

DOCUMENT RESUME

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Report to Secretary, Department of Agriculture; by Henry Eschwege, Director, Community and Economic Development Div.

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Lack of documentation prevents determination as to whether the Farmers Home Administration (FmHA) is complying with the "credit elsewhere" provision of the water and waste disposal program. Borrowers' files are not always reviewed to determine the ability of borrowers to refinance their water and waste disposal loans. Findings/Conclusions: Borrowers were not requested to refinance their loans, and it could not be determined whether borrowers were being asked to seek credit elsewhere. Agency requirements for using reserve funds to repair or replace system components did not insure that water and waste disposal systems would remain viable for the loan repayment period. Recommendations: The Secretary of Agriculture should direct the Administrator of the FmHA to make recommendations to the Congress concerning the reasonableness of the statutory credit elsewhere provision as it applies to nonpublic water and waste disposal borrowers; require State offices to document all credit elsewhere determinations in borrowers' files and to review periodically water and waste loans for refinancing through other credit sources; establish procedures requiring that reserve funds consider the useful life and future replacement costs of system components; insure that all borrowers meet reserve fund provisions placed on them; stop using the percentage-of-construction-cost method of compensating engineers and require that all engineering fees be a fixed amount; and establish procedures to require State or district office audits of all final engineering fee payments to prevent engineers from receiving fees in excess of allowable amounts. (Author/SC)

03504



UNITED STATES GENERAL ACCOUNTING OFFICE

Improvements Needed In The Administration Of Farmers Home Administration's Water And Waste Disposal Program

Department of Agriculture

Lack of documentation prevents determination as to whether Farmers Home Administration is complying with the "credit elsewhere" provision of the water and waste disposal program. Borrowers' files are not always reviewed to determine ability of borrowers to refinance their water and waste disposal loans.

Current requirements for maintaining reserve funds do not insure that a system will remain viable over the life of the loan.

The agency's method of compensating engineers penalizes them for designing the most economical system and can result in an excessive cost for the system.



UNITED STATES GENERAL ACCOUNTING OFFICE

WASHINGTON, D.C. 20548

PROCUREMENT AND SYSTEMS
ACQUISITION DIVISION

B-114873

The Honorable
The Secretary of Agriculture

Dear Mr. Secretary:

This report discusses Farmers Home Administration's water and waste disposal program and suggests ways to improve the administration of the program.

We made this review to determine Farmers Home Administration's effectiveness in administering the program to finance the construction or improvement of water and waste disposal systems in rural areas.

This report contains recommendations to you on pages 12, 13, 19, and 20. As you know, section 236 of the Legislative Reorganization Act of 1970 requires the head of a Federal agency to submit a written statement on actions taken on our recommendations to the House Committee on Government Operations and the Senate Committee on Governmental Affairs not later than 60 days after the date of the report and to the House and Senate Committees on Appropriations with the agency's first request for appropriations made more than 60 days after the date of the report.

We are sending copies of this report to the Director, Office of Management and Budget; the Assistant Secretary for Economic Development, Department of Commerce; the Administrator, Environmental Protection Agency; the Chairmen, House Committees on Government Operations and Agriculture; Senate Committees on Governmental Affairs and Appropriations, Subcommittee on Agriculture; and Senator James Abourezk and Congressman Bill Alexander. We are also sending copies to your Assistant Secretary for Rural Development; the Administrator, Farmers Home Administration; and the Director, Office of Audit.

Sincerely yours,

A handwritten signature in cursive script that reads "Henry Eschwege".

Henry Eschwege
Director

GENERAL ACCOUNTING OFFICE
REPORT TO THE SECRETARY
OF AGRICULTURE

IMPROVEMENTS NEEDED IN
THE ADMINISTRATION OF FARMERS
HOME ADMINISTRATION'S WATER
AND WASTE DISPOSAL PROGRAM
Department of Agriculture

D I G E S T

GAO reviewed the Farmers Home Administration's water and waste disposal program in Arkansas, Louisiana, and Mississippi and found that:

- Lack of documentation prevents determination as to whether the Farmers Home Administration is complying with the "credit elsewhere" provision of the water and waste disposal program. Borrowers' files are not always reviewed to determine ability of borrowers to refinance their water and waste disposal loans.
- Its requirements for reserve funds should consider the useful life and future replacement costs of system components.
- Its procedures for compensating design engineers needed to be revised.

GAO could not determine whether borrowers were being asked to seek credit elsewhere. (See pp. 4 to 6.) Borrowers were not requested to refinance their loans. (See pp. 8 to 9.) And agency requirements for using reserve funds to replace and repair system components do not insure that water and waste disposal systems will remain viable for the loan repayment period. (See pp. 9 to 11.)

The Farmers Home Administration also permits engineers to receive a percentage of the actual construction cost as compensation for designing water and waste disposal systems. This not only removes incentive for engineers to cut costs when designing systems, but also permits engineering fees to increase as construction costs increase regardless of whether or not the engineer performs additional work. Although engineering fees are limited by individual State office schedules, fee

overpayments have resulted because these fee schedules have not been adhered to. (See pp. 14 to 19.)

In order to correct these problems, GAO recommends that the Secretary of Agriculture should direct the Administrator of the Farmers Home Administration to:

- Make recommendations to the Congress concerning the reasonableness of the statutory credit elsewhere provision as it applies to nonpublic water and waste disposal borrowers. (See p. 12.)
- Require State offices to document all credit elsewhere determinations in borrowers' files and to review periodically water and waste loans for refinancing through other credit sources. (See pp. 12 and 13.)
- Establish procedures requiring that reserve funds consider the useful life and future replacement costs of system components. (See p. 13.)
- Insure that all borrowers meet reserve fund provisions placed on them. (See p. 13.)
- Stop using the percentage-of-construction-cost method of compensating engineers and require that all engineering fees be a fixed amount. (See p. 19.)
- Establish procedures to require State or district office audits of all final engineering fee payments to prevent engineers from receiving fees in excess of allowable amounts. (See p. 20.)

C o n t e n t s

	<u>Page</u>
DIGEST	i
CHAPTER	
1	INTRODUCTION
	1
	1
	2
	3
	LACK OF DOCUMENTATION IN BORROWERS'
	FILES OF CREDIT ELSEWHERE PROVISION
	4
	4
	6
	8
	9
	11
	11
	12
3	METHOD OF DETERMINING ENGINEERING
	FEEES SHOULD BE EVALUATED
	14
	14
	18
	19
	19

ABBREVIATIONS

ASCE	American Society of Civil Engineers
EDA	Economic Development Administration
EPA	Environmental Protection Agency
FmHA	Farmers Home Administration
GAO	General Accounting Office
OA	Office of Audit
OGC	Office of General Counsel

CHAPTER 1

INTRODUCTION

Section 306 of the Consolidated Farm and Rural Development Act, as amended (7 U.S.C. 1926 (supp. V)), authorizes the Secretary of Agriculture to make loans and grants to finance the improvement and/or construction of water and waste disposal systems in rural areas to serve farmers, ranchers, farm tenants and laborers, and other rural residents. The act defines a rural area as any area in a city or town that has a population of 10,000 or less.

WATER AND WASTE PROGRAM

Responsibility for carrying out the water and waste disposal program has been delegated to the Administrator, Farmers Home Administration (FmHA), under the supervision of the Assistant Secretary for Rural Development.

The objective of the water and waste disposal loan and grant program is to help financially needy communities that lack water and waste disposal systems and that are not able to develop such facilities with usual methods of financing. FmHA gives priority to projects designed to remove serious health hazards in rural areas. Loans and grants may be made to any association, including nonprofit corporations, municipalities, and public and quasi-public agencies to construct, enlarge, or improve facilities which store, treat, purify, and distribute water or collect, treat, and dispose of waste in rural areas.

The act requires that the highest priority must be given to rural communities with a population of 5,500 or less where water systems have deteriorated or waste disposal systems are inadequate to meet the community's needs. Priority is also given to projects that will enlarge, extend, or otherwise modify systems to provide service to additional rural residents and those which involve the merging of smaller systems. Applicants for water and waste disposal loans must be unable to obtain the needed funds from commercial or private credit sources at reasonable rates and terms.

Water and waste disposal loans have a maximum repayment period of 40 years or the useful life of the system, whichever is less, and bear interest at a rate of 5 percent. The law also requires that projects receiving water and waste disposal loans be consistent with development plans for the community and comply with Federal, State, and local laws.

Water and waste disposal loans, which are made and serviced directly by FmHA, are financed from the Rural Development Insurance Fund. Certificates, representing pools of loan notes, are sold by FmHA to the Federal Financing Bank to replenish the fund.

From 1940 through September 1976, FmHA obligated about \$3.4 billion in loan funds. For fiscal year 1977 FmHA was authorized \$750 million for water and waste disposal loans including \$150 million for loans to 24 States seriously affected by prolonged drought. As of September 30, 1976, there were 7,496 active borrowers and an outstanding loan balance of about \$2.1 billion.

Water and waste disposal grants may be made in conjunction with a loan or separately and are used to reduce user rates to a reasonable level. In determining the grant amount, FmHA considers the (1) rates charged in other communities with systems constructed at similar costs and (2) median family income in the community where the proposed project will be located. The grant amount may not exceed 50 percent of the project cost.

Grants will not be made to projects where it has been determined that the (1) area's population is likely to decline below that for which the project was designed, (2) project is not designed and constructed to meet present needs and to provide for reasonable foreseeable growth, and (3) project is inconsistent with either a comprehensive community water, waste disposal, or other development plan or any approved development plan. The amount of water and waste disposal grants may not exceed \$300 million in any fiscal year.

From inception of the water and waste grant program in 1966 through September 1976, FmHA obligated about \$646 million in grants. For fiscal year 1977, FmHA was appropriated \$275 million for water and waste disposal grants, including \$75 million for grants to 24 States seriously affected by prolonged drought.

ADMINISTERING THE PROGRAM

FmHA administers the water and waste disposal loan and grant program through a national office in Washington D.C.; a national finance office in St. Louis, Missouri; and a field structure of State and county offices. FmHA's national office establishes general agency policies and provides guidance to field offices. The national finance office develops and executes FmHA's financial program and reporting requirements.

The State offices, each headed by a State director, are responsible for administering all FmHA programs and activities in one or more States and for supervising county operations. State offices provide program supervision and management assistance to the county offices. The State office staffs include program supervisors and specialists in such fields as farming, engineering, architecture, and business. The county offices make and service loans and grants at the local level and provide technical guidance to the borrowers.

SCOPE OF REVIEW

We made our review primarily at FmHA's national office and State offices in Arkansas, Louisiana, and Mississippi. We reviewed applicable laws, regulations, instructions, and procedures; interviewed FmHA officials at the national and State office levels; and examined agency records and borrower files. We also reviewed regulations on engineering fees of the Environmental Protection Agency (EPA) and the Economic Development Administration (EDA), Department of Commerce.

CHAPTER 2

LACK OF DOCUMENTATION IN BORROWERS'

FILES OF CREDIT ELSEWHERE PROVISION

The Consolidated Farm and Rural Development Act, as amended, specifically requires that borrowers must be unable to get credit from other sources at reasonable rates and terms (7 U.S.C. 1983 (supp. V)) and must refinance their loans through other sources when requested to do so by the Government (7 U.S.C. 1983). The lack of documentation in borrowers' files prevented us from determining whether FmHA is complying with the "credit elsewhere" requirement. Our review showed, however, that FmHA lacks procedures for water and waste disposal refinancing reviews and not all borrowers' files are being examined to determine their ability to refinance loans through other credit sources. In addition, FmHA requirements concerning reserve funds for replacing and repairing system components do not insure that water and waste systems will remain viable for the loan repayment period because the requirements do not consider the useful life and future replacement cost of system components.

COMPLIANCE WITH CREDIT ELSEWHERE REQUIREMENT

Section 333 of the act (7 U.S.C. 1983 (supp. V)) requires that water and waste disposal loans be made only to those applicants who certify, and the Secretary determines, that they are unable to obtain sufficient credit elsewhere at reasonable rates and terms. FmHA requires State offices to determine the availability of credit elsewhere for each applicant and to request those applicants for which credit elsewhere appears available to apply for such credit. Those applicants requested to seek credit elsewhere must provide FmHA with evidence that credit elsewhere at reasonable rates and terms is not available before FmHA will continue to process the loan request.

The results of our review showed that borrowers' files did not always document FmHA's credit elsewhere determinations. Therefore, we could not assure ourselves that FmHA is complying with the credit elsewhere requirement or determine the basis on which such determinations were made. In addition, the credit elsewhere provision as it applies to nonpublic bodies may not be feasible.

In the three States we reviewed, State office officials told us that usually only public bodies are required to seek

credit elsewhere--by attempting to sell their bonds on the open market. According to these officials, nonpublic bodies are not required to seek credit elsewhere when requesting an initial loan, but may be requested to do so for a subsequent loan in Arkansas and Louisiana depending on their financial condition and the loan amount.

FmHA officials in the three State offices told us that any applicant requested to seek credit elsewhere must provide the State office with documentation that such credit is not available. For public bodies this may be an opinion from a bond counsel that a public body's bonds will not sell on the open market, or evidence that the bonds were offered on the open market and did not sell, such as the notice of bond sale. We were told that for those nonpublic bodies requested to seek credit elsewhere, a letter of rejection is required from the credit institution.

For applicants requested to seek credit elsewhere, we noted that FmHA does not specify the number of credit institutions from which an applicant must seek credit, nor does FmHA require that the rates and terms offered or denied by the credit institutions must be shown on the rejection letters. If the credit rates and terms are not included on the rejection letters, we question how State offices can determine that credit offered to the applicant was not reasonable.

To find out whether the State offices have made credit elsewhere determinations and required applicants to seek credit elsewhere, we reviewed State office files for 15 loans approved in Arkansas and Mississippi. For the 12 loans for which a credit elsewhere determination was needed, we found evidence in only 1 instance where the State office determined the availability of credit elsewhere. We found no evidence in the files for the 11 remaining loans that the State office determined that credit was or was not available elsewhere.

An official in the Mississippi State office told us that documentation is included in the loan file only if the applicant is requested to seek credit elsewhere. This official contended that the lack of documentation in the file does not mean that the availability of credit elsewhere was not determined. He said that if FmHA approved the loan, it was understood that other credit was not available. Inasmuch as FmHA is required to determine the availability of credit elsewhere at reasonable rates and terms for each applicant, we believe that each file should contain complete documentation that such a determination was made.

This official also told us that the credit elsewhere provision may increase the cost of projects for public bodies required to use bonds as evidence of debt because State law requires that public body bonds must be deliverable within 60 days of advertising and that this may result in public bodies paying interest on funds before the funds are needed.

However, officials in the Arkansas and Louisiana State offices felt that the credit elsewhere provision for public bodies is not a program hindrance. Louisiana officials said that some public bodies are able to sell their bonds on the open market and that the credit elsewhere provision prevents them from routinely coming to FmHA for cheaper loans.

Officials in the Louisiana and Mississippi State offices told us that the credit elsewhere provision should be eliminated for nonpublic bodies because credit is not available from commercial sources. Louisiana banking officials told us that banks would not be interested in making loans to either public or nonpublic bodies for water and waste disposal systems and that, in general, banks do not like to make loans with repayment periods in excess of 10 years. One bank official told us that Federal and State bank examiners have criticized banks for holding long-term bonds. A savings and loan association official said that the association cannot make loans for water and waste disposal systems.

FmHA should determine whether similiar views exist among lenders in other States regarding water and waste loans. If such views exist, it may not be reasonable to require nonpublic bodies to seek credit elsewhere.

Use of interim financing

FmHA regulations require that, whenever possible, water and waste disposal loans exceeding \$50,000 should be funded on an interim basis during construction by commercial sources to preclude the necessity of multiple advances of FmHA funds. Ordinarily, the requirement for using interim financing is included in the letter sent to an applicant outlining conditions the applicant must meet or agree to meet for FmHA approval of the loan.

Public and nonpublic borrowers in Arkansas and Mississippi have used interim financing on water and waste projects costing more than \$50,000. To determine whether interim financing has been required, we reviewed 29 loans approved for 27 projects in these two States. We found that 15 projects under

construction at the time of our review were using interim financing. There were three additional projects not under construction for which FmHA was requiring interim financing.

However, water and waste disposal borrowers in Louisiana have used interim financing only on a limited basis. A bond counsel in Louisiana told us that under State statute, the type of public bodies FmHA deals with cannot use interim financing. Although nonpublic bodies can use interim financing, an official of the State office told us that very few have done so because the State office just accepted the fact that interim financing at reasonable rates was not available. This official told us that the State office did not require written evidence from borrowers that interim financing was not available.

A bank official in Louisiana told us that banks may be interested in making loans on an interim basis for water and waste disposal systems. He believes that reasonable interest rates can be negotiated with borrowers; however, he told us that banks would require a statement from FmHA that upon completion of system construction it will make the loan to the borrower.

The results of a recent FmHA survey of all the State offices showed that 657 of the 1,608 projects under construction during calendar year 1976 did not use interim financing. The State offices reported that interim financing was not used on 267 of the 657 projects because it was not available or was not available at reasonable rates and terms. Of the remaining 390 projects, 290 did not use interim financing because of lack of legal authority and 86 did not because the loans involved were less than \$50,000. Specific reasons were not given for the remaining 14 projects.

Current FmHA regulations provide that when the interim financing funds have been spent, the FmHA loan will be closed and the loan proceeds used to retire the interim indebtedness. Furthermore, banks providing interim financing are notified by letter of this assurance and given information to show that FmHA funds have been set aside for the loan.

FmHA regulations do not require that borrowers shall provide FmHA with evidence of their inability to obtain interim financing at reasonable rates. Borrowers who claim they are unable to obtain interim financing should be required to provide FmHA with written documentation.

REFINANCING OF WATER AND WASTE
DISPOSAL LOANS

Section 333 of the act also requires that borrowers receiving water and waste disposal loans shall agree to refinance their loans through other credit sources when the Secretary determines that credit is available from other sources at reasonable rates and terms. However, in the three States we reviewed, no water and waste borrowers have been asked to refinance their loans and no borrowers have done so. Officials in the Arkansas and Mississippi State offices indicated that borrowers have not been asked to refinance their loans because credit outside FmHA is not available. An official of the Arkansas State office told us that only the larger public body borrowers--municipalities over 5,500 population--that have been operating for 15 to 20 years can acquire sufficient equity to enable them to sell their bonds on the open market to refinance their loans.

Our reviews showed that in Louisiana water and waste disposal loans were not reviewed to determine whether they could be refinanced through credit sources other than FmHA. It was not until August 1976, after our discussions with State office officials, that the Louisiana State office issued a bulletin requiring county offices to include water and waste loans in their next regular loan refinancing review.

FmHA's regulations establishing loan refinancing review procedures do not specifically include water and waste loans. The regulations require that the FmHA Finance Office shall provide lists annually to the county offices of only those emergency, operating, and real estate loans which should be reviewed for refinancing through other credit sources. Louisiana State office officials told us that a similar list of water and waste disposal loans would be beneficial to the review process.

A bank official in Louisiana told us that bankers would be interested in refinancing water and waste disposal loans for periods of less than 7 years and that reasonable rates could be negotiated.

FmHA has no central source of information on the number of water and waste disposal loans that have been refinanced through other credit sources. Data given to us by each State office pursuant to a special request showed that through June 30, 1976, a total of 19 water and waste disposal loans

had been refinanced through other credit sources, 10 of which were in Texas. The amounts refinanced in Texas ranged from \$11,800 to \$404,600 and the loans had been outstanding from 5 to 12 years. Although we were not able to determine the repayment periods of these refinanced loans, we believe that this demonstrates that credit may be available and that certain loans might be refinanced.

To better enable the Secretary to exercise the authority provided by the act's refinancing provision, FmHA should establish procedures for water and waste disposal loan refinancing reviews. These procedures should specify how often each water and waste loan should be reviewed for refinancing. Furthermore, FmHA should provide the county offices with lists of those water and waste disposal loans which should be reviewed for refinancing. We believe these actions would enable FmHA to effectively determine when a particular water and waste disposal loan could be refinanced through other sources at reasonable rates and terms.

ADEQUACY OF SYSTEM RESERVE REQUIREMENTS

FmHA water and waste disposal loans may have a repayment period of up to 40 years but cannot exceed the useful life of the system. However, FmHA's current reserve fund requirements for repairing and replacing system components do not insure that a system will remain viable over the life of the loan because the reserve amount is based on the loan debt of the system rather than the useful life and future replacement costs of system components.

FmHA requires that the borrower must establish a reserve fund for repairing and replacing system components; improving or expanding the system; and when necessary, making annual loan payments. FmHA requires borrowers to accumulate and maintain in this reserve account an amount equal to at least one annual loan installment and to accumulate this amount within 10 years of operation. Public bodies may be exempt from the reserve requirement if their FmHA loans are secured by general obligation bonds or other special assessment bonds.

FmHA regulations do not specify which system components are expected to be repaired and/or replaced from the reserve fund. FmHA State and national office officials told us that the present reserve requirements enable the borrower to cover the cost of replacing low-cost system components, such as motors and pumps. These officials told us, however, that the reserve accounts are not intended nor are they adequate to cover the cost of replacing major system components, such as wells and elevated storage tanks, and that FmHA would make

subsequent loans to cover the replacement of these high-cost components.

Since the loan repayment period is limited to the useful life of the system or 40 years, we believe that the amount of reserve to be maintained by the borrower for the repair and replacement of system components should consider the useful life and future replacement cost of those components expected to be repaired and/or replaced during the life of the loan. Only through this approach can FmHA be sure that the reserves are adequate to cover future repairs and replacements and that the system will remain viable over the life of the loan. However, FmHA has not determined what is the useful life of water and waste disposal systems and provides no guidance to borrowers in establishing the life expectancy of their systems.

The Louisiana State office engineer told us that design engineers could be required to include information on the useful life of systems in the preliminary engineering reports. The engineer felt that this would impress upon the borrower the need for adequate reserves and provide the borrower with the approximate time the components would have to be replaced.

Requiring design engineers to include information on the approximate useful life of system components would also provide FmHA with a more meaningful basis upon which to base a system's reserve requirements. We believe that this is one alternative FmHA should explore in establishing reserve fund requirements that are based on the useful life of a system and the future cost of system components expected to be repaired or replaced.

The loan debt of a system is not indicative of the funds that will be needed to repair and replace system components. Grants, which may equal 50 percent of the project cost, reduce the amount of loan needed to finance the system. Therefore, as the amount of the loan decreases, the reserve amount also decreases because it is based on the system's loan debt.

Also, the period over which the loan is to be repaid affects the reserve amount. In certain cases, State law may limit public bodies to a repayment period less than the 40 years permitted by FmHA. Therefore, larger annual installments are required to retire the debt and, consequently, larger reserve amounts are required.

The following table shows for a hypothetical project costing \$500,000 the effect varying grant amounts and/or repayment periods have on the amount of reserves a project would be required to maintain.

<u>Project amount</u>	<u>Grant amount</u>	<u>Loan amount</u>	<u>Repayment period</u>	<u>Annual installments</u>	<u>Reserve amount</u>
\$500,000	\$ -	\$500,000	40	\$29,140	\$29,140
500,000	250,000	250,000	40	14,570	14,570
500,000	-	500,000	30	32,525	32,525
500,000	250,000	250,000	30	16,263	16,263

As shown, the reserve amount for a project costing the same amount could vary from \$14,570 to \$32,525 depending on the grant amount and the loan repayment period.

Borrowers' ability to acquire and maintain adequate reserve funds

Our review of the files for 63 borrowers showed that 41 had accumulated the reserves required as of the end of their last fiscal year of operation. One borrower's loan was secured by general obligation bonds and therefore was not subject to the reserve requirement. For the 21 remaining borrowers who did not have the required reserves, a complete history of each borrower's reserve fund showing the amounts transferred to the reserve, amounts expended from the reserve, and reasons why the funds were expended was not readily available at the State offices. Of the 21 borrowers, 12 did not transfer any funds to the reserve during their last fiscal year of operation.

CONCLUSIONS

Individuals reviewing borrower files have no way of knowing if the applicant was or was not able to secure credit elsewhere. We believe that FmHA should document each borrower file to show whether or not credit elsewhere was available.

The credit elsewhere provision as it applies to nonpublic applicants may not be feasible. Commercial lending officials in one of the States reviewed indicated that lenders are not interested in making loans for water and waste disposal systems because of the long repayment period. If lenders in other States have this view regarding water and waste disposal loans, credit from sources outside FmHA may not be available to nonpublic bodies. Therefore, a determination should be made of the overall availability of credit to nonpublic bodies to determine the feasibility of the credit elsewhere provision as it applies to nonpublic borrowers.

Although FmHA requires that interim financing should be used on all loans of over \$50,000, it has been used on a

very limited basis in Louisiana. Although Louisiana statute prevents public bodies from using interim financing, nonpublic bodies are free to use such financing but few have done so because the State office assumed that interim financing at reasonable rates was not available. However, it appears to us that interim financing at reasonable rates is available. Therefore, all State offices should require written evidence from borrowers of their inability to obtain interim financing.

The act requires that borrowers will refinance their loans through other credit sources when FmHA requests them to do so after determining that commercial credit is available to the borrower at reasonable rates and terms. However, not all State offices review borrowers' files to determine their ability to refinance loans through other credit sources or request borrowers to refinance their loans. Also, FmHA has not specifically included water and waste disposal loans in its refinancing review procedures. FmHA should insure that all water and waste disposal loans are periodically reviewed for refinancing through other credit sources.

Inasmuch as the reserve requirements established by FmHA to repair and replace system components consider only the loan debt of a system and not the useful life and/or replacement costs of components, there is no assurance that the reserve fund will be sufficient to keep the system viable over the loan repayment period. A system's loan debt is not indicative of the funds that will be needed or should be accumulated to repair and replace system components. Grants and repayment periods may reduce the loan debt of a system to a point where systems costing approximately the same to construct have widely varying reserve requirements. FmHA should determine what would constitute an adequate reserve considering the useful life and future replacement cost of the components expected to need repair and/or replacement. Furthermore, FmHA should establish procedures to insure that borrowers meet reserve fund requirements.

RECOMMENDATIONS

We recommend that the Secretary of Agriculture direct the FmHA Administrator to:

- Make recommendations to the Congress concerning the reasonableness of the credit elsewhere provision as it applies to nonpublic water and waste disposal borrowers.
- Require the State offices to document all credit elsewhere determinations in borrowers' files.

- Insure that all water and waste disposal loans are periodically reviewed for refinancing through other credit sources.
- Require written documentation from borrowers in those States permitting interim financing that such financing at reasonable rates is not obtainable.
- Establish procedures requiring that the reserve fund for water and waste disposal systems consider the useful life and future replacement cost of system components.
- Insure that all borrowers meet reserve fund provisions placed on them.

CHAPTER 3

METHOD OF DETERMINING ENGINEERING FEES

SHOULD BE EVALUATED

Farmers Home Administration permits engineers employed to design water and waste disposal systems to receive a percentage of the actual construction cost as compensation for their services. This compensation method penalizes an engineer for designing an economical system and can result in an engineer receiving additional compensation without performing additional work. Also, although engineering fees are limited by individual State office schedules, fee overpayments have resulted because of nonadherence to these schedules.

PERCENTAGE-OF-CONSTRUCTION METHOD CAN RESULT IN INCREASED COSTS

FmHA regulations require that engineering fees on FmHA projects shall be reasonable; that is, not in excess of the fees charged on similar projects. To insure that fees are reasonable, FmHA has instructed State directors to approve an attachment to be used with the engineering services agreement showing maximum fee rates for professional engineering services.

The following table shows the effective engineering fee rates in the State of Arkansas as of August 1976.

<u>Total actual construction cost</u>	<u>Table I (note a) % of fee</u>	<u>Table II % of fee</u>
Less than \$ 50,000	12.50	11.00
50,000 - 100,000	11.25	10.00
100,000 - 200,000	9.75	9.00
200,000 - 300,000	9.00	8.25
300,000 - 500,000	8.25	7.75
500,000 - 1,000,000	7.50	7.00
1,000,000 - 2,000,000	6.75	6.50
2,000,000 - 4,000,000	6.50	6.25

a/Used for projects involving above-average engineering cost, such as complicated water or sewage treatment plants.

As shown, the engineer's fee on a project of average complexity costing \$400,000 to construct would amount to \$31,000 (7.75 percent of \$400,000). However, if inflation should increase the project's construction cost to \$440,000, the engineer's fee increases to \$34,100 (7.75 percent of \$440,000).

Permitting engineers to receive a percentage of the actual construction cost as payment for their services not only removes incentive for engineers to cut costs when designing systems, but also permits engineering fees to increase as construction costs increase regardless of whether or not the engineers perform additional work.

Our review of national office files for 18 water and waste disposal projects in Arkansas that received subsequent loans and/or grants in fiscal years 1975 and 1976 showed that 4 projects received additional funds totaling \$118,400 to complete the projects as originally planned. Of the \$118,400, about \$10,300 represented increases in engineering fees. An Arkansas State office official indicated that the additional funds were for completing the projects as planned and did not increase the number of users nor require additional engineering work.

During recent reviews of loans and grants made to associations in Kentucky for community facility projects, which include water and waste disposal systems, the Department of Agriculture's Office of Audit (OA) noted that unnecessary delays by the engineer in preparing the final plans and specifications and a change order for one project increased the project's construction cost by \$43,900 and the engineer's fee by \$6,100. Inflation accounted for \$35,000 of the increase in construction costs.

Data showed that a separate rate schedule was developed by 40 of the 42 State offices for projects or portions of a project that were unusually complex and required more extensive design considerations and project supervision than normally encountered on basic projects. This data showed that as of July 1976, 11 of the State offices were using the rate schedules of their State engineering societies and that 13 offices developed their schedules in conjunction with the State engineering societies.

For 16 of the 18 remaining State offices, the rate schedules were based on the engineering fee curves published in the American Society of Civil Engineers (ASCE) Manual Number 45. The ASCE curves show the engineering fee rates recommended for projects of average and above-average complexity. Inasmuch as engineering fees will vary from State to State because of engineers' salaries, other costs of doing business, and general demand, State offices should be cautioned about using fee schedules based on national averages. We were unable to determine the basis for the rate schedules for two State offices.

Engineering rate schedules show that rates vary among the 50 States and 2 territories. The following table shows the range of rates and computed fees on water and waste disposal projects costing \$500,000.

<u>Type of project</u>	<u>Highest</u>		<u>Engineering fees</u>		<u>Average</u>	
	<u>Rate</u>	<u>Amount</u>	<u>Lowest</u>	<u>Rate</u>	<u>Rate</u>	<u>Amount</u>
Water	9.2	\$46,000	5.2	\$26,000	7.2	\$36,100
Waste	9.36	46,800	5.8	29,000	7.8	39,000

In making our computations we assumed that the project was of average complexity and used the applicable rate schedule except in those cases where the State office had indicated that the rate schedule for more complex projects was to be used. The lowest rates for both water and waste disposal projects were in Oklahoma. The highest rate for water projects was in Iowa; the highest rate for waste disposal projects was in Indiana.

We recognize that engineering fees will vary from State to State because of engineers' salaries, other costs of doing business, and general demand for engineering services. We question, however, whether these factors vary so much that the engineering rate permitted by FmHA for a waste disposal system costing \$500,000 in Indiana is 9.36 percent, resulting in a fee of \$46,800, whereas the rate for a waste disposal system costing the same amount in the neighboring State of Illinois is 7.09 percent, resulting in a fee of about \$35,400, or a difference of \$11,400.

It should also be noted that in 24 States the resident inspector receives a percentage of actual construction cost as a fee. The resident inspector is usually provided by the engineer and is responsible for overseeing day-to-day construction of the project to insure that it is done properly and that the plans and specifications are followed.

Shortcomings of the percentage-of-construction method for reimbursing engineers were discussed in our May 1975 report 1/ on reducing costs of Environmental Protection Agency- (EPA-)funded waste treatment plants. The report pointed out that this method penalizes engineers for designing the most economical facilities because their fees are based on actual construction costs. The report concluded that EPA

1/"Potential of Value Analysis For Reducing Waste Treatment Plant Costs" (RED-75-367, May 8, 1975).

needs to revise its regulations and require municipalities to use methods other than the percentage-of-construction-cost method of procuring professional services for designing waste treatment facilities before a successful cost control program could be developed.

In December 1975 EPA revised its regulations to prohibit the use of cost-plus-percentage-of-cost and percentage-of-construction-cost contracts for engineering services. The regulations, which became effective in March 1976, emphasize the negotiation process necessary to insure the best technical product at a fair and reasonable price. EPA's procedure appears to be in line with the Federal policy established in October 1972 when the Congress amended the Federal Property and Administrative Services Act of 1949 (40 U.S.C. 471 et seq.) which is to publicly announce requirements for architectural and engineering services and to negotiate the contracts on the basis of demonstrated competence and qualification for the type of professional services required and at fair and reasonable prices.

The Economic Development Administration (EDA), which also makes loans and grants for water and waste disposal systems, has placed similar curtailments on the use of the percentage-of-construction-cost method. EDA's regulations state that it is the agency's policy to require the use of fixed-price or cost-ceiling contracts; agreements allowing compensation to engineers based on a percentage-of-construction cost generally are not acceptable. An EDA official told us that EDA tries to stay away from the percentage-of-construction-cost method because it found that engineers were getting paid additional fees without doing additional work. This official told us that EDA regional offices use the ASCE curves to determine reasonableness of proposed engineering fees.

FmHA State and national office officials in the three States we visited seemed satisfied with the percentage-of-construction-cost method of compensating engineers. The Louisiana State office engineer told us that this is the most equitable method and none of the other methods, such as bidding, fixed-fee, etc., will provide better results. An official of the Arkansas State Board of Health told us that this method has always been used and no better one is known.

In December 1976 FmHA, in cooperation with EPA, developed an engineering services agreement requiring that all engineering fees be a fixed price on all projects funded jointly by the two agencies. In January 1977 FmHA revised the

engineering services agreement applicable to non-EPA-funded projects to allow the engineer to be compensated by either a fixed fee or a percentage of construction cost. We have consistently advocated avoiding contracts for engineering services based on a percentage of cost because it gives engineers incentive to inflate costs for increasing profits. Therefore, we believe that engineering fees on all FmHA-financed projects should be a fixed amount.

Control over fees paid to engineers

FmHA approves the engineering services agreement that stipulates the fee to be paid to the engineer. In doing so, FmHA assures itself that the fee is equal to or less than the applicable fee rate on the State office engineering fee schedule. FmHA may approve an engineering fee that exceeds the schedule rate if supporting documentation justifies the increased fee.

We reviewed 10 projects in the Louisiana State office that were completed in fiscal years 1975 and 1976 to determine whether the engineering fees paid as a percentage of total construction cost exceeded the percentages allowed on State office fee schedules. For two of these projects we found that engineering fees paid did exceed allowable rates. In one case the engineer was paid \$2,825 more than he should have been because the county supervisor did not properly compare the fee charged by the engineer with the fee schedule attached to the engineering services agreement. In the other case, the borrower and the design engineer executed a nonstandard agreement for engineering services. This agreement had an attached fee schedule showing higher rates of compensation than the effective State office schedule. We were told that this agreement was never reviewed by the State office, and that the loan was closed apparently without the State office's approval of any engineering contract. As a result, the engineer received \$1,800 more than he would have under the proper fee schedule. Later State office action resulted in the engineer returning the \$2,825 overpayment to the system owner. However, in the other case, the State office found that the system owner has no recourse because the contract is legal and binding.

Recent reviews of community facility projects in Kentucky by the Department of Agriculture's OA show that engineering fee overpayments are also occurring in that State. OA reported that for one project FmHA did not adhere to the rate schedule attached to the engineering services agreement, which resulted in a \$6,500 engineering fee overpayment. For another

project the State office failed to use the correct rate table, resulting in the engineer's being overpaid about \$1,500.

FmHA instructions do not require that State offices shall routinely review engineering fee payments to determine whether or not overpayments occurred. As a result of our review, the Louisiana State office made the five district directors responsible for insuring that all engineering services agreements are approved by the State office and that payments to contractors and engineers are checked against the contract rate. These payments will be verified by district and State office level staff on regular visits to county offices. Similiar procedures should be required in the other States to insure that engineering fee overpayments do not occur.

CONCLUSIONS

FmHA's practice of permitting engineers to be compensated for their services on the basis of a construction cost percentage results in engineers receiving additional fees for no additional work and removes the incentive for engineers to cut costs when designing systems. FmHA's recent revision to require only fixed-price fees on FmHA-EPA-funded projects will do away with the increased engineering fees based solely on increases in construction cost. FmHA should also require that engineering fees on non-EPA-funded projects should be a fixed amount.

Some State offices are using national average engineering fee rates for projects designed in their States. Such schedules may not be representative of the actual going rate for engineering services in these States and may need to be adjusted.

Engineering fee overpayments have resulted because of nonadherence to effective State office fee schedules. Engineering fee payments may be best controlled by routine audits by State or district office personnel before the final engineering payment is made.

RECOMMENDATIONS

We recommend that the Secretary of Agriculture direct the FmHA Administrator to:

- Stop using the percentage-of-construction-cost method of compensating engineers and require that all engineering fees be a fixed amount.

--Establish procedures to require State or district office audits of all final engineering fee payments to prevent engineers from receiving fees in excess of allowable amounts.

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