - The organization of services concerned with construction and maintenance of the road network has been subject to several

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\* "Let's Work Together" in Creole. This was a regional development project created in 1956 for the utilization of U.S. Point IV credits, and which included maintenance and betterment of the northern roads.

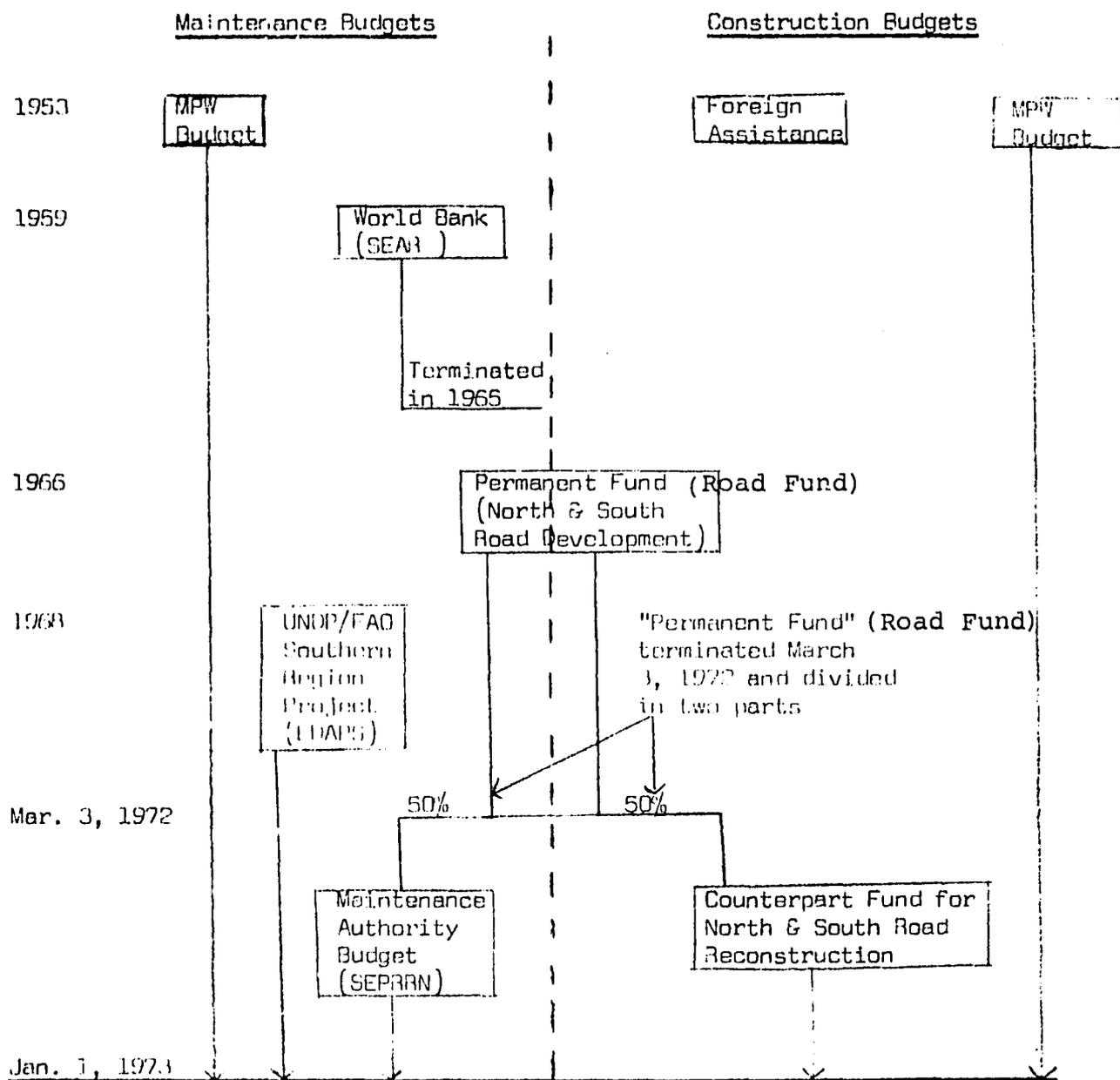
reforms during the past decade. Much of the time, responsibility for execution of the work, as distinguished from financing, lay with two divisions of the Department of Public Works, Transportation and Communications (MPW):

- a. The Roads and Communications Division, one of whose functions was the construction or rebuilding of the main axes of the road network.
- b. The Road Maintenance and Improvement Division, particularly concerned with general maintenance of the highway network, including departmental roads, as well as secondary roads where possible.

Within the MPW these two road services were last joined into a single Division of Roads and Bridges in June 1971; then the maintenance was formally separated from construction in March 1972, in accordance with the recommendations of the OAS expert. The table below indicates the separation and consolidation of maintenance and construction budgets and organizations since 1953.

ROAD MAINTENANCE AND CONSTRUCTION BUDGETARY SOURCES

1953 - 1972



The establishment of this separate entity does not result in a complete detachment of the two functions. First, the Minister of Public Works is the primary GOH official responsible for the operation of SEPRRN and will naturally serve as the common point of contact in coordinating overall road activities. The Decree specifically mentions that the Director of SEPRRN is to work in collaboration with the technical services of the MPW, and to provide the Minister of Public Works with monthly reports on work progress (see Annex III-2). Secondly, the new maintenance authority is directly linked with the MPW through joint useage of auxiliary workshops, and utilization of the same field engineers to perform both maintenance and MPW functions. (It is argued that with limited resources there is neither funds to pay for two field engineers in any one district, nor sufficient work to keep two men occupied.) Thus, in substance, though not in form, SEPRRN will function as a separate Division of the Ministry. There is a significant difference, however, from the line divisions of the Ministry: The Minister of Public Works serves only as chairman of a governing body composed of representatives of other Ministries and organizations, and thus SEPRRN's performance will be reviewed and its operational plan approved by an independent body beyond the control of the Minister of Public Works.

3. SEPRRN (Executing Agency) - Through the set of Decrees promulgated on March 3, 1972, "The Fund for Construction of the North and South National Roads" (Road Fund) was abolished and replaced by two new bodies, one for road construction financing and one for road maintenance. "The National Counterpart Fund of Haiti for the Construction of Roads" is managed by the "Banque Nationale de la Republique d'Haiti" (BNRH) and is meant to enable the government to supply counterpart whenever foreign financial or technical aid may be obtained for road construction. The "Permanent Maintenance Service for the National Highway Network" (SEPRRN), is authorized to maintain the road system of Haiti. It is a semi-autonomous body under control of the Minister of Public Works who acts as chairman of the managing body, the Administrative Council. Its resources are also managed by the BNRH.

At the present time the primary activities of SEPRRN are liquidating the liabilities of the previous maintenance service, the Road Fund, at a rate of about \$20,000 a month (about \$270,000 remains to be paid), paying salaries, and purchasing spare parts, fuel and other necessary materials to meet current emergencies. Salary payments are divided into two categories: the central office staff, composed

mostly of people transferred from the prior Road Fund to SEPRRN and part payment of MPW engineer and technician salaries in those districts where road maintenance occurs. SEPRRN does not appear as a line item in the Ministry of Public Works budget, though SEPRRN could be said to benefit indirectly from the MPW budget through sharing of MPW personnel.

In the 1972/73 National Development Budget there is a separate entry of 2,300,000 gourdes (\$460,000) for "Restoration of Certain National Roads" which represents SEPRRN's estimated fuel revenues after deductions for prior debts. While the Decree establishing SEPRRN speaks of maintaining the national road network, the budget mentions only restoration of certain national roads. Given the availability of funds and GOH anticipated resources, it is obvious that only roads of the highest priority can be within the scope of SEPRRN's authority at the present time. This would include the national highways and most departmental highways, with top preference given to the major trunk routes National Roads 100 and 200, which link the nation, North and South. At some future date when SEPRRN has the experience and capability it could include under its management jurisdiction the tertiary network road system. It is worthwhile to note that community self-help programs presently play an important role in maintaining this tertiary network, and their reliance on unskilled labor to care for specific road sections has been incorporated in this project. Crews of laborers will be responsible for normal maintenance of five kilometer sections and will be expected to dig ditches and clean drainage structures, remove vegetation and small landslides, repair potholes and the like. (A more detailed description can be found in Section V.)

The management function of SEPRRN revolves around effective integration of three interconnected activities: programming, budgeting, and execution of the work. Under present legislation, whether in the SEPRRN Decree or other laws such as the national budgeting process, there exists the machinery necessary to carry out these functions, but they have not yet been implemented. In the existing organizational structure of SEPRRN there is a programming office (see Annex V-4), and in the MPW there is a technical coordinating council coordinating activities with the national planning body, CONADEP (National Council for Development and Planning). A technical programming staff in SEPRRN should be created for developing an annual maintenance program, using inputs from the district engineers as the primary data source. Each district engineer would draw up estimates of the manpower and

equipment mix needed to fulfill annual road maintenance objectives, ex. 50 kilometers of reprofiling, 100 kilometers of compacting and so forth.\* The draft program would be coordinated with CONADEP through the MPW office of technical coordination. CONADEP has created in each Ministry an office of technical coordination, and SEPRRN would naturally rely on MPW to carry out this role.

The amount of road work required in each district would then be translated from an equipment and manpower time estimate to a cost figure, with a line item for the different categories of work. All costs, whether they be the computed cost of machine rental (includes operator costs, fuels, lubricants, maintenance and spare parts), labor costs or administrative overhead, will be determined by an analytical accounting unit in the central office. This unit will be the disbursement center and serve as a barometer of actual costs for work performed. (See Annex IV-2 for Formulation of District Costs.) The next phase of the budgetary process will be a recapitulation of the budget with each of the districts and divisions to resolve any outstanding difficulties, and final approval of the proposal by the Administrative Council, MPW and CONADEP, followed by inclusion in the National Development Budget.

This procedure may be modified by the technical advisors, but for the present, it serves as the outline of the proposed budgetary and programming process. In any case, the development of a detailed annual programming and budgeting system and the establishment of a control and reporting system will be among the priority targets of the technical assistance team. With the guarantee of the Ministry of Finance of a minimum funding level; the support of the BNRH in assuring liquidity of the account and its cooperation in providing efficient banking services; and intelligent execution of existing reporting and other control requirements, the framework exists for creating an effective maintenance service. Under the guidance of experienced technical advisors recommending practical modifications of the organization and operation of SEPRRN, the project purpose of developing the basic structure of a maintenance authority capable of becoming a full national maintenance authority, should be possible.

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\* A succinct road file would be kept recording previous maintenance activities for each road section, noting any abnormal wear and tear, listing the amount of reprofiling, compacting, terracing, and clearance.

4. National Bank of the Republic of Haiti (BNRH) - The BNRH as the state banking institution is charged with the financial management of SEPRRN. Article 13 of the Decree of March 3, 1972, states "The financial resources of (SEPRRN) 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 after justifying documents approved by the Director of (SEPRRN)." As is now the practice, the BNRH collects the revenue from the fuel taxes, approves and makes payment on all vouchers and pay-rolls, maintains the financial records, and audits SEPRRN activities. One result of the technical assistance input in finance and accounting will be to define the functional role of the Bank. The Bank's emphasis should probably be more toward financial management advice and direction and less involvement in the day-to-day decision-making process of SEPRRN.

In addition to providing banking services, the BNRH has a representative designated on the Administrative Council to review the activities of SEPRRN. SEPRRN is required to make trimester reports to the Administrative Council including a section summarizing financial activities.

#### C. The Project

The project is designed to provide significant training and infrastructure development for SEPRRN in its first phases, followed by equipment inputs as the capability of SEPRRN and skills of operators and mechanics warrant. The emphasis has been on limiting the amount of equipment used and increasing maintenance performed by manual labor, to the degree feasible.

The first activities will involve initial steps toward construction of a Central Workshop which will serve as the prime training facility, construction of an auxiliary workshop at Les Cayes, renovation of the Pote Cole shop building at Cap Haitien, and the arrival of instructor-advisors, both for management-administration as well as in technical specialties. During this time the GOH will prepare a work area in the present SEPRRN Port-au-Prince workshop for project training activities. The improved site will later be used by the GOH for minor repairs after completion of the new Central Workshop. This site is too small for expansion to a major overhaul facility. Up to \$50,000 of loan funds will be made available for improvement of this site and the renovation of the Pote Cole shop building. The latter will consist

mostly of replacement of damaged parts and painting. Up to \$100,000 will be used to procure spare parts for repair of existing equipment.

Advisors will begin work with their divisional counterparts in selected areas for intensive training, while in the case of the administration and accounting specialists, they will initially be involved in developing operating procedures. As spare parts for repair of the existing equipment arrive, mechanic trainees will be chosen to work on the equipment. As the equipment is put on the ready line, the operator trainees will start their on-the-job training.

Since the proposed plan of operation is to have equipment centralized in Port-au-Prince, both instruction of trainees and supervision of equipment should be a manageable task for a relatively small number of technical advisors. As now planned, District Chiefs will permanently control only minimal equipment, such as pickup trucks, but will have an expense authorization against which they may rent equipment from the central Division of Equipment, pay for labor costs, supplies and other miscellaneous costs (see Annex IV-2). Each piece of equipment will have a time-based rental rate which will include costs of fuel and lubricants, and operator costs. While formulas have already been worked up by the UNDP/IDB consultant, Ingeroute, the technical advisors financed under the loan will be expected to review them and make any required changes. (It is worthwhile to note that this centralized maintenance approach is commonly used in former French colonies in Africa such as the Ivory Coast, Madagascar, Togo.) The technical advisors will also finalize a list of specifications for the new training-related equipment to be procured. This equipment, some portions of which will require long lead times between order and delivery, will provide the core of the training program and of the new maintenance authority capability. Utilization of the new equipment will be primarily for districts responsible for sections of the national Routes 100 and 200. It will be the responsibility of the Director of SEPRRN and the Chief of the technical assistance team to insure that such is the case. Districts considered as falling within the highest priority of the program are Cap Haitien, Gonaives, Port-au-Prince, and Les Cayes. Further, the new equipment will be used in the context of a maintenance plan within the above limitations which will have been approved by the Administrative Council of SEPRRN. Included in this equipment package will be the equipping of one heavily mechanized team, one special operations team, and one district team.

Thus, the first tranche of the loan will cover: (a) technical assistance and training costs; (b) Central Shop and Les Cayes auxiliary workshop construction; (c) hand and machine tools for the Central Shop and auxiliary workshop; (d) preparation of the temporary training area and renovation of Pote Coleg shop; (e) spare parts for existing equipment; and (f) maintenance equipment--all amounting to approximately U.S.\$3,050,000 (see p. 33 for Cost Breakdown),

The second tranche will be available after a full review of the progress of the project has been completed. With A.I.D. concurrence that performance has been satisfactory, and agreement between A.I.D. and the GOH as to the remedying of any deficiency, the final tranche will then be released. Procurement here will focus on providing district equipment for the priority areas along the national trunk routes or as modified during the progress review and approved by A.I.D. The pilot districts selected will be staffed with qualified personnel from the training program. By the time the equipment from the second tranche arrives the Central Workshop construction should be finished and machine tools installed, providing adequate facilities for storage, repair and maintenance for the full complement of project equipment. This final tranche will amount to about U.S.\$650,000.

The project is intended to furnish the core of a nationwide maintenance authority expanded later either by GOH or foreign assistance financing. It is not designed to provide adequate maintenance throughout the national road network. At the completion of the three-year project period, SEPRRN should be able to effectively maintain highways reconstructed by IDB and IBRD financing, have sufficient trained staff to efficiently organize and operate continuously most maintenance activities in four districts and the central headquarters, and have developed a planning and programming mechanism capable of expanding operations to maintain a National Road Network of 1,790 kilometers. The project differs significantly from previous efforts to assist road maintenance in Haiti in that major road rehabilitation and reconstruction are not SEPRRN's operational function. Equally important, the major reconstruction projects to be financed by the IDB and IBRD are to be preconditioned on GOH demonstration of a satisfactory maintenance capability. Further, the balance of technical assistance and equipment and the phased timing of these inputs should provide greater security for effective program implementation and improved supervision than heretofore. By establishing the equipment rental system with equipment controlled by the Central Workshop there is less likelihood that it will be

directed to other purposes. The fact that some work can be done cheaper by hand will encourage the District Engineers to use these labor intensive methods to a maximum, thus giving better usage of the equipment in areas of better performance. By having a guaranteed annual budget and a minimum working balance, SEPRRN should be able to plan its operations without budgetary constraints, and once approved, that plan should be carried out without interference.

D. Implementation Plan

Implementation Plan for Phase I  
(First Tranche)

<u>Step</u>	<u>Action</u>	<u>GOH or AID Cost</u>	<u>Approximate Date</u>
1	Loan Authorization		Starting Date (S D)
2	Loan Agreement Execution		SD + one month
3	Commerce Business Daily Notification inviting technical proposals from consultants.		SD + 2 months
4	Satisfaction of all conditions precedent for consulting contract.		SD + 4 months
5	Issuance of Letter of Commitment for Consultant Contract (6 full time men first year; 6 full time men second year; 4 full time men third year; 1 man year for short term specialists)* 17 man years x \$60,000	\$1,020,000 (AID)	SD + 5 months
6	Chief of Consultant's Party (Advisor to Division of Works) arrives at post.		SD + 5½ months
7	Additional team members arrive:		SD + 6 months
	a) AGF short-term personnel for design of Central Shop and other facilities, as well as to finalize equipment specifications;		
	b) Mechanical Technician (Advisor to Chief of Department of Workshops) to initiate overhaul of existing equipment;		
	c) Mechanical Engineer (Advisor to Chief of Division of Equipment) to begin technical advice;		
	d) Mechanical Technician (Advisor to Chief of Department of Operations).		

\*See Breakdown of Technical Advisors

Step	Tasks	Est. of Cost	Approximate Date
8	GSA implements recommendations of the Board of Charge on matters (such as) equipment, selected site area for repair, training and site location, etc. of 1 unit.	\$ 75,000 (est.)	7 months
9	GSA transfers new electrical shop and has Government office to the building, etc.	\$ 50,000 (est.)	7 months
10	Transfer of technical assistance to: a) Administration and Personnel Division (Agency without of Division of Personnel) b) Research and Financial and Social Control Division (Agency of Division of Accounting)		7 1/2 months
11	GSA prepares full scale maintenance program and will identify first group of trainees for Central Office.		7 1/2 months
12	Transfer of letter of commitment for equipment of spare parts for maintenance equipment.	\$ 100,000 (est.)	7 3/4 months
13	Approval of agreement for transfer of relative equipment in accordance with Master Mechanics schedule of work plan.		8 months
14	Satisfaction of conditions necessary for exchange construction, training and spare parts and initial equipment procurement by (a) liquidation of old stock, and (b) 3% (est) working balance in SFPM account.	\$ 500,000 (est.)	8 1/2 months
15	Issuance of invitation for bids for plant transfer from (construction, tools, equipment, etc.).		8 3/4 months

<u>Step</u>	<u>Action</u>	<u>GOH or AID Cost</u>	<u>Approximate Date</u>
16	Selection of Tools and Maintenance Equipment Suppliers and award of Contracts.	\$1,320,000 (AID)	SD + 10 months
17	Construction Contract awarded for Central Shop and auxiliary workshop at Les Cayes.	\$ 480,000 (AID)	SD + 10½ months
18	Equipment begins to arrive as scheduled.		SD + 12 months
19	Contract with independent public accountant.	\$ 60,000 (AID)	SD + 12½ months
20	Review of Project Progress for Second Tranche approval		SD + 21 months

Implementation Plan for Phase II  
(Second Tranche)

1	Project Progress Review (15 months from commencement of project implementation).		SD + 21 months
2	Issuance of Invitations for Bid for second equipment procurement.		SD + 22 months
3	Selection of Equipment Suppliers and Contract Award.	\$ 650,000 (AID)	SD + 23 months
4	Equipment begin arriving.		SD + 25 months

Technical Assistance Component

First Operational Year

<u>Contract Personnel</u>	<u>Man Years</u>
Chief of Party (Div. of Works Advisor)	1
Architects and Engineers (Short-term)	1/2
Mechanical Engineer (Div. of Equipment Advisor)	1
Mechanical Technician (Dept. of Workshops Advisor)	1
Mechanical Technician (Dept. of Operations Advisor)	1
Administration-Personnel Expert (Div. of Personnel Advisor)	1
Financial-Record Keeping Expert (Div. of Accounting Advisor)	1
<u>Sub-Total</u>	<u>6 1/2</u>

Second Operational Year

Chief of Party (Div. of Works)	1
Mechanical Engineer (Div. of Equipment)	1
Mechanical Technician (Dept. of Workshops)	1
Mechanical Technician (Dept. of Operations)	1
Financial-Record Keeping (Div. of Accounting)	1
Administration-Personnel (Div. of Personnel)	1
Short-term Experts	1/2
<u>Sub-Total</u>	<u>6 1/2</u>

Third Operational Year

Chief of Party (Div. of Works)	1
Mechanical Technician (Dept. of Workshops)	1
Mechanical Technician (Dept. of Operations)	1
Financial-Record Keeping (Div. of Accounting)	1
<u>Sub-Total</u>	<u>4</u>
<u>TOTAL</u>	<u>17 man years</u>

### SECTION III - ENGINEERING ANALYSIS

#### A. Present Road System

The Haitian road network totals 3,300 kms. of which 1,019 kms. are designated as National Roads, 736 kms. as Departmental Roads and 1,545 kms, as Local Roads. The National Roads are those between the key cities and are listed in Annex V, Exhibit 1 (Annex V-1) Table No. 1. The Departmental Roads are the internal and border connecting roads and are listed in Annex V-1, Table No. 2. The local roads are roads and trails not usually used by automotive equipment. The system is shown on map in Annex V-1.

The two principal roads in the country are the Port-au-Prince to Les Cayes road of about 197 km, to the south and the Port-au-Prince to Cap Haitian road of about 243 km. to the north. Both roads had been improved at one time but the lack of maintenance now requires they be rebuilt to a hard surface. The IDB is considering a loan for the south road and if the loan is made construction could start in early 1974.

#### B. Technical Description of Project for Road Maintenance

This pilot project is designed to make a major contribution to the establishment and development of a strong maintenance organization, SEPRRN, to equip SEPRRN with sufficient useable maintenance equipment, proper shop facilities for equipment repairs, trained personnel, a satisfactory funding of the maintenance program, a programmed operation that will allow proper maintenance of the roads in selected areas and to act as a nucleus around which a maintenance organization capable of maintaining the entire road system can be built.

#### C. Present Level of Maintenance

The present condition of the roads in Haiti is reflected in the following:

\*Paved Roads (concrete, asphalt and block pavements) constitute only 9% of the network of which 11% could be considered in fair condition.

Gravel and Water Bound Macadam Roads make up 17% of the network with 52% in fair condition.

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\*Ingeroute's "Road Maintenance Study" Dec. 1972

Local Roads, Primarily Earth Tracks make up 47% of the system.

In all, 22% or 734 kms. out of 3,300 kms. are in reasonable condition now during the dry season. This figure will drop to less than 10% during the wet season. A detailed inventory of the condition of the Network is shown in Annex V Exhibit 2, Table No. 3.

The road maintenance program in Haiti has been gradually deteriorating since the IBRD maintenance project stopped in the early 1960's. All phases of road maintenance, the road sections, road surfaces, road drainage and road structures have continued to deteriorate.

Road sections have flattened and developed depressed places which became bog areas, road shoulders have disappeared completely in some areas and in others vegetation and silos have built the shoulders higher than the roadway so the road becomes a waterway. Road ditches have in general become filled and eliminated in the hilly areas and grown full of vegetation in the lowlands. Only remnants of asphalt are found on some roads which at one time had a complete asphalt surface. Some culverts have either been completely or partially destroyed and the lack of painting has resulted in such rusting of steel bridges that at least in one instance the bridge has lost its steel members at the abutments and is being held up with wooden cribs

The lack of road maintenance is apparent throughout the country.

D. Engineering Plan for Project Implementation

1. Maintenance Plan:

The decree of March 3, 1972 specified "The equipment and other materials of SEPRRN may never be used for other purposes than the maintenance and rebuilding of the national highway system. The equipment and materials will always remain under the direct control of the Director of SEPRRN."

The term "rebuilding" of national highways is somewhat vague since in some instances long sections of roads have been destroyed by floods and are normally rebuilt by the highway maintenance department.

In general SEPRRN will be responsible for:

Routine Maintenance, the work necessary to keep a road in the condition in which it was constructed. This includes the maintenance of drainage channels and structures, removal of slides, repainting of bridges, maintenance of shoulders and slopes and work on the road surface to keep it in a uniformly satisfactory condition.

Road Betterment, the work necessary at specific points on the road alignment to improve a local condition such as raising a fill, installing improved drainage structures, increasing radii on sharp curves, changes in grade, etc.

It is not intended that the Major Improvement of the Reconstruction of a road be considered a responsibility of the maintenance department. However, where the Ministry of Public Works does not have facilities available for the rebuilding of extended sections of road destroyed by floods or to enter the shadow zone of reworking a road to a condition where it can be maintained satisfactorily it may be necessary for the maintenance department to do some of this work.

It appears that the major problems with the highway maintenance department's operations in the past have been the lack of funds to buy parts and materials, the shortage of useable equipment and the administrative control of the work.

## 2. Organizational Structure of the Maintenance Department

### a. Present Organization

The decree of March 3, 1972 established SEPRRN and outlined its organizational structure. This consisted of a Board of Directors, the General Manager, and the Regional Services. The present T.O. with key personnel is shown in Annex V-3.

The Board of Directors consists of the Minister of Public Works, a representative of the National Bank of Haiti (BNRH), a representative of the Transportation Union and two engineers, one of which can be a foreign advisor.

The General Manager - The General Manager of SEPRRN will be a civil engineer and his central office will include a financial section, a technical section, an inspection section and a shop section. The warehousing responsibilities would be divided between the financial and shop offices.

### Regional Services

The decree specifies that twelve regional districts be established and they should be administered by a civil engineer. At the present time ten such districts have been designated, with indefinite boundaries, and engineers are or will be assigned to these locations. The other two locations have not been designated and may not be established now.

The maintenance program would be administered from the Central Office in Port-au-Prince where the central shop and warehouse are located. Each regional district office would be staffed with technical personnel. Equipment would be assigned with operators as needed. Laborers to work with the equipment would be employed from the area of the work in most cases. They will also have labor crews living along the roads where they are working on a continuing basis. Labor intensified methods are to be used wherever possible.

b. Proposed Reorganization

The Minister of Public Works and the IDB agreed that the Scope of Work for the Ingeroute maintenance study would be limited to the maintenance of the approximately 1,800 km. of national and departmental roads. The Scope of Work also included recommendation for an organization plan for the maintenance department. This plan is shown in Annex V, Exhibit 4, page 1, Table No. 5.

A comparison of the existing and proposed TO's shows them to be very similar. The Board of Directors for both plans are the same. The organization of the General Manager's office is changed somewhat. There are now four divisions proposed:

(1) The Division of Works will approve District Engineers' plans and budgets act as contacts for the Engineers in the Central Office and supervise their work.

(2) The Division of Equipment will be divided into two Departments - Operation, which will be responsible for the use and maintenance of the equipment in the field and Shops, which will be responsible for operating the central shops in Port-au-Prince and the auxiliary shops. The Equipment Division is also jointly responsible with the Accounting Division for the operation of the warehouse.

The other two Divisions are:

(3) Personnel; and

(4) Accounting.

Their duties are those normally associated with such functions.

The Commercial Office of the BNRH will monitor the work of the Accounting Division and actually dispense all funds.

There will be linear connection between the General Manager's office and the Technical Coordination Council of the MPW for the purpose of coordination of all work with the national goals. (See Annex IV-1)

### 3. Procurement

Procurement will be made in Code 941 countries by SEPRRN with the assistance of the consultants. Procurement procedures will meet all AID requirements including Small Business notification, reasonable price, insurance, shipping, etc.

### 4. Excess Property

U.S. excess property will be considered in the procurement program. SEPRRN will seek assistance from AID in ascertaining the availability of such equipment for project use. The costs of inspection, acquisition and other charges incident to SEPRRN may be financed under the loan. Prior to the procurement of any goods other than excess property SEPRRN shall indicate to AID that such goods either cannot be made available from excess property on a timely basis, or they are not technically suitable for the project. At least 15% parts will be ordered with any excess field maintenance equipment procured for the project.

### 5. Equipment Program

SEPRRN has a list of equipment which was transferred from MPW to SEPRRN in March 1972, most of which is very old and all of it needs repairing. The consultants made an inventory and condition survey of both the road equipment and the shop equipment. The repairable road equipment is shown in Annex V, Page 7 of 22, Exhibit 5, Page 1 of 2, Table No. 6. Detailed mechanical inspection may show that all of this equipment may not be repairable.

All of the MPW shop equipment is shown in Annex V, Page 8 of 22, Exhibit 5, Page 2 of 2, Table No. 7. SEPRRN equipment is shown in the second column. The Les Cayes and Cap-Haitian equipment may be transferred at a later date. All of this shop equipment is badly worn and much of it has burned out motors or is belt-driven from overhead pulleys.

The 1956 IBRD maintenance loan resulted in the establishment of a number of operation areas including four in the north at St. Marc, Gonaives, Port-au-Paix and Cap Haitian. At these four locations shop buildings were built and equipped, a small warehouse was installed and a full complement of maintenance equipment was assigned for work in each district. Today three of the four districts have only the buildings and the fuel tanks and pumps - all the shop and warehouse equipment and maintenance equipment has been removed. None of these districts have any automobiles or flatbed trucks for hauling personnel. The district

engineer is authorized to rent a car when he must go to the field and the hand workers as well as the foremen are employed along the roads near where they live. Hand tools are retained in each district and equipment, if available, is loaned from the central shop. The available maintenance equipment is usually moved by the central shop to the areas having the most critical maintenance problems.

The Cap Haitien district has a few pieces of useable maintenance equipment made up in part of which some is obtained from the extinct "Pote Cole" project.

The entire road maintenance program for 343 km. of roads in the Les Cayes area was turned over to FAO to be included in their regional development program. In addition to the FAO maintenance equipment the Minister of Public Works assigned three bulldozers, two rollers and a grader to FAO for the work as well as the Ministry of Public Works shop area in Les Cayes. The FAO project still has two years of operations before project completion. In January 1973 FAO reorganized this project and eliminated the road maintenance phase of the program. However, the GOH is trying to negotiate a plan whereby the FAO will continue to maintain the roads.

Practically all the equipment now used by SEPRRN is very old, including that purchased under the 1956 IBRD loan. It appears that a major portion of this equipment should be junked but since it is all they have SEPRRN is attempting to repair part of it. The lack of funds to buy parts has been a problem.

SEPRRN believes there are sufficient experienced heavy equipment operators available in Haiti to operate any additional equipment obtained by SEPRRN. These men have been trained in the Ministry of Public Works and with contractors. Both FAO and Ingeroute engineers believe there are good operators but need primarily in-the-field on-the-equipment job training. SEPRRN could use assistance in the planning and programming of equipment use and the establishment of a preventative equipment maintenance program.

## 6. Repair Shops

### a. Buildings

At the present time SEPRRN has the central shop in Port-au-Prince and four district shop buildings that were constructed under the IBRD loan. The IBRD financed shop at Gonaives is on a temporary loan to another organization.

The central shop in Port-au-Prince is in a bad state of repair and would require rehabilitation and additional construction to make it minimally useable. The shop is not sectionalized and the shop layout would have to be completely reorganized. The machine shop has some heavy machine shop tools with a number needing repairs and relatively few other shop tools and small equipment are available. It would require complete reequipping as well as having its operation reorganized. Therefore, the loan contemplates relocation of the entire central shop complex to a new, larger site which will permit efficient operations.

An inventory of the equipment belonging to both SEPRRN and MPW is shown in Annex V, Page 8 of 22, Exhibit 5, Page 2 of 2, Table No. 7.

The four field shop buildings are in fair condition. Three of the shops are now empty buildings. At one time they were equipped with shop tools, equipment and radios. Where power was not available, they had generators. They still have fuel tanks and pumps but they are not being used.

The Haitians believe there are sufficient experienced mechanics available in Haiti to care for the operation of all the shops. All of the mechanics will require training in the use of the special tools with which they are not familiar.

The shop program needs assistance in shop management, work programming, shop building and rehabilitation and shop equipment and tools.

The consultants have recommended that a new central overhaul shop be built in Port-au-Prince. The layout is shown in Annex V, Page 8 of 22, Exhibit 6, Page 1 of 4, and the estimated cost is shown in the same Exhibit, Page 2 of 4. It is believed that the areas and required services are adequate but, in keeping with American experience, the Technical Advisors to be financed by loan funds may wish to modify the layout in order to make the operation more efficient. There should be no increase in cost.

They have further recommended that the Pote Cole shops at Cap Haitien be rehabilitated and that new shops be built at Les Cayes. The latter layout and estimated costs are shown in Annex V-6, Pages 3 and 4. The estimated cost of work on the buildings at Pote Cole is \$10,000.

b. Machinery Shop Equipment and Tools

The consultant has recommended the hand tools shown in Annex V, Page 13 of 22, Exhibit 7, page 1 of 5, Table No 8 for use at all three shops.

They also recommended the machine shop tools shown in the above mentioned Annex and Exhibit Pages 3, 4, 5 of 5, Table No. 9 for use in the three facilities. The Technical Advisors may wish to substitute other tools for those listed because of special requirements for particular pieces of equipment obtained.

7. Warehousing

At present there are practically no warehousing operations in SEPRRN. The Central Warehouse is a room about 10' x 16' with a few wooden bins which are filled with a conglomeration of used parts and tires. A few fan belts and small parts boxes are mixed among the used parts. The warehouses in the district offices are usually a shop room where they store shovels, picks and wheelbarrows on the floor. A well developed warehouse system with a central warehouse in Port-au-Prince for maintaining a supply of quick turnover items to both the central and auxiliary shops will be required. Since the loan will finance parts for some of the presently owned equipment and all of the new equipment a complete warehouse with a record system will be required. Details will be left to the TA consultants. Such facilities are further required because of the COH's procurement policy. Rapid purchase is nearly impossible.

8. Training

The consultant will be responsible for training of office, shop and field personnel. A review of existing AID prepared training manuals in French will be made to determine their suitability for use in Haiti. If such are found they can be reproduced. The funds for this reproduction are included in the training AID procurement list shown in Annex V, Page 18 of 22, Exhibit 8, Page 1 of 1, Table No. 10.

In addition to the training film to be bought many of the equipment and material suppliers have instruction material available on a loan basis. The major limiting factor is language. In Haiti most tools and parts are known by their American names. Whereas relatively few workmen understand English, neither do they know the French names for these items as used in such material.

The District Engineers and Superintendents should be given basic courses in soil testing, quarry operation, asphalt paving and patching, and other applicable subjects.

9. Consultant

Since the type of road maintenance project proposed in this loan has already been executed successfully in the past by private consultants, it would appear that private consultants should be used in this case so as to be consistent with PD 33 and M.O. 1425.1.1.

It is anticipated that six full time foreign technicians would be used on the project - four for three years, two for two years, and one year of short term men as needed, making a total of 17 man years of consultants' time. A knowledge of French and English is necessary.

The consultant staff responsibilities would be in general but not limited to the following:

a. Supervisory Highway Maintenance Engineer, 36 months

As project manager, would be responsible for the administration of the consultants' operation; should be qualified to guide and assist the Chief of the Division of Works in planning and budgeting for District Programs. He would prepare materials and instruct District Engineers in such operations.

b. Equipment and Training Engineer, 24 months

He would formulate and execute training programs for highway maintenance equipment operators and mechanics. He would assist the Equipment Division Chief in operational procedures, planning and budgeting.

c. Equipment Specialist, Operations, 36 months

This specialist would work in the highway maintenance equipment training program and follow up operators' habits in the field. He is the chief instructor for equipment operators and is expected to spend over half of his time with working or training equipment in the field. He would advise the Chief of Operations on procedural and operation methods.

d. Heavy Equipment Mechanic, 36 months

This mechanic would work in the training program for mechanics and spend most of his time in the three shops. He will give a lot of his time to observing and directing working mechanics in technical matters. He will be an advisor to the Chief of the Shops.

e. Accountancy and Financial Recordkeeping Advisor, 36 months

This advisor would assist SEPRRN in establishing an accounting and recordkeeping system, design an appropriate internal audit system, and assist in making all such systems operational. He will advise the analytical accounting unit in the preparation of the equipment rental coefficients and overhead costs calculation. After review of the existing BNRH operation and the final report of Ingeroute, he will make specific recommendations as to the appropriate role of the BNRH under the new system with regard to normal banking functions (receipt and disbursement of funds), auditing of SEPRRN, and financial management.

f. Administration and Personnel Specialist, 24 months

This specialist will assist SEPRRN in effectively integrating the functions of programing, budgeting and execution of planned operations. He will evaluate the existing organization, taking into consideration recommendations of the Ingeroute report, and determine if any changes are necessary. He will assist SEPRRN in the preparation of Organization and Personnel Manuals which shall include inter alia lines and delegations of authority, reporting procedures, job description and qualification requirements, and Divisional functions.

g. Short Term Specialist, 12 months

The duties of these specialists will vary. One will be responsible for the plans and specifications for the two new facilities and recommendations for the renovations of the Pote Cole Shop. Others may be specialists in quarry operation, soil testing, asphalt paving, etc.

The Consultant will review the SEPRRN organization and operational plans, taking into consideration the GAS and Ingeroute recommendations, and, if necessary, make any recommendations he feels necessary to modify the organization and plans.

The Consultant will prepare the plans and specifications for the new facilities and recommend necessary work for the renovation of the Pote Cole shop and supervise the construction. He will be responsible for the selecting, from the presently SEPRRN owned equipment, the equipment to be repaired, order the parts and see that they are properly installed. He shall review the machine and hand tool lists, decide which tools either on or off the list are needed for the function of the shops as he has designed them. He will prepare specifications and order the tools, receive and allocate them as needed and establish a control system for their use. The cost of the tools will be limited to the amount shown in this loan paper. The actual procurement may be by others.

After reviewing the maintenance plan he will take in consideration the equipment in operation and then order equipment necessary to give a balanced operation, always keeping in mind the necessity of using labor intensity methods wherever it is feasible. In case where a special piece of equipment is desired he must be prepared to justify his desire. Procurement will be limited to the money for this item in the loan paper and may be by others.

He will develop his training program and prepare a list of desired aids up to the limit shown in the loan paper.

The Consultant will prepare monthly reports, in French and English, on the operation of SEPRRN, which will cover the operations of the various Departments and will be based on SEPRRN reports, as well as on field, shop, and office observations.

#### 10. Basis for Determining Project Items and Cost Estimates

The types and numbers of maintenance, shop and training equipment items were determined by the French engineering firm, Ingeroute, during a study completed in December 1972.

Since SEPRRN has no hand tools and training equipment and very few machine tools and maintenance equipment they developed two maintenance programs for SEPRRN one listed the equipment needed. The first program was for a normal program using equipment whenever possible. The second program was a labor intensive plan. The numbers selected were usually between the programs but very close to the labor intensity plan.

The prices were obtained from dealers and manufacturers.

The cost of the Consultant's technical services was estimated on the basis of the foreign personnel requirements necessary to meet the objectives of the loan.

The size of the loan could well have been controlled by the ability of the GOH to meet the payroll and operating cost of the equipment.

Ingeroute calculated the annual budget requirements for SEPRRN using a normal amount of machinery with amortization of the equipment and other reserves. They also made similar calculations without amortization and spare parts reserve. These results are shown in Annex V-9, Table No. 11. The equipment cost plus 15% for spare parts was \$3,310,000 for this plan.



A satisfactory maintenance program will be a requirement for both IBRD and IDB future loans to the GOH.

F. Relation to Road 200, Port-au-Prince to Les Cayes

The first new road construction planned in Haiti will be Road 200 with IDB financing. If a satisfactory pilot maintenance program can be initiated with this AID loan and it could be projected into a national maintenance operation, it should establish a basis for a satisfactory maintenance plan for the new road.

G. Ability of SEPRRN to Execute and Administer the Project

SEPRRN is a new untried organization. It has drawn its engineers from the most experienced men in the MPW and will continue to be backstopped as needed from that Ministry. With the equipment to be bought with funds from this loan and the assurance given to AID by the Minister of Finance of a permanent budget with fixed revenues, it should begin to develop the stability necessary to execute a long-term maintenance plan. This will make it one of the more stable and therefore one of the more attractive places for serious technicians to work.

The success of this maintenance program will determine the availability of other loan funds to the GOH. The great interest of various Ministers contacted makes it appear that the GOH will maintain pressure on the Minister of Public Works to keep his best men in the project and properly motivated.

A good consultant will be able to use the staff to form a viable, capable organization which can properly execute and administer the project.

H. Environmental Analysis

The environmental analysis shows that only minor erosion problems may be created in outfall ditches. These are offset many times by the positive benefits of draining stagnant water which now stands in and along the road. A full analysis is shown in Annex VI, Page 1 of 2, Exhibit 1, Page 1 of 2.

IV. Financial Analysis

A. Funding Requirements

The proposed maintenance project consists of U.S. \$1,020,000 for technical assistance, U.S. \$980,000 for training equipment, Central Shop construction and machine tools and spare parts for existing equipment; and related costs; and \$1,700,000 for maintenance equipment including 15% for spare parts and a 15% contingency fund, the total of \$3,700,000 to be financed by AID. The Borrower will contribute the 12.5 acre site for the new central workshop, and 5 acres in Les Cayes valued for project purposes at the equivalent of U.S. \$50,000; the GOH will liquidate past obligations of predecessor maintenance services from the SEPRRW account, equal to approximately U.S. \$270,000; and it is estimated that the proposed project will increase GOH annual operating costs for highway maintenance by U.S. \$320,000 per annum for four years, or U.S. \$1,600,000. The Table below sets forth the phasing of the project and project costs.

ESTIMATED COST OF PROJECT (1973-77)

(U.S. \$1,000's)

ITEM	FIRST PHASE				SECOND PHASE				TOTAL		
	CY 1973		CY 1974		CY 1975		CY 1976		GCH	AID	
	GCH	AID	GCH	AID	GCH	AID	GCH	AID			
<b>I <u>First Phase</u></b>											
A. Preparation Temporary Training Site and Renovation of Pote Cole Shop	-	50	-	-	-	-	-	-	-	50	
B. Training Equipment	-	20	-	-	-	-	-	-	-	20	
C. Central Shop and Les Cayes Workshop Development	50	150	-	330	-	-	-	-	50	480	
D. Shop Equipment	-	270	-	-	-	-	-	-	-	270	
E. Consultant Contract Costs	-	210	-	390	-	300	-	120	-	1,020	
F. Independent Public Accountant	-	-	-	20	-	20	-	20	-	60	
G. Liquidation Old Debts	270	-	-	-	-	-	-	-	270	-	
H. Repair Parts for Existing Equipment	-	100	-	-	-	-	-	-	-	100	
I. Equipment (including 15% Spare Parts and 15% contingency)	-	-	-	1,050	-	-	-	-	-	1,050	
<b>II <u>Second Phase</u></b>											
A. Equipment (including 15% Spare Parts and 15% contingency)	-	-	-	-	-	-	-	-	-	650	
<b>III <u>GCH Additional Annual Operating Costs for SEPARAN</u></b>	320	-	320	-	320	-	320	-	1,280	-	
									<u>TOTAL</u>	1,930	3,700

B. Financial Schedule

Project funds will be disbursed in two phases. Phase I, includes the institutional infrastructure package and first equipment procurement, and will occur over the first fifteen months of project implementation. At the end of this fifteen month implementation period a full review of SEPRRN performance will be jointly conducted by representatives of the GOH, AID and the consultant. The purpose of this review is to evaluate SEPRRN execution, and decide if Phase II, the second equipment procurement, should proceed. This two phase approach is intended to facilitate the financial and technical absorption of the equipment by SEPRRN and to allow sufficient time for fulfillment of performance measures which would be impossible to meet before the first disbursement. The Table following sets forth the Financial Schedule.

Description of Project Activities in Phase I and Phase II

BREAKDOWN OF PROJECT COSTS

(\$1,000's)

Item	Total Project Costs	AID COSTS			GOH COSTS	
		Total AID	FX	LC	LC	LC
<u>PHASE I</u>						
a) Technical Assistance	\$1,020	\$1,020	\$ 920	\$100	—	—
b) Central Workshop and Les Cayes construction sites	\$ 50	—	—	—	—	\$ 50
c) Prior debt liquidation	\$ 270	—	—	—	—	\$ 270
d) Temporary Training site preparation and renovation of Pote Cole Shop in Cap Haitien	\$ 50	\$ 50	\$ 10	\$ 40	—	—
e) Training aids	\$ 20	\$ 20	\$ 20	—	—	—
f) Repair parts for existing equipment	\$ 100	\$ 100	\$ 100	—	—	—
g) Central Workshop Construction	\$ 340	\$ 340	\$ 170	\$170	—	—
h) Les Cayes Workshop construction	\$ 140	\$ 140	\$ 70	\$ 70	—	—
i) Hand & Machine Tools	\$ 270	\$ 270	\$ 250	\$ 20	—	—
j) Maintenance equipment (including 15% spare parts, 15% contingency)	\$1,050	\$1,050	\$1,000	\$ 50	—	—
k) CPA Contract	\$ 60	\$ 60	\$ 50	\$ 10	—	—
l) SEPRRN Operating Budget (1 1/2 years)	\$1,170	—	—	—	—	\$1,170
<u>Phase I Sub-total</u>	<u>\$4,540</u>	<u>\$3,050</u>	<u>\$2,590</u>	<u>\$460</u>	—	<u>\$1,490</u>
<u>PHASE II</u>						
a) Maintenance Equipment (including 15% spare parts, 15% contingency)	\$ 650	\$ 650	\$ 610	\$ 40	—	—
b) SEPRRN Operating Budget (2 1/2 years)	\$1,950	—	—	—	—	\$1,950
<u>Phase II Sub-Total</u>	<u>\$2,600</u>	<u>\$ 650</u>	<u>\$ 610</u>	<u>\$ 40</u>	—	<u>\$1,950</u>
<u>GRAND PROJECT TOTAL</u>	<u>\$7,140</u>	<u>\$3,700</u>	<u>\$3,200</u>	<u>\$500</u>	—	<u>\$3,440</u>

C. Source and Application of Funds

The Development Budget of Haiti is financed from three sources: (a) funds directed by CONADEP to the individual Ministries; (b) funds from extraordinary resources of the public sector which are used by Departments of Ministries and autonomous agencies of the GOH for development purposes; and (c) foreign assistance.

The SEPRRN Budget is strictly provided from the second source. SEPRRN receives 50% of the revenue from a tax of U.S. \$0.10 per gallon of gas and 50% of the revenue from a tax of U.S. \$0.10 per gallon of deisel fuel. The application of the tax is simple: when an oil tanker docks in Haiti the Tax Office (Service des Contributions) computes the value of the petroleum cargo unloaded and advises the importing company of the amount assessed. The oil company then deposits the amount in the BNRH, which thereupon credits the SEPRRN account for its share, and the Construction Fund for the other half.

There is no additional revenue which accrues to SEPRRN. Annex IV - 7 shows a breakdown of fuel tax receipts from 1967-72 and Annex IV-4 shows projections for 1973-77 for SEPRRN's share of the fuel tax. Traditionally, projects have been more secure financially when resources come from an earmarked fund than the general budget. However, the GOH has promised to make up any shortfall of funds necessary to meet the estimated annual budget requirement of \$780,000 from either accruals in the Construction Fund, or general budgetary resources. Further, as the cash flow from fuel taxes is irregular, and to permit stable planning and budgeting, the GOH has promised to make appropriate transfers or advances to the SEPRRN account through the BNRH to insure a minimum working balance of 10% of the annual operating budget of SEPRRN.

D. SEPRRN's Financial Capacity to Support the Proposed Maintenance Program

The proposed project requires that the GOH increase its annual expenditures on maintenance from approximately \$460,000 to \$780,000 per year. This amounts to a 70% increase in yearly operating costs for road maintenance. Although the percentage increase is substantial, it must be remembered that not much is presently being done in maintenance. Nor is it unreasonable in terms of anticipated increased revenue from gas tax receipts, and/or other resources expected available by 1974, such as funds collected by the State Tobacco Monopoly (\$600,000), flour mill (\$500,000) and funds liberated by amortization of the Brandt loan (\$1,320,000). In 1974 and thereafter, these funds should be available either for road maintenance or construction in accordance with specific project requirements. (See Annex IV-4).

The importance of continued road maintenance for general development and growth of commerce of the country, documented in the 1972 CIAP report, is understood by the Government as a program they must fully and permanently support. The CIAP report specifically recommends reorganization and strengthening of the maintenance service as a high priority activity in the overall macro-economic strategy, and we have every assurance that the GOH will therefore provide SEPFRN with the financial capacity to carry out its function.

E. Sources of Financing of North and South Road Reconstruction Program

Annex IV-4 shows the anticipated future financing for southern and northern road reconstruction programs during the implementation period. The GOH has no other significant road construction programs currently operating or planned during the project period.

F. Alternative Sources of Financing

AID's role in the Highway Transportation Sector has been carefully delineated in coordination with the GOH and other concerned development agencies, including the IBRD, IDB, UNDP and OAS. As noted elsewhere, the maintenance loan is considered a precondition for IDB financing of the reconstruction of the Northern Road. These institutions have expressed the view that establishment of an effective national road maintenance system is essential in order to assure that the benefits of these reconstruction programs are not short-lived.

G. Impact on U.S. Balance of Payments

The impact of this loan on U.S. Balance of Payments will be favorable, being largely neutral for the short-term, with prospects for additional exports. Nearly all equipment and services financed under the loan are expected to be of U.S. source and origin. The loan may be expected to induce follow-up orders for equipment and spare parts, and will assist the U.S. commercial position in a growing market for heavy construction equipment. It is expected that most procurement will be from the U.S. because of the nature of the terms to be financed, however, other Code 941 countries are eligible.

## SECTION V - ECONOMIC ANALYSIS

### A. Economic Environment of the Project

1. Geographic, Demographic and Socio-Economic Setting of the Project - Haiti is a country of extreme poverty; per capita annual GNP is less than \$75, lower than in any other Latin American country (see Annex VII-1). This extreme poverty is in part a result of its limited natural resources and comparatively large population. Tropical temperatures and tropical diseases, along with inadequate health and sanitation facilities, take their toll from worker productivity. Malaria, yaws, water-borne diseases and intestinal parasites are common. These handicaps to development are periodically aggravated by hurricanes which cause extensive crop and property damage.

The economy is based primarily on agriculture (see Annex VII-2,3). Farming is conducted on small, individually owned tracts using very primitive methods and producing mostly subsistence crops. The principal export crop, coffee, grows more or less uncultivated on highland slopes. A National Coffee Office has been set up to improve quality through technical aid and credit for growers. Sisal and sugar are the only crops grown for export on large commercial plantations as well as on the small farms. Until recently, agricultural export earnings were supplemented by an increase in tourist receipts. Some small-scale industry partially supplies local requirements for such items as shoes, cement, concrete blocks and lumber products. However, Haiti continues to rely on imports for some food products, especially wheat flour, and most manufactures including textile fabrics, wearing apparel, household appliances, motor vehicles and machinery.

The system of land ownership in Haiti makes it difficult to adopt improved, modern techniques of farming. After Haiti gained independence in 1804, the large colonial plantations were broken up into a multitude of very small holdings. Mechanized farming is not feasible on these small parcels, leaving intensive farming and expanded irrigation as the most promising means for increased production. Uncertainty of land titles and tenure are also handicaps. Roughly 20,000 persons obtain seasonal employment as sugar cane workers in the Dominican Republic.

The productivity of the Haitian laborer is also low because of lack of training and skill as a worker. Only 10 percent of the Haitian population is literate. Muscle power, rather than machine power, is relied upon for the accomplishment of most tasks. Few workers have the ability to operate

even simple equipment, and where equipment has been available, there are serious problems of maintenance and repair.

Haiti's population cannot be estimated with precision but is in the neighborhood of five million, and over 80 percent derive their income from agriculture. Hence the population pressure on the land is one of the highest in the world. Density is especially high in the fertile valleys. The urban population, about 450,000, is concentrated primarily in the Port-au-Prince area. In addition, there are a handful of provincial cities, none of which is more than 20,000.

It is estimated that the birth rate is of the order of 40 per 1,000 and the death rate about 20 per 1,000, resulting in an annual population growth of about 2 percent. The high death rate reflects poor protection against disease compounded by widespread malnutrition. In the countryside, up to 30 percent of newborn babies risk dying from tetanus during the first month of life.

There are no employment data in Haiti. However, considerable unemployment and underemployment clearly exist at present, in spite of substantial emigration, and of the recent upswing in economic activity. In the rural sector it is quite common to find adults who only work 2 or 3 hours a day in the fields, because of the very small size of holdings and the almost complete absence of productivity-raising inputs. The very elastic labor supply in the cities is evidenced by low daily wages (about \$1) for workers whose productivity, according to foreign businessmen, often exceeds that of similar labor in the U.S. In the provinces labor can be obtained for road construction for as little as \$10 per day plus food.

## 2. Macro-Economic Section

a. Economic Growth - Macro-economic information about Haiti is very scant, and necessarily rather unreliable, because of the preponderance of the agricultural sector about which relatively little is known. Investment and savings rates are low by international standards. Public investment amounts to only 1-2 percent of GDP. The tax ratio - about 12 percent of GDP - is relatively high for a country averaging around \$100 per capita income. Because of the low level of external assistance, a substantial part of public investment has been financed out of domestic resources. Manufacturing is one of the few areas where employment has increased rapidly during the past few years, particularly as a result of the creation of over 100 export-oriented assembly plants averaging about 100 workers each.

Although the country's resource based is quite poor in relation to the population of 5 million, the degree of under-utilization of resources is large enough to offer ample scope for development during the next decade. In particular, the agricultural output of existing irrigation schemes could be increased two-fold, given adequate maintenance and some rehabilitation of works. Likewise, Haiti's tourist sector affords favorable development prospects.

After more than a decade of stagnation, Haiti's GDP began to grow at a satisfactory pace between 1968 and 1972. This reversal reflects economic recovery in several sectors, particularly construction, manufacturing, government and services, including tourism. Savings deposits of the banking system, after remaining virtually at the same level between 1961 and 1967, almost doubled between 1967 and 1972. The resumption of confidence is also reflected in larger remittances from abroad. The relaxation of the political climate in 1971 further contributed to the improvement of the economic situation. During 1971 the GDP grew by nearly 6 percent in real terms, the highest growth rate in over a decade. Foreign exchange reserves also increased during the past three years. Of course, the growth performance of the past few years owes much to recovery after years of stagnation. The GDP per capita is still lower now than it was in 1960, and some of the major sectors of the economy - agricultural exports, irrigation, transport - have not yet shown signs of improvement. Because of the precarious balance of payments position and the weakness of economic management, Haiti will depend a great deal on external assistance in devising and implementing development policies.

Since 1967, the real GDP has risen by an average of 4 percent per annum, the growth rate increasing from 2.6 percent in 1968 to 4.5 percent in 1970 and 5.7 percent in 1971. Adjusted for the terms of trade, the real GDP grew by more than 5 percent in 1970 and about 4.5 percent in 1971. Following declines in 1968 and 1969, the terms of trade improved in 1970 owing to a sharp increase in coffee prices. In 1971, however, Haiti's terms of trade deteriorated again, as export prices fell slightly, while estimated import prices rose substantially. On a per capita basis, real GDP adjusted for the terms of trade declined by about 7 percent from 1962 through 1967, but since that year, it has risen by about 8 percent, and in 1971 it exceeded for the first time the level of 1962.\*

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\* Haiti Recent Economic Developments: IMF-1972 and IBRD/IDA-Economic Position & Prospects of Haiti; May 1972.

The balance of payments deficit on goods and services fluctuated around 4 percent of GNP during the last five years, rising from 3 percent in 1968 to 6 percent in 1970 but declining subsequently to 4 percent in 1971. The year-to-year changes in the current deficit were the result of the irregular performance of both exports and imports of goods and services, which in the last four years rose at average annual rates of 11 percent and 8 percent, respectively. This gap was approximately covered each year by unrequited transfers, mainly remittances from Haitians living abroad. Net capital movements were very small through 1969, and while capital inflows rose substantially in the following two years, they were broadly matched by reserve movements.

The main growth element of domestic expenditure in 1968-71 was investment, which grew at an average rate of 16 percent a year, whereas consumption is estimated to have increased by only 6 percent a year. The available evidence shows that national savings averaged only about 1 percent of GNP over the period as a whole, exceeding 2 percent of GNP in 1971, the highest level during that time period.

During 1963-1967 gross investment was virtually stagnant, averaging about 4.5 percent of the GNP, a level which was apparently insufficient to maintain the stock of capital. During that 1963-1967 period, the road network deteriorated, the irrigation systems were not maintained, and the arable land area continued to decline owing to erosion and exhaustion. Since 1967, however, investment has risen faster than output, and by 1971 it was equivalent to 6.3 percent of GNP. The gradual increase in investment since 1968 was led by public sector spending, while private sector investment outlays appear to have started to expand strongly in 1969.

The development plan for 1972 calls for an increase in public investment to \$20 million, from \$13 million in 1971 (see Annex VII-5).

b. Government Debt - Government indebtedness rose by 3 percent to a total of \$90 million during 1971, which is about 20 percent of GNP. The National Bank's holdings of bonds rose by \$4.8 million, reflecting issues of coffee bonds in the amount of \$54 million (carrying interest at 4 percent), \$3.2 million of which was in replacement of overdrafts. Bonded claims on the Government held by the non-bank private sector increased by \$16 million, owing mainly to an issue of Treasury bonds totaling \$2.2 million in December 1970. These

bonds were issued at a value of 90 percent, are repayable in eight years, and carry interest at the rate of 9.5 percent.

Debt service payments increased from \$4 million in 1970 to \$4.8 million in 1971, most of which were amortization payments. The ratio of external debt servicing to government revenues (one measure of the government debt's real claim on public revenues) was only 4 percent in 1971.

c. Interest Rates - The legal limit on the interest rate on loans was raised from 12 percent to 15 percent per annum in October 1970. The national Bank raised its lending rates by two percentage points, to 8-12 percent on commercial loans with adequate collateral (the lowest rate being applied to coffee and sugar exports) and to 10-15 percent for advances against personal signature (the highest rate being charged on loans of less than \$2,000). On the basis of partial information, it can be estimated that as a result of these measures the average interest rate charged by the Bank to private customers rose from 8.5 percent in 1969 to 9.5 percent in 1971. The private commercial banks adjusted their lending rates to those charged by the National Bank and, accordingly, the average interest rate charged by the Royal Bank of Canada rose from 8.5 percent in 1969 to 9.8 percent in 1971; but for 1972 the Royal Bank projects a decline in the average rate to 9 percent, reflecting a reduction in interest rates in Haiti in recent months. While this recent reduction in rates may have been affected by declining rates abroad, probably it has also been influenced by the increasing competition in banking since the opening of the branch of the First National City Bank of New York in November 1971 and the persistence of large excess reserves by the banks. Only the IDAI, which receives part of its resources from IDB long-term loans, lends for more than a year (normally 5-10 years) up to 70 percent of the total cost of the project, charging an interest of 8 percent per annum.

d. Balance of Payments and External Public Debt - Overall Balance of Payments Trends - Following overall deficits in 1967-68, Haiti's balance of payments attained increasingly larger surpluses in each of the next three years. Including the allocation of SDRs; the net international reserves rose by a record SDR 9.1 million in 1971, compared with SDR 6.5 million in 1970 and less than SDR 1 million in 1969. The strengthening of the international reserve position continued in the first five months of 1972 with a net gain of SDR 4.4 million (after allowing for a decline of SDR 0.7

million in the reserves due to the general realignment of currencies), compared with SDR 5.1 million in the corresponding period of 1970; in both periods there was an allocation to Haiti of SDR 2 million (see Annex VII-7).

## B. Micro-Economic Section

1. Existing Transport System & Five Year Road Program - Haiti's road network is deteriorating rapidly for want of proper maintenance. Disrepair is presently in such a state that not even the main national truck highways can be used throughout the year. The GOH realizes that it cannot afford to build new roads at the expense of a complete deterioration of the existing network. Most officials also recognize that concrete roads and often asphalt roads are not economically justifiable in a country with the limited vehicle fleet Haiti has. Thus, the objective of Haiti's Five Year Road Program is to reconstruct and improve existing roads and, if possible, construct certain secondary roads to develop a road network which would link the principal cities of the Republic by 1976. In view of the work envisaged and the local and foreign financial resources available the program is very ambitious. For example, if the program was carried out as scheduled over a five year period, it would require an average annual investment of \$7.0 million. It is clear that there are priorities, and the plan does give first priority to the North-South axis (Routes 100 and 200) as well as the main road serving the central region (Route 300). These three roads are obviously vital to the Haitian economy. (See Annex VII-8, Details of the Five Year Road Plan.)

2. Vehicle Fleet - Road transportation in Haiti is subject to no particular regulation, except for initial registration and periodic inspection of vehicles every four months. (Many vehicles, inspected or not, are seen running in the worst possible safety conditions.) Registered vehicles have increased from 13,065 in 1969 to 16,798 by March 1972 with approximately 2,300 four wheel vehicles imported during 1970-71. (Figures do not include motorcycles.) For the period 1966-1969 the average annual growth rate for each category of vehicle was as follows:

- automobiles	+ 26.5 %
- jeeps	+ 16.0 %
- pickup trucks	- 20.0 %
- <u>total light vehicle fleet</u> (4 wheels)	+ 20.0 %
- trucks	+ 4.5 %
- buses	- 15.0 %
- <u>total heavy vehicle fleet</u>	+ 2.5 %
- total fleet	+ 18.0 %

It could be noted that the large increase in automobiles is due to the fact that most of the entire fleet is concentrated in the Port-au-Prince urban area because of its economic preponderance over the rest of the country, which is at least in part due to the defective conditions of the Haitian road network.

Accepting that vehicle imports in 1972 will at least equal those in 1971, the National Department of Statistics indicate a fleet of 16,000 vehicles (excluding motorcycles and miscellaneous vehicles). Taking into account government vehicles and others with other characteristics, one could reasonably estimate the total owned vehicle fleet at about 19,000 in 1972. Annex VII-9 sets forth the most recent data on the compilation of the vehicle fleet. On the basis of studying records from the Matignon Army Forces road posts and direct field operations, it appears reasonable that five models were representative of the road vehicle fleet:

- a. Goods transportation truck: This is a vehicle with two single axles and dual rear tires. Its normal design load is 5 tons.
- b. Bus and passenger truck: This vehicle also has two single axles and dual rear tires. Its normal design load is 5.5 tons and it can hold about 50 passengers.
- c. Pickup trucks: The normal design load is 600 kg (1,320 lbs) and it can hold up to 8 passengers.
- d. Four wheel-drive truck: This is a truck with a normal design load of 5 tons and it can hold up to 10 passengers.
- e. Light automobile: This is a passenger car with a normal design load of 1.5 tons and it can hold up to 4 passengers.

Vehicles a, b and c have diesel motors. Vehicles d and e have gasoline engines. It is important to note that vehicles a, b and c are often overloaded to almost 50% of their normal design load. Greater improvement of operating conditions and enactment and enforcement of load regulations should reduce these excesses.

3. Vehicle Fleet Projections - In Annex VII-10 there are tables indicating motor fuel and lubricant consumption, tire imports and spare parts imports. The data is very raw but it does provide some indications of future trends. For example, the yearly average increase between 1966-71 in motor fuel

consumption was about 3%. It can be expected that in the short-term that expansion rate will continue with a gradual increase in emphasis on diesel fuel consumption. Lubricant utilization has increased by about 12% annually with a good portion due to increased industrial usage. This rate can also be expected to continue if the investment climate continues to be favorable. Tire importation has been erratic but should stabilize at a growth rate factor of about 7-9% annually. Spare part tonnage has had an average growth rate of about 17% with the same increase probable in the future. In any case, in the following table are the vehicle growth forecasts made by Ingeroute for low (a), average (b), and high (c) assumptions of increase. These assumptions correspond to the indicated annual average growth rates of the per capita GNP:

VEHICLE FLEET GROWTH FORECASTS

	1972	1976	1981	1986	1991	
i %	(a)	6	4	4	4	
	(b)	6	5	5	5	
	(c)	6	6	6	6	
X	(a)	78	98.5	119.8	145.8	177.4
	(b)	78	98.5	125.7	160.4	204.8
	(c)	78	98.5	131.8	176.4	236.1
Y	(a)	37.4	54.8	75.9	137.6	170.5
	(b)	37.4	54.8	81.7	152.8	199.0
	(c)	37.4	54.8	87.8	169.5	231.5
Population	5,073,100	5,512,600	6,112,700	6,772,900	7,484,400	
Total Fleet	(a)	19,000	30,200	46,400	93,200	127,600
	(b)	19,000	30,200	49,900	103,500	148,900
	(c)	19,000	30,200	53,700	114,800	173,300

It is unlikely that the composition of the entire fleet varies much. However, in future years a slight increase in the relative number of pickup trucks should be noted, as well as a more pronounced separation of goods and passenger traffic.

### C. Project Economic Justification

The overall purpose of the proposed Road Maintenance Program is to ensure proper protection for the investments made and/or projected for the near future in the expansion and improvement of Haiti's road system by providing equipment sufficient to maintain approximately 1,750-1,800 kms. of paved and unpaved roads and to increase the efficiency of existing maintenance equipment and personnel engaged in these activities.

Economic benefits that result from such a Program are two-fold: 1) savings to the road users in their vehicle operating costs; and 2) savings to the economy in the cost of future investment outlays which would be needed in absence of maintenance (the roads would deteriorate rapidly and would require earlier reconstruction).

The value of the road-user savings (benefits) attributable to the road maintenance program depends on the volume of traffic which can be expected over the roads which lie within the jurisdiction of the proposed maintenance section.

As to the second economic benefit attributable to the program, avoidance of expenditures for reconstructing non-maintained roads, it has been estimated that without maintenance, gravel roads would decay in approximately five years to an improved track state; dry weather dirt roads would become virtually unusable; and to bring the gravel surface roads up to their original condition would require an investment of U.S.\$41,375 per km. As set forth below, the results of the economic analysis using these benefit factors are favorable. A benefit/cost ratio of 1.18 was obtained<sup>1/</sup> and although the traffic projections and thereby the program benefits appear conservative a 10% reduction in the benefits would not cancel the economic justification of the program: the benefit/cost ratio would remain satisfactory.

In addition to the above, the program is likely to have a favorable effect on the country's balance of payments. Foreign exchange costs of the program could possibly be more than offset by the foreign exchange inflows or reduced outflows attributable to: (1) reduction in the wear of the road users' vehicles and the cost of their repair; (2) reduction in the Department of Highway's foreign exchange use by abandoning the repair of obsolete equipment; and (3) increases in export volumes of substitution of current imports through anticipated incremental output of goods transported on the maintained roads.

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<sup>1/</sup> Discounted at 15% to the base year.

Adequate road maintenance is also likely to facilitate trade with the Dominican Republic, the United States and other Caribbean countries and thereby promote the economic integration of the region.

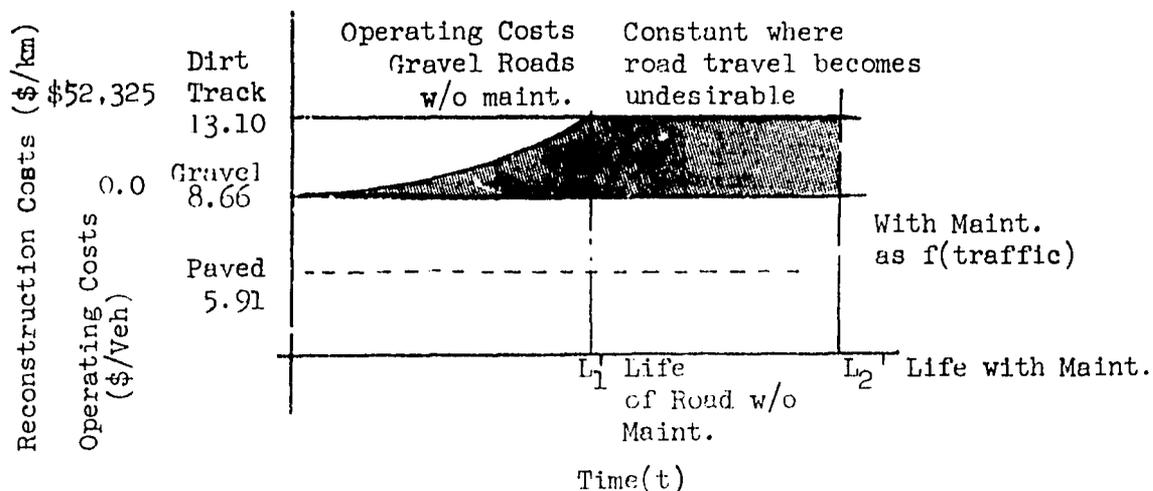
Since adequate maintenance is essential for the continued success of any road construction program, particularly unpaved roads which form the basis of the rural transportation network, the economic and social effects of secondary road maintenance would also benefit the low-income agriculture population, thus justifying the use of concessional resources for the financing of this program.

1. Cost of Future Construction Due to Difference in Useful Service Lives as Affected by the Maintenance Component - Figure II illustrates a measurable savings component through the comparison of the useful service lives of a "typical"\* road. The analysis provides the savings component of a reconstructed road which receives little or no maintenance, as in the present situation, compared to a well maintained road as proposed in this project. In effect, the analysis provides a "with" and "without" comparison. The body of the comparative analysis suggests that the useful service life of the road is considerably shortened due to the lack of maintenance thereby requiring earlier reconstruction of the road. The differential in the "time of reconstruction-savings concept" is the essence of the analysis.

To reiterate, the analysis assumes the road will deteriorate from a properly gravel surfaced state to an undesirable one within five years requiring

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\* In this exercise the "typical" roads are referenced to the Port-au-Prince--Les Cayes, PAP-Cap Haitien roads. The major reconstruction costs were extracted from the INGEROUTE analysis.



the reshaping of the road bed\* and the application of a new sub-base material and placement of a new surface. The useful service life of a typical gravel surfaced road is reduced from 10 to 5 years.

Most of the following data was extracted from the Ingeroute study for the Port-au-Prince--Les Cayes road. Ingeroute reduced all unit prices to an order of magnitude cost defined as construction per kilometer.

2. Unit Construction Costs for Haitian Roads - In the table below, the Les Cayes road is estimated to cost \$93,700 per km (col. 5) for a gravel surfaced road placed upon an improved alignment.

The anticipated average annual maintenance costs for a gravel surfaced road section is estimated at \$841/km. This provides the foundation of the cost stream. Therefore, subtracting the accounts of the maintenance expenditure introduced through the proposed program and the other maintenance related costs as described to the "typical" road facility, the derivation of the incremental cost stream was formulated.

\* The road bed is defined as the natural earth section. Additional road base or sub-base, a select material, is laid upon this section followed by a surfacing material of either gravel or pavement.

Unit Construction Costs Per Km\*

Works	On the Existing Track		Present Road	
	Minimum Earthwork Present Alignment	Enlargement of Roadway Minimum Culvert Works	New Align. Bridges & Culverts R.O.W.	Improved Alignment with some Rock Cuts
(1)	(2)	(3)	(4)	(5)
Earthworks	17,500	29,500	41,500	55,500 <sup>1/</sup>
Drainage	8,000	8,000	10,000	12,000 <sup>2/</sup>
Pipes & Box Culverts	1,600	2,000	2,500	3,000 <sup>3/</sup>
Base & Foundation	20,200	20,200	20,00	20,200
Land Acquisition	-	1,200	2,000	2,000
Miscellaneous	<u>1,000</u>	<u>1,000</u>	<u>1,000</u>	<u>1,000</u>
<u>Gravel Road</u>	48,300	61,900	77,200	93,700
Reconstruction Costs				41,375

\* IBID, INGERROUTE. Less: Bridges & Culverts, 2/3 earthwork costs. United Costs: see p. 158.

- <sup>1/</sup> 1/4 of cost used for reshaping gravel  
<sup>2/</sup> 1/2 of cost used for cleaning ditches  
<sup>3/</sup> 1/10 for repairs and cleaning culverts

3. Discounted Cash Flow - The cost and benefit streams were discounted at 15% which reflects prevailing opportunity cost of capital for projects of this nature and degree of uncertainty. Experience gained by the UNDP and other international lending institutions engaged in development lending to Haiti in the past 10 years indicates that a considerable degree of risk and uncertainty exists in the lending to maintenance programs. With consideration for this factor and the derived 12% used in the Ingeroute "Les Cayes" Study opportunity cost of capital was taken at 15%.

Efforts to adjust the economic accounts for shadow pricing of labor were not made at this time due to the difficulty of measuring labor inputs. However, if shadow prices

for unskilled labor were used they would approach zero due to the high rate of unemployment. Skilled labor, on the other hand, should reflect a spread of 1 1/2 to 2 times the current market price due to the scarcity of the required skills involved in the maintenance project. For instance, it is well known that Haitian equipment operators who emigrated to the United States during the last Haitian administration are experiencing gross earnings upward from \$16,000/yr. By present Haitian standards the equivalent salary lies in the neighborhood between \$1,200 to \$1,800 per year.

The formulation of the basic assumptions, and the data outlined in the Ingeroute study produced a rather straightforward comparison in the Benefit/Cost Analysis (see Annex VII-12). However, the units used in the measurement may appear somewhat abstract due to the complexity of measuring and combining the variables in the final analysis. In essence the B/C ratio is a unitless, or pure number; it must be derived by dividing "orange units" by "orange units." The success of this methodology is supported by interrelationship of time, distance, traffic flow, all as a function of cost, i.e., \$/km-veh. The computation resulted in a total annual equivalent benefit value of \$872.76/veh-km and an annual cost value of \$741.00/veh-km yielding a B/C of 1.18.

A 10% reduction in the benefit stream would also yield a satisfactory ratio.

With respect to the estimated current annual maintenance factor (i.e., \$100/veh-km), a sensitivity calculation was made by subtracting out the total estimated amount\* yielding a B/C ratio of 1.04.

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\* The exclusion of the estimated current maintenance expenditure probably approaches the "real" economic value of the current input. What with the present grant technical assistance, the level of service that the existing system produces and the overall level of disrepair of the total road network, all which tends to support the historic lack of maintenance inputs.

D. Employment Generation and Labor Intensity

The very nature of any LDC highway road maintenance effort is labor intensive compared to U.S. systems. Engineers accustomed to working in labor-scarce environments often associate many maintenance activities with machines which are customarily done in LDC's by hand labor. In Haiti almost all road maintenance is done by hand because equipment has just not been available, and the technical advisor selected will have to adapt himself to this environment. Furthermore, the Haitian Government is cognizant of the advantages in terms of employment generation and comparative economic costs, and intends to support continuing as much of the maintenance activity by hand labor, keeping in mind the basic transportation needs of the country. Thus, road gangs provided with only basic working tools will be responsible for normal maintenance operations such as cleaning of culverts, clearing ditches and filling of potholes. Other tasks which can be permanently assigned to labor crews will be determined in the course of the project.

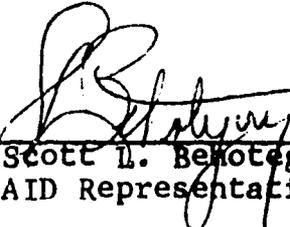
The subject of labor substitution for equipment will be one of the concerns of the technical advisors, and indeed, they will be responsible for assuring that the equipment and labor mix selected adequately reflects the labor intensive policy. It is, therefore, expected they will be familiar with, and draw upon, research done in the field of labor intensive methods.\* To some degree the experience gained regarding the usefulness of labor in maintenance will be transferrable to road reconstruction projects under consideration by the IDB and IBRD. Thus, experience gained here in the suitability of labor to perform basic tasks to both construction and maintenance can be expected to result in a significant increase in employment.

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\* Study of the Substitution of Labour for Equipment in Road Construction" (Scott, Wilson, Kirkpatrick & Partners, Feb., 1972, prepared for the IBRD).

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 HAITI HIGHWAY  
MAINTENANCE LOAN.

  
\_\_\_\_\_  
Scott L. Behoteguy  
AID Representative

2/5/73  
\_\_\_\_\_  
Date



Department of State

ANNEX I, Exhibit 2  
Page 1 of 2

TELEGRAM

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AIDAC

SUBJECT: IRR REVIEW - HIGHWAY MAINTENANCE

1. CAEC REVIEWED SUBJECT IRR AUGUST 16 AND INTENSIVE REVIEW AUTHORIZED WITHIN FOLLOWING FRAMEWORK:

- A) SCOPE OF PROJECT SHOULD BE DETERMINED BY ANTICIPATED GOH BUDGETARY RESOURCES WHICH WILL BE AVAILABLE FOR HIGHWAY MAINTENANCE OVER NEXT 2-3 YEARS;
- B) AS A MINIMUM, GOH FUNDS FOR MAINTENANCE SERVICE OPERATING BUDGET MUST PERMIT ADEQUATE LEVEL OF MAINTENANCE BE CARRIED OUT ON ROADS 100 AND 200;
- C) LOAN MUST BE DEVELOPED WITHIN TRAINING FRAMEWORK IN THAT ON-THE-JOB TRAINING OF MAINTENANCE PERSONNEL WILL BE EMPHASIZED

UNCLASSIFIED

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*Department of State*

**TELEGRAM**

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PAGE 02 STATE 154844

USING LOAN-FINANCED EQUIPMENT ON SELECTED HIGH-PRIORITY ROADS. GIVEN \$3.2 MILLION FINANCING LEVEL PROPOSED, IT IS NOT ANTICIPATED THAT COUNTRY-WIDE MAINTENANCE SERVICE WILL BE CREATED (WHICH IS BASIS OF IDB-FINANCED MAINTENANCE FEASIBILITY STUDY). EMPHASIS OF AID LOAN WILL BE TO GET NUCLEUS OF MAINTENANCE SERVICE UNDERWAY WITH CAPABILITY HANDLE HIGH-PRIORITY MAINTENANCE WORK WITHIN TRAINING CONTEXT:

D) MAINTENANCE ACTIVITIES SHOULD BE STRUCTURED SO AS TO MAXIMIZE EMPLOYMENT IMPACT OF PROJECT; AND

E) IN VIEW PROBABLE LACK GOH CONTRACTING EXPERIENCE, POSSIBILITY OF DIRECT A.I.D. CONTRACTING SHOULD BE CONSIDERED.

2. PROJECT COMMITTEE NOW BEING FORMULATED WITH INITIAL IN-COUNTRY ARRIVAL ANTICIPATED FOR MID-SEPTEMBER. WILL ADVISE FURTHER ONCE SCHEDULE IS FIRM. IRWIN

UNCLASSIFIED

AID 1240-2 (4-7 )

CHECKLIST OF STATUTORY CRITERIA

(Alliance for Progress)

In the right-hand margin, for each item, write answer or, as appropriate, a summary of required discussion. As necessary, reference the section(s) of the Capital Assistance Paper, or other clearly identified and available document, in which the matter is further discussed. This form may be made a part of the Capital Assistance Paper.

The following abbreviations are used:

FAA - Foreign Assistance Act of 1961, as amended.

App. - Foreign Assistance and Related Agencies Appropriations Act, 1972.

MSA - Merchant Marine Act of 1936, as amended.

COUNTRY PERFORMANCE

Progress Towards Country Goals

1. FAA § 209; §.251(b).

A. Describe extent to which country is:

*(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.*

Within its limited resources, the GOH is providing extension and credit services to farmers, is undertaking adaptive research to improve productivity, etc. The GOH has assigned a high priority to agricultural development and is actively seeking external assistance in this area, both private and official.

Haiti has in effect suitable investment incentive legislation, has established a special office to facilitate private investment, has ratified an investment guaranty agreement with the U.S. and otherwise encourages and cooperates with private enterprise.

The GOH has an official community development program and has encouraged the formation of community councils, farmers associations, etc., to undertake grass-roots development activities.

240-2 (4-7.2)

*(3) Increasing the public's role in the developmental process.*

The GOH's development budget for 72-73 is a third larger than for the preceding year and is approximately equal to its operating budget. The GOH has also recently agreed to provide \$ 28 million over five years as counterpart to external assistance.

*(4) (a) Allocating available budgetary resources to development.*

The budget for the Department of Interior and National Defense is the largest of the operating ministries. Included, however, in this total are police, fire protection, and other non-military costs. While there was a tendency toward questionable military procurement some months ago, there have been no indications of such in recent months.

*(b) Diverting such resources for unnecessary military expenditure (See also Item No. 16 and intervention in affairs of other free and independent nations.) (See also Item No. 14.)*

*(5) Willing to contribute funds to the project or program.*

A relatively high proportion of GOH counterpart funds is provided for in the project and has been agreed to by the government.

*(6) 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.*

Through the CIAP process, the GOH has established its intent to undertake reforms, particularly as they relate to fiscal measures. Attention of the GOH is also being directed to the improvement of producer incentives. Haiti is also considered to have a more open society now than it has experienced in the recent past.

AID 1240-2 (4-7')

*(7) Adhering to the principles of the Act of Bogota and Charter of Punta del Este.*

The GOH performance in this regard is encouraging.

*(8) Attempting to repatriate capital invested in other countries by its own citizens.*

Due to the mini-boom in Haiti, capital flight is not believed to be a problem at this time.

*(9) Objectively responding to the vital economic, political, and social concerns of its people, and demonstrating a clear determination to take effective self-help measures.*

The present regime has expressed on numerous occasions its concern for improving the welfare of the people and is taking reasonable measures to this end.

B. Are above factors taken into account in the furnishing of the subject assistance?

Yes.

Treatment of U.S. Citizens

2. FAA § 620(c). If assistance is to government, is the government liable as debtor or conditional 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?

According to available information, Haiti is not known to be so indebted.

AID 1240-2 (6-7)

3. FAA § 105(a)(1) - Has the vessel been used in any manner which is prohibited by the Act or the regulations thereunder or which is in violation of the Act or the regulations thereunder?

Has the vessel been used in any manner which is prohibited by the Act or the regulations thereunder or which is in violation of the Act or the regulations thereunder?

According to available information, the FAA has not taken any such action.

6. FAA § 105(a)(2) - Has the vessel been used in any manner which is prohibited by the Act or the regulations thereunder or which is in violation of the Act or the regulations thereunder?

Has the vessel been used in any manner which is prohibited by the Act or the regulations thereunder or which is in violation of the Act or the regulations thereunder?

Has the FAA not taken any such action against U.S. fishing vessels.

a. Has any violation occurred by Fishermen's Protective Act (FPWA)?

Not applicable.

b. Has any violation occurred by Antismuggling Act (ASA)?

Not applicable.

AID 1240-2 (4-73)

Relations with U.S. Government and  
Other Nations

5. FAA § 620(d). If assistance is for any productive enterprise which will compete in the United States with United States enterprise, is there an agreement by the recipient country to prevent export to the United States of more than 20% of the enterprise's annual production during the life of the loan? Not applicable.
6. FAA § 620(j). Has the country failed to take adequate measures to prevent the damage or destruction, by mob action, of U.S. property? There have been no incidences of mob action in Haiti in recent years.
7. FAA § 620(l). If the country has failed to institute the investment guaranty program for the specific risks of expropriation, in convertibility or confiscation, has the A.I.D. administration within the past year considered denying assistance to such government for this reason? An investment guaranty agreement with Haiti is in effect.
8. FAA § 620(q). Is the government of the recipient country in default on interest or principal of any A.I.D. loan to the country? Since rescheduling its debts with the U.S. in 1970, the GOH has been current in its payments.

AID 1240-2 (4-71)

9. FAA § 620(t). Has the country resumed diplomatic relations with the United States? If so, have they been renewed and have new bilateral assistance agreements been negotiated and entered into since such resumption?
- No.
10. FAA § 620(u). What is the payment status of the country's U.N. obligations? If the country is in arrears, were such arrearages taken into account by the A.I.D. Administrator in determining the current A.I.D. Operational Year Budget?
- Haiti is in arrears with regard to some of its U.N. obligations. Its arrearages are not such, however, to affect its voting rights. Some improvements have been realized recently in reducing its cumulative arrearages.
11. FAA § 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?
- No.
12. FAA § 620(b). If assistance is to a government, has the Secretary of State determined that it is not controlled by the international Communist movement?
- The Secretary of State has determined that Haiti is not controlled by the international communist movement.

AID 1240-2 (4-70)

13. FAA § 620(f). Is recipient country a Communist country? No.
14. FAA § 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.
15. FAA § 620(n). Does recipient country furnish goods to North Viet-Nam or permit ships or aircraft under its flag to carry cargoes to or from North Viet-Nam? No.
16. FAA § 481. Has the government of recipient country failed to take adequate steps to prevent narcotic 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? The GOH has cooperated with the U.S. with regard to international control of narcotics trafficking. Haiti has not been designated a priority action country as regards narcotic

Military Expenditures

17. FAA § 620(e). 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).)

The total of the FY 1972-73 ordinary and development budget is \$60.6 million, of which \$6.4 million, or 10.5% of the total, is budgetted for the Armed Forces. No detailed breakdown is available, but most of this sum is for administration. Sophisticated equipment is not involved in any capital expenditures.

CONDITIONS OF THE LOAN

General Soundness

18. FAA § 201(d). Information and conclusion on reasonableness and legality (under laws of country and the United States) of lending and relending terms of the loan.
19. FAA § 251(b)(2); § 251(c). Information and conclusion on activity's economic and technical soundness. If loan is not made pursuant to a multilateral plan, and the amount of the loan exceeds \$100,000, has country submitted to A.I.D. an application for such funds together with assurances to indicate that funds will be used in an economically and technically sound manner?
20. FAA § 251(b). Information and conclusion on capacity of the country to repay the loan, including reasonableness of repayment prospects.

Terms are legal and reasonable under both U.S. and Haitian law.

The activity to be financed has been determined as economically and technically sound and the borrower has provided reasonable assurance that the funds will be used in a sound manner.

The prospects for loan repayment are considered reasonable.

AID 1240-2 (4-72)

21. FAA § 611(a)(1). Prior to signing of loan 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 United States of the assistance?

Project design is based on an IDB-administered, UNDP-financed study of Haitian road maintenance requirements: organizational, financial, and physical. The cost estimate of the project is considered sound.

22. FAA § 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 purposes of loan?

The new GOH maintenance service was established by Presidential decree of March 1972. No further legislative action is required.

23. FAA § 611(e). If loan is for Capital Assistance, and all U.S. assistance to project now exceeds \$1 million, has Mission Director certified the country's capability effectively to maintain and utilize the project?

The certification prescribed by this section is included as an annex in this CAP.

24. FAA § 251(b). Information and conclusion on availability of financing from other free-world sources, including private sources within the United States.

It has been determined that financing for this project is not available from other free-world or U.S. sources (e.g. IDB, IBRD-IDA, EX-IM).

AID 1240-2 (4-72)

Loan's Relationship to Achievement  
of Country and Regional Goals

25. FAA § 207; § 251(a). Extent to which assistance reflects appropriate emphasis on: (a) encouraging development of democratic, economic, political, and social institutions; (b) self-help in meeting the country's food needs; (c) improving availability of trained manpower in the country; (d) programs designed to meet the country's health needs, or (e) other important areas of economic, political, and social development, including industry; free labor unions, cooperatives, and Voluntray Agencies; transportation and communication; planning and public administration; urban development, and modernization of existing laws.

- a) One purpose of the loan is to strengthen administrative and technical capabilities in the GOH, and induce the GOH to permanently provide funding required to maintain the country's road network.
- b) While it will not directly contribute to food needs, properly maintained highways will facilitate movement of agricultural products.
- c) The loan provides significant inputs for training of GOH personnel and should improve the availability of trained manpower in the country.
- d) Not applicable.
- e) The loan is specifically designed to meet Haiti's long-term transportation needs by developing an institution capable of maintaining the nation's roads.

26. FAA § 209. Is project susceptible of execution as part of regional project? If so why is project not so executed?

No.

27. FAA § 251(b)(3). Information and conclusion on activity's relationship to, and consistency with, other development activities, and its contribution to realizable long-range objectives.

GOH has assigned highest priority to: (1) roads rehabilitation; and (2) agriculture. This project supports both activities. It also contributes to the fourth priority, which is the development of tourism.

28. FAA § 251(b)(7). Information and conclusion on whether or not the activity to be financed will contribute to the achievement of self-sustaining growth.

Haiti is some distance yet from the takeoff point to self-sustaining growth. Nevertheless, project should contribute toward that end, particularly as it facilitates improvements in rural productivity.

AID 1240-2 (4-72)

29. FAA § 281(a). Describe extent to which the loan will contribute to the objective of assuring maximum participation in the task of economic development on the part of the people of the country, through the encouragement of democratic, private, and local governmental institutions.
30. FAA § 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.
31. FAA § 601(a). Information and conclusions whether loan will encourage efforts of the country to: (a) increase the flow of international trade; (b) foster private initiative and competition; (c) encourage development and use of cooperatives, credit unions, and savings and loan associations; (d) discourage monopolistic practices; (e) improve technical efficiency of industry, agriculture, and commerce; and (f) strengthen free labor unions.

While project provides that maintenance services shall concentrate initially on national and departmental roads, special attention has been given to maximizing the labor intensity of the project,

Improvement of access to markets is frequently cited by the rural population as a critical requirement both in terms of time saved and the condition in which their products reach the market (and thus the returns therefor). In view of the nature of the project, it will not contribute significantly to local institutional development, civic education, etc.

A primary purpose of the loan is to facilitate the movement of agricultural commodities, both to domestic markets and for export. Conversely, by facilitating the flow of agricultural inputs to farmers, the project will have a positive effect on agricultural efficiency.

AID 1240-2 (4-72)

32. FAA § 619. If assistance is for newly independent country; is it furnished through multilateral organizations or plans to the maximum extent appropriate?
- Haiti is not a newly-independent country.
33. FAA § 251(h). Information and conclusion on whether the activity is consistent with the findings and recommendations of the Inter-American Committee for the Alliance for Progress in its annual review of national development activities.
- The project is fully consistent with the findings and recommendations of the CIAP and has been specifically endorsed by CIAP.
34. FAA § 251(q). Information and conclusion on use of loan to assist in promoting the cooperative movement in Latin America.
- Not applicable.
35. FAA § 209; § 251(b)(8). Information and conclusion whether assistance will encourage regional development programs, and contribute to the economic and political integration of Latin America.
- Not applicable. The project will, however, contribute toward national integration within Haiti. Some improvements in land transportation with the Dominican Republic are also anticipated.
- Loan's Effect on U.S. and A.I.D. Program
36. FAA § 251(b)(4); § 102. Information and conclusion on possible effects of loan 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 the U.S. balance of
- The major portion of the loan funds will be used for the purchase of U.S. goods and services. Together with follow-on orders, the loan will have a positive effect on the U.S. economy.

ATD 1240-2 (4-72)

37. FAA § 601(b). Information and conclusion on how the loan will encourage U.S. private trade and investment abroad and how it will encourage private U.S. participation in foreign assistance programs (including use of private trade channels and the services of U.S. private enterprise).
- U.S. investors are evidencing considerable interest in Haiti at the present time, particularly with regard to tourism and transformation industries. The project will have a positive effect on both sectors, especially the farmers.
38. FAA § 601(d). If a capital project, are engineering and professional services of U.S. firms and their affiliates used to the maximum extent consistent with the national interest?
- The project includes a sizeable technical assistance component, which will probably be a U.S. source.
39. FAA § 602. Information and conclusion whether U.S. small business will participate equitably in the furnishing of goods and services financed by the loan.
- Provision will be made for U.S. small business to participate equitably in the furnishing of goods and services financed by this loan to the maximum feasible extent.
40. FAA § 620(h). Will the loan promote or assist the foreign all projects or activities of the Communist-Bloc countries?
- There is no Bloc aid to Haiti.

AID 1240-2 (4-72)

31. FAA § 621. If Technical Assistance is financed by the loan, information and conclusion whether such assistance will 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, information and conclusion on whether they are particularly suitable, are not competitive with private enterprise, and can be made available without undue interference with domestic programs.

Technical assistance financed by the loan will be provided by private enterprise on a contract basis. While it is anticipated that professional services will be provided by U.S. companies, AID Code 941 countries will also be eligible.

42. FAA § 252(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.

The loan is to a public borrower; however, the total U.S. \$3.7 million loan proceeds will be used to purchase goods and services from the private sector except to the extent of possible procurement of U.S. excess property.

Loan's Compliance with Specific Requirements

43. FAA § 201(d). Is interest rate of loan at least 2% per annum during grace period and at least 3% per annum thereafter?

Yes.

44. FAA § 608(a). Information on measures to be taken to utilize U.S. Government excess personal property in lieu of the procurement of new items.

An appropriate provision will be included in the loan agreement relative to excess property.

AI 1240-2 (4-72)

45. FAA § 604(a). Will all commodity procurement financed under the loan be from the United States except as otherwise determined by the President?
- Procurement will be from Haiti, U.S. and those countries included in AID Geographic Code 941.
46. FAA § 604(b). What provision is made to prevent financing commodity procurement in bulk at prices higher than adjusted U.S. market price?
- Appropriate provisions will be included in the loan agreement to assure that commodities financed are procured at prices not in excess of the prevailing U.S. market price.
47. FAA § 604(d). If the cooperating country discriminates against U.S. marine insurance companies, will loan agreement require that marine insurance be placed in the United States on commodities financed by the loan?
- According to available information, Haiti does not discriminate against U.S. marine insurance companies.
48. FAA § 604(e). If offshore procurement of agricultural commodity or product is to be financed, is there provision against such procurement when the domestic price of such commodity is less than parity?
- Not applicable; the loan does not entail procurement of agricultural commodities.
49. FAA § 611(h); App. § 101. If loan finances water or water-related land resource construction project or program, is there a benefit-cost computation made, insofar as practicable, in accordance with the procedures set forth in the Memorandum of the President dated May 15, 1962?
- Not applicable.

AID 1240-2 (4-72)

50. FAA § 611(a). If contracts for construction are to be financed, what provision will be made that they be let on a competitive basis to maximum extent practicable? Only limited construction is anticipated under the loan. To the maximum extent practicable, such construction will be awarded on a competitive basis.
51. FAA § 620(a). What provision is there against use of subject assistance to compensate owners for expropriated or nationalized property? Loan funds will be limited to the procurement of U.S. goods and services and to local construction costs and supplies.
52. FAA § 612(b); § 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 United States are utilized to meet the cost of contractual and other services. The U.S. does not own or control Haitian Gourdes which could be allocated to this project. As mentioned elsewhere, the project does require the GOH to allocate a sizeable amount of its available resources to the operation of the project.
53. App. § 104. Will any loan funds be used to pay pensions, etc., for military personnel? No.
54. App. § 106. If loan is for capital project, is there provision for A.I.D. approval of all contractors and contract terms? Yes.
55. App. § 108. Will any loan funds be used to pay U.N. assessments? No.

AID 1240-2 (4-72)

56. App. § 102. Compliance with regulations on employment of U.S. and local personnel for funds obligated after April 30, 1964 (A.I.D. Regulation 7). This regulation will be complied with.
57. FAA § 636(i). Will any loan funds be used to finance purchase, long-term lease, or exchange of motor vehicle manufactured outside the United States, or any guaranty of such a transaction? No; the loan agreement will restrict procurement of vehicles to U.S. sources.
58. App. § 501. Will any loan funds be used for publicity or propaganda purposes within the United States not authorized by the Congress? No.
59. FAA § 620(k). If construction of productive enterprise, will aggregate value of assistance to be furnished by the United States exceed \$100 million? Not applicable.
60. FAA § 612(d). Does the United States own excess foreign currency and, if so, what arrangements have been made for its release? Not applicable.

AND THE FOLLOWING:

1. The loan shall be made  
available to the borrower at least 10  
percent of the gross earnings  
of commercial banks (computed on a monthly  
basis) for the year ending on the date  
of the loan. The borrower shall be  
responsible for the payment of the  
loan at the time of maturity or  
at any time thereafter.

Appropriate provisions will be  
included in the loan agreement  
to this end.

Honorable Clinton E. Knox  
American Ambassador  
Port-au-Prince, Haiti

Dear Mr. Ambassador:

In the name of the Government of Haiti, I make a formal request to the Agency for International Development for a loan in the amount of \$3.7 million to be used in financing a maintenance program of National Highways.

The program will be initiated in 1973 with an execution period of four years and will comprise the following:

- 1) Technical assistance and training;
- 2) Construction of a new installation and renovation of certain existing facilities for the Maintenance Authority;
- 3) Acquisition of equipment for shops;
- 4) Acquisition of maintenance equipment;
- 5) Purchase of repair parts for maintenance equipment; and
- 6) Maintenance works of National Highways.

The project has a total cost of U.S. \$7.1 million of which expenditures in dollars are estimated at U.S. \$3.2 million and the expenditures in local currency of U.S. \$3.9 million. The Government of Haiti will contribute the equivalent of U.S. \$3.4 million over the project period. This project is justified for the following reasons:

- a) A noticeable deficit has accumulated in the maintenance of National Highways which seriously affects the social and economic well-being of Haiti.

- b) To obtain greater efficiency in maintenance of these roads it is necessary to train further the professional and semiprofessional personnel, operators, and mechanics who will be responsible for the execution of the maintenance program.
- c) There is a need to build a new central installation for repair and warehousing of maintenance equipment and spare parts in order to create an efficient service.
- d) The cost of operating old equipment obliges the government to divert sums of money for repair of same, which is urgently needed for normal maintenance operations.

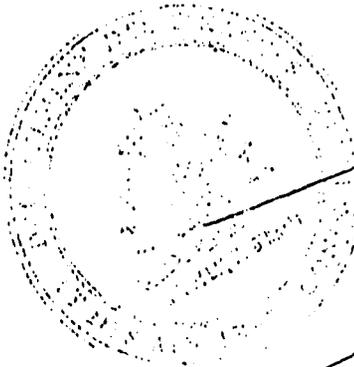
The loan funds will be exclusively destined for the purchase of tools, equipment, and spare parts required for the period of the first three years, to finance appropriate local construction costs of new or improved installations such as the central workshop, and to finance the costs of the necessary technical assistance.

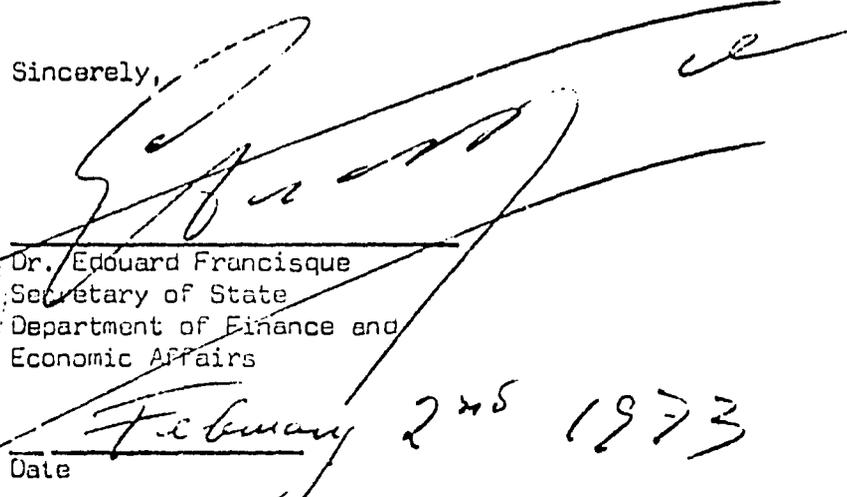
For this program the Government of Haiti will adopt the following measures:

- 1) Provide the necessary allocation of resources to assure the availability of not less than U.S. \$750,000 annually from 1973 to 1977 for the budget of the Maintenance Authority;
- 2) Give additional contributions, such as a suitable site for a central workshop in Port-au-Prince and auxiliary workshops in Les Cayes, as needed for better maintenance service during the period of the project and in the years following;
- 3) The Government of Haiti will liquidate such liabilities incurred prior to March 31, 1972, which were transferred to the new Maintenance Authority;
- 4) The Government of Haiti will give due priority and importance to the maintenance program, with particular regard to National Routes 100 and 200; and

5) The Government of Haiti will perform the maintenance works during the project period in accordance with programs and schedules prepared by the Administrative Council of the Maintenance Authority.

Sincerely,



  
Dr. Edouard Francisque  
Secretary of State  
Department of Finance and  
Economic Affairs

Date

February 2<sup>nd</sup> 1973

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 rebuilding 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 Duvalier

by the President

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

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.

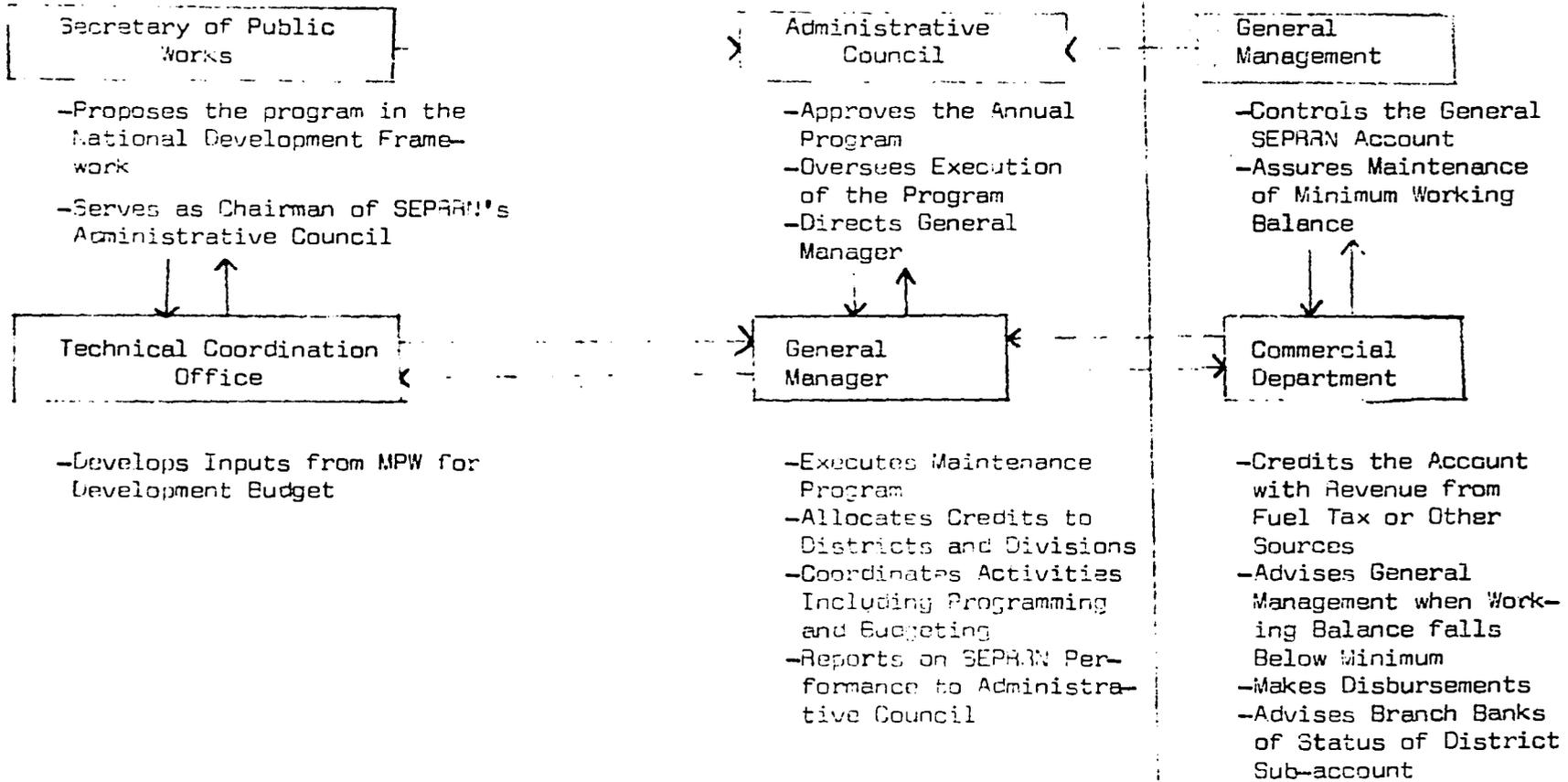
Article 4. The present Decree abrogates all Laws and dispositions of Laws, all Decrees and dispositions of Decrees, all Decree Laws or dispositions of Decree Laws which are contrary and will be promulgated and executed with diligence by the Secretary of State of Public Works, Transports and Communications.

RELATIONSHIP BETWEEN MPW, SEPRAN AND BNRH

Ministry of Public Works (MPW)

SEPRAN

BNRH



FORMULATION OF A DISTRICT BUDGET AFTER DETERMINATION OF WORK TO BE DONE  
(ALLOCATION OF BASIC COSTS)

<u>EC EQUIPMENT COSTS</u>	+	<u>OC OPERATING COSTS</u>	=	<u>TOTAL AUTHORIZED FOR DISTRICT</u>
Equipment Costs are lumped in single rental rates. These include following :		Operating Costs reflect the functioning expenses of the District		EC + OC =
A) Workshop Component		A) District Management		AUTHORIZED
1) Major Repair Costs		1) Engineer, Supervisor salary costs		EXPENSES
2) Spare Parts		2) District vehicles and supplies (fuel, lubricants, tires)		FOR
B) Personnel		3) District administrative costs		DISTRICT
-Machine Operators		4) Petty cash		
C) Supplies		B) Labor, and related costs		
1) Fuel		1) Normal and special maintenance work crew salaries		
2) Lubricants		2) Picks, shovels, wheelbarrows		
3) Spare Tires		C) Road Supplies		
D) Miscellaneous		1) Asphalt		
1) Overhead Costs, primarily relating to Port-au-Prince operations		2) Travel		
2) Minor Maintenance				

\*ANNUAL FINANCING OF ROAD WORKS  
(U.S. \$1,000's)

Financial Resources	1966-67	1967-68	1968-69	1969-70	1970-71	Estimated 1971-72
<u>MPW BUDGET</u>						
Maintenance and Improvement	240	240	240	240	240	172.4
Excise Taxes	<u>From May 1967 to October 1969</u>					
North-South axis	1,712.6			925	894.1	
Other Works	52.2			36	166	
<u>Total</u>	<u>1,760.6</u>			<u>961</u>	<u>1,060.1</u>	1,100
Resources Earmarked for Roads	2,782.8			1,301.8	1,400.6	1,272.4
State Budget	84,222.3			29,039.8	29,039.9	29,575.1
<b>Total Resources: Budget &amp; Excise Taxes</b>	86,003.1			29,000.8	29,099.9	30,675.1
Percentage for Roads	3.2%			4.5%	4.8%	4.2%

SOURCE: Ingeroute

HAITIAN GOVERNMENT PROJECTIONS OF COUNTERPART  
FUNDS FOR DEVELOPMENT PROJECTS

	1972-73	1973-74	1974-75	1975-76	1976-77
<b>I. EARMARKED FUNDS</b>					
Road maintenance	550 000	570 000	590 000	620 000	660 000
Port improvement	500 000	525 000	550 000	-	-
Road construction	550 000	570 000	2 270 000	2 330 000	2 420 000
Total	1 600 000	1 665 000	3 410 000	2 950 000	3 080 000
<b>II. FUNDS AVAILABLE AS COUNTERPART FOR DEVELOP- MENT PROJECTS IN GENERAL</b>					
<b>A. CONTRIBUTIONS OF AUTONO- MOUS AGENCIES AND GOVERN- MENT OWNED COMMERCIAL ENTITIES</b>					
Flour mill	500 000	525 000	550 000	575 000	600 000
Régie du Tabac	600 000	625 000	650 000	675 000	700 000
Port authority	-	-	-	625 000	700 000
Total	1 100 000	1 150 000	1 200 000	1 875 000	2 000 000
<b>B. SPECIAL FUND FOR DE- VELOPMENT (MATCHING FUND)</b>	1 400 000	1 470 000	1 543 500	1 620 675	1 701 709
Total (A+B)	2 500 000	2 620 000	2 743 500	3 495 675	3 701 709
<b>TOTAL (I+II)</b>	4 100 000	4 285 000	6 153 500	6 445 675	6 781 709

Source: Government of Haiti.

FAMILY GOVERNMENTAL FUNDS FOR DEVELOPMENT PROJECTS (1972-1977)  
NOTE

2.) The earmarked funds are specially allocated to finance specific projects  
a.) Total maintenance of the funds of this account come from a special tax on gasoline and alcohol and roads for the period 1972-1977 a very successful and even conservative rate of increase has been estimated for the anticipation of gasoline and alcohol, upon the basis of the trend of the previous years and taking into account the increase in cars in circulation in Haiti and the traffic evolution.

b.) The projects of the operations of port facilities in Port-au-Prince will be of 10,000,000 for 1972-1973, 1,750,000 from 1972-1975, it is estimated that these projects will cover the counterpart funds for the I.D.R. loan for port improvements. After 1975, considering the fact that the operations on the loan will begin only in 1976, projects under the disbursement the said projects will need for other development projects.

*cc) Road construction funds; see note under a.) - By October 1974, 20% of the total of the projects will be completed. It is estimated that the counterpart funds will be available for any development project.*

d.) Contributions of autonomous agencies and government owned commercial entities:

cc) The projects of the loan will be dedicated to development operations in the counterpart funds. The total increase in internal counterpart of loan (short) will allow the start of the projects.

cc) 10% of the total of the loan (1,200,000) (1,240,000) counterpart in the budget, a special contribution to development funds is already done by the state, since five (5) or six (6) months to be estimated that the annual contribution will increase substantially from 1,000,000 in 1976-77 to 1,700,000 in 1976-77, partly as an effect of larger revenues to be received by the said institutions.

cc) For information; see note under B, b.)

2.) Regarding funds this account has been created in the line of the provisions of the standing agreement signed on September 1966 by the Haitian Government and the International Monetary Fund.

CONCLUSION

It must be outlined that these funds come in addition to the resources of the development budget.

BANQUE NATIONALE DE LA REPUBLIQUE D'HAÏTI

Département Commercial

RÉSUMÉ DE LA SITUATION AU 30 SEPTEMBRE 1972

A C T I F

Caisse et Avoirs à l'Étranger  
 Droit de Tirages en F.M.I. et D.T.S.  
 Prêts, Escomptes, et Avances  
 Débiteurs Hypothécaires I.H.C.A.I.  
 Divers Débiteurs à Régulariser  
 Avances Spéciales  
 Titres État Haïtien et Bons du Trésor  
 Immeubles de la Banque et Propriétés  
 Participation d'Haïti au Capital F.M.I. 103 142 640 --  
 Soins Droits de Tirages en F.M.I. -25 737 840 70  
 Participation d'Haïti à B.I.R.D.  
 Participation d'Haïti à I.L.A.  
 Participation d'Haïti à B.I.D.

G A U D E S

48 715 742 85  
 42 334 631 50  
 70 435 218 78  
 2 425 492 75  
 15 939 756 18  
 28 949 090 65  
 194 137 031 40  
 4 552 984 88  
 77 354 799 30  
 75 000 000 --  
 3 800 000 --  
 19 995 000 --  
583 689 748 29

P A S S I F

Billets de Banque en Circulation  
 Dépôts  
 D.D. à l'Étranger  
 Divers  
 Obligations à Payer  
 Fonds Monétaire International F.M.I.  
 Banque Internationale de Reconstruction et de  
 Développement B.I.R.D.  
 International Development Association I.D.A.  
 Banque Interaméricaine de Développement B.I.D.  
 Capital  
 Provisions  
 Profits non répartis

G A U D E S

136 052 244 --  
 227 698 586 70  
 1 453 142 80  
 52 293 30  
 28 039 305 20  
 78 293 083 05  
 75 000 000 --  
 3 800 000 --  
 19 995 000 --  
 28 000 000 --  
 7 747 606 12  
 5 260 296 92  
583 689 748 29

Gérard Martinson  
 Contrôleur

Antoine André  
 Président et Directeur Général de la BNH

N.B. La Garde est fixée au taux de cinq gaudes pour un Dollar - Monnaie des États-Unis d'Amérique du Nord

TOTAL TAX RECEIPTS FROM GASOLINE AND DIESEL OIL 1967-1971

(In Gourdes)

	<u>Gasoline</u>	<u>Diesel</u>
1967/68	3,732,447	1,194,903
1968/69	3,622,064	1,003,390
1969/70	3,598,511	950,784
1970/71	<u>4,002,796</u>	<u>1,359,841</u>
Total	14, 955,818	4,508,918
1967-1971 Approximately US \$	3,000,000	\$ 900,000



NATIONAL ROAD NETWORK

The 1,019 Km. of National Roads and 736 Km. of Departmental Roads shown in the following tables and map compose the 1,755 Km. present National Road Network which SEPRAN is obligated to maintain.

Table No. 1  
 NATIONAL ROADS

No.	Description	SEPRAN		Alignment (Km.)
		Maintenance	Restoring (Km.)	
No. 1	P-au-P - Cap Haitien - Frontière	318	22(a)	(248)(b)
No. 2	Carrefour Joffre - Port-de-Paix	78	46	
No. 3	Crx. des Missions - Hinohe - RN 1	190	102	
No. 4	Mirebalais - Lascahobas - Frontière	51	4	
No. 5	Crx. des Bouque - Malpasse - Frontière	42	14	
No. 6	P-au-P - Les Cayes - Jérémie	301	54(a)	(152)(b)
No. 7	Carrefour Dufort (ou Fauché) - Jacmel	39(c)		40
	Totals	1,019	242	440

(a) Without taking into account the rehabilitation of the following sections, planned with the foreign assistance:

No. 1 Port-au-Prince - Cap-Haitien 248 Km  
 No. 6 Léogâne - Les Cayes 152 Km

(b) routine maintenance on the existing "road" until opening of the new road from Carrefour Fauche to Jacmel.

Unclassified

Annex V, Page 2 of 22  
 Exhibit 1, Page 2 of 3

Table No. 2  
 DEPARTMENTAL ROADS

No.	Description	SEPRRN		New Alignment (Km)
		Maintenance	Restoring (Km)	
D11	P-au-P - Pétionville - Kenscoff	27	0	
D12	Pont Sondé - Mirebalais	74	12	
D13	N1 - Pte.-Riv.Artibon. Dessalines N1	42	35	
D15	Ennery - St. Michel de l'Attalaye	26	1	
D16	Plaisance - Gros Morne	34	32	
D17	Limbé - Le Borgne - Anse à Foleur	30(a)	27	10
D18	Ferrier Rouge - Vallières			35
D21	Port-de-Paix - Môle Saint Nicolas	71	33	
D22	Port-de-Paix - Anse à Foleur	31	23	
D34	Hinche - St. Michel de l'Attalaye	42	20	
D36	St.Raphael - St. Michel de l'Attalaye	21	3	
D51	Fonds Parisien - Belle Anse	100	31	
D62	Miragoâne - Anse-à-Veau	34	25	
D64	Les Cayes - Côteaux	43	27	
D67	Jérémie - Anse d'Hainault	62	44	
D71	Jacmel - Belle Anse	99(b)	54	
	Totals	736	367	45

(a) Without taking into account the junction road between  
 Le Borgne and Anse à Foleur which is to be constructed.

(b) While waiting for the construction of the direct Marigot -  
 Belle-Anse road link along the coast.

# REPUBLIQUE D'HAITI REPUBLIC OF HAITI

## RESEAU ROUTIER NATIONAL PROPOSE PROPOSED NATIONAL ROAD NETWORK

Echelle  
Scale 1:2 000 000

### LEGENDE

Route Nationale



Route Départementale



Route à construire



Limite Départementale



Préfecture



Chef lieu d'arrondissement



### LEGEND

National Highway

Departmental road

Road to be built

Département limit

Department chief town

Arrondissement chief town

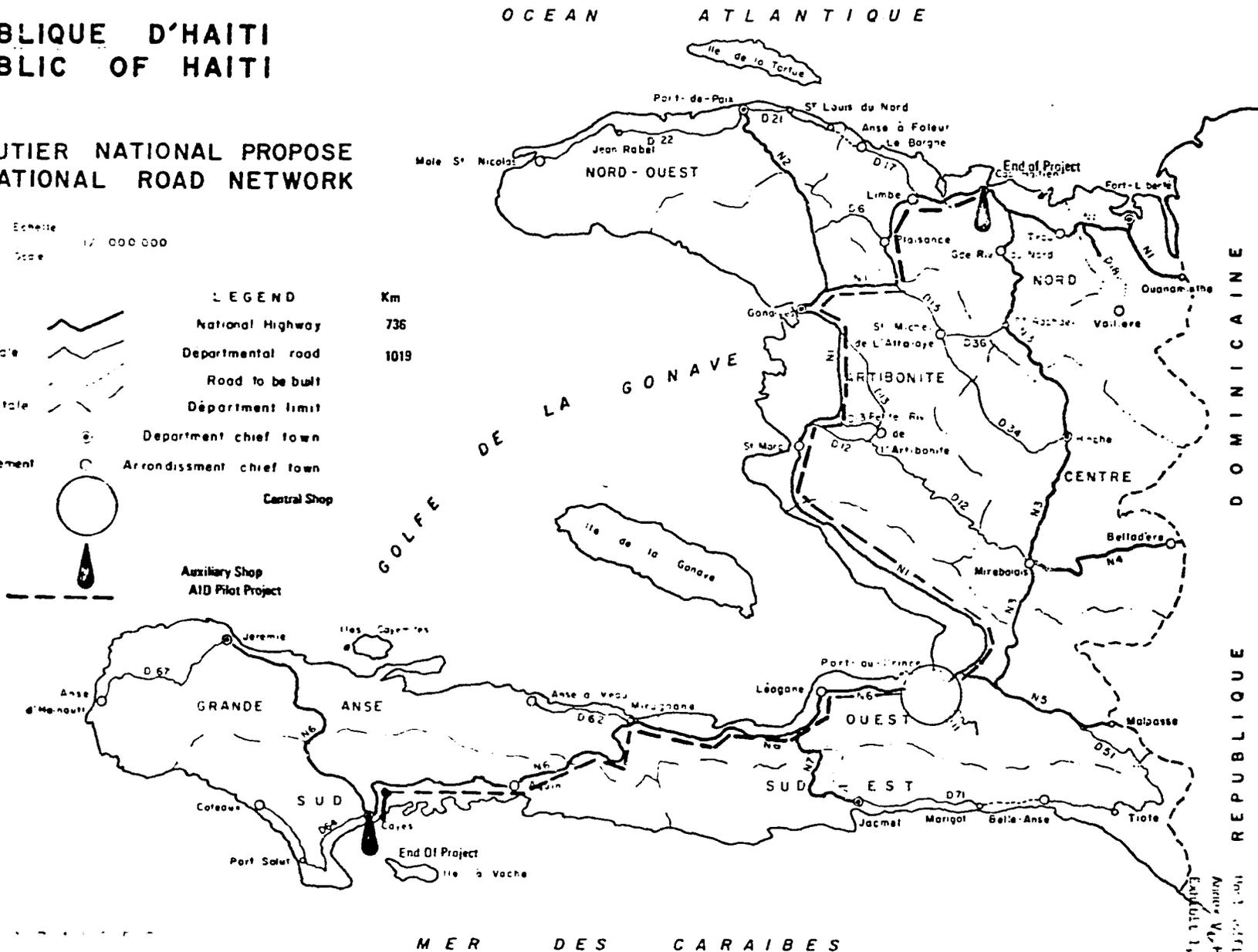
Central Shop

Auxiliary Shop  
AID Pilot Project

Km

736

1019



REPUBLIQUE DOMINICAINE

Annex V, page 2 of 22  
Scale 1:2,000,000

Table No. 3

Inventory of National and Department Roads of Haiti  
Condition of Roads by Districts  
(End 1972)

Kms.	Districts	Asphalt			Water bound Macadam			Dirt			Concrete			Block		
		F	P	VP	F	P	VP	F	P	VP	F	P	VP	F	P	VP
143	South West	-	-	-	-	73	30	27	11	2	-	-	-	-	-	-
146	South	-	-	14	-	-	-	90	42	-	-	-	-	-	-	-
213	South East	-	-	-	85	62	-	22	41	3	-	-	-	-	-	-
383	West	-	161	27	32	21	5	32	71	4	30	-	-	-	-	-
198	Central	-	-	-	47	3	-	29	48	71	-	-	-	-	-	-
283	Artibonite	-	47	12	21	4	1	98	63	21	-	-	-	14	2	-
147	North East	-	-	11	24	12	-	62	8	30	-	-	-	-	-	-
123	North	-	-	2	43	38	-	13	22	5	-	-	-	-	-	-
154	North West	-	-	-	51	17	16	14	41	15	-	-	-	-	-	-
1790	Totals	-	208	66	303	230	52	387	347	151	30	-	-	14	2	-

F - fair condition

P - poor condition

VP - very poor condition

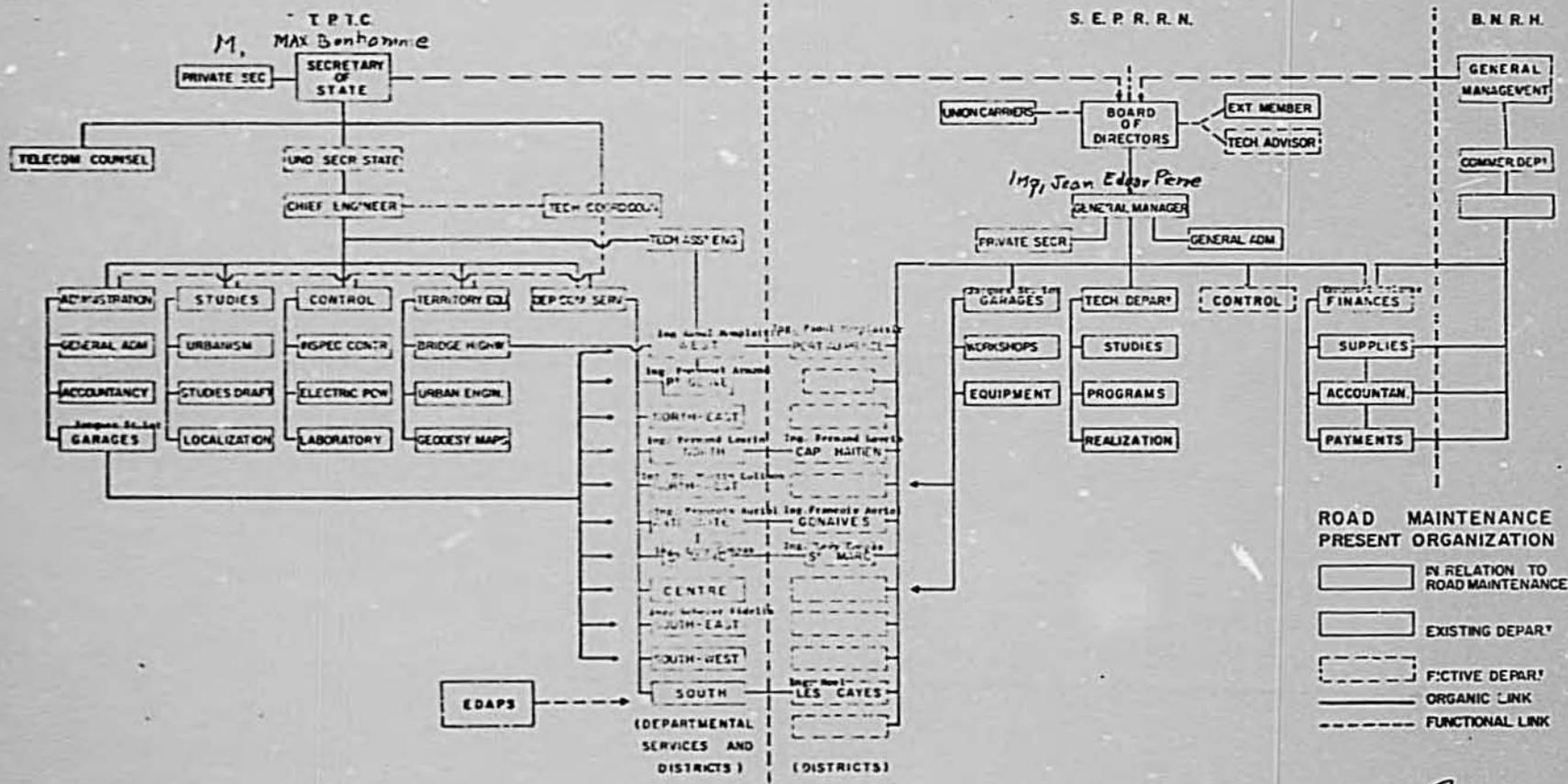
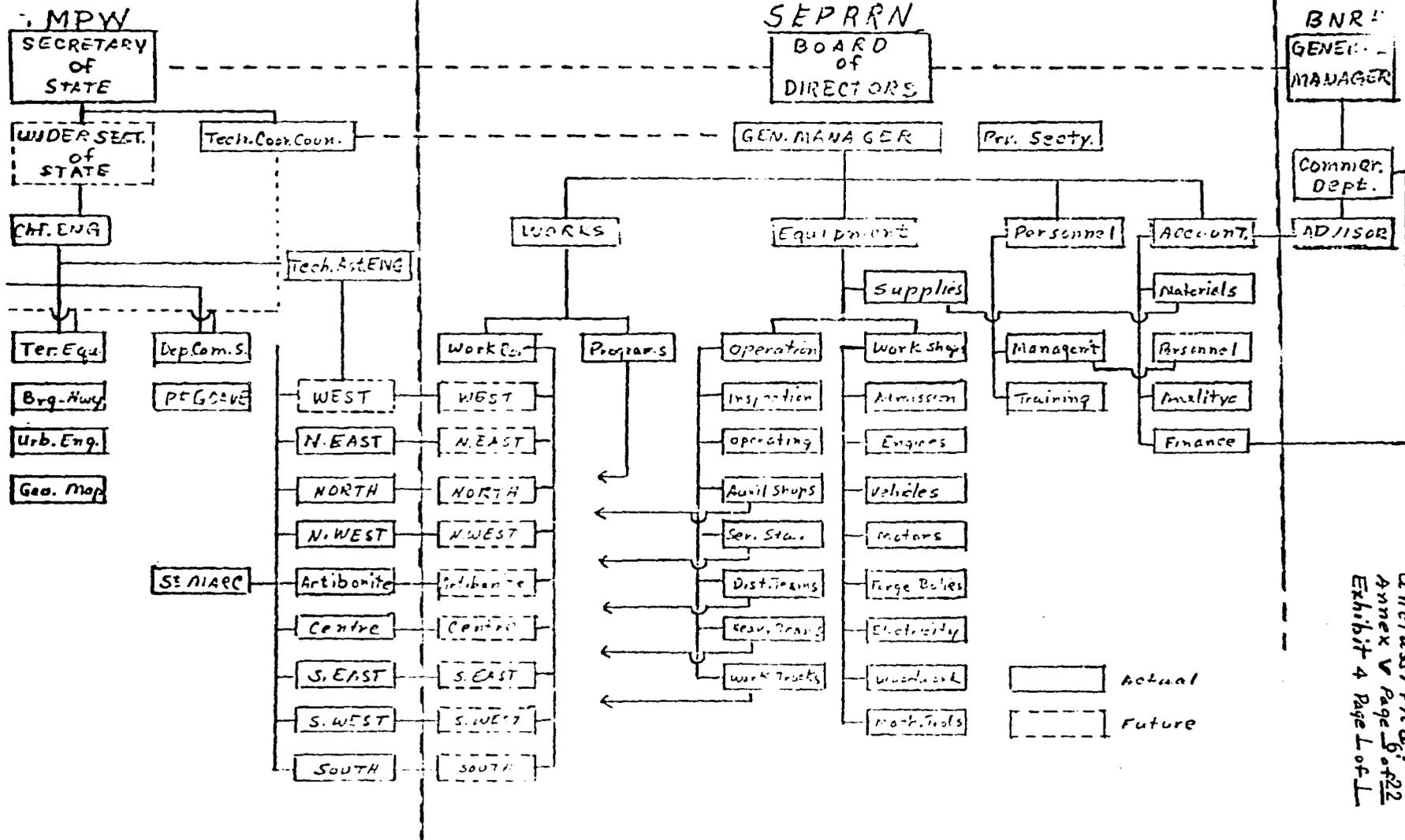


Table #

Pom

TABLE 5.  
ROAD MAINTENANCE  
PROPOSED ORGANIZATION



Unclassified  
Annex V Page 8 of 22  
Exhibit 4 Page 1 of 1

Table No. 6

SEPRAN EQUIPMENT LIKELY TO BE REPAIRED

Equipment	Repairable equipment Road Maintenance	
Jesp	2	
Pick-up truck	5	
Light truck	1	
Dump trucks	9	
Tractor with transport trailer	1	
Crawler tractor with bulldozer		
	CAT D8H	2
	CAT D7	1
	CAT D6	2
	CAT D4	2
Motorgrader:	CAT 12	3
	CA 112	2
Crawler loader		2
Wheel loader		3
Two wheel roller		4
Compressor		1

Table No. 7

EXISTING MACHINE - TOOLS AND EQUIPMENT  
 IN MINISTRY OF PUBLIC WORKS

December 31, 1972

Items	Port-au-Prince		Les Cayes	Cap-Haitien		Total
	MPW	SEPRAN		MPW	POTE-COLE	
Lathes	3	2	1	1	2	9
Filing vices	1	1				2
Drills	2	1	1	1	2	7
Valve rectifying device	1					1
Forge-hammer	1					1
Shears	1					1
Hydraulic press	1				1	2
Grinders	3				1	4
Milling machines		1				1
Oxyacetylene welders		2		1	1	4
Electric welders		1		1		2
Compressor	1	1		1	2	5
Battery charging units	2	2		1		5
Elevators	1		1	1		3
Tyre-levers				1	1	2
Forge				1	1	2
Service-Station	1	1		1	1	4

Note: All of this equipment is badly worn and a lot of it would require major overhauling before it could be used.

CENTRAL OVERHAUL SHOP  
 PORT AU PRINCE, HAITI.

unclassified;  
 Annex V page 9 of 22  
 Exhibit 6 page 1 of 7.

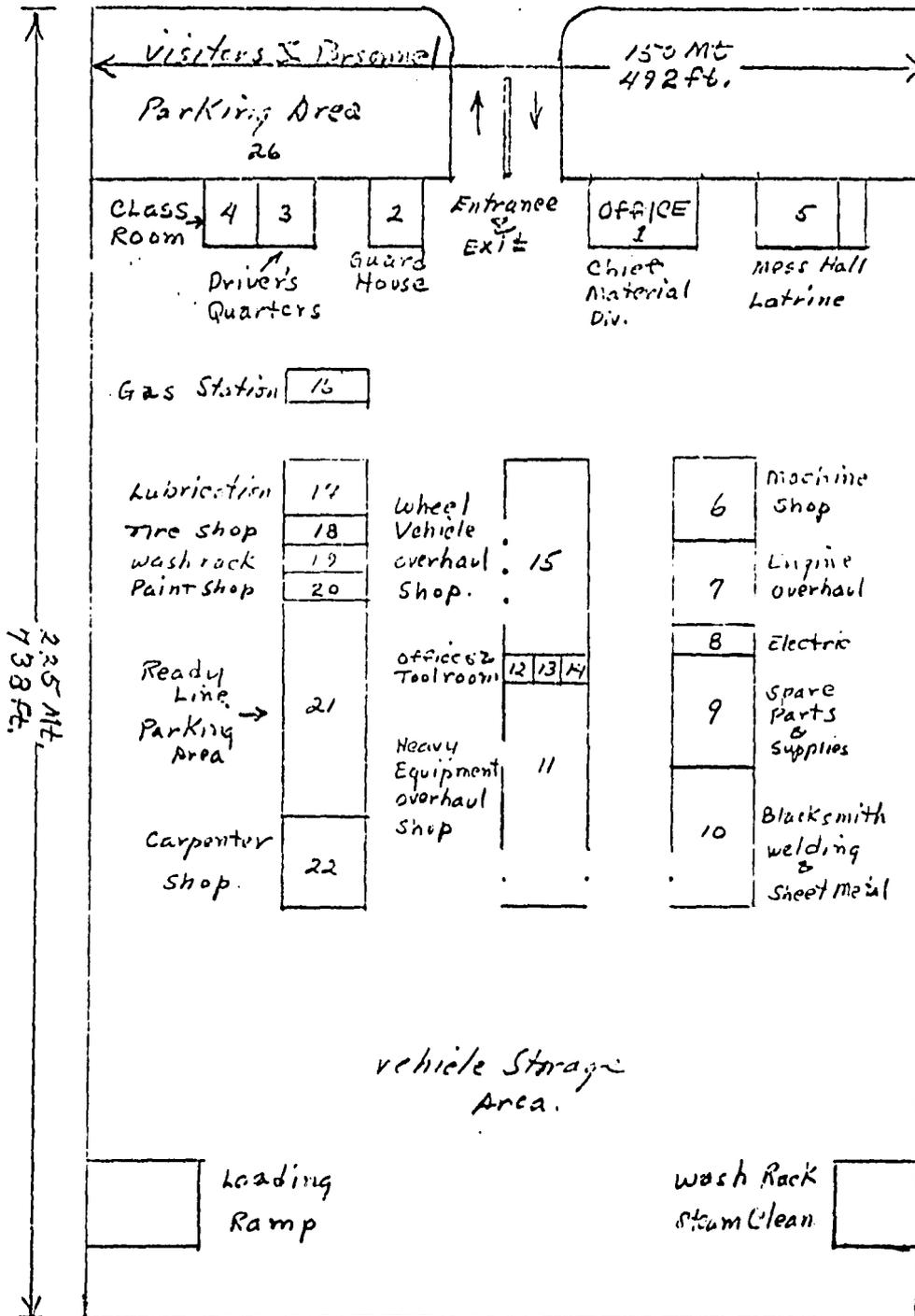


Table No 6

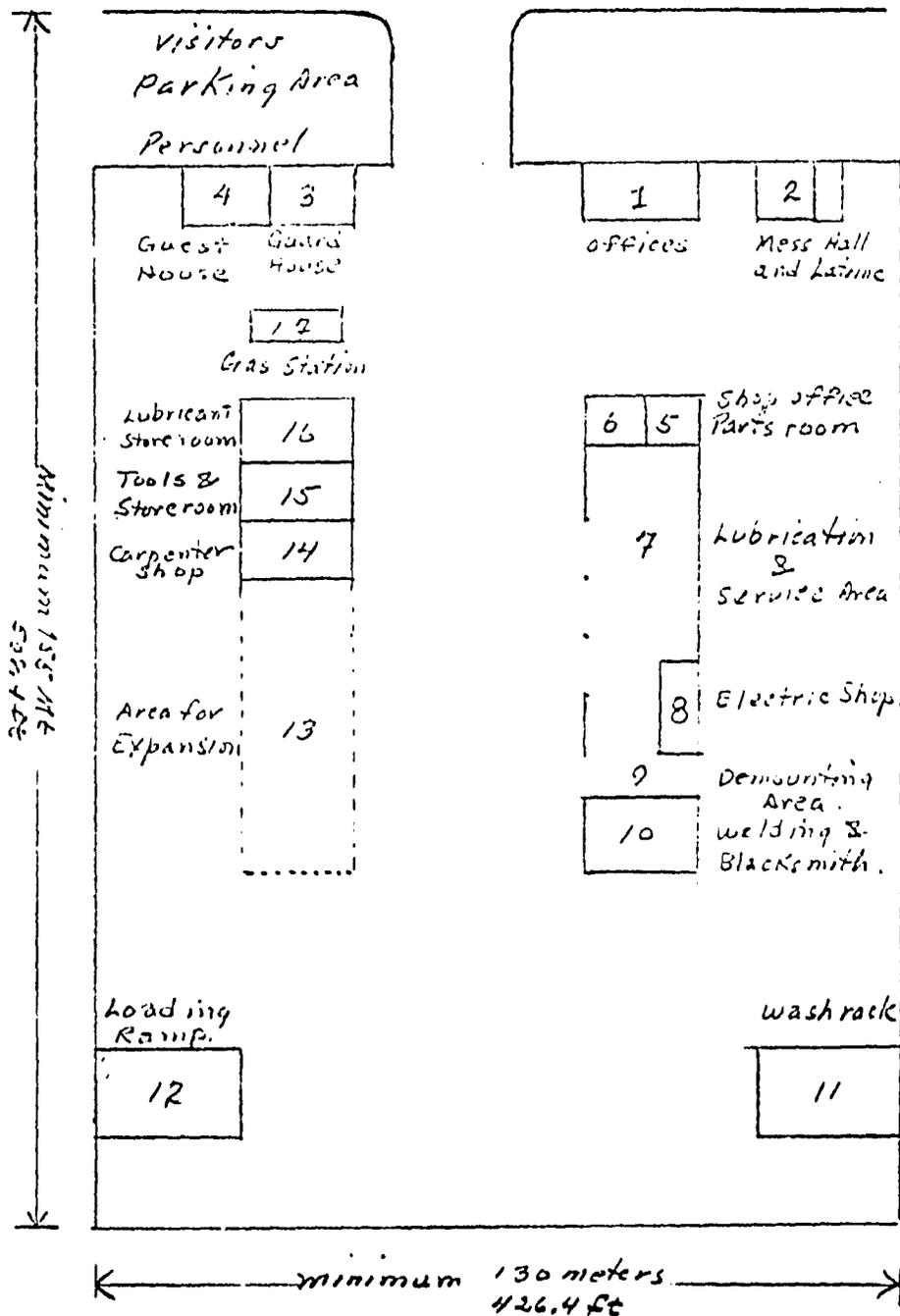
Estimate of the cost of construction  
of the Central Overhaul Shop for the Equip. Div.

Unclassified:  
Annex V page 10 of 22  
Exhibit 2 page 3 of 4

Designation of Shop facilities	Area	Estimates of \$ USA	
		unit cost	Total Cost
Area to be utilized			
Shops, Offices & Tool room 11, 12, 13, 14, 15	1,200m <sup>2</sup>	75	90,000
Allied Repair Shops & Supply Area 6, 7, 8, 9, 10	1,200m <sup>2</sup>	60	72,000
Service station, Garage & Carpenter 16, 17, 18, 19, 20, 21, 22	1,200m <sup>2</sup>	60	72,000
Offices, Chief Equipment Div. 1	216 m <sup>2</sup>	80	17,000
Guard House 2	100m <sup>2</sup>	80	8,000
Mess Hall, Latrine & First Aid 5	240 m <sup>2</sup>	80	19,000
Class Room & Drivers Dorm. 3, 4	240 m <sup>2</sup>	80	19,000
Pavement of Area around Shops	Lump Sum		40,000
Total			337,000
Estimate used			340,000

AUXILLIARY REPAIR SHOP  
 LES CAYES, HAITI

Unclassified;  
 Annex V page 11 of 22  
 Exhibit 5 page 3 of 7



*Table No 7*  
 Estimate of the cost of Construction Unclassified  
 of the Auxiliary Repair Shop at Les Cayes, Haiti. Annex V page 12 of 22  
Exhibit 6 page 4 of 4

Designation of Shop facilities	Area	Estimates of \$ U.S.	
		Unit Cost	Total Cost
Area to be Utilized shops, office & parts room 5, 6, 7, 8, 9, 10	900m <sup>2</sup>	60	54,000
Office of Resident Engineer 1	140m <sup>2</sup>	80	12,000
Guard House & Guest House 3 & 4	140m <sup>2</sup>	80	12,000
store rooms & carpenter shop	450m <sup>2</sup>	60	27,000
Mess hall & latrine 2	70m <sup>2</sup>	80	6,000
Paving, wash rack & loading 11, 12	Lump Sum		25,000
Gas Station 17		—	—
Total			136,000
Estimate Used.			140,000

TABLE NO. 8

SMALL TOOLING

<u>QUANTITY</u>	<u>DESCRIPTION</u>
8	Standard service sets, 176 tools
6	Nut Turning sets, 184 wrenches
4	General Purpose sets on wheels
4	Industrial maintenance sets
4	General automotive purpose sets
4	Body repair mechanics sets
4	Special brake service tool sets
20	General purpose service sets
4	Midget complete special wrench sets 1/4"
4	Extra duty standard set 21 tools (cylindrer head wrench)
2	Metal case with popular size torquemeter
1	Complete automatic oil pressure gauge set
2	Double Hex offsets
2	Double end wrench kits
4	Hex head wrench kits
4	Multi-Spline wrench kits
2	Set kit bag C 200
4	Electric drills 1/4"
4	Standard duty drill 3/8"
6	Complete sets of taps and dies
6	Fractional drill sets, 29 drills
4	Complete floor press set

TABLE 8  
 Page 2  
 DESCRIPTION

QUANTITY	DESCRIPTION
4	Basic medium 3 Jaw screw gear pullers
4	Sets of Universal Pullers
4	Clutch aligner sets
20	Parallel vices
4	Leg vices
11	12-ton rolling jacks
1	Set of special truck tools (according to truck make)
10	Blacksmith tool chests
3	Sheet-iron tool chests
10	Hand water-cooled grinding wheels
3	Electrician tool sets
4	Spray guns (professional type)
2	Cradles for engine assembly and disassembly
3	Sets of measuring instruments: sliding gauge, 500 mm sliders micrometers, magnetic stand comparator, thread gauge, thickness gauge, reaming gauge
3	Sets of drafting tools: center-punches, compasses, squares, rulers, adjustable squares, scribes
10	Protection goggles for metal-grinding work
14	Tire pressure gauges
20	Caterpillar 7 F 1680 or equivalent lever grease pumps with "Lub Tecalemit" hose and connecting sockets

The overall cost of the above light tools is estimated at seventy thousand U.S. dollars (U.S. \$70,000) at 1972 prices by Ingeroute.

TABLE NO. 9

SHOP TOOLS AND EQUIPMENT FOR OVERHAUL SHOPS

<u>QUANTITY</u>	<u>DESCRIPTION</u>
1	Lathe 1500 mm between canters and accessories
1	Universal milling machine and accessories
1	Crankshaft grinder, heavy vehicle type
1	Hydraulic Vertical press, 100 Tons
1	Radial drilling machine, 45 mm dia. capacity
2	Pillar drilling machines, 22 mm dia. capacity
2	Sensitive bench drilling machines, 12 mm dia.
1	Wheel balancing machine, passenger vehicle type
1	Wheel parallelism checking machine
1	Connecting-rod reaming machine
1	Connecting-rod checking machine
1	Travelling gantry-crane with 2-Ton differential pulley block
9	Heat vulcanization machines
1	Tungsten tool-grinder
1	Alternating metal hack-saw
2	Rotating arc-welding sets, 300/400 amps
1	Arc-welding set 300/400 amps, with 2-wheel trailer-mounted engine (Diesel or gasoline)
1	Dual fire stationary forge, power-blower
11	Portable forges, hand-blowers
2	55 kg anvils
11	35 kg anvils
11	4 HP engine (Diesel or gasoline) air compressors, 200 liter air tank, maximum pressure 12 bars

QUANTITY	DESCRIPTION
1	Point chamber
1	Heavy duty tire disassembling machine for roadbuilding equipment and heavy trucks
1	Electric welding tong for point-welding of vehcile bodies
2	Welding benches
2	Welding and oxy-acetylene cutting blowpipe chests
4	Grinding machines, 150 mm diameter grinders
1	Test-bench for injection pumps
1	Test-bench for generators and starters
1	Test-bench for 15 HP to 300 HP engines
1	12-Ton electro-mechanical lift-bridge
1	3-Ton hydraulic lift-bridge
1	Lubricating unit, 4 grease distributors, 3 oil distributors
1	Radiator scaling machine
1	High pressure wash rack
2	Battery charging sets 6-12-24 volts, 10 amps, with steam engine
2	Battery chargers 48 volts, 20 amps, for 110/220 volt power
6	Battery chargers 6-12-24 volts, 10 amps, for 110/220 volt power
1	Surface plate 1000 x 1500 mm
1	Electric punch-shear for 6 mm sheet-metal
1	Sheet metal bending machine, 2000 x 4 mm
1	Sheet metal folding machine, 2000 x 4 mm
2	Grinding machines, lapidary type, 350 mm diameter grinding wheels
1	Set of special tools with portable hydraulic press for Caterpillar D8 - D7 - D6 - D4 tractors
1	Workshop electric compressor..15 HP with 400 liter air-tank, automatic starter and cut-off

<u>QUANTITY</u>	<u>DESCRIPTION</u>
1	Hot water scouring chamber
1	Circular power wood-saw
1	Wood hand-saw, 900 mm fly-wheel
1	Multi-purpose woodworking machine (planer, surfacer, mortising, spindle moulding)
1	Automatic hand-saw sharpening machine

The cost of the above equipment is estimated at One hundred and sixty thousand U.S. Dollars (U.S. \$ 160,000) by Ingeroute

Table No. 10

TRAINING AIDS AND PRINTING OF MANUALS

1	Movie projector with sound and microphone attachments 16 M M	\$ 1,000.00
1	Projector for slides	200.00
1	Projector (Opaque reflector type) for projecting diagram illustrations and drawings directly on screen	500.00
1	Portable tape recorder for field use	100.00
1	Tape recorder for headquarters use	200.00
1	Movie camera 16 M M	350.00
1	Camera for still photos	200.00
1	Projection screen for travel to field	75.00
1	Projection screen for headquarters	75.00
1	Instruction movies for equipment operators	2,000.00
1	Instruction movies for equipment maintenance personnel	1,400.00
1	Instruction movies for mechanical personnel	1,400.00
1	Instruction movies for highway maintenance personnel	<u>1,500.00</u>
	Total Purchase	\$ 9,000.00
	Spare parts and contingencies	<u>1,000.00</u>
	Sub-total	10,000.00
	Reproduction of existing manuals	<u>10,000.00</u>
	TOTAL	\$ 20,000.00

Table 11

Required Annual Budget for SEPRAN to Maintain Entire National Road Network  
 using Normal Amounts of Equipment

Amounts in US\$ Equivalents

	<u>All expenses and reserves</u>	<u>Without amortization of equipment and spare parts</u>
a) <u>Personnel for Management*</u>		
General Management	23,500	23,500
National Bank	19,000	19,000
Districts (9)	84,200	84,200
b) <u>Routine Maintenance</u>		
Permanent Gangs (34)	115,000	115,000
Normal district teams (9)		
Equipment	666,000	423,000
Personnel	39,000	39,000
c) <u>Surfacing</u>		
Heavy mechanized teams (2)		
Equipment	550,000	260,000
Personnel	11,000	11,000
d) <u>Special operations</u>		
Equipment and personnel	170,000	78,000
e) <u>Inspection vehicles</u>		
G. M. and districts	162,000	61,000
f) <u>Materials and hand tools</u>		
G.M. and districts	31,000	31,000
g) <u>Provision for new surface dressing</u>		
to deposit in reserve	<u>53,700</u>	<u>53,700</u>
Annual total	\$ <u>2,150,000</u>	\$ 1,224,000
Monthly expenses	\$ <u>180,000</u>	\$ 102,000

\* Shop and Warehouse personnel are included in equipment costs.

Table 12

Comparison of  
 Required Annual Budget for SEPRAN to Maintain Entire National Road Network  
 using Minimum Equipment and Labor Intensity Methods and AID Pilot Project  
 Amounts in US\$ Equivalents

	<u>All expenses and reserves</u>	<u>Without amortiza- tion of equipment and spare parts</u>	<u>AID Pilot Project for 4 Districts w/o amorti- zation and spare parts</u>
a) <u>Personnel for Management*</u>			
General Management	28,500	28,500	28,500
National Bank	19,000	19,000	19,000
Districts (9)	84,200	84,200	(4) 37,400
b) <u>Routine Maintenance</u>			
Permanent Gangs (34)	115,600	115,600	(18) 61,200
Normal district teams (9)			
Equipment	203,000	100,000	148,000
Personnel	39,000	39,000	17,300
c) <u>Surfacing</u>			
Heavy mechanized teams (2)			
Equipment	550,000	260,000	(1) 130,000
Personnel	11,000	11,000	5,500
d) <u>Special Operations</u>			
Equipment and personnel	65,000	34,000	78,000
e) <u>Inspection vehicles</u>			
C. M and districts	15,000	8,000	8,000
f) <u>Materials and handy tools</u>			
Districts	31,000	31,000	18,000
g) <u>Provision for new surface dressing</u>			
to deposit in reserve	53,700	53,700	0
Annual total	\$ 1,215,000	784,000	550,900
Monthly expenses	\$ 100,000	65,000	45,900

Table No. 13

MAINTENANCE EQUIPMENT LIST MODIFIED BY AID

Number	Specifications of equipment	Estimate (\$)	
		Unit	Total
3	Light vehicle, commercial type	4,000	12,000
2	Four-wheel drive vehicle (jeep)	3,000	6,000
6	Four-wheel drive pick-up	4,000	24,000
12	7T diesel tri-dump truck	15,000	180,000
10	3/4T diesel dump truck	13,000	130,000
2	4/5T diesel flat bed truck equipped for supplying and greasing equipment (2000 l. fuel tank, tool boxes, compressor)	20,000	40,000
4	5/6000 l. water tank truck with four-wheel drive	18,000	72,000
2	3/4T flat bed truck with raves	13,000	26,000
1	3/4T workshop truck for on the site repairing (electric and oxyacetylene welders, cutting device, compressor with its ancillary equipment, tool boxes, spare part cases).	30,000	30,000
1	Diesel tractor with a 30T low-bed trailer	35,000	35,000
4	125 HP crawler tractor with tilt bulldozer and mounted ripper	54,000	216,000
4	125 HP motorgrader with scarifer	40,000	160,000
4	80/100 HP wheel loader with 1m <sup>3</sup> (1.5 cy) bucket and mounted ripper	25,000	100,000
2	10/14T three wheel roller with mounted ripper	20,000	40,000
10	0.6/0.8 3T vibrating roller manually guided with its trailer	3,000	30,000
1	4/5T wheel yard crane	15,000	15,000
1	10T crane mounted on truck with a 20T winch	30,000	30,000
1	Wheel crushing equipment turning out about 20 m <sup>3</sup> per hour	22,000	22,000

Table 13  
Page 2

Number	Specifications of equipment	Estimate (\$)	
		Unit	Total
2	Wheel air compressor with 90 HP engine giving 7/8 kg/cm <sup>2</sup> (200 psi) pressure with 2 pavement breakers and 2 drifter drills	16,000	32,000
2	15 KWA electric generating set with trailer	5,000	10,000
1	Trailer 600/800 l. binder spreader with reheating device	6,000	6,000
1	Sand-blasting set for steel structure	7,000	7,000
2	Office and housing trailer	12,000	24,000
2	1500 l. drinking water tank trailer	2,000	4,000
2	Water gas powered pump giving flow about 60 m <sup>3</sup> per hour with two 6 m. hoses	3,000	6,000
1	Radio, base station	3,000	3,000
3	Radio, Transceiver	2,000	6,000

Value of purchase	\$ 1,266,000
Spare Parts 15%	<u>189,900</u>
Sub-Total	1,455,900
Contingencies 15%	<u>218,385</u>
Total	1,674,285

Round Total \$1,700,000

Haiti Highway Maintenance Project: Environmental Analysis Annex

The present condition of Haitian roads varies from fair to impassable during the dry season and when the rains come a large portion of them are closed to all traffic for the wet season.

Well-managed, systematic road maintenance capabilities in the Road Department are virtually non-existent.

Through possible IBRD and IDB loans, two major roads will be rebuilt. The Haitian Government has requested AID to assist them in developing a road maintenance capability to adequately maintain these new (rebuilt) roads and to salvage, through maintenance, those roads not yet in such a state of deterioration as to require rebuilding.

Therefore, this project will consist of 1) supplying road maintenance equipment to be used in maintaining approximately 440 kms of primary roads; 2) supplying shop maintenance equipment and machinery to equip and construct a road equipment maintenance shop and yard; 3) providing technical assistance to the Maintenance Department in road maintenance management and techniques (including shop management); and 4) providing participant training in maintenance management and techniques.

The environmental analysis for this project was carried out by SER/ENGR and included site visits and discussions with Haitian officials.

The only potential adverse environmental effect identified was the possibility of soil erosion during the cleaning and cutting of side drainage ditches. This is expected to be taken care of through instruction to GDM personnel in good maintenance practices which include reseeding of exposed slopes and paving of side ditches where necessary. Disruption of vehicular traffic and movement of people is expected to be no greater than similar maintenance operations in other areas of the world. No adverse sociological aspects or dislocations of people or structures were identified since work under the project will be carried out mostly on existing roads and within existing rights-of-way.

Principal among the environmental beneficial aspects identified will be the elimination of stagnant standing pools of water, potential breeding areas for mosquitos, through cleaning and maintenance of side drainage ditches and other drainage structures. Other beneficial aspects could include fewer vehicular accidents caused by drivers veering to avoid potholes, lowered vehicle maintenance and repair costs, more comfortable and pleasant driving conditions for the motoring public, etc.

No accurate economic value can be assigned to the benefits listed above, and therefore no cost/benefit calculation is possible. However, this project is expected to significantly benefit the environment and the comfort and health of the people.

HAITI: COMPARISON WITH NEIGHBORING LATIN AMERICAN COUNTRIES -1969 a/

	HAITI	DOMINICAN REP.	GUATEMALA	EL SALVADOR	HONDURAS	NICARAGUA	COSTA RICA	PANAMA	COLOMBIA	VENEZUELA
Total population (in thousands of inhabitants)	5 095	b/ 4 200	5 034	3 326	2 496	1 960	1 731	1 361	21 407	10 401
Density	180	83	45	153	22	14	32	18	17	11
Growth rate of population	2,3 c/	3,6	3,1	3,7	3,4	3,6	3,3	3,3	3,2	3,5
Infant mortality rate (1-4 years)	33,0	6,3	28,5	10,4	10,6	7,0	5,3	7,3	13,4	4,9
Years of life expectancy at birth	47,5	52,0	47,0	56,9	42,6	51,0	63,3	64,3	60,0	65,8
Percentage of children in schools (5 to 14 years old - 1968)	14,8 d/	55,7	35,7	52,3	55,5	42,4	61,6	60,6	45,5	63,0
Percentage of literacy (1968)	18,8	43,0	37,9	50,8	47,0	49,8	85,8	78,3	72,9	52,0
Number of calories per inhabitant	1 850	2 290	2 200	1 840	2 010	2 350	2 610	2 500	2 200	2 490
Percentage of active population covered by a social security system (1967)	1,2	15,4	24,9	7,1	4,5	14,0	29,7	41,1	10,1	21,1
Gross domestic product (per capita) in US\$	98 e/	237	359	340	253	339	580	710	381	790
Share of agriculture in the G.D.P.	45,9 f/	24,6	27,3	26,0	38,5	27,9	22,4	21,0	30,3	7,8

a. Except specified, the figures correspond either to the year 1969 or to the five year period 1965-1969 and correspond to the estimates calculated by CEPAL on the basis of available statistics.

b. The estimate of the Haitian Statistical Office for the same year is 4.768 millions.

c. The estimate of the Haitian Statistical Office is 2.0 percent

d. The estimate of the Ministry of National Education for 1970 is 27 percent.

e. This is the GDP per capita at current prices which explains the difference with the GDP per capita at 1955 prices shown in Table II-1.

f. The estimate of the Haitian planning office is 50 per cent for 1969.

Source: United Nations Development Program in Haiti.

Composition of GDP at Factor Cost<sup>1/</sup>

(In millions of " S. \$ at constant 1955 prices)

	Fiscal Years										
	1961	1962	1963	1964	1965	1966	1967	1968	1969	1970	1971
<u>Gross domestic product</u>	296.2	320.6	315.6	311.9	314.2	314.4	309.7	317.9	328.6	343.3	362.9
Agriculture	146.9	159.1	158.4	157.1	159.6	164.2	161.6	165.1	169.7	170.0	180.2
Mining	3.9	5.7	5.6	5.4	4.8	4.5	4.0	4.4	6.8	5.8	6.7
Construction	5.9	6.5	6.4	6.1	5.7	4.6	4.5	4.9	5.3	6.5	7.3
Manufacturing	29.9	35.2	34.7	31.1	32.3	30.7	30.0	31.4	32.9	39.1	42.3
Electricity and water	3.2	3.6	3.56	3.5	3.8	3.8	3.9	4.0	4.4	4.4	4.7
Transport and communications	7.9	7.8	6.6	7.5	7.2	6.2	7.2	8.2	8.0	8.3	8.6
Commerce	272.0	36.6	34.1	31.8	32.4	32.6	29.3	31.4	32.3	34.1	35.4
Financial services	2.4	2.5	2.4	2.8	2.7	2.74	2.9	2.6	2.7	2.8	2.9
Housing	28.1	28.4	28.8	29.7	29.9	30.8	31.1	31.7	32.5	34.1	35.4
Government	19.7	17.6	14.7	16.04	14.9	13.8	15.1	12.7	13.8	15.6	16.1
Personal services	21.1	17.6	19.6	21.0	20.8	20.5	20.2	21.2	20.0	22.5	23.2
<u>Gross domestic product adjusted for the terms of trade</u>	<u>247.7</u>	<u>290.5</u>	<u>286.4</u>	<u>293.8</u>	<u>293.3</u>	<u>291.4</u>	<u>291.2</u>	<u>294.5</u>	<u>304</u>	<u>320.2</u>	<u>334.9</u>

Sources: Haitian Statistical Institute; National Council for Development and Planning; and Fund staff estimates.

<sup>1/</sup> The GDP estimates were compiled on the basis of a survey of 1955 value added by sectors. For subsequent years through 1969, the data are based on changes in the indices of gross production by sector which were assumed to reflect the variation in the value added. For 1970 and 1971, because of a lack of complete production data, the series was based on partial indicators of output.

## Production Statistics

(In thousands of metric tons, unless otherwise indicated)

	Fiscal Years				
	1967	1968	1969	1970	1971 <sup>1/</sup>
<u>Agricultural products</u>					
Coffee (thousand 60-kilogram bags)	469	526	503	450	544
Sisal (thousand short tons)	24	19	17	17	18
Cotton (thousand 250-kilogram bags)	9	4	5	7	12
Bananas	225	174	189	189	190
Cacao	2.7	2.5	2.7	2.9	3.1
Corn	246	220	242	240	252
Rice	77	77	83	80	81
Sugarcane	4,900	4,300	4,600	4,800	4,900
Sorghum	188	182	209	210	211
Beans	42	30	40	40	42
Tobacco	1.9	1.9	2.2	2.2	2.2
Sweet potatoes	6.5	6.6	7.4	6.6	7.0
Manioc	111	111	121	130	134
<u>Mineral products</u>					
Bauxite <sup>2/</sup>	316.0	469.9	763.8	648.5	753.2
Copper ore <sup>2/</sup>	7.3	4.4	5.9	4.8	6.5
<u>Industrial products</u>					
Sugar (thousand short tons)	60.5	63.7	58.2	63.9	69.6
Molasses (million gallons)	3.0	3.3	3.3	3.5	3.3
Cement	38.1	40.6	51.2	62.4	72.5
Cotton textiles (million yards)	3.8	4.0	3.5	3.6	5.9
Cigarettes (millions)	351.0	342.0	361.0	420.7	451.4
Flour	41.3	11.1	10.9	25.9	32.0
Soap	5.7	5.6	4.8	4.4	7.6
Cooking oil	4.7	4.7	5.0	4.9	8.1
Lard	0.7	0.6	0.6	0.7	1.5
Shoes (thousand pairs)	45.1	177.8 <sup>3/</sup>	175.1	221.2	277.9
Soft drinks (million bottles)	13.9	14.6	20.5	25.5	27.8
Essential oils (thousand kilograms) <sup>2/</sup>	286.2	32.5	300.3	206.0	321.6

Sources: National Bank of the Republic of Haiti; Ministry of Agriculture; and National Council for Development and Planning.

1/ Preliminary.

2/ Exports.

3/ The coverage was extended by including a previously unlisted manufacturer.

## Aggregate Economic Indicators

Fiscal Year	GDP at Current Factor Cost		GDP at Factor Cost at Constant 1955 Prices		Real GDP at Factor Cost** Per Capita	
	(Million U.S. \$ )	(Percentage change)	(Million U.S. \$ )	(Percentage change)	(U.S. \$ )	(Percentage change)
1962	295.4	...	320.6	-8.2	78.2	...
1963	301.2	2.0	315.0	-1.7	76.0	-2.8
1964	307.4	2.1	312.0	-1.0	76.8	1.1
1965	316.8	3.1	314.2	0.7	75.6	-1.6
1966	324.2	2.3	314.4	0.1	74.0	-2.1
1967	331.6	2.3	309.6	1.5	72.8	-1.6
1968	336.4	1.4	317.8	2.6	72.6	-0.3
1969	363.8	8.1	328.6	3.4	73.8	1.6
1970	387.2	6.4	343.2	4.5	76.6	3.8
1971	421.4	8.8	362.8	5.7	78.8	2.9
1963-67	--	2.4	--	-0.7	--	-1.4
1968-71	--	6.2	--	4.0	--	2.0

Sources: Appendix Tables I and IV; Haitian Statistical Institute; and Fund staff estimates.

\* Haiti Recent Economic Developments: IMF-1972 and IBRD/IDA-Economic Position. Prospects of Haiti: May 1972.

\*\* All statistical information in Haiti is calculated on a fiscal-year basis, the fiscal year running from October 1 to September 30. Thus, all references in this report are to fiscal years, except where explicitly indicated otherwise. For instance, year 1971 refers to the period October 1, 1970 to September 30, 1971.

Estimates of National Accounts<sup>1/</sup>

(In millions of U.S.\$ )

	Fiscal Years					
	1966	1967	1968	1969	1970	1971
<u>Domestic expenditure</u>	<u>364.2</u>	<u>369.8</u>	<u>372.2</u>	<u>408.4</u>	<u>445.8</u>	<u>481</u>
Consumption	348.6	353.8	355	387	421.4	451.8
Private sector	(316.2)	(320.4)	(322)	(352)	(383.8)	(410.2)
Public sector	(32.4)	(33.4)	(33)	(35)	(37.6)	(41.6)
Investment (including change in stocks)	78	16	17.2	21.4	24.4	29.2
Private sector	(8)	(7.8)	(7.2)	(9)	(13.2)	(16.2)
Public sector	(7.6)	(8.2)	(10)	(12.4)	(11.2)	(13)
<u>Balance on goods and nonfactor services</u>	<u>-16.4</u>	<u>-15</u>	<u>-7.2</u>	<u>-12.4</u>	<u>-21.6</u>	<u>-15.8</u>
Exports	45.6	41	47.4	48.4	53	62
Imports	62	56	54.6	60.8	74.6	77.8
<u>Gross domestic product at market prices</u>	<u>347.8</u>	<u>354.8</u>	<u>365</u>	<u>396</u>	<u>424.2</u>	<u>465.2</u>
Plus: Net factor income payments	-4	-3	-3.2	-3.2	-2.8	-3
<u>Gross national product at market prices</u>	<u>343.8</u>	<u>351.8</u>	<u>361.8</u>	<u>392.8</u>	<u>421.4</u>	<u>462.2</u>
Plus: subsidies	3.36	1.2	1	1.2	1.2	1.4
Less: indirect taxes	23.6	23.2	28.4	32.2	37	43.8
<u>Gross national product at factor cost</u>	<u>320.8</u>	<u>329.8</u>	<u>334.4</u>	<u>361.8</u>	<u>385.6</u>	<u>419.8</u>

Sources: Haitian Statistical Institute; and Fund staff estimates.

<sup>1/</sup> To obtain GDP at current prices, the real GDP at factor cost was adjusted by the relevant components of the cost-of-living index, except for the value of exports which was adjusted by the export price index. The balance on goods and nonfactor services and the net factor income payments were obtained from the balance of payments. Public sector consumption, investment, subsidies, and indirect taxes were calculated on the basis of available fiscal data. Private sector investment was derived from indicators of construction activity, direct foreign investment, and capital goods imports. Private consumption is a residual.

Public Sector Investment<sup>1/</sup>

(In millions of U.S.\$..)

	Fiscal Years				1972 Budget
	1969	1970	1971		
			Budget	Actual	
<u>Total investment</u>	<u>12.4</u>	<u>11.1</u>	<u>21.6</u>	<u>13.0</u>	<u>20.0</u>
Energy	2.2	3.7	3.4	5.0	3.2
Transport and communications	3.9	2.4	4.0	2.3	2.9
Agriculture	1.7	1.9	4.3	2.0	6.5
Industry	.2	.4	3.0	.9	1.3
Tourism	.4	.1	.3	.2	.5
Water	1.3	.2	2.4	.3	.5
Education	.5	.6	.8	.4	.5
Health	2.1	1.7	2.0	1.9	2.7
Community development	.1	.1	1.4	.2	1.8
<u>Source of financing</u>	<u>12.4</u>	<u>11.1</u>	<u>21.6</u>	<u>13.0</u>	<u>20.0</u>
External	4.0	3.6	11.6	3.5	9.6
Domestic	8.3	7.5	10.0	9.5	10.3

Sources: Appendix Table II; National Council for Development and Planning; and IMF Fund staff estimates.

<sup>1/</sup> Expenditures under the annual development budgets excluding the administrative costs of CONADEP and some other minor outlays.

1/  
Table II. Public Sector Investment  
(In millions of U.S. dollars)

	Executing Agency <sup>2/</sup>	Source of Foreign Funds	FY 1969			FY 1970			FY 1971		
			Total	Local Funds	Foreign Funds	Total	Local Funds	Foreign Funds	Total	Local Funds	Foreign Funds
<b>Total</b>			<u>12.36</u>	<u>8.3</u>	<u>4.03</u>	<u>11.13</u>	<u>7.49</u>	<u>3.65</u>	<u>13.04</u>	<u>9.51</u>	<u>3.53</u>
<u>Energy (Peligre project)</u>	CONADEP	Italian supplier	<u>2.15</u>	<u>2.15</u>	<u>--</u>	<u>3.70</u>	<u>3.49</u>	<u>.21</u>	<u>5.03</u>	<u>5.03</u>	<u>--</u>
<u>Transport and communications</u>			<u>3.34</u>	<u>3.34</u>	<u>--</u>	<u>2.40</u>	<u>2.40</u>	<u>--</u>	<u>2.3</u>	<u>2.3</u>	<u>--</u>
Southern peninsula highway	Road Fund)		<u>1.95</u>	<u>1.95</u>	<u>--</u>	<u>9.24</u>	<u>9.24</u>	<u>--</u>	<u>.894</u>	<u>.894</u>	<u>--</u>
Regional roads	TPCT )					<u>.026</u>	<u>.036</u>	<u>--</u>	<u>.166</u>	<u>.166</u>	<u>--</u>
Port-au-Prince harbor	Port Administration		<u>.398</u>	<u>.398</u>	<u>--</u>	<u>.484</u>	<u>.484</u>	<u>--</u>	<u>.514</u>	<u>.514</u>	<u>--</u>
Port-au-Prince airport	TPCT		<u>.062</u>	<u>.062</u>	<u>--</u>	<u>.078</u>	<u>.078</u>	<u>--</u>	<u>.074</u>	<u>.074</u>	<u>--</u>
Telecommunications	TELECO		<u>1.53</u>	<u>1.53</u>	<u>--</u>	<u>.88</u>	<u>.88</u>	<u>--</u>	<u>.654</u>	<u>.654</u>	<u>--</u>
<u>Agriculture</u>			<u>1.69</u>	<u>1.05</u>	<u>.63</u>	<u>1.89</u>	<u>.764</u>	<u>1.13</u>	<u>1.97</u>	<u>.782</u>	<u>1.19</u>
Southern peninsula program	UNDP	DARNDR	<u>.66</u>	<u>.32</u>	<u>.336</u>	<u>1.07</u>	<u>.442</u>	<u>.624</u>	<u>1.048</u>	<u>.224</u>	<u>.824</u>
Northern peninsula program	UNDP	DARNDR	<u>.3</u>	<u>.108</u>	<u>.192</u>	<u>.29</u>	<u>.044</u>	<u>.244</u>	<u>.33</u>	<u>.056</u>	<u>.274</u>
Other	IHPCADE DARNDR IDAI-SEN	IDB/Germany	<u>.73</u>	<u>.626</u>	<u>.102</u>	<u>.536</u>	<u>.278</u>	<u>.258</u>	<u>.592</u>	<u>.502</u>	<u>.09</u>
<u>Industry</u>	IDAI-SEN	IDB	<u>.20</u>	<u>.09</u>	<u>.138</u>	<u>.398</u>	<u>.364</u>	<u>.032</u>	<u>.862</u>	<u>.862</u>	<u>--</u>
<u>Tourism</u>	ONTP		<u>.37</u>	<u>.368</u>	<u>--</u>	<u>.146</u>	<u>.146</u>	<u>--</u>	<u>.164</u>	<u>.164</u>	<u>--</u>
<u>Education</u>			<u>.49</u>	<u>.25</u>	<u>.24</u>	<u>.59</u>	<u>.05</u>	<u>.54</u>	<u>.432</u>	<u>.166</u>	<u>.266</u>
University	COCEA	IDB	<u>.08</u>	<u>.02</u>	<u>.06</u>	<u>.266</u>	<u>.266</u>	<u>.24</u>	<u>.29</u>	<u>.068</u>	<u>.222</u>
Other	COCEA DARNDR	IDB/UNESCO	<u>.41</u>	<u>.23</u>	<u>.18</u>	<u>.324</u>	<u>.024</u>	<u>.3</u>	<u>.142</u>	<u>.098</u>	<u>.044</u>
<u>Health (mainly anti-malaria campaign)</u>	SNEM	U.S. AID/ UNICEF/WHO	<u>2.11</u>	<u>.178</u>	<u>1.93</u>	<u>1.72</u>	<u>.05</u>	<u>1.67</u>	<u>1.85</u>	<u>.054</u>	<u>1.8</u>
<u>Water (mainly Port-au-Prince)</u>	CANEP	IDB	<u>1.27</u>	<u>.204</u>	<u>1.06</u>	<u>.198</u>	<u>.168</u>	<u>.03</u>	<u>.258</u>	<u>.102</u>	<u>.156</u>
<u>Community development</u>	ONAAC	Catholic Relief Service (CARE) Church Aid Service	<u>.14</u>	<u>.114</u>	<u>.028</u>	<u>.096</u>	<u>.056</u>	<u>.04</u>	<u>.172</u>	<u>.052</u>	<u>.120</u>

Sources: National Council for Development and Planning; Agricultural and Industrial Development Institute; Inter-American Development Bank; and Fund staff estimates.

1/ Expenditures under the annual Social and Economic Action Plans, excluding the administrative costs of CONADEP and some minor items such as scholarships and certain research efforts.

2/ Abbreviations: CONADEP, National Council for Development and Planning; TPCT, Public Transportation and Communication Agency; TELECO, Telephone Company; CONADEP, Department of Agriculture, Natural Resources, and Rural Development; UNDP, United Nations Development Program; IHPCADE, Haitian Institute for the Promotion of Coffee and Exportable Commodities; IDAI-SEN, Agricultural and Industrial Development Institute-National Development Agency; ONTP, National Tourist Office; COCEA, Committee for the Coordination of Agronomic Education; SNEM, National Malaria Elimination Institute; CANEP, Metropolitan Water Agency; ONAAC, National Office for Alphabetization and Community Action.

Table III. Principal Ongoing Public Development Projects

Project	Description
Foligre hydroelectric project	<ol style="list-style-type: none"> <li>1. Construction of dam and installation of three generators with a total capacity of 47,000 kilowatts. Installation of transmission lines and transformers.</li> <li>2. Cost: G 100 million (mainly domestically financed but also medium-term suppliers' credits amounting to an estimated SDR 4.5 million).</li> <li>3. Term: Fiscal years 1969-73</li> <li>4. Status as of March 30, 1972: G 68 million spent; two turbines installed.</li> </ol>
Southern peninsula highway	<ol style="list-style-type: none"> <li>1. Repaving of road from Port-au-Prince to Jérémie, 300 kilometers in concrete.</li> <li>2. Cost: G 750,000 per kilometer, or G 225 million, to date domestically financed; IDB financing requested.</li> <li>3. Term: Fiscal years 1968-</li> <li>4. Status as of September 30, 1971: G 28.8 million spent; 33 kilometers paved.</li> </ol>
Port-au-Prince harbor	<ol style="list-style-type: none"> <li>1. Extension of existing wharf; dredging of access channel.</li> <li>2. Cost: G 13.5 million, domestically financed (IDB financing requested for a second phase).</li> <li>3. Term: Fiscal years 1968-73</li> <li>4. Status as of September 30, 1971: G 9 million spent.</li> </ol>
Fort-au-Prince airport	<ol style="list-style-type: none"> <li>1. Maintenance and extension of facilities, including extension of airstrip and reception facilities, hangar construction, and parking.</li> <li>2. Cost: G 5 million (domestically financed).</li> <li>3. Term: Fiscal years 1966-</li> <li>4. Status as of September 30, 1971: only minor progress has been made.</li> </ol>
Telecommunications	<ol style="list-style-type: none"> <li>1. Expansion of telephone network; installation of 3,000-line crossbar exchange in Pétionville and a 10,000-line crossbar exchange in Port-au-Prince.</li> <li>2. Cost: SDR 2.5 million covered by suppliers' credits.</li> <li>3. Term: Fiscal years 1971-74</li> <li>4. Status as of September 30, 1971: equipment installed equivalent to SDR 0.5 million.</li> </ol>
Southern peninsula program	<ol style="list-style-type: none"> <li>1. Road and canal rehabilitation, agricultural extension, and cooperatives.</li> <li>2. Cost: G 23 million, of which G 13 million provided by UNDP/FAO.</li> <li>3. Term: Fiscal years 1966-72</li> <li>4. Status as of September 30, 1972: G 18.5 million spent, of which G 9 million in UNDP/FAO funds. Main accomplishment has been maintenance of a 100-kilometer stretch of southern peninsula highway.</li> </ol>
Northern peninsula program	<ol style="list-style-type: none"> <li>1. Land and water survey, pilot irrigation project (1,600 hectares), agricultural extension cooperatives.</li> <li>2. Cost: G 8.2 million, of which G 6.2 million provided by UNDP/FAO.</li> <li>3. Term: Fiscal years 1963-72</li> <li>4. Status as of September 30, 1971: G 6.9 million spent, of which G 5.4 million provided by UNDP/FAO.</li> </ol>

Table III (concluded). Principal Ongoing Public Development Projects

Project	Description
Well drilling	1. Well drilling for irrigation in Gonsives area. 2. Cost: G 13.9 million, Government of Germany grant. 3. Term: Fiscal years 1964-77 4. Status as of September 30, 1971: G 3.9 million spent.
Malaria eradication	1. Malaria eradication. 2. Cost through 1971: G 95.8 million grant from U.S. AID, with cooperation from UNICEF and WHO. 3. Term: Fiscal years 1961-
Industrial park	1. Establishment of industrial park near international airport. 2. Cost: G 6.8 million, of which G 5.2 million financed by IDB. 3. Term: Fiscal years 1970-74 4. Status as of September 30, 1971: G 0.3 million in domestic funds spent.
Water supply	1. Extension of water distribution network in Port-au-Prince. 2. Cost: G 31.7 million, of which G 25.5 million financed by IDB. 3. Term: Fiscal years 1970-74 4. Status as of September 30, 1971: G 2.3 million spent, of which G 0.9 million of IDB funds.
University education	1. Improvement and purchase of equipment for Schools of Veterinary Medicine, Agronomy, and Medicine. 2. Cost: G 13.5 million, of which G 6.5 million provided by IDB. 3. Term: Fiscal years 1967-72 4. Status as of September 30, 1971: G 4.8 million in IDB funds disbursed.
IDB agricultural program	1. Development of agriculture and livestock rearing. 2. Cost: G 5 million, of which G 3.7 million financed by IDB. 3. Term: Fiscal years 1971-74 4. Status as of March 30, 1972: Uninitiated.

Sources: National Council for Development and Planning; United Nations Development Program; Inter-American Development Bank; and U.S. Agency for International Development.

Government Debt  
(In millions of dollars)

	Fiscal Years					First 5 Months	
	1967	1968	1969	1970	1971	1971	1972
<u>Total debt (end of period)</u>	87.8	85.6	88	87.5	90	89.42	91.9
External	42.9	42.5	42.3	41.4	40	40.9	42.04
Internal	45.1	43.2	45.7	46.08	50.14	48.6	49.84
Private sector	10.28	5.3	5.7	5.78	7.88	7.94	7.58
Monetary authorities	39.84	37.9	40	40.3	42.26	40.62	42.26
<u>Debt service (during period)</u>	3.4	2.9	2.8	4	4.76	1.9	1.74
Amortization	2.12	1.34	1.16	2.32	2.86	1.06	.90
External <sup>1/</sup>	1.02	.32	.3	1.34	1.9	.44	.48
Internal <sup>2/</sup>	1.1	1.02	.86	.98	1.26	.62	.42
Interest	1.3	1.52	1.64	1.68	1.9	.82	.84
External	.14	.08	.18	.5	.24	.12	.1
Internal	1.14	1.4	1.46	1.18	1.66	.70	.74

Source: National Bank of the Republic of Haiti.

<sup>1/</sup> Excludes gourdes credited to the accounts of foreign creditors (G 0.7 million in 1967, G 4.7 million in 1968, and G 5.5 million in 1969).

<sup>2/</sup> Excludes amortization of debt held by the monetary authorities.

## ANNEX VII

Exhibit 6  
Page 2 of 5

EXTERNAL PUBLIC DEBT OUTSTANDING AS OF SEPTEMBER 30, 1971  
DEBT REPAYABLE IN FOREIGN CURRENCY  
IN THOUSANDS OF U.S. DOLLARS

DEBT OUTSTANDING SEPTEMBER 30, 1971

CREDITOR COUNTRY TYPE OF CREDITOR	DISBURSED	UNDIS- BURSED	TOTAL
FRANCE	800	-	800
GERMANY (FED. REP. OF)	11	-	11
UNITED KINGDOM	701	-	701
USA	312	-	312
SUPPLIERS	1,824	-	1,824
CUBA	4,000	-	4,000
PRIVATELY PLACED BONDS	4,000	-	4,000
IBRD	143	-	143
IDA	350	-	350
LOANS FROM INTL. ORGANIZATIONS	493	-	493
CANADA	2,300	-	2,300
USA	28,611	-	28,611
LOANS FROM GOVERNMENTS	30,911	-	30,911
TOTAL EXTERNAL PUBLIC DEBT 1)	37,228	-	37,228

NOTE: DEBT WITH A MATURITY OF OVER ONE YEAR

1) INCLUDES PRINCIPAL IN ARREARS:	AMOUNT
GERMANY (FED. REP. OF)	7
UNITED KINGDOM	1
USA	312
SUPPLIERS	320
CUBA	4,000
PRIVATELY PLACED BONDS	4,000
USA	770
LOANS FROM GOVERNMENTS	770
TOTAL	5,090

DEBT SERVICE RATIO 1967-1980 <sup>1/</sup>  
(millions of US\$ and percent)

Year	Debt Service			Exports of Goods and Services <sup>2/</sup>	Debt Service Ratio
	Interest	Amortization	Total		
(Past)					
1967	0.1	1.0	1.1	41.0	2.7
1968	0.1	0.3	0.4	47.5	0.8
1969	0.1	0.3	0.4	43.6	0.3
1970	0.4	1.2	1.6	52.6	3.0
1971	0.1	1.3	1.3	62.2	2.1
(Projected on Outstanding Debt as of September 30, 1971)					
1972	0.1	1.6	1.7	65.0	2.6
1973	0.1	1.3	1.4	71.0	2.0
1974	0.1	1.7	1.7	77.0	2.2
1975	0.1	1.7	1.8	82.0	2.2
1976	0.4	1.7	2.1	89.0	2.4
1977	0.7	1.1	1.8	96.0	1.9
1978	0.7	1.1	1.8	103.0	1.7
1979	0.7	1.1	1.8	110.0	1.6
1980	0.6	1.2	1.9	118.0	1.6

<sup>1/</sup> Debt Repayable in Foreign Currency only. Excludes advance payments of suppliers credit for Paligre Hydro-electric Plant.

<sup>2/</sup> Principal Assumptions: Sugar-full quota of 30,000T by 1973.  
Coffee-decline until 1976 then rising to  
quota of 490,000 by 1980.  
Tourists-rising by 10,000 tourists per year.  
Re-exports-10% p.a.  
Other-4% p.a.

	1971	1972	1973	1974	1975	1976	1977	TOTAL
1) <del>Bank (CUBA) 205</del>								
Amortiz. Payments	200.0	200.0	200.0	200.0	200.0	200.0	200.0	1,400.0
Interest Payments	29.5	54.3	78.2	42.2	6.2	30.3	2.2	262.9
TOTAL	229.5	254.3	278.2	242.2	236.2	230.3	202.2	1,662.9
2) <del>Bank (CUBA) 757</del>								
Amortiz. Payments	552.5	667.5	832.5	1,170.0	1,222.5	1,432.5	1,590.0	7,467.5
Interest Payments	-	-	-	-	-	102.2	172.7	262.9
TOTAL	552.5	667.5	832.5	1,170.0	1,222.5	1,534.7	1,762.7	7,730.4
3) I. E. Road Maintenance								
Amortiz. Payments	226.0	143.0	-	-	-	-	-	369.0
Interest Payments	12.9	3.2	-	-	-	-	-	16.7
TOTAL	258.9	146.8	-	-	-	-	-	385.7
4) <del>SAH / A 001</del>								
Amortiz. Payments	34.5	72.4	87.4	125.7	153.1	148.6	151.1	735.7
Interest Payments	175.5	177.6	175.1	171.8	166.9	161.5	155.9	1,134.3
TOTAL	210.0	250.0	262.5	297.5	320.0	310.1	307.0	1,870.0
5) <del>SAH / A (C2 1962 - 2012)</del>								
Amortiz. Payments	-	1.8	3.5	1.5	3.5	3.5	3.5	19.3
Interest Payments	2.6	2.6	2.6	2.6	2.6	2.5	2.5	18.0
TOTAL	2.6	4.4	6.1	6.1	6.1	6.0	6.0	37.3
6) Banco de Colonos de Cuba								
Amortiz. Payments	-	-	-	-	-	-	-	-
Interest Payments	-	-	-	-	-	-	-	-
TOTAL	-	-	-	-	-	-	-	-
7) <del>SR de Marseille</del>								
Amortiz. Payment	150.0	150.0	150.0	150.0	150.0	150.0	-	900.0
Interest Payment	25.5	21.0	16.5	12.0	7.5	3.0	-	85.5
TOTAL	175.5	171.0	166.5	162.0	157.5	153.0	-	985.5

	1971	1972	1973	1974	1975	1976	1977	TOTAL
8) FID General Electric Co.								
Amortiz. payments	150.0	149.0	150.0	150.0	150.0	150.0	-	899.0
Interest payments	20.5	18.0	18.5	21.0	24.5	24.5	-	146.0
TOTAL	170.5	167.0	168.5	171.0	174.5	174.5	-	1045.0
9) FID B								
Amortiz. payments	-	204.1	1,493.6	1,553.7	631.7	503.7	303.1	4,690.9
Interest payments	-	2.5	15.4	26.7	10.1	11.8	13.0	76.5
TOTAL	-	206.6	1,509.0	1,580.4	641.8	515.5	316.1	4,767.5
10) Other Private Lenders								
Amortization	0.0	4.0	-	-	-	-	-	4.0
Interest	0.4	0.2	-	-	-	-	-	0.6
TOTAL	0.4	4.2	-	-	-	-	-	4.6
					In Multilateral Agreements			16,553.4
					Interests			2,126.6
					Total			18,680.0

Summary Balance of Payments  
(In millions of SDRs)

	Fiscal Years				
	1967	1968	1969	1970	1971
<u>Goods and services</u>	-13.1	-10.5	-15.6	-24.4	-15.9
Trade balance, f.o.b.	-8.2	-2.4	-5.4	-11.4	-5.5
Exports	(32.2)	(36.3)	(36.7)	(39.6)	(47.1)
Imports	(-40.4)	(-38.7)	(-42.1)	(-52.0)	(-55.4)
Freight and insurance on merchandise	-4.0	-4.1	-5.8	-9.2	-9.1
Travel receipts	2.1	4.5	5.4	6.6	8.7
Investment income	-3.1	-3.3	-3.3	-2.8	-5.1
Other	-4.9	-5.2	-6.5	-7.6	-7.3
<u>Unrequited transfers</u>	17.2	12.9	15.5	22.0	12.9
Private	13.2	8.9	10.8	15.0	15.1
Public	4.0	3.9	5.0	7.0	5.8
<u>Capital movements</u>	-2.5	3.0	2.3	3.3	5.7
Private	-1.3	3.2	1.7	0.4	0.1
Public agencies	0.2	1.0	2.5	0.5	1.1
Central Government	-1.4	-1.2	-1.9	2.2	-1.5
<u>Net errors and omissions</u>	1.1	-5.7	-1.7	2.6	1.4
<u>Overall balance</u>	-2.3	-0.4	0.8	4.0	7.1
<u>Allocation of SDRs</u>	--	--	--	2.5	2.0
<u>Net international reserves (increase -)</u>	2.3	0.4	-0.8	-6.5	-9.1
National Bank	2.3	0.3	-1.1	-6.3	-9.3
Other banks	--	-0.4	0.3	-0.2	-0.8

Source: IMF Report on Haiti 1972, Appendix Table XIV

FIVE YEAR ROAD PROGRAM

ANNEX VII

Exhibit 8

Page 1 of 3

Road Phase of execution of the road program Definition of studies and works		Estimates (thousands of dollars)	
		<u>Partial</u>	<u>Total</u>
<u>Road 100 : Fort-au-Prince-Gonaives-Cap-Haitien</u>			
Phase I	Construction of fill section road way over rice fields between Pont-Sondé and Pont l'Estère 17 km	779	
Phase II	Repairing of asphalt sections (about 65 km)	1,950	
	- Improvement of infrastructure between Plaisance and Cap-Haitien (50 km).	2,140	
	- Gradual concrete paving of the Plaisance-Cap-Haitien section and concrete overlays of paved sections (64 km).	<u>3,072</u>	
			6,941
<u>Road 150 : Gonaives - Port-de-Paix</u>			
Phase I	Study of infrastructure improvement (77 km)		
Phase II	Reconstruction of the roadway and appurtenances with gravel surfacing.	<u>762</u>	
			762
<u>Road 200 : Port-au-Prince - Les Cayes</u>			
Phase I	Alignment study (130 km) and implementation of the design (170 km)	9,628	
		550	
Phase II	Construction of concrete surfacing (175 km) - construction of 14 structures and repairing of 4 others	5,665	
		<u>860</u>	
			16,703
<u>Road 300 : Port-au-Prince - Hinche - Cap-Haitien</u>			
Phase I	Study of structures Reconstruction of infrastructure and gravel surfacing from Peligre to Cap-Haitien (140 km)	Reminder	
		1,386	
Phase II	Construction of structures	<u>400</u>	
			1,786

FIVE YEAR ROAD PROGRAM (cont.) Exhibit 8  
Page 2 of 3

Road Phase of execution of the road program Definition of studies and works	Estimates (thousands of dollars)	
	<u>Partial</u>	<u>Total</u>
<u>Road 102 : Croix des Bouquets - Saltrou</u>		
Phase II Study for improvement of infrastructure and of asphalt sections		
Phase III Repair of asphalt sections (22 km)	363	
-Repair of existing sections with gravel surfacing.	50	
-Rebuilding of drainage facilities and surface roadway (56 km)	<u>1,040</u>	
		1,453
<u>Road 113 : Gonaives - Anse Saint Nicolas</u>		
Phase I Study for reconstruction & repairs of roadway		
Phase III Reconstruction of road base	<u>693</u>	
		693
<u>Road 305 : Michelais - Belladère</u>		
Phase I Study for construction of 56 km		
Phase III Construction and resurfacing (56 km)	<u>554</u>	
		554
<u>Road 201 : Jacmel road</u>		
Phase I Study of a new alignment linking National Road 200 to Jacmel		
Phase III Construction and surface with gravel (55 km)	<u>1,925</u>	
		1,925
<u>Jeremie Road</u>		
Phase I Study for road linking Jeremie to either Les Cayes or Port-au-Prince	400	
Phase III Construction of road link and gravel surface (about 100 km)	<u>990</u>	
		1,390

FIVE YEAR ROAD PROGRAM (cont.)

Road Phase of execution of the road program Definition of studies and works	Estimates (thousands of dollars)	
	<u>Partial</u>	<u>Total</u>
<u>Boutilliers Scenic Road</u>		
Phase I      Topographical studies, expansion of road width. Construct retaining walls and drainage facilities	500	
Phase II      Lay asphalt surface	<u>210</u>	710
Studies and contingencies		2,083
Total estimate of the road program		<u>35,000</u>

## ANNEX VII

Exhibit 9  
Page 1 of 1

DEVELOPMENT OF THE HAITIAN VEHICLE FLEET

Category of vehicle	1966		1967		1968		1969	
	Quantity	%	Quantity	%	Quantity	%	Quantity	%
Automobiles	6,361	63.6	8,611	66.4	12,832	77.3	12,875	78.5
Jeeps	694	6.9	1,026	7.9	1,123	6.7	1,085	6.6
Pickup trucks	1,350	13.5	1,691	13.0	891	5.5	779	4.7
Truck	1,032	10.3	1,112	8.6	1,256	7.6	1,192	7.3
Buses	176	1.7	290	1.5	152	0.9	115	0.7
Motorcycles and miscellaneous	409	4.0	340	2.6	372	2.2	372	2.2
Total	10,029	100.0	12,950	100.0	16,624	100.0	16,418	100.0

Source : O.A.S. Mission and INCEROUTE Highway Study

It should be noted that this table shows the active fleet, as all vehicles in use are assigned new registration numbers each year.

MOTOR FUEL AND LUBRICANT CONSUMPTION  
(thousands of barrels)

Year	1966	1967	1968	1969	1970	1971
Ordinary gasoline	209.2	194.2	196.9	184.7	159.2	147.9
Superior gasoline	0	0	0	15.8	46.1	56.5
Diesel oil	189.2	182.8	191.1	214.0	239.5	253.7
Lubricants	11.7	13.1	15	16.1	19.4	20.9

(1 barrel = 42 U.S. Gallons)  
Source: Shell Oil Company

TIRE IMPORTS

	Number of tires	Weight in pounds
April 1964 - March 1965		779,605
" 1965 " 1966	18,254	779,010
" 1966 " 1967	24,981	1,003,434
" 1967 " 1968	18,797	864,038
" 1968 " 1969	25,380	1,060,326
" 1969 " 1970	24,358	1,030,532
" 1970 " 1971	25,578	1,138,299
" 1971 " 1972 (1)	28,290	1,301,002

Source : Société ARTY and Co.

Remark (1) extrapolation for the month of March 1972

IMPORTATION OF SPARE PARTS

(in tons)

Fiscal Year	Tonnage
1965/1966	184.4
1966/1967	193.8
1967/1968	167.4
1968/1969	276.4
1969/1970	351.7

Source : Customs Administration

VEHICLE OPERATING COSTS

As is shown in the following table, vehicle operating costs vary considerably in accordance with the different road surfaces (the costs are in U.S. cents/Km):

<u>Roads</u>	<u>Autos</u>	<u>Jeeps (Toyota)</u>	<u>Pick-up Trucks Peugeot 404 Diesel</u>	<u>Buses &amp; Pass. Trucks ISUFUTD</u>	<u>Trucks FORD 7000</u>
Pavement(Pa)	15.91	7.69	6.95	13.50	14.49
Gravel(G)	8.66	11.06	11.44	21.87	23.20
Dirt(Pr)	13.10	16.77	18.42	34.88	39.80
% Traffic on typical road	15%	10%	10%	28%	37%

^Definitions of Terms:Pa) Road with bituminous pavement

This is a modern paved road with improved geometrical characteristics.

Vehicle operation costs here are almost identical to those for a concrete road such as that on the Port-au-Prince - Leogane section.

Gr) Unpaved road with selected gravel surfacing

Its geometrical features are similar to those of the paved road, (Pa). The only difference is the absence of bituminous pavement. On this type of road operating expenses vary directly with the level of maintenance, and therefore with maintenance outlays.

Pr) Improved track

This is a road that is, without surface drainage, important structures, without suitable fill materials and whose roadway is often level with or slightly lower than the natural ground. It poses no major obstacles to traffic during the dry season, but may be cut off for hours or even days during the rainy season.

ANNEX VII

Exhibit 11  
Page 2 of 9

The derivation of cost factors is given below as well as the main principals used in estimating the operating costs described in the main body of the report.

1 ) Depreciation.

It was accepted that the purchase price of a vehicle should also be divided over a certain number of kilometers representing its average life span.

This idea, which is normally applied to operation of an industrial vehicle, can be used for the entire fleet.

As noted, greater part of this fleet is made up of commercially operated vehicles.

The amount to be depreciated is the purchase price of the vehicle, including the body and the tarpaulin for merchandise trucks, less the value of the tires. The residual value was considered nil.

2 ) Financial charges

These expenses were calculated for each vehicle, taking into account current credit formulas extended by different vehicle dealers.

3 ) Insurance and miscellaneous

It was accepted that the amount of insurance premiums corresponds to actual risks covered. These premiums are surprisingly reasonable, representing scarcely 20 % of generally applied premiums in French speaking Africa for similar traffic conditions.

The reason for this seems to be that in Haiti, goods transported are not covered in insurance contracts.

The heading "Miscellaneous" covers compulsory vehicle inspection fees as well as annual costs of registration and license plates.

4 ) Motor fuels

Fuel prices are the average between prices at Port-au-Prince and those at Les Cayes. A discount of one cent per gallon on large purchase of diesel fuel has been included for the commercial vehicles.

5 ) Lubricants

The price of lubricants is the average of prices for products available on the market.

6) Upkeep and Repairs

There are no large transportation firms in Haiti. More often than not a carrier owns only one vehicle, at most three, and he keeps no accounts. The impossibility of an analytical estimate led to the use of data from the "Manual sur les routes dans les zones tropicales et desertiques." The corresponding outlays were estimated as percentages of the price of a new vehicle including all taxes.

7 ) Expenses for drivers

This heading includes salaries as well as social contributions which, in principal, are paid by the employer. Sometimes these expenses are imaginary, as the owner of a single vehicle is the driver as well.

8 ) Overhead

Given the small size of most transportation enterprises, overhead was considered to be negligible.

For the headings 1, 4, 5, and 6 information from importers and tax offices provided costs with all taxes included (T.T.C.) untaxed costs (H.T.) and costs in foreign currency (D).

The costs under headings 2, 3, and 7 were taken as entirely local, exempt from all transport taxes.

For heading 8, the distribution was as follows :

It was accepted that costs including taxes were made up of 30 % for labor and local workshop expenses and 70 % for spare parts. The untaxed costs and costs in foreign currency were calculated on the basis of customs duties, that is an average of 20 % of the CIF price for spare parts and commercial margins, estimated at 40 % of the import price including taxes.

NUMBER OF TRAFFIC ACCIDENTS RECORDED  
BY THE POLICE BETWEEN 1966 AND 1970

Year	Accident between a vehicle and			Total accidents	Total veh. fleet
	vehicles	persons	other		
1966	1,560	1,144	121	2,285	10,029
1967	1,251	973	53	2,227	12,980
1968	1,269	1,173	142	2,684	16,624
1969	1,753	1,324	102	3,179	16,418
1970	1,661	1,385	120	3,166	-----

Source : General Headquarters of the Armed Forces of Haiti

It will be noted that the very high number of traffic accidents averages one accident per year for every five vehicles on the road. During a fairly recent study in Cameroon for traffic levels of the same order of magnitude as those foreseeable in Haiti and for a very similar terrain, INGEROUTE experts estimated that a savings in safety of about 2% of the possible savings on vehicle operating costs could be realized through road modernization. In view of the lack of precise knowledge on this subject, it would seem wise not to include this savings in the cost-benefit analysis of improvement of the infrastructure.

## ANNEX VII

Exhibit 11  
Page 5 of 9a.) TRUCKS FOR TRANSPORT OF GOODS

## FORD 7000

A PRICE DATA				
	Unit	Cost including taxes	Cost without taxes	Cost in foreign currency
Complete price of new vehicle without tires	\$	13,620.00	12,040.00	9,550.00
Price of set of 6 tires	\$	1,075.00	830.00	640.00
Price of insurance	\$/year	88.00	88.00	0
Price of license plates and inspection	\$/year	37.00	37.00	0
Price of diesel fuel	cent/liter	10.00	7.63	3.03
Price of lubricants	cent/liter	68.42	62.82	21.92
Cost of labor	\$/year	2,300.00	2,300.00	0

## B TECHNICAL DATA

	Unit	Pa	Gr	Pr
Annual average distance	km/year	90,000	60,000	40,000
Distance of vehicle depreciation	km	360,000	240,000	160,000
Life of tires	km	30,000	20,000	10,000
Diesel fuel consumption	l/100 km	30	45	60
Oil consumption	l/100 km	0.9	1.3	1.8
Total cost of repairs(1) for the entire life of the vehicle	% price of new vehicle	40	60	90

(1) Only spare parts, excluding labor and workshop expenses

## C CALCULATIONS OF OPERATING COSTS (cents/km)

Item	Pa			Gr			Pr		
	TTC	HT	D	TTC	HT	D	TTC	HT	D
Depreciation	3.78	2.34	2.65	5.68	5.02	3.98	8.51	7.53	5.97
Financial costs	0.85	0.85	0	1.28	1.28	0	2.17	2.17	0
Insurance and misc.	0.14	0.14	0	0.21	0.21	0	0.31	0.31	0
Diesel fuel	3.00	2.29	0.91	4.50	3.43	1.36	6.00	4.58	1.82
Lubricants	0.62	0.56	0.20	0.89	0.82	0.28	1.23	1.13	0.39
Tires	3.58	2.77	2.13	5.37	4.15	3.20	10.75	8.30	6.40
Maintenance/repairs	2.16	1.98	0.90	4.86	4.46	2.03	10.94	10.03	4.56
Labor	2.56	2.56	0	3.83	3.83	0	5.75	5.75	0
<b>TOTAL</b>	<b>16.69</b>	<b>14.49</b>	<b>6.79</b>	<b>26.62</b>	<b>23.20</b>	<b>10.85</b>	<b>45.66</b>	<b>39.80</b>	<b>19.14</b>

b) BUSES AND PASSENGER TRUCKSExhibit 11  
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## ISUZU TD

A PRICE DATA				
	Unit	Cost including taxes	Cost without taxes	Cost in foreign currency
Complete price of new vehicle without tires	\$	12,300.00	10,900.00	8,250.00
Price of set of 6 tires	\$	1,075.00	830.00	640.00
Price of insurance	\$/year	88.00	88.00	0
Price of license plates and inspection	\$/year	37.00	37.00	0
Price of diesel fuel	cent/liter	10.00	7.63	3.03
Price of lubricants	cent:liter	68.42	62.82	21.92
Cost of labor	\$/year	1,900.00	1,900.00	0

## B TECHNICAL DATA

	Unit	Pa	Gr	Pr
Annual average distance	km/year	90,000	60,000	40,000
Distance of vehicle depreciation	km	360,000	240,000	160,000
Life of tires	km	35,000	22,000	15,000
Diesel fuel consumption	l/100 km	35	52	70
Oil consumption	l/100 km	1	1.6	2.1
Total cost of repairs <sup>(1)</sup> for the life of the vehicle	% price of new veh.	40	60	90

(1) Only spare parts, excluding labor and workshop expenses

## C CALCULATIONS OF OPERATING COSTS (cents/km)

Item	Pa			Gr			Pr		
	TTC	HT	D	TTC	HT	D	TTC	HT	D
Depreciation	3.42	3.03	2.29	5.12	4.54	3.44	7.69	6.81	5.16
Financial cost	0.77	0.77	0	1.18	1.18	0	1.76	1.76	0
Insurance and misc.	0.14	0.14	0	0.21	0.21	0	0.31	0.31	0
Diesel fuel	3.50	2.67	1.06	5.20	3.97	1.53	7.00	5.34	2.12
Lubricants	0.68	0.63	0.22	1.09	1.00	0.35	1.44	1.32	0.46
Tires	3.07	2.37	1.83	4.89	3.77	2.91	7.17	5.53	4.27
Maintenance/repairs	1.96	1.78	0.81	4.38	4.03	1.83	9.88	9.06	4.11
Labor	2.11	2.11	0	3.17	3.17	0	4.75	4.75	0
<b>TOTAL</b>	<b>12.565</b>	<b>13.50</b>	<b>6.21</b>	<b>25.24</b>	<b>21.87</b>	<b>10.11</b>	<b>40.00</b>	<b>34.88</b>	<b>16.12</b>

## ANNEX VII

c) PICKUP TRUCKSExhibit 11  
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## PEUGEOT 404 DIESEL

	A PRICE DATA			
	Unit	Cost including taxes	Cost without taxes	Cost in foreign currency
Complete price of new vehicle without tires	\$	4,325 00	3,830.00	3,200 00
Price of set of 4 tires	\$	140.00	105.00	85.00
Price of insurance	\$/year	77 00	77 00	0
Price of license plates and inspection	\$/year	27 00	27.00	0
Price of diesel fuel	cent/liter	10.00	7.63	3.03
Price of lubricants	cent/liter	68.42	62.82	21.92
Cost of labor	\$/year	1,400 00	1,400 00	0

## B TECHNICAL DATA

	Unit	Pa	Gr	Pr
Annual average distance	km/year	60,000	40,000	27,000
Distance of vehicle				
Depreciation	km	180,000	120,000	80,000
Life of tires	km	50,000	30,000	15,000
Diesel fuel consumption	l/100 km	10	15	20
Oil consumption	l/100 km	0.3	0.5	0.6
Total cost of repairs(1) for the entire life of the vehicle	% price of new veh.	30	50	70

(1) Only spare parts, excluding labor and workshop expenses

## C CALCULATIONS OF OPERATING COSTS (cents/km)

Item	Pa			Gr			Pr		
	TTC	HT	D	TTC	HT	D	TTC	HT	D
Depreciation	2.40	2.15	1.78	3.60	3.19	2.67	5.41	4.79	4.00
Financial cost	0.22	0.22	0	0.33	0.33	0	0.50	0.50	0.50
Insurance and misc.	0.17	0.17	0	0.26	0.26	0	0.39	0.39	0
Diesel fuel	1.00	0.76	0.30	1.50	1.14	0.45	2.00	1.52	0.90
Lubricants	0.20	0.19	0.07	0.31	0.31	0.11	0.41	0.38	0.13
Tires	0.22	0.21	0.17	0.47	0.35	0.28	0.93	0.70	0.57
Maintenance/repairs	1.03	0.94	0.43	2.57	2.36	1.07	5.40	4.96	2.26
Labor	2.33	2.33	0	3.50	3.50	0	5.18	5.18	0
<b>TOTAL</b>	<b>7.63</b>	<b>6.95</b>	<b>2.75</b>	<b>12.57</b>	<b>11.44</b>	<b>4.58</b>	<b>20.22</b>	<b>18.42</b>	<b>8.36</b>

## ANNEX VII

Exhibit 11  
Page 8 of 9

d) JEEP

## TOYOTA HARD TOP

A PRICE DATA				
	Unit	Cost including taxes	Cost without taxes	Cost in foreign currency
Complete price of new vehicle without tires	\$	4,230.00	3,760.00	3,000.00
Price of set of 4 tires	\$	112.00	84.00	68.00
Price of insurance	\$/year	77.00	77.00	0
Price of license plates and inspection	\$/year	31.00	31.00	0
Price of gasoline	cent/litre	18.68	7.53	2.84
Price of lubricants	cent/liter	68.42	62.82	21.92
Cost of labor	\$/year	1,400.00	1,400.00	0

## B TECHNICAL DATA

	Unit	Pa	Gr	Pr
Annual average distance	km/year	60,000	50,000	40,000
Distance of vehicle depreciation	km	180,000	120,000	80,000
Life of tires	km	40,000	36,000	20,000
Gasoline consumption	l/100 km	18	20	25
Oil consumption	l/100 km	0.5	0.5	0.8
Total cost of repairs (1) for the entire life of the vehicle	% price of new veh.	30	50	70

(1) Only spare parts, excluding labor and workshop expenses

## C CALCULATIONS OF OPERATING COSTS (cents/km)

Item	Pa			Gr			Pr		
	TTC	HF	D	TTC	HF	D	TTC	HF	D
Depreciation	2.35	2.09	1.67	3.52	3.13	2.50	5.29	4.70	3.75
Financial costs	0.29	0.29	0	0.44	0.44	0	0.66	0.66	0
Insurance and misc.	0.18	0.18	0	0.22	0.22	0	0.27	0.27	0
Gasoline	3.36	1.35	0.51	3.74	1.51	0.57	4.67	1.88	0.71
Lubricants	0.54	0.51	0.11	0.41	0.38	0.13	0.55	0.50	0.17
Tires	0.28	0.21	0.17	0.37	0.23	0.23	0.56	0.42	0.34
Maintenance/repairs	1.00	0.93	0.41	2.51	2.30	1.04	5.28	4.84	2.20
Labor	2.33	2.33	0	2.80	2.80	0	3.50	3.50	0
<b>TOTAL</b>	<b>10.13</b>	<b>7.69</b>	<b>2.87</b>	<b>14.01</b>	<b>11.06</b>	<b>4.47</b>	<b>20.78</b>	<b>16.77</b>	<b>7.17</b>

e) LIGHT AUTOMOBILE

DATSUN 1600

A PRICE DATA				
	Unit	Cost including taxes	Cost with out taxes	Cost in foreign currency
Complete price of new vehicle without tires	\$	3,010.00	2,235.00	1,750.00
Price of set of 4 tires	\$	76.00	58.00	44.00
Price of insurance	\$/year	66.00	66.00	0
Price of license plates and inspection	\$/year	27.00	27.00	0
Price of gasoline	cent/liter	18.68	7.53	2.84
Price of lubricants	cent/liter	68.42	62.82	21.92
Cost of labor	\$/year	1,200.00	1,200.00	0

B TECHNICAL DATA

	Unit	Pa	Gr	Pr
Annual average distance	km. year	50,000	40,000	30,000
Distance of vehicle depreciation	km.	180,000	120,000	80,000
Life of tires	km	30,000	22,000	15,000
Gasoline consumption	l./100 km	10	13	16
Oil consumption	l./100 km	0.3	0.4	0.5
Total cost of repairs (1) for the entire life of the vehicle	% price of new veh.	30	50	70

(1) Only spare parts, excluding labor and workshop expenses

C CALCULATIONS OF OPERATING COSTS (cents / l.)

Item	Pa			Gr			Pr		
	TTG	HT	D	TTG	HT	D	TTG	HT	D
Depreciation	1.67	1.34	0.97	2.51	1.86	1.16	3.76	2.79	2.19
Financial costs	0.29	0.29	0	0.44	0.44	0	0.66	0.66	0
Insurance and misc.	0.19	0.19	0	0.23	0.23	0	0.31	0.31	0
Gasoline	1.87	0.75	0.28	2.43	0.98	0.37	2.99	1.20	0.45
Lubricants	0.20	0.19	0.07	0.27	0.25	0.09	0.34	0.31	0.11
Tires	0.25	0.19	0.15	0.34	0.26	0.20	0.51	0.39	0.29
Maintenance/repair	0.71	0.66	0.30	1.78	1.64	0.74	3.76	3.44	1.57
Labor	2.40	2.40	0	3.00	3.00	0	4.00	4.00	0
<b>TOTAL</b>	<b>7.58</b>	<b>5.91</b>	<b>1.77</b>	<b>11.00</b>	<b>8.66</b>	<b>2.86</b>	<b>16.33</b>	<b>13.10</b>	<b>4.01</b>

Annual Equivalent Operating Costs  
 (Expressed as a Savings)

<u>Year</u>	<u>Net Annual Savings</u>	<u>Annual Traffic</u>	<u>Discount Factor (P/F,15,N)</u>	<u>Present Worth @15%</u>	<u>Annual Equivalent (P/F,15,n) (A/p)</u>
1	.02344	6380	.8696	130.05	
2	.04688	7018	.7561	248.76	
3	.07032	7656	.6575	353.98	
4	.09376	8294	.5718	444.66	
5	.11720	8932	.4972	520.48	
6	.11720	9570	.4323	484.87	
7	.11720	10,708	.3759	471.75	
8	.11720	10,846	.3269	415.54	
9	.11720	11,484	.2843	382.65	
10	.11720	12,122	.2472	<u>351.20</u>	
				\$3,803.95	
	(0.19925)		$\bar{A}$		<u>\$757.94</u>
					veh-km

Net Annual Equivalent Savings

Operating Costs	\$ 757.94	/veh-km
Reconstruction Costs	<u>114.82</u>	
	\$ 872.76	/veh-km

Net Annual Equivalent Reconstruction Costs  
 (Expressed as a Savings)

<u>Year</u>	<u>Net Cost of Reconstruction</u>	<u>Average Annual Traffic</u>	<u>Discount Factor (P/F,15,n)</u>	<u>Present Worth</u>
1	5,237	6,380	0.8696	0.714
2	10,469	7,018	0.7561	0.507
3	15,701	7,656	0.6575	0.321
4	26,933	8,294	0.5718	0.176
5	26,165	8,932	0.4972	0.170
6	20,937	9,570	0.4323	0.198
7	15,699	10,108	0.3759	0.244
8	10,466	10,846	0.3269	0.339
9	5,233	11,484	0.2843	0.624
10	0	12,122	0.2472	<u>0</u>
				3.293

Annual Equivalent Reconstruction Savings  
 (corrected for traffic loan)

$$\bar{A} = \$114,82/\text{veh-km}$$

Costs Attributed to Differential Maintenance

Present Maintenance Expenditure	=	±	\$109/veh-km*
Proposed Maintenance Expenditure			841
Equivalent Annual Maintenance	=		\$741/veh-km
The benefit Cost Ratio	=		$\frac{\$872.76/\text{veh-km}}{741/\text{veh-km}} = 1.18$

Sensitivity

Neglecting the aforementioned economic value of the current maintenance input the sensitivity of the current maintenance input is 1:1½ and, the BIC computation yields a ratio of 1.04.

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\* The introduction of the vehicle units of the maintenance denominator, represents the maximum level of service (traffic) in relation to the geometric road design.

LOAN AUTHORIZATION

Provided From: ALLIANCE FOR PROGRESS LOAN FUNDS  
(HAITI: HIGHWAY MAINTENANCE)

Pursuant to the authority vested in me as Deputy U.S. Coordinator of the Agency for International Development ("A.I.D.") by the Foreign Assistance Act of 1961, as amended, and the delegations of authority issued thereunder, I hereby authorize the establishment of a loan pursuant to Part I, Chapter 2, Title VI, (Alliance for Progress) of said Act, as amended, to the Government of Haiti ("Borrower") not to exceed Three Million Seven Hundred Thousand United States Dollars (\$3,700,000) to assist in financing the United States dollar and local costs of purchasing highway maintenance equipment and shop equipment and facilities necessary for an adequate highway maintenance program, and of related technical assistance. This loan shall be subject to the following terms and conditions:

I. Interest and Terms of repayment

Borrower shall repay the loan to A.I.D. in United States dollars within forty (40) years from the date of the first disbursement under the loan, including a grace period not to exceed ten (10) years. Borrower shall pay to A.I.D., in United States dollars, on the disbursed balance of the loan, interest of two percent (2%) per annum during the grace period and three percent (3%) per annum thereafter.

II. Other Terms and Conditions

A. Equipment, materials and services financed under the loan shall have their origin in and be procured from countries included in Code 941 of the AID Geographic Code book as in effect at the time orders are placed for such goods and services.

B. As a condition precedent to any disbursements or the issuance of any letters of commitment under the loan AID shall have approved the technical advisor and technical advisor contract.

C. As a condition precedent to any disbursement other than for technical assistance, training aids, temporary training area site development, and spare parts for existing equipment, the Borrower shall present evidence, satisfactory to AID that:

- 1) Provisions have been made for the \$780,000 estimated annual operating budget of SEPRAN and evidence of operating funds not less than ten percent (10%) of said amount deposited in the SEPRAN account of the National Bank of Haiti available for such purpose. The GOH shall assure the continued allocation of such funds and maintenance of the minimum balance throughout the project period.
  - 2) As to SEPRAN, removal of all liabilities incurred by previous GOH entities prior to March 31, 1972.
  - 3) Suitable land for construction of the new central workshop and Les Cayes auxiliary workshop has been made available to the Project.
- D. As a condition precedent to any disbursement or issuance of any letters of commitment for more than \$3,050,000 of loan funds:
- 1) The GOH, AID and technical advisors will meet and review project performance after the first fifteen months of project execution to determine if progress has been satisfactory.
  - 2) SEPRAN will have developed a maintenance plan which establishes an order of road priorities and maintenance execution.
  - 3) The budgetary allocation specified for maintenance of roads under the AID project has been made available as needed, has been used for the intended purpose, and that neither the funds nor the equipment have been diverted to other operations, unless otherwise agreed. This evidence will be supported by audit carried out by an independent certified public accountant approved by AID.
  - 4) SEPRAN agrees to take the necessary steps to implement the recommendations resulting from the post-fifteen month review.
- E. Borrower shall covenant:
- 1) To permanently assign qualified managers, technicians, operators and mechanics to SEPRAN, and to take such reorganization steps or make reductions in personnel as recommended by the UNDP/IBD study, and approved by the AID technical advisors and the Borrower.

- 2) The Borrower covenants that project equipment shall not be used for other than maintenance of roads, which excludes road construction, except in emergency cases where prior AID approval is obtained in writing.
- 3) To give its full support to the maintenance program, and will give priority to the maintenance of the National Routes 100 and 200.
- 4) The Borrower covenants that labor intensive maintenance techniques will be emphasized in the development of the maintenance authority, to the degree feasible and consistent with national road requirements.

F. Such other terms and conditions as A.I.D. may deem advisable.

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Deputy U.S. Coordinator  
Alliance for Progress

\_\_\_\_\_  
Date