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CLASSIFICATION

521008401561

PD-AHF-955-51

PROJECT EVALUATION SUMMARY

1. PROJECT TITLE Road Maintenance II			2. PROJECT NUMBER 521-0084	3. MISSION/AID/W OFFICE Haiti
4. EVALUATION NUMBER (Enter the number of the report, including unit, e.g., Country or AID/W Administrative Code, Fiscal Year, Serial No. beginning with No. 1 each FY) 521-79-7			<input checked="" type="checkbox"/> REGULAR EVALUATION <input type="checkbox"/> SPECIAL EVALUATION	
5. KEY PROJECT IMPLEMENTATION DATES			6. ESTIMATED PROJECT FUNDING	7. PERIOD COVERED BY EVALUATION
A. First FHC-AG or Equivalent FY 77	B. Final Obligation Expected FY 81	C. Final Input Delivery FY 81	A. Total \$ _____ B. U.S. \$ 9,765,000	From (month/yr.) 7/77 To (month/yr.) 5/79 Date of Evaluation Review 6/6/79

8. ACTION DECISIONS APPROVED BY MISSION OR AID/W OFFICE DIRECTOR

A. List decisions and/or unresolved issues; cite those items needing further study. (NOTE: Mission decisions which anticipate AID/W or regional office action should specify type of document, e.g., program, SPAR, PIO, which will present detailed request.)

B. NAME OF OFFICIAL RESPONSIBLE FOR ACTION

C. DATE ACTION TO BE COMPLETED

This PES summarizes the major findings of the Group Seven report (Attachment A) and subsequent actions undertaken to implement evaluation recommendations.

Attachment A "Evaluation Study of Haiti Road Maintenance Phase II Project", A.I. Fiks, et. al., July, 1979.

9. INVENTORY OF DOCUMENTS TO BE REVISED PER ABOVE DECISIONS

<input type="checkbox"/> Project Paper	<input checked="" type="checkbox"/> Implementation Plan e.g., CPI Network	<input type="checkbox"/> Other (Specify) _____
<input type="checkbox"/> Financial Plan	<input type="checkbox"/> PIO/T	_____
<input type="checkbox"/> Logical Framework	<input type="checkbox"/> PIO/C	<input type="checkbox"/> Other (Specify) _____
<input checked="" type="checkbox"/> Project Agreement	<input type="checkbox"/> PIO/P	_____

10. ALTERNATIVE DECISIONS ON FUTURE OF PROJECT

A.	<input type="checkbox"/> Continue Project Without Change
B.	<input checked="" type="checkbox"/> Change Project Design and/or <input type="checkbox"/> Change Implementation Plan
C.	<input type="checkbox"/> Discontinue Project

11. PROJECT OFFICER AND HOST COUNTRY OR OTHER RANKING PARTICIPANTS AS APPROPRIATE (Names and Titles)

T. Nagy, ENGR in draft
G. George, ENGR in draft

12. Mission/AID/W Office Director Approval

Signature: William G. Rhoads
Typed Name: William G. Rhoads, Acting DTP
Date: _____

I. INTRODUCTION

Under the Road Maintenance II Project Agreement signed in July 1977, \$9.7 million in AID grant funds was provided to assist Haiti's National Highway Maintenance Service (SEPRRN) in developing a national program of highway maintenance. The project is a follow-on to the Highway Maintenance I Program which provided \$3,150,000 in loan funds (under 521-L-005 as amended) and an additional \$2,050,000 in grant funds (under 521-0072) to cover technical assistance and training. Road Maintenance I was designed to provide the capability to maintain the backbone of the national highway system, i.e. the north and south roads constructed by the World Bank and the Interamerican Development Bank. Road Maintenance II was designed to expand SEPRRN's operations to include departmental and local roads for a total coverage of 2036 kilometers.

The SEPRRN organization, beyond the administrative headquarters currently under construction in Port-au-Prince, consists of: a central garage and shops, four districts, and seven subdistricts. One of the subdistricts is to be upgraded to a district and another will be upgraded to a modified district, thus resulting in five districts, one modified district and five subdistricts. These field units are responsible for the maintenance of the nation's road system.

The initial evaluation of Phase II of the Road Maintenance project was conducted in April and May of 1979 by Group Seven Associates, Inc. and the final Report submitted to USAID in July, 1979.

This PES summarizes the major findings and recommendations of the Group Seven report and subsequent actions undertaken to implement evaluation recommendations.

II Major Findings

Planning and Administration. The Road Maintenance Plan prepared jointly by SEPRRN and the consultant indicates a planning capability. The consultant advisors involved in preparing the plan believe SEPRRN is capable of revising and updating it as required.

In the equipment maintenance area, however, the evaluators questioned SEPRRN's capability for planning without further advisory assistance. Parts replacement and equipment downtime remain serious problems. These are discussed further below.

In the areas of personnel, budget, administration and cost accounting, systems are rudimentary at best. In the judgement of the evaluators, problems in these areas will not be fully resolved until SEPRRN is integrated into the Ministry of Public Works (TPTC).

Training. There have been serious delays in implementing a training program because of modifications in the original plan. The participation of the GOH and SEPRRN in designing the major outlines of the plan has been, until recently, negligible. In the opinion of Group Seven, implementation of the new plan is beyond the present capacity of the GOH. The training plan should be made less ambitious.

Brigade Organization and Performance. The field work is accomplished by work units, called "brigades", (with necessary administrative and support personnel). The brigades are specialized along the lines of "hand" (i.e., labor-intensive), "intervention" (construction with machine-intensive technology), "regrading" (moderately mechanized), and "bridge" (bridges and other structures). Various brigades are assigned to each district or subdistrict.

Except for hand brigades, brigade organization has not occurred at the projected speed. Without specialized equipment, mechanized units cannot function. The following table shows the actual number of functioning brigades versus plan:

<u>Brigade Type</u>	<u>Actual</u>	<u>Maintenance Scheduled 1st half FY 1978/79</u>	<u>Project Paper FY 1978/79</u>
Intervention	1	2	4
Regrading	5	4	13
Hand (Labor-Intensive)	49 <u>1/</u>	48	37
Bridge	1	3	3
Signalization	0	-	1
Asphalt Teams <u>2/</u>	8	-	-

About 1500 kms of roads including their bridges and culverts are currently assigned for maintenance. Additional roads are expected to be added to the system with the total reaching about 2800 kms by 1982. Current district assignments vary from a low of 46 kms to a high of 315 kms. This range (269 kms) is expected to decrease as additional roads are assigned.

Of the total road length, 577 kms are currently classified as asphalt, the remaining kms (except for a small amount of concrete) are classified as gravel, but many of these should actually be considered as dirt (natural soil). A large percentage of the asphalt roads have recently been constructed and should require only minimum surface maintenance for a number of years.

In assessing field performance of the brigades, it is essential to bear in mind that the formal maintenance plan officially became effective only in mid-January, 1979. Thus at the time of the evaluation only 4 months experience existed on which to judge performance compared to standards. Obviously, maintenance operations were conducted prior to January 1979, but not under standards and schedules now in effect. It is also important to note that additional brigades, with the exception

1/ plus 4 brigades at Hince starting May 1979.

2/ separate units formerly included within hand brigades.

of hand brigades, were not yet activated, since equipment they were to use had not yet arrived.

With regard to maintenance, paved roads appeared good, but gravel and dirt roads showed much less evidence of maintenance - some none at all. Meaningful maintenance cannot be anticipated until the planned "intervention" and "regrading" brigades have been organized, equipped, trained and deployed. Available resources are presently being used to maintain recently completed paved roads.

SEPRRN's reconstruction capability at this time is limited to one intervention brigade and five regrading brigades (with 3 graders out of 14 able to operate). One reinforced regrading brigade was observed operating in the Jacmel area with good results. It is unrealistic to anticipate significant reconstruction capability until SEPRRN has solved its equipment maintenance problems and has organized and equipped its intervention brigades.

Emergency road repairs are the responsibility of the district or subdistrict in which they occur. (Districts and subdistricts are assigned geographic boundaries as well as specific roads.) The District Supervisor may react to emergencies by reassignment of resources. If conditions warrant, he is authorized to employ additional labor or equipment. In more extreme cases, private contractor assistance may be required. The districts do have the authority (and the responsibility) to react to emergencies with the forces at their disposal. Conditions beyond their capabilities would require assistance through the Technical Director's Office.

The 1491 kilometers of road shown in the Maintenance Plan are not all presently being maintained. Meaningful assessment of whether SEPRRN is meeting this target will require at least a year's experience after SEPRRN is more fully equipped and operating at near-full brigade strength.

The following tabulation shows the present status compared to the PP projection for FY 1978/79:

	<u>Programmed</u>	<u>PP FY 1978/79</u>	<u>Shortfall</u>
Permanent Maintenance	1138 km	1196 km	- 5 %
Emergency Maintenance	353 km	490 km	- 30 %
	<hr/>	<hr/>	<hr/>
Total National Roads Maintained	1491 km	1686 km	- 12 %

There are 140 concrete and 10 steel bridges which are to be maintained by SEPRRN. Whereas three bridge brigades were planned only one is presently functioning. Until the bridge brigades have been organized and are functioning - conducting inspections, identifying maintenance requirements and performing the maintenance - and until a reasonable time period has elapsed to check performance, it cannot be said that "the bridges are being maintained".

The organizational framework for the field work force is in place and appears adequate. It now needs the assignment of specialized personnel, training, equipment, facilities, and the experience of operating as district units in order to accomplish SEPRRN's mission.

The evaluation questioned the desirability of subdistricts reporting to the Technical Director rather than to the districts, but concur that the districts are not now sufficiently qualified to accept the responsibility for managing subunits. When experience and proficiency have been obtained, this would be a desirable change.

For SEPRRN to monitor its own output quantity and quality, it needs a strong reporting link from its districts and an effective independent inspection system. These have yet to be developed. The Inspection Section would be a good start.

Labor-Intensive Road Maintenance. Two factors are working strongly in favor of labor-intensive road maintenance at the present time. First, the nature of much of the current work lends itself to hand labor.

This is especially true on most of the recently-completed National roads, Routes 100 and 200, as well as the road to Jacmel. The cutting of brush, the cleaning of culverts and miscellaneous drainage improvements are, by their nature, labor-intensive. Secondly, the scarcity of operating equipment and the fact that new equipment has not yet arrived leaves little alternative.

The SEPRRN Maintenance Plan for 1978 - 82 retains strong labor components. The evaluators believe that the present labor-machine mix of the hand brigades is appropriate as is the mix envisaged for the other types of brigades.

Equipment Maintenance. Equipment maintenance and management is very poor. There are, however, strong indications that the present Garage Management Advisor and his SEPRRN counterpart recognize the problems and are making serious efforts to correct them.

One of the indicators of purpose achievement is that the downtime for equipment will have been reduced from the earlier 35-40 percent to 20-25 percent "at the end of the second year." The present rate of downtime was estimated to be about 40 percent. Only one survey respondent suggested a figure as low as 30-35 percent. To test these estimates, a listing was made of the primary maintenance equipment on the SEPRRN inventory, i.e., dozers, graders, frontend loaders, dump trucks, etc. The number in operating condition and in non-operating condition was then compared. Of 76 pieces of equipment, 32 (i.e., 42 percent) were not in operating condition.

This situation has little chance of improvement until operators acquire a greater sense of responsibility for preventive maintenance and an adequate parts-replacement system is in effect.

Community Action Program. The Project conceives of community-based, labor-intensive maintenance on roads with traffic under 50 vehicles per day. This would be accomplished through a Community Action Program which by FY 1978/79 was to involve some 30 local communities maintaining 540 kms of roads, or 18 kms each.

To-date, the program has not been initiated. No local communities are involved nor are any roads being maintained through a Community Action Program initiated by SEPRRN.

The program was to be based on experience gained through the labor-intensive pilot activity under the Agricultural Feeder Road project. It was hoped that guidance would be forthcoming from the consultant's report pertaining to contractual arrangements, crew sizes, work methods, etc. The report, however, did not provide the desired information.

SEPRRN Yearly Operating Plans. An operating plan, the SEPRRN Maintenance and Reporting System, 1978-1982, has been developed and published. The plan includes an inventory of roads and the number of structures which have been assigned to each district and subdistrict for maintenance. The work to be performed has been broken down into various categories. The amount of each category to be completed in each is identified. The type of brigade to which the work is assigned as well as the length of time and the time of year for performing it are shown. Also listed are the number and types of brigades assigned (or to be assigned) to each district or subdistrict, their composition (both personnel and equipment) and the estimated cost of operation. The Plan provides for annual additions to the maintenance requirements, personnel assignments, equipment assignments, and costs.

The plan is considered by the evaluation team to be a good starting point, but it will need periodic revisions to make it a workable management tool.

Private Contractor Performance. SEPRRN has had only limited occasion to employ private contractors in the performance of road or bridge maintenance. When done, it was for relatively small specialized assignments where SEPRRN manpower or experience was not immediately available. Such contracting was usually by agreed unit prices after an estimate had been prepared. Two buildings, a SEPRRN administration building in Port-au-Prince and a district headquarters facility at Hinche. Both of these were awarded

on a competitive bid basis and are either just getting underway or not yet started. At present, there is little evidence to indicate that SEPRON should or could administer and supervise major contractor involvement and even less evidence to indicate that contractors with the necessary experience or capabilities exist.

III. Major Recommendations

1. Headquarters-field relationships should be strengthened, particularly concerning inspection and leadership visitations. The inspection function should be strengthened by increasing the number of inspectors and insuring (through selection and/or training) that they are qualified and respected. Personnel should be rotated to cover different districts periodically to encourage objective reporting and evaluations. The function will become increasingly important as additional brigades are activated and operating. Inspectors should be instructed to report superior results in addition to flagging substandard work. Corrective actions (or commendations) should be timely and applied without favoritism.

2. Job functions should not carry dual TPTC-SEPRRN responsibilities. It is to SEPRRN's long-term advantage that joint TPTC-SEPRRN functions and responsibilities be separated.

3. The scope, size and timing of the training plan should be revised. The projected cost of the plan should be reduced and the period of implementation lengthened. It is possible to do this simultaneously with initiating work under the Plan.

4. A major preventive maintenance campaign should be launched to implement the traditional plan.

5. The equipment parts component of the warehouse should be transferred to operational control of the Garage Manager rather than of the Technical Director. The Technical Director's duties are such that he cannot be expected to provide the needed supervision and control. Direct control by the Garage will be more responsive to Garage needs. Stocking and warehousing of road maintenance materials should remain under the jurisdiction of the Technical Director.

6. Redouble efforts to provide an adequate stock of spare parts--preferably on a minimum-maximum system and take such other steps as are required to maintain the stock at a level insuring immediate availability for installation.

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Provide a more direct procedure for the garage to obtain parts locally. Simplify the procurement and approval procedures with pick-up of parts being made by personnel familiar with the materials involved.

A significant improvement could be made in overseas procurement of spare-parts if early approval were given to recommendation (2) of Amendment II of the March 15, 1979, Management Advisory Committee's memo (i.e., a U.S.-based procurer to expedite procurement of parts not available locally).

7. Revise the Maintenance Management and Reporting System 1978-1982 to reflect actual conditions as opposed to those which were anticipated when the Plan was issued in early 1979. Repeat the process after about six months' experience with additional equipment and brigades in operation. Revision should consider: the effect of rainy seasons on time schedules, a more realistic schedule for new roads entering the maintenance system, and a revised schedule for the formation of brigades and their effect on the work schedule. (Improvement of the Cap-Haitien - Milot road would have a positive effect on tourism at least in that area.)

8. Assign the vegetation clearing task near bridges to hand brigades as a minor extension of their roadside clearing activities, rather than to the bridge brigade.

9. Initiate the Community Action Program on a limited basis with social science input.

10. SEPRRN should eventually (in 3-5 years) be integrated into TPTC. A decision on when and how can only be made as conditions develop. The 1978 law reorganizing TPTC would put SEPRRN under the Autonomous Transport Service (ATS) of the TPTC. It is the opinion of Group Seven that SEPRRN should not be at any echelon lower than a full agency or division of TPTC; i.e., coequal with ATS.

IV Status of Recommendations as of 12/31/79

The following actions are keyed to the recommendations cited in the previous section:

1. The inspection section is being reinforced and is receiving increased Central Office Support. A plan of action has been prepared and is moving into the implementation phase. Some rotation is foreseen, however, but not to the extent proposed in the recommendation.

2. No action taken.

3. The training program is being implemented as proposed in the PP Amendment and some small changes have been incorporated into the new program. However the period of implementation remains at two years.

4. A garage reorganization has been initiated with more emphasis on preventive maintenance.

5. The status of control of the equipment parts component of the warehouse remains unchanged.

6. An independent firm was contracted to perform a physical audit of the warehouse. The final report as yet has not been received. Also min/max requirements lists are being prepared to support the eventual equipment fleets. An aspect of the garage reorganization is the revival of the component exchange system for vehicle maintenance.

7. SEPRRN with the assistance of their consultant is reviewing the maintenance plan. It should be noted that the original purpose of the plan was to provide a guidance for maintenance activities with periodic reviews performed on the document as conditions change such as equipment arrival and completion road reconstruction.

8. No action taken.

9. A plan of action was developed and an engineer assigned as the SEPRRN Project Coordinator. However no further progress to date.

10. No action taken.