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REPORT OF THE COMPTROLLER GENERAL OF THE UNITED STATES

Delays in Constructing Waste Treatment Facilities After Award Of Construction Grants-- Improvements Made

Environmental Protection Agency

Delays prior to construction have occurred under the Environmental Protection Agency's grant program for constructing waste treatment facilities. These delays have resulted from a variety of factors, including the award of construction grants to projects before plans and specifications were ready to promptly enter the construction bidding process.

Most of the problems with plans and specifications not being ready for bidding occurred in those projects where design was started or completed under an earlier grant program (Public Law 84-660).

Under the current grant program (Public Law 92-500) the award of a construction grant is preceded by grants which cover the development of project plans and specifications; accordingly, in the future, delays should be eliminated because problems with plans and specifications should be resolved before the construction grants are awarded.

CED-77-1

NOV. 10. 1976



B-166506

The Honorable Jim Wright, Chairman
Subcommittee on Investigations and Review
Committee on Public Works and
Transportation
House of Representatives

Dear Mr. Chairman:

As you requested, we are reporting on the improvements made by the Environmental Protection Agency in initiating construction on waste treatment facilities after the award of the construction grant.

This report contains a recommendation to the Administrator of the Environmental Protection Agency. 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 and Senate Committees on Government Operations 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 will be in touch with your office in the near future to arrange for release of the report so that the requirements of section 236 can be set in motion.

Sincerely yours,

A handwritten signature in cursive script that reads "Thomas B. Staats".

Comptroller General
of the United States

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ABBREVIATIONS

EPA	Environmental Protection Agency
GAO	General Accounting Office

COMPTROLLER GENERAL'S
REPORT TO THE SUBCOMMITTEE ON
INVESTIGATIONS AND REVIEW
COMMITTEE ON PUBLIC WORKS AND
TRANSPORTATION
HOUSE OF REPRESENTATIVES

DELAYS IN CONSTRUCTING WASTE
TREATMENT FACILITIES AFTER
AWARD OF CONSTRUCTION GRANTS--
IMPROVEMENTS MADE
Environmental Protection
Agency

D I G E S T

PROBLEMS ENCOUNTERED IN STARTING CONSTRUCTION
OF PUBLIC LAW 92-500 PROJECTS

Substantial delays in building waste treatment facilities are being incurred from the time a construction grant is awarded until construction begins. A new grant program, Public Law 92-500, replaced a single grant process with a multiple-step process.

Under the Public Law 92-500 program, the Environmental Protection Agency has established a process which includes the award of a:

- Step 1 grant for the development of facility plans.
- Step 2 grant for the detailed design and specification of a project.
- Step 3 grant which provides for the construction of a project.

According to the Agency, a construction contract, with efficient processing, could be awarded by a municipality within 6 months after award of a step 3 grant. However, as of May 5, 1976, there were 459 step 3 projects awaiting construction. Thirty percent of these projects--with funds of \$847 million--had been awaiting the start of construction for 7 or more months.

Extended construction delays cause adverse effects, such as substantial cost increases due to inflation, loss of employment opportunities, and the inability to meet the water pollution control requirements for a minimum of secondary treatment of municipal waste by July 1, 1977.

A variety of factors contributed to these delays. One was that the Environmental Protection Agency

awarded step 3 grants to projects which were not ready to enter promptly the construction bidding process. The projects were not ready because all step 3 grant requirements affecting project plans and specifications had not been fulfilled at the time of grant award. Construction starts were delayed considerably until the requirements were satisfied.

Most problems with plans and specifications not being ready for bidding occurred in projects where design was started or completed under the previous program, Public Law 84-660, and entered the grant process at step 3. Such transition projects will continue to enter the grant process at step 3 during 1976 and 1977.

Agency officials believe that construction grants should continue to be awarded to these projects even though they may not be ready for bidding because plans and specifications can be completed concurrent with the performance of other step 3 work.

In the future these delays should be eliminated because problems with plans and specifications should be resolved before step 3 grants are awarded.

Factors also contributing to extended preconstruction periods included problems in acquiring easements and rights-of-way, design and scope revisions in projects, and local funding.

To avoid some delays related to obtaining easements for Public Law 92-500 projects, GAO recommends that the Administrator of the Environmental Protection Agency publish regulations requiring that municipalities do preliminary easement work concurrent with preparation of project plans and specifications prior to the award of a step 3 grant. (See pp. 4 to 11.)

The Agency concurs with this recommendation and is proposing regulations requiring grantees to complete preliminary easement work concurrent with other step 2 work. (See p. 11.)

PROBLEMS ENCOUNTERED IN STARTING CONSTRUCTION
OF PUBLIC LAW 84-660 PROJECTS

Many waste treatment facility projects under the earlier Public Law 84-660 program encountered problems in starting construction promptly after grant award. As of December 31, 1974, 181 of these projects with Federal grants totaling \$237 million, were awaiting the start of construction for 2 years or longer.

As of September 8, 1976, the number of such projects has declined to 37 with Federal grant funds of \$65 million. Although most of this decline was due to projects starting construction, some grants were withdrawn by the Agency because no progress was being made toward getting the project under construction after 2 years from the date of the grant award. The primary reason for this was the difficulties communities encountered in obtaining funds for their share of project costs. Communities with withdrawn grants can apply for a higher percentage of Federal funding under the new Public Law 92-500. The Agency expects the remaining 37 Public Law 84-660 projects to proceed into construction and that the grants will not be withdrawn. (See pp. 13 to 16.)

FEDERAL AND LOCAL PARTICIPATION IN
FUNDING OF PUBLIC LAW 92-500 PROJECTS

Under the Public Law 92-500 program, the Federal Government provides 75 percent of approved eligible costs of constructing waste treatment projects. However, when total project costs are considered, the local community or grantee in some cases, has to finance a much larger share than 25 percent.

Some waste treatment projects include costs which are not approved for financing by the Agency or the States because of insufficient Federal funds. Projects might also involve costs not eligible for funding under the requirements of the 1972 amendments. In the majority of projects reviewed, the Federal share of total project costs was between 66 and 75 percent. Those projects for which the local share was substantially larger than 25 percent usually included construction of collection sewers, which were generally eligible but not approved for Federal funding. (See pp. 17 to 21.)

CHAPTER 1

INTRODUCTION

The Chairman, Subcommittee on Investigations and Review, House Committee on Public Works, in a letter dated December 10, 1974, asked us to review certain aspects of the Environmental Protection Agency's (EPA's) grants program for constructing municipal waste treatment facilities. Construction grants have been made under the Federal Water Pollution Control Act of 1956, (Public Law 84-660, as amended) (33 U.S.C. 1151), and the Federal Water Pollution Control Act Amendments of 1972, (Public Law 92-500) (33 U.S.C. 1251, Sup. 2, 1972).

The Chairman expressed concern about the large number of waste treatment facilities not under construction many months after grant award. As of December 1974 construction had not started on 181 Public Law 84-660 projects with grants totaling \$237 million. The grants had been awarded for 24 or more months. Also 63 Public Law 92-500 projects with grants totaling \$208 million were in a preconstruction status for 7 or more months after grant award. The Chairman asked us to:

- Determine the extent of and reasons for lengthy delays being incurred from the time some grants are awarded until construction is started.
- Ascertain the Federal share of waste treatment facility construction costs, when all of the costs are calculated, for projects authorized under Public Law 92-500.

The Chairman asked us also to examine the status and reasonableness of permits issued by EPA and the States under the National Pollutant Discharge Elimination System. This program was covered in a separate report to the Chairman entitled "Implementation of the National Water Pollution Control Permit Program: Progress and Problems" (RED-7-60, Feb. 9, 1976).

FEDERAL WATER POLLUTION CONTROL LEGISLATION

Permanent water pollution control legislation was enacted July 9, 1956, with the passage of Public Law 84-660. The act provided for Federal participation in a wide variety of water pollution control activities, including making grants for the construction of waste treatment facilities. Grants were made to help finance eligible project costs, including treatment plants, interceptor sewers, and pumping stations. Grants were usually awarded for entire projects, including preparation of plans and specifications and

construction, on the basis of preliminary plans and an engineering report. According to EPA, Public Law 84-660 projects should start construction within 24 months of the date of the grant award. Development of project plans and specifications was included in this time frame.

Federal grants under Public Law 84-660 provided a maximum of 30 percent of estimated eligible project costs subject to a maximum grant limitation of \$250,000. Amendments to the act removed the dollar limitation and increased the Federal share to a maximum of 55 percent.

Public Law 92-500 continued Federal aid in constructing publicly owned waste treatment facilities with an authorization of \$18 billion for fiscal years 1973 to 1975. The act made more construction items, such as collection sewer systems, eligible for Federal participation and increased the Federal share of eligible construction costs to 75 percent.

Under Public Law 92-500, the single grant process was replaced by a three-step process. A step 1 grant is made for developing a plan which defines the project's scope and basic design parameters. After EPA approval of the plan, a step 2 grant is awarded for preparing detailed engineering plans and specifications. After EPA approval of these plans and specifications, a step 3 grant is made for the construction stage, including advertising for bids, determining the responsible low bidder, awarding the construction contract, and constructing the project. EPA officials estimate that a construction contract should be awarded within 6 months of the date of a step 3 grant award.

A key feature of the grant process change is that the major obligation of Federal funds for the project (a step 3 grant) is deferred until after approval by EPA of detailed plans and specifications.

SCOPE OF REVIEW

In line with the Chairman's request, we examined the extent of and reasons for construction delays and obtained information on how much the Federal Government participates in the costs of constructing waste treatment facilities when total costs, both eligible and ineligible, are considered. We also examined the reasons why some grants for delayed projects were withdrawn by EPA. Our review included 26 grants awarded under Public Law 84-660: 14 were reviewed for construction delays, 11 for project withdrawal, and 1 project for both delays and withdrawal. Our review also included

45 grants awarded under Public Law 92-500: 34 were reviewed for construction delays and 11 for cost sharing.

We held discussions with officials at EPA headquarters in Washington, D.C., EPA regional offices in Boston, Massachusetts (region I), Atlanta, Georgia (region IV), and Kansas City, Missouri (region VII); and State water pollution control agencies in Connecticut, Florida, Georgia, Iowa, Kansas, Massachusetts, Maine, Missouri, North Carolina, and Rhode Island. We obtained information from municipalities and consulting engineers, and examined Federal and State agencies' records, studies, and other documents.

CHAPTER 2

PROBLEMS ENCOUNTERED IN STARTING

CONSTRUCTION OF PUBLIC LAW 92-500 PROJECTS

The Environmental Protection Agency has stated that, with efficient processing, a construction contract could be awarded by a municipality within 6 months of the date of a step 3 grant award. As of May 5, 1976, there were 459 step 3 projects awaiting construction. A total of 139, or 30 percent, of these projects--with funds of \$847 million--had been awaiting construction for 7 or more months.

Our review of 34 projects showed that a variety of factors contributed to the delays. One factor was that EPA, in an attempt to expedite the obligation of Public Law 92-500 funds, awarded step 3 grants to projects which were not ready to promptly enter the bidding process. These projects were not ready because all step 3 grant requirements affecting plans and specifications had not been fulfilled at the time of grant award. Construction on many of the 34 projects we reviewed was delayed considerably until the requirements were satisfied.

Other factors which contributed to extended preconstruction periods included problems in acquiring easements and rights-of-way as well as design and scope revisions in the project.

Extended delays in getting projects constructed cause:

- Substantial cost increases due to inflation. EPA has stated that the sewage treatment plant construction cost index rose about 18 percent in calendar year 1974 and 7 percent in calendar year 1975.
- Loss of employment opportunities. EPA has estimated that 20,000 to 25,000 persons are directly employed as a result of \$1 billion in construction grant funding, and another 20,000 to 25,000 jobs are indirectly generated.
- Inability to meet the water pollution control requirements of Public Law 92-500 calling for a minimum of secondary treatment of municipal waste by July 1, 1977.

REASONS FOR PRECONSTRUCTION LAG
IN PUBLIC LAW 92-500 PROJECTS

We reviewed 34 projects in 3 EPA regions to determine the reasons for delays being incurred from the time a step 3 grant was awarded until construction started. Projects selected were in a preconstruction status for 4 or more months as of January 1975, and represented 47 percent of the projects and 70 percent of the Federal grant funds in the 3 EPA regions. As shown in the following table, most of the 34 projects reviewed encountered 1 or more problems which resulted in a delay of the start of construction.

	<u>Number of projects</u>
Problems related to project plans and specifications	16
Problems with easements and rights-of-way	7
Problems with project design and scope revisions	7
Problems with local funding	2
Other problems	3
<u>Delays resulting from problems related to project plans and specifications</u>	

On February 25, 1976, the Administrator of the Environmental Protection Agency, in testifying before the Subcommittee on Investigations and Review, House Committee on Public Works, stated that the award of a step 3 grant is to be made with the understanding that the plans and specifications should be ready for bidding and that the bidding process will be promptly undertaken and construction contracts awarded. However, of 34 project we reviewed, 16 encountered 1 or more problems relating to project plans and specifications which delayed the start of the bidding process. The major problem was that step 3 grants were awarded when project plans and specifications were not ready for bidding. In other instances, EPA did not promptly review the revised and completed plans and specifications when they were subsequently submitted.

Plans and specifications not ready for bidding

In 15 of 34 projects, we found that the project plans and specifications were not ready to promptly enter the bidding process. Initiation of bidding procedures for these projects was not undertaken from 3 months to 18 months; 9 projects required 6 months or more.

Public Law 92-500 introduced numerous new requirements, including more comprehensive cost effectiveness studies and higher waste treatment requirements. These new requirements had to be met before projects with step 3 construction grants could be advertised for bids. In addition, projects designed to meet the criteria of Public Law 84-660, but not yet under construction, subsequently had to meet these new requirements. EPA's emphasis on obligating funds led to the award of step 3 grants before project plans and specifications had met all Public Law 92-500 requirements and thus delayed the start of the bidding procedure.

EPA regulations also require that prior to the award of a step 3 grant, applicants must consider, among other things, the environmental impact of the proposed projects and furnish two sets of construction plans and specifications suitable for bidding. In many instances, these regulations were not fully complied with at the time of grant award, resulting in substantial delays.

For example, one project encountered delays when a step 3 grant was awarded while a consulting engineer and community conservation commission were still assessing the project's environmental impact. On September 11, 1974, EPA awarded a \$2 million grant for a community's interceptor sewer system. At the time of grant award, the EPA project engineer believed that any changes resulting from the environmental issue, which related to the effects of locating a portion of the interceptor sewer through a wetland area, would be minor. After reaching agreement with the commission, the engineering firm had to revise project plans and specifications. They were submitted to the State and EPA for review 2-1/2 months after grant award. The State and EPA required additional modification prior to advertising for bids. The construction contract was not awarded until 10 months after grant award.

In another case EPA awarded a \$5 million grant for a secondary waste treatment facility project on July 31, 1973, without having received project plans and specifications. An EPA official stated that the grant was made on the basis

that substantially complete plans and specifications were available at the State. However, EPA did not receive plans and specifications from the State until 3-1/2 months after grant award. EPA began its review of them 3 months later. An EPA official attributed this delay to a heavy workload. EPA did not approve the plans and specifications for an additional 7 months because the engineering firm had to provide more information on project area conditions and complete revisions in line with EPA requirements. In total, processing from grant award to contract award covered a period of 20 months.

Most of the problems with plans and specifications not being ready for bidding occurred in those projects where design was started or completed under Public Law 84-660 and entered the grant process at step 3. Such transition projects will continue to enter the grant process at step 3 during 1976 and 1977. EPA officials believe that construction grants should continue to be awarded to these projects even though they may not be ready for bidding because plans and specifications can be completed concurrent with the performance of other step 3 work.

Because step 3 grants for projects designed under Public Law 92-500 will generally be preceded by step 1 and step 2 grants, which cover the development of project plans and specifications, such problems should be resolved before step 3 grants are awarded.

Slow review of plans and specifications by EPA

In 3 of the 34 projects reviewed, EPA did not promptly review revised and completed plans and specifications when submitted after grant award. EPA response time in reviewing plans and specifications in these projects exceeded 3 months. In one instance, EPA did not begin its review of a project's plans and specifications changes until almost 4 months after the changes were submitted by the consulting engineer and not until 3 months later for a second project. In a third project, plans and specifications approval was given 4 months after the consulting engineer had submitted additional information required by EPA. In all three instances, EPA officials agreed that review should have been undertaken sooner, however, they cited workload problems as the major cause of the delay.

During fiscal year 1976 the President authorized 300 additional program positions for EPA--250 new positions and 50 positions reprogrammed from other EPA activities. These

additional employees are to be used in various areas, including reviewing and approving project plans and specifications. This should help reduce workload problems and eliminate some delays.

Delays resulting from problems encountered in acquiring easements and rights-of-way

Construction of treatment plants and sewer systems usually requires obtaining title to plant sites and obtaining easements and rights-of-way to use another's property. Difficulties in acquiring easements or rights-of-way extended preconstruction time in 7 of the 34 projects reviewed with delays of over 6 months occurring in 4 projects.

EPA grant regulations require a statement of site availability prior to grant award; however, interpretation of this requirement is left to the discretion of the regional offices. One EPA regional official stated that where easements are involved, the community is only required to provide assurance that it has legal authority to obtain easements prior to construction.

In 4 projects we reviewed, the municipality did not start preliminary easement work (obtaining description and maps of land parcels, and determining property ownership) until after the step 3 grant award.

For example, preliminary easement work for one project involving interceptor sewers, estimated to cost \$8 million, had not started at the time of the step 3 grant award. As a result, most of the preliminary easement work was not completed until 3-1/2 months later when negotiations with land owners was started. Problems were then encountered in acquiring rights-of-way from the owners and the project was not advertised for bidding until about 8 months after grant award.

We believe that the delay attributable to the preliminary easement work was avoidable in that such work could be done while plans and specifications are being prepared. EPA headquarters agreed that this work should be done prior to the award of a step 3 grant.

We also recognize that there are other delays related to acquiring easements which may not be avoidable. For example, another project we reviewed involved construction of a waste treatment plant and interceptor sewers having an estimated cost of \$690,000. Attempts to obtain all

easements through negotiations failed. This led to condemnation proceedings and the community was not able to obtain title to the project site until 16 months after the date of the step 3 grant award.

Delays resulting from project design and scope revisions

Changes in project design elements or scope extended preconstruction periods in 7 of the 34 projects. One project for example, involving interceptor sewers estimated to cost \$362,000, had a scope revision when the engineering firm recognized the opportunity to relocate the point at which 2 interceptor sewers would connect because of the rapid construction of a nearby interceptor project. The change resulted in the deletion of some project elements at an estimated cost reduction of \$70,000, however, it also delayed the start of construction about 12 months.

Preconstruction periods were also extended by about 7 months in one project due to modification in plant design, resulting from a substantial cost increase in a major plant component, and by 6 months in another project when a reevaluation of the community's waste treatment needs showed that a more simplified plant design was desirable.

Delays due to local funding problems

EPA regulations require that an applicant for Public Law 92-500 funds agree to pay the non-Federal project costs and show the legal, institutional, managerial, and financial capability to insure adequate construction, operation, and maintenance of the treatment works. However, in 2 of the 34 projects we reviewed, local funding problems caused delays prior to the start of construction. One project involved interceptor sewers having an estimated cost of \$446,000. The Federal grant of \$375,000 was awarded on July 27, 1973. EPA required as a grant condition that the community also construct a waste water collection system as part of the project, however, the collection system did not receive a high enough priority to obtain Federal funds.

Local officials initially expected to receive grant assistance for the collection system from the water and sewer program of the Department of Housing and Urban Development. However, project funding under this program was terminated before the community received financial assistance. Additional attempts to secure funding from the State and EPA failed until finally, in March 1975, the

community received a State grant covering about 45 percent of the estimated collection system cost of \$760,000. After the funding had been obtained, the community incurred delays because of various other factors. As of April 1, 1976, 32 months after grant award, construction bids for the project had been received and were being reviewed.

In another project involving modification of two existing waste treatment plants, a local funding problem also contributed to a preconstruction delay. The low bid received was about \$150,000 higher than the project cost estimate of \$340,000. According to a community official, the bids were rejected because the local share would have required more funds than the community could raise. The project was rebid 14 months later with estimated costs rising to \$827,000. However, a community official explained that an improvement in the community's financial condition since the initial bids were received enabled the community to obtain funds for the local share by means of an increased sewer and water use charge and a bank loan.

Several factors accounted for the time required to rebid the project, including: an unsuccessful attempt to negotiate project costs with the low bidder; redesign of the plant modifications in an attempt to lower costs and subsequent review of the changes by the State and EPA; efforts to secure additional local funding; and a change in the community administration. The consulting engineer stated that the cost increase was due to a revised design providing improved waste water treatment and rapid escalation of construction costs. The construction contract was finally awarded in March 1975, about 20 months after grant award.

Other problems resulting in delays

Various other reasons were found which extended preconstruction periods for Public Law 92-500 projects, but occurred in only a few projects. For example, in one project, citizens of the community requested an environmental impact statement after grant award which delayed the project 12 months. In another project, reevaluation of the cost effectiveness of waste treatment at alternative locations was requested by an industrial firm which delayed the start of construction about 5 months. A third community delayed advertising for bids on its project until 9 months after grant award because the project involved interceptor sewers which were to be connected with a neighboring community's proposed interceptor sewer system. The neighboring community's system had been delayed due to difficulties encountered in obtaining required easements.

CONCLUSION

Lengthy step 3 preconstruction periods have occurred in Public Law 92-500 projects for a variety of reasons, including difficulties in obtaining easements, problems encountered in local funding, and changes to a project's design or scope. Due to unresolved problems related to plans and specifications or other conditions, many projects received grants before being ready to promptly proceed into construction. In part, this was related to the transition to the requirements of the 1972 amendments and to EPA emphasis on obligation of construction grant funds. Such transition projects will continue to enter the grant process at step 3 during 1976 and 1977. EPA officials believe that construction grants should continue to be awarded to these projects even though they may not be ready for bidding because plans and specifications can be completed concurrent with the performance of other step 3 work.

Step 3 grants for projects designed under Public Law 92-500 will generally be preceded by step 1 and step 2 grants, which cover the development of project plans and specifications. In the future such delays should be eliminated because problems with plans and specifications should be resolved before step 3 grants are awarded.

Where possible, efforts should be made to shorten the preconstruction time frame. This will help avoid costly inflation during the step 3 process, obtain earlier pollution abatement, and generate employment opportunities. Although not eliminating all delays resulting from the award of construction grants to projects not ready for bidding, improvements can be made in procedures for obtaining easements.

RECOMMENDATION

To avoid some delays related to obtaining easements, we recommend that the Administrator, Environmental Protection Agency publish regulations requiring that municipalities do preliminary easement work concurrent with preparation of project plans and specifications prior to the award of a step 3 grant.

AGENCY COMMENTS AND OUR EVALUATION

In commenting on our report (see app. I), EPA stated that it concurred with our recommendation on preliminary easement work. In this regard EPA said it was proposing regulations requiring grantees to complete preliminary easement work

concurrent with other step 2 work. Pending issuance of such regulatory requirements, EPA stated that it would issue appropriate Program Requirements Memorandum covering this subject.

We believe that the actions initiated by EPA, when completed, will implement our recommendation.

CHAPTER 3

PROBLEMS ENCOUNTERED IN STARTING

CONSTRUCTION OF PUBLIC LAW 84-660 PROJECTS

Many Public Law 84-660 waste treatment facility projects encountered problems in promptly starting construction after grant award. These problems resulted in lengthy preconstruction periods and in some cases withdrawal of the grants by EPA.

Public Law 84-660 grants are no longer awarded for constructing waste treatment facilities. However, as of December 31, 1974, there were 181 Public Law 84-660 projects with Federal grants totaling \$237 million awaiting the start of construction for 2 years or longer. Our review of 15 of these projects showed a variety of reasons, but no common cause, for the extended preconstruction periods. Such reasons included:

- Changes in project scope after the grant was awarded.
- Additional time needed to review complex designs of new advanced waste treatment facilities.
- Delays encountered in adjoining projects which adversely affected the start of construction.
- Difficulties experienced by communities in obtaining funds for their share of construction costs.

As of September 8, 1976, the number of Public Law 84-660 projects awaiting construction had declined to 37 projects with Federal grant funds of \$65 million. Most of this decline was due to projects starting construction, including 7 of the 15 projects reviewed. However, about 20 grants were withdrawn by EPA. Our review of 12 withdrawn grants showed that for 10 grants the communities encountered difficulties in obtaining funds for their share of project costs. According to EPA officials, Public Law 84-660 grants are withdrawn if 2 years after grant award, no progress is being made toward getting the project under construction. Communities whose grants are withdrawn because of lack of progress resulting from local funding problems could apply for Public Law 92-500 funding (75 percent of eligible costs). As of May 1, 1976, 10 of the 12 communities had received or were high on State priority lists to receive grants under Public Law 92-500.

EPA officials told us that with few exceptions, they expect the remaining 37 projects to proceed into construction and that the grants will not be withdrawn. Communities may prefer to continue Public Law 84-660 projects rather than comply with numerous new requirements of Public Law 92-500, such as more comprehensive cost effectiveness studies.

REASONS WHY PROJECTS WERE AWAITING
CONSTRUCTION OVER 2 YEARS

We reviewed 15 projects with Federal grants totaling \$53 million which had been awaiting construction 2 years or more as of December 31, 1974, to determine the reasons for the delays. These projects accounted for 63 percent of the funds and 25 percent of the number of such projects in the 3 EPA regions included in our review. We found that there were many different reasons for the delays, as show in the following.

Delay due to increased project scope and other design changes--One project in our review involving construction of interceptor sewers had an estimated cost of \$9 million. EPA awarded a \$2.7 million grant to the community on September 30, 1971. During the design stage the project was reevaluated and its scope increased to serve new areas annexed by the community. Project plans and specifications were submitted to EPA 19 months after grant award. EPA's review, which was completed 8 months later, identified the need for additional information and design changes. The engineering firm submitted a revised design in about 9 months. EPA approved this design in another 6 months but listed several factors for reconsideration by the consulting engineer. The construction contract was awarded in December 1975, 50 months after grant award.

Delay due to problems in completing an adjoining project--EPA awarded a \$732,000 grant on December 21, 1972, for a \$976,000 interceptor sewer project to be connected with a planned regional sewage treatment plant project. One engineering firm had design responsibility for both projects. Because operation of the interceptor sewer was dependent on completion of the treatment plant and construction time for the interceptor would be shorter, its design was scheduled to follow that of the treatment plant. However, design of the regional treatment plant, completed in May 1974, had been held up pending resolution of site acquisition problems. The interceptor design was not started until after completion of the regional treatment plant design and completed 1 year later. An engineering firm official stated that a site location problem and the firm's heavy workload further delayed

completion of the interceptor sewer design for several months. EPA approved the design in July 1975, 30 months after grant award, and construction began in December 1975, 36 months after grant award.

Delay due to problems in obtaining funding--EPA awarded a grant of \$142,500 to a community on September 18, 1972, for a \$505,000 waste treatment plant and interceptor sewer project. The community experienced early difficulty obtaining funds for its share of project costs. It first applied to the Economic Development Administration but was unsuccessful. The community finally obtained the funds by issuing bonds and by obtaining grants from the State in November 1973 and the Appalachian Regional Commission in July 1974. The construction contract was awarded in January 1975, 28 months after grant award.

Delay due to an advanced waste water treatment plant design--On December 29, 1972, EPA awarded a grant of \$3.4 million for a \$4.8 million project to upgrade a community's waste treatment plant to provide advanced treatment. Plans and specifications were submitted to EPA in November 1973. Because of the lack of operational experience for the advanced treatment process, EPA wanted additional assurances on plant performance and submitted the design to its research laboratories for a complete, indepth review. The laboratories recommended certain design modifications and, after they were made, EPA approved the plans and specifications in September 1974. The construction contract was awarded in March 1975, 27 months after grant award.

PROBLEMS ENCOUNTERED BY PROJECTS WHICH RESULTED IN GRANT WITHDRAWAL

EPA has followed the practice of withdrawing Public Law 84-660 projects not under construction within 2 years of grant award if the community was not making progress toward getting the project under construction. We reviewed 12 withdrawn grants and found that community problems in obtaining funds for their share of project costs was the primary reason for the lack of progress in 10 grants. According to EPA officials, communities whose Public Law 84-660 grant had been withdrawn could apply for a grant under Public Law 92-500 and obtain a higher percentage of Federal funding (75 percent) provided under Public Law 92-500. As of May 17, 1976, 7 of the communities had received Public Law 92-500 grants and 3 others were expected to receive grants in fiscal years 1976 or 1977. Projects for the other 2 did not have high enough priority for funding in either fiscal year.

The following illustrates some of the problems which resulted in EPA's withdrawal of the grants.

--EPA awarded a grant of \$105,000 to a community on February 3, 1971, for constructing waste treatment facilities estimated to cost \$336,000. The community had expected to obtain an additional grant from the Farmers Home Administration to help finance its share of project costs, but was unsuccessful. Due to lack of community financing for its share of project costs, the project did not proceed into construction and EPA finally withdrew the grant in February 1974. In November 1974 the community received a step 1 grant for the project under Public Law 92-500. As of May 1976 the community anticipated receiving step 2 and 3 grants prior to the end of the fiscal year 1977.

--Another community received an EPA grant of \$134,000 on December 28, 1972, for constructing waste treatment facilities. The project included a collection system which was not eligible for EPA assistance under Public Law 84-660. The community was unable to obtain funds for the \$557,000 collection sewer system from either the Farmers Home Administration or the State. In August 1974 the consulting engineer informed EPA that without additional funding the project could not be completed. This led to EPA's withdrawal of the grant in January 1975. The community has since submitted an application for funding under Public Law 92-500; however, the collection sewers have low priority for EPA funding, and therefore only the treatment plant portion of the project is expected to receive funding in fiscal year 1976. As of May 1976 the community is actively seeking further financial assistance from the Farmers Home Administration and the State.

CHAPTER 4

FEDERAL AND LOCAL PARTICIPATION

IN FUNDING OF PUBLIC LAW 92-500 PROJECTS

Under Public Law 92-500, the Federal Government is to provide 75 percent of approved eligible costs of constructing waste treatment projects. In his request, the Chairman expressed concern that when total costs of construction are considered, the local community or grantee, has to finance a much larger share than 25 percent of project costs. Total project costs under Public Law 92-500 may include costs that are eligible and approved by the States and EPA, eligible but not approved for funding, and ineligible.

Some projects may involve eligible costs which are not approved by EPA or the States for funding because of insufficient Federal funds. Subject to EPA concurrence, States generally give high priority to the approval of costs for such items as treatment plants and interceptor sewers but generally give low priority to the funding of eligible collection sewer systems (pipes into which homes and businesses empty their sewage). A project might also involve costs which are not eligible for EPA funding, such as costs of acquiring sewer rights-of-way and, generally, treatment plant sites. Communities must pay or obtain other funding for costs not approved or ineligible.

Our review of cost sharing for 45 projects in 10 States showed that, in the majority of the projects, the Federal share of total project costs was between 66 and 75 percent. Those projects for which the local share was substantially higher than 25 percent usually included construction of collection sewers which were not approved for Federal funding.

In addition to the 45 projects which had received some EPA funding, we found some projects which were constructed without Federal assistance. We examined the reasons for this situation and found that either the projects did not have enough priority to receive funding at the time of construction or that the communities did not want to comply with certain Federal grant requirements.

FUNDING OF PUBLIC LAW 92-500 PROJECTS

EPA provides communities with 75 percent funding of approved eligible costs of constructing waste treatment projects under Public Law 92-500. Communities may receive additional funding for Public Law 92-500 projects from the

States or other Federal agencies. For example, the Department of Housing and Urban Development has provided funds for constructing sewers under certain circumstances.

State funding is voluntary and varies from 0 to 20 percent of eligible costs, with the community funding at least 5 percent. Some States contribute a fixed percentage, while others provide varying amounts or have loan or credit programs. (The funding arrangements for all the States are shown in app. II.)

We reviewed the funding of 45 projects in 10 States within 3 EPA regions. Our sample was drawn from projects approved by EPA for a step 3 grant during the period February 1973 to March 1975, and included those reviewed for delays under Public Law 92-500 (see ch. 2) and additional step 3 projects which involved construction of treatment facilities.

We found that no local community paid more than 25 percent of total approved costs, but 15 communities paid more than 25 percent of total eligible costs and 22 paid more than 25 percent of total project costs. The Federal Government, on the other hand, paid at least 66 percent of (1) total eligible costs for 32 projects and (2) total project costs for 28 projects.

The following table is an analysis of the Federal and local participation in approved, eligible, and total project costs for the 45 projects.

<u>Percent of costs funded</u>	<u>Projects</u>		
	<u>Total approved costs</u>	<u>Total eligible costs</u>	<u>Total project costs</u>
By Federal Government (EPA and other Federal agencies):			
65 percent or less	-	13	17
66 percent to 75 percent	44	30	27
Over 75 percent	1	2	1
Total	<u>45</u>	<u>45</u>	<u>45</u>
By local communities:			
25 percent or less	45	30	23
26 percent to 50 percent	-	12	18
Over 50 percent	-	3	4
Total	<u>45</u>	<u>45</u>	<u>45</u>

Note: The table does not include State funding; however, app. III is an analysis of total Federal, State, and local funding of the 45 projects.

Of the 15 projects for which communities paid more than 25 percent of the eligible cost, 13 projects involved construction of collection sewers, although generally eligible ^{1/} for funding from EPA, were not approved. The communities therefore had to make other funding arrangements. In a few instances, the communities' share of approved costs was only 10 percent but its share of total eligible and total project costs was well in excess of 50 percent.

For example, one project involved construction of a sewer system, including extensive construction of collection sewers. Approved costs, excluding cost of the collection sewers, were \$824,000 of which the Federal share was \$618,000. The State's share was \$123,600. Collection sewer construction and related engineering and administrative costs of \$3.5 million increased total eligible costs to \$4.3 million. The community's share of total eligible and total project costs was in excess of 80 percent as shown below.

	<u>Percent of costs</u>		
	<u>Approved</u>	<u>Total eligible</u>	<u>Total project</u>
Federal	75	14	13
State	15	3	3
Local	10	83	84

In another project the Federal grant was \$734,000, with approved costs of \$979,000 for alteration of an existing pumping station and replacement of sewer lines. The project also involved \$1,739,000 for construction of collection sewers and \$342,000 for ineligible costs related to joining another community's sewer system. Total costs amounted to \$3,060,000. Extent of Federal, State, and local participation in the various costs is as follows.

^{1/} Under section 211 of the 1972 amendments, collection systems are generally eligible for Federal grants subject to review by EPA for conformance with the requirements of the act. Some of the collection systems included in our review had not been reviewed by EPA because they did not have enough priority for funding.

	<u>Percent of costs</u>		
	<u>Approved</u>	<u>Total eligible</u>	<u>Total project</u>
Federal	75	27	24
State	15	5	5
Local	10	68	71

PROJECTS PROCEEDING WITHOUT FEDERAL FUNDING

We found some instances where communities have proceeded with construction of waste treatment projects on their own or with State funding, but without financial assistance from EPA. In some cases, the projects did not have enough priority to receive Federal funding at the time of construction.

For example, one community upgraded four small treatment facilities at a cost of \$1.9 million with community funds. The community proceeded on its own because local officials believed that the community could not wait several years before the project was high enough on the State priority list to receive a Federal grant. Another community also proceeded on its own to improve its waste treatment facilities, at a cost of over \$300,000. The community was subject to a State fine for failing to provide adequate sewage treatment and therefore decided not to wait until the project had priority for EPA funding.

We also found that in one State, six communities objected strongly to Federal industrial cost recovery requirements, and decided to construct their projects without EPA financial assistance to avoid compliance with the requirements.

The Federal Water Pollution Control Act Amendments of 1972 provided that, effective March 2, 1973, the Administrator, Environmental Protection Agency, could not approve a grant for constructing waste treatment projects unless the applicant had established a system to recover from industrial users "that portion of the cost of construction * * * which is allocable to the treatment of such industrial wastes to the extent attributable to the Federal share of the cost of construction." Prior to March 2, 1973, EPA regulations required an industrial user to pay its proportionate share of the applicant's cost of construction. When the industrial cost recovery is applied to the 75 percent Federal contribution rather than to the applicant's contribution, a participating industry's share of the eligible cost increases by 300 percent.

The six communities and their industrial dischargers believed that the new requirements would place a heavy burden on industries and were inequitable because neighboring communities had earlier received grants under the limited industrial cost recovery regulations.

Although all applications were at EPA before March 1, 1973, final plans and specifications for the six projects were not completed and grants were not awarded. Because of these circumstances, the State agreed to provide 90-percent grants with the balance of project funds coming from the communities.

As of March 31, 1976, the State had awarded grants to four of the six projects which had entered construction in November and December of 1974. The other two projects had not been awarded grants because in one case, environmental problems had not been resolved and in the other, waste treatment agreements had not been reached on the costs to be shared by the communities proposing to use the facility.

CONCLUSION

In the majority of projects reviewed, the Federal share of project costs was not much less than 75 percent. However, the cost of collection system construction has resulted in some communities having to absorb a large share of total eligible project costs. Generally, State priority on treatment plants, interceptors, and related facilities left little funds available for Federal funding of collection systems. Communities have had to arrange financing on their own for this type of construction.

A limited number of projects have been undertaken without Federal participation. Many of these projects were not high enough on priority lists at the time of construction to receive EPA grants and the communities obtained funds either locally or through State assistance programs. In other cases, the communities did not want to adhere to EPA requirements that are part of a Federal grant, and thus proceeded without EPA assistance.



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
WASHINGTON, D.C. 20460

OFFICE OF
PLANNING AND MANAGEMENT

Mr. Henry Eschwege, Director
Community and Economic Development Division
U.S. General Accounting Office
Washington, D. C. 20548

Dear Mr. Eschwege:

On July 30, you sent us your draft report on "Delays In Constructing Waste Treatment Facilities" for review and comment.

We concur with your recommendation on preliminary easement work. In this regard we are proposing regulations requiring grantees to complete preliminary easement work (obtaining maps and descriptions of land parcels, and determining property ownerships) concurrent with other Step 2 work. Pending issuance of such regulatory requirements, we will issue an appropriate Program Requirements Memorandum covering this subject.

We appreciate the opportunity to review this draft report prior to its submission to Congress.

Sincerely yours,

A handwritten signature in cursive script that reads "Alvin L. Alm".

Alvin L. Alm
Assistant Administrator
for Planning and Management

PUBLIC LAW 92-500
CONSTRUCTION GRANT PROGRAM

State Funds Applied to Eligible Project Costs
(Becomes Part of 25% State/Local Share)

<u>Region I</u>		<u>Region VI</u>	
Connecticut	15%	Arkansas	None
Maine	15	Louisiana	None
Massachusetts	15	New Mexico	12.5%
New Hampshire	20	Oklahoma	None
Rhode Island	a/ 15	Texas	None
Vermont	15		
<u>Region II</u>		<u>Region VII</u>	
New Jersey	15%	Iowa	None
New York	12.5	Kansas	None
Puerto Rico	b/ 25	Missouri	15%
Virgin Islands	b/ 25	Nebraska	12.5
<u>Region III</u>		<u>Region VIII</u>	
Delaware	10%	Colorado	c/ 5%
Maryland	12.5	Montana	None
Pennsylvania	None	North Dakota	None
Virginia	c/ 5-15	South Dakota	5
West Virginia	None	Utah	None
Dist. of Columbia	b/ 25	Wyoming	None
<u>Region IV</u>		<u>Region IX</u>	
Alabama	None	Arizona	5%
Florida	None	California	12.5
Georgia	None	Hawaii	10
Kentucky	None	Nevada	None
Mississippi	12.5%	American Samoa	b/ 25
North Carolina	12.5	Tr. Terr. of	
South Carolina	None	Pac. Islds.	b/ 25
Tennessee	25 (loan)	Guam	b/ 25
<u>Region V</u>		<u>Region X</u>	
Illinois	None	Alaska	12.5%
Indiana	10%	Idaho	15
Michigan	5	Oregon	None
Minnesota	15	Washington	15
Ohio	None		
Wisconsin	c/ 5-15		

a/ May decrease due to lack of funds.

b/ Applicant same as State.

c/ Variable--State agency option.

Source: Environmental Protection Agency

SCHEDULE OF FEDERAL, STATE, AND LOCAL COST SHARING
 PERCENTAGES FOR 45 PUBLIC LAW 92-500 PROJECTS REVIEWED

<u>Approved cost</u>	<u>States with cost sharing (note a)</u>		<u>States without cost sharing (note b)</u>	
	<u>Amount</u>	<u>Percent</u>	<u>Amount</u>	<u>Percent</u>
Federal	\$ 74,912,000	75	\$143,970,000	75
State	13,990,000	14	-	-
Local	<u>10,893,000</u>	<u>11</u>	<u>47,990,000</u>	<u>25</u>
Total	<u>\$ 99,795,000</u>	<u>100</u>	<u>\$191,960,000</u>	<u>100</u>
<u>Total eligible cost</u>				
Federal (note c)	\$ 76,159,000	64	\$143,970,000	74
State	14,476,000	12	-	-
Local	<u>28,076,000</u>	<u>24</u>	<u>49,637,000</u>	<u>26</u>
Total	<u>\$118,711,000</u>	<u>100</u>	<u>\$193,607,000</u>	<u>100</u>
<u>Total project cost</u>				
Federal (note c)	\$ 76,159,000	62	\$143,970,000	71
State	14,476,000	12	-	-
Local	<u>31,955,000</u>	<u>26</u>	<u>58,218,000</u>	<u>29</u>
Total	<u>\$122,590,000</u>	<u>100</u>	<u>\$202,188,000</u>	<u>100</u>

a/ Connecticut, Iowa, Maine, Massachusetts, Missouri, North Carolina, and Rhode Island.
 b/ Florida, Georgia, and Kansas.
 c/ Federal includes funding from EPA and other Federal agencies.