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Senate Hearings

Before the Committee on Appropriations

Public Works for Water and Power Development and Atomic Energy Commission Appropriations

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Part 9—RECALL HEARINGS (Pages 6721–7162)

ATOMIC ENERGY COMMISSION
BONNEVILLE POWER ADMINISTRATION
CORPS OF ENGINEERS
DEPARTMENT OF INTERIOR
Bureau of Reclamation

AUTHENTICATED
U.S. GOVERNMENT
INFORMATION
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PUBLIC WORKS FOR WATER AND POWER DEVELOPMENT AND ATOMIC ENERGY COMMISSION APPROPRIATIONS FOR FISCAL YEAR 1975

HEARINGS

BEFORE A

SUBCOMMITTEE OF THE COMMITTEE ON APPROPRIATIONS UNITED STATES SENATE

NINETY-THIRD CONGRESS

SECOND SESSION

ON

H.R. 15155

AN ACT MAKING APPROPRIATIONS FOR PUBLIC WORKS FOR WATER AND POWER DEVELOPMENT, INCLUDING THE CORPS OF ENGINEERS—CIVIL, THE BUREAU OF RECLAMATION, THE BONNEVILLE POWER ADMINISTRATION, AND OTHER POWER AGENCIES OF THE DEPARTMENT OF THE INTERIOR, THE APPALACHIAN REGIONAL DEVELOPMENT PROGRAMS, THE FEDERAL POWER COMMISSION, THE TENNESSEE VALLEY AUTHORITY, THE ATOMIC ENERGY COMMISSION, AND RELATED INDEPENDENT AGENCIES AND COMMISSIONS FOR THE FISCAL YEAR ENDING JUNE 30, 1975, AND FOR OTHER PURPOSES

Printed for the use of the Committee on Appropriations

Part 9—Recall Hearings
(Pages 6721–7162)

ATOMIC ENERGY COMMISSION
BONNEVILLE POWER ADMINISTRATION
CORPS OF ENGINEERS
DEPARTMENT OF INTERIOR

U.S. GOVERNMENT PRINTING OFFICE

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PUBLIC WORKS APPROPRIATIONS FOR FISCAL YEAR 1975

WEDNESDAY, JUNE 19, 1974

U.S. SENATE,
SUBCOMMITTEE OF THE COMMITTEE ON APPROPRIATIONS,
Washington, D.C.

The subcommittee met at 2 p.m., in room S–146, the Capitol, Hon. John C. Stennis (chairman) presiding.

Present: Senators Stennis, Bible, Montoya, Hatfield, Young, and Bellmon.

ATOMIC ENERGY COMMISSION

RECALL HEARING

STATEMENT OF DR. DIXY LEE RAY, CHAIRMAN

ACCOMPANIED BY:

JOHN A. ERLEWINE, GENERAL MANAGER
MILTON KLEIN, ASSISTANT GENERAL MANAGER FOR ENERGY AND DEVELOPMENT PROGRAMS
MAJ. GEN. EDWARD B. GILLER, ASSISTANT GENERAL MANAGER FOR NATIONAL SECURITY
MAJ. GEN. ERNEST GRAVES, ASSISTANT GENERAL MANAGER FOR MILITARY APPLICATION
DR. JOHN M. TEEM, ASSISTANT GENERAL MANAGER FOR PHYSICAL RESEARCH
M. C. GREER, ASSISTANT CONTROLLER FOR BUDGETS
JAMES W. CULPEPPER, DEPUTY ASSISTANT CONTROLLER FOR BUDGETS

SUBCOMMITTEE PROCEDURE

Senator STENNIS. The hearing will come to order.

As members of the subcommittee know, the House of Representatives has now passed, and sent to the Senate, the Fiscal Year 1975 Public Works-AEC Appropriation bill, H.R. 15155, which, of course, has been referred to our committee and is before us for action. In accordance with our usual procedure and longstanding practice, we have this recall hearing prior to our markup of the bill. The purpose of the recall hearing is to permit the various agencies, for which appropriations are made under this bill, to have an opportunity to comment, reclama, or make such appeals from the action of the House on the budget requests as they deem necessary. Also, it affords the agencies a chance to bring any other matters to our attention, and enables mem-

bers of the committee to ask further questions about the programs and various projects that may or may not have been covered in the earlier hearings.

This afternoon, we will begin with the Atomic Energy Commission which will be conducted in closed, executive session, because some classified matters are expected to come up. After AEC, and in open session, we will have the U.S. Army Corps of Engineers, the Bureau of Reclamation, and the Bonneville Power Administration, in the order as named.

A copy of the House passed bill and the accompanying report is before each member for his use or reference.

Dr. Ray, you have a special welcome with us always, as well as your colleagues and associates, and we are glad to have you indeed. You have a letter for us here already, your backup material, and also you have a statement?

Dr. RAY. Yes, sir.

Senator STENNIS. All right, if it is agreeable to the committee membership we will proceed now and hear Dr. Ray.

Dr. RAY. Thank you, Mr. Chairman.

Senator STENNIS. We have for the record the names of those who are with you, Mr. Erlewine, general manager, and others.

Now, this is a closed hearing. I will be responsible for everyone on this side of the table now.

Dr. Ray, will you be responsible for everybody over there?

Dr. RAY. Yes, sir.

Senator STENNIS. All right, that is a fair trade and you proceed in your own good way, please.

STATEMENT OF DR. RAY

Dr. RAY. Thank you.

Mr. Chairman and members of the committee, my colleagues and I are pleased to appear before you to discuss further the Atomic Energy Commission's budget request for 1975.

To summarize briefly the current status of our 1975 budget, we requested appropriations totaling $3.247 billion, of which $2.472 billion was for operating expenses and $775 million was for plant and capital equipment.

The AEC Authorization bill, Public Law 93–276, was signed on May 10, 1974, providing for appropriations of $3.386 billion, an increase of $139 million over our request.

CHART ON AEC FISCAL YEAR 1975 BUDGET

In fiscal year 1975, our appropriations are being included in two separate bills, a special bill for energy research and development and a regular bill for other AEC activities. Chart 1 shows the breakdown of appropriations between these two bills. And we can see at a quick

glance that the regular appropriation bill, which is the one we are considering today, is just a bit over half of the total of the AEC appropriation.

[The chart follows:]

CHART I

FY 1975 BUDGET
U.S. ATOMIC ENERGY COMMISSION

APPROPRIATIONS

	AEC REQUEST	AUTHORIZATION ACT PL 93-276
	($ IN MILLIONS)	
SPECIAL ENERGY BILL		
OPERATING EXPENSES	$ 1,009.9	$ 1,050.0
PLANT AND CAPITAL EQUIPMENT	432.6	479.0
	$ 1,442.5	$ 1,529.0
REGULAR APPROPRIATION BILL		
OPERATING EXPENSES	$ 1,461.6	$ 1,505.6
PLANT AND CAPITAL EQUIPMENT	342.7	351.3
	$ 1,804.3	$ 1,856.9
TOTAL		
OPERATING EXPENSES	$ 2,471.5	$ 2,555.6
PLANT AND CAPITAL EQUIPMENT	775.3	830.3
	$ 3,246.8	$ 3,385.9

SPECIAL ENERGY BILL

Dr. RAY. On April 30, 1974 the House passed the special energy bill with appropriations of $1.508 billion for the AEC which is a reduction of $28 million from the authorizing legislation for this portion of our budget. On June 12, 1974, the Senate further reduced the AEC appropriations in the special energy bill to $1.456 billion, or $73 million below the authorizing legislation. We understand that the conferees have met to resolve the differences between the House and Senate actions, and final legislative action is anticipated in the near future.

We are here today to discuss the congressional action on our regular appropriations bill for AEC activities not included in the special energy bill. Here we have a breakout of those amounts on chart 2.

[The chart follows:]

CHART II

FY 1975 APPROPRIATIONS FOR AEC ACTIVITIES
NOT INCLUDED IN THE SPECIAL ENERGY BILL

(DOLLARS IN MILLIONS)

	AUTHORIZATION				
	AEC REQUEST	ACT PL 93-276	HOUSE ALLOWANCE	CHANGE	APPEAL
OPERATING EXPENSES	$1,461.6	$1,505.6	$1,428.8	$−76.8	$18.3
PLANT & CAPITAL EQUIPMENT	342.7	351.3	317.6	−33.7	23.8
TOTAL	$1,804.3	$1,856.9	$1,746.4	$−110.5	$42.1

CHART BREAKDOWN

Dr. RAY. As shown on chart 2, the House bill passed on June 6, 1974 included $1.746 billion for the AEC, of which $1.429 billion is for operating expenses and $317 million is for plant and capital equipment. This represents a reduction of $110.5 million from the authorizing legislation and $57.9 million from our request. We are seeking restoration of $18.3 million in operating expenses and $23.8 million for plant and capital equipment, a total of $42.1 million. Of the $18.3 million in operating expenses, $9.8 million is for the weapons program; $3.9 million for the physical research program; and $4.6 million for related changes in selected resources.

FUNDING BREAKDOWN BY PROGRAM

I will comment later on these.

With respect to plant and capital equipment, $10 million is for weapons construction; $3.8 million is for weapons capital equipment; and $10 million is a general reduction.

With respect to the weapons program, the Commission requests restoration of the $9.8 million reduction in operating expenses. This reduction would be particularly severe this year in light of our initially stringent weapons budget request and the recently identified requirements by the DOD for the development of new weapons systems. In allocating the $9.8 million reduction, the Commission would have to reduce production and surveillance by $5 million and research and development by $4.8 million.

I might pause to comment on that word "surveillance." The context in which the AEC uses the word has to do with the activities regarding the stockpile. Weapons are not simply stored someplace and left, but are continuously checked. Some of the individual units are removed from the stockpile, and the components examined for evidence of deterioration or any such problems that might develop. This is a precaution and a very important effort that must continue with respect to those reasons for the national defense.

Recent sharp increases in prices and potential wage escalation will make it difficult to meet our original fiscal year 1975 goal for weapons production. A further cut of $5 million would require substantial layoffs in our weapons production facilities and seriously erode our

capability to meet DOD requirements. We do have some more specific information on what the impact would be to employment in the weapon production complex.

The reduction of $4.8 million in research and development would have an adverse impact on our activities in the weapons laboratories, where we have seen reductions over the past 5 years due to budget stringency and increasing cost escalation. We believe these reductions are not in the country's interest in view of our obligations under the present Limited Test Ban Treaty safeguards and the need to maintain the strength of our laboratories for the possibility of a further test ban treaty.

We have not elected to allocate any of the reduction against the weapons testing program and here I believe it is important to understand the basis for our decision. The weapons testing program has been reduced over the past 5 years including a drop in manpower at the Nevada Test Site from 6,200 to 3,750. A further reduction in testing could seriously impact the AEC's ability to conduct a meaningful test program and to meet the present Limited Test Ban Treaty safeguard which requires a comprehensive, aggressive, and continuing underground nuclear test program.

The $3.9 million reduction in physical research is associated with high energy physics activities. This reduction comes on top of already serious problems being caused by the enormous cost increases for electricity, fuel, and materials resulting from the recent oil embargo. These recent increases when combined with the $3.9 million reduction are expected to result in an overall manpower reduction of about 800 people below the 1974 level and reduce utilization of the AEC's four major high energy physics accelerators 10 to 20 percent below the estimate at the time of our congressional request.

HIGH ENERGY ACCELERATORS

May I pause to emphasize this particular point. As you so well are aware, our high energy accelerations are very costly, highly sophisticated facilities. These facilities, for example, at the National Accelerator Laboratory, are capable of being operated essentially around the clock, minus, of course, time for maintenance and so on. The funds that we are discussing would not allow for that efficient use of these facilities, but rather for a much lower percentage of the overall availability. It is somewhat the same as with an expensive computer. It is penny wise and pound foolish not to have such a machine operating optimally, for the full amount of time for which it is available. In the case of the National Accelerator Laboratory, we will have to reduce operations from an estimated 65 percent of availability, as provided for in our request, to about 52 percent. Three other laboratories will be reduced from an average of about 55 percent to an average of about 40 percent. Such a reduction results in very inefficient utilization of these large and expensive machines.

The House imposed a general reduction of $20 million in unobligated balances and slippages in operating expenses. We anticipate that our actual costs and revenues will permit us to absorb this reduction without major programmatic impact. However, within this general reduction, the House specified that $807,000 be applied to our 1975 esti-

mate for travel of $8.8 million. The major portion of our requested increase for travel costs in 1975 relates to additional travel required for the effective administration of our expanded energy related R. & D. programs and for our regulation activities.

I might comment here that in addition to our responsibilities in regulation, there have been many questions raised recently with respect to the number and frequency of inspections related to the materials security and safeguards program. This reduction in travel money would curtail what we should do in these areas.

The sharp growth in nuclear powerplants coming online and the need for additional inspection activities make an increase in travel essential to carry out our responsibilities. Increased travel is also needed for required courier escorts for nuclear materials and weapons shipments. Recent fuel shortages have resulted in sharply increased costs for all travel activities. While we can accept the House reduction of $20 million, we feel that the travel estimate of $8.8 million represents our minimum requirements and therefore seek relief from the House limitation on these funds.

CONTINGENCY PROJECT

The House bill has eliminated $10 million for Project 75–3–a, weapons production, development, and test installations. This line item, referred to as a "contingency project," has been authorized and funded annually as a part of the weapons program. It assures availability of funding to meet emergent high priority requirements for which the scope and nature cannot be specifically defined in time for inclusion in our annual budget submission. The need for such projects may result from new DOD requirements, major design changes to weapons systems, and requirements for modifications of existing facilities to enhance safety conditions. Normally, this funding provides for 6 to 10 subprojects each year, ranging in cost from $500,000 to $3 million. Each subproject is reviewed and approved by AEC and then submitted to the JCAE and House and Senate Appropriations Committees before it is initiated.

The Commission accepts the guidance of the House Appropriations Committee and will make every effort to identify future requirements of this type for inclusion in our regular budget requests. During 1975, however, we believe that the restoration of this funding is essential to fund a number of recently identified high priority subprojects and to provide a transition phase to this alternate method of funding these projects.

In other words, we accept the guidance to change this method of making our requests, but we feel to cut off the funds entirely this year will have a very serious impact.

SANDIA LABORATORIES COMPUTER

The Commission requests the restoration of $3.8 million of the $8.5 million House reduction in weapons equipment funds for a major computer at Sandia Laboratories. The Commission believes it essential that Sandia be provided a major increase in scientific computing capability to meet its current and projected weapons program require-

ments, and the opportunity exists for obtaining this capability at a significant dollar savings. The original request of $8.5 million was based upon the procurement of a new computer system. The AEC periodically reviews its overall computer requirements, and consistent with the House views, we have determined that a large scientific computer system currently on lease at Lawrence Livermore Laboratory can be redeployed to meet Sandia's computing requirements. This computer system was originally leased pending the delivery of the STAR system to Livermore, and now through the application of rental credits can be purchased and installed at Sandia for $3.8 million, the amount we are requesting to be restored.

Restoration is requested of the $10 million general reduction made by the House in unobligated balances for plant and capital equipment. While the Commission recognizes that at the end of each fiscal year some funds remain unobligated, we must emphasize that these funds are not unprogramed, but are committed to congressionally approved projects. Unobligated balances that do exist will be required very early in fiscal year 1975 to maintain the momentum on major construction projects already underway and are not in any way excess to our needs.

Further, recent experience with higher rates of escalation in construction and procurement activities indicates that the AEC cannot absorb the $10 million reduction without curtailing construction work. Without restoration, the AEC will be required to reduce funding for ongoing and newly authorized projects, which will lead to disruption of construction schedules with an attendant higher cost in subsequent fiscal years.

In summary, we are requesting restoration of $42.1 million—$18.3 million in operating expenses, and $23.8 million in plant and capital equipment. We will be pleased to answer any questions you may have.

Senator STENNIS. Thank you very much, Dr. Ray.

By way of summary, you have stated your request for restoration of $42.1 million; that is out of how much reduction you stated in the beginning?

Dr. RAY. $110.5 million.

NEW WEAPONS SYSTEMS

Senator STENNIS. Now, going back briefly, and I will receive questions, I am sure, from other members.

Going back to page 2 of your statement and down in the bottom half there, what weapons are you talking about? You talk about the requirements by DOD for development of new weapons systems.

Dr. RAY. Yes; we have in mind here specifically three systems. The first one is called the FUFO, the full fuzing option bomb. We received a phase 3 request on the 14th of February this year. Commission acceptance was on May 17, and the R. & D. for this system is assigned to the Livermore and Sandia Laboratories.

Now, this particular weapon system is a replacement for the B–28 and some of the B–43 bombs in the stockpile. There are a total of [deleted] bombs requested, each with a [deleted] of from [deleted]. Each will weigh about [deleted] pounds.

The IOC or initial operational capability is requested for fiscal year 1979. I am trying very hard to train our staff to give me full words instead of alphabet soup.

Senator STENNIS. I am with you 1,000 percent.

Dr. RAY. It is estimated that about [deleted] nuclear tests will be required to develop that particular system.

The second one is the MK–12A, Minuteman III warhead. The phase 3 date is the 30th of April this year. It is anticipated this system will be assigned to Los Alamos and Sandia. Acceptance of this phase 3 is now pending before the Commission.

This system has the same physical characteristics as the MK–12 RV presently deployed in the Minuteman, but has a higher yield of about [deleted] pound reentry vehicle. A total of [deleted] warheads were requested by DOD with the expectation that this system would be operational in 1978. This effort will require about [deleted] nuclear tests.

The third system is a new one without a name as yet. It is a high yield warhead and is presently in phase 2 development. It is assigned to Livermore and Sandia. This warhead will have a high yield of [deleted], a system for possible use on Minuteman, Trident, or one of the advanced ICBM's.

The effort required to pursue this development will be approximately the same as a phase 3. The Defense Department has requested that we pursue such exploratory or advanced development testing as may be necessary to provide for this possible option in the future. A total of about [deleted] nuclear tests would be required at the Nevada test site. [Deleted.]

Those are the three weapon systems which are included.

Senator STENNIS. I am one of those who believe we already have enough bombs. I think we are overarmed in that field.

REPLACEMENT SYSTEMS

But what you are talking about here is new advanced, progressive, more modern weapons, all of them.

Dr. RAY. Yes. It is my understanding these will in fact be replacement systems except for the last one. Am I correct, General Giller?

General GILLER. Yes, the FUFO bomb is to replace weapons in the stockpile, some of which are now [deleted] years old, and it does contain all new technology. The reentry vehicle for the Minuteman will replace some of the Minuteman systems in the hole now, and the third system is an option for the future, an option yet to be employed.

Senator STENNIS. Are these connected with MIRV's?

General GILLER. The FUFO is an aircraft bomb. Mark 12–A is a Minuteman MIRV. The other would be either [deleted] warhead, because it would be [deleted] or it might be [deleted]. That hasn't been decided. If we can make it [deleted].

Senator STENNIS. But all of them do look to the future advanced weapon?

General GILLER. They push our technology.

Senator STENNIS. What did the House give as the reason for making this reduction?

General GRAVES. It was a general reduction, Mr. Chairman, in the overall program. It was not aimed at any specific element of the program. We have been following the general guidance of a year ago from the Joint Committee that we ought not to take any action in reduction of the weapons program which would affect the capability of the laboratories, on the one hand, and we felt it very important at the present time not to make any reduction that would further affect our capability of testing.

Senator STENNIS. Well, testing certainly is necessary and highly important.

LABORATORY PARTICIPATION

What was that you said about the capability of the laboratories? Are you running them at full capacity?

General GRAVES. They are busy. We have a few figures from fiscal 1969 to the present time on our total research and development manpower at the weapons laboratories. In 1969, the laboratories had 9,810 people. At the present time, fiscal year 1974, it is down to 8,092.

There has been a continual reduction each year so that we see this erosion of scientific capability as a possible problem.

Senator STENNIS. Well, we certainly don't want to overdo it, but you have a weapon program around $1 billion, a little over, and $9.8 million is a lot of money to me. But compared to $1 billion, it is a fairly small amount.

Can't you make adjustments in the program to take care of that fairly small reduction?

General GRAVES. We certainly do try to adjust the program, but in fact there are many things for which the costs do increase. These include materials contracts, labor, and utilities contracts, all of which are escalating.

Senator MONTOYA. Dr. Ray, what amount is involved here with respect to these programs for Sandia, Livermore, and Los Alamos; how much?

General GRAVES. The major effect would be on Sandia.

Senator MONTOYA. I understand. I asked you to verify this, whether if this cut goes through Sandia would have to utilize on weapons work approximately 415 people that are assigned to other work now in programs which have some priority.

Is that about right?

General GRAVES. I reviewed this matter with Jack Howard, Senator, just recently, and the fact is that this cut will require a shift. I would like to verify the exact number. I don't recognize that one. But the fact is this will require a major shift by Sandia in determining program priorities. It appears a major part of the program to be against that.

FUNDS FOR PROGRAM CONTINUATION

Senator MONTOYA. Would you inform us how much money is involved to continue these programs?

Dr. RAY. We will break that out from the total and provide that for the record.

[The information follows:]

FUNDING REDUCTION FOR SANDIA LABORATORIES

Sandia's budget problem is complicated by the concurrent influence of the House proposed budget cut and by the unanticipated appearance of three new Phase 3 (or equivalent) weapons weaponization projects.

To provide manpower to accomplish the new Phase 3's, approximately 350 man-year equivalents (direct scientific and engineering plus support and a proportionate share of indirects) need to be moved from Advanced Development to Weaponization. This is based on the expected early authorization of these Phase 3's and current estimates of the job they represent to Sandia. To support this somewhat more expensive weaponization effort and then sustain an additional budget cut, Sandia would be forced to reduce its hiring program—probably below the level necessary to offset attrition—to discontinue energy R&D (excluding laser fusion and electron beam efforts), other than that supported by nonweapons funds, and to reduce the scope of the safeguards program to such an extent that little forward-looking activity would remain.

Curtailment of hiring would interrupt Sandia's EEO program and delay achievement of goals. Of the $9.8 million reduction made by the House Appropriations Committee, $6.0 million is applicable to activities of the Sandia Laboratories.

COMPUTER OPERATIONS

Senator MONTOYA. Now, Mr. Chairman, the computer was also brought up. The House thought that all we had to do was go and borrow a computer from somewhere else and just place it in Sandia. But the computer that the AEC has in mind to get for Sandia, and which is sorely needed, is located, I understand, at Livermore, and it is under lease with an option to buy, and it will take $3 million to buy, and it will take some more money to rehabilitate it and to provide some peripheral equipment. I understand the total sum required for this purpose, not for buying a new one, is about $6.4 million.

Dr. RAY. My understanding is that AEC purchase of this computer would cost $3.8 million and that an additional $2.8 million is required to acquire the necessary peripherals to make effective use of it. The value of the equipment is something over $10 million. So we would be getting it at a very reasonable price.

Senator MONTOYA. Otherwise, you would lose the rental that you have paid?

Dr. RAY. Yes, sir.

Senator STENNIS. All right. That is a good point to bring up.

NATIONAL SCIENCE CENTER

Senator MONTOYA. I will leave the others here, so that if you will permit me just one additional question.

Senator STENNIS. Yes.

Senator MONTOYA. I am very concerned about the House not putting in construction money for the National Science Center which the Joint Committee has authorized. It was authorized unanimously by the Joint Committee and it was authorized by both Houses of Congress, and there has been some planning and design money already appropriated. The planning and design is already completed and now the House refused to put the $4.25 million in for construction. This National Science Center, everybody has agreed, should be at Los Alamos, because the library facilities are there—there has been no question about it.

Now, what can you tell us about this, Dr. Ray?

Dr. RAY. I can't tell you why the House would not approve that particular amount. The architect-engineering work has been done. Los Alamos has provided a good plan. There are programs of scientific seminars and planning sessions that involve the use of classified work and there are very few places in the country where these types of conferences can be held in close association with scientific and technical people. At Los Alamos there is access to both the laboratory and a fine technical library so this center would be a unique facility. It would be the only one of its kind in the country ideally suited to perform that particular function. It would also bring an activity to Los Alamos—I hesitate to say Los Alamos is isolated—because no place in the good State of New Mexico is truly isolated.

Senator MONTOYA. Thank you.

Dr. RAY. It is a location which is not on the usual travel pattern across the United States. We have very capable people there and to bring into that community visitors and scientists and people of technical expertise would help very much to keep the laboratory staff stimulated with new ideas and information. It will be an asset to the laboratory. So there are two ways of looking at it.

Senator STENNIS. All right.

GEOTHERMAL RESEARCH

Senator MONTOYA. Now, on the geothermal research. I understand that Dr. Fleming has reprogramed the geothermal funding which might reduce the personnel they have already assembled at Los Alamos, and if they have to reduce this personnel the whole project will disband.

Now, can you tell me anything about that?

Dr. RAY. The problem, I think, is not quite as serious as indicated. I think there has probably been some misunderstanding. The planning at Los Alamos has gone forth on the basis of a $4.1 million program in geothermal work. The funding figure at the present time would be $3.4 million, which is $700,000 less, and, of course, would have some impact. I think there was some lack of communication. We will find a way to work this out.

Senator MONTOYA. I hope you look into this because we are so far ahead in geothermal research at Los Alamos. We started with some in-house money, and Congress appropriated some more, and it is really an ongoing project, the only one of its kind in the country. I would sure like to preserve it and not lose these people who are already working on it.

Dr. RAY. Yes, I think that is very important. We have been fortunate in the present situation, where the energy research and development responsibilities are allocated to a number of different agencies, to have a strong program in geothermal research. We want to preserve that and hopefully if the ERDA legislation passes it will be strengthened.

Senator MONTOYA. Thank you.

DEVELOPMENT OF NEW SYSTEMS

Senator YOUNG. I would like to have a little more information on the development of new weapons systems. I think you mentioned the one for the Minuteman III. We just have been replacing Minuteman II's with III's. Would this be a new war type warhead?

Dr. RAY. On the technical details, I would like to ask assistance from General Graves, if I may.

General GRAVES. Under the Air Force plan, the initial operational capability would be in fiscal year 1978. The Air Force plans to replace a number of Minuteman II's with Minuteman III's at that time and to arm them with this new warhead, which has [deleted] yield of the warhead which is on the present Minuteman III. This would then give the Minuteman III fleet a mix. Some of them would have the present warhead, which is [deleted], and some of them would have the high yield warhead, which would be [deleted]. That would allow the Department of Defense to have some targeting options, which the Secretary of Defense believes is important for the strategy of the future.

Senator YOUNG. When would this new warhead be available for deployment?

General GRAVES. Fiscal year 1978 would be the first year for these warheads.

Senator STENNIS. Senator Bible?

TESTING PROGRAM

Senator BIBLE. You say here that the weapons—I am reading from page 3, Doctor—"The weapons testing program has been reduced over the past 5 years, including a drop in manpower at the Nevada Test Site, from 6,200 to 3,750. A further reduction in testing could seriously impact the AEC's ability to conduct a meaningful test program and to meet the present Limited Test Ban Treaty safeguard which requires a comprehensive, aggressive and continuing underground nuclear test program."

Reading from page 3, those are your words.

Dr. RAY. Could I clarify that briefly?

Senator BIBLE. Certainly.

Dr. RAY. Those words are quoted from the understanding at the time that the Limited Test Ban Treaty was inaugurated in 1963. During deliberations on the Treaty, the Joint Chiefs of Staff were asked by President Kennedy what it would take to maintain and protect the United States capability. The Joint Chiefs of Staff came up with what it would take, and they said, "The conduct of comprehensive, aggressive, and continuing underground nuclear test programs designed to add to our knowledge and improve our weapons in all areas of significance to our military posture for the future."

This statement was included in the record of that Treaty and was considered and approved by the Congress at that time. We interpret these safeguards to have the effect of the Treaty.

Senator BIBLE. Very well.

I think you make a correct interpretation, and I am not faulting your conclusion, I am happy you did.

FISCAL YEAR 1975 MANPOWER LEVEL

What is the present status today on the test site?

Dr. RAY. The average affordable manpower level for fiscal year 1975 is about 3,300.

Senator BIBLE. Down from 3,750 to 3,300? It is in that range?

Dr. RAY. Yes, in that range.

Senator BIBLE. And the money that is in this bill, as even with the appeals that you are making, does it, as I understand your statement, you are not putting any of the reduction against that weapon testing program.

Dr. RAY. No, sir. But there will be a reduction in personnel.

General GRAVES. The 1975 employment is down significantly from 1974—all the way down to 3,330.

Senator BIBLE. Well, that is kind of significant, 3,330.

General GRAVES. But that, you see, is not involved with this reduction we are talking about now. That represents the reduction that was inherent in the President's budget. We had an employment level for 1974 of 3,755, and we have an employment level for 1975 of 3,330.

What Dr. Ray was saying, we are not down there yet, but we are going down, and we must go down.

Senator BIBLE. 3,330?

General GRAVES. That is the level we have got to go to.

Senator BIBLE. What time in the current fiscal?

General GRAVES. Well, that will be by the end of the year.

Senator BIBLE. By the end of 1975?

General GRAVES. Yes, sir.

Senator BIBLE. And with the dollars that you have in there at the present time, you can keep at a level of approximately 3,700, though you must by the end of the year get down to 3,330?

General GRAVES. No. The President's budget would require us to go down, Senator Bible. This $9.8 million reduction is not affecting that because we are not proposing to apply any of that to the test site.

Senator BIBLE. That is what I understand this paragraph to say.

General GRAVES. We are going to have to go down to that.

Senator BIBLE. 3,330?

General GRAVES. Yes, sir.

Senator BIBLE. Even if we put the $9.8 back?

General GRAVES. Yes, because the $9.8 essentially was proposed to be taken against other programs.

NEVADA TEST SITE USE

Senator BIBLE. Now, tell me this. Beyond that, how far can you project the use of the Nevada Test Site in testing? I probe this question simply because I am constantly asked about it by people who work at the test site.

General GRAVES Well, I think the point is——

Senator BIBLE. It is a difficult question.

General GRAVES. We believe that continued testing is an essential element of our nuclear deterrent. We feel that the reliability of our stockpile and its modernization as technology may progress, requires testing, and the Nevada test site is the best place we have to do it.

Senator BIBLE. You have blown it all up, you might as well continue to do it both overhead and underground, but for how many years, that is the gut question.

Dr. RAY. It is hard to put a number of years on it, as I am sure you recognize.

Senator BIBLE. They ask me that. I am going to ask you to come out with me and see some of my mad constituents when they lay them off.

Dr. RAY. If testing were stopped it would seriously affect the weapon laboratories. You cannot keep development and improvement programs going without some testing.

Senator BIBLE. Simultaneously——

Dr. RAY. Simultaneously.

That would mean that we would be essentially coming to a standstill with respect to our nuclear capability. If the country were to take that position, we would soon be in the state Great Britain is in today.

Senator BIBLE. What is that state?

Dr. RAY. They decided some years ago they would not have a testing program [deleted].

Senator BIBLE. What type of condition did that leave them in?

Dr. RAY. [Deleted]. General Graves?

General GRAVES. Yes.

Dr. RAY. The sophistication of their weapon system is about [deleted].

U.S.S.R. VERSUS U.S.A. TESTING

Senator BIBLE. Is the U.S.S.R. continuing its testing?

Dr. RAY. We are happy you asked that question.

Senator BIBLE. That is why I asked.

Dr. RAY. We have some slides which should answer your question.

Senator BIBLE. I thought you might. I don't want to presume on your time.

Senator STENNIS. That is all right. I want to see this.

[Chart deleted.]

Dr. RAY. Remember that prior to the Limited Test Ban Treaty which took place in 1963, we had a moratorium in 1958. This bar graph shows the United States in blue and the Soviet Union in red in terms of the number of tests.

Now, it looks as if in 1962 we were way ahead of the Soviets in testing. This adds the yield in terms of megatons.

You can see that in 1962, as an example, whereas the United States had close to [deleted] tests. The total megatons were [deleted]. Whereas the U.S.S.R. conducted about [deleted] tests that totaled in the [deleted] range. So you have to know both the number of tests and the yield.

Now, we will take the next slide.

Senator BIBLE. Before you get to the next one, are all of these tests in the U.S.S.R. all underground?

General GRAVES. Not on this slide. That is an interesting point. You see that in 1963 we don't show a red bar. What happened was that when the treaty was signed—the Limited Test Ban Treaty—the United States was in a position to proceed with underground testing, but the Soviet Union was not, or they didn't choose to.

We don't know why. So this slide is primarily atmospheric testing although you see a little hatched area at the top.

Senator BIBLE. I see that.

General GRAVES. And that represents the amount of underground testing that was taking place back in these years.

Senator BIBLE. Thank you.

General GRAVES. We go to the next slide.

[Slide deleted.]

Dr. RAY. This is entirely underground testing. This gives us the picture from 1964 to the present time.

General GRAVES. These are actually [deleted] tests. You can see the numbers are [deleted]. In the late sixties, 1967, 1968, and 1969, we were doing more [deleted] than the Soviet Union was. That is associated with our development of warheads for Minuteman. But now, look what is happening here, 1970, 1971, 1972, 1973, and you see by the red bars that the Soviets are doing much more high-yeld testing than we are.

In fact, we had [deleted] in the years 1971, 1972, 1973. This is what we detect from the Soviet Union. They had [deleted] and in fact we didn't [deleted].

Senator BIBLE. General, where do you get the raw materials to go in and give you the background or the statistics to make up these charts from the U.S.S.R.? How do you get that?

General GRAVES. Through our seismic detection network [deleted].

Senator BIBLE. They don't share those statistics with you any more than you share them with them?

General GRAVES. No. We do have a policy if our test is large enough to announce it; but, of course, we have tests we don't announce as well.

Senator BIBLE. They do the same thing?

General GRAVES. They don't announce very many. Some that are so large that the whole world knows about it, there will be an acknowledgment.

But they don't have as much disclosure as we do. These are big enough, you see about 150 kilotons that we get a clear indication on our seismic network that they have set off a shot and we can approximate the yield from that signal. [Deleted.] These are yields we get from the seismic signals we receive [deleted].

Senator BIBLE. It is the considered judgment of you, Doctor, and of the General and the rest of your staff that this is a fairly reliable barometer of what is happening in the United States versus U.S.S.R.

General GRAVES. Certainly at this yield, there is no question we would know they have shot this number of big shots. The signals from them are unmistakable. There is no confusion with an earthquake when you are talking about something about 150 kilotons.

Senator BIBLE. In number, what does that amount to in both the U.S. and U.S.S.R.?

General GRAVES. [Deleted] for the United States, and the Soviet Union is about [deleted] as many.

Senator BIBLE. The scale way over on the left gives you the number?

General GRAVES. Yes, [deleted] year, 1971, 1972, 1973. [Deleted]. It is about [deleted] at this level for the Soviet Union.

Senator BIBLE. They have [deleted].

General GRAVES. Yes.

General GILLER. This coincides with their big missile rocket program we talked about at the hearing and Dr. Schlesinger has talked about; namely [deleted]. [Deleted.] These are the warhead people in the Soviet Union making warheads available for those missiles if the Soviet Union decides to deploy them. And you [deleted].

General GRAVES. [Deleted.]

STOCKPILE COMPARISONS

Senator BIBLE. Compare the totality of our nuclear warheads stockpile again, compare it with U.S.S.R.

General GRAVES. Well, the best way to do that would be to give a figure which Dr. Schlesinger has given on their potential. We could put on our land-based Minuteman [deleted] MIRV's with a yield, say, of [deleted]. If they wanted to use their full potential under SALT I to MIRV the missiles we know they have, they could have [deleted] MIRV vehicles, each MIRV vehicle being [deleted].

Dr. RAY. We also think this chart tells us why the U.S.S.R. is pushing so hard for a test ban treaty now. They have done the work.

Senator BIBLE. You think they are ahead of us now?

Dr. RAY. [Deleted.]

Senator BIBLE. That is why they are pressing so hard for the treaty?

Dr. RAY. Yes, sir.

Senator BIBLE. That is an interesting observation. I hadn't heard it before.

I want to develop where we stand in this mad race to see who could get the most bombs to blow everybody up. You have got enough bombs to blow everybody up now, don't you, Doctor? Is it the delivery system?

Dr. RAY. It depends on how things are used.

Senator BIBLE. If you hit the target, can't you do a little bit of damage here and there?

Dr. RAY. There can be quite a bit of damage. As a biologist, I have to say when you talk about complete eradication, it just isn't possible.

Senator BIBLE. You think there will be another Adam and Eve left?

Dr. RAY. Yes, sir.

Senator BIBLE. Then we will start all over again.

Dr. RAY. Even if you try to eradicate all the mosquitoes, there are always a few left.

Senator STENNIS. I have decided that the least developed, more remote, so-called poorer countries are the ones that have the best chance to survive.

Dr. RAY. If there is to be a total nuclear holocaust, you are quite correct.

Senator STENNIS. I mean in a big war.

General GILLER. Especially south of the equator.

Senator STENNIS. Especially south of the equator.

General GILLER. The upper atmospheric winds stay north and south, and the nuclear war would be fought in the north, and therefore, the fallout would be much higher in the northern half of the world than the southern half of the world. So you philosophize in the future maybe south of the border is an advantage.

Senator BIBLE. I thought south of the border was interesting, but I don't know. We always clean this up so don't let it worry you. He always remonstrates, tells me don't be so blithe on these serious questions. I would like to liven it up. That is all I have at this moment.

TESTING PROGRAM

Senator STENNIS. Your term "testing," what do you mean when you say testing?

Dr. RAY. During the research and development of a nuclear warhead, you test the various components to make sure they will perform in the way you think they should, and then you start fitting the components together to see whether they work properly in relation to each other.

Senator STENNIS. Synchronized?

Dr. RAY. Yes, sir. Eventually there is what is called a proof test, which is the whole warhead put together.

Now, that is as far as the development and testing goes. But beyond that, once the completed weapon, according to the tested design, has been manufactured, there are further checks made. As a general rule we would feel more confident if one of the weapons is just plucked out of the production line and tested as a fully manufactured weapon.

[Deleted.]

Senator STENNIS. Senator Young?

Senator YOUNG. No questions. I guess we are going to stop shooting firecrackers, too.

Senator STENNIS. Yes.

Senator BELLMON. Mr. Chairman, I am sorry I haven't been able to stay for all the testimony, but the figures you have up here on the second paragraph of your statement, that $2.472 billion is for operating expenses.

Now, the AEC does earn some income from this, and that money goes into the general fund. How much do you earn?

Dr. RAY. Earn from the sale of services?

Senator BELLMON. Yes.

Mr. GREER. We estimate $670 million in revenues for fiscal year 1975.

Senator BELLMON. And it happens to be our State is interested in getting a plant. Are the prices you set for the sale of enriched fuel to be at a level so the private sector can manufacture and make money, or have you set the price so low no private investments are likely to be drawn into it?

Dr. RAY. They are not at a level private industry would have to change. At the present time we have a full cost recovery including interest on the Government investment, but we are not permitted to set a price which would bring in any profit. There are three major things that affect our prices and those that private enrichers will have to charge.

First, the AEC production plants were built 20 years to 30 years ago at a time when construction costs were far less than they are at the present time. Also, the cost of money. When these plants were built, the cost of money was much less, so our average interest is about 6

percent. In the open market the private enricher going for capital investment would have to pay a much higher rate of interest. There would also have to be a profit to the private investor. When you put all these things together, the private enricher would have to charge much more than today's present charge. However, we do review our costs periodically and will announce very shortly an incremental increase. This is based on our actual costs, including the increased cost of power and labor costs escalation. Also, we include Government R. & D. costs, which are increasing, particularly for the gas centrifuge. I estimate the separative work unit costs will go up from the present $36 to $38 to around $47 in the near future.

Senator BELLMON. Dr. Ray, it seems to me that some time soon the cost of enriched fuel needs to reach the level the private sector will have to charge in order to be compensated for the investment. When that happens will the generation of electrical power from nuclear fuels still be economically competitive with fossil fuels?

Dr. RAY. Oh, yes, very much so. While the cost of electricity is great, especially for the gaseous diffusion plant, nevertheless, that energy value is increased about 30 fold through the enrichment of uranium and the use of that enriched uranium. We certainly don't expect a 30 fold increase in price.

Senator BELLMON. Let's say there is a public utility now considering the construction of a 1,000-megawatt plant, they have the choice of fueling it with coal or with uranium. Now, when they make the economic calculations and comparison they have to make, they figure the cost of uranium at the present artificially low price?

Dr. RAY. Yes.

Senator BELLMON. Now, if you were to put that price up to where it will have to be by the time the plant comes into production 8 years from now, would it still be competitive?

Dr. RAY. Yes. If the cost of enrichment services per separate work unit went according to our calculations, up to $100 from the present $30 or $40, it still would not contribute more than about 2 mils per kilowatt hour for this step in the fuel costs.

To put it another way, the present cost of the uranium fuel for a nuclear plant is a small amount of the total cost. Commonwealth Edison is operating more nuclear plants than any other utility—has had experience operating them. Well, their plants are operating at a cost about 25 percent lower than fossil fuel plants of similar size.

Senator BELLMON. One other question.

With our Government running a deficit this year of 4 or 5 billion dollars and next year a budget deficit of maybe 6 or 9 billion dollars, why don't we go ahead and raise the cost of your services to make up a half billion dollars?

Dr. RAY. If the Congress would like to provide new directions to the Atomic Energy Commission on the pricing of enrichment services, we would be very happy to comply.

Senator BELLMON. The decision is ours; is that right?

Dr. RAY. Yes.

Senator BELLMON. No further questions.

Senator Hatfield?

Senator HATFIELD. No questions.

Nevada Test Site Employment

Senator Bible. I want to ask just a couple more questions. I don't know if I pursued the question concerning the 3,330 level far enough. That level to which you say the Nevada Test Site is going to go at the end of fiscal year 1975, was that right, General Graves?

General Graves. I will have to correct that. Mr. Chairman, because I have looked at the notes more carefully, and that is average employment level for the year.

Senator Bible. That is average employment level?

General Graves. The man-year figure for the fiscal year, but over the year we will average 3,330.

Senator Bible. 3,330?

General Graves. The other number I gave you for 1974, the 3,755, is also an average employment level.

Testing Budget

Senator Bible. Well, now, are you in the course of making your budget for fiscal year 1976?

Dr. Ray. Yes.

Senator Bible. The answer is yes?

Dr. Ray. Yes.

Senator Bible. And at what level are you going to keep the testing program?

Dr. Ray. That is a very difficult question to answer. Of course, at the present time we are in this uncertain period of not knowing whether there may be a test ban treaty or if there should be a test ban treaty will we have to go into an accelerated program which would require supplemental appropriation.

Senator Bible. Explain that to me.

If you go into a test ban treaty, then you are going to have to require more people for testing?

Dr. Ray. Yes, in order to complete the testing work necessary for those programs that are planned or under development.

Senator Bible. And are not complete?

Dr. Ray. Not complete, that is correct.

Senator Bible. Before the treaty takes effect?

Dr. Ray. Yes.

Senator Bible. You would have a crash program then?

Dr. Ray. Yes, sir.

Our position is [deleted]. There is also some discussion of possibly an 18-month period between now and when a test ban might take effect. We don't know what the time will be.

Senator Bible. Of course, assuming that you do get to a test ban treaty and you have 18 months or 2 years or whatever, to reach that plateau, then you say it would undoubtedly be implementation or acceleration or crash programs during that period of time. After that, what happens with underground testing? Is that completely eliminated?

Dr. Ray. No. I don't think that that is contemplated, although there are some people who talk about a complete test ban.

Senator Bible. I understand.

Dr. RAY. But, that is not what is being considered.

There would be some threshold limit below which testing would be conducted and that would mean one could test only systems of low yield.

TESTING LEVELS

Senator BIBLE. And another followup question.

If the test ban treaty is not signed, is it reasonable to assume that the level of testing would remain about the same as it is in fiscal year 1975?

Dr. RAY. I would expect so. The 1975 figures were predicted on no test ban.

Senator BIBLE. Your testing would go on about the same level?

Dr. RAY. Yes.

Senator BIBLE. The only reason I delve into these questions is because I am frequently asked about them.

General GRAVES. There has been, of course, the action by the Joint Committee which recommended a slightly higher level of testing.

Senator BIBLE. And I think, if my memory is good on that, the increased level of their funding for additional testing was something in the range of $15 million; isn't that correct?

General GRAVES. That is right.

Senator BIBLE. Now, where do you find that within the budget? It is not in your budget?

General GRAVES. No, it was not.

Senator BIBLE. But it was a recommendation of the Joint Committee?

General GRAVES. Yes, sir.

Senator BIBLE. Well, where is that $15 million scattered, if you had $15 million in here for an additional AEC testing program or weapon program, where would you find that? Would you have so much in R. & D. and so much——

General GRAVES. No, to explain exactly, this would be entirely applied to the line for testing of atomic weapons, and it would go entirely into the activities at the Nevada Test Site, and our estimate is that if that $15 million were to be appropriated then we would reestablish the 1974 level of employment.

Instead of going down from 3,755 to 3,330, we would be able to maintain an average employment at the Nevada Test Site of approximately 3,755.

Senator BIBLE. Is that the recommendation that came out of the AEC before it got lost in the OMB?

General GRAVES. No, sir, that was not. Actually there was a cut at the OMB level of $15 million, but in fact the Joint Committee's action reflects their view that even what we proposed before was not an adequate testing program. They heard testimony from the laboratory directors on this point.

Senator BIBLE. They thought you were too low?

General GRAVES. They thought we were too low.

Senator BIBLE. In testing?

General GRAVES. Yes, sir.

Senator BIBLE. This is a difficult problem. My philosophy and theory, even though it involves my own State of Nevada, is to try to cut out the peaks and valleys. so when you get to a plateau of 3,300 or 3,435 or 3,700 it is constant until the test ban treaty is finally resolved. That is all I am trying to say.

My understanding from my very able staff man, I want to pay him tribute on the record, a sharp young fellow, well trained by Dick Russell, and I hope this brings him an increase in salary.

Senator Stennis is going to give me the dickens for saying these things when he returns, but he is gone now.

He advises me if you do get to a test ban treaty you of necessity will have to come back with a supplemental budget. I think you said that.

Dr. RAY. Yes.

Senator BIBLE. And we will wait until we get the test ban treaty. Senator Bellmon?

SELLING BASIS FOR FUEL

Senator BELLMON. One question.

If the Congress made a decision to go ahead and try to get the fuel charges, AEC charges of its customers up to something like the current projected costs, do you have long-range contracts that would not be affected? I don't understand on what basis you sell the fuel.

Dr. RAY. Let me say this. Our long-term or fixed commitments contracts are signed on a basis of an 8-year leadtime and this means that when we sign a contract we have guaranteed to that utility that they have not only the fuel supply guaranteed for starting up the reactor but a 30-year supply as well. Our capacity will fuel something in the neighborhood of over 350 such plants.

Now, the long term contracts which we have signed or in the process of completing this month will take care of all of those customers with plants that would plan to come on line between now and July of 1982. However, we know from our projections there will have to be additional enrichment capacity.

Senator BELLMON. I understand.

Dr. RAY. Given the leadtime for developing that additional capacity a decision must be made soon as to who builds the next plant and where it is to be built.

Mr. ERLEWINE. I think asking for contracts do permit a price increase of the contracts and the prices are not fixed.

Senator BELLMON. If the Congress authorized the AEC to adjust the prices upward, you could begin immediately to phase those increases in the existing contracts.

Mr. ERLEWINE. There is a limitation in a certain number of contracts which have a ceiling price concept that would limit what you could change, but that is a fairly small number.

Senator BELLMON. It occurs to me at some point there is going to have to be a very abrupt upward escalation of these fuel costs, perhaps we should begin fairly soon to allow AEC to make those adjustments so they won't hit the user with such a jolt.

Dr. RAY. This has been a matter of some concern to us for the last couple months. It is one of the reasons we have under consideration at this time an increase in prices. I think we will make an effort to bring prices up substantially.

SALE OF MATERIALS TO FOREIGN COUNTRIES

Senator YOUNG. Do we sell foreign countries the nuclear material at cost?

Dr. RAY. We sell foreign customers, in fact the United States is the largest supplier of services in the Western World and we have in our contracts a nondiscriminatory clause, as we do not discriminate among customers, everyone is on the same basis, foreign and domestic.

Senator YOUNG. They get the same prices?

Dr. RAY. Yes, sir.

Senator BELLMON. It seems to me we ought to be looking at that. Has AEC asked for the authority to increase the prices?

Dr. RAY. We have been discussing this possibility in a very recent policy session. We are considering coming to the Congress and asking for removal of the cost ceiling limitation but not where it is a contractual obligation.

Senator HATFIELD. I will follow up Senator Young's question. Does this include any money request to fill the obligations the President has made or the commitment the President has made to Egypt and to Israel?

Dr. RAY. I think the press has not given an entirely correct picture. The commitments that have been made so far are simply agreements to enter into negotiations. The negotiations would be those that are required before any manufacturer of nuclear materials in this country can sell to a foreign nation. Once the negotiations have worked out, all of the safeguards and so on, there is an agreed upon plan and a basis under which a foreign country can purchase American nuclear reactors. Then there would be a signed agreement that would have to come to Congress for approval.

Senator HATFIELD. In light of Senator Young's question, at what discount or what special rate or what kind of rate are we going to be starting with as a premise for negotiations? Has the President made commitments on that point?

Dr. RAY. Not to our knowledge. Under the present scheme of things, if an agreement is signed and approved, then Egypt and Israel would be a customer just the same as West Germany or France or England. There would be no price discrimination. They would get the same price.

Senator HATFIELD. But, it is possible that special arrangements could be made.

Dr. RAY. Not without our knowing about it. I don't think AEC could approve. There are no special arrangements made for any customers. Isn't that correct, Mr. Erlewine?

Mr. ERLEWINE. Yes. the Atomic Energy Act prevents the Commission from selling at a lower price to foreign customers than to domestic customers. We could not give a discount below the going price. As the chairman has indicated, we have given the same price on all our contracts.

Senator BELLMON. That price is far below what it would be if the new plant being built stays at the present cost of construction.

Senator HATFIELD. So we are still subsidizing.

Mr. GREER. The formula for calculating our costs is very complex. It takes into account all of the Government's costs, depreciation on the plants, a factor for interest on the Government's investment and so forth.

Senator BELLMON. What rate?

Mr. GREER. At the current Government borrowing rate at the time the investment is made. The interest factor reflects an average over the time of the investment, over the period at which the plant was built and other investments made. For example, today's investment would reflect today's rates, but last year's market would reflect last year's rate. The formula also provides for a contingency on top of all the costs. So from the standpoint of the Government's cost and the return on what the Government investment operation is, the formula was generally considered to be quite fair. I think the concern results from the fact that a replacement plant would, of course, cost much more and electrical power for a new plant might be higher than we pay. We have some very favorable long-term contracts for power. It is these considerations I think that the Chairman referred to.

Senator HATFIELD. One last question on this point.

Senator BIBLE. Does that line up the questions on the particular session?

Senator HATFIELD. I just wanted to follow through with one other question as to whether or not there is a legislative review on any of these contracts that are either negotiated or after a certain period of time in which the contract has been in effect, before it is renewed, is there any point at which the Congress has an interest?

Dr. RAY. Speaking of the international agreements, yes, all of these must come to the Congress. The agreement of cooperation which has to be entered into between the United States and any country which receives this nuclear material has to be approved by the President and then laid before the Joint Committee on Atomic Energy for 30 days. This agreement has to be in effect before the material can be delivered under a contract. The contract itself does not have to go to Congress.

Senator HATFIELD. The agreement does incorporate the condition upon which the contract is eventually based?

Dr. RAY. Yes, sir. The actual commitment, contractual commitment is through the contract itself, but the agreement for cooperation provides the framework for safeguards and things of that sort.

Senator HATFIELD. Mr. Chairman, I have two brief additional questions that Senator Baker has asked that I present today to the chairman on this budget.

JOINT COMMITTEE ON ATOMIC ENERGY AUTHORIZATIONS FOR TENNESSEE

I understand that the Joint Committee on Atomic Energy authorized $250,000 for Anderson County, Tennessee, and $295,000 for Roane County in the same state as additional payments-in-lieu-of taxes under

Section 168 of the Atomic Energy Act. Are these figures the amounts recommended by the Atomic Energy Commission to the OMB? Has the OMB acted on that request; and if so, what is their determination?

Dr. RAY. In March 1974, we submitted to OMB a draft of a proposed amendment to the AEC's authorizing legislation for fiscal year 1975 which contained the amounts you have indicated. The OMB response was that the proposed amendment should not be forwarded to Congress.

Senator HATFIELD. The Joint Committee report contains language to the effect that the $545,000 may be insufficient and that further study should be given this situation. Does the AEC have any such plans in that regard?

Dr. RAY. Although the AEC submitted to OMB a draft of proposed legislation recommending these payments to Anderson and Roane Counties, OMB did not approve the request. Subsequently, the JCAE amended the authorization bill. The AEC does not have any plans to study further the sufficiency of the $545,000.

Senator HATFIELD. The Joint Committee also authorized $1.5 million for Project 75–5–g, molten salt breeder reactor (preliminary planning preparatory to possible future demonstration project). I understand this to mean that the Committee wants the AEC to work together with appropriate industrial interests to begin work on a molten salt demonstration plant. Is that your interpretation of what this money is requested for?

Dr. RAY. Yes, it is our interpretation that the Joint Committee intends that the AEC work with industry in developing preliminary plans and initial design information for a molten salt demonstration project which might be undertaken later.

Senator HATFIELD. Are there other examples where the Atomic Energy Commission has involved the appropriate industrial concerns in the planning and construction of demonstration nuclear power plants?

Dr. RAY. Yes, the AEC in the past has been involved in a number of cooperative demonstration projects which have included most recently the 40 MW(e) Peach Bottom Reactor at Delta, Pennsylvania, the 330 MW(e) Fort St. Vrain Reactor at Platteville, Colorado, and the 350–400 MW(e) LMFBR Demonstration Plant to be constructed at Oak Ridge, Tennessee.

Senator HATFIELD. Have you found that to be a satisfactory way to develop the potential of various types of nuclear energy technology?

Dr. RAY. Ultimately a successful demonstration plant program is helpful to develop a commercial manufacturing capability for any new reactor concept, and the molten salt reactor would be no exception if a full scale development program should be undertaken. However, it is important to recognize that a demonstration project can be successful only when the necessary technology base has been established, and in the case of the MSBR there are key technical problems for which solutions must be developed before a demonstration plant could be designed, constructed, and operated successfully. The Commission's planning has been based on addressing these key problems before proceeding to propose the design and construction of another molten salt reactor.

QUESTION SUBMITTED BY SENATOR MONTOYA

Senator STENNIS. We have another question from the committee. We will just submit it in the record.

Dr. RAY. Yes, sir.

[The question and answer follow:]

Question. The design of the National Security and Resources Study Center (Project 74–2–d) includes a solar energy system to meet most of the heating and cooling requirements of the building. It is my understanding, however, that this so called "solar roof" is more than just a heating and cooling unit: it is, in the truest sense of the word, an *experiment* in the use of solar energy. Not only will it generate heat; it will also generate data which will be analyzed and used to improve the design of this and future solar systems. In this respect, the NSRSC's solar energy system is different from any now existing and a valuable contribution to project independence. I wonder if the Commission is in agreement with these remarks and with my belief that the "solar roof" is a very important part of the Center.

Answer. Yes, we do agree with your remarks and also with your belief that the "solar roof" is an important part of the Center. This system will provide field experience on the problems associated with the integration of a solar heating and cooling system into a building. It will entail the procurement of sizeable quantities of collector units to verify the suitability of the manufacturing process for collector units. Finally, the system will provide data on solar heating system installation costs under field operation conditions. The proposed solar collector system is both an experiment and a demonstration as data will be gathered and analyzed to provide important information for future applications. The AEC believes that experimental projects such as the "solar roof" are an important part of the search for alternative energy sources.

UNOBLIGATED FUNDS ON HAND

Senator BIBLE. Might I ask just two more questions for the record, Mr. Chairman. What amount do you anticipate you will have on hand unobligated on June 30, 1974?

Mr. GREER. Well, we have two appropriations. On our plant and capital equipment appropriation, last year we were very close, within about $8 million, I believe. That is the amount unobligated; that does not mean the funds are uncommitted.

Senator BIBLE. What is the difference?

Mr. GREER. Well, unobligated would mean actually that they are not in contracts, there is no formal obligation made. However, the funds are committed to and needed to complete the individual projects.

Senator BIBLE. Give me figures for both appropriations.

Mr. GREER. Yes, sir. On the operating side it was about $22 million, as I remember it, $22 or $23 million.

Senator BIBLE. Last year?

Mr. GREER. Yes, sir. Those funds carry over. To the extent that they are not used, they carry over and reduce our requirement for appropriation in the following year. Our program is funded three ways. It is funded from appropriations, from the revenues that we receive during the year, and from any carryover balances that are left over from the preceding year.

I would like to emphasize on the plant and equipment appropriation these are not excess funds; they are funds that simply were not obligated during the current fiscal year and are needed in the following fiscal year.

Senator BIBLE. But you still haven't answered my question. I don't think you are responsive. Two questions, very simple questions. How many dollars will you have unobligated in total on June 30, 1974?

Mr. GREER. Our expectation is that it would not exceed last year's $30 million.

Senator BIBLE. In total?

Mr. GREER. In total.

Senator BIBLE. How much uncommitted?

Mr. GREER. Well, that would be less than $30 million. It would be about $20 million.

Senator BIBLE. How about the projected unobligated balance at the end of fiscal year 1975? Can you project that?

Mr. GREER. We would project that at zero. We project that we will use the money.

Senator BIBLE. You try to work it down so you spend everything you get within the year you get it?

Mr. GREER. Yes, sir.

Senator BIBLE. That is all, Mr. Chairman.

Senator STENNIS. Thank you, Senator.

SUBCOMMITTEE RECESS

This concludes the executive session with the Atomic Energy Commission. We will take a brief recess after which we will proceed with the Corps of Engineers in open session.

[Whereupon, at 3:20 p.m., the subcommittee took a brief recess.]

(Open Session, 3:25 O'Clock, Wednesday, June 19, 1974)

DEPARTMENT OF THE ARMY

Corps of Engineers

The subcommittee reconvened at 3:25 p.m., in open session, Hon. John C. Stennis (chairman) presiding.

Present: Senators Stennis, Bible, Montoya, Hatfield, Young, and Bellmon.

STATEMENT OF MAJ. GEN. J. W. MORRIS, DIRECTOR OF CIVIL WORKS

ACCOMPANIED BY:

COL. G. K. WITHERS, ASSISTANT DIRECTOR, CIVIL WORKS, ATLANTIC

COL. EARLY J. RUSH III, ASSISTANT DIRECTOR OF CIVIL WORKS, UPPER MISSISSIPPI

LT. COL. J. W. RAY, ASSISTANT DIRECTOR OF CIVIL WORKS, LOWER MISSISSIPPI AND GULF

LT. COL. PAUL C. DRISCOLL, ASSISTANT OF CIVIL WORKS, PACIFIC

A. J. SMET, CHIEF, PROGRAMS DIVISION, CIVIL WORKS

SUBCOMMITTEE PROCEDURE

Senator Stennis. All right, the hearing will come to order. If we may have quiet, we will proceed.

I have a brief statement here, for the information of the witnesses, and any that might be here in some other capacity.

As we know, the fiscal year 1975 Public Works-AEC Appropriation bill is before our committee now and has already passed the House of Representatives. Now, we are having what we call our recall hearings, in other words, this is your second chance, and you testify on what the House has done. We have already had the Atomic Energy Commission testimony in closed session.

We will now proceed in open session with the U.S. Army Corps of Engineers, and we will later take up the Bureau of Reclamation and the Bonneville Power Administration.

We have with us General Morris, whom we all know. We are asking him to proceed in his own way with such assistance as he may wish.

General Morris. Thank you, Mr. Chairman.

Senator Stennis. We have a list here of the staff and those that are assisting you. You always have a special welcome.

General Morris. Thank you. I am very pleased to be here.

Senator Stennis. Your statement is very brief, so why don't you read it into the record.

HOUSE ACTION ON APPROPRIATION BILL

General MORRIS. Thank you very much. From our staff, I would like to introduce Mr. Smet.

Senator STENNIS. Glad to have you back with us, Mr. Smet.

General MORRIS. We have reviewed the House of Representatives bill and report on our appropriations request for fiscal year 1975. The House was generous in support of Corps programs and construction starts, many of which we consider to be of high priority for our future investment program. A number of increases on budgeted items also were included by the House. With regard to the increases and decreases in the President's budget made by the House of Representatives, I should point out that these changes are not consistent with the administration's budget priorities as reflected in the President's budget recommendations to Congress.

HOUSE REDUCTIONS

There are three specific reductions imposed by the House which, I believe, would significantly impede progress on our program. The first two items are substantial lump-sum reductions in the Construction, General and the General Investigations appropriations. These reductions, amounting to $20,997,000 for "Construction, general" and $2,420,000 for "General investigations," were based on the House committee's anticipation of larger unobligated carryovers and would pose a serious problem to our moving ahead expeditiously on budgeted studies and projects, as well as on any unbudgeted studies or projects which the Congress may retain in the bill as finally enacted.

A third reduction that would immediately and seriously impact on the Corps' program is the reduction of $4,123,000 for operation and maintenance. The reduction on budgeted items was actually $7,830,000, including $2 million for the Great Lakes Diked Disposal program, but was partially offset by specific increases for unbudgeted operation and maintenance items totaling $3,707,000.

We have prepared detailed reclama statements, which I would like to provide for the record, describing the impact of the House reductions and requesting deletion of these reductions.

DREDGE MORATORIUM

My final point relates to the moratorium on modification of Corps' dredges. We are fully aware of the intent of the Congress in establish- the moratorium, pending completion of our report on the national industry in this matter. We have agreed and continue to agree with the moratorium, pending completion of our report on the national dredge study. At the same time, we consider that the moratorium established a status quo on dredging work in regard to Corps versus private dredgers until that study is completed. In this context, we appreciate the willingness of the Congress to permit us, as an exception to the moratorium, to modify the dredge *Pacific* and urge similar approval to upgrade the electrical system of the dredge *Comber*, as recommended in our letter of May 29, 1974, which was too late for House

consideration. We feel that imposing new restrictions on where the *Pacific* can work sets a precedent which not only disturbs the status quo of Corps versus private dredgers but places constraints on the safe and economical use of the dredge.

Under the House constraint, scheduling the use of hopper dredges would be contingent on predicting when severe sea and weather conditions would exist.

I would, therefore, suggest the following language as a fair and reasonable alternative to that provided by the House: "Further, the Corps should proceed with the necessary modifications to the hopper dredge *Pacific* which will permit the Corps to use this dredge to operate in inside harbor and estuary areas, in addition to bar and entrance channel areas, as required for the most economical and safe use of the *Pacific*."

That concludes my remarks. My staff and I are prepared to respond to any questions that you may have.

Senator STENNIS. All right, thank you very much, General.

RECLAMA STATEMENTS

Now, did you have any basic material you want to put in the record? You mentioned the reclama statements.

General MORRIS. Yes, sir, there are three enclosures, which I mentioned in the text, we would like to include in the record.

Senator STENNIS. All right, without objection they will be put in the record.

[The information follows:]

GENERAL INVESTIGATIONS
GENERAL REDUCTION OF $2,420,000

1. FY 1975 Budget Request: The Fiscal Year 1975 Budget request was $59,300,000 with no programmed savings and slippage reduction.

2. House Committee Action: The Committee subtracted $2,420,000 as a line item reduction for "Anticipated additional unobligated carryover balances and other adjustments."

3. Restoration Requested: Request the $2,420,000 line item reduction imposed by the House be deleted.

4. Basis of Request for Restoration: The lump sum reduction of $2,420,000 unquestionably would result in delays in completing studies already underway. We expect that the Fiscal Year 1974 unobligated carryover into Fiscal Year 1975 will be the lowest, both in terms of dollars and percent, for this appropriation in recent years. We have reduced the number of studies in the Budget so that we can concentrate on those with the greatest needs and most promise and are using architect engineer firms and other consultants, to a greater degree than in the past, where our in-house staff is already fully committed.

CONSTRUCTION, GENERAL - GENERAL REDUCTION OF $20,997,000

1. FY 1975 Budget Request:

The Fiscal Year 1975 Budget request included a lump sum reduction for anticipated savings and slippage in the amount of $58,894,000.

2. House Committee Action:

The Committee increased the budgeted savings and slippage reduction by $20,997,000 as a "General reduction based on anticipated delays and carryover balances and other reductions."

3. Restoration Requested:

Request the $20,997,000 general reduction imposed by the House be deleted.

4. Basis of Request for Restoration:

The savings and slippage amount included in the Budget for the Construction, General appropriation was established after a careful evaluation of the amount of continuing and new work included in the individual construction project requests.

The additional $20,997,000 reduction imposed by the House would result in restricting the Corps flexibility in moving ahead with contracts and projects that are not impeded for any other reason or where transfer of funds are required to cover increased contractor earnings stemming from actual progress on going contracts. This additional reduction could well result in some funding delays over and above those reported to Congress during the Fiscal Year 1975 Appropriations hearings.

Another point of significant impact involves our experience on bids recently received for construction contracts. They are generally somewhat

higher than the amounts anticipated in preparation of the Fiscal Year 1975 Budget and will probably continue on this upward trend as a result of uncertainties associated with prices and availability of certain materials. The recent energy crisis and long lead times for delivery of basic construction materials such as steel, have been reflected in these higher bids. Here too, the reduction by the House would reduce the Corps capability to transfer funds as required for contracts awarded at the higher bid prices.

OPERATION AND MAINTENANCE, GENERAL
GENERAL REDUCTION OF $7,830,000

1. FY 1975 Budget Request:

The total FY 1974 Budget request is $445,000,000.

2. House Committee Action:

The House Committee imposed a general reduction of $7,830,000 of which $2 million was to be applied to the Great Lakes Diked Disposal program.

3. Restoration Requested:

A. Great Lakes Diked Disposal Program	2,000,000
B. General Reduction Based on Anticipated Carryover Balances	5,830,000
TOTAL RESTORATION REQUESTED	7,830,000

4. Basis of Request for Restoration:

a. Great Lakes Diked Disposal Program:

Although the Diked Disposal program has experienced many delays in the past, significant progress has been made in Fiscal Year 1974. Seven construction contracts were awarded during Fiscal Year 1974, with a total contract value of $45.5 million, and we anticipate awarding 16 more in Fiscal Year 1975, with an estimated face value of $ 101 million. Accordingly, we fully expect that the full amount of the O&M Budget request of $20 million for FY 1975 will be obligated and expended before the end of Fiscal Year 1975. Furthermore, it is likely that additional funds would have to be diverted from other maintenance work in order to accomplish the scheduled dike work in Fiscal Year 1975.

b. General Reduction Based on Anticipated Carryover Balances:

The unobligated balance at the end of FY 1973 was three-tenths of one percent of the total amount available for obligation, exclusive of funds for the Great Lakes Diked Disposal program. It is estimated the unobligated balance at the end of FY 1974, including the Diked Disposal program, will again be less than one percent.

The Mississippi River flood in the spring of 1973 and continued high river stages have been responsible for tremendous quantities of material being carried downstream by the river. This has resulted in extreme and continuous high rates of shoaling in the Southwest Pass. The Southwest Pass which connects the Gulf of Mexico with the important harbor of New Orleans and Mississippi River & Tributaries is one of the heaviest traveled waterways in the United States. In order to maintain navigation in the Southwest Pass, a dredging capability many times that of normal requirements had to be provided. The funding of this extraordinarily large O&M requirement of $11,000,000 could only be accomplished by the diversion of O&M funds scheduled for dredging of other important navigation projects. Due to this diversion of O&M funds the dredging requirements for these harbors is now critical. Additional extraordinary maintenance dredging requiring O&M funds will be required for those navigation projects from which funds were diverted and in Southwest Pass in FY 1975.

The Hopper Dredge McKENZIE while dredging in Galveston Harbor was rammed and sunk. Salvage operations requiring O&M funds in FY 1975 are estimated at $4,200,000. Any reduction of O&M funds based on anticipated carryover would result in the deferment of essential work which should be accomplished in FY 1975.

HOPPER DREDGE ISSUE

Senator STENNIS. I am going to yield now to the Senator from Oregon. Do you have questions?

Senator HATFIELD. Mr. Chairman, I appreciate the opportunity to make the record clear on this hopper dredge issue which is of great importance to us.

First, General Morris, would your language that you have suggested on page 3 prevent establishing an undesirable precedent with the *Pacific* that could affect other hopper dredges?

Let me ask it this way: Does the present language relating to restrictions on the *Pacific* establish a precedent that would affect other hopper dredges?

General MORRIS. Yes, sir, I interpret it that way very definitely.

Senator HATFIELD. Now, before I go to the next question, Mr. Chairman, I think it is important to note the present language that restricts the *Pacific* to bar work. It is really precedent setting, as the General has said, and it could affect us in a very serious way.

I have here a letter from the Louisiana delegation in the House, signed by each member of that delegation, which indicates that if this precedent is applied to the hopper dredge operating in the Lower Mississippi River, such a restriction could result in a reduction in utilization of 50 percent or more. Recalling the recent flood conditions in that area, the severe shoaling in the south and southwest passes of the Mississippi River would not have been able to be maintained or kept open for navigation.

So I think it is not only a serious matter for the west coast and for us in Oregon, but it is precedent setting for all hopper dredges. I am hopeful the committee, which has been very generous and very understanding of my efforts on this hopper dredge question in the past, will support the Corps' proposal here. I think we will see a new

attitude on the part of the House in the conference this time, because the Louisiana people particularly have seen the impact of this moratorium on the Lower Mississippi.

Now, the only other point I would like——

Senator STENNIS. If you will yield at this point. You want to put the statement of the Louisiana delegation in the record?

Senator HATFIELD. Yes, sir.

Senator STENNIS. I have here the letter from the Louisiana delegation.

Senator HATFIELD. I would also like to have my letter to Congressman Passman and a letter from the port of Portland signed by Mr. Beman, the director of the marketing program in the port of Portland, outlining the situation in Oregon, included in the record. When we talk about going out for bids for private dredges to do this work, which a Corps' dredge could do, the assumption is there are a number of dredges available to come in for a bid.

CORRESPONDENCE

Well, here we have some very good evidence that this is not necessarily true, that there is only one hopper dredge available for some of the work there now on the west coast, so you wouldn't have a competitive bid situation as implied by this moratorium language. I would like to have this as part of the record.

Senator STENNIS. Without objection, the letters will be placed in the record.

[The letters follow:]

LETTER FROM SENATOR MARK O. HATFIELD

United States Senate

COMMITTEE ON APPROPRIATIONS
WASHINGTON, D.C. 20510
June 7, 1974

The Honorable Otto E. Passman
U.S. House of Representatives
Washington, D.C. 20510

Dear Congressman Passman:

Having noted your interest in the impact, on the Corps of Engineers' hopper dredge fleet, of the moratorium on replacement or rehabilitation of all dredging equipment, I would like to bring to your attention an action that I feel would be an unwise precedent -- the placing of restrictions on future utilization of the hopper dredge "Pacific."

The House Appropriations Committee's approval of the Corps's plan to re-power and modernize the "Pacific" contains this caveat: Following completion of this work, the "Pacific" may no longer perform dredging inside the bars at the river mouths, unless inclement weather forces the "Pacific" in off the bar. In other words, if the House language prevails, the "Pacific" will be constrained from doing inside harbor and river channel work. Although the bar work is enough to keep the "Pacific" quite busy during the summer months on the West Coast, some small projects that have depended on the "Pacific" doing some inside work each year when she is in the area will suffer. Without the "Pacific" the costs to these small harbor areas of having the necessary work done will double or triple. Furthermore, overall utilization of the "Pacific" will fall off by 5-10%, which will increase the maintenance dredging costs to all ports the "Pacific" serves.

There is no good reason why the "Pacific" should be singled out for this kind of restriction on its future utilization. It is the first hopper dredge to be rehabilitated since the moratorium went into effect, and I would ask you to consider the implications for hopper dredge service in your area if this kind of restriction is placed on every hopper dredge that the Corps must modernize.

I intend to try to persuade my colleagues in the Senate Appropriations Committee to keep the hopper dredge fleet free of such operating restrictions, and I would urge you to contact Subcommittee Chairman Joe Evins again, and other members of the House Appropriations Committee who will be Conferees on the FY 1975 Public Works Appropriations Bill, to express this interest I believe we share.

Your concern in this matter is deeply appreciated.

Sincerely,

Mark O. Hatfield
United States Senator

REPLY FROM LOUISIANA DELEGATION ABOUT RESTRICTIONS ON UTILIZATION OF HOPPER DREDGES

Congress of the United States

House of Representatives

Washington, D.C. 20515

June 18, 1974

Honorable Mark O. Hatfield
United States Senate
Washington, D.C. 20510

Dear Senator Hatfield:

Thank you for your letter dated 7 June 1974 relative to the constraint on the efficient usage of the hopper dredge PACIFIC contained in the House Report language on the FY 75 Appropriations Act.

We agree that such a restriction on the usage of the PACIFIC in inside harbor and river channel areas would constitute an unwise precedent. As we see it, the restriction contains two undesirable features. It would prohibit the usage of the PACIFIC in harbor and river channel areas, unless the work was performed incidental to work being performed on bar or entrance channel areas and then, only during those periods when operations on the bar or entrance channels could not continue because of severe sea and weather conditions.

Based on the utilization of the hopper dredge LANGFITT during the past two years when it was urgently needed to maintain navigable depths in the lower Mississippi River as a result of unusual flooding conditions, we estimate that such a restriction could result in a reduction in utilization by as much as 50% or more. In this connection, the shoaling situation in the South and Southwest Passes of the Mississippi River became so critical this year that it was necessary for the Corps to reassign four additional seagoing hopper dredges for several months to keep the Mississippi River open to navigation. Therefore, we would like to see the Corps proceed immediately with the modification of its hopper dredge fleet.

The recent sinking of the MacKENZIE, as a result of being rammed by a tanker in Galveston Bay, has reduced the total number of seagoing hopper dredges available to meet the national needs to fifteen. The average age of the remaining dredges is about 30 years. In view of the fact that these are the only dredges of this type available in the country,

we cannot understand why any type of constraint on their efficient use is necessary or desirable. Therefore, we intend to try to persuade our colleagues in the House Appropriations Committee to keep the hopper dredge fleet free of any operating restrictions and to advise the Chairman of the Subcommittee on Public Works of our concern in this matter.

Thank you for advising us of your position on this important issue.

Sincerely,

F. Edward Hebert, M.C.

Lindy (Mrs. Hale) Boggs, M.C.

David C. Treen, M.C.

Joe D. Waggonner, Jr., M.C.

Otto E. Passman, M.C.

John R. Rarick, M.C.

John B. Breaux, M.C.

Gillis W. Long, M.C.

LETTER FROM OGDEN BEEMAN

June 6, 1974

The Honorable Mark O. Hatfield
United States Senate
Senate Office Building
Washington, D.C. 20510

HOPPER DREDGE MORITORIUM

During my testimony to the appropriations subcommittee on May 2 regarding the dredge moritorium, you posed the question of whether all pipeline dredging should be performed by private contractors. I want to elaborate on my answer at that time.

The arguments raised by the dredging moritorium have revolved around the contractors apparent goal to perform all dredging which can be performed by private dredging equipment. The goal of port authorities and the transportation industry is to have our channels deepened and maintained to full project depths on a dependable year-around basis. The goal of the Federal Government, I believe, should be synonymous with that of the port authorities goal with the added factor of minimizing cost of this work. If the Legislative branch of the government wishes to spend more funds to accomplish work with privately owned dredges, that is clearly a decision which can be made. This, per se, does not affect achievement of the port goals regarding channel depth.

The point at which port goals become jeopardized is the point where the contracting procedures and dredge use restrictions become so complex and time consuming that channels cannot be maintained on a timely basis. Let me give you several hypothetical examples:

1. The inside channel of the Umpqua River (which could be maintained by contractor dredges at 3-4 year intervals) is surveyed and found to have a very small shoal 2 feet above project depth. The project is not scheduled for dredging for another 2 years. It would cost $75,000 to mobilize a pipeline dredge into the river and take as long as 90 days by following competitive bidding practices.

In contrast, if the hopper dredge PACIFIC was working in any of the ports on the Southern Oregon Coast, it could be mobilized to the site within 24 hours at a cost of less than $5,000 and the shoal could be immediately removed.

My point is this:

1. If the Congress wishes to authorize the additional cost necessary to accomplish this work by private dredging plant, it is of no particular concern to the local port authority. However, the three months delay required means navigation interests on that waterway could be forced to light load or not sail (depending on the seriousness of the shoal) for the three month period. A navigation project with this lack of reliability is not returning its full benefits to the local area or the United States.

2. The Columbia River (inside the bar) has a project depth of 40 feet. During the spring freshets it usually shoals several feet. For this reason,

annual dredging will usually be done to depths of 42' to 45' so that after shoaling, the river will be at depths of around 40'. However, this is an inexact process as shoaling is not completely predictable and varies with the height and term of the spring runoff. Consequently, at the end of the freshet period, there may be numerous areas where channel depths are less than 40'.

Example: The freshet is receding and surveys are taken indicating the entire river has controlling depths of 39' or greater except for three places. Mile 25 (Astoria) has a small shoal at 37' depth. Mile 59 (Longview) has three small shoals at 35' depth. Mile 96 (Sauvie Island) has extensive shoaling at 37' depth. Suppose the Corps of Engineers is working under a rule that says work capable of being performed by pipeline dredge must be done by pipeline dredge. The Corps has placed one contractor pipeline dredge under a rental agreement which begins working on the shoal at Mile 96. The shoals at Miles 59 and 25 cannot be touched even though the dredge BIDDLE is at anchor at Mile 6 due to fog and could remove these two shoals in 48 to 72 hours. By the time the pipeline dredge can work its way downstream, four weeks have gone by - during which time ships have loaded to 35' instead of 39' leaving tens of thousands of dollars in potential revenue sitting on the docks and causing ship owners all over the world to receive telex's saying Portland does not have a 40' project but a 35' project.

Example: Same situation as above. When the Corps goes out to bid for the rental pipeline dredge it finds that:

1. There are no dredges in the river to bid the work. Recent expansion of work in Alaska or Puget Sound or California has caused the only two suitable contractor dredges to leave the River.

2. There is one dredge available for the work. Realizing that the ports are absolutely dependent on channel maintenance, the contractor bids the work at twice the contract estimate.

The Columbia River examples cited on the previous page gives you some insight into why the Port of Portland has always retained a dredging capability and why Congressional authorization for Columbia River navigation projects have required the port to make this dredge available to the Corps. This is necessary for project maintenance when rapid mobilization is required to remove shoals. The dredge OREGON guarantees the Corp of Engineers dredging capability as required on extremely short notice. This is particularly important now that both the USCE pipeline dredges MULTNOMAH and WAKKIAKUM are no longer operational.

A case in point will occur this year. The Columbia River will be in flood stage well into July followed by low water conditions as early as September. Rapid mobilization of pipeline dredges is necessary because of the short period between high water (when shoaling takes place) and low water (when navigation is hindered).

I hope these examples will help in your further deliberations on this subject.

Ogden Beeman

Ogden Beeman, Director
Marine Marketing Department

STUDY COMPLETION DATE

Senator HATFIELD. I am very hopeful that we can in this Congress, in this particular year, remove the moratorium from hopper dredges, leaving it on pipeline dredges, and eliminate the restrictive language on utilization of the *Pacific*. I think that should be our objective. I would like to ask one last question.

When is the study going to be completed?

General MORRIS. It will be finished during September.

Senator HATFIELD. That is a new date, isn't it?

General MORRIS. It is about the same date. I sort of have my fingers crossed on that. The contractor is supposed to be in within the next 2 weeks with the beginning of his report and we would hope to have the full report in time for insertion in the fiscal year 1976 budget considerations.

Senator HATFIELD. Thank you very much, Mr. Chairman.

Senator STENNIS. We thank you.

Senator Bible.

Senator BIBLE. I defer first to Senator Young.

BURLINGTON DAM, N. DAK.

Senator YOUNG. I just have two short questions.

With respect to the Burlington Dam, what is your total capability? Included in the House bill was $250,000, I believe.

General MORRIS. Our capability is $400,000.

MISSOURI RIVER GARRISON DAM TO LAKE OAHE

Senator YOUNG. Now, on bank stabilization from Garrison Dam to Oahe Reservoir, how much is in the budget and what is your capability?

General MORRIS. I can provide that for the record.

[The information follows:]

MISSOURI RIVER, GARRISON DAM TO LAKE OAHE, N. DAK.

$300,000 is included in the President's Budget for fiscal year 1975 and the Corps of Engineers fiscal year 1975 capability is $900,000. The capability amount would advance project completion by six months.

HUMBOLDT RIVER AND TRIBUTARIES, NEV.

Senator YOUNG. That is all, Mr. Chairman.

Senator BIBLE. If I might, could I ask two questions?

Senator STENNIS. All right.

PEMBINA RIVER STUDY, NORTH DAKOTA

Senator YOUNG: I have just been contacted by the Institute for Ecological Studies at the University of North Dakota in Grand Forks concerning the need for an environmental impact assessment of the Pembina River project commonly called the Pembilier Dam.

The Pembina River Basin in North Dakota suffered from unusually heavy flooding this spring. I visited there about 6 weeks ago and much

of this very fertile farm area was under water. The recurrence of flooding on this river has become very serious and it is essential that we move ahead with this flood control project.

Does your present budget contain funds for such a study?

If not, what would you require in this bill to undertake such a study?

General MORRIS. No, sir; our present budget does not include a request for funds for this study. However, our capability on this study is $50,000. This amount would be used to complete the final report and develop and process an environmental impact statement. I should also point out that our ability to perform this work in fiscal year 1975 is contingent upon the willingness and ability of Canada to participate.

Senator BIBLE. General Morris, I believe I read the House action correctly on funds for the continuation of the Humboldt project, and if I do read it correctly, it shows you have $250,000 in the budget for planning for fiscal year 1975; is that correct?

General MORRIS. That is correct, sir.

Senator BIBLE. And how far along will that take you toward the next step?

General MORRIS. Sir, as I recall, that will allow us to complete the phase I planning.

Senator BIBLE. Then what is the next step, assuming that that planning is completed with the additional $250,000?

General MORRIS. Sir, the next step would be to accomplish those studies required for project formulation and environmental impact.

Once these are completed, the next step would be to propose construction.

Senator BIBLE. You're proposing a construction start in the next fiscal year?

General MORRIS. That would be the next step after planning was completed.

Senator BIBLE. I am sure we have called, maybe not to your personal attention, but at least to the district man in the Corps—where is the district that governs Nevada, is it Sacramento or San Francisco?

General MORRIS. Sacramento District.

Senator BIBLE. Who is the district engineer there at the present time?

General MORRIS. Colonel Rockwell.

TRUCKEE MEADOWS, NEV.

Senator BIBLE. The need was made known to him, and it was to study the flood control problems of the Truckee Meadow. We are forever studying them. With flood plain problems coming in April, the flood plain insurance bill having passed, and the history of flooding in the Truckee Meadows, it will require some additional study and review of the work you have already done. I am told that you have a capability of $30,000 for that purpose.

General MORRIS. That is right.

Senator BIBLE. And I would hope, Mr. Chairman, that we could add a line item for that so we could give it some attention. It is a critical problem and the amount is very modest, but it is in a flood plain.

Senator STENNIS. All right.

Senator BIBLE. I would hate to make the request, it is so minor.
Senator STENNIS. It is very important.
Senator BIBLE. Thank you, Mr. Chairman.

MISSISSIPPI RIVER LEVELS

Do you have the Mississippi under control this year? I felt like I came from the State of Mississippi last time I was questioning you.
General MORRIS. I am happy to report the water is receding, but is unusually high again this year for June.
Senator STENNIS. We are having tributary troubles, water gets down the small streams and can't get into the river.
Senator BIBLE. The Yazoo River?
Senator STENNIS. Yes; my telephone rings into the night.
Senator BIBLE. That is all, Mr. Chairman.

OREGON PROJECTS

Senator HATFIELD. I have two questions on two projects.
As you know, General, we have a timetable to meet with regard to the 1976 omnibus authorization bill for possible inclusion of the Siuslaw jetty project and the Days Creek project of Oregon.
I want to make the record here as to the clear understanding that the corps does have the ability to make wise and efficient use of the full $132,000 on Siuslaw in order complete that study. The request was for $70,000 and the capability previously was established at $80,000. But it is true that if we make provision for the full $132,000, the study could be finished a little into fiscal year 1976, is that correct?
General MORRIS. Yes, sir.

DAYS CREEK PROJECT

Senator HATFIELD. Now, General, one other question. As you know, the Days Creek project, which, under the new authorization procedure, will have to come back to the Public Works Committees for the second phase, is listed for a $300,000 capability. What is the minimum amount that could be appropriated this year in order to keep the timetable to meet the 1976 omnibus bill?
General MORRIS. I don't have that, sir; $300,000 is our full capability.
Senator HATFIELD. Can you get that for the record?
General MORRIS. I will have to provide that. I presume it would be $300,000, but this would not complete the phase 1 general design memorandum. I will provide for the record the earlist date that we could report to the Congress on our phase 1 studies.
Senator HATFIELD. If you could.
[The information follows:]

DAYS CREEK LAKE, ORE. (PHASE 1 ADVANCE ENGINEERING AND DESIGN STAGE)

With $300,000 in fiscal year 1975, which is the maximum we could effectively use, we could complete our phase 1 studies in June 1976 subject to appropriations in fiscal year 1976.

RECALL TESTIMONY

Senator HATFIELD. Mr. Chairman, Senators Dole and Gurney have some questions that they would like to have submitted to be answered.

Senator STENNIS. All right, Senator, without objection they will certainly be included in the record and you gentlemen will get those answers back as soon as you can. I want to close the record as early as possible.

Senator HATFIELD. And Senator Mathias, too.

Senator STENNIS. The same thing with reference to Senator Mathias. Let's get them in within 7 days, if you can.

Senator HATFIELD. Yes.

Senator STENNIS. Now, General Morris, the subcommittee conducted 7 days of hearings over a period of 2 weeks, morning and afternoon sessions, and received testimony of Members of the Senate and the House, interested organizations and public witnesses on the fiscal year 1975 appropriations bill for Public Works-AEC. Hundreds of witnesses were heard, and presented statements and made various requests, and submitted testimony to the subcommittee. These statements, requests, and testimony of both proponents and opposition witnesses have been submitted to the Corps.

You have the questions, I understand, and will submit answers from the Corps' viewpoint on the matters raised both as to the Corps' capability, the opposition testimony, and other points made in the previous hearings, is that right?

General MORRIS. That is right.

Senator STENNIS. These questions and answers will help fill out the record and will provide additional information to the subcommittee as we proceed to mark up this bill.

Again, not trying to rush anyone, but we want to have our printed hearings ready for the other membership when the bill comes to the floor. So you have most of them there?

General MORRIS. Yes; we will have these to you shortly.

MONTGOMERY TO GADSDEN, COOSA RIVER CHANNEL, ALA.

Senator STENNIS. There is nothing in the budget, the House has included $200,000, and local interests have requested $300,000. What is your capability on this project?

General MORRIS. Mr. Chairman, our capability on this project is $200,000 to initiate a detailed economic restudy.

Senator STENNIS. Would you submit a statement for the record?

General MORRIS. Yes, sir.

[The statement follows:]

Project: Montgomery to Gadsden - Coosa River Channel, Alabama

Summarized Financial Data:

Estimated Federal Cost (Corps of Engineers)		$ 292,000,000
Estimated Federal Cost (U.S. Coast Guard)		100,000
Estimated non-Federal Cost		17,270,000
Cash Contribution	$ 0	
Other Costs	17,270,000	
Total Estimated Project Cost		309,370,000
Allocations to Date		0
Balance to Complete (Corps of Engineers)		292,000,000
Economic restudy estimate		500,000
Amount that could be used in FY 1975		200,000

Authorization: 1945 River and Harbor Act

Location and Description: The project is located in Elmore, Chilton, Coosa, Shelby, Talladega, St. Clair, Calhoun, and Etowah Counties, Alabama, between Montgomery, Alabama, and Gadsden, Alabama. The proposed improvements consist of five locks with chamber dimensions of 84 x 600 feet to be constructed in existing Alabama Power Company developments, which will provide a navigation channel 9 feet deep and 150 feet wide from Montgomery to Gadsden.

Proposed Operations: The amount of $200,000 could be used to initiate an economic restudy. The restudy is estimated to cost $500,000 and will require 24 months to complete.

Justification: The Alabama-Coosa Basin is rich in natural resources. Its economy heretofore has been largely agricultural. However, the basin is rapidly becoming highly industralized. Provision of a 9-foot navigation channel would stimulate industrial expansion in the area, which would materially aid the economy of the area. The project would provide an additional means of transporting heavy and bulk commodities to and from the tributary area along the Coosa River. The Coosa navigation project will be an asset to the over-all national transportation system by providing a connecting transportation link from the Appalachia region of North Alabama and Georgia with the world and continental ports through the Port of Mobile and to the industrial and agricultural centers of the South and Midwest. Five counties in Alabama have been designated redevelopment areas under the Public Works and Economic Development Act of 1965. The benefit-cost ratio is 1.10 to 1. The average annual benefits are broken down as follows:

Navigation	$ 14,484,000
Power loss adjustment	—210,000
Recreation	416,000
Area Redevelopment	2,327,000
Total	$17,017,000

Status of Environmental Impact Statement: An EIS would be prepared during preconstruction planning.

TENNESSEE-TOMBIGBEE WATERWAY, ALA. AND MISS.

Senator STENNIS. The budget request was $30 million. The House has included $37,900,000, and local interests have requested $37,900,000. What is your capability on this project?

General MORRIS. Our capability on this project is $37,900,000, Mr. Chairman.

Senator STENNIS. What would be accomplished with the additional $7,900,000?

General MORRIS. The additional funds would permit a more orderly acquisition schedule for Gainesville and Aliceville. Acquisition for the Aliceville reservoir and public use areas would be completed about 6 months earlier than scheduled and the construction area for Aberdeen would be acquired in fiscal year 1975. Completion of Columbus Lock and Dam would be advanced 10 months and completion of Demopolis reservoir would be advanced 11 months.

TENNESSEE-TOMBIGBEE WATERWAY, ALA. AND MISS., OPPOSITION

Senator STENNIS. We have received testimony in opposition to this project from a representative of Seaboard Coast Line Industries, Inc., a copy of which has been provided to you. Would you comment on the allegations made.

Colonel WITHERS. The allegations fall mainly into three categories. I would like to comment on each in turn. First, regarding user charges:

By law, tolls or user charges may not be imposed on inland waterway projects. Therefore, imposition of user charges for the Tennessee-Tombigbee Waterway would require a specific act of Congress and raise the general question of whether it would be equitable to single out this project and not the many other inland waterways already constructed. Second, regarding project justification:

No claim is made that the Tennessee-Tombigbee is necessary for economic progress in the 3-State area of Alabama, Tennessee, and Mississippi. The transportation savings are predicated on actual traffic and forecasts of future traffic that would occur without the project. These forecasts are developed in recognition of the fact that economic growth will occur, without the project, as has been described in Seaboard Coast Line's statement. The Corps does recognize, however, that on any waterway or harbor project, stimulation of the affected area's economy would in all probability take place over and above normal growth, but no monetary benefits are ascribed to this. The Corps is not authorized to use benefits resulting from stimulation of the economy in justifying water resources projects.

The barge operators perform the service of providing low-cost waterway transportation service to shippers and receivers of freight, resulting in lower production costs. The savings are passed on to ultimate consumers. The real beneficiary of waterway projects is the general public. The citizens of the country pay for the investment and also receive the benefits in the form of lower costs. As a matter of information, the savings in transportation costs creditable to the project affect shippers and receivers of freight in varying degrees over a much

broader area than the three States mentioned. The project actually affects 16 States in the Eastern, Midwest and Southwest areas as well as the Southern area.

As to the phrase, "second lane of traffic for the Mississippi River," it is pointed out that no traffic which could move as cheap as or cheaper on the Mississippi or any other waterway was accepted as prospective traffic for the Tennessee-Tombigbee Waterway. Third, regarding project cost:

The cost estimate referred to is based on a 1938 report and prices reflect those applicable to those times. According to the Engineering News Record Construction Cost Indices, construction costs have increased over eightfold since that year. The project as conceived in 1938 would therefore be $532 million in 1973. Also, the project as envisioned at that time contemplated smaller locks and a narrower channel which may have been adequate for the type of traffic and equipment of the times. The plan now in effect includes larger locks, and a wider waterway so as to meet modern standards. Environmental controls and structural design to conform to present day standards have also added to the cost.

BRADLEY LAKE, ALASKA

Senator STENNIS. There is nothing in the budget. The House has included $62,000, and local interests have requested $62,000. What is your capability on this project?

General MORRIS. Mr. Chairman, our capability on this project is $62,000 to complete a feasibility report.

Senator STENNIS. Would you submit a statement for the record?

General MORRIS. Yes, sir.

[The statement follows:]

Project: Bradley Lake, Alaska

Summarized Financial Data:

Estimated Total Appropriation Requirement	$130,000,000	
Future non-Federal Reimbursement	$130,000,000	
Estimated Federal Cost (Ultimate Corps of Engineers)		0
Estimated non-Federal Cost		130,000,000
Reimbursement: Power	130,000,000	
Total Estimated Project Cost		$130,000,000
Allocations to Date		174,000
Balance to Complete		129,826,000
Preconstruction Planning Estimate		2,700,000
Feasibility Report (Included in Planning Est.)		236,000
Amount that could be used in FY 1975		62,000

Authorization: Flood Control Act of 1962.

Location and Description: Bradley Lake, at an elevation of about 1,000 feet, is a perched lake located near the head of Kachemak Bay on the southwestern end of the Kenai Peninsula, Alaska about 100 miles south of Anchorage and 25 miles east of Homer. Bradley Lake was authorized essentially as a hydroelectric project with some minor related purposes. The plan of improvement provides for construction of a concrete gravity main dam at the outlet of the lake, a spillway and outlet works and two smaller saddle dams. The dams would increase the lake level by about 100 feet to create about 300,000 acre-feet of usable storage. In addition, the North Fork of the Bradley River would be diverted into lake drainage and runoff from the glacier at the head of Bradley Lake, would be diverted into the lake.

Proposed Operations: The amount of $62,000 could be used to complete the feasibility report.

Justification: Power to be produced at Bradley Lake is needed to meet the demands of the rapidly growing power market in the Cook Inlet area. The existing combined steam and internal combustion plants have a total capacity of 176,200 kilowatts. Current forecasts for the Anchorage-Kenai area indicate a peak load of 249,800 kilowatts in 1975, 410,000 kilowatts in 1980 and 689,500 kilowatts in 1985. The forecasted peaking demands will exceed existing capacity in the Anchorage-Kenai area by 73,600 kilowatts in 1975, 233,800 in 1980, and 513,300 in 1985. The authorized Bradley Lake project would provide 69,300 kilowatts of dependable capacity. The benefit-to-cost ratio has not been updated since the Alaska Power Administration is in the process of preparing a marketability study and the Federal Power Commission is in the process of updating power values. These two items would be used in developing the Feasibility Report.

STATUS OF ENVIRONMENTAL IMPACT STATEMENT:

An Environmental Impact Statement will be prepared to accompany the Feasibility Report.

SNETTISHAM, ALASKA

Senator STENNIS. The budget request was $1,400,000. The House has included $2,100,000, and local interests have requested $2,100,000. What is your capability on this project?

General MORRIS. Our capability on this project is $2,100,000, Mr. Chairman.

Senator STENNIS. What would be accomplished with the additional $700,000?

General MORRIS. The additional amount would be used to initiate the permanent reconstruction of the transmission line from the Snettisham project to Juneau, Alaska. Earlier this year, this subcommittee approved a transfer of $1,400,000 to perform temporary repairs of the transmission line damaged by last winter's storms.

INDIAN BEND WASH, ARIZ.

Senator STENNIS. The budget was $194,000. The House has included $1,100,000, and local interests have requested $1,100,000. What is your capability on this project?

General MORRIS. Our capability on this project is $1,100,000, Mr. Chairman.

Senator STENNIS. What would be accomplished with the additional $906,000?

General MORRIS. The additional amount would be used to initiate construction of the project in accordance with the modified plan currently under review in the office, Chief of Engineers.

DEQUEEN LAKE, ARK.

Senator STENNIS. The budget request was $1,920,000. The House has included $1,920,000, and local interests have requested $2,170,000. What is your capability on this project?

General MORRIS. Our capability on this project is $2,170,000, Mr. Chairman.

Senator STENNIS. What would be accomplished with the additional $250,000?

General MORRIS. The additional amount would be used to advance completion of the project by 6 months.

DIERKS LAKE, ARK.

Senator STENNIS. The budget request was $530,000. The House has included $530,000, and local interests have requested $1,135,000. What is your capability on this project?

General MORRIS. Our capability on this project is $1,135,000, Mr. Chairman.

Senator STENNIS. What would be accomplished with the additional $605,000?

General MORRIS. The additional amount would be used to advance completion of the project by 6 months and permit completion in fiscal year 1975.

GILLHAM LAKE, ARK.

Senator STENNIS. The budget request was $850,000. The House has included $850,000, and local interests have requested $1,000,000. What is your capability on this project?

General MORRIS. Our capability on this project is $1,000,000, Mr. Chairman.

Senator STENNIS. What would be accomplished with the additional $150,000?

General MORRIS. The additional amount would be used to advance completion of the project by 6 months.

McCLELLAN-KERR ARKANSAS RIVER NAVIGATION SYSTEM, BANK STABILIZATION AND CHANNEL RECTIFICATION, ARK. AND OKLA.

Senator STENNIS. The budget request was $610,000. The House has included $610,000, and local interests have requested $2,443,000. What is your capability on this project?

General MORRIS. Our capability on this project is $2,443,000, Mr. Chairman.

Senator STENNIS. What would be accomplished with the additional $1,833,000?

General MORRIS. The additional amount would be used to initiate and complete construction of critically needed structures for channel stabilization.

McCLELLAN-KERR ARKANSAS RIVER NAVIGATION SYSTEM, LOCK AND DAMS, ARK. AND OKLA.

Senator STENNIS. The budget request was $4 million. The House has included $4,100,000, and local interests have requested $6,060,000. What is your capability on this project?

General MORRIS. Our capability on this project is $6,060,000, including $100,000 for the Conway Water Supply item.

Senator STENNIS. What would be accomplished with the additional $2,060,000?

General MORRIS. Of the additional amount, $100,000 would be used to initiate design of the Conway Water Supply item of the project as authorized in the Water Resource Development Act of 1974. The remaining amount would be used to advance completion of the entire project by 6 months.

NORFORK LAKE-HIGHWAY BRIDGE, ARK.

Senator STENNIS. There is nothing in the budget, and local interests has requested $50,000. What is your capability on this project?

General MORRIS. Mr. Chairman, our capability on this project is $50,000 to initiate preconstruction planning.

Senator STENNIS. Would you submit a statement for the record?

General MORRIS. Yes, sir.

[The statement follows:]

NORFOLK LAKE—HIGHWAY BRIDGE CONSTRUCTION, ARKANSAS

Summarized Financial Data

Estimated total appropriation required	$17,200,000
Future non-Federal reimbursement	2,900,000
Estimated Federal cost (ultimate)	14,300,000
Estimated non-Federal cost	2,900,000
Reimbursment	[1] 2,900,000

NORFOLK LAKE—HIGHWAY BRIDGE CONSTRUCTION, ARKANSAS—Continued

Summarized Financial Data

Total estimated project cost	$17,200,000
Allocations to date	[2] 100,000
Balance to complete	17,100,000
Preconstruction planning estimate	1,000,000
Amount that could be utilized in fiscal year 1975	50,000

[1] To be paid on completion of bridges.
[2] These funds were appropriated in supplemental appropriation bill for FY 1973 (PL 92–607), but not allocated until passage of the Water Resources Development Act of 1974 on March 7, 1974.

Authorization.—Water Resources Development Act of 1974.

Location and Description.—The proposed project is located in Baxter County, Arkansas, on the North Fork River about 15 miles above its confluence with White River and approximately 8 miles from Mountain Home. The plan of improvement provides for construction of two bridges across the lake and three segments of roadway. This work also involves acquisition of rights-of-way and utility relocations.

Proposed Operations.—The amount of $50,000 would be used to continue preconstruction planning.

Justification.—The project provides for a free highway bridge over the Norfork Lake in the area where United States Highway 62 and Arkansas State Highway 101 were inundated as a result of the construction of the Norfork Dam and Lake. When this project was constructed in the early 1940's during World War II, the United States District Court awarded the State of Arkansas the sum of $1,342,000 as compensation for the inundation of the U.S. Highway 62 and State Highway 101 in lieu of constructing a replacement bridge. This decision, made during the emergency wartime situation, turned out to be most disadvantageous to the State, as a serious need exists for a crossing of the lake to replace the inundated road. The project provides for such a crossing, with the condition that the State repay to the United States the compensation received in 1943, with interest from that date. The project provides for facilities to replace existing ferries operated by the State of Arkansas. The bridges will cross the Norfork Lake and Bennetts River arm of the lake. The bridges are needed to prevent traffic delays and for economic development of the area.

Status of Environmental Impact Statement.—Environmental studies necessary to prepare a satisfactory EIS will be accomplished during preconstruction planning phase of the project.

OUACHITA AND BLACK RIVERS, ARK. AND LA.

Senator STENNIS. The budget request was $7 million. The House has included $7 million, and local interests have requested $12 million. What is your capability on this project?

General MORRIS. Our capability on this project is $12 million, Mr. Chairman.

Senator STENNIS. What would be accomplished with the additional $5 million?

General MORRIS. The additional amount would be used to advance construction of navigation channels and advance acquistion of lands for the Felsenthal Wildlife Refuge.

PINE MOUNTAIN LAKE, ARK.

Senator STENNIS. There is nothing in the budget, and local interests have requested $150,000. What is your capability on this project?

General MORRIS. Mr. Chairman, our capability on this project is $150,000 to continue preconstruction planning.

Senator STENNIS. Would you submit a statement for the record?

General MORRIS. Yes, sir.

[The statement follows:]

Project: Pine Mountain Lake, Arkansas

Summarized Financial Data:

Estimated Total Appropriation Required:	$18,600,000	
Future Non-Federal Reimbursement	10,940,000	
Estimated Federal Cost (Ultimate)		$7,660,000
Estimated Non-Federal Cost:		10,940,000
Reimbursement: Water Supply	10,940,000	
Total Estimated Project Cost		18,600,000
Allocations to Date		554,000
Balance to Complete		18,046,000
Preconstruction Planning Estimate		950,000
Amount that could be utilized in FY 1975		150,000

Authorization: 1965 Flood Control Act (HD 270/89/1).

Location and Description: The proposed project is located at mile 35.7 on Lee Creek in Crawford County, Arkansas. The project is a multiple-purpose lake for flood control, municipal and industrial water supply, and recreation. The lake would provide a storage capacity of 124,160 acre-feet, of which 40,320 would be for flood control, 81,340 for water supply, and 2,500 for sediment storage. The storage designed for water supply would provide a safe yield of 60 million gallons per day.

Proposed Operations: The $150,000 would be used to continue preconstruction planning in FY 1975.

Justification: The proposed project would provide an adequate degree of flood protection on Lee Creek downstream from the dam; municipal and industrial water supply of 60 million gallons daily; area redevelopment benefits; and recreational experiences of a type that is not available in sufficient quantities to satisfy the needs of the population within the zone of influence, as expressed in the Arkansas State Comprehensive Outdoor Recreation Plan.

Water-supply storage adequate to yield 60 m.g.d. is required for the future needs of the cities of Fort Smith and Van Buren, Arkansas. This storage will be needed in the summer of 1976, which is the date that the existing supply will be inadequate as determined from projections of future demands for water by the consulting engineer for Fort Smith. Crawford County, in which the proposed project is located, and several surrounding counties are designated by the Economic Development Administration as qualified areas under PL 89-136.

The benefit-to-cost ratio is 1.2 to 1. The estimated annual benefits for the project are:

Flood Control	$74,000
Water Supply	609,000
Recreation	157,000
Redevelopment	86,000
Total	926,000

Status of Environmental Impact Statement: An Environmental Statement will be prepared as part of the preconstruction planning activities and will be submitted, with the General Design Memorandum.

Posten Bayou, Ark.

Senator Stennis. There is nothing in the budget, and local interests have requested $60,000. What is your capability on this project?

General Morris. Mr. Chairman, our capability on this project is $60,000 to initiate preconstruction planning.

Senator Stennis. Would you submit a statement for the record?

General Morris. Yes, sir.

[The statement follows:]

Posten Bayou, Ark.

Summarized financial data

Estimated Federal cost	$2,500,000
Estimated non-Federal cost	320,000
Cash contribution	150,000
Other	170,000
Total estimated project cost	2,820,000
Allocations to date	
Balance to complete	2,820,000
Preconstruction planning estimate	450,000
Amount that could be utilized in fiscal year 1975	60,000

Authorization.—Approved December 1970 under Section 201 of the Flood Control Act of 1965.

Location and Description.—The project is located in southwest Arkansas, in Lafayette County, on the left descending bank of Red River. The plan of improvement is divided into two components: a. Construction of a major outlet from Posten Bayou, at approximately Mile 9.5, into Red River by the Corps of Engineers, and, b. interior drainage improvements to be accomplished by others. The major outlet will consist of a diversion channel approximately 2.5 miles in length, a control structure, and about 1.2 miles of tie-in levees to retain the protection against overflow from Red River afforded by the existing levee.

Proposed Operations.—The amount of $60,000 would be used to initiate preconstruction planning.

Justification.—A serious flood problem exists in portions of the Posten Bayou watershed where agricultural production sustains damages from headwater floods and future development of fertile lands is being curtailed by frequent ponding of runoff. Average annual damage from headwater flooding under existing conditions is estimated at $95,000. Construction of the proposed major outlet in conjunction with upstream improvements would prevent 86 percent of the damage and would increase net returns on 12,500 acres of open lands and make feasible the conversion of 2,570 acres from woodland to cropland. The benefit-to-cost ratio for both the major outlet and the overall plan is 1.2 to 1. The average annual benefits are presently estimated at $206,000 for flood control and $16,000 for area development.

Status of Environmental Impact Statement.—The final environmental impact statement was filed with the Council of Environmental Quality on 16 November 1970. An updated statement will be prepared during preconstruction planning.

Red River Levees and Bank Stabilization Below Denison Dam, Ark., La., and Tex.

Senator Stennis. The budget request was $1,900,000. The House has included $1,900,000, and local interests have requested $2,150,000. What is your capability on this project?

General Morris. Our capability on this project is $2,150,000, Mr. Chairman.

Senator Stennis. What would be accomplished with the additional $250,000?

General Morris. The additional amount would be used to advance revetment work at Harmon, Armistead, and Benton, La.

Buchanan Dam, H. V. Eastman Lake, Calif.

Senator Stennis. The budget request was $3,700,000. The House has included $4,100,000, and local interests have requested $4,500,000. What is your capability on this project?

General Morris. Our capability on this project is $4,500,000, Mr. Chairman.

Senator Stennis. What would be accomplished with the additional $800,000?

General Morris. The additional amount would be used to continue construction and would advance completion by 6 months.

Chester, North Fork of Feather River, Calif.

Senator Stennis. There is nothing in the budget. The House has included $900,000, and local interests have requested $900,000. What is your capability on this project?

General Morris. Mr. Chairman, our capability on this project is $900,000 to initiate construction.

Senator Stennis. Would you submit a statement for the record?

General Morris. Yes, sir.

[The statement follows:]

Project: Chester, North Fork of Feather River, California

Summarized Financial Data:

Estimated Federal Cost		$2,900,000
Estimated non-Federal Cost		2,070,000
Cash Contribution	$ 0	
Other Costs	2,070,000	
Total Estimated Project Cost		$ 4,970,000
Allocations to date		190,000
Balance to complete		2,710,000
Amount that could be used in FY 1975		900,000

Authorization: Flood Control Act of 1968

Location and Description: The project will be located on North Fork of Feather River, immediately upstream from the town of Chester, Plumas County, California. The plan of improvement comprises construction of a 45-foot high ungated diversion dam which would divert flows in excess of the outlet capacity of the dam into a partially leveed diversion channel for conveyance of the floodflows around the town and into Lake Almanor.

Proposed Operations: The amount of $900,000 would be used to initiate construction in FY 1975.

Justification: The project would provide a high degree of flood protection to the town of Chester (estimated 1973 population 1,550) now subject to frequent damaging flood inundations. Property in the flood-prone area of the town is valued at about $17,800,000. During the December 1964 flood, damages were estimated at $275,000. On the basis of current conditions of development and price levels, these damages would amount to about $437,000, all preventable by the project. The project would provide flood protection to about 1,000 urban acres. The benefit-to-cost ratio for the proposed project is estimated at 1.7 to 1. The average annual benefits are currently estimated to be $319,000, broken down as follows: $297,000 for flood control and $22,000 for area redevelopment.

STATUS OF ENVIRONMENTAL IMPACT STATEMENT: The draft Environmental Impact Statement was submitted to CEQ on 29 April 1973. The final statement is scheduled for submission to CEQ in June 1974.

Cottonwood Creek, Calif.

Senator Stennis. There is nothing in the budget, and local interests have requested $400,000. What is your capability on this project?

General Morris. Mr. Chairman, our capability on this project is $400,000 to initiate preconstruction planning.

Senator Stennis. Would you submit a statement for the record?

General Morris. Yes, sir.

[The statement follows:]

Project: Cottonwood Creek, California

Summarized Financial Data:

Estimated Total Appropriation Requirement	$209,000,000	
Future non-Federal Reimbursement	- 157,360,000	
Estimated Federal Cost (Ultimate)		$51,640,000
Estimated non-Federal Cost		157,360,000
Reimbursement (Irrigation)	$ 6,500,000	
Reimbursement (M&I Water Supply)	$149,600,000	
Reimbursement (Fish and Wildlife and Recreation)	$ 1,260,000	
Other Costs	0	
Total Estimated Project Cost		$209,000,000
Allocations to date		0
Balance to Complete		$209,000,000
Preconstruction Planning Estimate		$ 7,000,000
~~Amount that could be used in FY 1975~~		~~$ 400,000~~

Authorization: Flood Control Act of 1970, subject to approval by the President.

Location and Description: The project is located on the main stem below the confluence of the North and Middle Forks and on the South Fork of Cottonwood Creek in Shasta and Tehama Counties, California. Cottonwood Creek drains into the Sacramento River midway between the cities of Redding and Red Bluff. The plan of improvement provides for two multiple-purpose projects, one at the Dutch Gulch site on the main stem, and one at the Tehama site on the South Fork. Dutch Gulch Lake would have a capacity of 1,100,000 acre-feet, and Tehama Lake a capacity of 900,000 acre-feet, for a combined total storage of 2,000,000 acre-feet.

Proposed Operations: The amount of $400,000 could be used to initiate preconstruction planning on the first stage of the project--the Dutch Gulch Lake Unit subject to approval of the project by the President.

Justification: The project will provide flood protection to about 8,000 acres of predominantly agricultural lands along lower Cottonwood Creek; will reduce flood flows in Sacramento River, thereby providing increased flood protection to some 490,000 acres downstream to Colusa; will improve agricultural crop use; and reduce bank erosion. Average annual flood damages along Cottonwood Creek are estimated at $320,000; flood damages in those downstream areas affected by Cottonwood Creek flows are estimated at $4,000,000 per year. The project would provide water needed for municipal and industrial purposes in other areas of the State, for irrigation in the local service area, and would provide a wide range of outdoor recreational activities, including a warm water fishery in the lakes, and enhancement of the anadromous fishery in Cottonwood Creek, Sacramento River, and ocean waters. The

benefit-to-cost ratio is 1.15 to 1. The average annual benefits are listed below:

Current estimate, July 1973 base (100-year life)	
Average annual benefits	$15,380,000
Flood Control	2,368,000
Municipal and Industrial Water Supply	10,160,000
Irrigation	304,000
Fish and Wildlife	453,000
Area Redevelopment	1,792,000
Recreation	303,000

STATUS OF ENVIRONMENTAL IMPACT STATEMENT: The Environmental Impact Statement filed with CEQ on 13 November 1970 will be updated during preconstruction planning, and submitted in conjunction with the Phase I General Design Memorandum.

REMARKS: Recently completed studies of the flood damages and hydrologic aspects of the 1970 flood on a portion of the Sacramento River indicate that flood control benefits for the Cottonwood Creek project will increase very substantially with a corresponding increase in the benefit-to-cost ratio.

Cucamonga Creek, Santa Ana River Basin, Calif.

Senator Stennis. There is nothing in the budget. The House has included $1,200,000, and local interests have requested $3,200,000. What is your capability on this project?

General Morris. Mr. Chairman, our capability on this project is $3,200,000 to initiate construction on the lower Cucamonga Creek channel.

Senator Stennis. Would you submit a statement for the record?

General Morris. Yes, sir.

[The statement follows:]

Project: Cucamonga Creek, Santa Ana River Basin, California

Summarized Financial Data:

Estimated Federal Cost		$ 57,800,000
Estimated non-Federal Cost		11,900,000
Cash Contribution	$ 774,000	
Other Costs	11,126,000	
Total Estimated Project Cost		$ 69,700,000
Allocations to date		2,085,000
Balance to complete		55,715,000
Amount that could be used in FY 1975		3,200,000

Authorization: Flood Control Act of 1968.

Location and Description: The site of the proposed improvement is in San Bernardino and Riverside Counties, about 40 miles east of Los Angeles, California, and is in and near the cities of Upland and Ontario and in the communities of Alta Loma, Cucamonga, and San Antonio Heights. The authorized plan provides for construction of (a) a debris basin on Cucamonga Creek and a channel along Cucamonga Creek from the debris basin to the Prado Dam; (b) an improved San Antonio Heights diversion system, which would include a diversion levee -- with debris-storage basins -- to divert West Cucamonga Creek headwaters into Cucamonga Creek; (c) a debris basin and collection levee downstream from Demens, Thorpe, and Angalls Canyons and a diversion channel from the debris basin to Cucamonga Creek, the Hillside debris basin in a canyon adjacent to Deer Canyon, and a diversion channel from the Hillside debris basin to the main channel along Deer Creek.

Proposed Operations: The amount of $3,200,000 could be used to initiate construction on the lower Cucamonga Creek channel.

Justification: Construction of the project would alleviate a serious flood problem along Cucamonga Creek and its tributaries, and would provide protection against floods to parts of the cities of Upland and Ontario; to parts of the communities of Alta Loma, Cucamonga, and San Antonio Heights; and to a rapidly developing industrial and commercial property outside the populated areas. About 40,000 persons live or work in the overflow area (19,000 acres) that would be protected by the authorized improvements. The present value of lands and improvements in the overflow area is about $630,000,000 (1973 estimate). The Ontario International Airport complex extends across Cucamonga and West Cucamonga Creeks; and with its present planned-future major air-service-terminal facilities, it will be second in importance to the existing Los Angeles International Airport. A recurrence of the 1938 flood of record under present conditions of economic development in the overflow area, would cause damages estimated at $23,700,000, of which $21,800,000 would be prevented by the project. The floods of January-February 1969 caused $12,780,000 damages in the project area, of which $12,220,000 would have been prevented had the project been in full operation. The benefit-to-cost ratio is 2.2 to 1. The average annual benefits consist of flood control ($5,860,000) and recreation ($230,000).

STATUS OF ENVIRONMENTAL IMPACT STATEMENT: The draft Environmental Impact Statement was filed with CEQ on 23 May 1973. The final statement is currently in process to CEQ.

REMARKS: Phase I GDM studies, recently completed, demonstrated the need for inclusion of recreation facilities in the project plan and the desirability of providing protection to the West Cucamonga Creek drainage basin. The improvements on West Cucamonga Creek are considered to be beyond the approving authority of the Chief of Engineers and additional authorization would be required before this work could be accomplished. This unauthorized work is not included in the estimated Federal cost nor the project description herein.

Dry Creek (Warm Springs) Lake and Channel, Calif.

Senator Stennis. The committee has been informed that the Supreme Court has commented on the Dry Creek (Warm Springs) Lake and Channel, Calif. project. First, is the Corps aware of this action and, if so, how does it affect the project and the Corps ability to utilize the $13,500,000 requested in the fiscal year 1975 budget?

General Morris. Sir, the Corps is aware that on June 17, 1974 Justice Douglas of the Supreme Court granted the requested stay pending appeal to the Court of Appeals to maintain the status quo in the construction of the project. This means that there is to be no further disturbance of the soil in connection with the dam other than research investigation, planning and design activity.

If this stay is continued beyond August 31, 1974, the amount of $13,500,000 in the budget could not be fully utilized and the amount could be reduced to $7 million. This amount would assume favorable Appeals Court action by the end of this year and a new contract award for the main dam in February 1975.

It is anticipated that Justice Douglas' action will be appealed to the full Supreme Court. If this occurs and his stay is reversed prior to August 31, 1974, the full $13,500,000 could be utilized in fiscal year 1975.

OPPOSITION

Senator Stennis. In testimony before this committee, Mrs. Iva Warner, representing the Warm Springs Dam Task Force, expressed opposition to the Warm Springs project in California. The thrust of her testimony is that the project is hazardous and she quotes from the testimony of expert witnesses who appeared in Federal court during recent hearings. Would you enlighten us relative to the lawsuit brought against this project?

Colonel Driscoll. Yes, sir. The litigants, representing various groups but including no national conservation organizations, filed suit on March 22, and an amended complaint on April 22, 1974, contending that the provisions of NEPA had not been fully accommodated in the EIS on Warm Springs and that Executive Order No. 11514, covering salvage or preservation of archeological values, had not been adequately addressed. These questions were considered in Federal Court beginning on April 22, 1974 and hearings were concluded on May 16. On May 23, the Judge denied the plaintiff's request for an injunction and ruled that the Corps' environmental impact statement was adequate. This ruling permits the award of a contract approximating $20 million for the outlet works. The judge stipulated that an archeological site near the dam, known as "Takoton" and which has yielded some Pomo Indian artifacts, be protected from current construction. The plaintiffs have appealed this decision.

Senator Stennis. There appears to be considerable concern about the design of the dam in view of the local seismic situation. Has the corps taken or does it plan to take any special precautions to insure design adequacy?

Colonel Driscoll. The dam was designed using the accepted Corps of Engineers methods of analysis and using the most conservative factors and features necessary to insure a safe structure in a highly

seismic area. Specific features incorporated into the structure for earthquake effects consisted of widening the dam crest, enlarging the impervious core, using plastic material in the impervious core, increasing width of internal drainage elements adjacent to the impervious core, use of erosion resistant materials, flat embankment slopes and highly compacted embankment. Considerable discussion in Court was addressed to the new dynamic method of analysis. Based on comments by the State of California and the fact that dynamic analysis is being used by private engineering firms for design of earth embankments, it is planned to make a dynamic analysis of the Warm Springs Dam embankment and to compare the two methods. Whichever method yields the more conservative, or flatter, embankment slopes, will govern the final design of the project. The changes required, if any, can be made at little additional cost to the project.

MERCURY AND BORON HAZARDS

Senator STENNIS. Another concern voiced in the opposition testimony focused on potential hazards from mercury and boron. Also mentioned were high levels of fluoride and asbestos which might pose problems as well. What have you done to identify and cope with these problems and what further action do you contemplate?

Colonel DRISCOLL. The potential pollution problems emanating from possible contamination by mercury, boron, fluorides, and asbestos are probably no greater than those of any lake in northern California and, with the exception of asbestos, are attributable to the presence of a minor hot springs area on a lesser arm of Warm Springs Creek. The contribution of this flow to the lake is very minor as a monitoring program conducted downstream of the Warm Springs Dam site by the USGS indicates acceptable year-round levels of these potential contaminants. This monitoring program began in 1970 and is continuing. The basis for the question of asbestos in drinking water as a danger to public health is not known. However, it should be pointed out that most reservoirs and waters located in the Coast Range and particularly in northern California are associated with serpentine rocks, the source of whatever amount of asbestos might be present in the water. Continued monitoring of hazardous metals, asbestos, fish algae, and aquatic invertebrates is continuing and will proceed through construction and during and after filling of the reservoir.

COYOTE DAM ENLARGEMENT

Senator STENNIS. The tasks force mentions an alternative to the Warm Springs project that presumably would be preferable to that group. This is the enlargement of Coyote Dam and zoning of the flood plain below the Warm Springs dam site. What are your views of this alternative?

Colonel DRISCOLL. Alternatives to warm springs were addressed in both the EIS and the general design memorandum. None will provide all the benefits of warm springs, nor will any supply any one benefit at comparable cost. The enlargement of Coyote Dam would not provide recreation nor flood control and would not provide the water supply needed within 25 years as maximum yield would be 48,000 acre-feet

per year as compared to 135,000 from warm springs. It is also doubtful that this alternative could be accomplished for several reasons: It would be opposed as eliminating existing recreation facilities and as requiring the closure of an existing hydroelectric power plant owned by the Pacific Gas & Electric Co.

Not only that, it would require continued diversion of water from the Eel River watershed into the Russian River Basin which is strongly opposed by the Humboldt County Board of Supervisors. In fact, if that board's recommendation is accepted, an additional 12,000 acre-feet a year would go to the Eel River Basin, further reducing the supply from Coyote Dam, whether it is enlarged or not. And, finally, Gov. Ronald Reagan of California has rejected the enlargement of Coyote Dam as impractical because he doubted that Congress would authorize this less productive alternative to one on which an excess of $30 million of Federal funds already has been spent.

Food-plain zoning is an admirable concept and followed wherever possible. It would not reduce present flood damages in this case, however, which will increase in the future. Owing to the fact that such zoning allows agricultural use, and also because the farmers have long expected the project to be built, higher value crops have been planted. Great damage to new vineyards occurred during the floods of this year which would have been lessened were lesser value crops involved. Upgrading of agricultural land continues.

Senator STENNIS. The Warm Springs Dam Task Force advocates withdrawal of funding until studies are completed that demonstrate the dam and its water will be safe. What is your reaction to this request?

Colonel DRISCOLL. Withdrawal of funds is not recommended. The need for the dam remains, all safety considerations will be met, all possible contaminants have been investigated, an extensive archaeological program is underway, and the provisions of NEPA, as certified by the EPA, and Executive order have been met. A 1-year delay in completion of the project would result in a minimum of $10 million increase in project costs, and as indicated by recent bidding experience could even be substantially higher. In addition, flood control benefits expected to accrue beginning in 1976 would slip a year, and there would be a loss of average annual benefits amounting to $2,440,000. Issues raised to date would add no cost to the project. However, any delay would impact on the beneficial uses of the project. It should be noted, also, that the county of Sonoma would complete its distribution system, now underway, 2 years before water is available, and that water could be needed in a year of exceptionally low rainfall.

GOLETA AND VICINITY, CALIF.

Senator STENNIS. There is nothing in the budget, and local interests have requested $100,000. What is your capability on this project?

General MORRIS. Mr. Chairman, our capability on this project is $100,000 to initiate preconstruction planning.

Senator STENNIS. Would you submit a statement for the record?

General MORRIS. Yes, sir.

[The statement follows:]

Project: Goleta and Vicinity, California

Summarized Financial Data:

Estimated Federal Cost		$ 19,300,000
Estimated non-Federal Cost		5,750,000
Cash Contribution	$ 630,000	
Other Costs	5,120,000	
Total Estimated Project Cost		$25,050,000
Allocations to date		0
Balance to complete		19,300,000
Preconstruction Planning Estimate		1,300,000
Amount that could be used in FY 1975		100,000

Authorization: Flood Control Act of 1970.

Location and Description: The project will be located in the Goleta Valley area in Santa Barbara County, California. The plan of improvement provides for about 1.3 miles of channel clearing and 11.2 miles of channel improvements. Channel clearing would be accomplished on Maria Ygnacio, San Jose, San Pedro, Las Vegas, and Carneros Creeks. Construction of channel improvements would be accomplished on Atascadero, Maria Ygnacio, San Jose, Las Vegas, San Pedro, Carneros and Tecolotito Creeks.

Proposed Operations: The amount of $100,000 could be used to initiate preconstruction planning.

Justification: The Goleta area is rapidly urbanizing and is subject to frequent severe flooding. The flood of January 1967 caused damages of $760,000 in the project area. The floods of January and February 1969 caused damages of about $530,000 in the project area. Should a standard project flood occur prior to construction of the project, it is estimated that damages of about $11,606,000 would result. The total value of lands and improvements in the area to be protected by the project is estimated at $70,600,000 (1973 prices). The benefit-to-cost ratio is presently estimated at 1.6 to 1. The average annual benefits, all flood control, are estimated to be $2,520,000.

STATUS OF ENVIRONMENTAL IMPACT STATEMENT: The Environmental Impact Statement filed with CEQ on 13 November 1970, will be updated during preconstruction planning.

Hidden Lake, Calif.

Senator Stennis. The budget request was $2,400,000. The House has included $2,700,000, and local interests have requested $3 million. What is your capability on this project?

General Morris. Our capability on this project is $3 million, Mr. Chairman.

Senator Stennis. What would be accomplished with the additional $600,000?

General Morris. The additional amount would be used to continue construction and would advance completion by 6 months.

Lakeport Lake, Calif.

Senator Stennis. There is nothing in the budget, and local interests have requested $1,500,000. What is your capability on this project?

General Morris. Mr. Chairman, our capability on this project is $1,500,000 to initiate construction.

Senator Stennis. Would you submit a statment for the record?

General Morris. Yes, sir.

[The statement follows:]

Lakeport Lake, Calif.

Summarized financial data

Estimated total appropriation requirement	$20,500,000
Future non-Federal reimbursement	−9,575,000
Estimated Federal cost (ultimate)	10,925,000
Estimated non-Federal cost	10,055,000
Reimbursement (M. & I. water supply)	5,800,000
Reimbursement (irrigation)	3,230,000
Reimbursement (recreation)	545,000
Other costs	480,000
Total, estimated project cost	20,980,000
Allocations to date	2,150,000
Balance to complete	18,350,000
Amount that could be used in fiscal year 1975	1,500,000

Authorization.—Flood Control Act of 1965

Location and Description.—The project is located on Scotts Creek in California about four miles west of the City of Lakeport in Lake County. The authorized plan of improvement provides for construction of a 203-foot high earth and rockfill dam to create a lake with gross storage capacity of 55,000 acre-feet for flood control, municipal water supply, irrigation, recreation, and fish and wildlife. The project plan also includes downstream channel work and levees.

Proposed Operations.—The amount of $1,500,000 could be used to initiate construction.

Justification.—Flood flows from Scotts Creek cause serious damages in the agricultural areas of Scotts Valley and the canyon area downstream of the valley. In addition, as Scotts Creek is a principal tributary to Clear Lake, flows from this stream contribute substantially to flood damages around the lake. Without the project, future flood damages are estimated to average $522,000 per year. The December 1964 flood caused damages along Scotts Creek amounting to over $400,000. Had the proposed dam and lake, downstream levee and channel improvements been in full operation, most of this damage would have been prevented. A new supply of irrigation water will be made available, averaging 9,200 acre-feet per year for the water-deficient Scotts Creek irrigation service area. Municipal water supply will be increased about 8,400 acre-feet per year, enabling the city of Lakeport to provide domestic water service to the new and growing

areas within the city limits and to the rapidly growing areas adjacent to the city. The project will provide recreational opportunities for boating, water skiing, picnicking, camping, and fishing. The project functions independently. The benefit-to-cost ratio is 1.4 to 1. The average annual benefits are listed below:

Current estimate July 1973 base (100-year life)

Average annual benefits	$1,330,000
Flood control	367,000
Municipal water supply	292,000
Irrigation	517,000
Recreation and fish and wildlife	48,000
Area redevelopment benefits	106,000

Status of environmental impact statement.—The draft Environmental Impact Statement was submitted to CEQ on 24 October 1972. The Final Statement was filed with CEQ on 3 April 1974.

Lytle and Warm Creek, Calif.

Senator Stennis. The budget request was $3,600,000. The House has included $3,600,000, and local interests have requested $6,100,000. What is your capability on this project?

General Morris. Our capability on this project is $6,100,000, Mr. Chairman.

Senator Stennis. What would be accomplished with the additional $2,500,000?

General Morris. Recent contractor bids have indicated higher than anticipated construction and material costs. The additional amount is required to award the final project contract in sufficient time to maintain the current project completion schedule of April 1976.

Marysville Lake, Calif.

Senator Stennis. The budget request was $350,000. The House has included $950,000, and local interests have requested $950,000. What is your capability on this project?

General Morris. Our capability on this project is $950,000 Mr. Chairman.

Senator Stennis. What would be accomplished with the additional $600,000?

General Morris. The additional amount would be used to continue preconstruction planning and would permit a more optimum program for foundation explorations and other field surveys.

New Melones Lake, Calif.

Senator Stennis. The budget request was $15,500,000. The House has included $15,500,000, and local interests have requested $20,500,000. What is your capability on this project?

General Morris. Our capability on this project is $20,500,000, Mr. Chairman.

Senator Stennis. What would be accomplished with the additional $5 million?

General Morris. We have recently received the main dam contractor's schedule. Analysis of his planned placement for fiscal year 1975 provided the basis for increasing our capability from the budget

amount to $20,500,000. Consequently the additional capability would primarily be used to meet expected earnings on the main dam contract.

SACRAMENTO RIVER BANK PROTECTION PROJECT, CALIF.

Senator STENNIS. The budget request was $1 million. The House has included $1 million, and local interests have requested $3 million. What is your capability on this project?

General MORRIS. Our capability on this project is $3 million, Mr. Chairman.

Senator STENNIS. What would be accomplished with the additional $2 million?

General MORRRIS. The additional amount would be used to accelerate construction which would advance completion of currently scheduled work at four critical erosion sites by one flood season. In addition, it would permit initiation of construction of the phase II portion of the project that would include critical erosion areas recently worsened by the 1973–74 floods. In particular, immediate protective works are required in the Murphy's slough reach where the river now threatens to change course and cut across a large oxbow feature.

SACRAMENTO RIVER, CHICO LANDING TO RED BLUFF, CALIF.

Senator STENNIS. The budget request was $255,000. The House has included $255,000, and local interests have requested $500,000. What is your capability on this project?

General MORRIS. Our capability on this project is $500,000, Mr. Chairman.

Senator STENNIS. What would be accomplished with the additional $245,000?

General MORRIS. The additional amount would be used to cover contractor earnings, ongoing work, and to fund design requirements at additional sites now requiring protection due to erosion during the 1973–74 floods.

SAN DIEGO HARBOR, CALIF.

Senator STENNIS. The budget request was $500,000. The House has included $1,100,000, and local interests have requested $1,100,000. What is your capability on this project?

General MORRIS. Our capability on this project is $1,100,000, Mr. Chairman.

Senator STENNIS. What would be accomplished with the additional $600,000?

General MORRIS. The additional amount would be used to complete channel dredging 6 months earlier.

SAN DIEGO (SUNSET CLIFFS), CALIF. (SEGMENT A)

Senator STENNIS. There is nothing in the budget, and local interests have requested $30,000. What is your capability on this project?

General MORRIS. Mr. Chairman, our capability on this project is $30,000 to initiate preconstruction planning.

Senator STENNIS. Would you submit a statement for the record?

General MORRIS. Yes, sir.

[The statement follows:]

Project: San Diego (Sunset Cliffs), California (Segment A)

Summarized Financial Data:

Estimated Federal Cost		$1,135,000
Estimated non-Federal Cost		1,135,000
Cash Contribution	$1,135,000	
Other Costs	0	
Total Estimated Project Cost		$2,270,000
Allocations to date		0
Balance to complete		1,135,000
Preconstruction Planning Estimate		90,000
Amount that could be used in FY 1975		30,000

Authorization: River and Harbor Act of 1966.

Location and Description: The site of the improvement is located on the Pacific Ocean shoreline within the city limits of San Diego, in San Diego County, California. The proposed project provides for the construction of a protective recreational beach, generally 4,000 feet long and 200 feet wide, by the deposition of about 720,000 cubic yards of suitable beach material along the shore and the construction of four stone groins to contain the fill.

Proposed Operations: The amount of $30,000 could be used to initiate preconstruction planning.

Justification: The project will provide protection of critically eroded bluffs along the shore in the Ocean Beach-Sunset Cliffs area. Considerable erosion is occurring in many areas along Sunset Cliffs, and is threatening houses, public streets and utilities. A comparison of changes in the bluff line over a 35-year period reveals an average rate of erosion of from 1 to 3 feet. Reduction of the beach area at the base of the cliffs has exposed the toe to more direct wave action and the rate of erosion is expected to increase. The benefit-to-cost ratio is estimated to be 1.7 to 1. Average annual benefits are estimated at $63,300 for beach erosion control and $158,700 for recreation.

STATUS OF ENVIRONMENTAL IMPACT STATEMENT: Preparation of the Environmental Impact Statement will be accomplished during preconstruction planning.

San Luis Rey River, Calif.

Senator Stennis. There is nothing in the budget, and local interests have requested $100,000. What is your capability on this project?

General Morris. Mr. Chairman, our capability on this project is $100,000 to initiate preconstruction planning.

Senator Stennis. Would you submit a statement for the record?

General Morris. Yes, sir.

[The statement follows:]

Project: San Luis Rey River, California

Summarized Financial Data:

Estimated Federal Cost		$ 10,900,000
Estimated non-Federal Cost		4,150,000
Cash Contribution	$ 1,230,000	
Other Costs	2,920,000	
Total Estimated Project Cost		15,050,000
Allocations to Date		0
Balance to complete		10,900,000
Preconstruction Planning Estimate		1,100,000
Amount that could be used in FY 1975		100,000

Authorization: Section 201 of the Flood Control Act of 1965 (authorized in 1970).

Location and Description: The project will be located on the San Luis Rey River in the vicinity of the city of Oceanside, San Diego County, California. The plan of improvement provides for about 7.2 miles of channel improvements along the San Luis Rey River from Murray Road to the ocean and about 800 feet of stone revetted levee on the south bank from the railroad to the ocean.

Proposed Operations: The amount of $100,000 could be used to initiate preconstruction planning.

Justification: The proposed project would alleviate serious flood problems in the lower San Luis Rey River Valley, including portions of the city of Oceanside. The total value of lands and improvements in the flood plain is estimated at $54,000,000 (July 1973). Construction of the proposed project sould permit optimum development of the flood plain which cannot be developed to its full potential without floood protection. The benefit-to-cost ratio is currently estimated at 1.3 to 1. The average annual benefits , all flood control, are estimated at $1,208,000.

STATUS OF ENVIRONMENTAL IMPACT STATEMENT: The Environmental Impact Statement filed with CEQ on 13 November 1970 will be updated during preconstruction planning.

Santa Paula Creek, Calif.

Senator Stennis. When the South Pacific Division engineer, General Fink, appeared before this committee in March, he was requested to review your estimates for the Santa Paula Creek, Calif., project and to report to this committee before we completed action on this year's budget. Has that review been made?

General Morris. Yes, sir. Based on July 1974 prices, our current estimate of Federal cost is $15,300,000, an increase of $1,800,000 over the estimate of $13,500,000 presented with the fiscal year 1975 budget request. The increase is due to increased price levels of $598,000, higher bid prices of $958,000, and increased Government costs of $244,000. In conjunction with General Fink's review of the project financial data, it was discovered that recreation benefits presented with the budget estimate were inadvertently overstated due to our failure to delete the benefits previously attributed to facilities that have been substantially reduced in scope. This change reduced recreation benefits from $260,000 to $106,000, and the benefit-to-cost ratio from 2.3 to 1.9.

Senator Stennis. What is the current status of the project?

General Morris. Sir, we have shut down construction of the project pending action by the U.S. District Court, Central District of California, on the current litigation before the court. Our action complies with the expressed desires of Judge Byrne of the District Court. It now appears that the budget request of $2,600,000 could probably be reduced to $2 million without any adverse effects on the project's construction schedule.

Walnut Creek, Calif.

Senator Stennis. The budget request was $545,000. The House has included $545,000, and local interests have requested $925,000. What is your capability on this project?

General Morris. Our capability on this project is $925,000, Mr. Chairman.

Senator Stennis. What would be accomplished with the additional $380,000?

General Morris. The additional amount would be used to initiate construction of the first unit of the Pine and Galindo Creeks improvements 1 year earlier than currently scheduled.

Whitewater River Study, Calif.

Senator Stennis. There is nothing in the budget, and local interests have requested $60,000. What is your capability on this study?

General Morris. Mr. Chairman, our capability on this study is $60,000 to continue the survey.

Senator Stennis. What would be accomplished with this amount?

General Morris. Sir, the $60,000 would enable us to identify those areas within the basin where further study effort is not required and those areas where further investigation is warranted.

Senator Stennis. What has been accomplished with funds appropriated to date for this study?

General MORRIS. Sir, in addition to the development of basic data required for the investigation of the Whitewater River basin, interim reports were prepared for flood control on Tahchevah and Tahquitz Creeks. Both projects were authorized and construction was completed on Tahchevah Creek in March 1965. Also, the identification of several small projects under the authority of section 205 of the 1948 Flood Control Act, as amended, was possible. Two of these, Chino Canyon and Banning local protection projects, have been constructed. Since initiation of the study in 1938, the Corps has expended $715,000 for these investigations.

ARKANSAS RIVER AND TRIBUTARIES ABOVE JOHN MARTIN DAM, COLO.
(PHASE 1 ADVANCE ENGINEERING AND DESIGN STAGE)

Senator STENNIS. There is nothing in the budget and local interests have requested $250,000. What is your capability on this project?

General MORRIS. Mr. Chairman, our capability on this project is $250,000 to initiate preconstruction planning.

Senator STENNIS. Would this permit you to initiate an interim phase I report for Fountain Lake, Colo.?

General MORRIS. Yes, sir, after preliminary work on the entire plan we could initiate the phase I report on Fountain Lake.

Senator STENNIS. Would you submit a statement for the record?

General MORRIS. Yes, sir.

[The statement follows:]

Project: Arkansas River and Tributaries Above John Martin Dam, Colorado
(Phase I Advance Engineering and Design Stage)

Summarized Financial Data:

Estimated Federal Cost		$ 65,337,000
Estimated non-Federal Cost		6,925,000
Cash Contribution	$ 41,000	
Other	6,884,000	
Total Estimated Project Cost		$ 72,262,000
Allocations to Date		0
Balance to Complete		72,262,000
Preconstruction Planning Estimate		
Phase I Estimated Cost	$1,140,000	
Balance to Complete Preconstruction Planning	2,785,000	
Amount that could be Utilized in FY 75		250,000

Authorization: Water Resources Development Act of 1974 for Phase I stage of advance engineering and design.

Location and Description: The authorized project consists of 8 subprojects located along the Arkansas River and Tributaries above John Martin Dam, Colorado. They consist of 4 local protection projects located at Florence, La Junta (Anderson and King Arroyos), Portland and Pueblo, Colorado. There are two Arkansas River channelization projects. One is a 7 mile reach from La Junta upstream to Timpas Creek, Colorado, which is referred to as the Test Reach Colorado project. The other reach is through the city of La Junta, Colorado, which is referred to as La Junta (Reach 2-Urban), Colorado project. There is one floodway project located in a six mile reach from Brewster to Florence, Colorado. This reach is referred to as the Arkansas River Floodway, Colorado project. The remaining project is a reservoir project located 1.5 miles upstream from Pueblo, Colorado, on Fountain Creek. This project is referred to as Fountain Lake, Colorado project. A description of each of the eight subprojects is given below:

Florence, Colorado. This local protection project consists of two earthfill dams and two diversion channels. The Coal Creek Dam is located on Coal Creek about 1.3 miles upstream from the Arkansas River. The dam will be 1,230 feet long and 75 feet high with a flood control storage capability of 5,660 acre-feet at spillway crest. The other dam is Oak Creek Dam located on Oak Creek about 2.3 miles upstream from the Arkansas River. The dam will be 4,440 feet long and 118 feet high with a flood control storage capability of 17,160 acre-feet at spillway crest. One diversion channel is Chandler Creek Diversion which diverts flows from Chandler Creek to Oak Creek Dam. This channel will be 2,600 feet long. The other diversion channel is Oak Creek Outfall Channel which diverts the flows from Oak Creek Dam to the Arkansas River via Chandler Creek. This channel will be 1,900 feet long.

La Junta (Anderson and King Arroyos), Colorado. This local protection project consists of the channelization of the Anderson and King Arroyos to safely convey their flood flows through the city and into the Arkansas River. The Anderson Arroyo channelization will be 3,700 feet long with the upstream 1,720 feet unlined and the downstream 1,980 feet concrete lined. The King Arroyo channelization will be 5,790 feet long and gravel lined.

Portland, Colorado. This local protection project consists of a levee and floodwall along the right bank of the Arkansas River and 3,250 feet of channel improvements.

Pueblo, Colorado. This local protection project consists of improving Dry Creek which flows through the western edge of the city. Improvements would include widening to 150 feet for a distance of 3,800 feet above the mouth. Levees would be required along both banks of the channel for about 2,000 feet. The enlarged channel would have a capacity of 31,000 c.f.s.

Test Reach, Colorado. The improvements along this 7 mile reach will be flood control levees with tie backs and landside drains of sufficient length to test their water salvage capabilities. One oxbow fishery and an area suitable for wildlife management studies are also included. This is a pilot study to show the environmental impact of channelization and related works on the river's physical appearance and conditions in the control of floods and salvage of water. Environmental groups, individuals, state and local governments will be invited to participate in determining the environmental impact of the channelization.

La Junta (Reach 2-Urban), Colorado. The improvements include a north and south bank levee on the Arkansas River to increase the channel capacity to the standard project discharge of 200,000 c.f.s. The north bank levee will be 3 miles long with an upstream tie back of 1,600 feet and a downstream tie back of 4,000 feet. The south bank levee will be 2 miles long with a downstream tie back levee. The upstream levee ties into the Anderson Arroyo.

Arkansas River Floodway, Colorado. The improvements consist of a south bank levee about 31,280 feet long beginning about 3.5 miles above Florence, Colorado, and terminating 2.5 miles downstream at the mouth of Cocklebur Creek. The levee will provide 100 year flood protection.

Fountain Lake, Colorado. The project consists of a rolled earth filled dam 12,905 feet long and 172 feet high with a 2,727 foot wide uncontrolled flow spillway located in the west embankment. The outlet conduit will be a 12 foot diameter concrete structure with vertical hydraulic gates. The structure would provide a flood control storage of 247,000 acre-feet.

Proposed Operations: The $250,000 will be used to initiate Phase I of the General Design Memorandum and the hydrology memorandum

Justification: Many flood problems remain unsolved. Major floods were experienced at various localities in the subbasin in June 1921, May 1935, April 1942, and May 1955, but the most recent and most destructive general flood since 1921 occurred in June 1965. During the 1965 flood, the cities of Pueblo and La Junta were severely damaged and agricultural damages were extensive. Damages were estimated at nearly $18 million in the subbasin, and four lives were lost. A recurrence of the June 1921 flood would cause damages estimated at more than $101 million. The tributaries of the Arkansas River debouch large amounts of sediment into the main stem resulting in aggradation which progressively reduces the channel capacity, causes changes in the channel alignment, raises the water table, and creates obstructions to flow. The raised ground water table results in poor drainage conditions, accelerated growth of phreatophytes, and the ineffective use of water. The available supply of water is appropriated many times over. Although there are numerous reservoirs in the subbasin, they generally are not suitable for recreational use because of extreme drawdown, especially during peak season irrigation use in the summer. The Bureau of Outdoor Recreation indicates that there will be a need for an additional 94,000 surface acres of water in 1980 and 300,000 surface acres in 2020 to satisfy the demand for water-oriented recreation in the area.

Status of Environmental Impact Statement: The final EIS was filed with CEQ on 13 August 1973. During the Phase I advance engineering and design additional environmental investigations will be made and the statement on file with CEQ revised or supplemented as determined necessary.

Brevard County, Fla.

Senator Stennis. The budget request was $400,000 and the House has not included any funds.

What is your capability on this project?

General Morris. We have no capability on this project, Mr. Chairman. We find that based upon the bids for the recently awarded, contract, we can complete the initial fill with available funds. Therefore, we do not need the budget request.

Central and Southern Florida

Senator Stennis. The budget request was $4,400,000. The House has included $4,400,000, and local interests have requested $7 million. What is your capability on this project?

General Morris. Our capability on this project is $7 million, Mr. Chairman.

Senator Stennis. What would be accomplished with the additional $2,600,000?

General Morris. The additional amount would be used to advance construction of three structures, seven levees and one canal from 6 to 12 months.

Potomac Estuary Pilot Water Treatment Plant, District of Columbia, Maryland, and Virginia

Senator Stennis. There is nothing in the budget, and local interests have requested $6 million. What is your capability on this project?

General Morris. Mr. Chairman, our capability on this project is $350,000 to initiate preconstruction planning.

Senator Stennis. Would you submit a statement for the record?

General Morris. Yes, sir.

[The statement follows:]

Potomac Estuary Pilot Water Treatment Plant, District of Columbia, Maryland, and Virginia

Summarized financial data

Estimated Federal cost	$5,800,000
Estimated non-Federal cost	0
Cash contribution	0
Other costs	0
Total, estimated project cost	5,800,000
Allocations to date	0
Balance to complete	5,800,000
Preconstruction planning estimate	600,000
Amount that could be used in fiscal year 1975	350,000

Authorization.—Water Resources Development Act of 1974.

Location and Description.—The project is located in Washington, D.C., in the area of the Blue Plains wastewater plant adjoining the Potomac River. The project consists of a water treatment plant with a capacity of one million gallons per day that includes advance treatment processes and an evaluation laboratory.

Proposed Operations.—The amount of $350,000 would be used to initiate preconstruction planning.

Justification.—The project is necessary to determine the applicability of advanced water treatment processes in meeting water supply needs for the Washington area. The feasibility of treating polluted estuarine water bodies has not yet been proven.

Status of Environmental Impact Statement.—Draft EIS will be submitted concurrently with the Draft GDM and Final EIS with Final GDM.

Cross-Florida Barge Canal Restudy

Senator Stennis. There is nothing in the budget. The House committee stated they had no objection to the use of funds originally impounded by OMB, but released as a result of court action, to study the environmental impact of the Cross Florida Barge Canal. Will these funds complete the study?

General Morris. Mr. Chairman, the $150,000 released from budgetary reserve will permit completion of a plan of study and initiation of the study. We will need additional funds to complete the work based on a tentative estimate of $1,800,000.

Senator Stennis. You say you will need more funds. What is the additional amount to complete the study?

General Morris. It is $1,650,000, sir.

Senator Stennis. Could you use all of this $1,650,000 in fiscal year 1975?

General Morris. The plan of study is not complete, but I believe we will be able to use the full amount. It is our intention to complete the study as soon as possible, consistent with funding.

Senator Stennis. Could you reallocate other funds to carry this workout?

General Morris. Not under the general investigations appropriation. The amount required to complete could not be taken from our other work without severe disruption of the program. If this committee and the House committee were to direct us to conduct the study under the construction general appropriation, we could probably reallocate funds to the project for this purpose without serious detriment to the overall program. However, this would be very difficult in view of the general reduction of $20,997,000 by the House in that appropriation.

Senator Stennis. Would you submit a statement for the record?

General Morris. Yes, sir.

[The statement follows:]

Cross Florida Barge Canal Restudy

Summarized financial data

Estimated Federal cost (Corps of Engineers)	[1] $1,800,000
Allocations to date	150,000
Balance to complete (Corps of Engineers)	1,650,000
Amount that could be used in fiscal year 1975	1,650,000

[1] Tentative and subject to further refinement.

Proposed Use of Funds.—The $1,650,000 would be used to complete preparation of a detailed restudy, including an environmental impact statement.

Justification.—In a decision, dated 31 January 1974, on the consolidated trial concerning the Cross Florida Barge Canal, Judge Harvey M. Johnsen ordered

the Corps of Engineers ". . . to prepare or have prepared for it 'a detailed and complete environmental impact study of the project' with the inclusion therein of 'all environmental and other factors requisite to a determination of appropriate action to be taken in the management of completed portions of the project.'"

Status.—The Corps is participating in discussions at the Washington level with representatives from the Office of Management and Budget, Council on Environmental Quality, Environmental Protection Agency, Department of Agriculture, Department of Interior, Department of Justice and the White House Domestic Council to determine the manner in which the Environmental Impact Statement will be prepared. The Jacksonville District office participated as a member of a field level interagency committee in the preparation of a plan of study which is now under review by the interagency committee at the Washington level.

Remarks.—Funds for the environmental impact statement were appropriated in Fiscal Year 1973, but were placed in budgetary reserve by the Office of Management and Budget. Judge Johnsen's decision directed release of these funds and they were allocated to the Jacksonville District 8 March 1974. These funds are being used to prepare the plan of study. The remainder can be used to begin the study, however, significant progress and completion will depend upon additional funding.

Four River Basins, Fla.

Senator Stennis. The budget request was $400,000. The House has included $3 million, and local interests have requested $4 million. What is your capability on this project?

General Morris. Our capability on this project is $3 million, Mr. Chairman.

Senator Stennis. What would be accomplished with the additional $2,600,000?

General Morris. The additional amount would be used to advance work on canals and structures in the Tampa area primarily. The project completion would be advanced 3 months.

Senator Stennis. My colleagues from Florida have requested me to ask you several additional questions concerning the Four River basins project and the study as well. First, did the Corps propose to advertise in excess of $16 million in Four River basins construction during the first quarter of 1974—prior to the fiscal year 1975 budget formulation?

General Morris. Yes, sir. The schedule based on the fiscal year 1974 budget request anticipated advertising two contracts with a total cost over $16 million in the first quarter of calendar year 1974.

Senator Stennis. Were these contracts advertised?

General Morris. No, sir.

Senator Stennis. Are plans and specifications for the contracts completed and ready for advertising?

General Morris. The plans and specifications are in various stages of completion with the last segment scheduled for December 1974.

Senator Stennis. If the Corps was prepared to advertise for bids on $16 million of work during early 1974, why is you capability only $3 million?

General Morris. The $16 million represents the total Federal and non-Federal cost of two contracts. The $3 million represents the maximum amount we can spend on contracts during fiscal year 1975 alone. Our capabilities are based on an assumed receipt of funds in November of the budget year. Therefore, any new contract that would start with added funds would be underway for no more than half the year. The

longest contract will take over 3 years to complete. The total value of contracts to be advanced by the additional $2,600,000 is over $25 million, which includes the two contracts originally scheduled for fiscal year 1974.

Senator STENNIS. Could the Corps utilize in fiscal year 1975 $325,000 on the Four River Basins water resources study? I note that the House included $7,000 for the study.

General MORRIS. Our capability for the study is $325,000, Mr. Chairman.

Senator STENNIS. What would be accomplished with the additional $318,000?

General MORRIS. The additional amount will allow us to make substantial progress on this important water supply study.

Senator STENNIS. The Southwest Florida Water Management District states that they have virtually all of the field data necessary to complete this vital study needed to formally add water supply to the Four River Basins project benefits. With the cooperative effort of the Southwest Florida Water Management District and the U.S. Geological Survey, would an appropriation of $325,000 for the Four River Basins water resources study substantially complete this study?

General MORRIS. No; the cost of phase 2 of the survey review even with the cooperative efforts of the water management district and the USGS will exceed $325,000 by a substantial amount. Field data available from the water management district has recently been reviewed. It will facilitate the study, however, considerably more field information will be necessary to complete the urgently needed water supply study for the area.

PANAMA CITY HARBOR, FLA.

Senator STENNIS. There is nothing in the budget, the House has included $430,000, and local interests have requested $430,000. What is your capability on this project?

General MORRIS. Mr. Chairman, our capability on this project is $430,000 to initiate construction of the project.

Senator STENNIS. Would you submit a statement for the record?

General MORRIS. Yes, sir.

[The statement follows:]

Project: Panama City Harbor, Florida

Summarized Financial Data:

Estimated Federal Cost (Corps of Engineers)		$2,905,000
Estimated Federal Cost (U. S. Coast Guard)		55,000
Estimated non-Federal Cost		150,000
Cash Contribution	$ 0	
Other Costs	150,000	
Total Estimated Project Cost		3,110,000
Allocations to date		110,000
Balance to Complete (Corps of Engineers)		2,795,000
Amount that could be used in FY 1975		430,000

Authorization: June 1972 under Section 201, 1965 Flood Control Act.

Location and Description: Panama City Harbor is on St. Andrew Bay, an arm of the Gulf of Mexico, about 105 miles east of Pensacola and 230 miles northwest of Tampa. St. Andrew Bay is about 10 miles long parallel to the coast, and separated from the Gulf by a barrier beach known as Lands End Peninsula. The bay has two outlets to the Gulf, one a natural inlet at the eastern end of Lands End Peninsula and the other a dredged channel 32 feet deep through the peninsula about 4 miles west of the natural opening. The dredged cut is stabilized by twin rubble-mound jetties and serves as the harbor entrance from the Gulf.

Modification of the project would provide (a) an enlarged main entrance channel 42 by 450 feet in the Gulf approach channel and 40 by 300 feet across the Peninsula to St. Andrew Bay; (b) branch channels 38 by 300 feet from the inner end of the main entrance channel westward to the Port Authority terminal at Dyers Point and eastward to the Bay Harbor terminal; (c) turning and maneuvering areas of about 55 acres opposite Dyers Point and 42 acres opposite Bay Harbor; and (d) a 40-foot deep anchoring and loading basin of about 177 acres in St. Andrew Bay near the inner end of the main entrance channel.

Proposed Operations: The $430,000 could be used to initiate construction of the project.

Justification: The existing controlling depth for deep-draft navigation at Panama City Harbor is 32 feet, mean low water, which is inadequate to provide for safe and unrestricted navigation by many of the vessels now using the port. Future vessel traffic expected to serve both Bay Harbor and Dyers Point will have loaded static drafts of 34 feet. LASH vessels, expected to use the main entrance channel only, will have a normal operating draft of 36 feet. The design depth required would be greater to provide for trim, "squat," and a tolerance allowance for safety and maneuverability. The channel improvements considered, together with facilities recently constructed by local interests are expected to generate more regular sailings and improved vessel service at Panama City with a consequent progressive increase in waterborne commerce conveyed in deep-draft vessels. Prospective tonnage of paper and paper products, residual fuel oil, scrap iron, salt cake, gum and wood chemicals, peanut and peanut products, clay and nitrate of soda using deep draft vessels is expected to increase from 805,000 tons in 1970 to 1,063,000 tons in 2025. The benefit-cost ratio is 2.8 to 1. Average annual benefits are estimated at $1,631,000, all for navigation.

Status of Environmental Impact Statement: The final EIS was filed with CEQ 22 March 1972. An updated final EIS is scheduled to be filed in the 2nd Quarter of FY 1975.

St. Lucie Inlet, Fla.

Senator Stennis. There is nothing in the budget, and local interests have requested $125,000. What is your capability on this project?

General Morris. Mr. Chairman, our capability on this project is $175,000 to initiate preconstruction planning.

Senator Stennis. Would you submit a statement for the record?

General Morris. Yes, sir.

[The statement follows:]

St. Lucie Inlet, Fla.

Summarized financial data

Estimated Federal cost (Corps of Engineers) (including deferred construction)	$3,834,000
Estimated non-Federal cost (including deferred construction)	1,323,000
Cash contribution	1,092,000
Other costs (lands)	231,000
Total, estimated project cost	5,157,000
Allocations to date	0
Balance to complete (Corps of Engineers)	3,834,000
Preconstruction planning estimate	250,000
Amount requested for fiscal year 1975	0
Amount that could be used in fiscal year 1975	175,000

Authorization.—May 1974 under Section 201, Flood Control Act.

Location and Description.—St. Lucie Inlet is located in Martin County on the east coast of Florida near the town of Stuart, about midway between Cape Kennedy and Miami. The proposed project provides for extension of the north jetty about 500 feet, including modification of the existing jetty to provide a sand bypass weir section about 500 feet long, excavation of a sand impoundment basin adjacent to the bypass weir in the north jetty, construction of a south jetty consisting of a rubble-mound structure about 2,400 feet long—1,200 feet during initial construction and 1,200 feet deferred construction, if and when needed, a walkway for recreational fishing on the south jetty, and excavation of a channel between the existing bar-cut and the Intracoastal Waterway 500 feet wide and 10 feet deep through the bar-cut, tapering to a width of 150 feet through the inlet, and 100 feet wide and 7 feet deep to the Intracoastal Waterway. Transfer of 380,000 cubic yards of accumulated material to the south beach will take place during each two-year maintenance period, or an average of 190,000 cubic yards annually.

Proposed Operations.—The amount of $175,000 would be used to initiate preconstruction planning, subject to authorization.

Justification.—Difficulties exist in navigation and beach erosion control. Navigation difficulties and hazards are experienced when northeasterly seas and ground swells break in or near the Federal Bar Channel and during periods of strong ebb discharge and heavy seas. The reef just offshore is responsible for much of the turbulence in the outer portion of the inlet. Also, the present inlet is difficult and extremely costly to maintain. Beaches south of the inlet are eroding at a rapid rate (27 feet per year). Between 1882 and 1946 the south shoreline receded 2,500 feet. It is felt that the first 3.5 miles of beach south of St. Lucie Inlet can be stabilized by incorporating a sand bypass system into the inlet improvements. Based on the project functioning independently, the benefit to cost ratio is 1.3 to 1. The estimated average annual benefits are as follows:

Navigation	$215,700
Beach erosion	587,000
Recreation	73,300
Total	876,000

Status of Environmental Impact Statement.—The final environmental impact statement was filed with the Council on Environmental Quality on 24 April 1974.

Richard B. Russell Dam & Lake, Ga. and S.C.

Senator Stennis. The budget request was $500,000. The House has included $2,125,000, and local interests have requested $2,125,000. What is your capability on this project?

General Morris. Our capability on this project is $2,125,000, Mr. Chairman.

Senator Stennis. What would be accomplished with the additional $1,625,000?

General Morris. The additional amount would be used to initiate construction of the project.

Senator Stennis. Your budget data stated that land acquisition had not started pending approval of recreation cost sharing contracts, the filing of an environmental impact statement with CEQ and approval of a post authorization change. What is the status of these three actions?

General Morris. With the approval of the post authorization change by OMB on 7 June 1974 these actions are all complete. The approval of the post authorization change was conditioned on the use of the previously estimated fish and wildlife benefits of $70,500 rather than the current figure of $1,038,000 in evaluation of these benefits between ourselves and the Bureau of Sport Fisheries and Wildlife. We will try to reach a mutually agreeable estimate with the Bureau. In the meantime, the project can proceed as it is well justified with either figure.

West Point Lake, Ga.

Senator Stennis. The budget request was $6,300,000. The House has included $8,800,000, and local interests have requested $8,800,000. What is your capability on this project?

General Morris. Our capability on this project is $8,800,000, Mr. Chairman.

Senator Stennis. What would be accomplished with the additional $2,500,000?

General Morris. The additional amount would be used to complete the project 6 months earlier.

Barbers Point (Deep Draft) Harbor, Oahu, Hawaii

Senator Stennis. There is nothing in the budget, and local interests have requested $50,000. What is your capability on this project?

General Morris. Mr. Chairman, our capability on this project is $50,000 to continue planning.

Senator Stennis. Would you submit a statement for the record?

General Morris. Yes, sir.

[The statement follows:]

Project: Barbers Point (Deep-Draft) Harbor, Oahu, Hawaii

Summarized Financial Data:

Estimated Federal Cost		$18,070,000
Corps of Engineers	$18,000,000	
U. S. Coast Guard	70,000	
Estimated non-Federal Cost		4,090,000
Cash Contribution	1,940,000	
Other Costs	2,150,000	
Total Estimated Project Cost		$ 22,160,000
Allocations to date		267,000
Balance to Complete		17,733,000
Preconstruction Planning Estimate		515,000
Amount that could be used in FY 1975		50,000

Authorization: River and Harbor Act of 1965.

Location and Description: Barbers Point is located on the southwest coast of Oahu, Hawaii, about 16 miles west of Honolulu. The authorized plan provides for a deep-draft harbor and a small boat harbor. The deep-draft harbor would consist of an entrance channel 4,200 feet long, 450 feet to 650 feet wide and 38 feet to 42 feet deep; an inshore harbor basin with an area of about 77 acres and 38 feet deep; and about 6,000 linear feet of wave absorber structures. The small boat harbor has been deleted from my further planning at the request of the state of Hawaii, the local cooperating agency.

Proposed Operations: The amount of $50,000 could be utilized to initiate economic evaluation studies.

Justification: The authorized project will provide a second harbor for Oahu's rapidly increasing population and industrial growth, which depend primarily on waterborne commerce for supplies. Since 1957, extensive industrial growth has occurred at Barbers Point. The area has developed into the first large-scale industrial complex to be founded on the Island of Oahu outside the environs of metropolitan Honolulu. By January 1974, over $200,000,000 had been invested in site development and plant construction for heavy, medium and light industries occupying approximately 650 acres. The benefit-to-cost ratio is 1.3 to 1. The average annual benefits all from commercial navigation, are estimated at $1,208,000.

STATUS OF ENVIRONMENTAL IMPACT STATEMENT: The Environmental Impact Statement will be prepared during preconstruction planning with the draft currently scheduled for submission to CEQ in the first quarter of FY 1977 and the final in the second quarter of FY 1977.

Hilo Harbor Modification Study, Hawaii

Senator Stennis. There is nothing in the budget and local interests have requested $70,000. What is your capability on this study?

General Morris. Mr. Chairman, our capability on this study is $70,000.

Senator Stennis. What would be accomplished with this amount?

General Morris. Sir, the amount of $70,000 would be used to initiate a wave monitoring program to investigate the surge problem in Hilo Bay. This program would furnish data necessary to determine the feasibility of reducing the surge problem in the existing Hilo Harbor area which adversely affects commercial navigation activity in the harbor. The data could also be utilized in any future overall Hilo Bay studies that may be undertaken.

Iao Stream, Maui, Hawaii

Senator Stennis. There is nothing in the budget, and local interests have requested $2,750,000. What is your capability on this project?

General Morris. Mr. Chairman, the preconstruction planning for this project is currently underway and scheduled for completion in fiscal year 1975, utilizing available funds. In view of the status of the project, the Corps of Engineers does not have a capability for fiscal year 1975.

Kaneohe-Kailua Area, Hawaii

Senator Stennis. The budget request was $300,000. The House has included $300,000, and local interests have requested $660,000. What is your capability on this project?

General Morris. Our capability on this project is $660,000, Mr. Chairman.

Senator Stennis. What would be accomplished with the additional $360,000?

General Morris. The additional amount would be used to accomplish foundation and material studies which recently have been found to be necessary prior to initiation of construction. These studies were not previously anticipated and have resulted in an increase in the cost of design required prior to construction.

Kaului Harbor, Maui, Hawaii

Senator Stennis. There is nothing in the budget. The House has included $500,000, and local interests have requested $586,000. What is your capability on this project?

General Morris. Mr. Chairman, our capability on this project is $586,000 to initiate and complete construction.

Senator Stennis. Would you submit a statement for the record?

General Morris. Yes, sir.

[The statement follows:]

Project: Kahului Harbor, Maui, Hawaii
(Mitigation of Shore Damage)

Summarized Financial Data:

Estimated Federal Cost	$614,000
Estimated non-Federal Cost	0
Total Estimated Project	$614,000
Allocations to date	28,000
Balance to complete	586,000
Amount that could be used in FY 1975	586,000

Authorization: Section 111 of the River and Harbor Act of 1968.

Location and Description: Kahului Harbor is located on the north shore of the Island of Maui, about 94 miles southeast of Honolulu. The plan of improvement provides for the construction of a new stone revetment about 330 feet in length from an existing revetment, rehabilitation of the existing stone revetment, replenishment of two sections of beach, and the construction of a breakwater and three groins to protect the replenished beaches.

Proposed Operations: The amount of $586,000 could be used to initiate and complete construction of the project.

Justification: Since completion of harbor basin enlargement in the northern part of Kahului Bay in 1962, erosion has accelerated along the south shore as a direct result of the Federal Navigation Project. In addition to the loss of valuable beach, shore property in the area, particularly Kahului Beach Road, is now vulnerable to damage from storm waves. The shoreline has eroded an average of about 50 feet since 1959, throughout the beach area to be protected by the proposed mitigation works. These mitigation works are regarded to be essential to mitigate the adverse effects of prior navigation improvements in accordance with the intent of Section 111 of Public Law 90-483, The River and Harbor Act of 1968.

STATUS OF ENVIRONMENTAL IMPACT STATEMENT: The final Environmental Impact Statement was filed with CEQ on 23 November 1973.

Lahaina Small Boat Harbor, Maui, Hawaii

Senator Stennis. There is nothing in the budget. The House has included $300,000, and local interests have requested $1,440,000. What is your capability on this project?

General Morris. Mr. Chairman, our capability on this project is $300,000 to initiate construction.

Senator Stennis. Would you submit a statement for the record?

General Morris. Yes, sir.

[The statement follows:]

Project: Lahaina Small Boat Harbor, Maui, Hawaii

Summarized Financial Data:

Estimated Federal Cost		$1,460,000
Corps of Engineers	$1,440,000	
U. S. Coast Guard	20,000	
Estimated non-Federal Cost		1,590,000
Cash Contribution	1,280,000	
Other Costs	310,000	
Total Estimated Project Cost		$ 3,050,000
Allocations to date		75,000
Balance to complete		1,365,000
Amount that could be used in FY 1975		300,000

Authorization: River and Harbor Act of 1965

Location and Description: The Lahaina Harbor is located on the west coast of the Island of Maui, about 22 road miles west of Wailuku. The proposed improvements provide for construction of an offshore breakwater about 1,300 feet long and two revetted moles about 350 and 740 feet long, respectively, to form a harbor basin of about 10.6 acres, together with an entrance channel and turning basin. The proposed improvement could accommodate about 360 small craft.

Proposed Operations: The amount of $300,000 could be used to initiate construction.

Justification: Existing light-draft facilities at Lahaina can accommodate about 80 small craft. These facilities are inadequate for current and projected needs. As a historic whaling center and first capitol of Hawaii, the town of Lahaina is becoming an increasingly popular tourist attraction. The proposed improvements would provide a harbor of refuge for transient craft and would accommodate a total of 360 small craft. The benefit-to-cost ratio is 2.3 to 1. Average annual benefits are listed below:

Current Estimate, July 1973 Base (50-year life)

Average Annual Benefits	$366,100
Recreational Boating	353,900
Commercial Fishing	4,000
Land Enhancement	8,200

STATUS OF ENVIRONMENTAL IMPACT STATEMENT: Final Environmental Impact Statement was submitted to CEQ on 14 April 1971. A supplement to the final is currently scheduled for submission to CEQ in the third quarter FY 1975.

Stenator STENNIS. There is nothing in the budget. The House has included $46,000, and local interests have requested $46,000. What is your capability on this project?

General MORRIS. Mr. Chairman, we had previously expressed a $46,000 capability to initiate preconstruction planning. However, a recent review of the physical conditions prevailing at the site has disclosed that private development in the project area has preempted the possibility of developing the necessary land site facilities required for a Federal navigation project. Consequently, we have found it necessary to reduce our capability from $46,000 to zero for fiscal year 1975.

Senator STENNIS. Would you provide a statement for the record?

General MORRIS. Yes, sir.

[The statement follows:]

Project: Reeds Bay Small Boat Harbor, Hawaii, Hawaii

Summarized Financial Data:

Estimated Federal Cost		$516,000
Corps of Engineers	$505,000	
U. S. Coast Guard	11,000	
Estimated non-Federal Cost		535,000
Cash Contribution	505,000	
Other Costs	30,000	
Total Estimated Project Cost		$1,051,000
Allocations to date		0
Balance to complete		505,000
Preconstruction Planning Estimate		95,000
Amount that could be used in FY 1975		46,000

Authorization: River and Harbor Act of 1965.

Location and Description: The proposed harbor would be located at Reeds Bay, a small inlet in the shoreline of Hilo Bay, adjacent to the city of Hilo, on the northeast coast of the Island of Hawaii. The plan of improvement provides for construction of a breakwater 870 feet long and an entrance channel 880 feet long, 120 feet wide, and 12 feet deep to create a harbor with a capacity for 270 small craft.

Proposed Operations: The amount of $46,000 could be used to initiate preconstruction planning.

Justification: There are no existing small boat harbors on the windward coast of the Island of Hawaii that provide adequate protection for the present recreational boat fleet. The existing fleet has been repeatedly exposed to damage from storm waves. The proposed improvement would be located at the town of Hilo, the second largest city in Hawaii, with a 1970 population of 33,915. The number of recreational boats in this area has been relatively low despite the ideal boating conditions because of the lack of adequate harbor facilities. The benefit-to-cost ratio is 1.8 to 1. Average annual benefits are estimated at $91,200, all from recreational boating.

STATUS OF ENVIRONMENTAL IMPACT STATEMENT: The Environmental Impact State-
[illegible] preconstruction planning.

Columbia River and Tributaries Study, Idaho

PUMPED STORAGE HYDROELECTRIC INVESTIGATION

Senator Stennis. The President's budget requests $570,000 for Columbia River and Tributaries General Investigations. I understand the Corps has an addition fiscal year 1975 capability of $340,000–$150,000 of which would be used to complete the inventory of possible pumped storage sites by this time next year. Is that correct?

General Morris. Yes, sir.

Cottonwood Creek Dam, Idaho

Senator Stennis. There is nothing in the budget, and local interests have requested $300,000. What is your capability on this project?

General Morris. Sir, we have no capability on this project. The procedure used for determining the future component of the flood control benefits attributable to this project is under review in my office. Pending approval of that procedure or some modification thereof, we cannot complete the review of the adequacy of the economic feasibility of this project which is a prerequisite to completion of preconstruction planning. We expect to resolve this problem and complete our preconstruction planning in fiscal year 1975.

Placer Creek, Idaho

Senator Stennis. There is nothing in the budget, and local interests have requested $100,000. What is your capability on this project?

General Morris. Mr. Chairman, our capability on this project is $100,000 to initiate preconstruction planning.

Senator Stennis. Would you submit a statement for the record?

General Morris. Yes, sir.

[The statement follows:]

Project: Placer Creek, Idaho

Summarized Financial Data:

Estimated Federal Cost (Corps of Engineers)		$2,500,000
Estimated non-Federal Cost		336,000
Cash Contributions	$ 0	
Other Costs	$336,000	
Total Estimated Project Cost		$2,836,000
Allocations to Date		0
Balance to Complete (Corps of Engineers)		2,500,000
Preconstruction Planning Estimate		310,000
Amount that could be used in Fiscal Year 1975		100,000

Authorization: Section 201 of 1965 Flood Control Act (Authorized 1970)

Location and Description: Placer Creek flows to the north through the city of Wallace, in northern Idaho. Wallace is approximately 50 miles east of the city of Coeur d'Alene, in Shoshone County. The project would provide for construction of a reinforced concrete channel in the lower 5,000-foot reach of Placer Creek, with a debris barrier upstream of the concrete channel.

Proposed Operations: The amount of $100,000 could be used to initiate preconstruction planning.

Justification: The recommended improvement would provide protection for approximately 41 acres of highly developed urban property in the city of Wallace from floods having frequencies up to 200 years. The project would also provide partial protection for 14 acres of land in Wallace from floods of the South Fork Coeur d'Alene River flood flows of about 50-year frequencies. Estimated annual benefits total $181,000, all flood control. The benefit-to-cost ratio is 1.18 to 1, based on 50-year project life.

STATUS OF ENVIRONMENTAL IMPACT STATEMENT: Final Environmental Impact Statement was filed with CEQ 13 November 1970.

COLUMBIA DRAINAGE AND LEVEE DISTRICT NO. 3, ILL.

Senator STENNIS. There is nothing in the budget and local interests have requested $200,000. What is your capability on this project?

General MORRIS. Mr. Chairman, our capability on this project is $200,000 to initiate construction.

Senator STENNIS. Would you submit a statement for the record?

General MORRIS. Yes, sir.

[The statement follows:]

Project: Columbia Drainage and Levee District No. 3, Illinois

Summarized Financial Data:

Estimated Federal Cost		$1,720,000
Estimated Non-Federal Cost		140,000
Cash Contribution	$ 0	
Other	140,000	
Total Estimated Project Cost		$1,860,000
Allocations to Date		95,000
Balance to Complete		1,625,000
Amount that could be utilized in FY 1975		200,000

Authorization: 1962 Flood Control Act

Location and Description: The project is located on the left bank of the Mississippi River between Miles 156 and 166 above the Ohio River in Monroe County, Illinois. The proposed plan of improvement provides for the construction of two pumping stations and appurtenant facilities.

Proposed Operations: The amount of $200,000 would be used to initiate construction of the 30 c.f.s. pump station with related ditching and continue planning and design for the remaining project features.

Justification: Although the area is presently protected from major floods on the Mississippi River, substantial damages result from interior flooding due to interior runoff impoundment during high Mississippi River stages. The proposed plan for construction of two pumping stations is needed in order to alleviate damage to crops and property. The benefit-to-cost ratio is 1.8 to 1. Benefits credited to the project are based upon reduction in damages from impounded rainfall. Average annual benefits, all flood control, are estimated to be $157,000.

Status of Environmental Impact Statement: The final environmental impact statement was filed with the Council of Environmental Quality on 20 July 1973.

HELM LAKE, ILL.

OPPOSITION

Senator STENNIS. This year we have received opposition testimony from Mr. Gene Timm, director of the Committee on the Skillet Fork of the Little Wabash; Mr. Ben C. Harpstrite, State representative; Mr. John Ford, president of the Marion County Farm Bureau; and Mr. Leo M. Eisel, director of the Division of Waterways, representing Gov. Dan Walker. Testimony requesting clarification of certain points has been received from Senator Charles H. Percy. I will raise specific questions from their testimony. Mr. Timm testified that the Helm Reservoir is not presently and never has been economically feasible, socially desirable, environmentally sound, or politically advantageous. Also, the Helm Reservoir has never been locally supported or promoted, and it is not likely to be utilized to any great extent by a community which never wanted it.

Colonel RUSH. Based on updating the cost and benefit data from the authorizing document to current price levels, the benefit to cost ratio is 1.4 to 1. As the advance engineering and design studies are accomplished, consideration will be given to the social and environmental effects in selecting the best overall plan to fulfill the recognized needs of the area. Although support for the Helm Lake project was given by the State during preauthorization studies, it is recognized that the present State administration does not now support further appropriation of funds for continued studies at this time. This is evident from Mr. Eisel's testimony on behalf of the State.

Senator STENNIS. Mr. Harpstrite testified that based on his knowledge of the project it seems of little value to the area since according to the Illinois Division of Waterways, no actual need exists for additional water or recreation in the region. Mr. Harpstrite also states his opposition to the project because the flood control benefits would be very minimal due to the topography of the lower flood plain.

Colonel RUSH. Coordination with the State of Illinois during our preauthorization studies, indicated that there was a need in the area for additional water supply and recreational facilities. The present State administration does not support further appropriations of funds at this time.

Available funds are sufficient for further coordination with the Department of Waterways as well as other State agencies that will be accomplished to determine the latest feelings of the State with respect to the project as well as the needs for water supply and recreation. The current estimate of flood control benefits is $642,000 annually. This is not considered minimal.

Senator STENNIS. Mr. Ford testified that this project, of all projects proposed by the Corps of Engineers, is the only one that has been justified on the basis of a recreation benefit that is more than 50 percent of the entire cost. Also the water supply benefit constitutes another large portion of the projected benefits, even though the study shows that no additional water supply is needed in the area before the year 2000. Mr. Ford also questioned the projected flood control benefits as the proposed damsite, in the uppermost area of the Skillet

Fork, will provide flood control only at, or immediately below, the damsite.

Colonel RUSH. The project as currently considered, based on updated values from the authorizing document, includes recreation benefits of $824,000 annually, which is 34 percent of the total project benefits. The cost allocated to recreation, as included in the authorizing document, amounts to 45 percent of the total project construction cost, including the future recreation increment. The current estimate for water supply of $750,000 annually is based on the authorizing document updated to current values. If the appropriation of funds for the current studies is continued, coordination with the appropriate State agency or agencies will be accomplished to determine the current water supply needs of the area. The project, as currently proposed will provide flood reductions along the Skillet Fork and downstream along the lower Little Wabash River. It is recognized that the greatest reductions would occur immediately downstream from the damsite; however, the reductions further downstream along the Skillet Fork and Little Wabash are measurable and result in tangible savings to the affected landowners.

Senator STENNIS. Our colleague, Senator Percy, has provided the committee with several questions concerning Helm Lake which he requested be asked. A staff member from Senator Percy's office visited Lake Carlyle and noted that the water of the lake was so high that a marina there was flooded and the picnic area was heavily damaged by water. Senator Percy is concerned about the same problem with Helm Lake. Has adequate study been made to insure that the land around the lake will be usable for recreation and that the shores of the lake will be protected enough to minimize any shore erosion?

Colonel RUSH. While flood control storage in the Helm project is anticipated during the recreation season, special consideration will be given the design of recreational facilities to allow their use at a variety of water levels. During the detailed planning process, detail study will be made on the effect of all frequent pool levels on the lake shore and corrective measures recommended if necessary.

Senator STENNIS. Senator Percy would like to know if serious study have been given to how excess waters collected in Helm Lake will be released so that the farmers downstream will be able to plant and harvest their crops each year? Apparently such a problem exists below Lake Carlyle and Lake Shelbyville since every year Senator Percy receives telephone calls from irate farmers whose fields have been flooded when the reservoirs have been opened. What effect will this released water have on the flat flood plain below the dam?

Colonel RUSH. In view of problems that farmers have had downstream from Lake Carlyle and Lake Shelbyville, the Louisville District has initiated hydrologic studies of the Skillet Fork Basin. Seasonal releases will be used in the regulation of Helm Lake to minimize flow downstream during the May to November crop season. This will have the effect of substantial reduction on the flat flood plain below the dam to obtain greater crop benefit.

Senator STENNIS. Senator Percy feels that because of the contour of the land above the proposed site of Helm Lake there is the suggestion that only a shallow pond may be formed by the dam. Obviously,

a shallow pond would have little recreational benefit. In figuring the cost benefit ratio for this project how much of the favorable benefits come from the estimated recreational value? Would the project be worthwhile if the recreational benefits were completely dropped? Can some assurance be made that a shallow pond will not be the case?

Colonel RUSH. Although there will be a considerable amount of shallow water at the Helm project, the water at the dam will be approximately 45 feet deep.

In calculation of the benefits of the Helm project about 34 percent are derived from recreation. However, there would be little, if any, change in the B/C ratio of recreation were deleted as a project purpose.

Further study of the Helm project may result in modification of the plan presented in the Interim Report No. 3 Wabash River Basin Comprehensive Study. However, it appears unlikely that any project would be recommended that has a pool of insufficient depth to allow for some recreational use.

Senator STENNIS. Colonel, you stated earlier that the present State administration does not support further appropriations at this time. Do you still support your budget request for $175,000?

Colonel RUSH. Sir, under the circumstances the requested fiscal year 1975 funds are not required. Funds on hand are sufficient for further coordination with the State.

ILLINOIS WATERWAY, DUPLICATE LOCKS, ILL. AND IND.

OPPOSITION

Senator STENNIS. The Chairman of the Democratic Central Committee of Lockport, Ill., has stated that the plan as endorsed by the State of Illinois, in its testimony to Congress, has a severe impact on the tax base of Lockport—reducing it from $5 million to only $500,000 assessed valuation. A proposed industrial park would be eliminated and two school districts would lose a significant portion of their tax base.

The mayor of the city of Lockport has stated that the relocation of the Santa Fe Railroad would affect a minority group along Daviess Street. The noise level and safety factor would result in this residential community becoming less desirable.

Can you comment, Colonel?

Colonel RUSH. Sir, the Corps appreciates the concern over the loss in assessed valuation for the city of Lockport and the two school districts. It is understood, however, that the reduction in assessed valuation has occurred over the last 10 years or more. This loss, however, is not related, either directly or indirectly, to the authorized improvement for the waterways.

The State of Illinois' objective has been to enhance the social and economic aspects of the area generally encompassed by the cities of Joliet and Lockport in conjunction with the proposed improvement to the Illinois waterways. In essence, this involved the lowering of the

waterway and improvements to the roadways and bridges servicing the area. In evaluating the State's proposal, a range of alternatives was considered. Two alternatives involving high lift locks would effect the Lockport area. Under Plan 4 the high lift lock would be located at Ninth Street in the Lockport area. Under Plan 3 the lock would be at the vicinity of 16th Street, also in the Lockport area. The latter is adjacent to the site of the existing Lockport Lock. Plan 4 is essentially the original State proposal, but modified to meet navigational requirements.

Our analysis indicates that the lock site in Plan 3 is superior to the Ninth Street site in Plan 4. This is due to the better navigation approaches offered under Plan 3, reduced amount of spoil, and the fact that Plan 3 avoids eliminating any major existing industries on the waterway.

In our analysis, we have identified the loss of tax revenue as a project impact. The loss of tax revenue in the waterway reach adjacent to Lockport is estimated at $52,000 annually for plan 3 and $187,000 annually for plan 4. The loss attributable to plan 4 results from the elimination of a major sand and gravel industry on the waterway. The loss of tax revenue under plan 4 would not, however, affect the city of Lockport. A major portion of the $52,000 annual loss anticipated under plan 3 would accrue to the city of Lockport.

The industrial area in question is affected by plan 3. Nevertheless, we have ascertained that no plan of development currently exists nor is there any proposal for development. This area has been industrially zoned for over 10 years. This land had been on the market for some time with neither the owner, the city, nor industry expressing interest in developing this area. Portions of this area are identified as being located in the existing flood plain by the Northeast Illinois Planning Commission and the site has no access to the waterway and poor highway access.

Under Plan 3, seven existing residences would be affected by relocation of the AT and SF tracts. The railroad tracts would not introduce a new safety hazard nor additional noise source to the residences of the immediate area. The AT and SF tracts would be relocated approximately 800 feet laterally from their present location. Also, the Gulf, Mobile & Ohio RR. tracts border this subdivision on the east. Concern regarding the existing safety hazards could be averted by the installation of a fence along the railroad tracts.

KASKASKIA ISLAND DRAINAGE AND LEVEE DISTRICT, ILL.

Senator STENNIS. There is nothing in the budget, and local interests have requested $150,000. What is your capability on this project?

General MORRIS. Mr. Chairman, our capability on this project is $150,000 to initiate preconstruction planning.

Senator STENNIS. Would you submit a statement for the record?

General MORRIS. Yes, sir.

[The statement follows:]

Project: Kaskaskia Island Drainage and Levee District, Illinois

Summarized Financial Data:

Estimated Federal Cost		$5,760,000
Estimated Non-Federal Cost		194,000
Cash Contribution	$ 0	
Other	194,000	
Total Estimated Project Cost		$5,954,000
Allocations to Date		0
Balance to Complete		5,760,000
Preconstruction Planning Estimate		775,000
Amount that could be utilized in FY 1975		150,000

Authorization: 1962 Flood Control Act

Location and Description: The Kaskaskia Island Drainage and Levee District, in Randolph County, Illinois, lies on the right bank of the Mississippi River between miles 111 and 116 above the mouth of the Ohio River northeast of the town of St. Mary's Missouri. The plan of improvement consists of raising and enlarging the existing 14.8 miles of levees to the approved grade.

Proposed Operations: The amount of $150,000 would be used to initiate preconstruction planning.

Justification: The existing levee offers only partial protection to 9,420 acres of agricultural land and the villages of Kaskaskia and Pujol. Under present conditions, the frequency of flooding of Kaskaskia Island is once in 7.3 years and the average duration of flooding is approximately 26 days. Raising the levee to design grade would decrease the frequency of flooding to once in 50 years. The benefit-to-cost ratio is 1.16 to 1. The average annual flood control benefits are estimated at $251,000.

Status of Environmental Impact Statement: The environmental impact statement will be prepared during preconstruction planning.

Lake Shelbyville and Carlyle Lake, Ill.

Senator Stennis. Senator Percy of Illinois in presenting testimony before the Senate Appropriations Committee on the budget for Helm Lake and Louisville Lake, and Lincoln Lake in the Wabash Valley stated that farmers below Lake Shelbyville and Carlyle Lake have found their lands flooded each spring when the Corps releases its stored up water. Senator Percy also quoted from a report by one of his staff who visited the Carlyle Lake project recently, stating the farmers surrounding Carlyle Lake were flooded extensively. Would you comment on this?

Colonel Ray. The Carlyle Lake and Lake Shelbyville projects are units of the general comprehensive plan for the development of the Kaskaskia River basin for flood control, water supply, fish and wildlife conservation, recreation, and downstream water quality control. Included in the plan, in addition to the lake projects, were a network of levees at several locations downstream of both Shelbyville and Carlyle. The levees, however, were never built due to lack of local sponsorship.

Carlyle Lake and Lake Shelbyville were placed in operation in 1967 and 1970, respectively. The plans of regulation called for discharges of 7,000 cubic feet per second from Carlyle and 4,500 cubic feet per second from Shelbyville, which at the time were considered to be nondamaging releases. Subsequently, it has been determined that damages result downstream when releases exceed 4,000 cubic feet per second from Carlyle and 1,800 cubic feet per second from Shelbyville; therefore, it has been necessary to restrict downstream releases. As a result, the dams have at times stored more water than originally contemplated.

The Government of the United States owns flowage easements on approximately 24,000 acres of land around Carlyle Lake for the purpose of emergency storage of floodwaters. The land on which these flowage easements exist are farmed at the owners' own risk of being flooded, of which they were made aware when they sold the easements.

To minimize the flood damaging condition, both in the pool and downstream of the dams, a modified plan of regulation has been developed and is now being refined. The St. Louis district has met with the public on numerous occasions to obtain their input to refine the plan of regulation. However, it should be noted that any modification to the regulation plans may result in only a partial solution. To achieve a more complete long-range solution to the flooding problem, both in the pool and downstream; levees, channelization, green belts, flowage easemeents, or a combination of these may be required.

The proposed levees, which have not yet been built, are necessary to prevent flooding of low-lying lands downstream of the lake dams in periods of releases from the reservoirs exceeding the revised regulation plan.

Senator Stennis. The staff member also stated he saw approximately 22,000 acres of winter wheat flooded, and that it would be difficult to estimate when these farmers could get in their fields to sow beans and corn. Senator Percy also stated that this constant high level of water exists at Lake Shelbyville. Would you comment on this?

Colonel RAY. Again, this is in regard to the approximately 24,000 acres of flowage easement land around Carlyle Lake and the unprotected low-lying lands below Carlyle Lake and Lake Shelbyville. These lands were flooded by storage of floodwaters and release of floodwaters at Carlyle Lake and by release of impounded floodwaters at Lake Shelbyville.

Senator STENNIS. Senator Percy stated he had a letter from the Kaskaskia Horseshoe Campgrounds to the Corps of Engineers complaining of the destruction of its property in the protected zone one-half mile below Lake Shelbyville Dam due to the release of water in February. Would you comment on this?

Colonel RAY. The Kaskaskia Horseshoe Campgrounds are located just below Lake Shelbyville on the east bank of the river. When maximum releases from the lake are made necessary by high pool stages, such as has occurred the past 2 years, the lower levels of the campground are flooded. This is a winter condition which is very unlikely to occur during the recreation season. Some bank wash occurred because of constant releases over an extended period of time. Using the modified plan of regulation, the bank wash problem will be generally alleviated by passing the winter flows on through the reservoirs, thus eliminating long periods of bank-full releases previously necessary to reduce any floodwaters impounded.

The Kaskaskia Horseshoe Campgrounds are located on low ground and do not have optimum operating conditions, but without Lake Shelbyville it is unlikely that there would be a campground.

A reply by OCE on April 5, 1974, pertaining to this problem was made to Mr. Ora Langley, owner of the campground.

Senator STENNIS. The staff member further stated that the picnic areas, recreation areas, and the two or three marinas were heavily damaged by the water, and that the West Access Marina was in operation only 96 days during the recreation season. Would you comment on this?

Colonel RAY. The flood of 1973 resulted in high lake levels at Carlyle Lake for about 3 months during the normal recreation season from April 1 to October 31. The West Access Marina was out of operation during this period of high lake levels, or about 45 percent of the recreation season.

In addition to Carlyle Lake, the flood of 1973 resulted in high lake stages on other lakes throughout the Kaskaskia River and Mississippi River basins. Whereas recreational use of the lakes was curtailed by the flood, hardships, and damages prevented by storage of floodwaters in the lakes are considered to more than offset recreational losses.

LINCOLN LAKE, ILL.

OPPOSITION

Senator STENNIS. The committee on the Embarras River states that the alternatives proposed for the Lincoln Lake project have little public support; that the problems of severe impact on farm drainage, high flood damage below the proposed dam even after construction, and an adverse impact on environmental values still exist; and that

adequate alternatives exist for Charleston's water supply. Would you please comment on these points?

Colonel RUSH. At this time, there is little, if any, public support for any alternative other than a lake project on the Embarras River and this support is primarily from downstream landowners. We believe we have developed the necessary procedures for solving the potential farm drainage problems, and in the study of alternatives, these problems are being given further consideration. Extensive investigation has been directed toward analysis of the amount of storage release that can be maintained below the proposed dam so that downstream flooding and adverse effect on land drainage will not occur with the project in operation. An analysis of the environmental effects of the proposed project, as well as studied alternatives, will be accomplished in sufficient detail to allow appropriate decisions on the matter. Of course, an updated environmental impact statement will be prepared, as necessary to comply with Public Law 91–190. Analysis of alternative water supply sources for Charleston indicates that, while alternatives do exist, the most economical method would be the incorporation of storage for that purpose in a multiple-purpose project at the proposed Lincoln site.

Senator STENNIS. Senator Charles H. Percy of Illinois has stated that he understands counties below the proposed Lincoln Dam want a high dam built to protect their lands from flooding, and the counties upstream don't want any dam on the Embarras, suggesting that further discussion by involved communities is desirable. Do you have any future plans in this regard?

Colonel RUSH. Continued coordination meetings will be held with Federal, State, regional, and local interests throughout the planning process. Such meetings will be utilized to maintain a responsive relationship to local interests.

Senator STENNIS. Mr. Wayne Meyer, chairman of the Douglas County, Ill., Soil and Water Conservation District, contends that the Embarras River water quality is not suitable for a reservoir impoundment and that eutrophic action could cause the reservoir to die a slow death. What are your views on this situation?

Colonel RUSH. Existing and proposed land treatment plans, along with State and Federal laws dealing with water pollution, are expected to provide a satisfactory quality of water in the proposed lake. These land treatment measures in the upstream areas consist of improved soil and water management practices. Land treatment measures for nonpoint sources of pollution and advanced waste treatment for Charleston and Mattoon will be instrumental in alleviating water quality problems. This matter is also receiving additional study to insure a viable project.

Senator STENNIS. Mr. Meyer also states that there are several small tributary reservoir sites that could be developed by Charleston for future water supply, and that the Lincoln Lake project would preclude the use of those sites. Would you please respond to this point?

Colonel RUSH. Small single purpose water supply sites do exist for future development by Charleston. However, studies conducted by governmental and private interests concur in the conclusion that the

inclusion of water supply storage space in Lincoln Lake is most beneficial from a cost-effectiveness standpoint.

Senator STENNIS. Mr. Meyer further contends that construction of a large dam does not give total protection from flooding, that operational problems restrict flood control, and that the Corps does not understand the drainage problems associated with flat prairie lands. Please discuss these points.

Colonel RUSH. It is agreed that a lake project cannot assure total flood protection, but a review of the economics of Lincoln Lake indicates that the benefits from flood damage reduction outweigh the costs of providing such reduction. The matter of operational problems associated with the proposed project have been given considerable attention and it is believed that the proposed regulation schedule will provide satisfactory results. Considerable study and effort have been given to analysis and solution of potential tile drainage problems associated with the proposed project. We believe we have developed the necessary procedures for solving the potential drainage problems.

Senator STENNIS. Mr. Merle A. Buddemeier, president of the Douglas County Farm Bureau, Tuscola, Ill., contends that Lincoln Lake is a poorly designed project and that there are no feasible solutions to the serious farmland drainage problems which would result. Would you please respond to these contentions?

Colonel RUSH. Our studies of Lincoln Lake have devoted considerable attention to the capacity of the downstream channel as well as the relationships that exist to the drainage outlets. The reservoir regulation schedule that has been developed is designed to allow operation of the project with no adverse effect on those systems. As a result, flood damage reduction benefits to downstream interests should be substantial and project operation should not result in worse conditions than those existing at the present time.

Senator STENNIS. Mr. Buddemeier further contends that alternatives to Lincoln Lake do exist, and that the original project would not be economically justified if current interest rates were utilized in the economic analysis. Do you have any information in this regard?

Colonel RUSH. In the study of alternatives currently underway, projects at the Lincoln site having varying storage capacities have been given preliminary consideration. Based on studies to date, which are not in final detail, the original project with flood control pool at elevation 626 would have a benefit-to-cost ratio of 1.8 to 1 at 3¼ percent interest rate, and 1.08 to 1 at 5⅝ percent.

LITTLE CALUMET RIVER, ILL.

Senator STENNIS. There is nothing in the budget. The House has included $40,000, and local interests have requested $40,000. What is your capability on this project?

General MORRIS. Mr. Chairman, our capability on this project is $40,000 to initiate and complete preconstruction planning.

Senator STENNIS. Would you submit a statement for the record?

General MORRIS. Yes, sir.

[The statement follows:]

Project: Little Calumet River, Illinois

Summarized Financial Data:

Estimated Federal Cost	$ 300,000
Estimated Non-Federal Cost	0
Total Estimated Project Cost	$ 300,000
Allocations to Date	0
Balance to Complete	300,000
Preconstruction Planning Estimate	40,000
Amount that could be utilized in FY 1975	40,000

Authorization: Water Resources Development Act of 1974

Location and Description: The Little Calumet River rises in western LaPorte County, Indiana, near Michigan City and flows generally westerly through Porter and Lake County, Indiana, into Cook County, Illinois, to its junction with the Calumet-Sag Channel in Calumet Park, Illinois. The proposed improvement provides for clearing the main channel of the Little Calumet River from its confluence with the Calumet-Sag Channel eastward to the Indiana State Line.

Proposed Operations: The $40,000 would be used to initiate and complete preconstruction planning.

Justification: The proposed project will improve the environment through the removal of fallen trees, roots, silt, and other debris and objects which contribute to flooding, unsightliness, and pollution of the Little Calumet River.

Status of Environmental Impact Statement: The Final EIS will be submitted during preconstruction planning.

Senator STENNIS. The budget request was $27,900,000. The House has included $27,900,000, and local interests have requested $27,900,000. What is your capability on this project?

General MORRIS. Our capability on this project is now $22 million, due to delays.

IMPACT OF 12-FOOT CHANNEL

Senator STENNIS. Mr. Leo M. Eisel, director of the Division of Waterways of Illinois representing the Governor, Hon. Dan Walker, presented testimony concerning replacement of the Locks and Dam No. 26, Mississippi River. Mr. Eisel supported appropriations of the budget request for this project, but expressed the State's concern that these funds would permit installation of deeper sills in the new lock than now exists, thereby permitting an incremental extension of the 12-foot channel. He asked that these funds not be expended until State and Federal agencies and private citizens have the opportunity to consider the economic, social, and environmental impact of a 12-foot channel on both the Illinois and Mississippi Rivers. Would you please comment on this?

Colonel RAY. Sir, the locks have been designed specifically for 9-foot draft navigation. The required depth of water in the lock chamber for safe and efficient operation of any large modern lock is dependent on the difference in water levels above and below the dam, the filling time, and the amount of turbulence generated during the filling and emptying operations. Turbulence in the lock chamber produces stresses in the barge mooring hawsers and on the mooring anchors in the lock walls. The depth of lock floor required to keep these stresses within tolerable limits was determined through extensive research studies conducted at the U.S. Waterways Experiment Station. With data developed in the studies and weighed against economic consideration, the optimum depth for new Locks 26, which are 1,200- by 110-foot locks with a 24-foot head, was determined to be 21 feet. The locks would have been much deeper had they been designed for a 12-foot navigation channel.

Lock 27, the newest lock on the Mississippi River, the lock closest to the Locks 26 project, and designed for a 9-foot project depth, has a floor depth of 41 feet. Floor depths of the new locks on the Ohio River, which are also designed for a 9-foot project depth, vary from 22 feet to 38 feet, with an average of about 30 feet.

The designed sill depth of 18-feet below the minimum water surface elevation downstream from the dam was elected to provide adequately for the draft of the tows and for the accumulation of ice on the bottom of the tows during winter operations. There must be adequate clearance between the bottom of the tow and the sill to permit the water to run out of the locks as the tow enters the chamber. Corps' records, photographs, and interviews with the lockmasters and tow pilots indicate that a 9-foot buildup of ice on the bottom of tows is not unusual in severe winter operations and has damaged the sills in the past. Lock 26 is the northernmost lock that is fully utilized all year round. Traffic through Lock 26 goes up the Illinois River year round

but very little traffic ventures north of Lock 26 on the Mississippi River in the severe winter weather because the Mississippi River is completely frozen and impassible to most commercial navigation. The Lock 26 pool receives the ice flows from the upper Mississippi River, but still must be able to operate in severe weather. The 18-foot depth of sill proposed for the new Locks 26 is the minimum that will provide for efficient operations of the locks in the winter season.

A 12-foot channel project has not been authorized by Congress. Economic, social and environment impacts will be considered in planning studies of a 12-foot channel and will be included in any report that may be submitted to Congress.

Louisville Lake, Ill.

OPPOSITION

Senator Stennis. This year we have received opposition testimony from Mr. Harold Arnold, vice-president of the committee on the Little Wabash. Testimony requesting clarification of certain points has been received from Senator Charles H. Percy. I will raise specific questions from their testimony. Mr. Arnold testified that 28,000 acres of land would be required for the project. What is the amount of land required for the project? What would be the impact on the tax base for Clay and Effingham Counties? Mr. Arnold also stated that recreational development at the project will be in competition with existing recreational facilities, and it will provide only minimum flood control benefits.

Colonel Rush. In our latest studies the amount of land required has been reduced due to a change in interpretation of the joint Army-Interior memo on real estate acquisition policy. Another reason is that only minimum basic recreation facilities are currently being considered. Therefore, there is a reduction in the lands that were previously needed for recreational development. Our present estimate is that about 16,000 acres of land will be required. The exact amount of land needed will not be known until the recommended plan is selected. Since the State of Illinois has informed the Corps that it does not wish to participate in the recreational development, our latest studies include only minimum basic recreational facilities. The flood control benefits are currently estimated to be $1,459,000 annually. This is not considered minimal.

Senator Stennis. Mr. Arnold testified that the project has no local sponsor and may never have one. Also, the State has refused to participate in the water supply and recreational costs and there is little likelihood that the small towns of the area will raise the required millions.

Colonel Rush. The State of Illinois is the local sponsor for this project. The State has expressed support for this project to include the needed water supply for this portion of southern Illinois. The State has agreed to assume responsibility for the water supply component provided they can reach agreement on long term reimbursement from local municipalities that would benefit. The State has indicated that they will not be able to participate in the recreational aspects of the project. The Corps has been notified that there is some

interest in the project area for private or locally sponsored recreational development. Additional coordination is being pursued to determine if this is possible.

Senator STENNIS. Senator Percy has asked the Corps to provide some assurances that proper considerations will be given to see that adequate planning is made of the size of Louisville Lake, so that land around the lake will be usable for recreation and that the shores of the lake will be protected enough to minimize any shore erosion.

Colonel RUSH. It is the policy of the Corps to size a project to accommodate the needs for which the project was authorized. This is based on our formulation studies which identify and optimize benefits for each purpose included in the project. If during our studies it is indicated that shore erosion protection is needed, it will be added at that time and will be included in the final design of the project. Recreational facilities will be designed to allow their use at a variety of lake levels.

Senator STENNIS. Senator Percy stated that information from the State of Illinois Governor's Task Force on Flood Control estimated the need for water supply in the Louisville Lake Project between now and 2020 is about 10,000 acre-feet rather than the 44,000 acre-feet proposed by the Corps. Senator Percy suggested that the Corps, within the next year, communicate with the Task Force, the Illinois Division of Waterways and the Embarras Regional Planning and Development Commission for clarification on what the water supply component will be.

Colonel RUSH. Since the State of Illinois will be the local sponsor for the water supply storage contained in the project, coordination with the Governor's Task Force on Flood Control and the Illinois Division of Waterways has already begun. Knowing that 44,000 acre-feet might be too much, the Corps requested that the State make a study to determine a realistic estimate of the water supply needs. This study indicated a storage of about 10,000 acre-feet is needed and our latest studies are based on 10,000 acre-feet. Coordination with these agencies as well as the Embarras Regional Planning and Development Commission and any other concerned agencies will continue as current studies are finalized.

Senator STENNIS. Senator Percy expressed concern that there might be problems in operation of the Louisville project similar to those being encountered below the Lake Carlyle and Lake Shelbyville dams. Farmers below these dams have experienced flooding of cropland each spring when the Corps releases stored waters from the reservoirs. Will the Louisville project produce similar effects?

Colonel RUSH. Being aware of the problems associated with the downstream areas of Lake Carlyle and Lake Shelbyville in Illinois, special emphasis was placed on the cropping season releases from the Louisville Lake project. As a result, the Louisville Lake study, based on the hydrologic model of the Little Wabash River Basin, will develop seasonal release rates to minimize the occasional times when flows above bankful capacity will have to be released in the spring. From May through November the reservoir is to be regulated to create a substantial reduction in reservoir outflows for a greater crop benefit in the flat flood plain below the dam.

McGee Creek Drainage and Levee District, Ill.

Senator Stennis. There is nothing in the budget and local interests have requested $400,000. What is your capability on this project?

General Morris. Mr. Chairman, our capability on this project is $400,000 to initiate construction.

Senator Stennis. Would you submit a statement for the record?

General Morris. Yes, sir.

[The statement follows:]

Project: McGee Creek Drainage and Levee District, Illinois

Summarized Financial Data:

Estimated Federal Cost		$9,390,000
Estimated Non-Federal Cost		424,000
Cash Contribution	$ 0	
Other	424,000	
Total Estimated Project Cost		$9,814,000
Allocations to Date		347,000
Balance to Complete		9,043,000
Amount that could be utilized in FY 1975		400,000

Authorization: 1962 Flood Control Act.

Location and Description: The McGee Creek Drainage and Levee District lies on the right bank of the Illinois River between miles 67.2 and 75.1 in Brown and Pike Counties, Illinois. The project provides for the reconstruction of 14.7 miles of levees, construction of a pumping station and a closure structure.

Proposed Operations: The amount of $400,000 would be used to initiate construction.

Justification: The existing levee offers only partial protection to 12,080 acres, of which 11,200 acres are highly developed agricultural lands. The estimated population of the district is about 100 persons. The maximum flood of record, that of 1943, caused damages estimated at three-quarters of a million dollars. Damages that would be sustained due to a flood of the same magnitude as the flood of record occurring today would result in damages estimated at $2,030,000. The benefit-to-cost ratio is 1.17 to 1. The average annual benefits, all flood control, are presently estimated at $439,000.

Status of Environmental Impact Statement: The final environmental impact statement was filed with the Council of Environmental Quality on 12 March 1974.

Senator STENNIS. The budget request was $600,000. The House has included $600,000, and local interests have requested $600,000. What is your capability on this project?

General MORRIS. Our capability on this project is $600,000, the same as the budget, Mr. Chairman.

OPPOSITION

Senator STENNIS. I have several questions concerning the Springer Lake project that Senator Percy requested be asked. This year he has received two Government reports that have raised serious questions about this project. The Federal Environmental Protection Agency has ruled this project as environmentally unsatisfactory in their comments on the draft environmental impact statement filed by the Army Corps of Engineers. We cannot completely dismiss a Federal report that has such a strong statement. The Governor of Illinois last year questioned the water quality of Lake Springer and now the EPA has some concerns for both Lake Springer and Friends Creek. The EPA says this project should only be built if a specific program accompanies it. This is to insure that the water quality will not be reduced. The EPA says the proposed Springer Lake and the utilization of Friends Creek will not provide an appreciable improvement in the quality of Decatur's water. What are the Corps comments? The State of Illinois Environmental Protection Agency has established a 0.05 mg/1 maximum limit for total phosphorus in a stream where it enters a reservoir or lake, or in a reservoir or lake. Can this regulation be met with Lake Springer? Because of the drainage problem of herbicides and pesticides entering the water from upstream farmland, will the fish in Lake Decatur and Lake Springer be fit for human consumption? Will the water be suitable for swimming?

Colonel RUSH. Sir, this matter has been discussed with the U.S. Environmental Protection Agency, and that Agency subsequently clarified its position. The U.S. EPA stated that the principal reason for their comments is that without an effective point-source and nonpoint-source pollution control program, the water quality of the Sangamon River will not meet levels specified in federally approved State standards.

The U.S. EPA has also stated that the project should not bear the burden of waiting for a guarantee that all water quality standards be met. Instead, it is their position that an approved program be established to control the sources of pollution that would cause a violation of those standards. The planning process provided in section 303(e) of Public Law 92–500 is the vehicle to develop the program to achieve the standards. According to the U.S. EPA, the Illinois EPA expects to complete the initial 303(e) plan for the Sangamon Basin some time in fiscal year 1975. This initial plan will indicate the specific water quality management measures necessary for point-source abatement. It will also define the magnitude of the nonpoint-source problem for which solutions must be developed. Completion of the full plan has not been scheduled as yet, but will indicate the specific water quality

measures necessary for both point- and nonpoint-source abatement. It is expected that consistent with the Assurances of Local Cooperation for this project previously furnished by the State of Illinois, the State EPA would complete the full 303(e) plan. Under article "i" of the Assurances, the State agreed that it will "Provide for adequate water pollution control at all sources within the watershed in accord with the applicable State-Federal water quality standards and regulations and procedures of the State to prevent pollution of the impounded waters of the multiple-purpose reservoir system, and of the greenbelt area of the Sangamon River; * * *."

Completion of the full 303(e) plan will meet the objectives of the U.S. EPA and will provide the basis for achieving the instream water quality standards as they relate to the intended project uses. Additionally, the implementation of the 303(e) plan will contribute to higher water quality in Lake Decatur.

Senator STENNIS. Another Government report on the water supply for Decatur is of interest. A revised estimate by the Illinois Division of Water Resource Management has estimated the total demand for water supply in 2020 to be 43.8 million gallons per day. This figure represents 13 Mgal/d additional demand for water above the present 31 Mgal/d now available to Decatur. This is 26 Mgal/d from Lake Decatur and 5 Mgal/d from existing wells. The project will provide an additional 26.9 Mgal/d, which is more than twice the projection of needs by the IDWRM. Has the study been reevaluated using this 43.8 figure? Because all of us are interested in fiscal restraint and the wise use of Federal money, we should be concerned when a project is designed to build a lake twice as big as may be needed almost 50 years from now. How do we justify this to the farmers who have to give up their valuable farmland now for this lake?

Colonel RUSH. Sir, the Corps has formulated this project to meet the water supply needs specified by the State. The State Division of Waterways in a report dated June 2, 1969, set forth its desires for the proposed development of the Springer Lake project. In that report, the State indicated an intent to purchase storage that would provide sufficient yield for not only the projected needs of the city of Decatur but also for Springfield and other downstream communities. Some 35,000 acre-feet of storage was originally programed by the State in their June 2, 1969, report for this need, but this was subsequently reduced to 24,100 acre-feet by the Corps in conjunction with the State during project reformulation. The change is described in the Corps' recommended development report of May 1970 as reported in the Senate Committee on Public Works' print, serial No. 92–2, dated December 1970.

The Corps views the use and potential distribution of such storage to be within the sole purview of the State. Under the provisions of the Water Supply Act of 1958, as amended, the Corps is obligated to provide storage for such use, providing the sponsoring entity has the required legal and financing authority and capability to provide full reimbursement to the Federal Government. Therefore, until the State officially advises this office to the contrary, we view this storage as representing a legitimate need which must be met by the plan of improvement for the Sangamon River Basin.

Senator STENNIS. There has been concern expressed over flood control protection from the reservoir. Has the Corps recently studied the matter of drainage above and below the proposed dam so that the farmers upstream and downstream do not have to worry about excess waters being released on their fields? Has a study been made on the Friends Creek area?

Colonel RUSH. Sir, our Chicago district is currently updating the hydrology and hydraulics of the Springer Lake and Friends Creek subimpoundment. Results of these studies will be in the hydrology and hydraulic design memorandum scheduled to be completed soon.

As far as the downstream channel is concerned, no problems are anticipated in carrying the release rate from the reservoir. What is of concern to us, however, is the effect that longer duration flooding may have on the existing ground water as related to crop growth in areas adjacent to the greenbelt. Although we feel that this effect will only be of a minor nature, we have hired a consultant to look into this matter. Results of this study should be available in about a year from now.

With respect to the Friends Creek area, we assume that Senator Percy's concern is on the flooding of the existing farm drain tiles. The Corps is aware of these drain tiles and, to date, has located them through special aerial photography and field surveys. The proposed alterations, if required, will be closely coordinated with the owners and the solutions presented in a feature design memorandum.

Senator STENNIS. Illinois State Senator Harber H. Hall, in his testimony, stated that Decatur could get its water supply from Lake Shelbyville at a cost of only $4 million. Is this water available for Decatur, and is this an economically feasible scheme?

Colonel RUSH. Sir, the water supply storage in Lake Shelbyville was provided in compliance with a request from the State of Illinois. Since the State requested and paid for this water supply storage space, it is up to the State to decide who will draw on this water supply storage. At the time when the State contracted for this water, it was indicated that the water supply was intended for local communities.

Even if the water in Lake Shelbyville were available for the city of Decatur, it is very doubtful that the city would be willing to contract for it. First of all, the yield from this storage would not be adequate for the demand in the year 2020. Second, based on preliminary cost estimates, the construction of approximately 30 miles of pipelines would far exceed the $4 million quoted by Mr. Hall. Our estimate is approximately $12 million for the initial construction. This cost converted to annual cost, exclusive of operation and maintenance, exceeds the annual cost of a well system or storage in Springer Lake with the annual operation and maintenance included.

Senator STENNIS. Illinois State Senator Harber H. Hall raised many of the objections to this project which were heard in previous testimony. Most have been answered in this or prior year's testimony and require no answer from you at this time. However, I noted that State Senator Hall stated that the University of Illinois has hired an engineering firm to study this project. Is he talking about the study that Harza Engineering performed some time ago or is this a new study?

Colonel RUSH. Sir, the board of trustees of the University of Illinois has again hired Harza Engineering Co., this time to analyze our final revised environmental impact statement to ascertain the probable effects of the project on Allerton Park and other university properties. Harza is also to advise the university as to how it can be guaranteed that the dam and reservoir will be designed, constructed, and managed so as to eliminate or restrict possible damage to an acceptable level. In addition, Harza is to advise the university of any feasible alternatives that would reduce, to an acceptable level, any damage to be expected from the dam.

The district engineer, Chicago district, has furnished the university and Harza Engineering all the information requested for a proper evaluation of all the objectives. Of course, since the final revised EIS has not been completed, Harza has not been able to complete their study.

Senator STENNIS. The Committee on Allerton Park lists some 15 problems that, it contends, need to be solved in connection with this project. I realize that many of these problems were covered in prior year testimony and in testimony already presented. Do you care to make any general comments?

Colonel RUSH. No, sir. The committee raised most of these points in commenting on our revised draft EIS; we will address these comments in the final EIS.

Senator STENNIS. Mr. Marlin stated that there is a question on local sponsorship for this project and who will pay for the recreational facilities. Does this item still have to be resolved?

Colonel RUSH. No, sir. The State of Illinois has indicated its intent to serve as the local sponsor for this project. The Illinois General Assembly, in the spring session of 1970, passed legislation authorizing the State of Illinois to furnish the required items of local cooperation The Governor signed the bill on July 8, 1970. Formal assurances were requested from the State, and the State has provided these assurances. The State assurances provide the necessary sponsorship required for cost sharing of reservoir storage as well as the development and operation of the greenbelt and associated recreational facilities.

Though not required, the Corps is also seeking to turn the operation and maintenance of the reservoir recreational facilities over to the State and local interests consistent with the intent of Public Law 89–72.

Senator STENNIS. In last year's testimony, Colonel Eineigl mentioned that Governor Walker, when endorsing the project, imposed certain conditions. Dr. Eisel, director of the Division of Waterways of the State of Illinois, enumerated these conditions and implied that progress is made toward meeting them. However, Mr. Marlin, of the Committee on Allerton Park, stated in his testimony that the Springer project cannot meet these conditions. Would you comment on this, Colonel?

Colonel RUSH. Sir, as stated in last year's testimony, the Governor asked for Corps assurances on two of his conditions. These related to project effects at Allerton Park and the suitability for recreational purposes of lands within the flood control pool. Last June, the District

Engineer in Chicago provided the Governor information which was intended to assure him that these two objectives could be met.

Two other objectives of the Governor relate to assurances that the State will recover costs expended for water supply and obtain recreational usage commensurate with the costs. The city of Decatur is on record that it is willing to pay all costs associated with the water supply storage. We in the Corps are, of course, of the opinion that the recreational benefits warrant the cost.

The remaining objective deals with the water quality aspects of the Sangamon River and, hence, the ability of the Springer project to meet its intended use. As I indicated in responding to Senator Percy's question, the planning process established by section 303(e) of Public Law 92–500 is the vehicle for meeting this objective.

Senator STENNIS. The Committee on Allerton Park contends that the B/C ratio will go below unity if well water is used as the least costly alternative for the water supply benefits. Is this correct?

Colonel RUSH. Sir, the economic evaluation contained in both the environmental impact statement and budget justification sheets is based on an annual updating of project costs and benefits assessed during the 1970 detailed study phase. We know that some of the values will change. Current assessments are indicating that the benefits for water supply and general recreation may change. It is correct that the water supply benefits will be decreased to reflect the economic worth of the least cost alternative, now wells. Conversely, the general recreation benefits are expected to substantially increase, based on our preliminary draft of the recreation resources appendix which is presently being coordinated with other Federal, State, and local agencies. In direct response to your question, my judgment is that the project will continue to reflect a marginal economic worth.

Senator STENNIS. The Committee on Allerton Park stated that there are still three lawsuits pending against this project. What is the status of these lawsuits?

Colonel RUSH. We know of only two cases pending against this project. One is in the Federal district court at Springfield, Ill., brought by the Environmental Defense Fund. The other is an action in the State court brought by individuals.

The Federal case is a suit for injunction and declaratory judgment against proceeding with the Springer Lake project and against implementing any plan that would alter the historic flood patterns in Robert Allerton Park. This case is currently in the discovery stage and the Government has complied with requests to answer written interrogatories and motions to produce documents. No further court action is anticipated until the updated environmental impact statement has been finalized and filed with CEQ.

The case in the State court is a suit for injunction by six plaintiffs to restrain the denfendants, officers of the State, State agencies, and State departments from cooperating further with, and providing assurances to, the U.S. Government as required by the Federal legislation. This case was dismissed on the State's motion by the circuit court judge in July 1973. The circuit court's decision was appealed to Illinois Appellate Court and it is anticipated that arguments will be presented before that court in September 1974.

QUESTIONS OF SENATOR PROXMIRE

Senator STENNIS. Senator Proxmire has submitted these questions. The Corps most recent cost estimate of $88.7 million appears to be based solely on a construction cost index. What is the new cost if increased land costs are taken into account? I am not sure the $450 per acre average cost is still reasonable, since the Corps spent about $6,000 for 3 acres in 1973. I also note that in the EIS on page B–142, easements along Friends Creek and the Sangamon are estimated to cost $725 per acre.

Colonel RUSH. Sir, the July 1973 cost estimate, of $88.7 million, was based on the use of applicable construction cost indices as well as adjustments to reflect the then current values of lands in the study area. The costs for lands and damages included in the July 1973 project estimate were generally in consonance with a study of the then current land values and improvements conducted by the Deane Appraisal Service. This study, completed in early 1973, is now being updated to insure comparability with the latest market values.

For your information, the costs for lands include not only the market value of such land but also costs for the purchase of any improvements involved as well as the relocation of those residing on the land. These costs will naturally vary by location within the two reservoirs. The $6,000 expenditure for some 3 acres reflects the value of subdivision lots, an exception to the general land use typical of the reservoir areas.

Senator STENNIS. Has the Chicago district consulted the St. Louis and Louisville districts regarding the matters of drainage disruption? Running the river out of bank in the green belt may create problems similar to those on the Kaskaskia River. The Friends Creek impoundment could have problems similar to those at the proposed Lincoln Reservoir.

Colonel RUSH. Yes, sir. Our estimates include costs for solutions of drainage problems in connection with farm drain tiles in the lake areas. These costs were also included in the determination of the benefit-cost ratio.

Chicago district did consult St. Louis and Louisville districts. The problem St. Louis has on the Kaskaskia River is not similar to the green belt flooding. On the Kaskaskia, the problem is to keep the water within the river banks, whereas, in the green belt, land will be purchased beyond the banks to permit out-of-bank flooding.

With respect to the proposed Lincoln Reservoir, the Louisville district had worked out solutions to the drainage problems on farm drain tiles. Chicago district had a meeting with Louisville district to discuss this problem. Since then Chicago district has used the method of locating farms drain tiles as suggested by Louisville district.

Senator STENNIS. I note that the Illinois general assembly did not authorize State participation in the Oakley project until May 29, 1970 and that according to the Corps the State did not sign formal assurances of local cooperation until May of 1971. It does not appear that "satisfactory assurances to pay the required non-Federal share of project costs" could have been given before December 31, 1969. The new Water Resources Development Act of 1974 says that such projects should be calculated at higher interest rates. Why isn't the Oakley B/C ratio calculated at 5⅛ percent instead of 3¼ percent?

Colonel RUSH. The requirements of section 80b of Public Law 93–251, the Water Resources Development Act of 1974, regarding the criteria to be used to determine the appropriate discount rate do not require that the assurances must be authorized by legislative action. Rather, the Act states "In the case of any project authorized before January 3, 1969, if the appropriate non-Federal interests have, prior to December 31, 1969 given satisfactory assurances to pay the required non-Federal share of project costs, the discount rate to be used in the computation of benefits and costs for such projects shall be the rate in effect immediately prior to December 24, 1968, and that rate shall continue to be used for such project until construction has been completed * * *" The letters of intent from the city of Decatur, dated July 30, 1968 and from the State of Illinois, dated June 14, 1968, provided the "satisfactory assurances" insofar as section 80b of Public Law 93–251 is concerned. Legislation enacted in 1970 authorized the State to formally execute the required items of local cooperation.

Senator STENNIS. In the Corps project justification is the statement: "An additional source of water supply is most important to the city of Decatur because of the very limited capacity of its present source, Lake Decatur." In view of new water supply projections for Decatur cited in the EIS it is still the Corps' feeling that this project is urgently needed as a source of water?

Colonel RUSH. Sir, the Corps has formulated this project to meet the water supply needs specified by the State. The State Division of Waterways in a report dated June 2, 1969, set forth its desires for the proposed development of the Springer Lake project. In that report, the State indicated an intent to purchase storage that would provide sufficient yield for not only the projected needs of the city of Decatur but also for Springfield and other downstream communities. Some 35,000 acre-feet of storage was programed for this need, but this was subsequently reduced to 24,100 acre-feet during project reformulation. We know that most of the water supply storage was programed to meet the short term as well as future needs of the city of Decatur.

The Corps views the use and potential distribution of such storage to be within the sole purview of the State. Under the provisions of the Water Supply Act of 1958 as amended, the Corps is obligated to provide storage for such use, providing the sponsoring entity has the required legal and financing authority and capability to provide full reimbursement to the Federal Government. Therefore, until the State officially advises this office to the contrary, we view this storage as representing a legitimate need which must be met by the plan of improvement for the Sangamon River Basin.

Senator STENNIS. The Illinois geological survey and the State water survey claim that ground water is available to Decatur from the Mahomet-Teays aquifer. These claims are based on extensive studies. On page B–102 of the EIS the Water Survey states, "It appears clear that the Mahomet Valley ground water aquifer could meet the water supply needs of Decatur for a considerable period into the future without unreasonable interference with existing installation and their projected needs." On page B–95 the water survey points out that Decatur could easily obtain up to 26 MGD from the aquifer. Does the Corps accept the statement that ground water could meet Decatur's

future need? If not, are there any comprehensive investigations to support that view?

Colonel RUSH. Sir, the Corps accepts the claims and studies of the Illinois Geological Survey and the State Water Survey as to the availability of ground water from the Mahomet Valley. This was the reason that groundwater was used as an alternate source in determining the economic worth of the water supply storage. Also, we agree that sufficient water appears to be available for Decatur to satisfy the need for the year 2020. A major consideration, however, to a ground water development of this magnitude is the fact that the city of Decatur would have no control over this supply. Other developments or users of the ground water could make the present projections of adequacy too low.

Senator STENNIS. On page 3–62 and 3–63 of the EIS the Corps accepts a new Decatur water need projection of 43.8 MGD and says there is excess water in the proposed plan. Yet the well field alternatives in appendix B are figured on a need of 58.3 MGD.

Colonel RUSH. Sir, the Corps has formulated the Springer project to meet the water supply needs specified by the State of Illinois. The State has requested storage which in combination with existing sources is sufficient to provide 58.3 MGD to meet not only the needs of Decatur but also for other downstream communities. The well field alternates presented in appendix B were formulated to be consistent with the above, such that direct comparisons of costs could be made.

Senator STENNIS. In hearings before the House Appropriations Committee, General Bachus accepts well water as the least cost alternative and states the project benefits will be decreased by over $300,000 annually because of this. It would appear that by using the lower need figure of 43.8 MGD the cost of well water scheme I could be further reduced. For example, the projected 2020 shortage of 16.8 MGD could be more than met by the 22.7 MGD from the first two well fields planned by the year 2000 under scheme I. This could eliminate the first cost and O. & M. of the third well field and two of the four pipelines.

What is the cost of well water under schemes I and II if the lower figure for water demand is used? What does this do to the B/C ratio?

Colonel RUSH. Sir, the economic worth of the least costly alternative for water supply well water, would be reduced by some $100,000 in average annual costs. These costs reflect the discounted worth of the applicable investment and annual operating costs for the differential between the State-requested 58.3 MGD and the cited 43.8 MGD. As stated in previous recall testimony, the reduction in water supply benefits will be generally offset by the increase in general recreation benefits. Based on the project's economic costs, at 1973 price levels, and the modified benefits for both water supply and general recreation, the resultant benefit-cost ratio would be at least 1.03 if the lower water demand figure is used.

Senator STENNIS. On page 3–56 the EIS says that significant shoreline erosion is not expected. Is this statement true in light of existing erosion around Lake Decatur and the situation at Carlyle and Shelbyville Lakes? Decatur's consultant has recommended rip-rapping sections of Friends Creek and doing some bank shaping to mitigate ero-

sion and mudflows. Does the project's current cost estimates include money for this?

Colonel RUSH. Sir, planning has not progressed to such a detailed stage where we can say erosion definitely will be a problem. At this time we can only say, based on the general topography and soil types that we do not expect it to be a critical problem for all reaches of the reservoirs' shoreline. Therefore, costs for only minor erosion corrections are included in our current estimate.

Our estimates carry a contingency factor to cover items which cannot be foreseen during the preliminary planning stages. If, after detailed study, more extensive erosion measures will be required, the additional cost will be covered by the contingency fund. It is not expected that the total project cost will increase due to this consideration.

BIG BLUE LAKE, IND.

Senator STENNIS. There is nothing in the budget. The House has included $100,000, and local interests have requested $100,000. What is your capability on this project?

General MORRIS. Mr. Chairman, our capability on this project is $100,000 to initiate preconstruction planning.

Senator STENNIS. Would you submit a statement for the record?

General MORRIS. Yes, sir.

[The statement follows:]

Project: Big Blue Lake, Indiana

Summarized Financial Data:

Estimated Federal Cost (Corps of Engineers)		$38,700,000
Estimated non-Federal Cost		8,608,000
Cash Contribution:	$8,608,000	
Water Supply	4,576,000	
Recreation	4,032,000	
Total Estimated Project Cost		47,308,000
Allocations to date		0
Balance to Complete (Corps of Engineers)		38,700,000
Preconstruction Planning Estimate		900,000
Amount that could be used in FY 1975		100,000

Authorization: 1968 Flood Control Act.

Location and Description: The proposed dam site is in east-central Indiana on the Big Blue River about 42.1 miles above its confluence with Sugar Creek to form Driftwood River, a tributary of East Fork White River. The site is in Hancock County about 3 miles north of Morristown and about 26 miles east of Indianapolis, Indiana. The project will consist of a rolled earth and concrete gravity type dam with a gate controlled overflow spillway and three gate controlled sluices in the base of the dam. The reservoir would have a storage capacity of 120,100 acre-feet. A detached rolled levee about 10,670 feet long and 13.5 feet height, with interior drainage facilities will provide flood protection for the town of Carthage, Indiana.

Proposed Operations: The amount of $100,000 would be used to initiate preconstruction planning of the project in FY 1975.

Justification: Big Blue Reservoir will be operated as a unit of the general comprehensive plan for flood control and related water resource development in the Wabash River Basin. The project, in combination with the fifteen other presently authorized reservoirs in the Wabash Basin, will aid in the reduction of flood flows along the Wabash River and, to a lesser degree, along the Ohio River below the Wabash River. The 269-square-mile drainage area controlled by the reservoir is about 45 percent of the Big Blue Basin which is tributary, in turn, to Driftwood, East Fork White, White, and Wabash Rivers. The project would provide for reductions in flood stages and flood damages in overflow areas along about 42 miles of the Big Blue, 15 miles of the Driftwood, and 192 miles of the East Fork White Rivers below the proposed dam and, to a lesser extent, along downstream reaches of the White and Wabash Rivers. The total values of all urban developments along the reaches of the Big Blue and East Fork White Rivers below the proposed dam are estimated at $116,458,000 and $150,206,000 respectively (1973 values). Recurrence, under present conditions, of March 1913 record flood heights along affected reaches of the Big Blue, Driftwood and East Fork White Rivers would cause damages estimated at $15,135,000 (1973 values), of which $8,718,000 would be prevented by the project.

Operation of the project during flood conditions equivalent to those of March 1973 would reduce flood levels about 1.7 feet at Shelbyville, which is about 19.6 miles below the proposed dam, and 0.3 miles at Columbus, which is about 57.1 miles below the proposed dam. Other damaging floods during the last five years occurred in April 1972, February 1971, January-February, March and April 1970, January-February and April 1969, February, May and August 1968. In addition, the project would provide storage for low-flow augmentation in the interest of water quality control, for water supply and for general and fish and wildlife recreational opportunities. The benefit-cost ratio is 1.7 to 1. The total annual benefits of $3,760,000 are broken down as follows:

Flood Control	$1,966,000
Water supply	273,000
Water quality control	427,000
Recreation:	
General	1,005,000
Fish and Wildlife	89,000
TOTAL	$3,760,000

Status of Environmental Impact Statement: Draft Environmental Impact Statement will be submitted concurrently with the Draft Phase I GDM and Final EIS with Final Phase I GDM.

Project: Big Pine Lake, Indiana

Summarized Financial Data:

Estimated Federal Cost (Corps of Engineers)		$ 31,200,000
Estimated non-Federal Cost		
Cash Contribution:	$ 1,578,000	
General & Fish & Wildlife		
Recreation including Lands	1,578,000	
Total Estimated Project Cost		32,778,000
Allocations to Date		864,400
Balance to Complete (Corps of Engineers)		30,335,600
Appropriations Requested for FY 1975		0
Amount that could be used in FY 1975		500,000

Authorization: 1965 Flood Control Act.

Location and Description: The proposed dam site is in west central Indiana on Big Pine Creek, about 2.5 miles above its confluence with the Wabash River at Attica. The lake lies in Warren County and is about 68 miles northwest of Indianapolis. The proposed project will control a drainage area of approximately 331 square miles and consists of an earth and concrete gravity type dam about 4,620 feet long and 132 feet maximum height, with a gate controlled overflow spillway and four gate controlled stuices.

Proposed Operations: The amount of $500,000 would be used to initiate construction of the project in FY 1975.

Justification: Big Pine Lake, in combination with the other fifteen presently authorized lakes in the Wabash Basin, will aid in the reduction of flood flows along the Wabash River and, to a lesser degree, to the reduction of major flood flows on the Ohio River below the Wabash River. Flood flows arising in the Big Pine Creek Basin contribute to flood damages in the downstream flood plain of the Wabash River. A number of urban areas, located in the flood plains have inadequate or no local flood protection. Many business and industrial concerns, public buildings, residences, and other improvements are in these high damage areas. Extensive railroad, highway, and utility systems are also situated in the flood area. Large agricultural areas in the flood plain are subject to frequent flooding, resulting in damages to crops and livestock, and soil erosion and other losses common to rural areas. Flood damages are reduced, to some extent, by the operation of completed projects and will be further reduced upon completion of lakes and local protection projects now under construction. However, recurrence of major floods would continue to cause widespread damages in the Wabash River Basin.

Rural, urban, transportation and levee developments along the Wabash River below Big Pine Creek, excluding the property protected by local protection projects now under construction or completed, are evaluated at about $397.2 million dollars (1973 values). The record flood of 1913 caused damages amounting to about $3,130,000 along the reaches of the Wabash River affected by the project, excluding the local protection projects as previously noted. A recurrence of this flood under present conditions of development would cause damages estimated at $34,889,000 of which $1,368,000 would be prevented by the project (both 1973 values). Damaging floods along the Wabash River below Big Pine Creek during the last five years occurred in January, April and June 1973; April 1972; February 1971; April-May 1970; and January - February 1969. In addition, the project would provide seasonal storage for general and fish and wildlife recreational opportunities. The benefit-cost ratio is 1.6 to 1. The total annual benefits of $2,422,000 are broken down as follows:

Flood Control	$ 1,589,000
Recreation:	
General	787,000
Fish and Wildlife	46,000
TOTAL	$ 2,422,000

Status of Environmental Impact Statement: The Draft Environmental Statement is scheduled for submission to CEQ in the fourth quarter of FY 1974. The Final Statement is scheduled for submission in the second quarter FY 1975.

Big Pine Lake, Ind.

Senator Stennis. There is nothing in the budget. The House has included $500,000, and local interests have requested $500,000. What is your capability on this project?

General Morris. Mr. Chairman, our capability on this project is $500,000 to initiate construction.

Senator Stennis. Would you submit a statement for the record?

General Morris. Yes, Sir.

[The statement appears on pp. 6830–6831:]

Big Pine Lake, Ind.

OPPOSITION

Senator Stennis. This committee has again heard from a number of individuals and groups, testifying in opposition to the Big Pine Lake project. Among those testifying are: Penny Parmenter, the Committee on Big Pine Creek; Alice Evans, Indiana Eco-Coalition; Ann Fisher, the Great Lakes Chapter of the Sierra Club; Mr. William J. Parmenter, Pine Creek Canoe Club; Gail Ann Fisher, Children Who Care About Big Pine Creek; Sylvia Troy, Save the Dunes Council; Jim Jontz, Indiana Conservation Council and Illinois Wildlife Federation; Mr. Carl N. Kramer; and Mr. David Dreyer. Many questions have been raised on different aspects of the project and I will address these major issues as we proceed. First, several statements have been made concerning the interest rate that has been used in the economic analysis for the Big Pine Lake project. Would you please discuss this point for us?

Colonel Rush. This matter was discussed in our testimony before this committee for fiscal year 1974. The interest rate used for project evaluation is 3¼ percent, as established by the Water Resources Council regulations in concert with the Secretary of the Treasury and other executive agencies. In December of 1968, the Water Resources Council implemented a regulation describing the interest rate formula to be used in plan formulation and evaluation. At the same time, provision was made for maintenance of an interest rate of 3¼ percent, if an appropriate non-Federal agency provided before December 31, 1969, satisfactory assurances to pay the required non-Federal share of project cost. Such assurances have been received for the Big Pine Lake project. The Congress has recently emphasized their position in the use of this interest rate formula and indicated their desire that the formula described above continue to be used. This matter is set forth in Section 80 of the Water Resources Development Act of 1974, which is Public Law 93–251.

PROJECT ALTERNATIVES

Senator Stennis. We have received testimony recommending alternatives to Big Pine Lake, including the alternative of designation of Big Pine Creek as a scenic river in the National Scenic Rivers program. Also, questions have been raised concerning the fact that the site selection is not final at this time. Would you please discuss these factors with us?

Colonel RUSH. All relevant alternatives, including both structural and nonstructural means, have been or are presently being considered for Big Pine to determine how efficiently they can meet the water related needs of the area, while at the same time considering the environmental and social effects. The optimum plan has not finally been determined. The final recommendation cannot be made until all relevant information on the alternatives is at hand. Consideration of Big Pine Creek as a scenic river in the National Scenic Rivers Program is the responsibility of the Department of the Interior. As we pointed out in our testimony last year, designation of Big Pine Creek as a scenic stream with recreation potential was considered in the Wabash River Basin Comprehensive Study and an environmental corridor was recommended to be established and maintained through and in addition to the authorized project.

Senator STENNIS. Considerable testimony has also been received concerning the environmental problems that exist in connection with the Big Pine Lake project. Would you please discuss the attention being given to the environmental matters concerning the project?

Colonel RUSH. To eliminate any possible bias in the environmental considerations to Big Pine Lake, outside environmental consultants have been utilized by the Corps of Engineers. Our studies are presently continuing to minimize the effect the project will have on the Fall Creek Gorge. As was discussed in our testimony for fiscal year 1974, Big Pine Lake was not formulated in isolation from the environmental resources of the entire basin. In the Wabash Comprehensive Study and resulting plan, full consideration was accorded to the need for and desirability of preserving free-flowing streams for canoeing and many other social and environmental reasons. Big Pine's place in the plan was determined only after full consideration of many of the alternatives and in consideration of many objectives. Based on the consultants' study of the environmental features associated with the Big Pine Lake area, and with our continuing coordination with Federal, State, and local interests in these matters, an environmental impact statement will be prepared in accordance with the requirements of the National Environmental Policy Act. This statement will discuss the environmental features and the environmental impact of the Big Pine Lake and the alternatives. This will include, of course, the resultant loss of stream, the effects upon fish and wildlife, and other environmental features.

Senator STENNIS. We have again received testimony that questions the logic of removal and future flooding of upstream lands in order to protect lands downstream from a potential dam. Would you please comment?

Colonel RUSH. Those people who live above and within a potential reservoir project and are dislocated by that project, are fairly compensated for their property. In theory, the benefits for a project should be sufficient to compensate those who are giving up opportunities, as such is the case at Big Pine. People who live in farms in the low lands do so because the stream valleys contain some of the most productive soil in the Nation, and it is in the national interest to optimize the use of their land to protect the current developments that are there.

Senator STENNIS. Testimony has also been received again this year concerning the costs associated with the loss in agricultural produc-

tion from the lands that must be taken for the reservoir, as well as the effects of loss of tax revenues from the lands removed from the tax base in the county affected. Would you please discuss these matters?

Colonel RUSH. Concerning the matter of loss of production in the acreage taken for the reservoir, an annual charge or "loss of land productivity," is included in the cost account which represents the net difference in land productivity using the private interest and the Federal interest rate. Judging from experience with similar projects, the tax base in Warren County can be expected to suffer some tax losses due to project construction for 3 or 4 years, after which, project induced development will bring about a recovery and extension of the tax base far beyond present projections without the project.

Senator STENNIS. Mr. Carl Kramer has testified about his concern that Big Pine Lake will rapidly become filled with silt and lose its effectiveness in a very short number of years. Is such a statement correct?

Colonel RUSH. It is the usual practice in the design of lake projects by the Corps of Engineers to include sufficient storage space to allow for silt and sediment accumulation for a period of 100 years without materially affecting the other purposes for which the project was authorized and designed. Such has been the case at the Big Pine Lake project.

Senator STENNIS. Much concern has again been expressed about the projected recreation benefits and the need for additional recreation opportunities in the Big Pine area. Your comments in this regard would be appreciated.

Colonel RUSH. There is little question of a need for recreation opportunities for this part of Indiana. Region IV has the smallest amount of water of any of the Indiana regions. The State outdoor recreation plan lists as unsatisfied needs all elements, except fishing. These unsatisfied needs include boating, picnicking, swimming, and camping; portions of which would be met with Big Pine. In addition, all indices indicate that the residents of region IV go to other places for recreation, with region VIII, including Indianapolis, having the greatest unmet need. Recreation by its very nature is somewhat flexible in where it can be met since people can go to the opportunity. The existing road networks assure that many would avail themselves of the opportunity at Big Pine, coming both from within region IV and from outside of region IV.

BIG WALNUT LAKE, IND.

Senator STENNIS. The budget request was $225,000. The House has included $300,000 and local interests have requested $300,000. What is your capability on this project?

General MORRIS. Our capability on this project is $300,000, Mr. Chairman.

Senator STENNIS. What would be accomplished with the additional $75,000?

General MORRIS. The additional amount would advance completion of preconstruction planning by 4 months.

Cross Wabash Valley Waterway

OPPOSITION

Senator Stennis. Mr. Thomas E. Dustin, executive secretary of the Indiana Division of the Izaak Walton League, has submitted a statement of opposition to the Cross Wabash Valley Waterway. Mr. Jim Jontz, conservation director of the Indiana Conservation Council and Ms. Alice Evans, president, Indiana ECO-Coalition have also submitted statements of opposition to the navigation study. This opposition again criticizes the economics of the Ohio River to Mount Carmel segment, questions the rewriting of a contract for coal traffic and market analysis, and objects to the lack of requirement that project beneficiaries make payments toward construction, operation, and maintenance of the waterway. What is your response to these statements?

Colonel Rush. The reconnaissance study of the Ohio River to Mount Carmel, Ill., portion of the waterway was conducted in sufficient scope only to determine if such improvement appeared feasible, and to recommend more detailed investigations if such feasibility resulted. The current study, of a more detailed nature, is being conducted to determine prospective benefits and estimated costs for final evaluation as recommended in the broader reconnaissance study. The initial coal traffic and market study contract was found to be much more costly than anticipated. The contract, therefore, was rewritten to delete certain portions which are to be completed with our own staff. At present there is no legislation which provides for user charges for cost sharing of construction, operation, and maintenance on the inland waterways.

Greenfield Bayou Levee

OPPOSITION

Senator Stennis. Ms. Alice Evans, president of the Indiana ECO-Coalition, and Mr. Thomas E. Dustin, executive secretary of the Izaak Walton League of America, express concern that the project will result in serious environmental losses, in that the levee will destroy at least 2,000 acres of forest and wetlands by causing the soils of the woodlands to dry out, permitting clearing and drainage for agricultural uses. What are your views on this matter?

Colonel Rush. Economic studies for the project assumed that only about 1,000 of the 2,000 acres of woodlands and wetlands would be converted to agricultural use. There has been a recent major change in land ownership in the southern portion of the area to be protected by the authorized levee alinement. About 3,000 acres have been acquired by Indiana and Michigan Electric Co., this area including most of the referenced woodlands within the project area. The eventual plans for use of this land have not been officially revealed at this time.

A recent meeting with landowners in the project area indicated that there is considerable disagreement concerning local desires and financial capability. Until such time as the local problems are resolved, the Louisville District plans to proceed no further with work on the project. If at some future time, after settlement of local issues, the local

interests request resumption of project studies, an alternative alinement will be considered which would exclude from protection most of the woodlands in question.

Senator STENNIS. Ms. Evans raises questions as to the economics of the project, especially in regard to the use of a 3¼-percent interest rate for project evaluations, claiming of future growth benefits and use of higher land utilization benefits. What is your response to these points?

Colonel RUSH. The interest rate in effect in December 1968, prior to the new higher rate of 4⅝ percent as proposed by the Water Resources Council, was 3¼ percent. However, in the official announcement by the Council as published in the Federal Register, an exception was made for the application of the new rate as follows:

> Where construction of a project has been authorized prior to the close of the second session of the 90th Congress, and the appropriate state or local government agency or agencies have given prior to December 31, 1969, satisfactory assurances to pay the required non-Federal share of project costs, the discount rate to be used in the computation of benefits and costs for such project shall be the rate in effect immediately prior to the effective date of this section, and that rate shall continue to be used for such project until construction has been completed, unless the Congress otherwise decides.

The Greenfield Bayou project qualified for retaining the 3¼ percent rate under this exception, as the necessary conditions were met. Section 80 of the Water Resources Development Act of 1974 reaffirms the use of this interest rate.

Future growth benefits are claims for the project in accordance with applicable guidelines and instructions for project evaluation, specifically Senate Document 97, 87th Congress, 2d session.

Higher land utilization benefits are also included in accordance with Senate Document 97, which states that flood control and prevention benefits may include an increase in the net return from higher use of property made possible as a result of lowering the flood hazard.

Senator STENNIS. Ms. Evans proposes that consideration be given to an alternative levee alignment which would exclude the wetlands and woods in the southern part of the area proposed for protection.

Colonel RUSH. This is essentially the same alternative as I mentioned earlier and will be given further consideration if and when studies resume on the project.

Senator STENNIS. Mr. Thomas E. Dustin, executive secretary of the Izaak Walton League of American, Inc., contends that construction of the Greenfield Bayou Levee will cause increased flooding problems on the Wabash River in the vicinity of the project, unless a major Wabash River channelization is undertaken. What are your views on this situation?

Colonel RUSH. Recent studies have been made to reduce the height of the proposed levee grade, thus reducing to some extent the adverse effects of confinement outside the levee. It is considered that the overall adverse effects, when measured on an average annual dollar value, would not significantly affect the project economics, nor result in appreciable losses to the affected properties. The greatest confinement results from the higher, or rarer, flood occurrences; however, for the more frequently occurring lower stage floods, the confinements are relatively insignificant.

Senator STENNIS. Mr. Dustin further states that, with the completion of the upstream flood control projects, it is unlikely that the 1913

flood height would ever be reached again. How do you respond to this point?

Colonel RUSH. The upstream projects do result in considerable flood reductions at the Greenfield Bayou project site. However, a substantial flood problem remains and can only be significantly reduced through a local protection project. The project as planned would protect against a flood height with a recurrence interval of about once in a 15-year period. The height of the 1913 flood would be reduced about 2 feet at the project site by operation of the existing and authorized upstream projects.

Senator STENNIS. In view of the locals problems and your plans to stop work on the project, do you still support your budget request for $200,000?

Colonel RUSH. Sir, until all problems are resolved, funds on hand are sufficient and the requested fiscal year 1975 funds are not required.

INDIANA DUNES NATIONAL SEASHORE, IND.

OPPOSITION

Senator STENNIS. Mr. Thomas E. Dustin of the Indiana Division of the Izaak Walton League of America stated that essentially about 2 miles of shoreline at Beverly Shores is lost. A rock revetment was constructed to halt shoreline erosion. This was accomplished without the benefit of an environmental impact statement. Will the beach and shoreline be restored? Why did the Indiana Dunes stone revetment project proceed without the benefit of an environmental impact statement?

Colonel RUSH. Sir, this emergency project was accomplished with National Park Service funds and therefore did not appear in the Corps budget. The Corps of Engineers acted as an engineering and construction agent of NPS. We expect that as the water levels of Lake Michigan recede and the beaches are again exposed to the wind, the dune sand will be blown landward. This wind-blown sand will be deposited as it strikes the rock revetment, and after a time, it is anticipated that the revetment will be buried. The beaches will continue to enlarge as the lake levels drop and the beach nourishment and littoral drift continue.

As to the lack of an EIS, the stone revetment was considered an interim emergency shore protection project for which an EIS is not required.

INDIANA SHORELINE EROSION, LAKE MICHIGAN, IND.

OPPOSITION

Senator STENNIS. Mr. Thomas E. Dustin of the Indiana Division of the Izaak Walton League has stated that a substantial problem of shore erosion is being caused by the breakwater at Michigan City. The interruption of the littoral flow along the shore is the most probable cause of the erosion. What is being accomplished to mitigate the effects of this breakwater?

Colonel RUSH. Sir, it has been determined that the Michigan City breakwater acts as a partial barrier to littoral drift along the shore

and therefore contributes to some degree to the erosion of the shoreline west of Michigan City. The Indiana shoreline erosion study currently underway will investigate the erosion along the shore from Michigan City to Gary, and will determine to what extent the breakwaters contribute to the erosion and will develop alternative plans to mitigate the damages attributable to the Federal harbor structures. Our budget request includes $100,000 for this study. The interim study of the reach between Michigan City and Indiana Dunes State Park is scheduled to be completed in a 3d quarter fiscal year 1975. An EIS would clearly be required for any plan of improvement contained in the study recommendations.

PAKOTA LAKE, IND.

Senator STENNIS. The budget request was $3,600,000. The House has included $4,600,000, and local interests have requested $4,600,000. What is your capabiilty on this project?

General MORRIS. Our capabiilty on this project is $4,600,000, Mr. Chairman.

Senator STENNIS. What would be accomplished with the additional $1 million?

General MORRIS. The additional amount would be used to advance completion of the project by 3 months.

UNIONTOWN LOCKS AND DAM, IND., AND KY.

Senator STENNIS. The budget request was $7,850,000. The House has included $9,850,000, and local interests have requested $11,850,000. What is your capability on this project?

General MORRIS. Our capability on this project is $11,850,000, Mr. Chairman.

Senator STENNIS. What would be accomplished with the additional $4 million?

General MORRIS. The additional amount would be used to permit additional payments of anticipated contract earning on the dam. It would not permit any advancement in our overall completion.

MISSOURI RIVER LEVEE SYSTEM, IOWA, KANSAS, MISSOURI AND NEBRASKA

OPPOSITION

Senator STENNIS. Senator Percy of Illinois has testified before this committee in opposition to the construction of the L–15 Missouri River levee unit near St. Charles, Mo. You have had an opportunity to review Senator Percy's statement.

Senator Percy states that the Corps has requested $50,000 for the L–15 Levee to be used to complete the Corps' environmental impact study and finish other studies on the project. What is the purpose of your request?

Colonel RUSH. The current budget request for the Missouri River Levee System includes funds for the L–15 Levee to complete the initial

planning report and to continue preconstruction planning should a structural alternative be recommended. Should a structural alternative not be recommended, planning would not be continued on this unit and the remaining amount tentatively allocated to this unit in the budget request would be reallocated to other Missouri River Levee System units.

Senator STENNIS. Senator Percy says that the L–15 Levee lacks proven economic justification; that the Corps is acquiring a favorable benefit-cost ratio using the original discount rate of 2.5 percent; and that a more realistic discount rate of as little as 5.5 percent would result in an unfavorable benefit-cost ratio. Is this so?

Colonel RUSH. Senator Percy's statement is correct in that the L–15 levee unit of the Missouri River levee system is not economically justified when analyzed with discount rates of 5.5 percent or greater. However, the new principles and standards of the Water Resources Council as they apply to interest rates and the related question of what identifies separable or independent elements of a project or system have not yet been resolved.

Senator STENNIS. Senator Percy contends that although the Corps is not authorized to use a higher discount rate, it should not recommend a project today on the basis of such outdated money-cost figures. Would you comment on this?

Colonel RUSH. No recommendation for construction of the L–15 unit will be made until the interest rate question, and other issues, are resolved. Local interests have expressed plans to move forward with a levee project in this area without Federal involvement.

Senator STENNIS. Senator Percy feels that not enough information is available on the environmental impact of the L–15 Levee on the natural flood plain in the area. Will an environmental impact statement be prepared?

Colonel RUSH. A complete environmental statement will be filed on the L–15 project in the event that Federal action is recommended. This statement would assess all known social, economic, and environmental impacts of the recommended project and of alternatives to the recommended project. The completion and filing of any such document is contingent on a recommendation for Federal action.

Senator STENNIS. Senator Percy states that the L–15 project would deprive the St. Louis area of a valuable green belt and recreation area. Would the project do this?

Colonel RUSH. In the public participation program conducted by the Corps, both opponents and proponents of a levee project agreed that the L–15 area should not be permitted to urbanize. Plans for the recreational use of the area between the levee and the river were dscussed as were plans such as the Great Rivers Recreation Area proposed by Pride Inc., of Alton, Ill. None of these plans would be precluded by the construction of a levee for the protection of agriculture in the L–15 area.

Senator STENNIS. Senator Percy feels that construction of the levee may cause irreparable damage to Alton Lake. What will be the effects on Alton Lake?

Colonel RUSH. Construction of the L–15 Levee will have no significant effect on Alton Lake. During periods of high water when the L–15 might have an effect, the gates of Lock and Dam 26, which impounds water creating Alton Lake, are opened to achieve "open river" conditions. During these times, recreational use and even commercial navigation are suspended on Alton Lake.

Senator STENNIS. Senator Percy has expressed concern for the 40,000-plus people in Alton, Ill., who would be directly affected by the raising of the waters on their side of the river as a result of this levee. How will this levee affect the water levels?

Colonel RUSH. Investigations related to the L–15 project have shown that a damaging flood occurs at Alton about once in 13 years on the average. A levee constructed to provide 50-year protection to the L–15 area would raise the water surface at Alton by about 0.2 of a foot for a riverflow of 13-year frequency. For a 50-year riverflow, the highest that a 50-year levee would confine, the increase in water surface elevation at Alton would be about 0.6 of a foot.

Senator STENNIS. Senator Percy suggests that consideration should be given to other means of flood protection such as lower 10–25 year agricultural levees which would protect farmers, but preclude the encroachment of industry. Has the Corps looked at other alternatives?

Colonel RUSH. Preconstruction planning of the L–15 project includes consideration of no action, 10-year, 25-year, 50-year, 100-year, and urban design levee protection. Land use in flood plains can be regulated by local governments to reflect their goals through local ordinances. The existence of a levee providing agricultural protection should have little impact on the effectiveness of such local flood plain regulation measures.

Senator STENNIS. Senator Percy recommends that the Corps be instructed to give serious consideration to the study on a proposed great rivers recreational area by Pride Inc., of Alton, Ill. Has the Corps considered this study in its planning?

Colonel RUSH. As I have stated, the Corps is aware of the proposal of Pride Inc., for the Great Rivers Recreation Area. In the work group discussions of the public participation program, this proposal was discussed thoroughly. An agricultural levee would not adversely affect the proposal of Pride Inc.

MISSOURI RIVER, SIOUX CITY TO THE MOUTH, IOWA, KANSAS, MISSOURI, AND NEBRASKA

Senator STENNIS. The budget request was $4,700,000. The House has included $4,700,000, and local interests have requested $5,700,000. What is your capability on this project?

General MORRIS. Our capability on this project is $5,700,000, Mr. Chairman.

Senator STENNIS. What would be accomplished with the additional million?

General MORRIS. The additional amount would be used to continue dike and revetment construction in the lower reaches of the Missouri River. Project completion would be advanced by 2 months to July 1979.

RATHBUN LAKE, IOWA

Senator STENNIS. There is nothing in the budget. Local interests have requested $700,000. What is your capability on this project?

General MORRIS. Mr. Chairman, our capability on this project is $700,000 to make payment to the Iowa Conservation Commission for construction of the fish hatchery.

Senator STENNIS. Would you submit a statement for the record?

General MORRIS. Yes, sir.

[The statement follows:]

Project: Rathbun Lake, Iowa (Fish Hatchery)

Summarized Financial Data:

Estimated Federal Cost	$700,000
Estimated Non-Federal Cost	0
Total Estimated Project Cost	$700,000
Allocations to Date	0
Balance to Complete	700,000
Preconstruction Planning Estimate	0
Amount that could be used in Fiscal Year 1975	700,000

Authorization: Water Resources Development Act of 1974 (P.L. 93-251).

Location and Description: The proposed fish hatchery would be located in the vicinity of and downstream from Rathbun Lake, Iowa. Payment is authorized to be made to Iowa Conservation Commission in contribution toward the cost of a fish hatchery being constructed for the purpose of restoring fish losses resulting from the construction of Rathbun, Saylorville, Coralville and Red Rock Lakes, in Iowa.

Proposed Operations: The amount of $700,000 could be used to make payment to the Iowa Conservation Commission for construction of the fish hatchery.

Justification: The construction of Rathbun, Saylorville, Coralville and Red Rock Lakes in the State of Iowa caused the loss of fishes. The proposed fish hatchery will restore fish losses and will make possible production of sport fish for distribution into suitable fishing waters in a wide area of Iowa. Fishing will be improved and widespread benefits will result.

STATUS OF ENVIRONMENTAL IMPACT STATEMENT:

An environmental assessment statement is expected to be executed by the Kansas City District Engineer in the first quarter FY 1975.

OPPOSITION

Senator STENNIS. Mr. Joel M. Pickelner testified before this committee on behalf of the National Wildlife Federation. He was concerned about the Corps' O. & M. activities in the Upper Mississippi River north of Keokuk, Iowa. He was disturbed over the impacts on wildlife habitats of dredged materials disposal methods. He also felt the Corps was moving ahead to construct a 12-foot channel when only a 9-foot channel is now authorized. He was further concerned that a final environmental impact statement has not been filed with the Council on Environmental Quality. Why is maintenance dredging required?

Colonel RUSH. Maintenance dredging is essential above Keokuk, Iowa, in order to sustain waterborne commerce. Tonnage carried on the Mississippi in our Rock Island District between Keokuk, Iowa, Lock and Dam 19 and Guttenberg, Iowa, Lock and Dam 10 exceeded 16 million tons in 1972.

Senator STENNIS. How many sites are dredged and what is the extent of this activity?

Colonel RUSH. Each year 9 to 17 sites are normally dredged throughout this reach. The quantity of material varies each year but averages out at about 768,000 cubic yards.

Senator STENNIS. What type of material is removed from the channel?

Colonel RUSH. Almost without exception the material is clean fine sand.

Senator STENNIS. Where is this material deposited?

Colonel RUSH. Due to the limitations of existing equipment, the disposal site must be within 1,600 feet of the dredge cut. In most cases deposition is made on islands or along the shoreline. At some sites it is necessary to dispose of the dredged material in shallow open water adjacent to the channel. Percentage wise, about 95 percent of the material is deposited on land and 5 percent is deposited in open water.

HARMFUL EFFECTS

Senator STENNIS. Other than a smothering effect upon terrestrial vegetation, what other effects occur that are considered harmful to fish and wildlife?

Colonel RUSH. The dredging operation produces a sand and water mixture which is very fluid. At some sites the material flows into adjacent sloughs. Likewise, since the material is not contained, annual flooding and other natural phenomenon tend to move the material away from the site.

Senator STENNIS. What is the special significance of pool 19?

Colonel RUSH. This pool has, along with other pools of the Upper Mississippi River, become expressly important to migratory waterfowl within the Mississippi Flyway. The pools are heavily utilized during both the spring and fall migrations. Specifically, pool 19 harbors several major fingernail clam beds which are major food sources for diving ducks. Two species of divers, the redhead and canvasback duck, concentrate in this pool to feed on the clams. Populations of both

species mentioned are very small placing greater importance on the clam beds of pool 19 to insure survival of the species.

Senator STENNIS. Do current maintenance dredging activities destroy these clam beds?

Colonel RUSH. Several studies have been made by biologists and graduate students to generally define the location of these beds. From available data, the nearest dredging activity is 8 miles upstream. Likewise, dredging activity is confined to the main channel while clam beds are generally located off-channel on shallow mud flats.

Senator STENNIS. Are plans being developed for a 12-foot navigation channel?

Colonel RUSH. In 1943 authorization was given to the Corps to study the feasibility of a 12-foot navigation channel. The study was resumed in 1968 and a preliminary feasibility report was published in July 1973. The report generally concluded that a 12-foot channel was not economically feasible, at this time, upstream from the confluence of the Mississippi and Illinois Rivers. Also, during the course of the study, it became evident that a 12-foot channel project could have a significant environmental impact.

STATUS OF ENVIRONMENTAL IMPACT STATEMENT

Senator STENNIS. Has an EIS been prepared and filed for O. & M. activities of the 9-foot navigation channel project?

Colonel RUSH. Yes, sir, draft environmental impact statements were prepared for pools 1 through 22 by the St. Paul and Rock Island Engineer Districts. The draft statements were placed on file with CEQ in February and March 1974, respectively. Final statements are now being prepared and will be on file this summer.

BIG HILL LAKE, KANS.

Senator STENNIS. The budget request was $500,000. The House has included $500,000, and local interests have requested $900,000. What is your capability on this project?

General MORRIS. Our capability on this project is $900,000, Mr. Chairman.

Senator STENNIS. What would be accomplished with the additional $400,000?

General MORRIS. The additional amount would be used to advance completion of the project by 1 year.

BLUE RIVER RESERVOIRS, KANS.

OPPOSITION

Senator STENNIS. Ms. Ann Sullivan has provided the committee with testimony of her opposition to the construction of the Blue River basin projects located in Kansas and Missouri.

Ms. Sullivan states that there has been little time to review the environmental impact statement submitted by the Corps, that there has been little publicity in the news media relative to this project, that she has been able to obtain little data from the Corps office, and that a

newspaper recently conducted an interview showing that less than 5 percent of the people in her county knew anything about the project. Doesn't the Corps keep the public informed on what it is doing?

Colonel RUSH. Completion of the phase I GD17 was delayed. In accordance with our regulations this report must be completed and available for public review at the time the draft environmental statement is released for review. We regret this delay and recognize that it has inconvenienced those who wished to prepare testimony for the congressional hearings. The social, economic, and environmental assessment report prepared by Midwest Research Institute, the draft environmental statement, prepared by the Corps, and a copy of the press release have all been placed in a number of local libraries. A number of articles have appeared in both the Kansas City Star and the Johnson County Sun relative to the Blue River projects. Since the middle part of April, four articles pertaining to these projects have been printed in the Star and at least two articles have been published in the Sun.

Senator STENNIS. Ms. Sullivan requested that we refrain from funding the projects until the voters of Johnson County indicate their preferences regarding the reservoirs and attendant recreational facilities in a ballot scheduled for the fall of 1974. What can you tell us to assist us in considering her request?

Colonel RUSH. The greatest benefits to be derived from the Blue River projects economically are from the flood control capabilities and not from the recreational potential. Even if recreation facilities are omitted, Tomahawk, Indian, and Wolf-Coffee Lakes would still show a favorable benefit-to-cost ratio.

Senator STENNIS. Ms. Sullivan stated that one hazard of a lake with a tremendous drawdown is that it provides a breeding ground for mosquitoes, as was the case at Niobrara, Nebr. Will such a condition occur at the Blue River Lakes?

Colonel RUSH. Operational studies, although preliminary, indicate that drawdowns will average only 2 feet every other year at Indian Lake, while at Tomahawk and Wolf-Coffee Lakes a 1-foot drawdown will occur. As you can see, these lakes would maintain a relatively stable water level.

FLOOD PLAIN ZONING

Senator STENNIS. Ms. Sullivan states that the Corps says the best flood protection is flood plain zoning and that the quarter of a billion dollars proposed for the Blue River basin projects could be better spent on developing flood plain zoning and attendant recreation facilities. What are your comments on this?

Colonel RUSH. Flood plain zoning has been carried out on the local level. In Missouri, Swope Park and the Blue River Parkway have been most effective in holding down flood losses in these areas. Overland Park, Kans., is developing a similar parkway along a portion of Indian Creek. The city of Leawood, Kans., has established a flood plain zoning ordinance and Overland Park, Kans., is developing an ordinance also against developing the flood plain. These measures will help; however, they will not prevent damages to existing development within the flood plain. The Blue River projects are needed to prevent such damages.

CEDAR POINT LAKE, KANS.

OPPOSITION

Senator STENNIS. In testimony before this committee, Mr. Pat Sauble, a farmer, opposed the expenditure of any more funds for planning of the Cedar Point Lake project. He furnished us copies of five letters prepared by city officials from five communities which are located near the project. Each stated their community had no plans to purchase water stored in the proposed project. There appears to be a question of interest and need for water supply in the project. Can you tell me who wants water from the project and what are the needs for water supply?

Colonel RAY. The Kansas Water Resources Board, in their March 9, 1973, meeting, approved a resolution of assurance covering water supply storage for 13.7 million gallons per day in Cedar Point Lake, which is the total lake yield. City officials of Strong City, Kans., have indicated they want water from the project for immediate and future uses.

Our studies indicate a water supply deficit of about 100,000 to 200,000 gallons per day is expected by 1980 for the Cedar Point Lake study area. By 2080, the deficit is expected to range between 8 and 46 million gallons per day. An independent study prepared by the Kansas Water Resources Board staff indicates a potential water supply shortage of 13.4 million gallons per day by year 2020. We feel that based on the above there is good and sufficient need for providing the water supply storage in the project.

Senator STENNIS. HEW reports the national birth rate was 4 percent lower than last year. If this trend keeps up, will we need the projected water storage for year 2020?

Colonel RAY. Even though HEW reports a decline in national birth rates, we do not believe that this decline is applicable to any measurable degree to the Cedar Point project. In subnational areas, migration rates are much more important as a factor of change than fertility rates. Population estimates used in the Cedar Point project are based on a Department of Commerce regional projection, census series C, which considers net migration.

NEED FOR LAKE RECREATION

Senator STENNIS. Mr. Sauble has also stated that the Bureau of Outdoor Recreation concludes there is no need for lake-oriented recreation in the Cedar Point Lake study area. Yet, the Corps has included recreation as a project purpose and has claimed benefits for recreation. Would you comment on his statement?

Colonel RAY. Yes, sir. The variance in study conclusions is explained by a difference in day-recreation use distance. The Tulsa district, as well as the Kansas Park and Resources Authority, considers a 50-mile market area while the Bureau of Outdoor Recreation uses a 75-mile market area. The larger area includes other day recreation use areas which are not included in the smaller market area. Our studies show there is a need for lake boating and swimming in the study area;

therefore benefits for recreational purposes have been included in the project evaluation.

Senator STENNIS. Mr. Sauble also pointed out in his testimony in 1973, there were six floods on the Cottonwood River, yet Cedar Creek never reached flood stage. Would you comment?

Colonel RAY. There seems to be a communications gap about "flooding in Cedar Creek." When we speak of flooding, we are referring to the stages as shown on the gage at Cedar Point. Any water level above 13 feet on the gage is considered out of banks and flooding is recorded. Readings from the Cedera Point gage indicate Cedar Creek was out of banks four times in 1973. Readings from the Plymouth gage on the Cottonwood River near the Chase-Lyons county line indicate the Cottonwood River was out of banks eight times in 1973.

NEED FOR FLOOD CONTROL

Senator STENNIS. Is there a need for flood control on Cedar Creek and the Cottonwood River?

Colonel RAY. Our studies indicate the average annual structural and crop loss from flooding on Cedar Creek and on the Cottonwood River below Cedar Creek is about $480,000.

Senator STENNIS. What effect would the Cedar Point Lake project have on reducing those losses?

Colonel RAY. Flood control provided in the proposed project would reduce those losses about $200,000 on an average annual basis.

Senator STENNIS. Is flood control in Cedar Point Lake economically justified?

Colonel RAY. Yes, sir.

Senator STENNIS. Would the development of flood water retarding structures in Middle Creek, Diamond Creek, South Fork, Payton Creek, Doyle Creek, and Cedar Creek watersheds provide more flood protection for the Cottonwood and Neosho Rivers?

Colonel RAY. The flood control effects of watershed development for the entire Cottonwood River Basin cannot be compared to flood control effects of Cedar Point Lake alone. Developing Cedar Point Lake does not preclude development in five of the watersheds. Watershed development in those five watersheds and Cedar Point Lake would provide more flood protection than watershed development in the six watersheds.

Senator STENNIS. Will the project have adverse effects on recreation, archeology, history, and culture of the stream and area?

Colonel RAY. The project will result in changes to the stream and the area. Those changes have been assessed in the environmental statement, and have been fully considered in the selection of the recommended project.

CLINTON LAKE, KANS.

Senator STENNIS. The budget request was $8,750,000. The House has included $8,750,000, and local interests have requested $10,000,000. What is your capability on this project?

General MORRIS. Our capability on this project is $8,750,000, the same as the budget, Mr. Chairman.

DOUGLASS LAKE, KANS.

Senator STENNIS. There is nothing in the budget and local interests have requested $100,000. What is your capability on this project?

General MORRIS. Mr. Chairman, our capability on this project is $100,000 to initiate reconstruction planning.

Senator STENNIS. Would you submit a statement for the record?

General MORRIS. Yes, sir.

[The statement follows:]

Project: Douglass Lake, Kansas

Summarized Financial Data:

Estimated Total Appropriation Requirement		$33,500,000	
Future non-Federal Reimbursement		11,200,000	
Estimated Federal Cost (Ultimate)			$22,300,000
Estimated non-Federal			11,200,000
Reimbursement:			
Water Supply	$10,700,000		
Recreation	500,000		
Other	0		
Total Estimated Project Cost			33,500,000
Allocations to Date			0
Balance to Complete			33,500,000
Preconstruction Planning Estimate			1,100,000
Amount that could be utilized in FY 1975			100,000

Authorization: 1965 Flood Control Act

Location and Description: The dam would be located in Butler County, Kansas, on Little Walnut Creek, about 6 miles northeast of Douglass, Kansas. The plan of improvement consists of a rolled-earth embankment and a controlled spillway. The dam would be 11,640 feet in length including the spillway, with a maximum height of 89 feet above the streambed. The total reservoir storage would be 171,900 acre-feet for flood control, 77,300 acre-feet for water conservation, and 18,200 acre-feet for sedimentation.

Proposed Operations: The amount of $100,000 would be used to initiate preconstruction planning.

Justification: The Douglass Lake is a unit in the plan for the control of floods in the Walnut River Basin. In the flood plain below El Dorado, Towanda, and Douglass Damsites, there are about 6,900 residents and 2,400 employees. Floods average about one each year on the main stem and major tributaries. The maximum flood of record at the Winfield gage occurred in 1944 when the peak stage was 8.3 feet above flood stage, and 5.8 feet above flood stage at Douglass. Other major floods occurred in 1923, 1928, 1951, 1964, and 1965(2). Because of the nature of the overflow-land, even minor floods cover much of the flood plain along the main stem. Moderate floods cover almost all of it. Major floods pose extreme threats to the cities of El Dorado, Augusta, Winfield, and smaller communities. Lands subject to flooding in the headwaters are primarily rural. Other properties subject to flooding within the system area include oil installations and related equipment, county roads, highways, railroads, and utilities. The estimated value of the properties, including proven and unproven minerals, is over $109 million. About 42,000 acres of rural land are in cultivation below the dams in this system, with an estimated crop value of $2 million. The average annual flood losses are estimated at $924,000. Construction of this project would provide a high degree of flood protection for 2,010 acres and would assist in the protection of 49,050 acres in the basin, develop a water yield of 14.2 MGD; develop the optimum yield of the stream into a positive resource through storage and regulation; provide outdoor recreation for an estimated 485,000 persons annually; and sport fishing and hunting to help meet the regional demands. The benefit-to-cost ratio is 1.07 to 1. The average annual benefits for the project are broken down as follows:

Flood Control	$ 598,000
Water Supply	543,000
Recreation	334,000
Redevelopment	42,000
Total	$1,517,000

Status of Environmental Impact Statement: To be submitted concurrently with GDM, Phase I.

El Dorado Lake, Kans.

Senator Stennis. The budget request was $4 million. The House has included $4 million, and local interests have requested $4,500,000. What is your capability on this project?

General Morris. Our capability on this project is $4,500,000, Mr. Chairman.

Senator Stennis. What would be accomplished with the additional $500,000?

General Morris. The additional amount would be used to advance the real estate acquisition schedule.

Fort Scott Lake, Kans.

Senator Stennis. There is nothing in the budget. The House has included $300,000, and local interests have requested $900,000. What is your capability on this project?

General Morris. Mr. Chairman, our capability on this project is $900,000 to initiate construction.

Senator Stennis. Would you submit a statement for the record?

General Morris. Yes, sir.

[The statement follows:]

Project: Fort Scott Lake, Kansas

Summarized Financial Data:

Estimated Total Appropriation Requirement		$ 35,200,000
Future Non-Federal Reimbursement	$1,184,000	
Estimated Federal Cost (Ultimate)		$ 34,016,000
Estimated Non-Federal Cost		1,184,000
Reimbursement: Water Supply	$1,184,000	
Total Estimated Project Cost		$ 35,200,000
Allocations to Date		755,000
Balance to Complete		$ 34,445,000
Amount that could be used in Fiscal Year 1975		$ 900,000

Authorization: Flood Control Act of 1954 (H.D. 549/81/2)

Location and Description: The project is located on the Marmaton River, about five miles west of Fort Scott, in Bourbon County, Kansas. The plan of improvement provides for construction of an earthfill dam about 75 feet high and 7,200 feet long to create a lake with a total storage capacity of 235,500 acre-feet.

Proposed Operations: The amount of $900,000 would be used to initiate acquisition of lands and to initiate construction.

Justification: The Fort Scott Lake would control the runoff from 279 square miles of land in the Osage River Basin. The project would provide flood protection to about 37,500 acres along the Marmaton above the headwaters of Harry S. Truman Dam and Reservoir. Annual benefits will also accrue from recreation, fish and wildlife, water supply and area economic development. The benefit-to-cost ratio is 1.14 to 1.

The average annual benefits are listed below:
Current Estimate July 1973 Base (100-year life)

Flood Control	$ 811,000
Water Supply	124,000
Recreation	650,000
Fish and Wildlife	48,000
Area Redevelopment	227,000
TOTAL	$1,860,000

STATUS OF ENVIRONMENTAL IMPACT STATEMENT: The final statement was filed with CEQ 17 March 1972.

GROVE LAKE, KANS.

Senator STENNIS. There is nothing in the budget. Local interests have requested $1 million. What is your capability on this project?

General MORRIS. Mr. Chairman, in view of planning delays experienced on this project, although available funds are adequate to complete preconstruction planning, the project will not be ready for construction until after fiscal year 1975. Considering the status of planning we do not have a capability for Grove Lake in fiscal year 1975.

HILLSDALE LAKE, KANS.

Senator STENNIS. The budget request was $1,500,000. The House has included $2 million and local interests have requested $3 million. What is your capability on this project?

General MORRIS. Our capability on this project is $3 million, Mr. Chairman.

Senator STENNIS. What would be accomplished with the additional $1,500,000?

General MORRIS. The additional amount would be used to advance the completion date of construction by 6 months to December 1978.

OPPOSITION

Senator STENNIS. Dr. E. Raymond Hall has appeared before this subcommittee several times in opposition to further appropriation for Hillsdale Lake, Kans., because he believes the project is not economically justified and is no longer needed. He also introduced into the record written statements of Mr. Ken Bingman and Mrs. Mary A. Sherwood, who are also in opposition to further appropriations for Hillsdale Lake. You have had an opportunity to review these statements. Do you have any general comments?

Colonel RUSH. Yes, sir. As you stated, sir, Dr. E. Raymond Hall has appeared before this subcommittee several times in opposition to the Hillsdale Lake project. As has been the case in past years, Dr. Hall attempts to show that Hillsdale Lake is not economically justified. As currently planned, the Hillsdale Lake project is well justified with a benefit-cost ratio of 1.16 to 1. Dr. Hall also contends that the project is no longer needed. Information available to the Corps indicates that needs, particularly for water supply, are becoming more critical. Most of Dr. Hall's comments have been answered in past years. However, I would be happy to answer any specific questions you may have at this time.

STATUS OF LOCAL PARTICIPATION

Senator STENNIS. What is the status of the cost-sharing contracts?

Colonel RUSH. A contract with the State of Kansas for all of the water supply storage in Hillsdale Lake was approved by the Secretary of the Army on April 9, 1974. No cost-sharing contracts were obtained for recreational development under the provisions of the Federal Water Project Recreation Act of 1965. Due to this current lack of

local participation, the project was reformulated to exclude recreation and fish and wildlife enhancement.

Senator STENNIS. Does the 1.16 benefit-cost ratio reflect this reformulation?

Colonel RUSH. Yes, sir. The current estimated project cost does not include any costs for recreation or fish and wildlife enhancement facilities. The cost of lands to be acquired to preserve the recreation potential of the project in accordance with the Federal Water Project Recreation Act of 1965 is included however. Also included in the computation of the 1.16 benefit-cost ratio are incidental recreation and fish and wildlife benefits which are expected to be realized.

STATUS OF CONSTRUCTION

Senator STENNIS. Funds were appropriated for initiation of construction in 1972. Has construction been initiated?

Colonel RUSH. The land acquisition program for Hillsdale Lake was initiated in April 1974 following the approval by the Secretary of the Army of the water supply storage reimbursement contract with the State of Kansas. The Government has received and accepted offers to sell for six tracts of land at the Hillsdale Lake project. Closing for these tracts will be completed in the very near future, possibly June 21, for one tract. Acquisition of this first tract of land will constitute initiation of construction. Physical construction is scheduled to be initiated this fall.

Senator STENNIS. Has the Corps of Engineers considered the terms of Public Law 92–500 as it relates to water quality storage in Hillsdale Lake?

Colonel RUSH. Public Law 92–500 is not applicable to the water quality storage in Hillsdale Lake because funds for initiation of construction were appropriated on August 25, 1972, which was prior to the effective date of Public Law 92–500, October 18, 1972.

Senator STENNIS. Is the discount rate used in the economic analysis consistent with the Water Resources Development Act of 1974?

Colonel RUSH. Yes, sir. The 3¼-percent discount rate for the project is in accordance with the requirements of section 80 of the Water Resources Development Act of 1974.

INDIAN LAKE, KANS.

Senator STENNIS. There is nothing in the budget, the House has included $50,000, and local interests have requested $50,000. What is your capability on this project?

General MORRIS. Mr. Chairman, subject to a favorable finding on the restudy and reclassification of the project to the active category, our capability on the Indian Lake project is $50,000 to initiate preconstruction planning.

Senator STENNIS. Would you submit a statement for the record?

General MORRIS. Yes, sir.

[The statement follows:]

INDIAN LAKE, KANS. (DEFERRED FOR RESTUDY)

Summarized financial data

Estimated total appropriation requirement	$35, 702, 000
Future non-Federal reimbursement	4, 923, 000
Estimated Federal cost (ultimate)	30, 779, 000
Estimated non-Federal cost	4, 923, 000
Reimbursement: Recreation	4, 923, 000
Total, estimated project cost	35, 702, 000
Allocations to date	0
Balance to complete	35, 702, 000
Preconstruction planning estimate	1, 000, 000
Amount that could be used in fiscal year 1975	50, 000

Authorization.—Flood Control Act of 1970.

Location and Description.—The proposed damsite is located on Indian Creek in Johnson County, Kansas, about 14 miles above the confluence of Indian Creek with the Blue River. Preliminary plans provide for construction of an earthfill dam about 80 feet high and 4,800 feet long to create a lake with a total storage capacity of 22,900 acre-feet for flood control, fish and wildlife, recreation, and sediment reserve.

Proposed Operations.—Subject to a favorable finding on the restudy and reclassification of the project to the active category, the amount of $50,000 could be used to initiate preconstruction planning.

Justification.—The Indian Lake will control the runoff from about 15 square miles of land in the Indian Creek basin. Operated as a unit in the Blue River basin, Indian Lake, together with three other lakes and downstream Blue River Channel Improvement, would provide a substantial degree of protection to important urban development in the Kansas Citys, including the Leeds industrial area, the Blue Valley Industrial District, small business, and residential areas, as well as railroad and highway transportation routes. The benefit-to-cost ratio is estimated to be 2.6 to 1.

The average annual benefits are listed below:

Current estimate, July 1973 base (100-year life)

Flood control	$5, 597, 000
Fish and wildlife	80, 000
Recreation	720, 000
Total	6, 397, 000

Status of environmental impact statement:

The Environmental Impact Statement for the Blue River Basin, Kansas and Missouri, was filed with CEQ on 13 November 1970. An updated draft statement on the Blue River Basin plan was filed with CEQ on 8 April 1974. The final statement is scheduled for submission to CEQ in the first quarter of FY 1975.

KANSAS RIVER NAVIGATION, KANS.

Senator STENNIS. There is nothing in the budget. Local interests have requested $50,000. What is your capability on this project?

General MORRIS. Mr. Chairman, our capability on this project is $50,000 to initiate preconstruction planning.

Senator STENNIS. Would you submit a statement for the record?

General MORRIS. Yes, sir.

[The statement follows:]

Project: Kansas River Navigation, Kansas

Summarized Financial Data:

Estimated Federal Cost		$ 3,750,000
Estimated Non-Federal Cost		16,000
Cash Contributions	$ 0	
Other Costs	$ 16,000	
Total Estimated Project Cost		$ 3,766,000
Allocations to Date		0
Balance to Complete		3,750,000
Preconstruction Planning Estimate		225,000
Amount that could be utilized in FY 1975		50,000

Authorization: Section 201 of the Flood Control Act of 1965. (Authorized 1974)

Location and Description: The proposed project is located on the Kansas River from the mouth to the Turner Bridge. The plan of improvement provides for construction of a harbor navigation channel 150 feet wide and nine feet deep, under low flow conditions for 9.33 miles from the mouth of the Kansas River to the Turner Bridge.

Proposed Operations: The amount of $50,000 could be used to initiate preconstfuction planning.

Justification: The Kansas River is a right-bank tributary of the Missouri River, joining the latter at the Kansas Cities. The banks of both rivers near the confluence are highly industrialized. Firms located on the Missouri River have access to waterborne commerce. The improvements proposed would extend harbor navigation into the Kansas River for 9.33 miles upstream. An improved navigation channel would serve three industrial areas along the lower Kansas River. The benefit-to-cost ratio is 2.3 to 1. Average annual benefits, all navigation, are estimated at $907,000.

STATUS OF ENVIRONMENTAL IMPACT STATEMENT: The final statement was filed with CEQ 24 September 1973.

Lawrence, Kans.

Senator Stennis. I notice that no funds are requested in this budget for the Mud Creek unit of the Lawrence local protection project and this committee has heard testimony from local interests supporting an appropriation in fiscal year 1975 for the project. Further, local interests have testified for funds for a project that would provide a levee along the right bank of Mud Creek and some channel improvements, using rights-of-way which they have already acquired. Does the Corps have a fiscal year 1975 capability for construction of the plan supported by local interests or any other plan?

General Morris. Mr. Chairman, subject to the Corps of Engineers being directed by the Congress to proceed with construction of a levee along the alinement for which local interests have acquired lands, easements and rights-of-way, our capability for fiscal year 1974 is $200,000 to complete planning and initiate construction of the Mud Creek unit of the Lawrence, Kans. project. The Corps does not have a capability in fiscal year 1975 for any plan other than those which would use the lands, easements, and rights-of-way already acquired by local interests.

Senator Stennis. Would you submit a statement for the record?

General Morris. Yes, sir.

[The statement follows:]

Project: Lawrence, Kansas

Summarized Financial Data:

Estimated Federal Cost		$8,870,000
Estimated non-Federal Cost:		
Cash Contributions	0	
Other Costs	$2,200,000	2,200,000
Total Estimated Project Cost		$ 11,070,000
Allocations to Date		5,165,000
Balance to Complete		3,705,000
Amount that could be used in FY 1975		200,000

Authorization: Flood Control Act of 1954.

Location and Description: The project is located along both banks of the Kansas River about 50 miles above its mouth at Lawrence, Douglas County, Kansas. The plan of improvement provides for the construction of levees along both banks of Kansas River and the right bank of Mud Creek, channel improvement for Mud Creek and Brook Street channel, bank protection, and appurtenant facilities for protection of North Lawrence and South Lawrence, Kansas.

Proposed Operations: Subject to the Corps of Engineers being directed to proceed with construction of the plan previously contemplated for which local interests have acquired lands, easements and rights-of-way, our capability for FY 1975 is $200,000 to complete planning and initiate construction of Mud Creek unit of the Lawrence, Kansas project.

Justification: The proposed levees and channel improvements would provide protection to an area north of Kansas River which contains about 8000 acres of residential, industrial and agricultural lands and to an area south of Kansas River which contains the Santa Fe Railroad yards and the municipal sewage treatment plant. The flood of record in the area occurred in July 1951, causing damages of $3,382,000. A recurrence of this flood at 1973 conditions and prices would cause damages estimated at $11,650,000. The benefit-to-cost ratio is 1.09 to 1. Average annual benefits, all flood control, are estimated to be $419,200.

STATUS OF ENVIRONMENTAL IMPACT STATEMENT:

A draft statement was filed with CEQ on 11 January 1972. A revised draft statement was filed on 5 February 1973. A new plan of improvement for Mud Creek Unit is now being considered. An updated draft statement is scheduled for submission to CEQ in the fourth quarter of FY 1974. The final statement is scheduled to be filed in the second quarter, FY 1975.

Marion, Kans.

Senator Stennis. The budget request was $78,000. The House has included $178,000, and local interests have requested $178,000. What is your capability on this project?

General Morris. Our capability on this project is $178,000, Mr. Chairman.

Senator Stennis. What would be accomplished with the additional $100,000?

General Morris. The additional amount would be used to initiate construction.

Perry Lake Area (Road Improvements), Kans.

Senator Stennis. There is nothing in the budget. The House has included $400,000, and local interests have requested $400,000. What is your capability on this project?

General Morris. Mr. Chairman, our capability on this project is $400,000 to initiate the construction.

Senator Stennis. Would you submit a statement for the record?

General Morris. Yes, sir.

[The statement follows:]

Project: Perry Lake Area (Road Improvements), Kansas

Summarized Financial Data:

Estimated Federal Cost	$ 3,000,000
Estimated non-Federal Cost	0
Total Estimated Project Cost	$ 3,000,000
Allocations to Date	100,000
Balance to Complete	$ 2,900,000
Amount that could be used in FY 1975	400,000

Authorization: River Basin Monetary Authorization Act of 1971 (PL 92-222)

Location and Description: The proposed road improvements are in 3 segments at different locations in Jefferson County, Kansas. The plan of improvements provides for construction of about 16.1 miles. Segment A extends from U.S. Highway 24 at Perry, Kansas, 2.5 miles north and west to the east end of the Perry damsite access road.

Segment B extends from the north side of the Jefferson Point State Park north and west about 5.5 miles to Highway K-92 about two miles west of Ozawkie, Kansas.

Segment C extends from K-92, about 2 miles east of Ozawkie, north about 8.1 miles to highway K-4, K-16, about two miles east of Valley Falls, Kansas.

Proposed Operations: The amount of $400,000 could be used to initiate construction.

Justification: Heavy traffic on gravel surface county roads to public use areas at Perry Lake has created a dust problem and posed a safety hazard. Hazardous curves will be rebuilt to provide better sight distance and greater radius. Blacktop surface will alleviate dust pollution as well as eliminating the dust cloud that impairs driving vision.

STATUS OF ENVIRONMENTAL IMPACT STATEMENT: An environmental assessment statement was executed by the Kansas City District Engineer on 8 January 1974.

Tomahawk Lake, Kans.

Senator Stennis. There is nothing in the budget the House has included $150,000, and local interests have requested $150,000. What is your capability on this project?

General Morris. Mr. Chairman, subject to a favorable finding on the restudy, our capability on the Tomahawk Lake project is $150,000 to initiate preconstruction planning.

Senator Stennis. Would you submit a statement for the record?

General Morris. Yes, sir.

[The statement follows:]

Project: Tomahawk Lake, Kansas

Summarized Financial Data:

Estimated Total Appropriation Requirement		$40,267,000
Estimated non-Federal Reimbursement	$10,167,000	
Estimated Federal Cost (Ultimate)		30,100,000
Estimated non-Federal Cost:		10,167,000
Reimbursement: Recreation	6,284,000	
Water Supply	3,883,000	
Total Estimated Project Cost		40,267,000
Allocations to Date		0
Balance to Complete		40,267,000
Preconstruction Planning Estimate		1,000,000
Amount that could be used in FY 1975		150,000

Authorization: Flood Control Act of 1970

Location and Description: The proposed Lake would be located on Tomahawk Creek in Johnson County, Kansas, in the communities of Leawood and Overland Park. Preliminary plans provide for construction of an earthfill dam about 80 feet high and 2,850 feet long to create a lake with a total storage capacity of about 35,900 acre-feet for flood control, possible water supply, fish and wildlife, recreation, and sediment reserve.

Proposed Operations: Subject to a favorable finding on the restudy, the amount of $150,000 could be used to initiate preconstruction planning.

Justification: The Tomahawk Lake will control the runoff from about 24 square miles of land in the Tomahawk Creek Basin. The flood of record in the basin occurred in September 1961, causing damages of nearly $8 million. A recurrence of this flood at 1972 conditions would cause damages estimated at $19.8 million. Operated as a unit in the Blue River Basin, Tomahawk Lake, together with three other lakes, and downstream Blue River Channel Improvement, would provide a substantial degree of protection to important urban developments in the Kansas Citys, including the Leeds industrial area, the Blue Valley Industrial District, small business, and residential areas, as well as railroad and highway transportation routes. The benefit-to-cost ratio is estimated to be 2.7 to 1.

The average annual benefits are listed below:
Current Estimate July 1973 Base (100-year life)

Flood Control	$6,285,000
Water Supply	265,000
Fish and Wildlife	120,000
Recreation	1,080,000
Total	$7,750,000

STATUS OF ENVIRONMENTAL IMPACT STATEMENT:

The Environmental Impact Statement for the Blue River Basin, Kansas and Missouri, was filed with CEQ on 13 November 1970. An updated draft statement on the Blue River Basin plan was filed with CEQ on 8 April 1974. The final statement is scheduled for submission to CEQ in the first quarter of FY 1975.

Tomahawk Lake, Kans.

OPPOSITION

Senator Stennis. Mr. V. M. Dostal, attorney in Leawood, Kans., has provided the committee with testimony in opposition to the construction of Tomahawk Lake located in Johnson County, Kans. You have had an opportunity to review Mr. Dostal's statement. Mr. Dostal has presented this committee with facts and figures to substantiate his position that this project cannot be justified economically.

Mr. Dostal stated that the increase in the cost of constructing Tomahawk Lake, initially estimated to cost $16,400,000 and now estimated at $42,545,000, is abnormal and indicates that the project cannot be justified in the area proposed. What has caused the increased in cost? Can the project be justified?

Colonel Rush. This increase is due to accelerated real estate costs, labor costs, material costs, and more refined data used in preparing the study. Development in the flood-prone areas bordering Indian Creek and the Blue River has rapidly increased also over a 7-year period. Tomahawk Lake would provide $6,285,000 in annual flood control benefits to the lower reach of Indian Creek and the industrialized portions of the Blue River flood plain compared with $1,060,700 annual flood control benefits determined at the time the $16,400,000 cost estimate was prepared using 1967 prices. We consider the project to be justified.

Senator Stennis. Mr. Dostal said that the Corps plans to remove four east-west roadways and four north-south roadways, replacing only one north-south roadway, thus eliminating seven roadways from the network in Leawood, Kans. What are the Corps' plans concerning roads in the area?

Colonel Rush. Planning studies show that four north-south roads will be affected and essentially three east-west routes will be affected by the project. Of these roads, only two, Roe and Metcalf Avenues, old U.S. 69 Highway, are paved roads within the lake area. Roe Avenue, a north-south road, will be relocated to provide a serviceable road network. The lake will not affect the new U.S. Highway 69 or Kansas Highway 150 located in that region. Those roads not planned for relocation are feeder-type roads that do not contribute greatly to the basic transportation network. The principal function of these roads is to provide access to potential developments within the project lands which would be preempted by the project. Thus, the existing major transportation network will be preserved by the relocation of Roe and Metcalf Avenues.

LAND COSTS

Senator Stennis. Mr. Dostal told us that in some sites in the area, land is valued at the equivalent of $65,340 per acre. That sounds like very expensive real estate. Is that a typical cost per acre in that area?

Colonel Rush. There are five tracts south of Interstate Highway 435 which are in the price range stated by Mr. Dostal. These sites are well out of the Tomahawk Creek flood plain and outside of the proposed project acquisition limit lines. The value of these tracts is enhanced by their proximity to transportation arteries in the area. Land within the project area does not enjoy exceptional access to transporta-

tion and is much lower in the flood plain making it less desirable as a development site. The average value of land for the Tomahawk project is placed at $5,000 per acre at July 1974 prices.

Senator STENNIS. Mr. Dostal contends that construction of Tomahawk Lake at the authorized site would be inconsistent with sound planning for the area and would adversely affect the Leawood South homes development. Is this true?

Colonel RUSH. Construction of Tomahawk Lake at this site will directly interfere with the two fairways of the 18-hole Leawood South golf course and six proposed homesites in the Leawood South subdivision which in 1973 were selling for an average of $17,000 apiece. The cost for modification of the golf course and for acquisition of the six home tracts are included in the project cost estimate.

Senator STENNIS. Mr. Dostal states that the Leawood City planners have disregarded the possibility of Tomahawk Lake being constructed in development plans for the growth of the city. He stated also that sewer districts have been created within the proposed project area. Has the potential project been totally disregarded in local planning?

Colonel RUSH. A local engineering firm was retained by Johnson County, Kans. in 1970 to develop alternative sanitary sewerlines for the Tomahawk Creek watershed with and without the lake project. The study has been completed; however, the county has withheld detailed designs and construction of the line pending the results of the Corps planning studies. This action has prevented further development within the project area. The costs for necessary sewer relocation have been included in the estimate.

RAINFALL DATA

Senator STENNIS. Mr. Dostal said that no flooding occurred in the area to be protected by Tomahawk Lake despite the unprecedented rains during the past year. Please comment on this point.

Colonel RUSH. This statement was previously addressed in the subcommittee hearings held last year. The following is the content of the answer given at that time:

> The Blue River basin, being relatively small, requires a hard rain of several inches in 12 to 24 hours to produce a serious flood. An example of this is the record flood which occurred in September 1961 caused by 6.23 inches of rain in 18 hours. Examination of the rainfall records for the basin show that although approximately 15 inches of rain fell between March 1 and April 25, the maximum 24-hour accumulation was only 1.85 inches. The rainfall during this spring has occurred at fairly regular intervals spaced several days apart. This spacing allows time for the runoff to drain out of the basin before the next rain, thereby preventing that concentration of runoff necessary to cause serious flooding. There have been some out-of-bank flows in the basin, but fortunately these were not great enough to cause serious problems.

BLUE RIVER BASIN PLAN

Senator STENNIS. Mr. Dostal testified that the senior civil engineer of the Corps has stated publicly that the Blue River Basin plan is viable without Tomahawk Lake. Is the basin plan viable without the project?

Colonel RUSH. The three Blue River Basin lake projects—Tomahawk, Indian, and Wolf-Coffee—acting in conjunction with the 12-

mile channel modification provide the maximum net economic benefits. It has been explained several times at public meetings held in Johnson County, Kans., which Mr. Dostal attended, that the most desirable plan included all the lakes and the channel work. Certainly the plan is still viable without Tomahawk Lake; however, excluding any one of the individual components will reduce the degree of flood protection afforded.

CONSTRUCTION SCHEDULE

Senator STENNIS. Mr. Dostal stated that the Corps recently said in a report that construction on Tomahawk Lake could not begin before 1980. Would construction be that far off in the future?

Colonel RUSH. The projected construction schedule in the draft environmental statement dated February 1974 shows a 1980 construction start of the Tomahawk project. It could begin sooner. Advanced land acquisition to preserve the site and relieve hardships could begin well in advance of construction.

Senator STENNIS. Mr. Dostal contends that because of the proposed construction schedule, the possibility of Tomahawk Lake providing timely water supply for the area is unfounded. Are the local water agencies concerned about the schedule?

Colonel RUSH. Water District No. 1 of Johnson County, Kans., the sponsor for water supply storage in Tomahawk Lake, is aware of the projected construction schedule. The water district plans to use Tomahawk Lake for future water supply rather than as an immediate source. The Corps has coordinated its planning with the local water districts' needs. District No. 1 has continued to express satisfaction with the latest plan for Tomahawk Lake.

ADVERSE IMPACT ON LOCAL COMMUNITY

Senator STENNIS. Mr. Dostal tells us that recreational facilities available to the area are abundant and that the area would be adversely affected by the 900,000 persons or 225,000 vehicles yearly that the lake would attract for the purpose of recreation. Would you comment, please?

Colonel RUSH. Current reports including those prepared by the Mid-America Regional Council, Happiness Is a Green Place, the Midwest Research Institute, and the master development plan for Overland Park, Kans., all indicate that there is a deficiency of parks and outdoor recreation in both Johnson County, Kans., and Metropolitan Kansas City. The city of Leawood, Kans., has only one sizable public park. This park, which is adjacent to Interstate 435, is not considered adequate by standards set for community park development.

Senator STENNIS. Mr. Dostal states that the large number of recreational visitors would combine with the effects of the seven interrupted roadways mentioned earlier to worsen existing traffic congestion. How does the Corps assess the traffic situation?

Colonel RUSH. Traffic congestion is worsening throughout all of Johnson County, Kans. Large apartment complexes and shopping areas constructed throughout the county contribute to this congestion. A large tract of land situated north of the proposed lake project near

Interstate 435 is presently being developed for commercial purposes within the city limits of Leawood. This development will also promote increased traffic within the community. The main paved traffic arteries affected by the project will be relocated to permit adequate circulation around the periphery of the project area. As mentioned previously, the roads which will be closed are unpaved. Residential and commercial development that would be constructed in the area in lieu of a lake project would also generate more traffic.

Senator STENNIS. Mr. Dostal says that the Leawood chief of police believes the existence of the lake would necessitate a $275,000 increase in his yearly budget. Mr. Dostal also states that similar increases would be needed in the budgets of other departments rendering services to city residents. He states that the 11,500 inhabitants could not undertake the burden of these increases in operating cost. Who will be responsible for police activities at the lake?

Colonel RUSH. The city of Leawood will not be responsible for the policing, operation, or maintenance at the lake project. Johnson County, as the recreation sponsor, will have this responsibility. The county is now planning to control access to the two park areas through a single entrance at each of these two areas. Local police would be called only when an arrest or other enforcement outside the authority of the park rangers would be required. The Johnson County sheriff may also assume this duty. If the Tomahawk Lake project were not constructed, urbanization of proposed project lands would demand an increase in personnel and equipment to provide adequate police protection to the new developments.

Senator STENNIS. Mr. Dostal states that the Johnson County Park Board, which has agreed to sponsor recreation at Tomahawk Lake in the amount of $1,182,000 annually, has an annual budget of only $600,000. How will the county be able to meet its financial commitment in this regard?

Colonel RUSH. Johnson County plans to ask the voters to approve an increase in the present levy to compensate for this deficit in the existing park budget. The Kansas State Legislature provided authority for such a vote. If this proposition should be defeated Tomahawk Lake will still show a favorable benefit-cost ratio with minimum recreational facilities required for public health and safety. Benefits to be derived from flood control and water supply storage are substantial and some recreational benefits would be retained.

BENEFIT-COST RATIO

Senator STENNIS. Mr. Dostal tells us that his examination of recent Corps reports reaffirmed his previous research indicating that the Corps of Engineers improperly magnify the benefits of Tomahawk Reservoir in order to arrive at a benefit-cost ratio of 2.7 to 1 which is totally unrealistic and cannot be supported. Is Mr. Dostal correct?

LOSS OF TAX BASE

Colonel RUSH. The benefit-cost ratio of 2.7 to 1 which appears in the planning report dated April 1974 is based on data compiled from extensive field surveys of both the project area and the Blue River

basin. It is a very realistic appraisal of current conditions and can be substantiated by supporting data.

Senator STENNIS. Mr. Dostal states that putting the private development which exists in this area underwater would result in a devastating loss to the tax base of various governmental units. He stated that this loss was calculated to be $12,568,000 per annum in June of 1972. What will be the effect on the tax base?

Colonel RUSH. Midwest Research Institute of Kansas City, Mo., the firm preparing the study entitled, "Social Economic and Environmental Assessment of the Blue River Basin" dated October 17, 1973, stated that "Despite the fact that there may be a local tax revenue loss directly due to the water projects, future improvements and land value appreciation in the area of the proposed lakes will increase property values substantially. This expected land value increase will more than offset the tax base reduction and consequently, will increase local tax revenues considerably." While it is true that about 2,300 acres would be removed from the tax rolls, not all of this acreage lends itself to development. For example, part of the land required for the project is subject to flooding at least once in a hundred years and the city of Leawood has recently passed a zoning ordinance restricting development in this area.

TOWANDA LAKE, KANS.

Senator STENNIS. There is nothing in the budget and local interests have requested $100,000. What is your capability on this project?

General MORRIS. Mr. Chairman, our capability on this project is $100,000 to initiate preconstruction planning.

Senator STENNIS. Would you submit a statement for the record?

General MORRIS. Yes, sir.

[The statement follows:]

Project: Towanda Lake, Kansas

Summarized Financial Data:

Estimated Total Appropriation Requirements		$39,900,000	
Future non-Federal Reimbursement		1,300,000	
Estimated Federal Cost (Ultimate)			$ 38,600,000
Reimbursement:			1,300,000
Water Supply	$800,000		
Recreation	500,000		
Other	0		
Total Estimated Project Cost			39,900,000
Allocations to Date			0
Balance to Complete			39,900,000
Preconstruction Planning Estimate			1,300,000
Amount that could be utilized in FY 1975			100,000

Authorization: 1965 Flood Control Act

Location and Description: The project is located in Butler County, Kansas, on Whitewater River, about 3/4 mile northwest of Towanda, Kansas. The plan of improvement consists of a rolled-earth embankment, and a controlled spillway. The embankment would be 11,460 feet in length, including the spillway, with a height of 82 feet above the streambed. Total storage of the lake would be 208,000 acre-feet, of which 133,500 acre-feet would be for flood control, 46,500 acre-feet for conservation, and 28,000 acre-feet for sedimentation.

Proposed Operations: The amount of $100,000 would be used to initiate preconstruction planning.

Justification: Towanda Lake is a unit in the plan for the control of floods in the Walnut River Basin. Construction of this project would provide substantial flood protection to 18,000 acres of rural land in the basin. The flood of record occurred in April 1944 and caused damages estimated at $1,730,000 (1973 prices). Floods average once every year and have a duration of 2 days. The most recent flood was in April 1970 and caused approximately $200,000 damage. The properties that would be protected by the project include cropland, pasture, and oil production, with an estimated value of $29,400,000 (1973 prices). Construction of the project would develop a dependable water supply of 2.0 MGD; provide dilution water to help solve the water quality problem in the lower basin; and provide outdoor recreation for an estimated 560,000 annual visitors; and sport fishing and hunting to help meet the regional demands. The benefit-to-cost ratio is 1.18 to 1. The average annual benefits for the project are broken down as follows:

Flood Control	$ 693,000
Water Supply	41,000
Water Quality Control	653,000
Recreation	562,000
Redevelopment	43,000
Total	$1,992,000

Status of Environmental Impact Statement: To be filed concurrently with GDM, Phase I.

Tuttle Creek Lake (Road Improvements), Kans.

Senator Stennis. There is nothing in the budget. The House has included $20,000, and local interests have requested $20,000. What is your capability on this project?

General Morris. Mr. Chairman, our capability on this project is $20,000 to initiate preconstruction planning.

Senator Stennis. Would you submit a statement for the record?

General Morris. Yes, sir.

[The statement follows:]

Project: Tuttle Creek Lake, Kansas
(Road Improvements)

Summarized Financial Data:

Estimated Federal Cost		$ 500,000
Estimated Non-Federal Cost		214,000
Cash Contributions	$ 0	
Other Costs	$ 214,000	
Total Estimated Project Cost		$ 714,000
Allocations to Date		0
Balance to Complete		500,000
Preconstruction Planning Estimate		80,000
Amount that could be used in Fiscal Year 1975		20,000

Authorization: Water Resources Development Act of 1974 (P.L. 93-251).

Location and Description: The proposed road improvement is located in Pottawatomie County, Kansas in the vicinity of Tuttle Creek Lake. The plan of improvement provides for construction of approximately 5.78 miles of surface roads. It will improve a portion of FAS 1208 road extending from the intersection with Kansas State Highway 13 in Section 5, Township 9 south, range 8 east, thence north and west to the intersetion with county road in section 14, Township 8 south, range 7 east.

Proposed Operations: The amount of $20,000 could be used to initiate preconstruction planning.

Justification: A large volume of traffic using this road for access to public use areas has created a dust pollution problem and posed a safety hazard. Improvements to this road will alleviate dust conditions and will provide a safe access road to the Tuttle Creek Lake area.

STATUS OF ENVIRONMENTAL IMPACT STATEMENT: Impacts of road improvements will be treated in the environmental statement on the operation and maintenance of Tuttle Creek Lake. The draft statement is scheduled for submission to CEQ in the fourth quarter of Fiscal Year 1974. The final statement is scheduled for submission to CEQ in the second quarter of Fiscal Year 1975.

Big South Fork National River and Recreation Area, Ky. and Tenn.

Senator Stennis. There is nothing in the budget. The House has included $250,000, and local interests have requested $250,000. What is your capability on this project?

General Morris. Mr. Chairman, our capability on this project is $250,000 to initiate preconstruction planning.

Senator Stennis. Would you submit a statement for the record?

General Morris. Yes, sir.

[The statement follows:]

Project: Big South Fork National River and Recreation Area, Kentucky and Tennessee

Summarized Financial Data:

Estimated Federal Cost (Corps of Engineers)	$ 32,850,000
Estimated non-Federal Cost	0
Total Estimated Project Cost	32,850,000
Allocations to Date	50,000
Balance to Complete (Corps of Engineers)	32,800,000
Preconstruction Planning Estimate	500,000
Amount that could be used in Fiscal Year 1975	250,000

Authorization: Water Resources Development Act of 1974.

Location and Description: The proposed project is located in south central Kentucky and north central Tennessee, in McCreary County, Kentucky and Scott, Morgan, Pickett and Fentress Counties, Tennessee. The National Recreation Area project will provide about 125,000 acres for the purposes of preserving and interpreting the scenic, biological, archeological, and historical resources of the area. No construction will be permitted except limited clearing for the establishment of day-use facilities, histroical sites, primitive campground and access roads. Lodges and other facilities will be provided in the adjacent areas.

Proposed Operations: The amount of $250,000 would be used to continue preconstruction planning of the project in FY 1975.

Justification: The Big South Fork National River and Recreation Area is established for the purposes of conserving and interpreting an area containing unique cultural, historic, geologic, fish and wildlife, archeologic, scenic, and recreational values, preserving as a natural free-flowing stream the Big South Fork of the Cumberland River, major portions of its Clear Fork and New Rivers stems, and portions of their various tributaries for the benefit and enjoyment of present and future generations. The benefit-cost ratio is not applicable for this project.

Status of Environmental Impact Statement: Statement will be developed as preconstruction planning proceeds to be submitted concurrently with the Development Plan.

BOONEVILLE LAKE, KY.

Senator STENNIS. There is nothing in the budget, and local interests have requested $500,000. What is your capability on this project?

General MORRIS. Mr. Chairman, we have no capability on this project, as available funds are adequate to complete preconstruction planning.

CAMPGROUND LAKE, KY.

Senator STENNIS. There is nothing in the budget. The House has included $130,000, and local interests have requested $130,000. What is your capability on this project?

General MORRIS. Mr. Chairman, our capability on this project is $130,000 to initiate preconstruction planning.

Senator STENNIS. Would you submit a statement for the record?

General MORRIS. Yes, sir.

[The statement follows:]

Project: Camp Ground Lake Kentucky (Phase I Advance Engineering and Design Stage)

Summarized Financial Data:

Estimated Total Appropriation Requirement	$ 53,400,000	
Future non-Federal Reimbursement	7,700,000	
Estimated Federal Cost (Ultimate-Corps of Engineers		$ 45,700,000
Estimated non-Federal Cost		7,700,000
Cash Contribution $ 0		
Reimbursement:		
Water Supply	$ 3,891,000	
Recreation & Fish & Wildlife Enhancement	3,809,000	
Total Estimated Project Cost		53,400,000
Allocations to Date		0
Balance to Complete (Corps of Engineers)		53,400,000
Preconstruction Planning Estimate		1,200,000
Phase I Estimated Cost	330,000	
Balance to Complete Preconstruction Planning	870,000	
Amount that could be used in FY 1975		130,000

Authorization: Water Resources Development Act of 1974, for Phase I stage of advance engineering and design.

Location and Description: The proposed dam site is located in north-central Kentucky on Beech Fork of the Rolling Fork of Salt River, about 49.1 miles above the Beech Fork-Rolling Fork confluence. This site, in Washington County is about 11 miles northeast of Bardstorm, Kentucky. The proposed project consists of a rolled-earth dam with multiple level outlets.

Proposed Operations: The amount of $130,000 would be used to initiate Phase I stage advance engineering and design planning of the project in FY 1975.

Justification: Camp Ground Lake will operate as a unit of the general comprehensive plan for flood control and related water resources development in the Salt River Basin. The project, in combination with other presently authorized reservoirs in the Salt River Basin, will aid in the reduction of flood flows along Beech Fork and lower Rolling Fork and, to a lesser degree along the Ohio River. The drainage area above the dam site is approximately 438 square miles. The flood control storage of Camp Ground Lake would benefit about 20,000 acres of flood plain on Beech Fork and lower Rolling Fork. The project would provide storage for low-flow augmentation in the interest of water quality control, for water supply and for general fish and wildlife recreational opportunities. The benefit-to-cost ratio for the project is 1.4 to 1. The average benefits of $6,318,000 are broken down as follows:

Flood Control	$ 1,808,000
Water Supply	491,000
Water Quality Control	431,000
Recreation:	
General	3,141,000
Fish & Wildlife	116,000
Area Redevelopment	331,000
TOTAL	$ 6,318,000

Status of Environmental Impact Statement: Draft Environmental Impact Statement was filed with CEQ on 6 October 1972. The Final EIS will be submitted concurrently with the Final Phase I GDM.

Carr Fork Lake, Ky.

Senator Stennis. The budget request was $3,800,000. The House has included $3,800,000, and local interests have requested $4,100,000. What is your capability on this project?

General Morris. Our capability on this project is $4,100,000, Mr. Chairman.

Senator Stennis. What would be accomplished with the additional $300,000?

General Morris. The additional amount would be used to advance project completion by 6 months.

Dam No. 3, Big Sandy River, Ky. and W. Va.

Senator Stennis. There is nothing in the budget. The House has included $25,000, and local interests have requested $25,000. What is your capability on this project?

General Morris. Mr. Chairman, our capability on this project is $25,000 to initiate and complete preconstruction planning.

Senator Stennis. Would you submit a statement for the record?

General Morris. Yes, sir.

[The statement follows:]

Project: Dam No. 3, Big Sandy River, Kentucky and West Virginia

Summarized Financial Data:

Estimated Federal Cost (Corps of Engineers)	$330,000
Estimated non-Federal Cost	0
Total Estimated Project Cost	330,000
Allocations to Date	0
Balance to Complete (Corps of Engineers)	330,000
Preconstruction Planning Estimate	25,000
Amount that could be used in FY 1975	25,000

Authorization: Water Resources Development Act of 1974.

Location and Description: The project is located on the Big Sandy River, a tributary of the Ohio River, approximately 26.2 miles above the mouth of the Big Sandy River. The authorized work consists of repairs to the existing project along with conversion of the dam to a fixed-weir type structure.

Proposed Operations: The amount of $25,000 would be used to initiate and complete preconstruction of the project in FY 1975.

Justification: Dam No. 3, Big Sandy River, ownership of which was transferred to local interests for water supply and recreational purposes upon discontinuance of the Federal navigation system, has become inoperable due to damage to the movable wicket section as a result of flood damage which occurred subsequent to the transfer of ownership. Restoration of the dam is a necessity for the communities of Louisa, Kentucky, and Fort Gay, West Virginia, to effectively use the pool upstream from the old Dam as a source of water supply. Restoration by replacement of the damaged movable elements (wickets) is inadvisable due to demonstrated inability of the owners to operate and maintain such movable structure; therefore conversion to a fixed-type structure has been authorized.

The project, located in Appalachia, is bordered by Wayne Co., West Virginia, and Lawrence Co., Kentucky, which qualify as (1) and (1,2) respectively under Title IV of the Public Works and Economic Development Act of 1965 (P.L. 89-136). The benefit-cost ratio is not applicable as the project was authorized with project economics.

Status of Environmental Impact Statement: Statement will be developed as preconstruction planning proceeds to be submitted concurrently with the Phase I GDM.

Falmouth Lake, Ky.

OPPOSITION

Senator Stennis. This year we have received opposition testimony from Mr. Nelson R. Allen, State senator, and Mr. Darrel Fegan, president of the Licking Valley Protection Association. The comments contained in their testimony relate to the effects on the tax base of the removal of the project lands from the tax rolls.

Colonel Rush. The initial impact on the tax base will be adverse to the area's economy, but ultimately, as in our other projects, the project should have a beneficial effect on the regional economy, as documented in the "Socioeconomic Study of the Impact of the Falmouth Lake Project" which study was performed by Spindletop Research. The above referenced study concluded that the economic impact on the region would be positive.

Kehoe Lake, Ky.

Senator Stennis. What is the status of the post authorization change for the Kehoe Lake, Ky. project?

Colonel Rush. The post authorization change for the Kehoe project is under review in the Office of the Chief of Engineers. The project has been reformulated to delete water quality and the storage has been reevaluated and hence reallocated as pertinent to other project purposes. Since section 65 of the Water Resources Development Act of 1974 (Public Law 93–251) requires: "Any such modification of a project where the benefits attributable to water quality are 15 per centum of the total project benefits shall take effect only upon the adoption of resolutions approving such modification by the appropriate committees of the Senate and House of Representatives." Since water quality benefits were 22 percent of the total benefits a report will be forwarded to the committees.

The administrative review and processing of appropriate reports to OMB and the congressional committees will be handled expeditiously.

Senator Stennis. There is nothing in the budget, and local interests have requested $1 million. What is your capability on this project?

General Morris. Mr. Chairman, our capability on this project is $750,000 to initiate construction.

Senator Stennis. Would you submit a statement for the record?

General Morris. Yes, sir.

[The statement follows:]

Project: Kehoe Lake, Kentucky

Summarized Financial Data:

Estimated Federal Cost (Corps of Engineers)		$ 27,600,000
Estimated non-Federal Cost		2,500,000
Cash Contribution	$ 0	
Reimbursement:		
Recreation & Fish and Wildlife Enhancement including lands	$ 2,500,000	
Total Estimated Project Cost		30,100,000
Allocations to Date		1,130,000
Balance to Complete (Corps of Engineers)		26,470,000
Amount that could be used in FY 1975		750,000

Authorization: 1966 Flood Control Act.

Location and Description: Proposed project is located in Carter County, Kentucky, at the Greenup-Carter County line, on Tygarts Creek, a tributary of the Ohio River, 48.5 miles above the mouth and 1.7 miles above Kehoe, Kentucky. The reservoir, controlling a drainage area of 127 square miles, would be formed by a rock-fill dam with an uncontrolled spillway. Construction will necessitate highway and utilities relocation or reconstruction.

Proposed Operations: The amount of $750,000 would be used to initiate construction of the project in Fiscal Year 1975, subject to filing the updated Final Environmental Impact Statement with CEQ, approval of the Post Authorization change by OMB and receipt of required resolution from the Public Works Committees.

Justification: The proposed reservoir would effect flood flow reductions on Tygarts Creek and the Ohio River. The Tygarts Creek Basin is predominantly agricultural in character, primary crops being corn, tobacco, and hay. Livestock is also a major farm activity. Average annual flood damages to crops and improvements on Tygarts Creek would be reduced by about 80 percent with construction of the reservoir. In addition to providing flood control benefits, the reservoir would provide extensive recreation facilities to develop the recreation potential of the project and stimulate economic activity in the surrounding part of the Appalachian Region. The benefit-cost ratio is 1.16 to 1. The total annual benefits are estimated at $1,661,900 are broken down as follows:

Flood Control	$550,200
Recreation:	
General	769,900
Fish & Wildlife	18,100
Redevelopment	323,700
TOTAL	$ 1,661,900

STATUS OF ENVIRONMENTAL IMPACT STATEMENTS: The Final Statement was filed with CEQ on 14 September 1972.

Paintsville Lake, Ky.

Senator Stennis. The budget request was $1 million. The House has included $1,500,000, and local interests have requested $2,500,000. What is your capability on this project?

General Morris. Our capability on this project is $2,500,000, Mr. Chairman.

Senator Stennis. What would be accomplished with the additional $1,500,000?

General Morris. The additional amount would be used to advance project completion 12 months.

OPPOSITION

Senator Stennis. We have heard opposition testimony from our colleague from Kentucky, Senator Cook, who has presented some significant points for consideration regarding Paintsville Lake. The Senator indicates there is considerable public opposition to this project. What is the nature of this opposition?

Colonel Rush. The main opposition to the Paintsville Lake proposal is landowner opposition. The project requires the acquisition of about 13,000 acres of land consisting of 430 tracts which will require about 190 families to relocate. Some of these families, together with their friends and supporters, are opposing the project. As of the end of April, the Corps has purchased 48 tracts consisting of some 1,050 acres of land. Of the 48 tracts acquired, 7 have had to be condemned for price. This is about normal experience.

Opposition to this project does not appear to be unusual for a large public works project of this type, and support for the project in eastern Kentucky continues strong.

In the development of major public works requiring considerable land, many persons will be inconvenienced. It is often not possible to build such works to provide needed and justified benefits to the public in general without also producing some adverse effects on those persons whose properties are acquired. Every effort will be made to keep those effects at a minimum and to see that just compensation is paid for the interest taken.

Senator Stennis. Senator Cook indicates that the Corps has refused to take any steps to find answers to many unanswered questions regarding construction of the lake. Do you know of any unanswered questions that have not been or are not being investigated?

Colonel Rush. No, sir. In February of 1973, we engaged the services of an environmental consulting firm to undertake a detailed environmental assessment of the project. Presently, the environmental analysis contract is about 70 percent complete and all work is expected to be finished by September of this year. The contractor and the subcontractors identified several areas of concern, some of which were already known to the Corps. Similar problems has occurred at other projects. Two major concerns are existing oil wells and the need to design the dam to be earthquake resistant.

The Corps has an engineering contractor investigating all project lands and upstream areas looking for oil and gas wells and establishing the condition of these wells and associated facilities.

With regard to earthquate design, the Corps has engaged a seismic consultant to provide data and analyses to assist us in the design of the Paintsville Dam.

Thus, we have three separate contractors making extensive investigations to complement the investigations being made by the district's staff. We, therefore, are vigorously evaluating all known concerns.

GEOLOGIC FAULT

Senator STENNIS. In response to the previous question you mentioned an earthquake concern. What is that concern?

Colonel RUSH. One argument against the project is concerned with possible earthquakes. There is a fault that crosses the reservoir about 2 miles above the dam site. The existence of this fault is well known to the Corps of Engineers and has been thoroughly investigated. There is no evidence that there has been any activity during historic time nor is there any indication that this is other than a low-risk seismic area. However, the Corps has engaged a seismic consultant to provide further data on the seismic activities in the area. The safety factor incorporated in the dam design is adequate for the dam to withstand the effects of an earthquake in the very unlikely event that a quake should occur. The earthquake concern is not a problem and, in any event, is provided for in normal Corps of Engineers dam design practice.

ABANDONED OIL WELLS

Senator STENNIS. Concerning the oil well problem, Senator Cook is concerned that residual oil and brines from over 400 abandoned oil wells would wreak havoc on the water quality control and recreation. You have indicated that you are aware of these wells. What is your present evaluation of the situation?

Colonel RUSH. The most commonly presented issue regarding Paintsville Lake is that the oil wells will pollute the lake. This is not in keeping with the facts. The records of the Kentucky Geological Survey indicate that there are about 77 wells in areas that would be covered by the full flood control pool. Our contractor's findings so far generally are verifying our previous informtion.

It is, and has been, Corps' policy to locate and seal all abandoned wells within our project boundaries. We have done this at other projects. By press release dated March 29, 1974, to papers in the region, the Corps announced that a complete inventory of all wells in the entire Paint Creek basin would be conducted by contract. Wells outside the project taking line would be reported to the Kentucky Water Pollution Control Commission for appropriate action. The work is currently underway and was preceded by an extensive informative campaign in the Paintsville area. We do not believe the oil wells will be a problem.

Senator STENNIS. Senator Cook has indicated that information regarding Paintsville Lake has been suppressed and that there is an internal Corps document that disputes the opinion of your own consultants. Have you attempted to suppress any information which would indicate the inadvisability of continuing with the project?

Colonel RUSH. We have noted newspaper accounts which cited a few comments extracted from 30 pages of comments which were sent to our environmental contractor in reviewing his initial draft. The Corps commented to the contractor on those areas of work which we considered would require reconsideration or which appeared to be in error and we commented on those areas which were considered to be excellent. Most of the comments simply posed questions for further consideration. The contractor is free to accept or reject these comments.

No information is being, or has been, suppressed which would indicate the project should not be continued.

REVISED EIS

Senator STENNIS. Senator Cook stated that there is considerable possibility that the Corps is violating Federal law because it has not filed a revised environmental impact statement since 1971. The Senator referred to a U.S. Sixth Circuit Court ruling last year, which he interprets as indicating that an updated EIS must be submitted every time appropriations are requested from Congress. What is your interpretation of that ruling?

Colonel RUSH. The case to which you refer is TVA's Tellico Dam and Reservoir in which TVA argued that it did not need to file an environmental impact statement since the project was initiated prior to the passage of the National Environmental Policy Act. The circuit court held that, in the context of the *Tellico* case, a request for appropriations of funds to continue construction would constitute a major Federal action with significant environmental impact since an environmental impact statement had not previously been filed. The ruling does not indicate that an updated statement is required every time appropriations are requested and is not applicable to the Paintsville situation. The environmental impact statement for the Paintsville Lake project was filed with CEQ in 1971. If, upon completion of our ongoing studies, it is determined that our EIS should be modified or supplemented, we shall do so.

BENEFIT-COST RATIO

Senator STENNIS. Would any of the concerns brought to our attention by Senator Cook, or any other factors result in a negative benefit-to-cost ratio, as the Senator states?

Colonel RUSH. We know of no new problems which would substantially increase the cost of the project and thereby reduce the benefit-to-cost ratio.

The current project cost estimate is $32,900,000 (July 1973 prices). The actual increase since Congress first appropriated construction funds has been slightly less than the increase for price level changes during the period.

The increase in costs resulting from price escalation includes escalation of real estate prices. The land acquisition costs could increase further as a result of increased mineral acquisition costs, but the extent of coal and oil resources within the project boundaries is such that no substantial effect on the benefit-to-cost ratio is anticipated.

The price escalation also has affected the benefits estimates such

that the benefit-to-cost ratio has not changed substantially, and is not expected to.

COMPREHENSIVE OIL WELL INVESTIGATION

Senator STENNIS. We have received also some opposition testimony on Paintsville Lake from Mr. Earl Kinner, Jr., of West Liberty, Ky. He submitted a letter from Mr. E. V. Tredway, a retired consulting engineer, also of West Liberty, Ky., which indicates that the many unlocated, unplugged old oil wells in the project area and the residue from washed out slush pits will continue to wash into the reservoir for years to come. Have you investigated this situation?

Colonel RUSH. Yes, sir. General Analytics, Inc., of Pittsburgh, Pa., under Corps contract, is conducting an oil and gas well, facility and system inventory for the entire Paint Creek drainage basin. The field inventory has resulted in the location, evaluation, and photographing of 1,350 oil, gas, and injection wells and 100 systems and facilities. Within the proposed real estate acquisition limits, the inventory has been completed with 119 wells and five holding basins located. Holding basins and the surrounding areas were not observed to be sources of bottom sludge, brine, or oil seepage. The total number of wells, facilities, and systems for which inventories have been completed include 130 sites where seepage, leakage, or spillage conditions were observed and include 20 improperly plugged or unplugged wells. The most significant problem encountered during site location work has been the construction of temporary road systems which has obliterated well locations. Additional inventory work is being continued. To insure project water quality and compliance with the statutes of the Commonwealth of Kentucky, a tentative method of well plugging has been developed which is essentially the same as that successfully utilized at the nearby Grayson Lake project.

COAL RESERVES

Senator STENNIS. We also have an opposition statement from Mr. Robert Addington, of Addington Brothers Mining, Inc., Sandy Hook, Ky., in which he states that there are coal reserves of commercial value in the Paint Creek watershed. He indicates that present market conditions make extraction of these deposits very desirable. Have you evaluated the extent of these deposits within the project boundaries?

Colonel RUSH. Yes, sir. We are continuing to review the coal reserve situation since recent increases in the price of coal now may make it economically feasible to mine coal previously not considered minable.

A review of U.S. Geological Survey and Kentucky Geological Survey publications and maps indicated that minable coalbeds do not occur below the maximum flood control pool evaluation 731 for the proposed Paintsville Lake. Minable coalbeds do occur above pool elevation. The beds are called the Van Lear Coal and the Fire Clay Coal. Meetings have been held with representatives from the Kentucky Geological Survey at the Lexington offices. Field mapping and production information pertinent to coalbeds located within the Paint Creek drainage basin were examined in that office. This data indicated that while coal strata had been mined extensively in adjacent drainage basins, the Paint Creek basin evidenced only limited mining

activity. Within the Paint Creek drainage basin in the Big Mine Fork area, coal has been mined at outcrop and by drift methods largely for local use. In the Smith Creek area strip and auger mine areas were delineated. The recent favorable market conditions have resulted in the determination that the coalbeds within the drainage basin have potential commercial value. Area extent of presently minable coalbeds above flood control pool elevation 731 and within the real estate acquisition limits indicates potential auger and stripable coal reserves of moderate tonnage.

Red River Lake, Ky.

Senator Stennis. The budget request was $200,000. The House has included $500,000, and local interests have requested $800,000. What is your capability on this project?

General Morris. Our capability on this project is $800,000, Mr. Chairman.

Senator Stennis. What would be accomplishd with the additional $600,000?.

General Morris. The additional amount would be used to advance completion of the project by 6 months.

OPPOSITION

Senator Stennis. This committee has heard testimony in opposition to the Red River Lake project from various groups and individuals. Those testifying include: Senator Marlow Cook of Kentucky; Mr. Robert Kuehne, associate professor in the Morgan School of Biological Sciences at the University of Kentucky; Mr. David H. Richardson, associate professor of economics at the University of Kentucky; and a representative from the "Save Our Red River Organization." The opposition has raised a number of questions on various aspects of the project. The major concern appears to be that the natural values and unique character of the gorge will be destroyed by the project. Have the impacts of this project been considered and the social cost for loss of a natural area been taken in account in the development of this project?

Colonel Rush. Comments relating to the assessment and measurement of the esthetic-environmental values points up the continuing difficulty in properly weighing these factors during the plan formulation process. Since no generally accepted technique is yet available for calculating the intrinsic value of environmental qualities and translating the findings to an economic value, the studies for the Red River project do not include such an evaluation. A factor contributing to the difficulty with this problem is that such an evaluation must necessarily recognize the inherent differences in the population's appreciation of such intangible values and that concern for these values is often limited to those having a professional interest and background in the natural sciences.

Any development of this type will result in alterations of existing environment. The net value of a project must be determined by weighing the overall benefits that will accrue from a project with the total costs or negative impacts. A problem arises in that many of these project impacts relate to intangible values such as esthetics or sociological impact. As these factors are subjective in nature and vary with each

individual it is virtually impossible to measure them in quantitative terms. In the planning and design of the Red River project an attempt has been made to prevent or mitigate whenever possible adverse environmental impacts from the project. Although some adverse impacts are unavoidable it is felt that the presently proposed multipurpose Red River Lake project is the best solution toward meeting the water resource needs of the area.

ALTERNATIVE SOLUTIONS

Senator STENNIS. Senator Cook and the Save Our Red River Organization and others have stated that the project purpose could best be served by other means. The goal to provide flood protection to Clay City could be accomplished more quickly and economically by a project limited to that objective such as a local protection project or through flood insurance. The downstream communities have declared the water supply storage is not needed, and that water would be piped from Cave Run Lake if required. The Corps has failed to consider the present recreational usage of the area and did not take into account the availability of similar facilities elsewhere in the State. Would you comment on these statements?

Colonel RUSH. The Red River Lake project was authorized by the Flood Control Act of 1962 as part of a comprehensive plan in the Kentucky River Basin to provide flood control and allied purposes both within the Kentucky River Basin and along the mainstem of the Ohio River. The allied purposes of the project are: Water supply, general recreation, fish and wildlife recreation and redevelopment benefits. The flood protection purpose provides for considerably greater needs than just flood protection for Clay City.

As the protection afforded by the project extends to an area much larger than Clay City, any alternative for meeting this purpose would have to consider the total area. As a partial alternative to the flood protection provided by this project, two local protection projects were evaluated for Clay City. These plans consisted of a levee, and combination of channel diversion and levee. The first plan was determined to have an economic ratio of 0.37 to 1 and the second plan a ratio of 0.66 to 1. This indicates that a local protection project would not be feasible even as a partial solution. Flood insurance was one alternative that was evaluated before deciding on a multipurpose lake project. Disregarding the fact that this alternative does not satisfy the other water resource needs of the area, flood insurance is only a means of distributing the losses. It does not prevent or mitigate damages. The Flood Disaster Protection Act of 1973 is an economic tool for preventing future imcompatible development in flood prone areas. From the standpoint it should reduce the need for large flood protection projects in the future; however, it does not adequately address the needs of existing development on flood-prone lands.

Water supply storage was provided in Red River Lake based on a request from the Commonwealth of Kentucky and upon receipt of assurance that the State would pay for this storage, if provided. The ultimate disposition of the water available from this storage is the responsibility of the State. The State continues to affirm the need for a water supply source to serve the area and continues to support Red

River Lake as the most economical source of supply. The city of Lexington, which will be the major recipient of this water, has voiced its need for a future water supply source. Although Cave Run Lake has been suggested as a potential water supply source, problems concerning the legality of interbasin transfer of water, increased costs—by a factor of 4 over that obtained from Red River Lake—and the fact that the functional capability of such a plan has never been determined raises serious doubts about the feasibility of this proposal.

The estimate of initial project recreation visitation of 590,000 visitor days annually is over and above 1 million visitors annually the gorge is presently experiencing. We do not agree with the statement that much of present recreational activity in the gorge will not be available after project completion. After impoundment all of the area's outstanding geologic features will be unaffected and accessible by the existing hiking trails the majority of which will not be affected. The scenic drive along Route 715 will remain open as well as the trails in the gorge bottoms except during storage of flood waters. This generally will not occur during the normal recreation season. However, it must be acknowledged that there is generally no accepted technique available for evaluating the intangible values of environmental quality and esthetics. As the periodic inundation by the temporary storage of floodwaters will undoubtedly modify the vegetative composition of affected portions of the gorge, the project will degrade the area in the minds of some. The project will affect only a small portion of an area over 25,000 acres in size. From the standpoint of the project's relative impact on the total area, it is not felt that present recreational usage of the gorge area will be significantly affected. From an analysis of the recreation potential of the area it is felt that development of the project will enhance the area for recreational use. Recreation development at Cave Run Lake as well as at other adjacent facilities was considered when evaluating Red River Lake's recreation potential. The types of facilities and activities at Cave Run Lake are more directly related to the water resource than those planned for Red River Lake. In the development of the recreation plan for Red River Lake, consideration was given to the scenic and environmental qualities of the area. As a result of this, the camping area is located about 2 miles from the lake and use of motorboats will be restricted at the lake. These are just two measures that have been taken to protect the environmental quality of the gorge area.

STRONG PUBLIC OPPOSITION

Senator STENNIS. We have heard testimony from Senator Cook that there is overwhelming public opposition to the project from residents of the area and that a petition opposing the project signed by 17,000 Kentuckians was presented to the Governor. He further stated that the hardships to the residents of the gorge, who will be forced to relocate have not been adequately considered. Are you aware of these facts?

Colonel RUSH. We are aware of the strong public opposition that has been voiced against the Red River Lake Project. However, the opposition to this project is not nearly unanimous since there are many who support it. The Louisville District Office has received nu-

merous individual pieces of correspondence in support of the project as well as a petition signed by 924 persons from the Clay City area requesting immediate construction of the dam. Although those supporting the project are not as widely based nor as vocal, their efforts are just as sincere. In many instances these proponents have a personal stake in the outcome of the controversy surrounding this project as their homes are affected by the river's flood waters. The disruption of families attendant to a project of this type is always a difficult task. However, in making these decisions, the impact on the displaced families must be evaluated in the proper perspective in relation to the total project. Although it is unfortunate these families will be displaced, the well-being and benefit to a substantially greater number of persons must be considered.

Under the provisions of Public Law 91–646, families displaced by the project are provided resettlement allowances, allowances for dislocation of farm or business operations, a rebate of prepaid property taxes, severance damages, relief from higher interest rates, and payment for property acquired.

DISCOUNT RATE

Senator STENNIS. Mr. Richardson in his testimony questions the discount rate used in formulating project economics. A discount rate of 3⅛ percent was used. At a time when the prime rate is in excess of 10 percent and when long-term Government bonds yield over 7 percent, it seems obvious that 3⅛ percent is too low. Moreover modest adjustments to the discount rate are capable of dropping the benefit-cost ratio below unity. If the initial construction costs are amortized at 7 percent instead of 3⅛ percent the resulting benefit-to-cost ratio is less than one. Will you explain the rationale used in determining the discount rate.

Colonel RUSH. Red River Lake was authorized by the Flood Control Act approved October 23, 1962, Public Law 87–874, 87th Congress. Senate Document 97, 87th Congress, 2d session, states in paragraph V–G–2.

> The interest rate to be used in plan formulation and evaluation for discounting future benefits and computing costs, or otherwise converting benefits and costs to a common time basis, shall be based upon the average rate of interest payable by the Treasury on interest bearing marketable securities of the United States outstanding at the end of the fiscal year preceding such computation which, upon original issue, had terms to maturity of 15 years or more.

The interest rate computed by the Treasury Department for fiscal year 1967 under the formula prescribed in Senate Document 97 was 3⅛ percent. When authorized projects receive initial appropriation of construction funds, the interest rate for that project is frozen at the rate used in support of the budget submission upon which appropriations for initial construction were based. The initial appropriation of construction funds for Red River Lake was made during fiscal year 1967, based on the 3⅛ percent interest rate, thus freezing the interest rate.

On December 22, 1968, the Bureau of the Budget, with approval of the President, announced adoption of a new formula for computing the discount rate to be used in plan formulation for discounting fu-

ture benefits and computing costs. The formula is as originally proposed by the Water Resources Council and became effective December 24, 1968. The announcement of the new discount rate, as published in title 18, Code of Federal Regulations, section 704.39, includes the following paragraph:

> Where construction of a project has been authorized prior to the close of the second session of the 90th Congress, and the appropriate state or local government agency or agencies have given prior to December 31, 1969, satisfactory assurances to pay the required non-Federal share of project costs, the discount rate to be used in the computation of benefits and costs for such project shall be the rate in effect immediately prior to the effective date of this section, and that rate shall continue to be used for such project until construction has been completed, unless the Congress otherwise decides.

Based on the above, the interest rate for Red River Lake remained unchanged at 3⅛ percent, the rate in effect for the project prior to the effective date of application of the new rate. This rate has been reaffirmed in the Water Resources Development Act of 1974 in section 80.

Senator STENNIS. Mr. Richardson further stated the Corps has not made any allowance for the recent and anticipated increases in the price of fuel which will tend to decrease the demand for recreation and will significantly increase cost of dam construction. Have these points been considered?

Colonel RUSH. As rapidly escalating fuel costs have been a relatively recent occurrence, there has been insufficient time to accurately assess impacts on recreational use. In any event it is not anticipated that recreational demand will decrease although it may result in shifts in the pattern of recreational use with people tending to visit facilities closer to their homes. Project construction costs are adjusted annually to reflect the overall upward trend in prices in all areas.

TAYLORSVILLE LAKE, KY.

Senator STENNIS. The budget request was $900,000. The House has included $1,400,000, and local interests have requested $2,400,000. What is your capability on this project?

General MORRIS. Our capability on this project is $2,400,000, Mr. Chairman.

Senator STENNIS. What would be accomplished with the additional $1,500,000?

General MORRIS. The additional amount would be used to advance project completion by 3 months.

TUG FORK VALLEY, KY., VA., AND W. VA.

Senator STENNIS. There is nothing in the budget, and local interests have requested $150,000. What is your capability on this project?

General MORRIS. Mr. Chairman, our capability on this project is $150,000 to continue phase I preconstruction planning.

Senator STENNIS. Would you submit a statement for the record?

General MORRIS. Yes, sir.

[The statement follows:]

Project: Tug Fork Valley, Big Sandy River Basin, Ky., Va. and W. Va. (Phase I Advance Engineering and Design Stage)

Summarized Financial Data:

Estimated Federal Cost (Corps of Engineers)	1/
Estimated non-Federal Cost	1/
Total Estimated Project Cost	1/
Allocations to Date	150,000
Balance to Complete (Corps of Engineers)	
Preconstruction Planning Estimate	1/
Phase I Estimated Cost	1,290,000
Balance to Complete Preconstruction Planning	1/
Amount that could be used in FY 1975	150,000

1/ Not available at present time.

Authorization: Water Resources Development Act of 1974, for Phase I stage of advance engineering and design.

Location and Description: The Tug Fork and Levisa Fork form the Big Sandy River at Louisa, Kentucky. The Tug Fork Basin is comprised of 1,555 square miles containing rugged and sharply dissected topography dictating that development takes place on the flood plans. The Phase I stage planning would evaluate the potential for providing all communities in the Tug Fork Valley with comprehensive flood protection by a combination of local flood protection works and residential flood proofing.

Proposed Operations: The amount of $150,000 would be used to continue Phase I stage advance engineering and design planning of the project in FY 1975.

Justification: Nearly every human activity in the Tug Fork Basin is affected by persistent repetition of flooding, and damages average over $600,000 annually along Tug Fork, with substantial additional damages also being sustained along tributary streams. The authorized Phase I GDM study will result in a viable flood damage reduction program for enhancing the general welfare and environment of the Tug Fork communities through an integrated program of local structural protection measures, flood proofing and housing programs, and land use planning including flood plain regulations. The Matewan and Williamson communities are the two most prominent areas and additional local protection works will also be studied in order to provide a high degree of effectiveness as well as a high degree of protection to an optimum number of the population. The benefit-cost ratio is not applicable for this project.

Status of Environmental Impact Statement: Draft Environmental Impact Statement will be submitted concurrently with the Draft Phase I GDM and Final EIS with Final Phase I GDM.

YATESVILLE LAKE, KY.

Senator STENNIS. The budget request was $900,000. The House has included $1,500,000, and local interests have requested $2 million. What is your capability on this project?

General MORRIS. Our capability on this project is $2 million, Mr. Chairman.

Senator STENNIS. What would be accomplished with additional $1,100,000?

General MORRIS. The additional amount would be used to advance project completion by 12 months.

ATCHAFALAYA RIVER AND BAYOUS CHENE, BOEUF AND BLACK, LA.

Senator STENNIS. The budget request was $500,000. The House has included $500,000, and local interests have requested $2,350,000. What is your capability on this project?

General MORRIS. Our capability on this project is $4,100,000, Mr. Chairman.

Senator STENNIS. What would be accomplished with the additional $3,600,000?

General MORRIS. The additional amount would be used to advance channel construction.

OPPOSITION

Senator STENNIS. Mr. Joel Pickelner, conservation counsel for the National Wildlife Federation, has urged that funds be withheld from this project. He has stated that this channelization project through over 50 miles of the Louisiana estuarine would cause destruction of the estuarine resources by covering 10,000 acres of wetlands with spoil during construction and another 3,000 acres every 3 years for project life. Would you please comment?

Colonel RAY. Mr. Chairman, the total length of the project is 53 miles with 20 miles through existing channels in the marsh area from the Gulf Intracoastal Waterway to the Atchafalaya Bay, and the remaining 33 miles through the bay coinciding with the alinement of the existing project. Project construction consists essentially of the improvement of existing watercourses by providing wider, deeper, and better alined channel. The project will result in the permanent loss of about 350 acres of swamp and coastal marsh that will be converted to enlarged channels. An additional 7,000 acres will be required for disposal of excavated material. The vegetation now found on the 7,000 acres will be killed, but such areas will, in time, become completely revegetated. Of the 7,000 acres, approximately one-third is now swampland and the remainder is comprised of coastal marshland. About 3,500 acres of the 7,000-acre disposal area will be subjected to periodic deposits from maintenance dredging during the time required for channel stabilization with a declining amount required for the remainder of the project life.

Senator STENNIS. Mr. Pickelner also states that this project would benefit only two oil rig manufacturing companies and that construction would proceed although alternative ways to shipping oil rigs to the gulf are abundant along the Mississippi and from other major ports of exit on the gulf. He is concerned about this and the destruc-

tion of estuarine resources with a project benefit-cost ratio of 1.2 to 1, at a 3⅛-percent discount rate. Would you please comment?

Colonel RAY. Mr. Chairman, I believe that Mr. Pickelner probably refers to Avondale Marineways and J. Ray McDermott, which would be immediate primary beneficiaries. However, the benefits attributable to the project consist mostly of savings in movement of derrick and launch barges, movement of drilling tenders and construction of submersible drilling rigs all now operating over the existing channels in the Morgan City area. In addition, the waterway is open to all, including oystermen, shrimpers, and both commercial and sport fishermen who are also expected to use the waterway. The benefits were evaluated by comparing transportation and production costs with the project in place with those which would obtain over existing and alternate routes in the absence of the project. All viable alternatives were considered. Since the benefits are either savings in transportation costs or savings in production costs, they represent savings that will ultimately accrue to the citizenry at large and not solely to a few individual operators. The benefit-cost ratio for the project at the authorized 3¼-percent discount rate is 1.2 to 1; however, when evaluated at 5⅝ percent, the rate currently specified for evaluating new projects, the project is still justified at 1.04 to 1. We feel that it is appropriate to emphasize that the project will, in a most direct way, facilitate the search for, and production of energy.

REEVALUATION BY DEPARTMENT OF INTERIOR

Senator STENNIS. Mr. Pickelner pointed out that of the two dozen formal comments to the Corps of Engineers so far on the project, 17 have been critical and adverse. He stated that the U.S. Department of the Interior has announced its intention to reevaluate the project and its fish and wildlife losses. Would you address this?

Colonel RAY. The project plan and the environmental impact statement were coordinated with all known interested agencies, groups, and individuals. As Mr. Pickelner stated, opposition to the project has been expressed. All expressions of opposition were evaluated and weighed in the decisionmaking process and clearly set forth in the environmental statement. The statement was placed on file with the Council on Environmental Quality on January 15, 1974 and its availability to the public published in the Federal Register by CEQ on January 28, 1974. Copies of the final statement have been furnished to all parties who commented on the draft statement, and to all parties requesting copies of it, irrespective of whether these parties commented on the draft. We did not advertise for bids on the project until February 27, 1974, and did not initiate construction until April 11, 1974.

Senator STENNIS. He also states that the Govermnent Accounting Office has recently released a report citing this project as an example of the failure of the Corps of Engineers to consider fish and wildlife values in water resource projects. Would you address this?

Colonel RAY. Mr. Chairman, we have reviewed the report referenced by Mr. Pickelner and no criticism is contained therein with regard to Corps of Engineers' consideration of fish and wildlife values. There

has been, however, a misunderstanding with respect to an alleged increase in required spoil area for the project. The plan for excavation and spoiling was developed by the Corps of Engineers and forwarded to the U.S. Fish and Wildlife Service for comment. The acreage associated with the spoil areas in the plan amounts to 7,800 acres and plans and specifications for construction are being prepared utilizing these same areas. Inadvertently, text portion of the final environmental impact statement states that 7,000 acres are required for spoil although the plan depicts 7,800 acres. Plans and specifications for the project are currently being developed utilizing the same plan for spoil areas as coordinated with the U.S. Fish and Wildlife Service.

STATUS OF LITIGATION

Senator STENNIS. Mr. Pickelner further advised that a lawsuit against the project has been filed by the police jury of the Terrebonne Parish, the city of Houma, and local commercial and sports fishermen. What is the current status of this litigation?

Colonel RAY. A hearing on a motion for a temporary injunction to halt construction while the case is tried on its merits was held in the 5th Circuit, Federal District Court, Eastern District of Louisiana, the week of April 8. The motion for the injunction was denied by the circuit court on May 17, 1974.

BAYOU BODCAU AND TRIBUTARIES, LA.

Senator STENNIS. The budget request was $300,000. The House has included $300,000, and local interests have requested $600,000. What is your capability on this project?

General MORRIS. Our capability on this project is $300,000, the same as the budget, Mr. Chairman.

LAKE PONTCHARTRAIN AND VICINITY, LA.

Senator STENNIS. The budget request was $3,300,000. The House has included $3,300,000, and local interests have requested $6,500,000. What is your capability on the project?

General MORRIS. Our capability on this project is $6,500,000, Mr. Chairman.

Senator STENNIS. What would be accomplished with the additional $3,200,000?

General MORRIS. The additional amount would be used to advance construction of levees and floodwalls at specific locations.

Mississippi River, Baton Rouge to the Gulf of Mexico, La.

Senator Stennis. There is nothing in the budget and local interests have requested $1,200,000. What is your capability on this project?

General Morris. Mr. Chairman, our capability on this project is $1,200,000 to initiate construction.

Senator Stennis. Would you submit a statement for the record?

General Morris. Yes, sir.

[The statement follows:]

Project: Mississippi River, Baton Rouge to the Gulf of Mexico, Louisiana (Southwest Pass and Bar Channel)

Summarized Financial Data:

Estimated Federal Cost (Corps of Engineers)		$8,990,000
Estimated Federal Cost (U.S. Coast Guard)		28,900
Estimated Non-Federal Cost		18,000
Cash Contribution	0	
Other Costs	$ 18,000	
Total Estimated Project Cost		$9,036,900
Allocations to Date		7,705,200
Balance to Complete		1,284,800
Amount that could be utilized in FY 1975		1,200,000

Authorization: 1945 River and Harbor Act

Location and Description: The project is located in the Lower Mississippi Delta Region in Plaquemines Parish, Louisiana. The project consists of construction of nine lateral pile dikes on the east bank between mile 1.8 and mile 3.0; construction of 41 lateral pile dikes on the west bank between mile 6.0 and mile 9.1; extension of 18 existing lateral pile dikes on the west bank between mile 10.1 and mile 14.4; extension of two lateral pile dikes and construction of two additional lateral pile dikes on the west bank between mile 17.3 and mile 19.1 and for the construction of two lateral pile dikes on the east bank between mile 18.6 and mile 19.1 extension of four existing lateral pile dikes on the west bank between mile 19.1 and mile 20.2.

Proposed Operations: The amount of $1,200,000 would be used to continue construction of pile dikes.

Justification: This project will reduce maintenance requirements for the area and will also serve in the stabilization of the bankline. The benefit-cost ratio is 25.4 to 1. The average annual benefits, all navigation, are estimated to be $167,010,000.

Status of Environmental Impact Statement: The final environmental impact statement is scheduled to be filed with the Council of Environmental Quality in June 1974.

New Orleans to Venice, La.

Senator Stennis. The budget request was $9 million. The House has included $9 million, and local interests have requested $12,500,000. What is your capability on this project?

General Morris. Our capability on this project is $12,500,000, Mr. Chairman.

Senator STENNIS. What would be accomplished with the additional $3,500,000?

General MORRIS. The additional amount would be used to advance levee construction.

OUACHITA RIVER LEVEES, LA.

Senator STENNIS. The budget request was $405,000. The House has included $405,000, and local interests have requested $1,005,000. What is your capability on this project?

General MORRIS. Our capability on this project is $505,000, Mr. Chairman.

Senator STENNIS. What would be accomplished with the additional $100,000?

General MORRIS. The additional amount would be used to advance the Monroe to Sandy Bayou levee enlargement.

OVERTON-RED RIVER WATERWAY, LOWER 31 MILES, LA.

Senator STENNIS. The budget request was $1,100,000. The House has included $1,100,000, and local interests have requested $3,500,000. What is your capability on this project?

General MORRIS. Our capability on this project is $3,500,000, Mr. Chairman.

Senator STENNIS. What would be accomplished with the additional $2,400,000?

General MORRIS. The additional amount would be used to advance construction of revetment at Chaney, Catfish Bayou, and Upper Sunk Lake.

RED RIVER EMERGENCY BANK PROTECTION, LA., ARK., OKLA. AND TEX.

Senator STENNIS. The budget request was $3,900,000. The House has included $3,900,000, and local interests have requested $4,900,000. What is your capability on this project?

General MORRIS. Our capability on this project is $4,900,000, Mr. Chairman.

Senator STENNIS. What would be accomplished with the additional $1 million?

General MORRIS. The additional amount would be used to advance the construction of Brown and Cadney revetments.

RED RIVER WATERWAY, MISSISSIPPI RIVER TO SHREVEPORT, LA.

Senator STENNIS. The budget request was $12 million. The House has included $12 million, and local interests have requested $20 million. What is your capability on this project?

General MORRIS. Our capability on this project is $20 million, Mr. Chairman.

Senator STENNIS. What would be accomplished with the additional $8 million?

General MORRIS. The additional amount would be used to advance specific items of revetment and bank stabilization.

RED RIVER WATERWAY, SHREVEPORT, LA., TO VICINITY OF INDEX, ARK.

Senator STENNIS. There is nothing in the budget and local interests have requested $100,000. What is your capability on this project?

General MORRIS. Mr. Chairman, our capability on this project is $100,000 to initiate preconstruction planning.

Senator STENNIS. Would you submit a statement for the record?

General MORRIS. Yes, sir.

[The statement follows:]

Project: Red River Waterway, Shreveport, Louisiana, to Vicinity of Index, Arkansas

Summarized Financial Data:

Estimated Federal Cost		$ 91,600,000
Estimated non-Federal Cost		11,400,000
Cash Contribution	$ 1,460,000	
Other	9,940,000	
Total Estimated Project Cost		103,000,000
Allocations to Date		0
Balance to Complete		103,000,000
Preconstruction Planning Estimate		300,000
Amount that could be utilized in FY 1975		100,000

Authorization: 1968 River and Harbor Act

Location and Description: The project is located in northwest Louisiana, southwest Arkansas and northeast Texas, along the Red River between Shreveport, Louisiana, and Index, Arkansas. It passes through the following parishes in Louisiana and counties in other States: Caddo and Bossier Parishes, Louisiana; Bowie County, Texas; Little River, Hempstead, Miller and Lafayette Counties, Arkansas. The project provides for realigning the channels of Red River from Shreveport, Louisiana, to Index, Arkansas, by means of dredging, cutoffs and training works, and for stabilizing its banks by means of revetments, dikes and other methods. Facilities to provide opportunities for recreation and for fish and wildlife development are an integral part of the project.

Proposed Operations: The amount of $100,000 would be used to initiate preconstruction planning.

Justification: Red River, in its natural state, is a meandering stream characterized by wide fluctuations in stage and continuing erosion of the banks. Many acres of productive land and improvements are lost each year to this caving and other lands are underdeveloped because of the insecurity of investment. Efforts at bank stabilization, to date, have been limited to individual locations for protection on an emergency basis. These efforts by local and Federal interests are inadequate to provide an efficient or economical overall approach to the problem. This project is of broader scope and the substantial effort is expected to result in the following benefits. Approximately 1,115 acres of land previously lost each year will be retained and the crops and other improvements (such as levees, railroads, highways, bridges, pipelines, power lines, telephone lines, and buildings) will be protected. Average annual crop damage and non-crop damage prevented is estimated to be $1,264,000 and $861,000, respectively. Security provided by the works will result in increased land utilization on approximately 72,000 acres of land, of which 54,700 acres are cleared and 17,300 acres are woodland. This project unit also will provide protection to work previously in place, which, in the past, has been subject to excessive attack because of the isolated program. The benefit to cost ratio is 1.09 to 1. The average annual benefits for the project are broken down as follows:

Flood Control	$ 3,304,000
Recreation	1,400,000
Area Redevelopment	675,000
Total	5,379,000

Status of Environmental Impact Statement: The final environmental impact statement was filed with the Council of Environmental Quality on 11 May 1973.

Vermilion Lock, La.

Senator Stennis. The budget request was $100,000. The House has included $100,000, and local interests have requested $100,000. What is your capability on this project?

General Morris. Our capability on this project is $100,000, the same as the budget, Mr. Chairman.

Senator Stennis. Some years ago we asked you to review the lock size of Vermilion Lock, and as I recall, you did that and reached a tentative conclusion that a larger replacement lock size would not be justified. Is there any later development?

General Morris. Yes, sir, we have found that the larger width lock, at 110 feet, is now justified to meet the existing commerce.

Senator Stennis. Has this larger lock size been approved by the Secretary of the Army under authority of the 1909 act.

General Morris. No, sir. That request has not been acted upon. It is under consideration by the Secretary's office at this time.

Dickey-Lincoln School Lakes, Maine

Senator Stennis. There is nothing in the budget. The House has included $800,000, and local interests have requested $800,000. What is your capability on this project?

General Morris. Mr. Chairman, our capability on this project is $800,000 to resume preconstruction planning.

Senator Stennis. Would you submit a statement for the record?

General Morris. Yes, sir.

[The statement follows:]

Project: Dickey-Lincoln School Lakes, Maine

Summarized Financial Data:

Estimated Total Appropriation Requirement		$356,000,000
Future non-Federal Reimbursement	$341,500,000	
Estimated Federal Cost (Ultimate)		14,500,000
Estimated non-Federal Cost		
Reimbursement:		
Power	$341,235,000	
Recreation	$265,000	
Total Estimated Project Cost		$ 356,000,000
Allocations to date		2,154,000
Balance to complete preconstruction planning		2,046,000
Amount that could be used in FY 1975		$ 800,000

Authorization: Flood Control Act of 1965

Location and Description: Dickey Lake is located on the Upper Saint John River near the Town of Dickey, Aroostook County, Maine immediately above its confluence with the Allagash River. The project provides for an earth-fill dam and supplemental dikes impounding reservoirs with gross storage capacity of 7,700,000 acre-feet for power, flood control and recreation. The Lincoln School Lake is located on the Saint John River 11 miles downstream from Dickey Lake and provides for an earth-fill dam impounding a reservoir with usable storage capacity of 24,000 acre-feet for purposes of regulating discharges from Dickey Lake and power generation.

Proposed Operations: The amount of $800,000 would be used to resume preconstruction planning.

Justification: The Dickey-Lincoln School Project is an integral unit of the comprehensive development and conservation of the water and power resources of the Saint John River Basin. Electric power will constitute the major benefits from the project and, due to power revenues, is fully reimbursable including interest. On-site annual power generation of about 1.2 billion kilowatt-hours resulting from an installed capacity of 830 MW will provide needed power to the New England area. Additional power benefits will be realized at downstream Canadian power plants. Flood control storage provided by the project will eliminate flood damages below the site. The advent of low-cost power and flood protection would contribute significantly to the advancement of the economic climate of the State of Maine and the New England area. The Dickey-Lincoln School Project is located in the part of Aroostook County, Maine which is classified as a Title IV (1) Economic Development Area. The benefit-cost ratio is 2.6 to 1. Average annual benefits are estimated as follows:

Power	$ 44,365,000
Flood Control	60,000
Area Redevelopment	817,000
Recreation	1,250,000
Total	$ 46,492,000

Status: Of the approximate $2.2 million spent to date, $1.5 million or 68 percent was allocated to surveys and foundation and soils exploration. Remaining funds were expended on real estate investigations and general design effort. No detailed engineering for actual bid plans and specifications has been started. No planning has been accomplished since November 1967 because of lack of funds. Preconstruction planning is approximately 60 percent complete, but some lost effort will be realized in resuming design.

Previous Allocation of Funds:

Fiscal Year	Allocations
1966	$ 780,000
1967	1,034,000
1968	340,300
1969-1974	0
Total	$ 2,154,300

Possible Planning & Construction Schedules:

Subject to funding, preconstruction planning would require 18 months to complete, and construction would require seven and one half additional years.

Status of Environmental Impact Statement:

Preparation of the environmental impact statement has been suspended pending future appropriation of funds.

OPPOSITION

Senator STENNIS. The Friends of the St. John has recently stated its opposition to the Dickey-Lincoln School Lakes project in Maine. The opposition is based on four principal points, namely, the project's nominal contribution toward meeting New England's electric energy requirements, the damage to the recreational and natural resource features of the upper St. John basin, the inadequacy of the benefit-to-cost ratio and that more desirable alternative courses of action are available. Would you please comment initially on the project's contribution toward meeting New England's power needs?

Colonel WITHERS. Yes, sir. The Dickey-Lincoln School Lakes project would be operated principally as a peaking power unit. In this role, Mr. Chairman, we feel the project would make a significant and economical contribution toward meeting New England's power needs. Unfortunately, the project's output has consistently been measured by the opponents in terms of energy generation. This is an unfair comparison. Being principally a peaking plant, the project is not a high energy-producing unit. Its true value rests in its availability to meet daily peak load demand quickly, reliably, and economically. The value of hydroelectric power in meeting this type of demand is clearly evidenced in the private sector by the recent construction of the Northfield Mountain and Bear Swamp pumped storage projects. These projects will be used solely for peaking purposes and are not high energy-producing plants. Conventional hydroelectric plants, such as Dickey-Lincoln School Lakes, have a distinct advantage over the pumped storage hydroelectric plants. Dickey-Lincoln School Lakes, because of its large storage capacity, would be capable in times of emergency of continuous operation for a considerable period. In contrast, a pumped storage development normally has a small headwater reservoir which limits the powerplant to a few hours of continuous operation. Another factor is that pumped storage projects rely upon the availability of off-peak energy for pumping to replenish the upper reservoir. Dickey-Lincoln School Lakes is self-sustaining and does not rely upon an exterior source of power.

A more meaningful and objective measure of the project's contribution can be expressed in terms of installed capacity needs. The NEPOOL–NEPLAN semiannual load and capacity report, dated October 1, 1973, indicates that the proposed required installed capacity for 1983 will total 34,905 megawatts. Of this total, 18,020 megawatts have been installed as of the end of 1973 resulting in a required expansion of 16,885 megawatts. If it is reasonably assumed that 20 percent of the total capacity needs would require peaking power units such as conventional and pumped storage hydroelectric plants and gas turbines, then the total needs for peaking purposes would amount to 7,000 megawatts. Based on 725 megawatts from the project planned for peaking power purposes, this represents a 10.25 percent contribution.

Senator STENNIS. With respect to the environmental impact, it was noted by the Friends of the St. John that Dickey-Lincoln School Lakes is larger than the Aswan High Dam in Egypt. Could you provide this committee some comparison in size between the two dams?

Colonel WITHERS. Sir, based on statistics included in the 1973 World Register of Dams, the Aswan High Dam has a maximum height of 364 feet, is approximately 12,500 feet long at its crest, and has an embankment fill quantity of about 54 million cubic yards. The Dickey Dam would have maximum height of 335 feet, a crest length of 10,600 feet and a total embankment quantity of about 61 million cubic yards. I would say, sir, that they are comparable in size.

Senator STENNIS. The Friends of the St. John stated that the large reservoir area would have significant adverse impact on an area—which quoted from the AMC Canoeing Guide, "has no equal in the eastern United States in the number and diversity of wilderness canoe trips which can be made." Similar adverse impact was also noted on the trout fisheries and deer yards. Have these impacts been examined?

Colonel WITHERS. As you may recall, sir, our preconstruction planning activity was terminated in late 1967 due to the lack of appropriations. At that time, preliminary environmental studies were being initiated and meetings were held with various Federal and State agencies. Subsequent to the cessation of our activity, the National Environmental Policy Act was enacted in 1969. In the spirit of this act, thorough in-depth environmental studies would have to be conducted on the project in conjunction with the preparation of an Environmental Impact Statement. Unquestionably, a project of the magnitude of Dickey-Lincoln School Lakes will have significant environmental impact—both gains and losses. These impacts must await detailed studies in order to objectively define and and measure their consequences. I will comment on the canoeing, fishing, and deer yards aspects based on our earlier planning activity.

The Allagash River is a far greater canoe stream than the St. John River. This was identified in our earlier studies of the project and led to relocating the Dickey damsite to its present location immediately above the confluence of the Allagash and St. John Rivers. Accordingly, the wild free-flowing features of the Allagash River, which supports heavy canoeing use, have been preserved. The St. John River itself cannot, in my opinion, be considered a prime canoeing stream because of its severe variation in flows. The river experiences very heavy flows in early Spring and extremely low flows in midsummer making canoeing very difficult during these periods. In fact, the AMC Canoeing Guide recognizes these wide variations in flows. I would like to quote from the Guide under its description of the St. John River Watershed. It reads as follows: "As the river has few ponds in its headwater, the water tends to run out quickly, so that shortly after the middle of June it may become quite low. On the other hand, one should not plan a trip down the main river before mid-June, as it might be too high, although the tributaries could be traveled earlier. In July and August the flow depends entirely on the amount of rainfall in the headwaters, and parties are strongly advised to maintain a flexible plan to avoid the unpleasantness of trying to canoe down a nearly dry river bed."

This variation in river flows also has an effect on the native brook trout. These trout reportedly can be found in the lakes and smaller tributary streams during the entire year. However, this even distribution of trout is not true of the main stem of the St. John River and

its larger tributary streams during the late summer and early fall months. This is the period of low streamflows and increased stream temperatures which force the fish to seek other cooler tributaries. Accessibility to the area is also limited. Access is gained by foot, by water, which is limited by low flows, or by some rough logging roads. On the other hand, Dickey Dam would impound an 86,000-acre lake which would provide access to wilderness areas previously inaccessible. The lake itself would provide a multiple warm and cold water fishery. Basically, there would be a trade-off between stream fishing and lake fishing. However, due to increased accessibility, the project area would most likely support more users and permit access to wilderness areas not previously available.

With respect to the loss of deeryards, a draft report was prepared by the Bureau of Sport Fisheries during our earlier preconstruction planning. The report indicated an estimated 2,200 deer would be displaced by the project but that an estimated 1,800 of these could be replaced by the project through mitigation measures. Such mitigation measures as acquisition of suitable land and proper management to replace lost deeryards would haves to be explored.

BENEFIT/COST ANALYSIS

Senator STENNIS. In refuting the economic analysis the Friends of the St. John reject your benefit-to-cost analysis on the basis of an unrealistic interest rate, failure to reflect value of lost timber and recreational output of flooded lands and the effect of escalation. Please comment on these items.

Colonel WITHERS. The project's economic analysis and cost estimates were developed in accordance with criteria and standards prescribed by SD 97. The interest rate of 3¼ percent is in accordance with a Water Resources Council regulation implemented in December 1968. This regulation revised the method of computing the interest rate as previously prescribed by SD 97. The regulation permitted an exception, however, for already authorized projects such as Dickey-Lincoln School Lakes which was authorized in 1965. The exception noted that if an appropriate non-Federal agency provided, prior to December 31, 1969, satisfactory assurances that requirements of local cooperation associated with the project would be met, then the previous interest rate would be retained. At Dickey-Lincoln School Lakes, local cooperation would be required for the cost sharing of recreational facilities. Assurances were received from the Governor of Maine by letter, dated February 24, 1969, that the non-Federal requirements would be fulfilled at the appropriate time. As a result, the interest rate was retained at 3¼ percent.

The Council subsequently established new principles and standards for water resource planning effective in October 1973. A section of these new standards includes the provision for increasing the interest rate to 6⅞ percent. However, the Water Resources Development Act of 1974, enacted on March 7, 1974, includes a section which requires that interest rates used for water resource projects be consistent with the implementation of the December 1968 Council regulation. Accordingly, the 3¼-percent interest rate remains firm for Dickey-Lincoln School Lakes. As a point of interest, if the project were evalu-

ated on a 6⅞-percent interest rate, it remains justified with a 1.3 to 1 ratio.

The value of lost timber is included in the project cost estimate. The estimate for land acquisition includes the estimted stumpage value of standing merchantable timber in addition to the value of cutover land based on its fair market value. Any recreational value would also inherently be reflected in the sale price of the land.

With reference to cost escalation, sir, the criteria and standards prescribed by SD 97 require that estimates of project costs be based on price relationships existing at the time of project analysis. Accordingly, the project cost estimate does not reflect any prospective price level escalations. I would like to note, however, that any analysis which includes projected escalations on both sides of the equation—that is, to project costs and to alternative costs which are a measure of the project's benefit—would probably favor the hydroelectric project. The inflationary effects on the high operating costs of alternative powerplants would be significantly greater than on the very low operating costs of conventional hydropower projects. A good example is the high cost of fuel currently being experienced.

The project cost estimate of the dam and appurtenances when design was terminated in 1967 totaled $218.7 million and the benefit-to-cost ratio was 1.9 to 1. The current cost estimate, which has been increased annually to reflect escalating costs, is $356 million and the benefit-to-cost ratio is 2.6 to 17. Although the Dickey-Lincoln School Lakes construction cost has escalated over the years, the cost of the alternatives which represent the power benefit has increased at a more rapid rate.

It is also pertinent to note that the economic life of a hydroplant is much longer than for a thermal plant. This means that to provide an equivalent amount of power, a thermal plant would have to be replaced at escalated costs at least twice during the economic life of the hydroplant.

ALTERNATIVES TO DICKEY-LINCOLN

Senator STENNIS. In its testimony relating to alternatives, the Friends of the St. John notes that the Federal Power Commission's suggested alternatives would be better than Dickey-Lincoln School Lakes. Would you comment on this?

Colonel WITHERS. The power benefit for Dickey-Lincoln School Lakes is equated to the most likely privately financial alternatives which would provide equivalent power in the absence of the Federal project. The Federal Power Commission provides the Corps with this information. The alternatives to Dickey-Lincoln School Lakes are a fossil fuel steamplant for the 105 megawatts scheduled for baseload marketing in Maine and gas turbines for the 725 megawatts of peaking power to be marketed in the Boston, Mass., area. The total annual cost for the alternative private power sources is $42.9 million. The annual cost for power from Dickey-Lincoln School Lakes is $31.2 million based on a repayment interest rate of 5⅞ percent and a 50-year repayment period as established by the Department of Interior. This represents an annual savings of $11.7 million over the private alternatives and clearly indicates that the project would provide power at least cost to the consumers.

Senator STENNIS. It was also noted that alternatives such as combined cycle units, fuel cells, solar energy and wind turbines offer more promise than Dickey-Lincoln School Lakes. Have you considered these alternatives?

Colonel WITHERS. Mr. Chairman, we look to the Federal Power Commission to provide us with the most feasible alternatives. In their analysis, the Commission evaluates all potential equivalent sources of power. In its 1970 National Power Survey, the Commission discussed other forms of energy generation. It noted that while some of these other energy facilities are realizing limited success, none appear to provide an immediate solution to any of the problems facing the utility industry today. Research has been limited to moderately sized installations with at-site application and not for use as a central station with widescale application such as Dickey-Lincoln School Lakes. From the information I have reviewed, it appears that to realize an economical source of power equivalent to the project, substantial added research and many years of effort will be required.

REVIEW OF ECONOMIC AND ENVIRONMENTAL EFFECTS

Senator STENNIS. The Friends of the St. John requested that no funds be appropriated to continue design until an independent review of the economics and environmental effects is accomplished. What is your view on this position?

Colonel WITHERS. An independent study of the project's economics has been conducted. As you may be aware, Mr. Chairman, the House Public Works Subcommittee of the Appropriations Committee appointed a special investigative staff in 1966 to determine the economic feasibility and soundness of the project. This in-depth objective study fully analyzed all aspects of the project. During its study the staff interviewed and evaluated the comments of pertinent Federal agencies and private interests.

Items evaluated by the investigative staff included the project's cost estimate, the soundness of its benefit-to-cost ratio, comparison of the project with privately financed alternatives, the repayment rate and marketability of power from the project and its significance in meeting the New England power needs. The study concluded that Dickey-Lincoln School Lakes was an economically sound and justified project. Subsequent hearings before the House and Senate Appropriations Subcommittees, such as this one, have provided a continued interchange on the project's feasibility, need, and justification.

The environmental impacts, as I noted earlier, have not been thoroughly addressed because of the lack of funds since 1967. A comprehensive environmental analysis would receive early and priority attention should our preconstruction planning resume. The environmental objective is a recognized partner in the development of water resource plans. Any future design activity would certainly be conducted within this framework of environmental consciousness.

Senator STENNIS. Mr. Joel M. Pickelner, conservation counsel for the National Wildlife Federation, recently appeared before this committee to express his organization's opposition to Dickey-Lincoln School Lakes, Maine. Mr. Pickelner cited the minimal contribution of the project toward meeting the New England power demand and the loss

of woodland, miles of white water canoeing and outstanding brook trout streams. Would you comment on his remarks?

Colonel WITHERS. Mr. Chairman, my previous comments on the testimony of the Friends of the St. John discussed the project's contribution to New England's power needs and the white water canoeing and brook trout aspects. With reference to the loss of woodlands, the impoundment behind Dickey Dam would inundate 86,000 acres of land at its maximum power pool. This land is comprised principally of timberland, much of which has been cut over. However, putting this loss in perspective, I should note that the State of Maine is very heavily forested. The loss of timberland due to the Dickey-Lincoln School Lakes project would represent less than six-tenths of 1 percent of the forested acres in the State of Maine.

Senator STENNIS. The Bangor, Maine, Daily News had an editorial on May 13, 1974, by Mr. Robert W. Patterson entitled "Dickey Dam Project Doesn't Make Sense." The writer posed four questions which I would like to ask you. First, what will be the sources of additional peaking power as demand increases?

Colonel WITHERS. Construction of additional facilities will be required to meet future power demands. These facilities can be comprised of hydroelectric plants both conventional and pumped storage, and gas turbines. However, due to lack of conventional hydroelectric sites in New England, the peak load requirements will be met by pumped storage and gas turbines. As I have stated previously, although other forms of energy generation are realizing limited success, none appear to provide immediate solution to any of the problems facing the utility industry today.

Senator STENNIS. Could Dickey-Lincoln's potential contribution be provided by those sources?

Colonel WITHERS. Yes; however, the Dickey-Lincoln School Lakes project is more economical than the pumped storage or gas turbines alternative.

Senator STENNIS. Would the cost to the taxpayer be more or less?

Colonel WITHERS. The cost to the consumer would be less for the Dickey-Lincoln School Lakes project than equivalent alternatives. All cost allocated to power would be reimbursable. Consequently, the taxpayer would not bear these costs. The estimated ultimate Federal cost would be $14.5 million.

Senator STENNIS. The last question posed by Mr. Patterson is, Would environmental losses be larger or smaller?

Colonel WITHERS. As noted in earlier testimony Senator, a project of the magnitude of Dickey-Lincoln School Lakes will have environmental impacts. These impacts must await detailed studies in order to objectively define and measure their consequences.

POTOMAC RIVER—NORTH BRANCH (ACID MINE DRAINAGE STUDY), MD., AND VA.

Senator STENNIS. On the Potomac River, north branch acid mine drainage study, Senator Mathias has some questions for me to ask.

In light of the announced capability of $200,000 how would the money be used?

General MORRIS. The additional amount of $150,000 over the budget amount of $50,000 would be used to continue public involvement, to initiate hydrology studies, investigation of mine areas, special studies on simulation techniques and impact assessments, and problem identification.

Senator STENNIS. If this money is largely to be spent on consultant contracts, is it not possible that a larger sum than the listed capability could be utilized in fiscal year 1975?

General MORRIS. No, sir. Considerable in-house effort is required for effective in-house supervision, coordination, and overall study management. The capability amount of $200,000 is the maximum amount that we could effectively use considering requirements of other ongoing studies and projects on our limited personnel who have the technical expertise for contract management.

Senator STENNIS. In light of the Corps' cost estimate of $1.8 million for this project, should not an effort be made to get this program underway, especially in view of the early completion of the Bloomington Dam?

General MORRIS. Every effort is being made to expedite work on the study. The capability on the study is $200,000 in fiscal year 1975 whereas the budget allowance is $50,000. The draft plan of study currently being coordinated with State and Federal agencies and being reviewed within the Corps of Engineers indicates as estimated total study cost of $1,800,000. The current schedule for completion of the Bloomington Lake project is in fiscal year 1980 and we certainly would make every effort to complete the mine drainage study by that time, subject, of course, to the availability of funds.

CHARLES RIVER NATURAL VALLEY STORAGE AREAS, MASS.

Senator STENNIS. There is nothing in the budget. The House has included $100,000, and local interests have requested $100,000. What is your capability on this project?

General MORRIS. Mr. Chairman, our capability on this project is $100,000 to initiate planning.

Senator STENNIS. Would you submit a statement for the record?

General MORRIS. Yes, sir.

[The statement follows:]

Project: Charles River Natural Valley Storage Areas, Massachusetts

Summarized Financial Data:

Estimated Federal Cost (Corps of Engineers)	$ 8,340,000
Estimated non-Federal Cost	0
Total Estimated Project Cost	8,340,000
Allocations to Date	0
Balance to Complete (Corps of Engineers)	8,340,000
Preconstruction Planning Estimate	420,000
Amount that could be used in FY 1975	100,000

Authorization: Water Resources Development Act of 1974.

Location and Description: The Charles River extends inland from Boston Harbor southwesterly toward the Massachusetts - Rhode Island border and is some 80 miles long with a watershed covering 307 square miles. The project provides for federal acquisition and perpetual protection of 17 crucial natural valley storage areas totalling 8,422 acres in what is known as the Middle and Upper watershed of the Charles River.

Proposed Operations: The amount of $100,000 would be used to initiate planning of the project.

Justification: The Charles River watershed project is a multipurpose project for flood control, recreation, and fish & Wildlife management through the acquisition in fee or easement of the major natural valley storage areas. The project provides 8,500 acres of flood protection, or nearly 13 percent of the New England Region's remaining needs for the period 1985-1989. In the event of the recurrence of the 1955 flood of record, losses would amount to over $ 12 million in the Middle and Upper reaches by the year 2020 with a stage four feet higher. The project is the least cost alternative to expensive structural solutions. Not only does the natural valley storage buffer the effects of high flow periods, but it mitigates the consequences of low flow and extended drought. The current benefit-to-cost ratio is 1.5 to 1. Annual benefits are as follows:

Flood Control	717,000
General Recreation	28,600
Fish & Wildlife	96,200
TOTAL	841,800

Status of Environmental Impact Statement: A draft environmental impact statement was placed on file with the Council on Environmental Quality on 14 August 1972.

KALAMAZOO, MICH.

OPPOSITION

Senator STENNIS. Mr. Myron H. Ross has testified in opposition to the local flood protection project at Kalamazoo, Mich. He asks that no funds be approved for this project, alleging primarily that the project lacks economic justification. He says Corps of Engineers figures exaggerate project benefits in several ways. Some of his assertions become quite involved. One illustration he gives is a Corps 20 percent increase adjustment in 1947 flood damages to reflect 1949 dollars. He says this was based on a corresponding 20 percent increase in the Engineering News-Record construction cost index and should have been 15 percent lower to discount productivity increases over the same period. Do you have a comment on this point?

Colonel RUSH. Yes, sir. It is not realistic to contend that worker productivity in the construction industry increased by 15 percent in the 2-year period. Furthermore, labor is only one component in compiling the index. Assuming such increases of labor productivity were possible, it would require about twice the 15-percent increase over the same period to reduce the 20-percent adjustment to be only 5 percent for the 2-year period.

PROJECTED DAMAGE

Senator STENNIS. Mr. Ross alleges Corps flood damage estimates include a 20-percent increase reflecting projected growth in the project area, and that future growth should not be considered in estimates of future damage.

Colonel RUSH. The damage estimates consider growth expected to occur if no flood protection project is built. Sir, it is reasonable to consider such growth, because such growth will occur and will be subject to flooding damage if the project is not built.

Senator STENNIS. Regarding Mr. Ross' contention that damages and losses resulting from unemployment are exaggerated, does a comparison with indices of economic activity and relative flood magnitudes indicate that lost earnings are exaggerated?

Colonel RUSH. Sir, it is not clear where Mr. Ross obtained the factors of 1.35 for "greater economic activity" or of 0.87 for "lower flood level." Therefore, it is difficult to evaluate his analysis. Percentage differences in lost earnings or in any other flood damages do not necessarily bear a direct proportional relationship either to the general level of economic activity in a community or to the rate of peak flood discharge.

Senator STENNIS. Why are some of the projected damages predicated on the possibility of floods greater than the highest flood of historical record?

Colonel RUSH. Sir, the discharge record for the Kalamazoo River at Kalamazoo is only 40 years. It is too short and incomplete to be used directly for many purposes of the flood control study. Established methods of statistical analysis as applied in hydrologic engineering, provide a method of making an extension of the discharge record above 8,000 cubic feet per second possible, and to cover a longer period of time than the period of record, and to determine floods of higher mag-

nitude that probably have occurred in the past and may be expected to occur in the future.

Senator STENNIS. Is there a genuine trend toward a decrease in frequency of floods on the Kalamazoo River?

Colonel RUSH. The table from which Mr. Ross elicited his trend was table 1 of appendix B, "Flood Damages, Frequencies, and Benefits," Corps of Engineers, U.S. Army, Milwaukee District, p. 12, which is part of Senate Document No. 53, "Kalamazoo River, Mich., Kalamazoo Vicinity." The table displays the peak discharges in cubic feet per second of a series of historically experienced floods of the Kalamazoo River at Kalamazoo, Mich. A footnote to the table explains that the table displays all floods of 2,750 cubic feet per second or more between 1932 and March 1948 and all floods of 4,800 cubic feet per second or more prior to 1932. The reason for the difference is that the Kalamazoo City record gage, the only flood gage in operation prior to 1932, does not record floods with peak discharges of less than 4,800 cubic feet per second. Since 1932, when an additional gage, the Comstock Gage, was installed, floods with peak discharges between 2,750 and 4,800 cubic feet per second have also been recorded. Any elicitation of a statistical trend in peak discharges which ignores the nature of the data is clearly invalid, which explains why Mr. Ross has reached his manifestly improbable conclusion that the flood hazard will become nonexistent during the life of the project.

Senator STENNIS. Mr. Ross says the interest rate used to calculate benefits should be higher, more closely approximating the private sector.

Colonel RUSH. Sir, the interest rate used in calculating benefits and costs of this project, and of all other corps water resources projects, is specified in directives issued by the Chief of Engineers in accordance with guidance provided in law or by the Water Resources Council pursuant to law. The rate is not an arbitrary selection intended to favor one project or hinder another. Section 80 of the Water Resources Development Act of 1974 is the most recent law providing specific guidance.

Senator STENNIS. Why is the estimated life of the project 100 years instead of 50 years?

Colonel RUSH. Sir, the project is designed to provide flood protection for 100 years; therefore, the benefits during the 100-year life of the project, suitably discounted with respect to time, are balanced against the costs of the project.

Senator STENNIS. Why has there been no discussion of alternatives to the project as authorized?

Colonel RUSH. The environmental impact statement for the project will describe alternative methods of providing flood damage reduction. Flood insurance, although a valid concept and desirable from the point of view of property owners, does not reduce flood damages, but merely distributes an individual's catastrophic economic loss over many years to many individuals. A loss remains a loss, no matter who pays for it. In this sense, flood insurance is not an alternative which avoids or reduces flood damage.

Senator STENNIS. Why has no consideration been given to nonmonetary factors?

Colonel RUSH. Sir, full consideration will be given to environmental factors in the reanalysis of project design. Alternative means of flood prevention and modification of project design will be considered in public workshops to which all interested persons will be invited. An environmental impact statement will then be written, displaying all of the environmental impacts, both beneficial and adverse, of the proposed project design.

OTTAWA RIVER HARBOR, MICH. AND OHIO

Senator STENNIS. There is nothing in the budget. The House has included $10,000, and local interests have requested $10,000. What is your capability on this project?

General MORRIS. Mr. Chairman, our capability on this project is $10,000 to initiate preconstruction planning.

Senator STENNIS. Would you submit a statement for the record?

General MORRIS. Yes, sir.

[The statement follows:]

Project: Ottawa River Harbor, Michigan and Ohio

Summarized Financial Data:

Estimated Federal Cost (Corps of Engineers)		$ 1,390,000
Estimated Federal Cost (U. S. Coast Guard)		9,000
Estimated non-Federal Cost		1,685,000
Cash Contribution	$ 1,390,000	
Other	295,000	
Total Estimated Project Cost		3,084,000
Allocations to Date		0
Balance to Complete		1,390,000
Preconstruction Planning Estimate		210,000
Amount that could be utilized in FY 1975		10,000

Authorization: Approved December 1970 under Section 201 of the 1965 Flood Control Act.

Location and Description: The Ottawa River, located in Lucas County, Ohio and Monroe County, Michigan, empties into the western end of Lake Erie about 3.5 miles north of Toledo Harbor, Ohio and about three-fourths of a mile north of the Michigan - Ohio State line. The project provides for construction of a channel 8 feet deep, 200 feet wide, and about 15,000 feet long in Maumee Bay from the Toledo Harbor ship channel to the mouth of the Ottawa River, and a channel 6 feet deep, 100 feet wide and about 16,500 feet long in the Ottawa River from the river mouth to the Suder Avenue Bridge.

Proposed Operations: The $10,000 would be used to initiate preconstruction planning.

Justification: There currently is a deficiency of adequate harboring facilities for present and future light-draft craft on westerly Lake Erie. This situation results in traffic congestion at existing light-draft harbors and in sailing distances between these harbors too long for the safe passage of small light-draft craft. The Ottawa River is the only site in the area suitable for development of a Federal small-craft facility. This waterway, already a popular base for a sizable fleet of small recreational craft, has the potential for further expansion. However, the lack of adequate channel depth restricts the present use and precludes growth of both locally-based and transient fleets. During periods of low lake levels, the shallow channel depths restrict the passage of all except the smaller craft. Improvement of Ottawa River would serve to improve the existing restrictive and sometimes hazardous conditions, afford a near optimum usage, encourage the future growth of locally based and transient fleets to their full potential and provide additional refuge facilities for light-draft craft cruising along the westerly coast of Lake Erie between the mouth of Detroit River and Port Clinton Harbor, Ohio. The benefit-to-cost ratio is 2.4 to 1. The average annual benefits, all recreational navigation, are estimated to be $505,000.

Status of Environmental Impact Statement: The final EIS will be submitted upon completion of the Phase I - Plan Formulation Design Memorandum.

Red Run Drain and Lower Clinton River, Mich.

Senator Stennis. There is nothing in the budget. The House has included $50,000, and local interests have requested $50,000. What is your capability on this project?

General Morris. Mr. Chairman, our capability on this project is $50,000 to initiate preconstruction planning.

Senator Stennis. Would you submit a statement for the record?

General Morris. Yes, sir.

[The statement follows:]

Project: Red Run Drain and Lower Clinton River, Michigan

Summarized Financial Data:

Estimated Federal Cost		$ 174,000,000
Estimated non-Federal Cost		69,000,000
Cash Contribution	$ 39,500,000	
Other Costs:		
Lands and Relocations	27,275,000	
Recreation	2,225,000	
Total Estimated Project Cost		243,000,000
Allocations to Date		0
Balance to Complete		174,000,000
Preconstruction Planning Estimate		5,500,000
Amount that could be utilized in FY 1975		50,000

Authorization: 1970 Flood Control Act

Location and Description: The Red Run Drain and the Lower Clinton River, located in the southeastern portion of the lower peninsula of Michigan, flows across Macomb County to empty into Anchor Bay, an arm of Lake St. Clair about 20 miles north of the city of Detroit, Michigan. The project provides for channel improvement of Red Run Drain from the Oakland--Macomb County line to the mouth of Red Run Drain; abandonment of the Oakland County portion of the existing Red Run Drain project; improvement of the Lower Clinton River channel from Red Run Drain to and through the Clinton River Cut-Off Canal to Lake St. Clair, general and navigational recreation facilities, modification of 19 highway bridges and two railroad bridges and utility modifications.

Proposed Operations: The $50,000 would be used to initiate preconstruction planning.

Justification: The Red Run and Lower Clinton River Basins have experienced numerous floods causing extensive overland and basement flooding damages. The maximum flood of record occurred in April 1947 causing approximately $770,000 in damages. Floods of slightly less volume occurred in 1938 and 1943 and inundated most of the low lands adjacent to the Clinton River and were moderately damaging. Since the maximum flood of record, floods about equal to the 1938 flood occurred in 1948, 1950, 1956, 1962 and 1968. The 1956 and later floods went relatively unnoticed in the Mount Clemens area because the Clinton River Cut-Off Canal flood control project was in operation; however, in the Red Run area extensive physical damage has occurred with increasing frequency. The Red Run Basin is highly urbanized now and is expected to be completely developed by the year 2000. The Red Run Drain carries essentially all of the basin's storm water and is now

overtaxed, resulting in basement flooding. On a number of occasions, basement flooding has occurred in the Red Run Basin when the Clinton River was practically normal. Floods are most common in the spring, as a result of long duration storms over the entire basin and at a time when spring runoff is often high, due to frozen soils and melting snow. Floods which inundate residential, commercial, industrial and public building areas occur almost annually. The most recent flood occurred in June 1968 and caused overland and basement damages of approximately $24,300,000. On the basis of current conditions and price levels, the estimated flood damages for the 1947 and 1968 floods would be $30,300,000 and $39,900,000, respectively, substantially all of which would be prevented by the project. The benefit-to-cost ratio is 3.5 to 1. The average annual benefits are as follows:

Flood Control	$ 54,490,000
Recreation	1,255,000
Total	55,745,000

Status of Environmental Impact Statement: The final EIS will be submitted upon completion of the Phase I - Plan Formulation Design Memorandum.

Rochester, Minn.

Senator Stennis. There is nothing in the budget. The House has included $40,000, and local interests have requested $40,000. What is your capability on this project?

General Morris. Mr. Chairman, our capability on this project is $40,000 to initiate preconstruction planning.

Senator Stennis. Would you submit a statement for the record?

General Morris. Yes, sir.

[The statement follows:]

Project: Rochester, Minnesota (Phase I Advance Engineering and Design Stage)

Summarized Financial Data:

Estimated Federal Cost		$37,200,000
Estimated Non-Federal Cost		3,140,000
Cash Contribution	$ 0	
Other	3,140,000	
Total Estimated Project Cost		40,340,000
Allocations to Date		0
Balance to Complete		37,200,000
Preconstruction Planning Estimate		900,000
Phase I Estimated Cost	150,000	
Balance to Complete Preconstruction Planning	750,000	
Amount that could be used in FY 1975		40,000

Authorization: Water Resources Development Act of 1974, for Phase I stage of advance engineering and design.

Location and Description: Rochester is located in Olmsted County in southeastern Minnesota on the South Fork of the Zumbro River. The Zumbro River is a tributary of the Mississippi River. The plan of improvement consists of channel improvement supplemented by levees and flood proofing measures at and in the vicinity of Rochester, together with appropriate floodplain regulation measures. Principal project features include about 10 miles of channel work, 8,100 feet of levees, three pumping stations, interceptor sewers and ditches for interior drainage, and flood proofing of three large municipal buildings.

Proposed Operations: The $40,000 would be used to initiate preconstruction planning.

Justification: Major floods have occurred in Rochester three times during the past 23 years. In the spring of 1962, the fast rising waters fo the South Fork Zumbro River and its tributaries together with ice jams caused damages estimated at $1.6 million at Rochester. Under current conditions and prices a recurrence of the 1962 flood could cause damages estimated at $5.7 million. Potential damages from a flood having a frequency of occurrence of once in 100 years could be more than $40 million under present conditions. Over 1,800 residences, 200 businesses, and 11 industries at Rochester would be subject to flood damage. The proposed plan would provide flood damage reduction for 3,000 acres of urban area in the Zumbro River basin. The benefit-to-cost ratio is 1.7 to 1. The average annual benefits, all flood control, are estimated at $4,215,000.

Status of Environmental Impact Statement: A final statement was filed in September 1973 with the Council on Environmental Quality. During the Phase I advance engineering and design studies additional environmental investigations will be made and the statement on file with CEQ revised or supplemented as determined necessary.

Edinburg Lake, Miss. (Phase 1 Advance Engineering and Design Stage)

Senator Stennis. There is nothing in the budget, and the House has included $100,000. What is your capability on this project?

General Morris. Mr. Chairman, our capability on this project is $100,000 to initiate the Phase 1 stage of advance engineering and design.

Senator Stennis. Would you submit a statement for the record?

General Morris. Yes, sir.

[The statement follows:]

Project: Edinburg Lake, Mississippi (Phase I Advance Engineering and Design Stage)

Summarized Financial Data:

Estimated Total Appropriation Requirement	$ 44,000,000	
Future non-Federal Reimbursement	2,740,000	
Estimated Federal Cost (Ultimate-Corps of Engineers)		$41,260,000
Estimated non Federal-Cost		2,740,000
Reimbursement:		
Recreation & Fish &Wildlife Enhancement	$ 2,740,000	
Total Estimated Project Cost		44,000,000
Allocations to Date		100,000
Balance to Complete (Corps of Engineers)		43,900,000
Preconstruction Planning Estimate		1,850,000
Phase I Estimated Cost	310,000	
Balance to Complete after Phase I	1,540,000	
Amount that could be used in FY 1975		100,000

Authorization: 1974 Water Resources Development Act, for Phase I stage of advance engineering and design.
Location and Description: The project will be located on the Pearl River about 2 miles east of Edinburg, Mississippi, and about 130 river miles above Jackson, Mississippi. The proposed improvements include compacted earthfill and concrete non-overflow dam sections, a 292-foot-long gated spillway and two 3-x5-foot sluices in the right abutment of the spillway. The dam, including the spillway section, would be 7,154 feet long and would have a maximum height of 54 feet.

Proposed Operations: The amount of $100,000 could be used to continue the Phase I stage of advance engineering and design.

Justification: There is a serious flood problem along the Pearl River. The Edinburg project would provide varying degrees of flood protection to the flood plain which contains about 255,000 acres, of which 253,000 are rural and 2,000 are urban. Floods in the reaches immediately downstream of the project would be essentially eliminated except on rare occasions. At Jackson the December 1961 flood affected an estimated 191 dwellings, 60 commercial establishments, one industry, and miles of streets and railroads. This flood caused a damage of $1,238,300 to property with an estimated value of $24,645,000. Had a flood of the magnitude of the December 1961 flood occurred in 1972, it would have caused urban damages of $3.3 million. Overall the project would reduce average annual flood damages downstream of the damsite by about 54 percent. In addition, present facilities are inadequate to meet existing local needs for water-dependent and water-enhanced general recreation activities. The proposed project would provide storage for flood control, water quality control, recreation and fish and wildlife enhancement. The stimulus of the project would materially aid the overall local economy. Four counties within a reasonable commuting distance of the project have been designated redevelopment areas under Section 401 (a) of PL 89-136. The benefit-cost ratio is 1.8 to 1. Average annual benefits are broken down as follows:

Flood Control	$3,218,000
Water Quality Control	750,000
Recreation, including Fish and Wildlife Enhancement	1,187,000
Area Redevelopment	591,000
Total	$ 5,746,000

Status of Environmental Impact Statement: The final EIS was filed with CEQ 20 September 1972. An updated final statement will be prepared during preconstruction planning.

Clarence Cannon Dam and Reservoir, Mo.

Senator Stennis. The budget request was $21,700,000. The House has included $22,700,000, and local interests have requested $22,700,000. What is your capability on this project?

General Morris. Our capability on this project is $22,700,000, Mr. Chairman.

Senator Stennis. What would be accomplished with the additional $1 million?

General Morris. The additional amount would be used to advance construction of recreation facilities.

Harry S. Truman Dam and Reservoir, Mo.

Senator Stennis. The budget request was $30,500,000. The House has included $43 million, and local interests have requested $43 million. What is your capability on this project?

General Morris. Our capability on this project is $43 million, Mr. Chairman.

Senator Stennis. What would be accomplished with the additional $12,500,000?

General Morris. The additional amount would be used to continue relocations and construction on going contracts and to advance completion date of the project by 10 months to June 1980 and advance initial power-on-line by 7 months to March 1979.

Little Blue River Channel, Mo.

Senator Stennis. The budget request was $500,000. The House has included $500,000, and local interests have requested $1,000,000. What is your capability on this project?

General Morris. Our capability on this project is $1 million, Mr. Chairman.

Senator Stennis. What would be accomplished with the additional $500,000?

General Morris. The additional amount would be used to advance project completion by 3 months to August 1978.

Little Blue River Lakes, Mo. (Land Acquisition)

Senator Stennis. The budget request was $2,500,000. The House has included $2,500,000, and local interests have requested $5,500,000. What is your capability on this project?

General Morris. Our capability on this project is $5,500,000, Mr. Chairman.

Senator Stennis. What would be accomplished with the additional $3 million?

General Morris. The additional amount would be used to advance land acquisition and to initiate construction.

Meramec Park Lake, Mo.

Senator Stennis. The budget request was $3,600,000. The House has included $4,600,000, and local interests have requested $5,600,000. What is your capability on this project?

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General MORRIS. Our capability on this project is $5,600,000, Mr. Chairman.

Senator STENNIS. What would be accomplished with the additional $2,000,000?

General MORRIS. The additional amount would be used to advance land acquisition.

OPPOSITION

Senator STENNIS. Mr. Lester Dill of Leasburg, Mo., states in testimony regarding the Meramec Park Dam project that a private study initiated in March of 1969 indicated that the fluctuating level of water in Onondaga Cave would undermine and collapse the cave foundations and thereby collapse Onondaga Cave's most significant onyx formations. Also this study indicated that with the loss of most of the upper level formations and all of the dry floor, the entire commercial cave venture would be lost. Would you comment on this?

Colonel RAY. The Corps' geological and engineering judgment is to the contrary as far as undermining and collapsing cave foundations are concerned; 600 to 700 linear feet of cave would be inundated and unusable at normal pool. The rest plus some additional undeveloped reaches would still be suitable for a spectacular tourist attraction.

Any valid study of the foundations of the cave formations and extrapolation of their future behavior under either existing or anticipated changed conditions would necessarily include sampling foundation materials beneath the formation in question and determining their strength and other characteristics. It is our opinion, however, that the lake fluctuations will be slow and will not produce scouring currents or subaqueous erosion in the cave. Also, wave action will be minimized in the cave due to confinement.

Senator STENNIS. Mr. Dill continues in his testimony stating that Corps of Engineers officials verbally imply that the Onondaga Cave might be saved by grouting, elevating walkways and an alternate entrance. However, Mr. Dill states no official plans have been revealed by the Corps of Engineers to indicate the feasibility of a plan of this nature, nor have they indicated that a plan of this nature is being considered; however, on page 3–68 of the environmental impact statement it states "—portions of the cave could be operated commercially after impoundment." Mr. Dill's concern here is also supported and strengthened by testimony from two organizations, the National Caves Association and the Missouri Caves Association, stating concern over not only the loss of the commercial caves, but loss of an extraordinary natural wonder. Mr. Tom Cravens, President of the Missouri Speleological Survey, Inc. has contributed testimony that the Meramec Dam project will adversely affect over 100 caves in this area and that the project will have extensive adverse effects on Onondaga Cave, and Cathedral Cave, another commercially operated cave, will be destroyed. Has the Corps of Engineers developed a plan whereby this cave and others could be operated commercially after impoundment?

Colonel RAY. During the fiscal year 1973 hearings, we stated that there are 68 known caves in the reservoir area, 16 of which have been found in the field; the remainder being based on data received from the State. In addition, we said that 22 caves are located downstream from the reservoir. Subsequent to these hearings, the following infor-

mation has been developed and appears on page 3–18 of the environmental impact statement for this project:

There are approximately 3,000 caves known in the State of Missouri, approximately 150 of which are known from the Meramec Basin. Forty-four of these caves will be affected by the Meramec Park Lake. Nineteen caves fall within the normal pool and will be permanently inundated, and 25 caves fall within the flood pool and will be periodically inundated. The only commercially developed cave within the normal pool of the reservoir is Onondaga Cave. Approximately one-half of the lower levels of this cave will be inundated. Access to the remaining portion of the cave will be available by a second entrance. (Meramec Caverns, which are located 6 miles downstream of Meramec Dam, will not be flooded by the reservoir. Meramec Caverns and Onondaga Cave are under the same ownership and control.) In the reservoir, as a whole, caves appear to develop near elevation 700. This is above the normal pool elevation 675 but below top of the flood control pool elevation 709. Hence, many of the wild caves in the project area will not be permanently flooded.

A plan for the preservation of Onondaga Cave as a recreation feature by installation of elevated walkways above the normal pool has been developed. Cathedral Cave is not commercially developed, and no public guided tours are conducted. Negotiations for the purchase of all or a portion of the lands of the Crawford County Caverns Co., owner of Onondaga, Cathedral, and Meramec Caves, have not been initiated. The plan for preservation of Onondaga Cave has not been presented to Mr. Dill. Land acquisition, as is the usual practice, starts at the damsite and proceeds upstream. The cave is approximately 19.3 miles above the dam and funding for land acquisition has not permitted initiation of negotiations with Mr. Dill.

ECONOMIC IMPACT

Senator STENNIS. Testimony has been presented by Judge Orville Burnett, presiding judge of Crawford County, Mo., indicating concern over the economic impact of the Meramec Park Dam. He states the project will destroy the tax base for a number of years and that the Bourbon School District will be destroyed due to acquisition of the majority of the district land. Judge Burnett also states concern for the type of population this project will attract. He reflected that Crawford County cannot finance a police force large enough to control this area. Elmer King, mayor of Bourbon, Mo., has also testified as to his concern for the need of additional police services, sewage and waste disposal, and road maintenance as a result of this project. Superintendents of the Reorganized School District No. 1 of Crawford County, Mo., Robert J. Clark, and Consolidated District No. 2 of Franklin County, Mo., James K. Tice, have also expressed concern as to the economic impact in the project area. Mr. Robert L. Hyder, an attorney from Jefferson City, Mo., testifying on behalf of Mr. Lester Dill, the Ozark Cave Association, Inc., and the Crawford County Caverns Corp., also expressed concern over the social and economic impact of the project. Would you comment on the economic conditions that will result from this project?

Colonel RAY. Senator, last year we answered a similar question regarding the economic and social impact of construction of the project. If I may, I will just summarize our comments.

A major impact of this project will be an increase in the recreational industry and allied enterprises. This impact will provide not only local income but will affect the value of surrounding property. Hotels, restaurants, and retail trade allied to recreation industry will receive favorable stimulus. This effect will be felt in an increased tax base thereby providing finances for development of needed municipal facilities.

A report prepared in 1972 by the Corps entitled "Harry S. Truman Dam and Reservoir Project" addressed the impact of reservoir projects on population changes and the related economic effects. This report was discussed in detail last year before this committee.

Senator STENNIS. Judge Burnett further testified that this project will destroy several thousand acres of fertile farmland and land devoted to the raising of livestock. Judge Burnett points out that Crawford County now has some 50,000 acres of land owned by the Federal Government, the Clark National Forest and the Missouri Conservation Commission for recreational use. Mr. Hyder also expressed concern over the amount of agricultural lands being taken and with the loss of parklands. Would you comment on this?

Colonel RAY. Mr. Chairman, as we indicated in testimony last year, approximately 8,900 acres of agricultural land will be inundated by the lake and 3,480 acres will be converted from agricultural to recreational use. A pattern of land conversion is developing in the Meramec Basin from agricultural to urbanization due to the proximity to the St. Louis Area. This will develop with or without the project.

Of the 50,000 acres Judge Burnett refers to as being in the recreation area, less than 40 acres of this have been improved for recreation use, the remainder is in a primitive state. Both of the agencies Judge Burnett refers to as owner of this acreage have endorsed the Meramec Lake project.

SEISMIC FAULT CONDITION

Senator STENNIS. Mr. James A. Froning, in testimony before the committee, raised the possibility that the terrain may be such that the proposed lake will not fill with water due to known earth faults in the area. Also the possibility exists, he states, that the pressure and weight of the water could cause increased seismic activity. He also refers to a "secret" fault in the east abutment that is shown in the Corps of Engineers Impact Statement but the existence of this fault has not been confirmed by the Corps. Mr. Hyder also expressed concern over possible construction difficulties and increased seismic activity because of the weight of the impoundment. Would you comment on this?

Colonel RAY. The lake will fill with and hold water. Groundwater levels around the reservoir are higher than the proposed lake level. A water-tight barrier at the damsite will result in a successful project. This barrier will consist of the dam, positive seepage cutoff measures,

and an impervious curtain of cement grout beneath the dam and adjacent reservior rims.

There are known significant "faults" in the immediate area of the east abutment. The Hamilton Creek fault is east of the damsite but not in the abutment. A number of small unmapped faults with slight displacement would normally be expected to exist in the project area because of the general nature of the terrain. Any faults encountered in our future explorations of the damsite will be investigated but are expected to be of very minor significance. Studies indicate that none of the known faults will affect the filling of the reservior.

There has been normal seismic activity in the Meramec Basin. There is no evidence to support the theory that this project will cause increased seismic activity of any consequence. In cases where impoundments have apparently caused increased seismic activity in this country, it is relatively minor activity and usually associated with projects much larger than Meramec Park Lake.

Senator STENNIS. Testimony was presented by Judge Burnett, that this project "will destroy three of the most beautiful rivers that we have in our country; namely, the Meramec, Courtois, and Huzzah Rivers." Mr. Hyder also expresses concern over the loss of these streams.

Colonel RAY. Mr. Chairman, in fiscal year 1973, we answered this same question in detail. Last year, we summarized our comments. If I may, I will again summarize.

The majority of the unique Ozark resources of the Meramec, Huzzah, and Courtois will be preserved or enhanced. River conditions suitable for canoeists will be available more of the time, and through better access, camping will be improved. Meramec Park Lake will have a shoreline of 175 miles which will be accessible to the public and a water surface area at normal pool of 12,600 acres available for general recreation.

Senator STENNIS. The Ozark Flyfishers testified regarding concern over the loss of a natural flowing stream, inundating caves and destroying wildlife and forest Also the loss of farmlands, contributing to a growing shortage of food-producing acreage, all of which will result from the construction of the Meramec Dam project. Would you comment on those points which you have not already covered today?

Colonel RAY. It is inescapable that the Meramec Park Lake will eliminate parts of the upper Meramec River and Courtois and Huzzah Creeks. Naturally, this will mean a loss of some sections of beautiful streams and some decrease in the stream fishery; however, in the overall picture, the fishing resources will be much improved and a much-needed lake fishery will be created. The U.S. Fish and Wildlife Service estimated on January 28, 1964, that there would be an increase of 504,400 annual fisherman days with the project as compared to the river fisherman days of 66,880. This increase is composed of 485,400 days on the lake area and 18,000 days on the downstream reaches. The outlet works design will provide for the discharge of water with sufficient oxygen content during all seasons to insure preservation and enhancement of existing downstream fishery such as bass, channel catfish, and other fish indigenous to the lower river. The dam should in-

crease overall fishery resources in two ways; by the regulation of the streamflow below the dam for both volume and temperature. Second, the Missouri Department of Conservation has indicated their interest to construct a trout hatchery below the dam, utilizing the releases from the reservoir.

With regard to loss of wildlife and forests, construction of Meramec Park Lake will require acquisition of 865 acres of the Huzzah Wildlife Management Area lands. To offset this loss, approximately 1,035 acres of privately owned lands located along the shoreline areas immediately contiguous to the existing Huzzah Wildlife Management Area will be transferred to the Missouri Department of Conservation. In addition, 730 acres acquired immediately contiguous to the Huzzah Wildlife Area, including the 325 acres purchased from the Huzzah area plus 405 acres of privately owned lands will be licensed to the Missouri Department of Conservation for intensive fish and wildlife management purposes, as provided for under the Fish and Wildlife Coordination Act of 1946, as amended.

Substantial project lands in other portions of the project will also be included in the license. The Missouri Department of Conservation has specifically requested that project lands located north of the Huzzah Wildlife Management Area across the main arm of the reservoir be considered for inclusion. They indicated that this area was particularly desirable due to its proximity to the Huzzah. In addition, project lands in the upper reaches of the reservoir could be used for wildlife management purposes, as could other suitable, remote locations. These lands will be recommended for license to the Missouri Department of Conservation to help offset the wildlife habitat losses that will occur due to inundation by the project.

Senator STENNIS. They further contend that flood control benefits of this project, while reducing flooding on 36,000 acres downstream, construction of the reservoir will result in inundation of 52,000 acres to create the lake. Also the $330,000 crop benefit downstream does not favorably compare with a $390,000 crop loss that will result from removing the acreage from production, that would be required to construct the reservoir. They contend that an open space policy in the flood plain would result in greater benefits. Mr. Hyder also questioned that these benefits were properly determined. Would you comment on this?

Colonel RAY. The flood control pool at Meramec Park Lake will impound the standard project flood or a runoff of 7.28 inches from the 1,500 square mile drainage area above the damsite. The retention of this storm runoff would furnish a high degree of protection to the 10,950 acres of the Meramec River flood plain between the damsite and the confluence of Meramec and Bourbeuse Rivers. Partial protection would be afforded an additional 28,760 acres of land in the lower Meramec Valley between the mouth of the Bourbeuse River and the confluence of the Meramec and Mississippi Rivers. Consideration must be given not only to the number of acres protected against flooding but to the character of construction and installations on the protected acres. The inundation by the lake of upstream raw land, largely brush and timber or low-lying agricultural lands now subject to frequent flooding, makes possible the protection of highly urbanized and improved properties. The cited values of $390,000 and $330,000 cannot be verified or substan-

tiated. Apparently the granting of variances and spot zoning in the lower Meramec River flood plain has resulted in additional construction in St. Louis County. In Jefferson County, there is no zoning applicable to the flood plain. This is also true in such towns as Valley Park and Penton. The recent flood plain inventory reveals intensified building and land use in the Meramec River flood plain.

A more up-to-date detailed inventory of the agricultural, residential, commercial, and industrial lands and buildings that will be protected against flooding is now underway. Preliminary data indicates that the present day annual flood benefits attributable to the Meramec Park project will be far in excess of $1,542,000 claimed for the project. The loss of productivity of lands inundated by Meramec Park Lake is included in the cost of the land acquired for the project on the basis of present day market values. This land with improvements consists of 38,700 acres and is presently valued, including damages, relocation, and acquisition costs, at $18,874,000.

The contention that an open space policy in the flood plain would result in greater benefits is apparently a reiteration of the suggestion that the flood plains be acquired by a Government agency. This is apparently a comparison of the current total project cost of $93 million, with the outdated estimated cost of $53,300,000 to acquire the flood plain downstream of the dam. The $93 million project cost results in project benefits of recreation, fish and wildlife, water supply, stream flow augmentation, and development and navigation. The updated flood plain acquisition cost is $112,500,000. Acquisition would satisfy only one project benefit, flood control. The portion of the project cost of $93 million assignable to flood control in the multi-purpose Meramec Park Lake is $30,839,000. This is $81,661,000 less than the cost of flood plain acquisition.

PROJECT BENEFITS

Senator STENNIS. The Citizens Committee to save the Meramec, located in Leasburg, Mo., and the Ozark Chapter of the Sierra Club from Olivette, Mo., each have submitted testimony questioning the benefits that the Meramec Park Lake was authorized under. The benefits claimed for Area Economic Development have been questioned by each of these two organizations. The Sierra Club cites two studies, one made by Dr. Rex Campbell, a rural sociologist, and the other by John Ballard, a local government specialist with the University of Missouri County Extension Service. Each of these studies question the economic development, first by comparison of counties with recent reservoir development, and neighboring nonreservoir counties, finding that the family economic level did not improve, and second by pointing out that any revenue growth at the municipal or county level could not keep pace with the increased services required such as schools, roads, police and waste disposal. The Citizens Committee to Save the Meramec contends that the profits and wages made during construction are usually from nonlocal labor force and thereby the local economy is not stimulated. Would you comment on this?

Colonel RAY. The studies referenced by the Sierra Club were made in rural areas. It is doubtful if the same results would be obtained in the counties which host or are adjacent to Meramec Park Lake. These counties are either in or adjacent to the St. Louis Metropolitan area.

The 2½ million people in the St. Louis complex, which is rapidly expanding toward the lake site, will have a profound effect on the development of the project area. The report on Harry S. Truman Dam and Reservoir, mentioned a few minutes ago, indicated that revenues in lake counties generally did keep up with increased demands for services.

The contract recently awarded for the construction of the access road and the administration-visitors center building at Meramec Park Lake has resulted in the employment of local people. This number will increase as the major items are placed under contract.

Senator STENNIS. They also contend that the recreation benefits are already present in a free flowing river and the benefits that are already available in the Meramec in its natural state should be considered and these benefits would equal any future benefits resulting from construction of a reservoir. Also, for those that want flat water recreation, several impoundments are already available and within a reasonable distance. Mr. Hyder also questions if the recreation benefits have been properly determined and has expressed concern over loss of opportunity for canoeists and float fishermen. Would you comment on this?

Colonel RAY. When operative, Meramec Park Lake will increase the opportunity for improved float trips on the 108 miles of river below the dam. The river will have a more uniform flow, due to releases for water supply and water quality in the lower basin. The necessity of portaging and pulling boats around or over shoals will be substantially reduced during time of draught. These releases will alleviate stream pollution, reduce health hazards, and enhance boating and swimming recreational activities in the reaches below the dam.

Above Meramec Park Lake, natural river conditions will continue. Attractive floatable water will remain from Cedar Ford to the Steelville Park, a 3-day, 30-mile float. On the Huzzah, river conditions will exist from Davisville to the Highway 8 bridge, a 15-mile float. The Courtois will remain floatable from the Highway 8 bridge at Berryman to Scotia Landing, a distance of 16 miles. In a wet season, these float distances will be greater. In addition, Meramec Park Lake will have a shoreline of 175 miles which will be accessible to the public and a water surface area at normal pool of 12,600 acres available for general recreation.

On the shoreline abutting the lake will be 9,840 acres or recreation lands fully accessible to the public. These lands are in 14 strategic locations and vary in size from 190 to 1,660 acres and have a total lake frontage of 75 miles. The Missouri State Park Board, the Missouri Department of Conservation, and the Corps of Engineers will provide recreational facilities suitable for camping, picnicking, swimming, and general recreation pursuits on these areas. Comfort station, central shower and laundry buildings, water supply and sewage treatment facilities will be provided. Certain tracts will be leased to concessionaires to provide supplies and items required by the recreationists. The use and development within the public lands will be planned and controlled.

The remaining portion of this question was answered in fiscal year 1973 testimony. If I may, I will summarize that portion. In that testimony, we gave figures to bear out that reservoir projects close to the St. Louis area are in a greater demand for recreational use than was

originally anticipated. Attendance at Corps constructed facilities have exceeded the original projected attendance and heavy overuse of recreational areas is being experienced. Projections of attendance now show that by the year 2020 demands would double over that of 1970 and that anticipated facilities will support less than 30 percent of this demand.

Senator STENNIS. These two organizations also contend that the benefits claimed for streamflow augmentation is contrary to directives expressed in the Federal Water Pollution Control Act and have been rejected by the Environmental Protection Agency because of this Federal Act. Would you comment on this?

Colonel RAY. The legislation referred to in the testimony is believed to be the Federal Water Pollution Control Act Amendments of 1972, PL 92–500. Sections 102(b)(1), 102(b)(2), and 102(b)(3) pertaining to streamflow regulation and water quality storage are quoted for your ready reference:

"(b)(1) In the survey or planning of any reservoir by the Corps of Engineers, Bureau of Reclamation, or other Federal agency, consideration shall be given to inclusion of storage for regulation of streamflow, except that any such storage and water releases shall not be provided as a substitute for adequate treatment or other methods of controlling waste at the source.

"(2) The need for and the value of storage for regulation of streamflow (other than for water quality) including but not limited to navigation, salt water intrusion, recreation, esthetics, and fish and wildlife, shall be determined by the Corps of Engineers, Bureau of Reclamation, or other Federal agencies.

"(3) The need for, the value of, and the impact of, storage for water quality control shall be determined by the Administrator, and his views on these matters shall be set forth in any report or presentation to Congress proposing authorization or construction of any reservoir including such storage."

In accordance with section 102(b)(2) of the act, consideration for low flow augmentation can be given to the following: to aid the city of Kirkwood in its domestic water supply; to aid the St. Louis County Water Co. in its domestic water supply; to provide a more sanitary and healthful river in the lower basin; to aid the environmental and esthetic appearance of the river and provide increased recreational benefits; to aid all localities on the lower Meramec River by lessening the effects of agricultural runoff, deposits and other undesirable substances; and to improve river fishing in the downstream reaches. In summary, even with the achievement of the objective of Public Law 92–500 to eliminate point source pollution discharges, the need for streamflow regulation for beneficial purposes will continue.

On September 18, 1973, the U.S. Court of Appeals, 4th Circuit, in the case of *Cape Henry Bird Club* v. *Laird*, 484 F. 2d 453, held that subsections (b)(1) and (b)(3) of the 1972 amendments do not apply to projects funded for construction prior to October 18, 1972, the effective date of the act. In a memorandum dated 12 November 1973, the EPA administratively determined that Section 102(b) of the act would be implemented only for "those reservoir projects not funded by Congress for construction, including land acquisition, as of October 18, 1972, the effective date of the act." Meramec Park Lake has been in land acquisition status since fiscal year 1968 and the Civil Works Appropriation Act of August 25, 1972 authorized a construction start.

Senator STENNIS. These two organizations further contend that the benefits claimed for water supply are not consistent with the current population trends. They state that the Missouri Geological Survey

has determined that ground water supplies are sufficient to meet all foreseeable needs. They further state that construction of the reservoir would place the ground water supply under the threat of irrevocable contamination by leakage of surface water into the ground water supply. Mr. Hyder also questions if the water supply benefits have been properly determined. Would you comment on this?

Colonel RAY. Last year, we answered a question similar to this. If I may, I will summarize a portion of last year's answer and furnish some additional information. Virtually all water used in the upper basin is obtained from ground water sources, which is sufficient to meet the needs of the upper basin to the year 2070. However, the city of Sullivan has recently experienced difficulty with the deep wells upon which it relies for water. The lake adjacent to the city would provide a reliable source of water. In the lower basin, ground water is supplemented by withdrawals from the Meramec and Missouri Rivers. Water supply storage can be released when needed to meet the requirements for water supply in the lower Meramec Basin during periods of low flow. This storage will also be available for water supply withdrawal by towns above the dam near the lake.

The Federal Water Pollution Control Act Amendment of 1972, Public Law 92–500, provides that all communities which discharge sewage into waterways must have secondary treatment plants by 1977. The Missouri Clean Water Commission is actively enforcing the State water quality standards established pursuant to the Federal legislation. With elimination of these sources of pollution, there should be no danger of contamination of the ground water. However, even without the reservoir, the possibility of contamination exists until sources of pollution are eliminated.

Senator STENNIS. They also contend that the benefits claimed for fish and wildlife are for benefits to lands to be acquired outside the project area and that this will not compensate for habitat lost as a result of flooding caused by the reservoir. Wildlife that will move into a new range due to loss of habitat resulting from the reservoir would have to move into an area that will already be carrying the normal amount of wildlife, forage and cover. Mr. Hyder also questions that these benefits have been properly determined. Would you comment on this?

Colonel RAY. Sir, it is clearly stated in the EIS that there will be an overall loss of habitat and corresponding wildlife population. However, the benefits are not based on these two factors. Fish and Wildlife benefits credited to the project are generally based on three factors: (1) the increase in downstream fishery resulting from controlled releases both for quantity and temperature; (2) the increase in fisherman visitation due to the greater shoreline and availability of flat water habitat; and (3) the increase in hunting days resulting from conversion of private lands, open to a few, to public lands open to all on equal terms.

STATUS OF LITIGATION

Senator STENNIS. The Ozark Chapter of the Sierra Club has filed suit in the Federal Court to stop construction on the Meramec Park Lake project. The case is now scheduled to be tried on June 17, 1974. Would you give the present status of this lawsuit?

Colonel RAY. The litigation is presently set for trial before the Honorable H. Kenneth Wangelin in the U.S. District Court for the Eastern District of Missouri on June 17, 1974. Attorneys for the parties litigant are presently attempting to reach agreement to narrow down the issues involved in the litigation. It is expected that the court will call for a pre-trial conference within the very near future.

LOCAL OPPOSITION

Senator STENNIS. The Sierra Club as well as Mr. Hyder also mention a study made by Hon. James Symington, a congressional Representative near this project. They state that his study has found that more people are opposed to the construction of this project than are for it. Would you comment on this?

Colonel RAY. There was no specific study hearing on the need for the construction of Meramec Park Lake conducted by Congressman Symington. The question was one of many in a poll form which asked those who returned the questionnaire to express their opinion on many subjects. The respondent was to check the square indicating yes/no or no opinion. The results of the poll on the construction of the Meramec Park Lake are unknown to the Corps. The questionnaire was mailed to a congressional district that will not be the host district to the Meramec Park Lake. The polled area would not be as well informed as the project area about the purposes, benefits, and impacts of Meramec Park Lake. A more relevant and meaningful public opinion survey was conducted in July and August 1972 by the Public Opinion Survey Unit, Business and Public Administration Research Center, University of Missouri, Columbia, Mo. The survey was conducted on a scientific basis. Fifty-eight percent of the people who expressed an opinion were in favor of construction of Meramec Park Lake. This survey is documented in detail in the final environmental statement covering the Meramec Park Lake project.

Mr. Chairman, after commenting on these specific questions, if I may, I would like to state that most, if not all, of the questions raised in opposition testimony on the Meramec Park Lake project have been extensively discussed in the final environmental statement for the project. A copy of the updated statement was submitted to C.E.Q. on September 26, 1973.

Senator STENNIS. Mr. Carl L. Hyder states that judicial proceedings will be brought in the Federal courts to stop construction of this project. He contends that the act of admission by which the sovereign State of Missouri came into the Union, and which act has the dignity of a treaty between the United States and the sovereign State of Missouri, there is to be found the following language: "* * * and that the river Mississippi, and the navigable rivers and waters leading to the same, shall be common highways * * *" and that in the past there has been no objection to the construction of a number of dams across the streams in the Ozarks but the point of saturation has been reached and this restriction must now be invoked. Would you comment on this?

Colonel RAY. The full quotation of the language partially quoted by Mr. Hyder reads as follows: "and that the river Mississippi and the navigable rivers and waters leading to the same shall be common high-

ways and forever free as well as to the inhabitants of the said State as to other citizens of the United States without any tax duty, imposed or toll therefor imposed by the said State."

Similar language has been used in admission sets for other States and we do not know of any instances where such provisions have been interpreted as being a legal bar to the authority of Congress to authorize navigation, flood control, and related projects.

LAND REQUIREMENTS

Senator STENNIS. Mr. Hyder further stated that the Government is taking 43,838 acres of land for the proposed project in order to improve flood control on only 10,800 acres of land below the project. Would you address this point?

Colonel RAY. Sir, the environmental impact statement states that 40,800 acres will be required. However, based on recent relinements in survey data, the Corps will acquire only 38,700 acres for this project. This is subject to additional minor adjustments as survey data is further refined during the acquisition process. The basis of the figure of 43,838 cited by Mr. Hyder cannot be determined or verified. Approximately 10,950 acres between the damsite and the confluence of the Meramec and Bourheuse Rivers, mile 64.8, will be given a high degree of flood protection by the project. Partial protection will be afforded an additional 28,760 acres in the lower Meramec Valley. As indicated in my previous testimony, much of the acreage protected consists of highly urbanized and improved properties. It is currently estimated that these lands and properties are valued at about $112,500,000. The total value of the lands and improvements to be taken by the project is estimated to be about $18,874,000. Consideration must be given not only to the number of acres protected by the project versus that taken for the project but, also, to the relative value of these lands and improvements. In addition, the land purchased will contribute to other project purposes such as public recreation opportunities and fish and wildlife conservation.

Senator STENNIS. He further indicated that backwaters from the Mississippi River, not high flows from the Meramec River, are the primary cause of flooding. Please comment on this claim.

Colonel RAY. While a severe flood on the Mississippi River causes backwater to about river mile 21 on the Meramec River, or to a point approximately 87 miles below the dam, flooding by flows from the Meramec River has inundated lands along the entire length of the river annually. In developing the flood control benefits for this project, the effect of Mississippi River backwater flooding was removed in the analysis. No benefits are attributed to the project for protection from flooding from any source other than the Meramec River and its tributaries, it is fortunate that a storm of the 1945 magnitude did not coincidentally occur over the Meramec Basin at the time of last year's flood on the Mississippi River. Had this happened, the flood in the lower and middle Meramec River would have assumed catastrophic proportions. It is to reduce such damages from combined flooding and to afford protection from high Meramec River flows that the flood control impoundments are proposed for the Meramec River and its major tributaries.

Senator STENNIS. Mr. Hyder states that construction of Meramec Park Lake will result in broad mudflats. Will you comment on this please?

Colonel RAY. Mr. Chairman, Meramac Park Lake will have a relatively stable level. There are no hydroelectric facilities installed, consequently there will be no water releases for this purpose. Average annual normal pool fluctuations in storing flood flows will be approximately 4 feet, which will usually occur in the spring months of the year. Only on extremely rare occasions will be entire flood storage pool be filled. On a probability basis, this could occur but once in about 200 years or more. Based on the 44-year period of record for which we have gage readings, the normal pool will exist 85 percent of the time.

The surface water level can be expected to fall below the normal pool elevation once every 2 years. This is likely to occur from mid-July through late fall. A 1-foot drop below normal pool elevation would expose 260 acres around the lake. A 2-foot drop below normal pool elevation would expose 518 acres of lake bottom. A drop of 2 feet below the normal pool is expected to occur in an average only once in every 25 years. This exposed area would be distributed around the 175 miles of lake shore.

The valley of the Meramec River is steep and rocky. Limestone bluffs shut large pools of the stream. The distance between the valley floor and the top of the abutting bluffs often exceed 200 feet. The terrain in most cases will not permit the formation of flats subject to recurrent flooding. Consequently, extensive mudflats will not be a significant problem at Meramac Park Lake.

Senator STENNIS. Mr. Hyder references allegations made in the press that a review of the taking line being used on this project discloses that certain landowners have been highly favored for no apparent valid reason; these landowners being members of the Meramec Basin Association, the leading advocate of this project. Will you comment on this?

Colonel RAY. Lands for Meramec Park Lake project are being acquired pursuant to the "Joint Policies of the Department of the Interior and the Army relative to reservoir project lands" which were published in the Federal Register, February 22, 1962, volume 27, page 1734.

The House Appropriations Committee directed a review by its staff of land acquisition at Meramec Park Lake in 1969, partially in response to newspaper allegations. The results of this investigation were presented at the hearings before the House Committee on Appropriations for fiscal year 1970, House of Representative Report 91–1219, 91st Congress, 2d session. All data pertaining to land acquisition at this project, including the extent of Government acquisition and private land speculation were reviewed. The House committee staff concluded that there was no indication that favoritism had been shown by the Corps of Engineers to certain corporations or individuals in the selection of locations for the public use areas which affected land planned for acquisition.

The report further states that it appears that the Corps' primary criterion in the selection of public use areas, areas with direct access to the existing public road network, has resulted in planned acquisition

of more land owned by local farmers because their land is on the more developed side of the river and are served by the existing public road network.

I quote from the committee report:

Therefore, it appears that the Corps primary criterion in the selection of public-use areas, areas with direct access to the existing public road network, has resulted in the planned acquisition of more land owned by local farmers because their land is on the more developed west side of the Meramec River and are served by the existing public road network. Some of these landowners are members of the Meramec Valley Land Protective Association. Further, it appears that due to the lack of an existing public road network on the east side of the river, the Corps has actually, though unintentionally, favored the owners of these larger, more remote tracts, some of whom are members of the Meramec Basin Association.

The committee also directed that the corps review and eliminate, to the extent feasible, acreage planned for acquisition. As a result of our review, in compliance with this directive, the project area to be purchased in fee title was reduced by 1,400 acres. By reducing the acreage purchased, it was necessary to add 200 acres of flowage easement. This was, in effect, a net reduction of 1,200 project acres made in compliance with the instructions of the committee. The committee was informed of this action taken by the corps and approved the project land acquisition, House of Representatives Report 91–1219, 91st Congress, 2d session.

Senator STENNIS. In his written statement, Mr. Hyder refers to the Meramec Basin Association; whereas in his oral statement he referred to the Meramec Dam Association. Are there two similar organizations in this area?

Colonel RAY. No, sir. We are not aware of a Meramec Dam Association. We think Mr. Hyder meant to refer to the Meramec Basin Association in both instances.

Senator STENNIS. Mr. Hyder has also stated that since the project is located in one of the most active earthquake areas in the world, its construction and subsequent impoundment could result in a catastrophe should a recurrent shock result. Will you comment on this?

Colonel RAY. The areas of greatest earthquake risk in the world are the California-Alaska coastline and Japan. These areas are classified as zone 3, major risk areas. The Meramec Park Lake Dam is a zone 2 area, an area of moderate earthquake risk. This fact is recognized and the dam will be designed to withstand the greatest expected earthquake with an adequate factor of safety in accordance with normal, established engineering practices.

Senator STENNIS. He also contends that the annual costs charged to the project are too low when compared to a 6-percent interest rate applied to the estimated project cost of $93 million. He further questions the firmness of the project cost estimate. Would you address these two points?

Colonel RAY. The annual cost incident to this project is based on an interest rate of 3¼ percent. This is the interest rate that was in effect prior to December 24, 1968. In accordance with the Water Resources Development Act of 1974, Public Law 93–251, for any project authorized before January 3, 1969, if non-Federal interests, prior to De-

cember 31, 1969, have given satisfactory assurances to pay the required non-Federal share of project costs, the discount rate to be used in the computation of benefits and costs for such project shall be the rate in effect immediately prior to December 24, 1968, and that rate shall continue to be used for such project until construction has been completed unless otherwise provided by a statute enacted after the date of enactment of this act.

Assurances for this project were accepted on behalf of the United States from local interests in February 1968.

The current project cost estimate is based on general design studies and is considered a reasonably firm estimate based on sound engineering judgment and July 1, 1973, price levels. Certainly the project cost is subject to many variable factors which can affect the final cost. As construction costs follow the general inflationary trends, the project costs will increase. However, benefits generally appreciate with the price level increases.

MISSISSIPPI RIVER AGRICULTURAL AREA NO. 8 (ELSBERRY), MO.

Senator STENNIS. The budget request was $100,000. The House has included $200,000, and local interests have requested $200,000. What is your capability on this project?

General MORRIS. Our capability on this project is $200,000, Mr. Chairman.

Senator STENNIS. What would be accomplished with the additional $100,000?

General MORRIS. The additional amount would be used to accelerate preconstruction planning.

PERRY COUNTY DRAINAGE AND LEVEE DISTRICTS NOS. 1, 2, AND 3, MO.

Senator STENNIS. The budget request was $180,000. The House has included $180,000, and local interests have requested $220,000. What is your capability on this project?

General MORRIS. Our capability on this project is $220,000, Mr. Chairman.

Senator STENNIS. What would be accomplished with the additional $40,000?

General MORRIS. The additional amount would be used to advance preconstruction planning.

PROSPERITY LAKE, MO.

Senator STENNIS. There is nothing in the budget. The House has included $75,000, and local interests have requested $75,000. What is your capability on this project?

General MORRIS. Mr. Chairman, our capability on this project is $75,000 to initiate preconstruction planning.

Senator STENNIS. Would you submit a statement for the record?

General MORRIS. Yes, sir.

[The statement follows:]

Project: Prosperity Lake, Missouri (Phase I Advance Engineering and Design Stage)

Summarized Financial Data:

Estimated Total Appropriation Requirement		$24,500,000	
Future non-Federal Reimbursement		10,100,000	
Estimated Federal Cost (Ultimate)			$14,400,000
Estimated non-Federal Cost:			10,100,000
Reimbursement:			
Water Supply	$9,300,000		
Recreation	800,000		
Other	0		
Total Estimated Project Cost			$24,500,000
Allocations to Date			0
Balance to Complete			24,500,000
Preconstruction Planning Estimate			900,000
Phase I Estimated Cost		150,000	
Balance to Complete Preconstruction Planning		750,000	
Amount that could be utilized in FY 1975			75,000 1/

Authorization: Water Resources Development Act of 1974, for Phase I stage of advance engineering and design.

Location and Description: The dam is to be located on Center Creek, Jasper County about 3 miles southwest of Carthage, Missouri. The plan of improvement provides for a lake having a capacity of about 71,500 acre-feet, of which 19,000 acre-feet would be for water supply. The remaining storage would be for flood control and sediment reserve. The dam would rise approximately 80 feet above the Center Creek Valley floor. It would consist of a rolled earth embankment section integral with a gated concrete valley spillway and two concrete non-overflow sections. Low flow releases would be made through a low flow pipe with multi-level inlets to the lake.

Proposed Operations: The $75,000 would be used to initiate preconstruction planning. The Hydrology Design Memorandum, Part I, would be completed, and the Phase I General Design Memorandum would be initiated.

Justification: This project would provide protection to 11,900 acres of rural lands along Center Creek downstream of the dam and along Spring River downstream of the Center Creek confluence. The flood of record occurred in May 1943, when peak stage was 8.9 feet above flood stage and caused damages estimated at $1,430,000 on 1973 prices for the area to be protected. Ten floods having a peak stage greater than 5.1 feet above flood stage have occurred since 1940. Floods on Center Creek have caused extensive damages and retarded agricultural use of the valley lands and have contributed to flooding and damages on Spring River. Major physical properties susceptible to flood damage include: crops, farm units, utilities, highways, farm roads and bridges. There is a need for surface water supply development in the Joplin-Carthage Area, Jasper County, Missouri. Storage provided in the project estimated to yield 27 MGD, will satisfy the projected needs. A need exists in the Spring River basin for additional water-oriented recreational facilities. The Prosperity Lake will partially satisfy those needs by facilities to take care of an estimated 364,000 annual visitors. The benefit-to-cost ratio is 1.00 to 1. The average annual benefits of the projects are broken down as follows:

Flood Control	$ 228,000
Water Supply	879,000
Recreation	507,000
Redevelopment	171,000
Total	$1,785,000

Status of Environmental Statement: A final statement was filed in April 1971 with the Council on Environmental Quality when the report of the Chief of Engineers was sent to Congress. During the Phase I advance engineering additional environmental investigations will be made and the statement on file with CEQ revised or supplemented as determined necessary.

Pattonsburg Lake, Mo.

OPPOSITION

Senator Stennis. Dr. J. Larry Dowell, M.D., president of Save Our Soil, Inc., has provided this committee with testimony in opposition to the construction of Pattonsburg Lake. Professor Byron Augustine also testified against the project. It was reported that the Corps of Engineers, at the request of Missouri Gov. Christopher Bond is undertaking a reevaluation of the entire project. What is the Corps doing in this regard?

Colonel Rush. Dr. Dowell suggests that no further action on the project be taken until after the current reanalysis of the authorized Grand River basin projects is completed. We concur. In accordance with the congressional direction contained in the 1974 Water Resources Development Act, the only action now underway is the reanalysis.

Senator Stennis. Dr. Dowell contends that certain key individuals, previously strong proponents for the project, have withdrawn their support, indicating an erosion of public opinion favoring the project. Are you considering public opinion in your reanalysis?

Colonel Rush. As part of the restudy, the views of the State and local interests will be determined.

Senator Stennis. Dr. Dowell alleges that land prices in northwest Missouri are presently undergoing rapid increase, further affecting the cost-benefit ratio, which has dropped from 1.3 to 1 down to 1.06 to 1 in a 2-year period. How have cost increases affected the cost-benefit ratio?

Colonel Rush. The rapid rise in land and construction costs has indeed affected the benefit-cost ratio. These effects are reflected in two ways: (1) the cost of development and (2) the benefits. Until the restudy is well advanced, we are not prepared to make judgments as to impacts on the benefit-cost ratio.

Senator Stennis. Colonel, as you know agricultural commodities are very precious to the United States and are a major export item. I trust that you are considering this in your project development.

Colonel Rush. With regard to the amount of land which would be removed from agricultural production, our economic studies will consider this factor as we evaluate various alternatives that are formulated.

Senator Stennis. Dr. Dowell has pointed out that the energy crisis will have an adverse effect on construction costs and on recreational aspects of the project. How do you view these effects?

Colonel Rush. On the subject of fuel shortage, let me assure you that the annual update of construction costs reflects present fuel costs. In regard to the fuel shortage on recreational usage it may have some effect during the current year; however, it is not possible to predict the extent of this factor in the future. It may become more difficult to visit distant lakes, but many people now talk of the "half-tank radius" as being the minimum limiting travel distance. Dr. Dowell states that Pattonsburg Lake is 60 to 100 miles away from population centers, which would seem to be within "half-tank radius" of most cars.

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Senator STENNIS. Another point raised by Dr. Dowell is that the residents of the proposed lake area have been denied the normal rights of life, liberty, and the pursuit of happiness by the long history of this project. Is the Corps moving ahead to solve this dilemma?

Colonel RUSH. In regard to Dr. Dowell's concern for the length of study of the project, I would like to point out that the Corps is aware of the problem created by the prolonged planning period. The Corps is as concerned as the Grand River basin residents about an early completion of a program which will effectively solve as many water resources problems in the basin as possible. The current Grand River basin reanalysis scheduled for completion in early 1975 will provide the basis for a clear determination of which projects remain viable and which are no longer justified.

PINE FORD LAKE, BIG RIVER, MO.

Senator STENNIS. There is nothing in the budget and local interests have requested $150,000. What is your capability on this project?

General MORRIS. Mr. Chairman, our capability on this project is $100,000 to initiate preconstruction planning.

Senator STENNIS. Would you submit a statement for the record?

General MORRIS. Yes, Sir.

[The statement follows:]

Project: Pine Ford Lake, Big River, Missouri

Summarized Financial Data:

Estimated Total Appropriation Requirement	$ 59,500,000	
Future non-Federal Reimbursement	12,516,000	
Estimated Federal Cost (Ultimate)		$46,984,000
Estimated non-Federal Cost		12,516,000
Reimbursement:		
Water Supply	3,285,000	
Recreation & Fish & Wildlife Enhancement	9,231,000	
Total Estimated Project Cost		59,500,000
Allocations to Date		0
Balance to Complete		59,500,000
Preconstruction Planning Estimate		2,700,000
Amount that could be utilized in FY 1975		150,000

Authorization: 1966 Flood Control Act.

Location and Description: The site of the proposed Pine Ford Lake is in Jefferson, Washington and St. Francois Counties about 45 miles southwest of St. Louis. The proposed damsite is in Jefferson County on the Big River about 44 miles above its confluence with the Meramec River. The earth dam will be approximately 2,070 feet long, and 141 feet high with a concrete chute spillway. The lake would provide a storage capacity sufficient to provide for flood control, recreation, water supply, stream flow augmentation, and fish and wildlife conservation.

Proposed Operations: The amount of $150,000 would be used to initiate preconstruction planning.

Justification: This project is one of the major units in the Comprehensive plan of Development of the Meramec Basin. It would contain a 100-year frequency flood at Pine Ford damsite to non-damaging stages in the 43 miles of Big River Valley below the damsite. Together with the Union and Meramec Park Lakes, it would contain a 200-year frequency flood in Meramec River above Pacific to non-damaging stages and would provide increased flows in the interest of future water supply and stream flow augmentation. The benefit-cost ratio is 1.7 to 1. The average annual benefits are listed below.

Flood Control	$ 996,000
Water Supply	249,000
Water Quality	208,000
Recreation	3,100,000
Fish and Wildlife	229,000
Navigation	3,000
Area Redevelopment	132,000
Increased Transportation Costs	-6,000
TOTAL	4,911,000

Status of Environmental Impact Statement: The environmental impact statement will be prepared during preconstruction planning.

UNION LAKE, BOURBEUSE RIVER, MO. (EXCLUSIVE OF STATE HIGHWAY 185 RELOCATION)

Senator STENNIS. There is nothing in the budget and local interests have requested $2 million. What is your capability on this project?

General MORRIS. Mr. Chairman, our capability on this project is $2 million to initiate construction.

Senator STENNIS. Would you submit a statement for the record?

General MORRIS. Yes, sir.

[The statement follows:]

Project: Union Lake, Bourbeuse River, Missouri (Exclusive of State Highway 185 Relocation)

Summarized Financial Data:

Estimated Total Appropriation Requirement	$45,200,000	
Future non-Federal Reimbursement	4,650,000	
Estimated Federal Cost (Ultimate)		40,550,000
Estimated non-Federal Cost		4,650,000
Cash contribution		
Reimbursement:		
Water Supply	4,650,000	
Other	0	
Total Estimated Project Cost		45,200,000
Allocations to Date		1,997,700
Balance to Complete		43,202,300
Amount that could be utilized in FY 1975		2,000,000

Authorization: 1938 Flood Control Act

Location and Description: The proposed damsite is in Franklin County on the Bourbeuse River about 33 miles above its confluence with the Meramec River. The lake is wholly within Franklin County. The earth dam will be approximately 2,100 feet long with crest 148 feet above streambed, with a detached ungated spillway 200 feet wide at elevation 651.

Proposed Operations: The amount of $2,000,000 would be used to initiate construction.

Justification: Construction of the proposed Union Lake will provide standard project flood protection to 7,020 acres of floodplain in the Bourbeuse River Valley above the mouth of the Bourbeuse River and partial protection to 28,760 acres of land in the lower Meramec. It would also provide storage to partially satisfy the present and future demands for water supply and stream flow augmentation in the lower Meramec Basin as well as low-flow augmentation for navigation on the Mississippi River. The normal pool of 6,600 acres with 100 miles of shoreline will be available for recreational use and fish and wildlife conservation. Completion of the project will result in an estimated 1,770,000 visitor days annual recreational attendance which will stimulate the local economy. The benefit-cost ratio is 1.6 to 1. The average annual benefits are listed below:

Flood Control	$ 842,000
Water Supply	325,000
Water Quality	352,000
Recreation	$ 1,784,000
Fish and Wildlife	291,000
Navigation	10,000
Area Redevelopment	100,000
Increased Transportation Cost	- 6,000
TOTAL	$ 3,698,000

Status of Environmental Impact Statement: The draft environmental impact statement was filed with the Council of Environmental Quality on 28 March 1974. The final statement is scheduled to be submitted on July 1974.

Frazer-Wolf Point Bank Stabilization, Montana

Senator Stennis. There is nothing in the budget. The House has included $375,000, and local interests have requested $375,000. What is your capability on this project?

General Morris. Mr. Chairman, our capability on this project is $375,000 to initiate and complete construction.

Senator Stennis. Would you submit a statement for the record?

General Morris. Yes, sir.

[The statement follows:]

Project: Frazer-Wolf Point Bank Stabilization, Montana

Summarized Financial Data:

Estimated Federal Cost	$ 400,000
Estimated non-Federal Cost	0
Total Estimated Project Cost	$ 400,000
Allocations to Date	$ 25,000
Balance to Complete	$ 375,000
Amount that could be used in Fiscal Year 1975	$ 375,000

Authorization: River Basin Monetary Authorization Act of 1971 (P.L. 92-222).

Location and Description: The project is located along the Missouri River approximately 4 miles southeast of Frazer, Montana. The project consists of 960 linear feet of stone fill dike construction on the right bank and 2200 linear feet of segmented bank protection on the left bank. The project limits extend from about .25 mile upstream to .50 mile downstream of the Frazer- Wolf Point Irrigation Unit intake structure.

Proposed Operations: The amount of $375,000 would be used to initiate and complete construction.

Justification: Channel rectification structures along the right bank, upstream of the intake area, are necessary to correct shoaling conditions at the intake which is owned by the Bureau of Indian Affairs and provides water for a 12,300 acre irrigation district. Bank erosion protection structures along the left bank, downstream from the intake are necessary to prevent serious bank erosion that will result from forcing the channel flow into the intake area. Adverse shoaling conditions are continuing to increase. The water intake capacity is being increased to provide water to an additional 5,350 acres, for a total 17,650 acres. The proposed plan will furnish a sufficient water supply to the intake area allowing the irrigation unit to meet its output requirements.

STATUS OF ENVIRONMENTAL IMPACT STATEMENT: An environmental impact assessment statement was executed by the Omaha District Engineer on 29 March 1974.

Libby Dam-Lake Koocanusa, Mont.

Senator Stennis. The budget request was $21,500,000. The House has included $21,500,000, and local interests have requested $26,100,000. What is your capability on this project?

General Morris. Our capability on this project is $26,100,000, Mr. Chairman.

Senator Stennis. What would be accomplished with the additional $4,600,000?

General Morris. The additional amount would be used as follows: $4 million for construction of fish production measures for mitigation of fish losses; $100,000 for initiation of preacquisition activities for wildlife land mitigation; $350,000 for reimbursement to Boundary County, Idaho, for costs incurred in connection with the Deep Creek Bridge; and $150,000 for initiation of planning for compensation of local interests in the Kootenai Flats area of Boundary County, for modification of drainage district facilities.

Libby Reregulating Dam, Power Units, Mont. (Phase I Advance Engineering and Design Stage)

Senator Stennis. There is nothing in the budget. The House has included $75,000, and local interests have requested $75,000. What is your capability on this project?

General Morris. Mr. Chairman, our capability on this project is $75,000 to initiate and complete the Phase I General Design Memorandum.

Senator Stennis. Would you submit a statement for the record?

General Morris. Yes, sir.

[The statement follows:]

Project: Libby Reregulating Dam, Power Units, Montana
(Phase I Advance Engineering & Design Stage)

Summarized Financial Data:

Estimated Federal Cost (Corps of Engineers)		$23,000,000
Estimated non-Federal Cost		
Cash Contribution	0	
Other Costs (Reimbursement for Power)	$ 23,000,000	
Total Estimated Project Cost		$ 23,000,000
Allocations to Date		0
Balance to Complete		$ 23,000,000
Preconstruction Planning Estimate		$ 1,000,000
Phase I Estimated Cost	$ 75,000	
Balance to Complete after Phase I	$925,000	
Amount that could be used in FY 1975		75,000

Authorization: Water Resources Development Act of 1974, for Phase I stage of advance engineering and design.

Location and Description: The Libby Reregulating damsite is on the Kootenai River about seven miles upstream from the town of Libby, Montana and 10 miles below the Libby main dam. The plan of improvement provides for installation of four power units in the reregulating dam providing a total of 43,790 kw.

Proposed Operations: The amount of $75,000 would be used to initiate and complete Phase I General Design Memorandum.

Justification: The installation of power generation units in the Libby Reregulating Dam are required to serve continually growing power needs. Load-resource studies prepared by the Bonneville Power Administration demonstrate development of a precarious power shortage situation in the region in spite of planned withdrawal of power deliveries to California and denial of additional Federal power for new industrial loads. The growth of the Pacific Northwest energy requirements requires development of large thermal resources which must be supplemented with additional low-cost hydro capacity if the regional power needs are to be met in an economical and efficient manner. Estimated annual benefits total $2,443,000, all power. The benefit-to-cost ratio is 1.5 to 1.

STATUS OF ENVIRONMENTAL IMPACT STATEMENT: Final Environmental Impact Statement was filed with CEQ on 28 January 1972.

OPPOSITION

Senator STENNIS. Senator Hruska has advised me of an article which appeared in the New York Times on May 18, 1974 regarding the relocation of the town of Niobrara, Nebr. There were several statements in the article indicating that certain townspeople, including the President of a local bank, Mr. Donald Farber, are dissatisfied with the relocation. Could you comment on the article and Mr. Farber's accusation?

Colonel RUSH. Yes, sir. Generally speaking, our relations with the townspeople of Niobrara have been good. Mr. Gordon Prinz, manager of the town of Niobrara, and our Corps project manager confer several times each week regarding this matter. A point of great concern with the people of Niobrara is the lack of direct relief to the business community commensurate with the benefits to homeowners or farmers. The quarrel is not with the Corps of Engineers but appears to be predicated upon the belief that none of the small businessmen in Niobrara will be able to afford to construct new business houses and that a viable business community will not exist after the relocation. Many of the businessmen operate from leased quarters and lease facilities which will not be available in the new town. Hence, to stay in business these small businessmen will have to furnish the capital for construction of a new plant. It is the position of many of the planning commission members and businessmen that adequate funds are not available from local sources. Representatives of the district engineer are working with the planning commission, city officials and interested parties in an effort to resolve these problems. However, where there is a legal impediment or legal requirement, the situation must be recognized by the Corps and the affected people.

All persons displaced from their homes or businesses as a result of Government acquisition are entitled to benefits under the Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970. The act provides for reimbursement for actual moving expenses and losses resulting from moving, or an alternative payment in lieu of actual expenses which amounts to approximately $500 for a home and from $2,500 to $10,000 for a business or farm operation, depending upon average business or farm income. It also provides for a replacement housing payment to enable a displaced person to be relocated in a decent, safe, and sanitary home at least comparable to his former home. This payment can amount to a maximum of $4,000 for tenants and $15,000 for homeowners, and is in addition to the purchase price paid for the property by the Government.

With respect to Mr. Farber's complaint, it is not with the Corps per se, but rests with his objection to relocation assistance as provided by section 205, title II, of Public Law 91-646. In conversation between Corps representatives and Mr. Farber on June 17, Mr. Farber confirmed that he had no quarrel with the Corps of Engineers but rather with the law we are charged administering. Section 205 requires that we advise affected persons of the availability of and sales data concerning comparable replacement housing in the general area. Mr. Farber feels that this advice encourages persons to move to some place other

than the new town. However, our latest poll taken in February 1974 indicates that 89 percent of the owners and tenants and 42 out of 53 businesses intend to relocate to the new town.

Senator STENNIS. Senator Hruska has informed us that there appears to be a community relations problem between the Corps and the community. What is being done to improve relations between the Corps and the community?

Colonel RUSH. Representatives of our Omaha district are meeting regularly with the townspeople and their representatives. We are attempting to be as helpful as possible to the people affected by the relocation, within our authorities and the obligations of existing legislation.

PAPILLION CREEK AND TRIBUTARIES LAKES, NEBR.

Senator STENNIS. The budget request was $6 million. The House has included $7,500,000, and local interests have requested $9 million. What is your capability on this project?

General MORRIS. Our capability on this project is $9 million, Mr. Chairman.

Senator STENNIS. What would be accomplished with the additional $3 million?

General MORRIS. The additional amount would be used to acquire lands and to initiate construction at site 15. Project completion would be advanced by 6 months to December 1980.

RIO GRANDE FLOODWAY (TRUTH OR CONSEQUENCES UNIT), N. MEX.

Senator STENNIS. There is nothing in the budget, and local interests have requested $100,000. What is your capability on this project?

General MORRIS. Mr. Chairman, our capability on this project is $100,000 to initiate preconstruction planning.

Senator STENNIS. Would you submit a statement for the record?

General MORRIS. Yes, sir.

[The statement follows:]

Project: Rio Grande Floodway, Truth or Consequences (Hot Springs) Unit, New Mexico

Summarized Financial Data:

Estimated Federal Cost		$ 9,200,000
Estimated non-Federal Cost		2,300,000
Cash Contribution $	0	
Other	2,300,000	
Estimated Total Project Cost		$11,500,000
Allocations to Date		0
Balance to Complete		9,200,000
Preconstruction Planning Estimate		500,000
Amount that could be Utilized in FY 75		100,000

Authorization: 1948 and 1950 Flood Control Acts.

Location and Description: The project is located in the vicinity of Truth or Consequences (Hot Springs), New Mexico. It would consist of about four miles of levees on the Rio Grande, an interior drainage system and about five miles of diversion channel on the tributary arroyos in the vicinity of Truth or Consequences, New Mexico.

Proposed Operations: The amount of $100,000 would be used to initiate preconstruction planning.

Justification: A major flood occurred on 2 September 1972. The area was declared a major disaster area by the President on 22 September 1972. The repair of the flood protection structures in the vicinity of Truth or Consequences was estimated at $346,000. This includes $96,000 to repair levees from the Rio Grande upstream on the Cuchillo Creek (a tributary of the Rio Grande with confluence just north of Truth or Consequences), and $250,000 to dredge the Rio Grande back to its preflood capacity. The Truth or Consequences flood problem has been a continuing one. Periodically, a major flood occurs as on 2 September 1972 with disastrous results. House Document 243, 81st Congress, reported annual benefits of $4,307,660, annual charges of $3,615,733, and a benefit to cost ratio of 1.2 to 1.0 for the entire Rio Grande Floodway Project. No separate cost analysis was made for the Truth or Consequences Unit. However, based on a cursory cost estimate made in 1959 and cost analysis in House Document 243, the Truth or Consequences Unit is expected to have a benefit to cost ratio greater than one.

Status of Environmental Impact Statement: The final EIS will be submitted concurrently with the Phase I General Design Memorandum.

Dunkirk Harbor, N.Y.

Senator Stennis. There is nothing in the budget. The House has included $45,000, and local interests have requested $45,000. What is your capability on this project?

General Morris. Mr. Chairman, our capability on this project is $45,000 to initiate preconstruction planning.

Senator Stennis. Would you submit a statement for the record?

General Morris. Yes, sir.

[The statement follows:]

Project: Dunkirk Harbor, New York

Summarized Financial Data:

Estimated Federal Cost (Corps of Engineers)		$ 865,000
Estimated Federal Cost (US Coast Guard)		17,000
Estimated Non-Federal Cost		2,469,000
Cash Contribution	$ 865,000	
Other	1,604,000	
Total Estimated Project Cost		$3,351,000
Allocations to Date		0
Balance to Complete		865,000
Preconstruction Planning Estimate		200,000
Amount that could be utilized in FY 1975		45,000

Authorization: 1965 River and Harbor Act.

Location and Description: Dunkirk Harbor is located in the city of Dunkirk, Chautauqua County, in the southwest portion of New York State. The harbor is on the south shore of Lake Erie, 37 miles southwest of Buffalo, New York, and 45 miles northeast of Erie, Pennsylvania. The proposed improvement provides for a detached breakwater and a shore-connected rubblemound breakwater, totaling 1,930 feet; an access channel 8 feet deep and 100 feet wide; an inner channel and a dock-front channel 6 feet deep and 100 feet wide; and a mooring basin 6 feet deep and 100 feet wide.

Proposed Operations: The amount of $45,000 would be used to initiate preconstruction planning.

Justification: The proposed improvement will permit full use of existing facilities and those planned for construction by non-Federal interests and would result in significant benefits to recreational boating. The benefit-to-cost ratio is 1.18 to 1. The average annual benefits for the project are broken down as follows:

Navigation	$133,200
Area Redevelopment	1,400
Total	$134,600

Status of Environmental Impact Statement: The final EIS will be filed with CEQ during preconstruction planning.

EAST RIVER (SPUR CHANNEL TO ASTORIA WATERFRONT), N.Y.

Senator STENNIS. The budget request was $1,500,000. The House has included $2,850,000, and local interests have requested $3 million. What is your capability on this project?

General MORRIS. Our capability on this project is $2,850,000, Mr. Chairman.

Senator STENNIS. What would be accomplished with the additional $1,350,000?

General MORRIS. The additional amount would be used to complete construction in fiscal year 1975.

EAST ROCKAWAY INLET TO ROCKAWAY INLET, AND JAMAICA BAY, N.Y.

Senator STENNIS. There is nothing in the budget. The House has included $4 million, and local interests have requested $4 million. What is your capability on this project?

General MORRIS. Mr. Chairman, capability on this project is $4 million to continue construction.

Senator STENNIS. Would you submit a statement for the record?

General MORRIS. Yes, sir.

[The statement follows:]

Project: East Rockaway Inlet and Jamaica Bay, N. Y.

Summarized Financial Data	Total Project	Beach Erosion Portion
Estimated Federal Cost	$ 67,200,000	$ 9,902,500
Estimated Non-Federal Cost	44,700,000	9,920,500
Cash Contribution	(38,200,000)	(8,952,350)
Other Costs	(6,500,000)	(945,150)
Total Estimated Project Cost	111,400,000	19,805,000
Allocations to Date	1,380,700	170,000
Balance to Complete (COE)	65,819,300	9,732,500
Amount that could be used in FY 1975	4,000,000	4,000,000

Authorization: The 1965 Flood Control Act (79 Stat. 1073) authorized a combined beach erosion and hurricane - flood protection project for the Rockaways and Jamaica Bay. The Water Resources Development Act of 1974 specifically authorized staged construction of the project and clarified the requirements of local cooperation required, including Federal-nonFederal cost sharing.

Location and Description: The project is on the Atlantic Coast of New York City between East Rockaway Inlet and Rockaway Inlet, the lands within and surrounding Jamaica Bay, New York. The coastal area is a peninsula located entirely within the Borough of Queens, New York City. The greater portion of Jamaica Bay lies in the Boroughs of Brooklyn and Queens, New York City, and a small section at the easterly end, known as Head of Bay, lies in Nassau County. The improvement consists of: a hurricane barrier across the entrance of Jamaica Bay with a navigation opening; dikes, levees, floodwalls, fill placement, stoplog structures, stairways, ramps, road raising, and other appurtenant works; and Federal participation in the cost of periodic beach nourishment of the shore protection works for 10 years after completion of the initial beach fill.

Proposed Operations: The amount of 4,000,000 would be used to continue construction of the beach erosion portion in FY 1975, subject to receipt of local cooperation assurances, and a final EIS being filed with CEQ.

Justification: Erosion along Rockaway shorefront has progressed to a point where large sections of the high water beach have been completely lost. As a result the backshore development such as the public boardwalk, ancillary beach and park facilities, utility lines and streams are now exposed and extremely vulnerable to extensive damage in the event that a significant coastal storm or hurricane system strikes this area. The sections of the beach which are most severely affected are between Beach 109th Street and Beach 86th Street and between Beach 40th Street and Beach 24th Street. Another significant impact of the loss of high water beach, will be on the large number of bathers from the metropolitan area who will not be able to enjoy these areas. The erosion problems are essentially the same ones which were recognized in the original survey investigations and which would be corrected by implementation of the authorized projects. The present critical nature of the problems are a result of frequent attack in recent years by "Northeast" coastal storms and inadequate maintenance of the beach by local interests. Average annual benefits are as follows:

	Total Project	Beach Erosion Portion
Flood Control	$ 3,477,000	-
Beach Erosion Control (Recreation)	2,780,900	$ 2,468,900
TOTAL	$ 6,257,900	$ 2,468,900
Benefit - Cost Ratio	1.3 to 1	1.45 to 1

Status of Environmental Impact Statement: The Draft EIS for the Beach Erosion portion was filed with CEQ on 5 February 1974. The Final EIS for the Beach Erosion portion is scheduled to be filed the 4th Quarter of FY 1974.

BEACH EROSION

Senator STENNIS. A fiscal year 1974 Supplemental Appropriation Act provided funds to initiate construction of the beach erosion portion of the East Rockaway Inlet to Rockaway Inlet and Jamaica Bay project. Do you plan to use any of the $4 million that the House added to continue planning on the hurricane-flood protection portion of the project?

General MORRIS. No, sir. Those funds will be used to continue construction of the beach erosion portion of the project. Section 72 of the Water Resource Development Act of 1974 provided for independent construction of the two portions of the project. We feel the two portions are now separate and independent and we will budget for them separately in the future.

Senator STENNIS. Do you have a capability to continue planning of the hurricane-flood protection portion of the project?

General MORRIS. Yes, sir. We have a capability of $180,000 to continue planning the hurricane flood protection portion of the project.

Senator STENNIS. Do you plan to move to construction of the hurricane-flood protection portion?

General MORRIS. At the present time we are concentrating on completing preconstruction planning. When we near completion of preconstruction planning and local interests show strong intent to comply with the requirements of local cooperation, we will consider recommending the hurricane-flood protection portion as a new construction start.

ELLICOTT CREEK CHANNEL IMPROVEMENTS, N.Y.

Senator STENNIS. There is nothing in the budget. The House has included $135,000, and local interests have requested $250,000. What is your capabiilty on this project?

General MORRIS. Mr. Chairman, our capability on this project is $135,000 to initiate and complete preconstruction planning.

Senator STENNIS. Would you submit a statement for the record?

General MORRIS. Yes, sir.

[The statement follows:]

Project: Ellicott Creek Channel Improvements, New York

Summarized Financial Data:

Estimated Federal Cost		$1,300,000
Estimated Non-Federal Cost		600,000
Cash Contribution	$ 0	
Other	600,000	
Total Estimated Project Cost		$1,900,000
Allocations to Date		0
Balance to Complete		1,300,000
Preconstruction Planning Estimate		135,000
Amount that can be utilized in FY 1975		135,000

Authorization: 1974 Water Resources Development Act.

Location and Description: The proposed channel improvements are located on Ellicott Creek, New York, in Erie County, Town of Amherst. Approximately 5,000 feet of channel improvement work commencing 2,000 feet downstream of Sweet Nome Road and ending about 1,000 feet downstream of Niagara Falls Boulevard. The channel improvement consists of widening, straightening and deepening of the existing creek channel. The work will be compatible with the Sandridge Lake project, authorized in 1970, and any alternatives currently under study pursuant to the 1970 Flood Control Act.

Proposed Operations: The amount of $135,000 would be used to initiate and complete preconstruction planning.

Justification: The channel improvement work will alleviate flooding in the town of Amherst from Stahl Road to Niagara Falls Boulevard. Stahl Road is located about 2½ miles above the upstream end of the project improvements. The area to be protected consists primarily of residential homes, the site of the new State University of Buffalo now under construction, and a new housing development being planned and constructed by the Urban Development Corporation. The benefit-to-cost ratio for this project is 2.1 to 1. Average annual benefits, all flood control, are $274,000.

Status of Environmental Impact Statement: The environmental impact statement being prepared for the entire Sandridge Lake project will include the Ellicott Creek Channel Improvement. The draft statement is scheduled to be filed with CEQ during the 4th quarter FY 1974. The final statement is scheduled to be filed with CEQ during the 2nd quarter FY 1975.

Senator STENNIS. There is nothing in the budget. The House has included $2,800,000, and local interests have requested $2,800,000. What is your capability on this project?

General MORRIS. Mr. Chairman, our capability on this project is $2,800,000 to resume construction, subject to filing of a final environmental impact statement.

Senator STENNIS. Would you submit a statement for the record?

General MORRIS. Yes, sir.

[The statement follows:]

Project: Fire Isalnd Inlet to Montauk Point, New York

Summarized Financial Data:

Estimated Federal Cost		$ 54,000,000
Estimated non-Federal Cost		54,000,000
Cash Contribution	$ 44,200,000	
Other Costs	9,800,000	
Total Estimated Project Cost		108,000,000
Allocations to Date		4,400,468
Amount that could be used in FY 1975		2,800,000

Authorization: 1960 River and Harbor Act, as modified by the Water Resources Development Act of 1974.

Location and Description: The project area, extending from Fire Island Inlet easterly to Montauk Point along Atlantic Coast of Suffolk County, is about 83 miles long and comprises about 70 percent of the total ocean frontage of Long Island. Fire Island Inlet is located about 50 miles east of New York City. The plan of improvement principally consists of raising the dunes along practically all of the project area and providing interior drainage and protective vegetation; widening the beaches along the greater part of the project area; constructing where needed, maximum of 50 groins; and providing for subsequent beach nourishment.

Proposed Operations: The amount of $2,800,000 would be used to resume construction, contingent upon receipt of local cost-sharing funds and filing of a final Environmental Impact Statement.

Justification: The shore from Fire Island Inlet to Montauk Point affords a recreation area for a tributary population of more than 5 million persons. Erosion of the shore front is a serious threat to present use and future development of the shore area. The hurricane problems are related to the tidal flooding. Storm tides created by high winds and low barometric pressure have broken through the dunes and barrier reefs along the shore, with resultant heavy loss of life and extensive property damage. A recurrence of the hurricane tide of record (September 1938) would cause inundation and wave damage estimated at $110 million. The 6 March 1962 storm caused damage to properties and homes (Estimated at $16,500,000). Severe erosion of the beach and dunes occurred at about 75 locations. The December 1965 storm caused damages estimated at $3,000,000. Storms in January and April 1967 caused appreciable damage to beaches and dunes. The 20-22 Mar 73 storm caused extensive erosion and damages. The benefit-cost ratio is 2.4 to 1. Each of the five reaches of the project are justified as separable and independent units with benefit-cost ratios ranging from 1.7 to 3.5.

Status of Environmental Impact Statement: The Draft EIS is scheduled to be filed in the first quarter of FY 1975, and a Final EIS is scheduled for the second quarter of FY 1975.

Great Lakes and Saint Lawrence Seaway Navigation Season Extension, N.Y.

Senator Stennis. In recent testimony concerning the navigation season extension program for the Great Lakes, Mr. Thomas E. Dustin, executive secretary, Indiana Division of the Izaak Walton League, raised some questions about the warming of shoreline waters to reduce ice formations. What are the present plans for use of thermal discharge from generating plants to reduce ice formation?

Colonel Rush. We have not determined at this time if use of thermal discharge to reduce ice thickness in shipping channels is an environmentally acceptable alternative. The utilization of thermal discharge is but one method being considered under the navigation season extension program to reduce ice thickness and allow vessels to navigate during winter periods. The design of a pilot test facility and purchase of equipment necessary for installation is proposed for fiscal year 1975. The proposed test site is in the Saginaw Bay area. The purpose is to provide a test as to the utilization of waste heat and its feasibility, both in terms of economic and environmental considerations.

Senator Stennis. When will the complete installation and operation of the pilot test program take place?

Colonel Rush. The design and equipment purchase will be initiated in fiscal year 1975. The actual testing of the facility and completion of the construction is proposed to take place in fiscal year 1976.

Senator Stennis. Will an environmental impact statement be filed on the pilot test program?

Colonel Rush. Yes, sir. An environmental impact statement has been filed which includes a full discussion on the proposed test.

Senator Stennis. Are there any environmental studies being conducted in conjunction with the pilot test program?

Colonel Rush. Yes, sir. The Bureau of Sport Fisheries and Wildlife has been collecting baseline data concerning fish and benthic organisms for the last 2 years. The data collection will continue in fiscal year 1975 and will be used as a basis for assessing the environmental impact of a thermal discharge system.

Moriches Inlet, N.Y.

Senator Stennis. There is nothing in the budget, and local interests have requested $1 million. What is your capability on this project?

General Morris. Mr. Chairman, we have no capability on this project pending completion of the Fire Island to Jones Inlet, N.Y. project.

New York Harbor (Anchorage Areas) N.Y.

Senator Stennis. The budget request was $4 million. The House has included $5 million, and local interests have requested $5,500,000. What is your capability on this project?

General Morris. Our capability on this project is $6 million, Mr. Chairman.

Senator Stennis. What would be accomplished with the additional $2 million?

General Morris. The additional amount would be used to advance completion 4 months to June 1977.

Senator STENNIS. There is nothing in the budget. The House has included $330,000, and local interests have requested $4 million. What is your capability on this project?

General MORRIS. Mr. Chairman, our capability on this project is $330,000 to complete preconstruction planning and initiate construction.

Senator STENNIS. Would you submit a statement for the record?

General MORRIS. Yes, sir.

[The statement follows:]

Project: New York Harbor Collection and Removal of Drift, New York and New Jersey

Summarized Financial Data:

Estimated Federal Cost (July 1972 prices)		$ 23,830,000
Estimated non-Federal Cost		25,830,000
Cash Contributions	$ 11,920,000	
Other Costs	13,910,000	
Total Estimated Project Cost		49,660,000
Allocations to Date		80,000
Preconstruction Planning Estimate		360,000
Amount that could be used in FY 1975		330,000

Authorization: Water Resource Development Act of 1974.

Location and Description: The project covers all of the Port of New York. It encompasses 8 New Jersey and 7 New York Counties. The port embraces some 1,500 square miles. It has a frontage of 755 miles, measured along the shorelines of its navigable waters of which 460 miles are in New York and 295 miles in New Jersey. The plan is to remove current and continuous sources of drift in New York Harbor consisting of an estimated 29.2 million cubic feet of material from about 1975 derelict vessels, above 150 deteriorated piers and wharves, other deteriorated non-repairable structures, debris lying along the shores, about 180 repairable piers and wharves, and other repairable shore structures.

Proposed Operations: The amount of $330,000 would be used to complete pre-construction planning ($280,000) and initiate construction ($50,000) subject to the filing of a Final EIS with CEQ and local interests signing and complying with the requirements of local cooperation.

Current Benefit-Cost Ratio: 6.3 to 1.

Breakdown of Benefits:

Commercial and Public Vessels	$ 9,075,000
Recreational Boats	5,426,000
Real Estate Enhancement	427,000
Removal of drift in water under existing Federal Project	88,000
Removal of drift from recreational beaches	1,854,000
Detrimental effect from removal of deteriorated shore structures in use	648,000
	$ 16,222,000

Status of Environmental Impact Statement: A Final EIS is scheduled to be filed in the fourth quarter of FY 1975.

Other Information: The project was initially authorized subject to approval by the Secretary of the Army and the President of plans and recommendations on file in Office, Chief of Engineers. On 15 August 1972, the President disapproved the project, and was not included in the President's Fiscal Year 1975 budget. Section 91 of the Water Resources Development Act of 1974 modified the authorization in accordance with the recommendations contained in "Survey Report on Review of Project, New York Harbor Collection and Removal of Drift," dated June 1968, revised March 1969, and April 1971, on file in the Office, Chief of Engineers. The modified authorization provides a monetary authorization ceiling of $14,000,000.

Preconstruction Projects Requiring Additional Funds, N.Y. and Ohio

Senator Stennis. With all the changes in your project planning that have been taking place, are there now some projects which require additional funds and on which this committee should be informed? I'm referring to projects previously thought to be fully funded for preconstruction planning.

General Morris. Yes, sir; there are three that come to mind.

They are Red Creek, N.Y.; Eastlake, Ohio; and Lakeview Park, Lorain, Ohio.

Senator Stennis. Please provide information on each of the projects.

General Morris. Yes, sir.

[The information follows:]

Project: Red Creek, New York - Genesee River

Summarized Financial Data:

Estimated Federal Cost		$4,180,000
Estimated Non-Federal Cost		2,850,000
Cash Contribution	$ 0	
Other (Lands and damages and relocations)	2,850,000	
Total Project Cost		7,030,000
Preconstruction Planning Estimate		408,000
Allocations to Date		336,000
Balance to Complete Preconstruction Planning		72,000
Amount that can be utilized in FY 1975		46,000

Authorization: 1966 Flood Control Act (S.D. 107/89/2)

Location and Description: Red Creek is a minor tributary of the Genesee River located near the northern end of the river basin in Monroe County, New York. The project is located in the city of Rochester and the suburban towns of Brighton and Henrietta immediately south of the city. The plan of improvement includes enlargement and realignment of the creek channels, construction and modification of bridges, levees and land fill along certain reaches of the channels, and a levee along the Genesee River.

Proposed Operations: The amount of $46,000 could be utilized to continue preconstruction planning. The General Design Memorandum could be completed in FY 1975 and preparation of plans and specifications for Stage I construction (floodwall and levees on Genesee River) could be initiated.

Justification: Most of the Red Creek Basin lies within the towns of Brighton and Henrietta. These towns are within the metropolitan area of Rochester and have developed rapidly during the past 10 to 15 years as suburban, residential, and commercial centers. The population increased about 80% in ten years for the combined area. Commercial and industrial development has accompanied residential growth, and areas zoned for industrial and commercial use are expected to generate additional growth. Portions of the area are subject to annual flooding by overflow from the creek and frequent flooding by Genesee River overflows across the low divide between the river and Red Creek. The project is designed to contribute towards meeting the local, basin, and regional water resource development physical needs and for local flood protection. The benefit-to-cost ratio is 1.3 to 1. The average annual benefits, all flood control, are $392,000.

Status of Environmental Impact Statement: A draft EIS will be submitted to CEQ in the second quarter of FY 1975 with the final EIS scheduled for submittal to CEQ in the third quarter FY 1975.

Project: Eastlake, Ohio - Chagrin River

Summarized Financial Data:

Estimated Federal Cost (Corps of Engineers)		$4,690,000
Estimated Federal Cost (US Coast Guard)		10,000
Estimated Non-Federal Cost		1,810,000
Cash Contribution	$1,190,000	
Other (Lands and damages, relocations, parking lot and dock ramp)	620,000	
Total Project Cost		6,510,000
Preconstruction Planning Estimate		510,000
Allocations to Date		405,000
Balance to Complete Preconstruction Planning		105,000
Amount that can be utilized in FY 1975		70,000

Authorization: 1965 Flood Control Act (S.D. 35/89/1)

Location and Description: The project is located on Chagrin River, in the city of Eastlake, Lake County, Ohio. Chagrin River flows northerly through the city of Eastlake into Lake Erie about 15 miles east of Cleveland. The plan of flood protection for Eastlake consists of realignment and enlargement of the Chagrin River channel from deep water in Lake Erie through part of the city of Eastlake, construction of arrowhead breakwaters at the mouth of the river, construction of levees, provide a spur channel and an access channel and development of recreational facilities at the river mouth.

Proposed Operations: The amount of $70,000 could be utilized to continue preconstruction planning. The General Design Memorandum could be completed in FY 1975 and preparation of plans and specifications for the breakwaters could be initiated.

Justification: The project is a multi-purpose project for the lower 2-mile reach of Chagrin River. It is primarily designed to provide protection to the city of Eastlake from damages resulting from floods and secondarily, to provide a small-boat recreational harbor adequate to meet the needs of existing and the prospective navigation. The benefit-to-cost ratio is 1.8 to 1. The average annual benefits are broken down as follows:

Flood Control	$404,200
Navigation	263,300
Fish and Wildlife	155,100
Total	$822,600

Status of Environmental Impact Statement: The draft EIS was filed with CEQ on 18 December 1972 and the final EIS is scheduled to be filed in September 1974.

Project: Lakeview Park, Lorain, Ohio

Summarized Financial Data:

Estimated Federal Cost		$ 1,260,000
Estimated Non-Federal Cost		540,000
Cash Contribution	$540,000	
Other	0	
Total Project Cost		1,800,000
Preconstruction Planning Estimate		180,000
Allocations to Date		100,000
Balance to Complete Preconstruction Planning		80,000
Amount that can be utilized in FY 1975		30,000

Authorization: 1954 River and Harbor Act (H.D. 229/83/1)

Location and Description: Lakeview Park is located in the City of Lorain, Lorain County, Ohio, on the south shore of the Lorain Harbor west breakwater. The plan of improvement consists of construction of about 70 feet of seawall with top elevation at 10 feet above low water datum, construction of a new groin 295 feet long, alteration and extension of three existing groins to a length of 295 feet each, and the placement of suitable sand fill to develop a bathing beach.

Proposed Operations: The amount of $30,000 could be utilized to continue preconstruction planning. The Phase II General Design Memorandum could be completed in FY 1975.

Justification: Lakeview Park is a public park owned by the City of Lorain. The Erie Lake frontage is 1,500 feet in length and a beach varying in width up to 60 feet has accumulated between the easterly groins, composed of sand and some gravel. There is a bath house and refreshment stand for public use. A stepped concrete seawall extends across the beach at the foot of the bluff. Four long and two short groins extend lakeward from the seawall. These facilities were constructed and have been maintained by local interests. Since 1937, erosion has claimed part of the eastern and western extremities of the beach and the groins have had severe deterioration from wave action. There is a definite need for additional beaches in the vicinity. The proposed plan of improvement will protect public property and will provide bathing facilities for the encouragement of healthful recreation of the people. The proposed improvement will increase the park capacity of the beach area by some 3,000 persons. It will also provide protection against further unsightly damage from erosion behind and beneath the existing seawall. The benefit-to-cost ratio is 1.8 to 1. The average annual benefits, all recreational, are $148,000.

Status of Environmental Impact Statement: The draft EIS is scheduled for submittal to CEQ in June 1974 and the final EIS is scheduled for September 1974.

B. Everett Jordan Dam Lake, N.C.

Senator Stennis. The budget request was $1,850,000. The House has included $1,850,000, and local interests have requested $8 million. What is your capability on this project?

General Morris. Our capability on this project is $3 million, Mr. Chairman.

Senator Stennis. What would be accomplished with the additional $6,150,000?

General Morris. The current schedule is based on the restrictions of an injunction which was in effect at the time the budget was prepared. We now have a consent decree which will allow us to complete the dam and use it for flood control purposes until a supplement to the EIS on water quality can be prepared and submitted. The additional $6,150,000 will enable us to begin relocation of roads subject to inundation when the dam is storing floodwater, and it will provide for a more orderly and efficient construction schedule.

Brunswick County, N.C.

Senator Stennis. The budget request was $1 million and the House has not included any funds.

What is your capability on this project?

General Morris. We have no capability on this project, Mr. Chairman. After the budget was prepared, we received a letter withdrawing local support for the project. We cannot use the $1 million in the budget request.

Falls Lake, N.C.

Senator Stennis. The budget request was $3 million and the House has included $5,500,000. What is your capability on this project?

General Morris. Our capability on this project is $5,500,000, Mr. Chairman.

Senator Stennis. What would be accomplished with the additional $2,500,000?

General Morris. The additional amount would be used to acquire additional lands and for relocations and the access road. It would advance project completion by 6 months.

Reddies River Lake, N.C.

Senator Stennis. The budget request was $140,000 and the House has included $160,000. What is your capability on this project?

General Morris. Our capability on this project is $160,000, Mr. Chairman.

Senator Stennis. What would be accomplished with the additional $20,000?

General Morris. The additional amount would be used to advance preconstruction planning by 2 months.

Roaring River Lake, N.C. (Phase 1 Advance Engineering and Design Stage)

Senator Stennis. There is nothing in the budget, and the House has included $100,000. What is your capability on this project?

General Morris. Mr. Chairman, our capability on this project is $100,000 to initiate preconstruction planning.

Senator Stennis. Would you submit a statement for the record?

General Morris. Yes, sir.

[The statement follows:]

Project: Roaring River Lake, N.C. (Phase I Advance Engineering and Design Stage)

Summarized Financial Data:

Estimated Total Appropriation Requirement	$ 20,000,000	
Future non-Federal Reimbursement	2,605,000	
Estimated Federal Cost (Ultimate-Corps of Engineers)		$17,395,000
Estimated non-Federal Cost		2,605,000
Cash Contribution $ 0		
Reimbursement:		
Water Supply	$ 1,753,000	
Recreation & Fish & Wildlife Enhancement	852,000	
Total Estimated Project Cost		20,000
Allocations to Date		0
Balance to Complete (Corps of Engineers)		20,000,000
Preconstruction Planning Estimate		1,500,000
Phase I Estimated Cost	400,000	
Balance to Complete Preconstruction Planning	1,100,000	
Amount that could be used in FY 1975		100,000

Authorization: Water Resources Development Act of 1974, Phase I stage of advance engineering and design.

Location and Description: The project lies in Wilkes County, North Carolina, about 45 miles west of Winston-Salem, with the damsite on Roaring River, a tributary of Yadkin River. Wilkes County, North Carolina is within the Appalachian Region. The project is to consist of a rolled-earth embankment with a maximum height of 159 feet which will control a drainage area of 129 square miles. A saddle spillway will be located on the left bank of the dam. The concrete ogee crest will be uncontrolled at elevation 1092 feet msl. An intake structure with a multiple level intake tower will allow water from various levels to be withdrawn for discharge, and additional gates will control discharge through the outlet works. The reservoir would be 5.2 miles long and have an area of 821 acres at maximum conservation pool.

Proposed Operations: The $100,000 could be used to initiate the Phase I stage of advance engineering and design.

Justification

The project, in conjunction with W. Kerr Scott Dam and Reservoir and Reddies River Lake will reduce flood damages in the upper reaches of the Yadkin River to negligible proportions and, to a lesser degree, downstream to High Rock Lake below Winston-Salem. In conjunction with Reddies River Lake, it will provide low-flow augmentation for water quality control at Winston-Salem past the year 200. Along with W. Kerr Scott and Reddies River Reservoirs the needs for water supply along the main stem to High Rock Lake would be met past the year 2000. The reservoir and project lands will afford a substantial increase in the opportunities for outdoor recreation in the Yadkin River Basin. The project is located in the Appalachian Region and will result in greater employment in the area. The current benefit-cost ratio, is 1.01 to 1. Average annual benefits are broken down as follows:

Flood Control	$ 273,000
Water Supply	113,000
Water Quality Control	398,000
Recreation	403,000
Area Redevelopment	115,000
	$ 1,302,000

Status of Environmental Impact Statement: The Draft Environmental Statement was filed with CEQ 25 May 1972. A final EIS will be prepared during preconstruction planning.

Burlington Dam, N. Dak.

Senator Stennis. The budget request was $250,000. The House has included $250,000, and local interests have requested $400,000. What is your capability on this project?

General Morris. Our capability on this project is $400,000, Mr. Chairman.

Senator Stennis. What would be accomplished with the additional $150,000?

General Morris. The additional amount would be used to advance the completion of the phase II General Design Memorandum by 4 months.

Burlington Dam, Souris River, N. Dak.

OPPOSITION

Senator Stennis. Mr. Joel M. Pickelner, conservation counsel for the National Wildlife Federation, has suggested that a larger dam at the existing Lake Darling damsite is an alternative to the Burlington Dam. He contends that the alternative would provide adequate flood protection for Minot at less cost, would not destroy the Upper Souris Waterfowl Marshes, would discourage drainage of the upland area west of Tolley, N. Dak., would save about $45 million, would save agricultural land, and would not displace farm families. Would you comment on this alternative?

Colonel Rush. In our phase I General Design Memorandum studies, which were completed after the budget justification data were submitted to Congress, we have considered many alternatives and combinations of alternatives, including the suggested dam at the Lake Darling site about 33 river miles upstream from the Burlington damsite. If the dam were moved to Lake Darling, the usable storage, because of the limitation imposed by the Canadian boundary, would be reduced from 595,000 acre-feet at the Burlington site to 330,000 acre-feet at the Lake Darling site. This amount of usable storage would not provide adequate flood protection for Minot and suburban areas. If the Bureau of Sport Fisheries and Wildlife would continue to operate Lake Darling as it has in the past, which is reasonable, storage above Burlington Dam would not be used more often than once in 25 to 30 years, On this basis, the wildlife marshes would not be destroyed.

Whether the dam should be constructed at Burlington or Lake Darling has no bearing on the non-Federal plan to regulate the water levels in the marsh area in the area west of Tolley.

A dam and reservoir at the Lake Darling site could be developed at a cost of about $8 million less than the cost of developing the dam and storage area at the Burlington site. Any additional savings would be through omission of additional works necessary to permit effective use of the flood control storage. Thus, substantial downstream channel and levee work would be required in either case to obtain the degree of protection expected. In addition, the Burlington Dam permits diversion of flood flows from the Des Lacs River, which would exceed channel capacity through Minot, via a tunnel to storage in the Burlington pool at a cost of about $13 million. A comparable diversion to Lake Darling would cost about $30 million. The net effect is a greater cost

for the Lake Darling proposal while sacrificing some of the flood protection from Souris River floods.

About 5,200 acres of privately owned cropland and grassland-pasture would be acquired for construction of a dam at the Burlington site, and about 2,400 acres of similar lands would be acquired if the dam were built at the Lake Darling site. These lands would not be totally lost to production since, if acquired in fee, they could be farmed on a lease basis. Only flowage easements might be required on some of the most infrequently flooded lands, permitting continued operations except during rare flood occurrences.

Even the lesser degree of protection afforded by the Lake Darling proposal would require displacement of farm families. Approximately 33 families would be affected by the development of the storage area above the Burlington damsite as compared to about 24 families above the Lake Darling damsite.

INCREASED PROJECT COSTS

Senator STENNIS. Mr. Maitland S. Sharpe, environmental affairs director of the Izaak Walton League of America, has provided for the record a statement by Mrs. John A. (Paula) Ward, regional governor, Northern Plains Region, of the league, opposing appropriation of funds to continue preconstruction planning for Burlington Dam. Will you comment on the Izaak Walton League concerns about the increase in cost of this project since authorized by Congress in 1969?

Colonel RUSH. Yes, sir. However, first I would like to say that we appreciate Mrs. Ward's kind words regarding our dedication and efficiency during flood emergencies, and I assure you that we are equally dedicated and efficient in analyzing the merits of permanent flood control alternatives to meet the needs of the people.

The project document provided for a dam at the Burlington site with a storage capacity of 637,000 acre-feet at a Federal cost, based on June 1969 prices, of about $29 million and a channel improvement through Minot to increase the capacity from 1,500 to 3,800 cubic feet per second at an estimated Federal cost of $3.9 million and non-Federal costs of about $1.4 million. The total estimated Federal and non-Federal cost was about $34.3 million. During the period from June 1969 to July 1973, the price base for our phase 1 report on Burlington Dam, construction costs increased about 48 percent. The latest cost estimate for Burlington Dam by itself, based on July 1973, construction price levels, is $42.2 million and the corresponding approved cost estimate for the channel is $16.9 million. The channel improvement and related works were authorized separately and are currently under construction.

The phase 1 estimate for the Minot Channel is $17.6 million, including a Federal cost of $15 million and a non-Federal cost of $2.6 million. The increase in cost of the channel work above that for the change in price levels is attributable primarily to increasing the channel capacity to 5,000 cubic feet per second, additional interior drainage works, and added costs to prevent degradation of the environment. Our phase 1 study cost estimate for the Burlington Dam is $44 million, as compared to the present estimate of $42.2 million. This $1.8-million increase in cost is accounted for by an increase of about $2.8 million

for mitigation and associated costs estimated provisionally by the Bureau of Sport Fisheries and Wildlife, inclusion of a $1.2-million item for channel clearing between Logan and the J. Clark Salyer National Wildlife Refuge to assure operation of the reservoir as planned without flooding at constricted areas, and net savings of about $2.2 million, primarily due to design changes.

OTHER WORK ITEMS

Other items of work have been added to meet local needs as discussed with and either proposed by or approved by the Citizens Advisory Committee, and are summarized in the table which I will submit for the record.

[The information follows:]

Additional work items

	Cost in millions
Improve channel and levees in reach from Burlington to Minot to permit passage of flows up to 5,000 ft^3/s, requested by committee to make full use of improved Minot Channel and make use of reservoir less frequent, thus reducing effects on the Upper Souris refuge and farmlands in the pool area	$6.1
Improve levee at Sawyer, same as above	.6
Improve levee at Velva, same as above	2.0
Non-Federal actions to allow passage of flows as above through sparsely developed areas	.5
Des Lacs diversion tunnel and related works to provide Minot and suburban areas with adequate protection from less frequent major floods on the Des Lacs River	13.0
Total cost of added improvements	22.2

PROJECT BENEFITS

Senator STENNIS. Mr. Ward raises questions about the Corps' economic analysis. She alleges that two dubious benefits are included by the Corps. One of these concerns foregoing rehabilitation of Lake Darling Dam and the other is the average annual benefits assigned to local employment. Please explain these benefit items for the committee.

Colonel RUSH. Project benefits have been determined as set forth in the project document. In 1969 the average annual benefits were estimated at about $4.5 million and, based on July 1973 price levels, are currently estimated at $5.4 million, exclusive of about $0.8 million for local employment gains recognized as a regional benefit. During the period from June 1969 to July 1973, building and household furnishing costs increased an average of about 30 percent, and future growth benefits have been estimated conservatively.

In its present condition Lake Darling Dam is well able to serve the fish and wildlife management purpose for which it was constructed but it does not conform with modern safe design standards for a large storage impoundment above a large urban area. The modification considered necessary, unless Burlington Dam is built, would consist principally of a concrete gated pillway capable of passing the spillway design flood without risk of a dam failure. If Burlington Dam were in place downstream from Lake Darling Dam, storage in the Burlington pool would inundate Lake Darling Dam so that a major flood approaching spillway design size would not cause failure of the Lake Darling structure. Average annual benefits for modification of Lake

Darling Dam in accordance with modern design standards, representing an average annual cost of about $0.55 million, are considered properly creditable as benefits to the Burlington Dam since the modification work would not be required if Burlington Dam were constructed.

Local employment benefits have been determined in accordance with recognized procedures where public works are planned for areas of chronic underemployment as determined by the Economic Development Administration of the Department of Commerce. In accordance with our policy, project economics are reported with and without direct local employment benefits. In the case of Burlington Dam, local employment benefits are based on hiring local currently unemployed and underemployed persons for the project's construction.

Senator STENNIS. Mrs. Ward states that the Corps has assigned more than one-half the flood control benefits to future growth whereas the National Water Commission supports flood plain management as a strategy to avoid flood loss. She also quotes an entry on page 118 of the Corps' EIS on the Minot Channel modifications relating to flood plain development. Would you comment on this?

Colonel RUSH. The discussion presented on page 118 of the draft environmental impact statement refers to the control of future urban growth in floodplain areas not already occupied. We support continuance and enforcement of strong floodplain regulations by appropriate local entities so that construction of Burlington Dam and related works does not result in further building and development in floodplain areas which would remain subject to flooding at the 5,000 cubic-feet-per-second flow to be passed without use of storage in Burlington Dam.

At the present time a number of suburban areas between Burlington and Minot and at Sawyer and Velva below Minot are protected by levees. The phase 1 plan provides for raising and strengthening these levees to pass safely the 5,000- to 7,700-cubic-feet-per-second flow whereas substantial intervening low areas might, without regulations, be developed thus subverting the reservoir operation plan.

Based on information contained in the phase 1 GDM, flood control benefits for the Burlington Dam are 80 percent of the total benefits and one half of the flood control benefits are attributed to future growth. Both the city of Minot and Ward County have passed flood plain regulations which will remain in force only if Burlington Dam is constructed. On this basis, the future growth in flood losses has been projected through the assumed project life and discounted to present worth.

Senator STENNIS. Mrs. Ward contends that the Corps has ignored the recommendations of the Citizens' Advisory Committee which was formed to review alternative solutions to the flood problem in the Minot area and reach a consensus of what was best in the public interest. Has the Corps ignored the committee recommendations?

Colonel RUSH. Repeatedly, during the 16 public meetings of the Souris River Flood Control Planning Committee, the representatives of the Corps of Engineers explained that the degree of protection to be provided was an engineering decision. Such a decision must be based on experience and the considered judgment of competent engineers familiar with the runoff characteristics and potential of the basin. Of

the 17 recommendations of the advisory committee, only the recommendation that the plan provide protection against floods of a magnitude expected about once in 100 years, a 1-percent chance of occurring in any one year, was not accepted.

Caesar Creek Lake and East Fork Lake, Ohio

Senator Stennis. Has there been any change in the litigation pending against the Caesar Creek Lake and East Fork Lake projects in Ohio?

Colonel Rush. Yes, sir. As you will recall, both projects had been partially stopped as a result of a suit initiated by the attorney general of the State of Ohio on July 18, 1973.

Senator Stennis. How long has the litigation been pending?

Colonel Rush. On May 21, 1974, the U.S. District Court, Southern District, Ohio, permitted the Government to proceed on both projects, and the respective main dam contractors are in the process of remobilization.

Senator Stennis. Was the Corps able to utilize the funds provided in the current fiscal year to advance the projects?

Colonel Rush. During fiscal year 1974 a limited amount of work was permitted by the court. In order to fully utilize the funds provided, the committee gave their approval to transfer the surplus funds to other ongoing projects where shortage existed.

Chillicothe, Ohio

Senator Stennis. There is nothing in the budget. The House has included $300,000, and local interests have requested $300,000. What is your capability on this project?

General Morris. Mr. Chairman, our capability on this project is $300,000 to initiate construction.

Senator Stennis. Would you submit a statement for the record?

General Morris. Yes, sir.

[The statement follows:]

Project: Chillicothe, Ohio

Summarized Financial Data:

Estimated Federal Cost (Corps of Engineers)		$5,400,000
Estimated non-Federal Cost		1,380,000
Cash Contributions	0	
Other Costs	$1,380,000	
Total Estimated Project Cost		6,780,000
Allocations to date		325,000
Balance to Complete (Corps of Engineers)		5,075,000
Amount that could be used in FY 1975		300,000

Authorization: 1962 Flood Control Act, 1965 Flood Control Act and as modified by Section 33 of the Water Resources Development Act of 1974.

Location and Description: The proposed local protection project is located along the right bank of the Scioto River at Chillicothe, Ohio. The project would consist of concrete wall, earth levee, the necessary gate openings and pump stations.

Proposed Operations: The amount of $300,000 would be used to initiate construction of the project in FY 1975, subject to filing the Final Environmental Impact Statement with CEQ.

Justification: The City of Chillicothe is the second major damage center (after Columbus) in the Scioto Basin, 1970 population - 24,842 and has an excellent balance between industry within the city and agricultural activity in the surrounding area. The record flood of March 1913 inundated 75% of the city and caused damages in excess of $1,000,000. It is estimated that a flood of equivalent magnitude, under today's conditions, would cause damages in excess of $55,800,000. The project would provide total protection to 898 acres (urban) and partial protection to 878 acres (urban).

The January 1959 flood resulted in the flooding of 779 houses, 3 small plants, 2 schools, and 7 churches, and caused damages in excess of $2,800,000. The entire project lies within Appalachia. The immediate counties are not designated as Economic Development Areas, although Jackson County (to the immediate Southeast) and the Waverly Area of Pike County (about 20 miles Southwest) are both classified as (1) under provisions of the Public Works and Economic Development Act of 1965 (PL 89-136). The benefit-cost ratio is 1.5 to 1. The total annual benefits of $391,500 are broken down as follows:

Flood Control	$ 341,900
Redevelopment	49,000
TOTAL	$ 391,500

Other Information: Original authorization required completion of construction of 4 upstream reservoirs (Alum Creek, Mill Creek, Big Darby and Deer Creek) before the Chillicothe Project could be constructed. Section 205 of the Flood Control Act of 1965 modified the authorization to authorize construction of Chillicothe at such time as the 4 reservoirs were under construction. Public Law 91-282 (19 June 1970) further modified the authorization to permit construction of Chillicothe prior to construction of Big Darby, and further, to permit the plan for Chillicothe to be revised so as to provide a degree of protection substantially equivalent to that provided by the

project as originally authorized. The Water Resources Development Act of 1974 authorized construction of the Chillicothe Project prior to commencement of construction of the Mill Creek project.

Status of Environmental Impact Statement: Draft Environmental Impact Statement was filed with CEQ 25 July 1973. Final statement is scheduled for submission in the fourth quarter of FY 1974.

EMPIRE-STRATTON, OHIO

Senator STENNIS. There is nothing in the budget, and local interests have requested $20,000. What is your capability on this project?

General MORRIS. Mr. Chairman, our capability on this project is $20,000 to initiate preconstruction planning.

Senator STENNIS. Would you submit a statement for the record?

General MORRIS. Yes, sir.

[The statement follows:]

Project: Empire and Stratton, Ohio

Summarized Financial Data:

Estimated Federal Cost (Corps of Engineers)		$ 634,000
Estimated non-Federal Cost		18,000
Cash Contribution	$ 0	
Other Costs	18,000	
Total Estimated Project Cost		652,000
Allocations to Date		33,000
Balance to Complete (Corps of Engineers)		601,000
Preconstruction Planning Estimate		105,000
Amount that could be used in FY 1975		20,000

Authorization: 1938 Flood Control Act.

Location and Description: The villages of Empire and Stratton are located in Jefferson County, Ohio, on the right bank of the Ohio River, about 55 miles below the head of the river at Pittsburgh, Pennsylvania. The project would provide a high degree of flood protection to these villages by utilizing Ohio States Routes 7 and 152 in Empire and Ohio Route 7 in Stratton as dikes and providing structures for internal drainage of the area which would be protected by the raised highways.

Proposed Operations: The amount of $20,000 would be utilized to initiate preconstruction planning of the project in FY 1975.

Justification: The villages of Stratton and Empire had a population of 386 and 491, respectively, in the 1970 census. Development in the flood zones is principally residential and commercial with a smaller amount municipal. These developments are accompanied by such accessory improvements as railroads, highways and utilities. The flood areas within the village of Empire and Stratton are 87 acres and 54 acres, respectively. The December 1942 flood, after complete reduction by the existing reservoir system, was the highest reduced flood of record. The damages to properties at Empire and Stratton, that would result from a recurrence of the highest reduced flood, are estimated at $691,000, August 1965 degree of development adjusted to July 1973 values. The most recent major flood occurred in March 1964 and June 1972. The project would provide protection against all floods as great as the maximum flood of record as modified by the existing reservoir system.

The project would provide flood damage reduction to a total of 141 acres within the villages of Empire and Stratton which are currently not protected along the Ohio River. The benefit-cost ratio is 1.2 to 1. The total annual benefits for the project are $36,000, all of which are flood control.

Status of Environmental Impact Statement: Draft Environmental Impact Statement will be submitted concurrently with the Draft Phase I GDM and Final EIS with Final Phase I GDM.

GALLIPOLIS LOCKS AND DAM, OHIO AND W. VA.

Senator STENNIS. There has been a recent public notice about a project to replace the locks at the Gallipolis locks and dam on the Ohio River. I note that this project is not in the budget. What is the status of the Gallipolis project?

General MORRIS. A replacement project for existing Gallipolis locks and dam has been recommended by the district and division engineers under the provisions of section 6 of the 1909 River and Harbor Act. The act requires such modifications to be approved by the Board of Engineers for Rivers and Harbors and the Chief of Engineers. Approval of replacement structures under the 1909 act is delegated to the Secretary of the Army. The project is now before the Board of Engineers for Rivers and Harbors for review.

Senator STENNIS. This is not the first of the Ohio River replacement projects. How many are under construction or completed?

General MORRIS. Sir, the total will be 19 when the whole program is finished. Presently there are six under construction, or which one is in service, and eight are completed.

Senator STENNIS. Were all of these projects approved by the Secretary of the Army under the provisions of section 6 of the 1909 act before being funded for advance engineering and design?

General MORRIS. Sir, of the 15 replacement projects presently approved, 7 received appropriations from Congress prior to completion of approval action by the Secretary of the Army. However, none of the funds appropriated were spent until the project received final approval.

URGENCY

Senator STENNIS. Is there any urgency for action on the Gallipolis project?

General MORRIS. Serious traffic delays are now being experienced at Gallipolis, and will become very costly by the time new locks can be constructed. At least 6 years will be required to design and construct the new locks. Current projections, which do not take into account the increased use of coal because of the Nation's energy shortage, indicate a 20 percent increase in traffic by 1980. I might also point out that during periods of high water a hazardous approach condition exists at the Gallipolis locks due to the currents created by the bend in the river upstream from the dam site. If a tow were to be swept into the dam gates, the pool would be lost for months, interrupting the entire Ohio River navigation system.

CAPABILITY

Senator STENNIS. What is the corps capability for initiating planning on the Gallipolis project in fiscal year 1975?

General MORRIS. Mr. Chairman, our capability on this project is $200,000 to initiate preconstruction planning, subject to approval of the replacement report by the Secretary of the Army.

Senator STENNIS. Would you submit a statement for the record?

General MORRIS. Yes, sir.

[The statement follows:]

Project: Gallipolis Locks and Dam Replacement, Ohio River, Ohio & W. Va.

Summarized Financial Data:

Estimated Federal Cost (Corps of Engineers)	$ 119,000,000
Estimated non-Federal Cost	0
Total Estimated Project Cost	119,000,000
Allocations to Date	0
Balance to Complete (Corps of Engineers)	119,000,000
Preconstruction Planning Estimate	1,000,000
Appropriations Requested for FY 1975	0
Amount that could be used in Fiscal Year 1975	200,000

Authorization: Section 6 of Rivers and Harbors Act of 3 March 1909; approval by Secretary of the Army pending.

Location and Description: The proposed project is located in Gallia County, Ohio, and Mason County, West Virginia, on the Ohio River 279.2 miles below Pittsburgh, Pennsylvania, and about 9 miles below the City of Gallipolis, Ohio. The project will consist of (1) construction of two 110' X 1200' locks with 23' lift in a new canal and (2) renovation of existing dam including new gates, new bulkhead system, and foundation anchorage.

Proposed Operations: The amount of $200,000 would be used to initiate preconstruction planning of the project in FY 1975, subject to approval of the replacement report by the Secretary of the Army.

Justification: The existing Gallipolis Locks and Dam, with lock dimensions of 110X600 and 110X360 feet, was completed in 1937 and the dam with the exception of the roller gates, is still considered to be in good operating condition. However, the limiting dimensions of the existing lock chambers are causing delays to navigation. These delays are becoming more critical because nearly all of the older, other projects in this central reach of the Ohio River have been replaced by new, high lift locks and dams with main lock chambers 1,200 feet long. The smaller lock chambers at Gallipolis are incapable of efficiently handling the large, modern tows and increased volume of traffic which is occurring because of the rapid industrial expansion now taking place along the Ohio River. An appreciable percentage of traffic time required in moving cargo along the reach of river served by the Gallipolis locks is used in passing through and waiting for other tows to clear the locks. The proposed structure would eliminate almost all such delays. The rate of traffic growth is such that the capacity of the existing locks could be exceeded prior to completion of the proposed new locks.

Further problems are occasioned by the physical location of the existing structure. Poor approach conditions, particularly to downbound traffic, are made more difficult by rising river flows, resulting in the need for additional operating personnel and a higher than normal accident rate to the structure as well as causing considerable hazard to the tows. Construction of the new canal will provide excellent approach conditions, both upstream and downstream.

Ton-mile traffic on the Ohio River has increased more than 2.6 times since 1950. Total river tonnage for 1972 was approximately 138,900,000 and ton-miles were 40.7 billion. All indications are that the growth in traffic will continue for many years and may be accelerated by the rapid industrial expansion now taking place in the river basin. The efficient and uninterrupted river transportation of coal, petroleum, steel products, and chemicals, to, from, and through this area is highly important in normal times and the importance is greatly increased in times of national emergency. Construction and maintenance of adequate navigation structures to accommodate modern towing equipment are essential to the continuous development in the area and to meet the need for economical transportation of bulk and finished products.

Mason County, W. Va., qualifies as (1) under Title IV of the Public Works and Economic Development Act of 1965 (PL 89-136), and the proposed project is located in Appalachia. The benefit-cost ratio is 5.5 to 1.

Status of Environmental Impact Statement: Draft EIS has been files with CEQ in Jan 1974. Final EIS will be filed with CEQ when Secretary of the Army approves the replacement report.

Other Information: The Replacement Report was submitted in May 1974 and is currently under review by the Board of Engineers for Rivers and Harbors.

HANNIBAL LOCKS AND DAM, OHIO AND W. VA.

Senator STENNIS. The budget request was $10,110,000. The House has included $10,110,000, and local interests have requested $11,816,000. What is your capability on this project?

General MORRIS. Our capability on this project is $11,816,000, Mr. Chairman.

Senator STENNIS. What would be accomplished with the additional $1,706,000?

General MORRIS. The additional amount would be used to advance project completion by 11 months.

MILL CREEK, OHIO

Senator STENNIS. The budget request was $400,000. The House has included $500,000, and local interests have requested $500,000. What is your capability on this project?

General MORRIS. Our capability on this project is $500,000, Mr. Chairman.

Senator STENNIS. What would be accomplished with the additional $100,000?

General MORRIS. The additional amount would be used initiate construction of the project.

NEWARK, OHIO

Senator STENNIS. There is nothing in the budget, and local interests have requested $200,000. What is your capability on this project?

General MORRIS. Mr. Chairman, our capability on this project is $200,000 to initiate construction.

Senator Stennis. Would you submit a statement for the record?

General MORRIS. Yes, sir.

[The statement follows:]

Project: Newark, Ohio

Summarized Financial Data:

Estimated Federal Cost (Corps of Engineers)		$2,830,000
Estimated non-Federal Cost		395,000
Reimbursement	$ 0	
Other Cost	395,000	
Total Estimated Project Cost		3,225,000
Allocations to Date		283,000
Balance to Complete (Corps of Engineers)		2,547,000
Amount that could be used in FY 1975		200,000

Authorization: 1968 Flood Control Act.

Location and Description: Newark is the county seat of Licking County, Ohio, and is located on the Licking River at the junction of North Fork and South Fork, 29 miles above the confluence of the Licking River with the Muskingum River at Zanesville, Ohio. The project would consist of diverting Log Pond Run, interior drainage improvements to the completed Federal local protection project and modification of the existing North Fork Channel.

Proposed Operations: The amount of $200,000 would be used to initiate construction of the project in FY 1975, subject to filing the Final Environmental Impact Statement with CEQ.

Justification: A serious flood problem exists in the upper Licking River Basin with the city of Newark being the major damage center. This heavily populated (41,836 - 1970 census) industrial area is subject to flooding from North Fork, South Fork, Raccoon Creek and Log Pon Run, all of which flow through Newark or its suburban areas. The existing local proection project at Newark protects an area containing approximately 140 acres, with 120 acres being highly developed. The unprotected area subject to flooding in and around Newark contains 909 acres of which 528 acres are developed lands. This total developed area (648 acres) contains 916 residences, 11 apartment buildings, 74 commercial establishments, 15 large and small industries, 3 churches and 2 schools. During the January 1959 flood of record when the existing levee was skirted, from 80 to 90 percent of the buildings were flooded causing damages in excess of $7,700,000. Along with the proposed Utica Reservoir, the recommended Newark Protection would reduce average annual damages by 91 percent at the principal damage center along the right bank of North Fork and would reduce average annual damages by 73 percent in the rapidly developing Log Pond Run area of Newark. The benefit-cost ratio is 2.3 to 1. The total annual benefits are estimated at $342,200 all for flood control.

Status of Environmental Impact Statement: The Draft Environmental Statement was filed with CEQ 28 July 1972. The Final Statement is scheduled for submission in the fourth quarter FY 1974. The Final EIS will stipulate that no action will be taken with respect to the North Fork Channel modification pending completion of additional environmental analysis of the inter-relationship of the channel modification with the Utica Lake Project.

Oklahoma State Water Plan

Senator Stennis. What is the Corps capability in fiscal year 1975 for the Oklahoma State water plan?

General Morris. The State of Oklahoma has indicated that it could use the maximum technical assistance authorized to help in developing its State water plan. Such cooperation by the Corps was authorized by section 22 of the Water Resources Development Act of 1974 and is limited to $2 million annually on a national basis, not to exceed $200,000 annually per State. However, the amount that might be available for use in any one State would have to be based on an equitable distribution of the amount that might be appropriated for the national effort. Since this is a newly authorized program, the needs and funding on a national basis are still being reviewed. This program will consist of a cooperative program and is not a grant program; it would be funded under the general investigations item, coordination with other agencies.

Senator Stennis. What is the objective of the State of Oklahoma?

General Morris. The State of Oklahoma is in the process of developing a state-wide water plan and desires as much technical assistance as is available. The potential priority tasks would be to determine quantities of water available in eastern Oklahoma, define water sources, define water needs in central and western Oklahoma, and develop the most economical means of water transport for both long range and short term needs.

Arkansas-Red River Basin Chloride Control, Okla., Tex, and Kans.

Senator Stennis. The budget request was $1,300,000. The House has included $1,300,000, and local interests have requested $2,200,000. What is your capability on this project?

General Morris. Our capability on this project is $2,200,000, Mr. Chairman.

Senator Stennis. What would be accomplished with the additional $900,000?

General Morris. The additional amount would be used to initiate construction of area VIII as authorized by the Water Resources Development Act of 1974.

Senator Stennis. Would you submit a statement on area VIII for the record?

General Morris. Yes, sir.

[The statement follows:]

Project: Arkansas-Red Basins Chloride Control, Oklahoma, Texas and Kansas (Area VIII)

Summarized Financial Data:

Estimated Federal Cost		$22,000,000
Estimated non-Federal Cost		0
Cash Contribution	$ 0	
Other	0	
Total Estimated Project Cost		$22,000,000
Allocations to Date		$ 2,819,000 (1)
Balance to Complete		22,000,000 (2)
Amount that could be utilized in FY 1975		900,000

(1) Allocations to date for entire project for preconstruction planning.
(2) Balance to complete construction of Area VIII.

Authorization: 1966 and 1970 Flood Control Acts; Water Resource Development Act of 1974.

Location and Description: The project is located along the Wichita River in King and Knox Counties, Texas. The plan of improvement consists of a low head brine collection dam, a brine storage reservoir, and the necessary pumping plant and pipelines.

Proposed Operations: The amount of $900,000 would be used to initiate construction in Area VIII.

Justification: Three major natural chloride source areas (Areas VII, VIII, and X) in the headwaters of the Wichita River Basin unite to render the waters of the river unsuitable for most municipal, industrial, and agricultural uses. Because control of all three chloride source areas is required to meet minimum water quality improvement goals for the basin, the plan to control all three source areas comprises this Wichita River project. The construction of Area VIII is vital to the functioning of the project to greatly reduce the chloride pollution of the Wichita River. The benefit-to-cost ratio is not applicable to this project.

Status of Environmental Impact Statement: The final statement prepared for the Wichita River portion of the overall project will cover Area VIII. This final statement is scheduled for submission to CEQ in the first quarter of FY 1975.

Copan Lake, Okla.

Senator Stennis. The budget request was $1,800,000. The House has included $2,800,000, and local interests have requested $10 million. What is your capability on this project?

General Morris. Our capability on this project is $10 million, Mr. Chairman.

Senator Stennis. What would be accomplished with the additional $8,200,000?

General Morris. The additional amount would be used to advance the award of contracts for major pipeline and highway relocations and to purchase the necessary real estate.

Sand Lake, Okla.

Senator Stennis. There is nothing in the budget and local interests have requested $100,000. What is your capability on this project?

General Morris. Mr. Chairman, our capability on this project is $100,000 to initiate preconstruction planning.

Senator Stennis. Would you submit a statement for the record?

General Morris. Yes, sir.

[The statement follows:]

Project: Sand Lake, Oklahoma

Summarized Financial Data:

Estimated Total Appropriation Requirement		$11,800,000
Future non-Federal Reimbursement		
Estimated Federal Cost (Ultimate)		$8,700,000
Estimated non-Federal Cost		3,100,000
Reimbursement:		
Water Supply	3,100,000	
Other	0	
Total Estimated Project Cost		11,800,000
Allocations to Date		0
Balance to Complete		11,800,000
Preconstruction Planning Estimate		700,000
Amount that could be utilized in FY 1975		100,000

Authorization: 1962 Flood Control Act

Location and Description: The dam would be located on Sand Creek, about 8-1/2 miles west and 1-1/2 miles south of Bartlesville, Oklahoma, in Osage County. The plan of improvement consists of an earth-fill dam and an uncontrolled spillway, with a maximum height of about 114 feet above the streambed. The outlet works consists of an 8-foot diameter conduit, a gated intake structure and stilling basin. A low-flow pipe and a water-supply pipe will be located adjacent to the intake structure. Total capacity of the lake would be 91,000 acre-feet, of which 51,700 would be for flood control, 35,000 for conservation, and 4,300 for sedimentation.

Proposed Operations: The amount of $100,000 would be used to initiate preconstruction planning.

Justification: Sand Lake is a unit in the plan for the control of floods in the Caney River-Bird Creek Basins, which are a part of the Verdigris River Basin. Construction of this project would provide flood protection to 16,020 acres of rural land and 20 acres of urban land in the Caney River Basin, and contribute to the control of floods on the Verdigris River. The flood of record occurred in 1943 and caused damages estimated at $1,910,000 (1973 prices). Floods average one every 11 months and have an average duration of 3 days. The most recent flood was in May 1970 and caused approximately $310,000 damage. The properties that would be protected by the project include cropland, pasture and oil production, with an estimated value of $16,000,000 (1973 prices). The city of Bartlesville, Oklahoma, would be the potential water supply user. Construction of this project would develop a dependable water supply yield of 7.8 MGD; provide dilution water to help solve the water quality problem in the basins; outdoor recreation for an estimated 200,000 annual visitors; and fishing and hunting to help meet the regional demands. The benefit-to-cost ratio is 1.8 to 1. The average annual benefits for the project are broken down as follows:

Flood Control	$ 641,000
Water Supply	180,000
Water Quality Control	97,000
Recreation	140,000
Fish and Wildlife	5,000
Redevelopment	13,000
Total	$ 1,076,000

Status of Environmental Impact Statement: To be submitted concurrently with GDM, Phase I.

Skiatook Lake, Okla.

Senator Stennis. The budget request was $3 million. The House has included $4,250,000, and local interests have requested $4,250,000. What is your capability on this project?

General Morris. Our capability on this project is $4,250,000, Mr. Chairman.

Senator Stennis. What would be accomplished with the additional $1,250,000?

General Morris. The additional amount would be used to advance completion of the project by 3 months.

Tuskahoma Lake, Okla.

Senator Stennis. There is nothing in the budget and local interests have requested $100,000. What is your capability on this project?

General Morris. Mr. Chairman, our capability on this project is $100,000 to initiate preconstruction planning.

Senator Stennis. Would you submit a statement for the record?

General Morris. Yes, sir.

[The statement follows:]

Project: Tuskahoma Lake, Oklahoma

Summarized Financial Data:

Estimated Total Appropriation Requirement		$35,600,000
Future non-Federal Reimbursement		17,100,000
Estimated Federal Cost (Ultimate)		$ 18,500,000
Estimated non-Federal Cost		17,100,000
Reimbursement:		
Water Supply	$17,100,000	
Other	0	
Total Estimated Project Cost		35,600,000
Allocations to Date		0
Balance to Complete		35,600,000
Preconstruction Planning Estimate		1,000,000
Amount that could be utilized in FY 1975		100,000

Authorization: 1962 Flood Control Act

Location and Description: The dam would be located on Kiamichi River at mile 118.5, about 2 miles south of Albion, Oklahoma, in Pushmataha County. The plan of improvement consists of a rolled earth embankment 6,770 feet in length, and an uncontrolled chute spillway 200 feet in width, with sill and apron. The controlled outlet works would be located in the valley on the north side of the river. A water supply outlet would also be provided. Total capacity of the lake would be 374,000 acre-feet, of which 138,600 acre-feet would be for flood control, 231,000 acre-feet for conservation, and 4,400 acre-feet for sedimentation.

Proposed Operations. The amount of $100,000 would be used to initiate preconstruction planning.

Justification: The Tuskahoma Lake is a unit in the plan for the control of floods in the Kiamichi River Basin. The area under consideration has experienced several major floods since 1930, of which the 1938, 1943, and 1949 floods had maximum stages at one or more keypoints in the area. The 1949 flood was the maximum flood of record at the Tuskahoma damsite. A recurrence of this flood would cause structural losses estimated to be $580,000, but would cause only minor crop losses (due to the season of occurrence). Had this flood occurred during the summer months, the crop losses would have been about $148,000. The properties susceptible to flooding include agricultural properties, highways and bridges, railroads, utilities, sawmills, and the water supply pumping plant for Antlers, Oklahoma. The total value of the property, including proven and unproven minerals, is estimated to exceed $9 million. Construction of this project would provide a high degree of flood protection for 4,160 acres and would assist in the protection of 20,460 acres in the basin; develop a dependable water supply of 94 MGD; provide outdoor recreation for an estimated 301,000 annual visitors; and fishing and hunting to help meet the regional demands. The benefit-to-cost ratio is 1.12 to 1. The average annual benefits for the project are broken down as follows:

Flood Control	$ 385,000
Water Supply	952,000
Recreation	313,000
Fish and Wildlife	17,000
Redevelopment	79,000
Total	$ 1,746,000

Status of Environmental Impact Statement: To be submitted concurrently with GDM, Phase I.

APPLEGATE LAKE, OREG.

Senator STENNIS. There is nothing in the budget. The House has included $1 million for land acquisition, and local interests have requested $1,500,000. What is your capability on this project?

General MORRIS. Mr. Chairman, our capability on this project is $1,500,000 to continue land acquisition and initiate construction.

Senator STENNIS. Would you submit a statement for the record?

General MORRIS. Yes, sir.

[The statement follows:]

Project: Applegate Lake, Oregon

Summarized Financial Data:

Estimated Total Appropriation Requirement	$45,500,000	
Future non-Federal Reimbursement	1,033,000	
Estimated Federal Cost (Corps of Engineers)		44,467,000
Estimated Federal Cost (U.S. Forest Service Recreation Facilities)		4,125,000
Estimated non-Federal Cost:		1,339,000
Reimbursement: Irrigation (non-Federal reimbursement for future irrigation is under study):	$ 1,033,000	
Recreation:	$ 306,000	
Total Estimated Project Cost		49,931,000
Allocations to Date		972,000
Balance to Complete (Corps of Engineers)		44,528,000
Amount that could be utilized in FY 1975		$ 1,500,000

Authorization: Flood Control Act of 1962, modified by the Water Resources Development Act of 1974.

Location and Description: The Applegate Lake would be located on the Applegate River, a tributary of the Rogue River, in Jackson County about 23 miles southwest of Medford, Oregon. The plan of improvement provides for construction of a rock-fill dam about 232 feet high with a gate-controlled spillway and multi-level outlet works. The reservoir would have a total storage capacity of about 75,000 acre-feet.

Proposed Operations: The amount of $1,500,000 could be used to continue land acquisition and initiate construction.

Justification: Applegate Lake, a part of an overall recommended plan for the Rogue River Basin, would be operated in the interest of flood control, irrigation, fish and wildlife enhancement, water quality control and recreation for Applegate Valley. Runoff would be controlled from an area of about 223 square miles. Increased flows of adequate quality and quantity would be provided for fish enhancement in Applegate River and Rogue River, and peak stages of floods would be reduced. During the December 1964 flood, the most severe flood for which damage data is available, damages to the area downstream from Applegate Reservoir amounted to $1,730,000 on Applegate River and $4,521,000 on Rogue River, of which about $1,987,000 would have been prevented by Applegate Lake. The January 1974 flood was more severe than the 1964 flood but data on damages is not yet available. Jackson County is listed as a labor surplus area, as is adjacent Josephine County, located just below the damsite. The benefit-to-cost ratio is 1.4 to 1. Average annual benefits are listed below:

Annual Benefits	Amount
Flood Control	$ 1,796,800
Irrigation	20,600
Fish and Wildlife Enhancement	523,100
Recreation	357,000
Water Quality	383,000
Miscellaneous	5,400
Area Redevelopment	250,000
TOTAL	$ 3,335,900

STATUS OF ENVIRONMENTAL IMPACT STATEMENT: The final Environmental Impact Statement was filed with CEQ on 10 February 1972. A supplement to the statement was filed with CEQ on 21 July 1972.

OPPOSITION

Senator STENNIS. With regard to the Applegate Dam in Oregon, this committee has received testimony in opposition to the project from Ms. Judith A. Neilson representing the Oregon Environmental Council, from Mr. Ashworth on behalf of the "Stop the Applegate Dam Committee" and the Rogue Group of the Sierra Club, and from Prof. F. W. Smith of Southern Oregon College. As a general matter, these witnesses have testified that the flood control value of this project is minimal. Would you please comment?

Colonel DRISCOLL. Sir, flood damages that will be prevented by the project over a 100-year period are not minimal; in fact they will average $1,796,800 annually. If the project had been in operation during the recent 1974 flood, it would have prevented $2,581,000 of the flood damage experienced by property owners this winter.

INADEQUATE PROJECT FORMULATION

Senator STENNIS. The witnesses opposing this project claim that studies of the watershed have been seriously inadequate, and that the Corps has no basis for its selection of the project location or its determination of project effectiveness in controlling stream flow in the basin. Would you care to comment on this criticism?

Colonel DRISCOLL. Yes, sir. The Applegate Lake project has been studied intensively over a span of years commencing prior to the Rogue River Basin Survey Report dated December 1961. More than 30 potential reservoir sites in the Rogue River basin were investigated before the Lost Creek, Elk Creek, and Applegate sites were selected. These studies gave in-depth consideration to the needs and potential of the entire basin and were carried out with the cooperation and assistance of appropriate State and other Federal agencies. Contrary to Mr. Ashworth's assertions, hydrologic studies were made of the entire Rogue River basin, with records available in some areas dating back to 1895. Of the feasible alternatives available, the site selected for the Applegate Dam is demonstrably the one producing the maximum benefits.

Senator STENNIS. Another observation of project opponents is that potentially serious problems will develop when water is impounded behind the dam because of potential turbidity and the danger of arsenic and mercury mineralization. What is the concern in this respect and how do you view the problem?

Colonel DRISCOLL. Mr. Chairman, last year I reported to this subcommittee that studies of the turbidity potential in the Applegate reservoir had just been initiated. Our preliminary findings are convincing that maximum possible turbidity levels will lie well within acceptable and manageable limits. We intend to proceed with further detailed studies as a basis for determining what refinements might be desirable in project design and operation.

With regard to danger from arsenic or mercury contamination in the reservoir, we foresee no significant problems. Arsenic has not been found as a surface water contaminant in the Applegate River drainage. While mercury deposits do exist in the drainage area, they exist in the form of cinnabar, a mineral which, for all practical purposes,

is insoluble. Furthermore, no mercury deposits of any kind are known to exist with the limits of the future reservoir.

ENVIRONMENTAL IMPACT

Senator STENNIS. The fate of the Siskiyou Salamander remains as an issue in connection with this project. Do you know any more about this species than you did last year? What conservation measures do you propose?

Colonel DRISCOLL. Sir, in July 1973 the Corps of Engineers contracted with the University of Michigan to have Dr. Ronald Nussbaum, formerly of Oregon State University, an expert herpetologist, undertake comprehensive investigation of the natural history of the species and its distribution. A literature review was completed last fall and field studies are currently underway. A final report on his findings is due in December 1974, which will provide a basis for developing conservation measures.

Senator STENNIS. In his testimony, Mr. Ashworth states that, by the Corps' admission, the Environmental Impact Statement for this project is inadequate but a revision is not scheduled until the second quarter of 1976. What is the situation?

Colonel DRISCOLL. Mr. Chairman, the environmental impact statement for the Applegate project was filed with CEQ on February 15, 1972, and is considered to be in full compliance with the requirements of the law although admittedly not meeting the overall standards which the Corps has evolved since that time. A supplement to the EIS will be submitted to reflect current studies and conservation decisions relative to the Siskiyou Mountain Salamander. Evidently Mr. Ashworth has mistakenly construed this supplement to be a general revision of the entire document.

Senator STENNIS. Mr. Ashworth has also noted that the project will have serious effects on fish and wildlife in northern California although that State has not been consulted nor have requests for hearings by various California conservation groups been honored by the Corps. Would you comment on these matters, please?

Colonel DRISCOLL. Yes, sir. The State of California has, in fact, been consulted regarding the Applegate project. In a letter dated February 13, 1974, the director of California Fish and Game, Mr. Ray Arnett, informed the district engineer they are satisfied with present plans for resolving fish and wildlife problems. Mr. Arnett also indicated that meetings on these problems should not be necessary since they have been resolved to the point where the State of California can respond to questions or comments from its residents on this subject.

ECONOMIC FEASIBILITY

Senator STENNIS. Witnesses opposing the project question the validity of the cost and benefit determinations. In addition, it has been alleged that project benefits will accrue to a few large landowners and business interests as windfall profits by enabling higher use of the flood plain. Would you please address these criticisms?

Colonel DRISCOLL. Sir, the cost and benefit determinations have been extensively reviewed by the General Accounting Office. These findings

generally support the Corps benefit computations and show that the project is economically feasible. There is no evidence that flood control will bring about higher use of flood plain lands or that owners will realize windfall gains. Corps economists and appraisers reviewed values and ownerships of property in the flood plain of Applegate River specifically to determine whether or not windfall benefits were possible. A complete reconnaissance appraisal of the flood plain was conducted in which all structures were identified and appraised. Applegate Valley, like other agricultural areas, has owners of large farms as well as small; however, there are no known unusually large ownerships within the flood plain. Both Jackson and Josephine Counties have adopted flood plain zoning ordinances to restrict further development in flood prone areas. The flood control benefits calculated for the project were based on restrictive growth policy described in these ordinances.

Senator STENNIS. Professor Smith stresses in his testimony that a much greater need for a flood control dam in the area exits in Ashland Creek, above the city of Ashland, Oreg. Has the Corps examined this possibility?

Colonel DRISCOLL. Sir, Ashland Creek is not a tributary for Applegate River, thus a dam on the creek would not control flooding along the Applegate, where the problem exists. During our Rogue River basin studies which led to recommendation for construction of Applegate Lake project, as well as Lost Creek and Elk Creek, flood control storage in the vicinity of Ashland was considered. This feature was determined to have very serious technical problems as well as an extremely unfavorable economic prospect.

BEAVER DRAINAGE DISTRICT, OREG.

Senator STENNIS. There is nothing in the budget, and local interests have requested $300,000. What is your capability on this project?

General MORRIS. Mr. Chairman, our capability on this project is $300,000 to initiate construction.

Senator STENNIS. Would you submit a statement for the record?

General MORRIS. Yes, sir.

[The statement follows:]

Project: Beaver Drainage District, Oregon

Summarized Financial Data:

Estimated Federal Cost (Corps of Engineers)		$ 1,670,000
Estimated non-Federal Cost		351,000
Cash Contributions	0	
Other Costs	$ 351,000	
Total Estimated Project Cost		$ 2,021,000
Allocations to date		189,000
Balance to Complete (Corps of Engineers)		1,481,000
Amount that could be used in FY 1975		300,000

Authorization: Flood Control Act of 1950

Location and Description: The Beaver Drainage District is located in Columbia County, Oregon, north of the town of Clatskanie, along the Columbia River between river miles 49.7 and 55.4. The plan of improvement provides for raising and strengthening portions of the existing primary levee, strengthening levees along the Tank Creek diversion canal, reconstruction of the Tank Creek tide box and increasing the pumping capacity of the district.

Proposed Operations: The amount of $300,000 could be used to initiate construction.

Justification: Protection afforded by existing levees is inadequate against larger floods. The Drainage District was saved from inundation during the 1948 flood by construction of an earth parapet along the west and south levees. During the 1964 winter flood, water came up to the edge of the road near the pumping station. Subsequent to 1964, one of the wood stave pipe discharge lines for the old pumping station began leaking and developed a sink hole in the levee. Although this hole has been repaired and the discharge line partially removed, a second wood stave discharge line is still being used for emergency pumping. The proposed improvements would provide protection against a flood of 840,000 cfs at The Dalles. Average annual benefits, all flood control, are estimated at $188,400. The benefit-to-cost ratio is 2.2 to 1.

STATUS OF ENVIRONMENTAL IMPACT STATEMENT: A revised draft Environmental Impact Statement was filed with CEQ on 12 February 1973. The final Environmental Impact Statement is scheduled to be filed with CEQ in May 1974.

BONNEVILLE SECOND POWERHOUSE, OREG. AND WASH.

Senator STENNIS. The budget request was $11,100,000. The House has included $11,500,000 and local interests have requested $11,500,000. What is your capability on this project?

General MORRIS. Our capability on this project is $11,500,000, Mr. Chairman.

Senator STENNIS. What would be accomplished with the additional $400,000?

General MORRIS. The additional amount would be used to initiate the relocation of the town of North Bonneville.

BONNEVILLE SECOND POWERHOUSE (RELOCATION OF THE TOWN OF NORTH BONNEVILLE), OREG. AND WASH.

Senator STENNIS. I have a series of questions concerning the Pacific Northwest that Senator Magnuson requested be asked. The President's budget requests $11.1 million for construction of the second powerhouse at Bonneville. The Corps has an additional fiscal year 1975 project capability of $400,000 in connection with relocation of the town of North Bonneville, of which $250,000 would be for land acquisition and $150,000 would be for engineering and design work. Is that correct?

General MORRIS. Yes, sir.

Senator STENNIS. In connection with the relocation of North Bonneville, is the new townsite to be within the area selected by town officials?

General MORRIS. Sir, the Corps of Engineers is presently negotiating a contract with the town of North Bonneville wherein the town will hire an architect engineering firm to provide a relocation plan. Alternative townsites will be studied and final plans will be approved by the town and by the Corps. The area preferred by the town obviously will not be rejected without convincing proof that a different location would better serve the public interest.

Senator STENNIS. Does the Corps have authority to relocate the railroad tracks in the new townsite as has been requested by town officials?

General MORRIS. Yes; the Corps has the authority to relocate the railroad if such relocation is necessary in order to accomplish the relocation of the town as authorized by section 83 of the Federal Water Resources Development Act of 1974, Public Law 93–251.

Senator STENNIS. Does the Corps intend to relocate the railroad tracks as requested?

General MORRIS. The architect engineering firm to be engaged by the town to develop a relocation plan will also study the necessity for relocation of the railroad including the justification for that relocation.

Senator STENNIS. Would funds for the track relocation be within the additional $400,000 fiscal year 1975 capability for the second powerhouse project? If not, what amount will the Corps require for that purpose in fiscal year 1975?

General MORRIS. There are no funds for relocation of the railroad

in the additional $400,000 fiscal year 1975 capability. Scheduling of the town relocation is such that funds to undertake relocation of the railroad would not be required until fiscal year 1976.

Senator STENNIS. How is the Corps assuring that town officials and town residents are meaningfully involved in planning and carrying out the town relocation?

General MORRIS. The town will have the responsibility of directing the work under the architect engineering firm contract to provide a relocation plan. Both the town and the Corps will develop the scope of the planning study and jointly approve the study decisions and results. By that means the town and its residents will be fully involved in the planning process.

Senator STENNIS. When does the Corps expect the town will, in fact, be relocated?

General MORRIS. Our present scheduling provides for the town of North Bonneville to be relocated by late in calendar year 1977.

BONNEVILLE SECOND POWERHOUSE, OREG., AND WASH.

Senator STENNIS. This subcommittee has received testimony concerning construction of the second powerhouse at Bonneville Dam on the Columbia River from the Oregon Environmental Council represented by Ms. Judith A. Neilson. The primary concern of the Oregon Environmental Council centers around the effects of peaking operations on anadromous fish runs in the Columbia. Comments made by various agencies on the draft environmental impact statement are quoted in the testimony as being indicative of the seriousness of the situation. Would you inform this subcommittee what the Corps is doing in response to concerns such as these?

Colonel DRISCOLL. The fisheries agencies originally expressed a great deal of concern for the effects of peaking on anadromous fish during the preparation of the draft environmental impact statement. As a result of their concern, the Corps has entered into accelerated peaking studies which were begun in fiscal year 1973 and are programed to continue through fiscal year 1980. The research work is being done by the fish and wildlife agencies and some universities. In addition, the various concerned fisheries agencies are actively participating in the design of the additional fish passage facilities for the second powerhouse. We are fully convinced that this kind of cooperative effort will insure that the needs of fish and wildlife are fully met both in terms of required facilities and with regard to limits imposed on river fluctuations.

Senator STENNIS. What is the current view of the various concerned fishery agencies about the second powerhouse project and the proposed peaking operations?

Colonel DRISCOLL. The fisheries agencies, although concerned about various details of the projects, are not now opposing the construction of the second powerhouse or the operation of the Columbia River as a peaking system. Instead, as I mentioned, they are actively cooperating in insuring that the system and its operational procedures are compatible with the needs of the Columbia River fishery.

OPPOSITION

Senator STENNIS. This subcommittee has heard testimony in opposition to the Catherine Creek project, Oregon, from Ms. Judith A. Neilson representing the Oregon Environmental Council. Of particular concern is their feeling that the draft environmental statement was of poor quality and raised a great many questions that have not yet been properly addressed. What is the status of the final environmental statement?

Colonel DRISCOLL. The draft environmental impact statement has been revised to respond to the comments received during the review draft process. The final environmental impact statement for the project will be forwarded to the Council on Environmental Quality during the first quarter of fiscal year 1975.

Senator STENNIS. Further testimony indicates that prime fish spawning reaches will be wiped out, and that the elimination of winter grazing ranges for elk could decimate the herds in the area. What is your assessment of these concerns and what does the Corps propose to do about the adverse effects of the project on fish and wildlife?

Colonel DRISCOLL. To mitigate loss of fish spawning areas, the proposed plan of development includes construction of a hatchery along with provisions for enhancing natural spawning of chinook salmon. Wildlife mitigation will consist of a supervised, fenced, 480-acre big game replacement area.

Senator STENNIS. Another concern of the Oregon Environmental Council is that the project will pave the way for another dam and stream channelization project to be located on the Grande Ronde River that would seriously threaten the fishery of the entire river. What is the relationship between the Catherine Creek project and other potential water development in the basin. Would construction of Catherine Creek increase the need for or feasibility of future projects?

Colonel DRISCOLL. There is no functional relationship between Catherine Creek and the future Grande Ronde project. Construction of the Catherine Creek project would not increase the need for or feasibility of a future Grande Ronde project.

Senator STENNIS. With regard to project benefits, the testimony of the Oregon Environmental Council indicates that recreational development lacks necessary local funding support and that also there will be no market for the irrigation water. Would you please comment on these matters?

Colonel DRISCOLL. The recreational development has been coordinated with both Union County and the State of Oregon. They have indicated that they will sign the formal sponsorship documents. Local interests have also indicated that they will purchase all available irrigation water. The Bureau of Reclamation is responsible for the sale of all irrigation water and they will make the necessary arrangements for repayment under provisions of reclamation law.

Senator STENNIS. A major concern regarding this project is, of course, the problem of the Indian fishing rights. Earlier testimony by the Corps indicated optimism that efforts toward reaching a satis-

factory agreement with the Indians would be successful. Would you provide this subcommittee with a report on how you have progressed and what the outlook is?

Colonel DRISCOLL. Mr. Chairman, as you correctly noted, we have been proceeding with a feeling of optimism that a satisfactory understanding could be reached with the confederated tribes of the Umatilla Indian Reservation who claim that the project will adversely effect their treaty rights to fish along Catherine Creek. Unfortunately, I must report that we have not been successful to date and, furthermore, it now appears that the tribal council has become unalterably opposed to construction of the project under any circumstances or within the terms of any agreement we can conceive of.

UMATILLA INDIAN TREATY RIGHTS

Senator STENNIS. With regard to the Catherine Creek project this subcommittee has also received correspondence from Mr. Dennis J. Whittlesey, of the law firm of Hogan & Hartson, representing the Confederated Tribes of the Umatilla Indian Reservation. At this point I would like to have that letter inserted into the record.

[The letter follows:]

June 4, 1974

Senator John C. Stennis
Chairman, Public Works Subcommittee
Senate Appropriations Committee
United States Senate
Washington, D.C.

Re: Catherine Creek Dam and Lake --
Proposed Appropriation.

Dear Senator:

We represent on a non-fee basis the Confederated Tribes of the Umatilla Indian Reservation in protecting certain treaty rights threatened by the above-named public works project. Funding for the Catherine Creek Dam and Lake is being sought in the proposed appropriations for public works (Army Corps of Engineers), and we understand that this project will be discussed during the so-called "Recall Hearings" to be held by the Public Works Subcommittee in the very near future.

We have not previously testified before your committee on this matter because assurances were given us by the Armys Corps of Engineers (COE) that the Indian opposition would be discussed in full. The dispute has not been resolved, and COE representatives will report on the dispute and its current status during the Recall Hearings. In light of the serious issues presented by the proposed project's construction, and since a full airing thereof is essential, we request that we be allowed to testify during the Recall Hearings.

In order to insure that the Committee fully appreciates the seriousness of the dispute, the following information is provided:

A. The project is not authorized.

The Catherine Creek Dam and Lake, Union County, Oregon, was purportedly authorized by the Flood Control Act of 1965, 79 Stat. 1973, 1084. The proposed project calls for the construction of a non-energy producing dam across Catherine Creek, a tributary of the Grande Ronde River, at a site approximately 8 miles upstream from the city of Union, Oregon.

The resulting impoundment would inundate approximately 2.5 miles of the natural stream channel of Catherine Creek. The Umatillas have a right to fish this stream under the Treaty of June 9, 1855, 12 Stat. 945, 946. This treaty right has never been abrogated, and we contend that the project cannot be "authorized" as a matter of law until a specific abrogation or modification of the treaty right has been enacted by Congress -- a position taken by the Department of the Interior (USDI) in a letter to the COE dated December 27, 1973, concerning this project.

In its December 27 letter, USDI noted that the Umatilla "off reservation" fishing rights unquestionably give them a perpetual fishery at Catherine Creek. Citing a series of Supreme Court opinions dealing with interpretations of treaty rights,

USDI advised the COE that no construction at Catherine Creek can be authorized until Congress has "clearly and unequivocally" abrogated the treaty rights owned by the Umatillas. Such has not been done, and for this reason USDI advised that it opposes construction of the project.

Since any legal authorization of the project requires Congressional modification of the treaty rights at issue, we submit that further action should only follow consideration of the matter by the Indian Affairs Subcommittee of the Senate Interior Committee and suggest that funding be deferred until a full consideration can be given to this matter by that Subcommittee.

B. The proposed project is harmful and will contribute little of value.

It seems to be the position of the COE that the Catherine Creek project will be beneficial to all who reside or visit in the vicinity of Union County, yet the facts belie this assumption.

Much of the following discussion was taken directly from the draft Environmental Impact Statement (EIS) promulgated by the COE, so it will be difficult for the COE to take issue with these assertions.

This project does not call for the construction of an energy producing dam, rather, flood control is its major function. The draft EIS identifies a number of so-called "major floods", although it discloses only one occasion on which the purported flood waters penetrated the community of Union, Oregon. Much of the flooding apparently is rural and probably inundates agricultural lands.

In addition, the purported fishing benefits to be provided by this project ignore the fact that the EIS identifies two Oregon State stream water quality standards which will be violated by the project's existence: (1) the dissolved-solids levels in the reservoir and downstream therefrom will be far in excess of those allowable under State standards, and (2) thermal stratification within the lake will be such as to raise serious questions as to whether the fish population will even be able to survive, let alone flourish to such an extent that valuable fishery will be established.

The National Park Service signed a contract for archaeological studies within the project area to be conducted by the University of Oregon's Museum of Natural History. That study has been completed and identifies seven archaeological sites within the actual project area, two of which are deemed to be "major" sites. These presumably will be excavated prior to any inundation, but destruction of historical Indian sites has already been so widespread throughout the western United States that this factor is worthy of more than the lip service paid to the issue by the COE.

The Catherine Creek project is on a major migration path and refuge for certain kinds of wildlife, including deer and elk. The draft EIS identifies that a significant adverse impact will be created on this wildlife by the construction of this project and that other wildlife will be adversely affected by the diversion of wildlife from the project area.

The cost-benefit ratio of this project is not disclosed, and we submit that it is already very low under discount rates in existence in 1965. Should the COE apply current discount rates to this project, there is no dispute that the cost-benefit ratio would be so adverse that the project could not be justified.

C. The draft environmental impact statement is so inadequate as to prevent a meaningful review and comment by pertinent agencies and interested individuals and groups.

The draft EIS was promulgated in August, 1972, and made no mention of the treaty rights to fish Catherine Creek possessed by the Umatillas. The United States Department of the Interior advised the COE of the existence of those treaty rights and the EIS's failure to discuss them within 90 days of the date the EIS was promulgated. As of this date, no effort has been made by the COE to revise the draft EIS or to make known to the pertinent federal and state agencies and interested groups the existence of those treaty rights for the purposes of review and comment. Nor have there been any studies by the COE to ascertain the effects of this project on the treaty rights.

We are not aware that the issue has ever been litigated as to when a draft EIS is so inadequate as to make the final EIS inherently inadequate. However, it is certainly reasonable to assume that a draft statement can be so deficient that the reviewing agencies cannot be said to have made a knowledgeable comment as contemplated by the Guidelines promulgated by the President's Council on Environmental Quality (which establish a full disclosure procedure for obtaining the most knowledgeable review by an agency of the environmental and social effects of a proposed federal project). Such a proposition was supported by the United States District Court for the District of Connecticut in its opinion in Sierra Club v. Mason, 5 ERC 1216 (March 26, 1973), when it stated at page 1217:

> * * * [T]he agency that circulates a deficient draft statement takes the risk that the final statement may be found deficient for lack of a draft statement that was sufficient to elicit appropriate reaction. * * *

The National Environmental Policy Act of 1969 (NEPA) is concerned with major federal actions which will have a significant impact upon the human environment. Certainly, there can be no dispute that any project which has an effect upon rights guaranteed to Indians by treaty falls within this definition. Anthropologists whom we have contacted are prepared to testify under oath that the Umatilla Indians historically have engaged in stream fishery and not lake fishery. There can be no dispute that the inundation of a portion of Catherine Creek will affect the fishery throughout the entire stream, as evidenced by the extensive planning for the construction of the fish hatchery and the artificial stocking of the stream above and below the dam with fingerlings on an annual basis. (It is interesting to note that there is no planning for a "fish ladder" at the dam and fish will have to be physically transported around it.)

The Supreme Court has stated on many occasions that a treaty is to be construed in a manner consistent with the understand-

ing at the time the treaty was executed of the "unlettered Indians" affected thereby. Anthropologists who have extensively studied the Umatillas will testify that the Umatilla Indians would have been incapable of understanding the concept of a lake fishery at Catherine Creek or any other mountain stream within the vicinity of their historical hunting and fishing lands, and that the construction of Catherine Creek Dam is totally inconsistent with what the Umatillas would have understood, contemplated, or intended at the time the treaty was signed.

This draft EIS is totally deficient and will not stand a legal attack upon its failure to discuss or consider the Indian fishing rights guaranteed by treaty. Certainly, no appropriations for construction should precede an adequate NEPA review, which -- by law -- is to be a part of the "decision-making process".

D. The project will not stand the tests imposed by the Principals and Standards for Water Resource Planning.

As previously discussed, this project is not "authorized" as a matter of law. The COE has thus far refused to commit application of the new guidelines which were developed by the Water Resources Council for the study and evaluation of various factors associated with water resources projects. They are known as "Principals and Standards for Water Resource Planning" and were published in the Federal Register, Volume 38, No. 174, September 10, 1973. They require an objective evaluation to any project affecting water resources before it can proceed.

Although we feel this project is not authorized, it is possible that "authorization", as contemplated by the Principals and Standards, was granted by Congress in the Flood Control Act of 1965. Assuming arguendo that this is an "authorized" project, the Principals and Standards permit a discretionary application of their requirements by the head of the agency to projects which are "authorized but unfunded". We doubt that the Principals and Standards would ever be applied to this project by the COE, for the objective evaluations the guidelines require would mandate cancellation of the project.

The Principals and Standards call for a balancing of economic, social, and environmental factors. Any ultimate decision requires that the balancing of these factors be determinative of a decision to go forward. If the balance is negative, the project cannot proceed.

In addition, the Principals and Standards require that the current discount rate be applied in determining the cost-benefit ratio, rather than the lower discount rates in effect at the time the project was authorized. Such an application would point out a clear deficiency in this project from a cost-benefit viewpoint.

E. The Umatillas' exclusive fishery right may have been violated in the past and will be violated by this project.

The Umatilla treaty provides that the Umatillas shall have "the exclusive right of taking fish in the streams running through and bordering said reservation".

Serious question exists as to whether Catherine Creek was one of those "bordering" streams as contemplated by the unlettered Umatilla in 1855. If so, all non-Indian fishery which has been conducted at Catherine Creek since 1855 has been in violation of the Umatilla right, and it is very possible that a cause of action for such violations exists. In addition, any effect upon the stream to which the Umatillas have an exclusive fishery right by the COE project would unquestionably constitute compensable damage. Neither of these issues has been considered by the COE, and should be.

Anthropologists with whom we have discussed this matter are prepared to testify in court that Catherine Creek is a stream to which the Indians would have contemplated an exclusive right to fish. As previously discussed, the unlettered Indian in 1855 is the individual to whom the treaty rights adhere, and in a dispute such as this one anthropological testimony must be relied upon by the courts in determining the standards to be applied.

This question is a serious one, and we submit that it too should be submitted to the Senate Interior Committee's Indian Affairs Subcommittee for consideration before this project moves forward.

Conclusion.

For too many years Indian rights have been brushed aside in the name of "progress". We are in profound disagreement with the COE's apparent policy that every stream must be dammed, and some sort of artificial fishery substituted for what nature has provided. Such is especially true when a tribe which has been so trampled upon as the Umatillas finds itself threatened with the extinction of another treaty right and with little in the way of defense at its disposal.

Prior to 1855, the Confederated Tribes of the Umatilla Indian Reservation did not exist. Rather, the Cayuse, Umatilla, and Walla Walla Tribes independently occupied much of what today constitutes eastern Oregon. These proud peoples were banded together and thrown into an artificial Confederation in the name of "progress". Their historical homelands were reduced to a small area, and their rights to hunt and fish severely curtailed by treaty -- all in the name of "progress". This degradation was further magnified during the 20th Century when allotments were granted within the reservation to Indians and the unallotted property made available to white settlers. Thus, the Umatillas today have even less property than that permitted them by treaty in 1855 -- this, too, apparently was "progress".

It is difficult for us to understand how the COE can proceed with any planning, let alone the request for appropriations for construction, before the Umatilla rights have been dealt with in a satisfactory manner. NEPA requires the preparation of an environmental impact statement as part of the "decision-making process". In this instance, the EIS not only was not part of the decision-making process, the Umatilla rights were not even discussed in the draft EIS which was circulated for comment. Inasmuch as the Corps has been aware for some 20 months that the fishing rights existed and has not attempted to disclose them to the reviewing agencies, we feel that this matter must be given more consideration before a single dollar is appropriated.

As previously stated, we sincerely hope that you will afford us the opportunity to appear at the Recall Hearings and further explain our position in this regard and answer any questions which the Subcommittee may have. We are confident that this dispute will not be swept aside in the interests of "progress", and appreciate your consideration.

Sincerely yours,

Dennis J. Whittlesey

Senator STENNIS. Now, in this letter, Mr. Whittlesey points out several issues which, if substantiated, could have an adverse impact on this project. First of all, he brings up the question of the Indians' treaty rights and states that construction of the project would violate treaty secured rights to fish on Catherine Creek. He further states that the Department of Interior supports the view that in the absence of specific congressional action to abrogate or modify these treaty rights the project cannot legally go forward. Would you please give us the Corps position on this matter?

Colonel DRISCOLL. Yes, sir. By letter dated December 27, 1973, the Department of the Interior asserted the opinion that Indian fishing stations reserved by treaty do, in fact, exist in the project area and that any construction that would result in a taking of these stations would not be authorized in the absence of an indication of specific congressional intent to do so or without tribal consent in such taking. The Interior Department thereupon placed itself in opposition to construction of the project under the present circumstances.

Since the Indians claim to fishing rights on Catherine Creek first came to our attention in October of 1972, the Corps has worked diligently with the Bureau of Indian Affairs, members of the tribal council, and with attorneys representing the tribe. Over this period of 18 months we have made concerted attempts to specifically determine the nature of the fishing rights claimed and the effects of the project on these rights. Our investigation into this matter disclosed no convincing argument that the fishing rights secured by the treaty of 1855 will be impaired by the Catherine Creek project. Nevertheless, we made a number of proposals to the tribal council that, if authorized and carried out, regardless of the nature of the fishing rights that may exist, would improve the tribe's current capability for fishing on Catherine Creek and help safeguard that capability against future encroachment of any type. Our proposals included the development of exclusive-use fishing camps and the procurement of easements for access to the creek across private land. Despite the fact that the Indians currently experience practical difficulties in carrying out anything but token fishing activity on Catherine Creek, these proposals were rejected, and as I have pointed out it appears clear that the only course of action that would be acceptable to the tribes would be the total abandonment of the Catherine Creek project.

As we see it, the position of the Interior Department in opposition to the project, as expressed in its letter of December 27, 1973, is based upon a fundamental, and perhaps preliminary, presumption that such fishing rights as do exist are of such nature as to be incompatible with a reservoir on the stream. Our subsequent investigations do not bear out such a premise. It is the position of the Corps that construction and operation of the Catherine Creek project will have no direct, significant, adverse effect on the Indian treaty rights. On the contrary, we continue to maintain the position that the project will significantly improve what is now a very modest anadromous salmon fish run in Catherine Creek and in addition will establish a resident trout fishery of exceptional abundance. There will, in no way, be an impairment to the right of the concerned Indian tribes to take fish along Catherine Creek. The argument that 2½ miles of this creek will be converted to

a reservoir does not, in our view, substantiate the conclusion that a guaranteed right to take fish will be aborted.

We recognize that the issue of Indian treaty rights was not raised in time to be placed before Congress in connection with the authorization of this project. However, now that this issue has been expressed, it is our best judgment at this time that the legal authority to undertake the project is not in jeopardy. The Corps will, however, engage in further discussions with the Department of Interior, and, if necessary, with higher authority with a view to resolving any basic disagreements. As we see the situation, however, no reasonable interpretation of the treaty of 1895 would dictate abandonment of the Catherine Creek project or require abrogation of rights secured by that treaty.

Senator STENNIS. Mr. Whittlesey's letter states that the Catherine Creek project is harmful and will contribute little of value. What is this project expected to produce and what is the viewpoint of the people in Union County, Oreg. regarding this project?

Colonel DRISCOLL. The project will provide substantial flood control benefits in Union County and the city of Union, irrigation benefits, municipal water supply, and recreation benefits and will provide a hatchery that is expected to approximately triple the present salmon run on Catherine Creek as well as maintain the steelhead run. Local support for the Catherine Creek project has been overwhelming. Of a 22,000 total Union County population, including children, over 2,000 people have contributed money to finance four county delegations to Congress to express support for the project.

Senator STENNIS. Mr. Whittlesey discounts the validity of flood control benefits assigned to the project. Would you please comment?

Colonel DRISCOLL. Mr. Whittlesey correctly points out that most of the flood-prone areas are agricultural rather than urban. Flood control benefits would be about 94 percent rural. Nevertheless, the frequency and intensity of flooding and the value of the croplands involved combine to make flood control a well-justified project purpose with average annual damage prevention valued at about $600,000.

Senator STENNIS. Another of Mr. Whittlesey's concerns is that the project cannot meet Oregon State stream water quality standards and that claimed water supply and fishery enhancement benefits may not be possible. Can you respond to this concern?

Colonel DRISCOLL. Yes, sir. The Oregon Department of Environmental Quality has stated, "The status of water supply in the subject area is so critically short that for benefit to all society and fish, it would be better to have increased flows with perhaps a slightly substandard quality on some parameters than little or no flow that now exists in certain seasons." The current plan for improving the anadromous fishery is supported by the National Marine Fisheries Service. Water supply quality is not viewed as a significant problem by any concerned agency.

Senator STENNIS. What arrangements have been made for preservation of potentially valuable archeological sites in connection with this project?

Colonel DRISCOLL. The National Park Service has programed funds for additional investigations of three sites that were identified in an earlier report completed on April 24, 1973, by the University of Oregon Museum of Natural History. Upon completion of this investigation a determination will be made by the National Park Service as to the

historical value of these sites. Objects of value, such as artifacts and tools that may be uncovered during this operation will be preserved and properly cared for by the University of Oregon Museum of Natural History.

Senator STENNIS. Mr. Whittlesey's letter points out the adverse effects of the project on wildlife. Could you elaborate further on the nature of these affects and the mitigation measures being planned?

Colonel DRISCOLL. Yes, sir. Since Catherine Creek Lake is relatively small and physically blocks only a small portion of the migratory route, it is not likely to have a major impact upon big game migrations and populations. This information has been developed in coordination with the Oregon State Game Commission. The U.S. Bureau of Sport Fisheries and Wildlife has estimated that the project will cause the hunter-day loss of 370 for deer and 100 for elk without mitigation. A recent study by the Bureau of Sport Fisheries and Wildlife estimates the project will cause a loss of 59 deer and 29 elk. Since project construction will cause a displacement of these big game animals, mitigation procedures are included in the project plan. Proposed mitigation measures recommended by the fish and wildlife agencies include acquiring approximately 480 acres of land adjacent to the project and managing it as big game range. Mitigation land will be fenced to prevent livestock entrance and to permit restoration of adequate grazing conditions for wildlife species. Management of the acquired lands will be supervised by the Oregon State Wildlife Commission. In addition to the wildlife management areas it can be expected that the land immediately surrounding the lake will also be attractive to wildlife during the recreation off-season, since forage can be expected to be good in most of the recreational areas as a result of grass and tree plantings. Management of the mitigation land for deer and elk and improved habitat around the lakeshore should provide adequate replacement for the land that will be directly affected by project inundation.

The smaller animal species such as beaver, river otter, mink, and other will probably be completely dislocated from the impoundment area due to loss of habitat and excessive human presence. However, it should again be stressed that the reservoir will be quite small.

Senator STENNIS. The benefit-cost ratio for this project is shown as 1.2 to 1. At what interest rate was this figure calculated and what would the ratio be under the current rate?

Colonel DRISCOLL. The benefit-cost ratio is calculated at the prescribed interest rate of 3¼ percent. If a rate of 5⅝ percent were used the ratio would fall to 0.75 to 1.

Senator STENNIS. In his letter to the subcommittee, Mr. Whittlesey states that the Corps failure to mention the Indian treaty rights issue in the draft EIS prevented a meaningful review and comment by pertinent agencies and interested individuals and groups. What is the Corps view on this?

Colonel DRISCOLL. Mr. Chairman, it is not difficult to imagine a case where an omitted or erroneously stated description of a project impact might seriously or even totally inhibit the essential review process. However, such was not the case in this instance. On the contrary, the review process has worked exceedingly well in disclosing that the possibility of violating Indian treaty rights in the project

area had been overlooked and, then, in bringing into direct consultation all concerned agencies and known interested parties. Unfortunately, as I have previously testified, the issue remains unresolved. There is a basic disagreement on how the treaty of 1855 is to be interpreted, not on how this project will impact on the fishery, a matter incidentally that the draft EIS did adequately address. We have explored the legal arguments carefully and, as the responsible Federal agency, have concluded that the evidence does not support the contention that the project will damage any guaranteed fishing rights of the Indians. In summary, the problem now is fundamentally a legal one and its resolution ultimately depends upon decisions that cannot be significantly influenced throught further extension of the EIS review process.

Senator STENNIS. In his letter, Mr. Whittlesey argues that this project would have to be canceled if evaluated under the terms of the "Principles and Standards for Water Resource Planning." Has this project been evaluated under these criteria?

Colonel DRISCOLL. No, Mr. Chairman. As Mr. Whittlesey correctly points out, the principles and standards may be applied selectively to authorized projects in those cases where the projects have not been funded. Since Congress appropriated construction funds for Catherine Creek in fiscal year 1973, it is not eligible for reevaluation under the principles and standards. However, I think it would be highly misleading to take this to mean that full consideration to social and environmental values has not been given. The project was developed in close coordination with State and other Federal agencies. We have thereby developed a great deal of information about the social and environmental implications of the Catherine Creek project and consider that its construction will clearly be in the best overall public interest.

Senator STENNIS. As a final matter, Mr. Whittlesey raises the possibility that the Umatilla Indians may have the exclusive right to fish on Catherine Creek based upon their understanding at the time the treaty was signed in 1855 that Catherine Creek would be considered as "running through or bordering" the reservation. Can you comment on this claim?

Colonel DRISCOLL. Mr. Chairman, we have been unable to find any substance whatsoever in the claim that this stream, which lies so completely apart from the designated reservation, could be construed as being a bordering stream. We feel the claim is a frivolous one that could be extended to include literally every water course in the Nation.

DAYS CREEK LAKE, OREG.

(PHASE 1 OF ADVANCE ENGINEERING AND DESIGN STAGE)

Senator STENNIS. There is nothing in the budget, and local interests have requested $300,000. What is your capability on this project?

General MORRIS. Mr. Chairman, our capability on this project is $300,000 to initiate phase 1 of the advance engineering and design stage.

Senator STENNIS. Would you submit a statement for the record?

General MORRIS. Yes, sir.

[The statement follows:]

Project: Days Creek Lake, Oregon (Phase I Advance Engineering and Design Stage)

Summarized Financial Data:

Estimated Appropriation Requirement	$131,000,000	
Future non-Federal Reimbursement	10,070,000	
Estimated Federal Cost (Ultimate)		$120,930,000
Estimated non-Federal Cost		10,070,000
Reimbursement: M&I Water Supply	2,543,000	
Irrigation	2,987,000	
Recreation	4,540,000	
Total Estimated Project Cost		$131,000,000
Allocations to Date		0
Balance to Complete		$131,000,000
Preconstruction Planning Estimate		$ 2,100,000
Phase I Estimated Cost	$ 400,000	
Balance to Complete after Phase I	$ 1,700,000	
Amount that could be used in FY 1975		$ 300,000

Authorization: Water Resources Development Act of 1974, for Phase I stage of advance engineering and design.

Location and Description: Days Creek Dam will be located on the South Umpqua River, about one mile upstream from the town of Days Creek, in Douglas County, Oregon. The proposed plan of improvement provides for construction of a rockfill dam 254 feet high to create a lake with a total storage capacity of 480,000 acre-feet for flood control, water supply, irrigation, water quality, recreation and fish and wildlife purposes.

Proposed Operations: The amount of $300,000 could be used to initiate Phase I of preconstruction planning.

Justification: Days Creek Lake would be operated in the interest of flood control, municipal and industrial water supply, irrigation, water quality control, fish and wildlife enhancement, and recreation. Runoff would be controlled from an area of about 640 square miles. Increased flows of adequate quantity and quality would be provided during dry periods for fishery enhancement and peak stages of floods would be reduced. During the December 1964 flood, the most severe of record, damages downstream of the Days Creek site amounted to $17,182,000 of which $13,230,000 would have been prevented by the project. The benefit-to-cost ratio is 1.3 to 1.

Average annual benefits are listed below:

Annual Benefits	Amount
Flood Control	$8,524,000
M&I Water Supply	225,000
Irrigation	202,000
Water Quality	284,000
Fish and Wildlife Enhancement	759,000
Recreation	1,305,500
Area Redevelopment	982,000
TOTAL	$ 12,281,500

STATUS OF ENVIRONMENTAL IMPACT STATEMENT: The Final Environmental Impact Statement was filed with CEQ on 6 October 1972. The Environmental Impact Statement will be updated during preconstruction planning.

OPPOSITION

Senator STENNIS. The Oregon Environmental Council, represented by Ms. Judith A. Neilson before this subcommittee has expressed opposition to providing funds for construction of the Days Creek project on the South Umpqua River, Oreg. While acknowledging that the basin experiences extremely low flows in the summer and serious flooding from time to time in the winter, the council maintains that this project may not be a solution. One major concern is that the reservoir may contain water of very poor quality and that adequate studies will not be completed prior to beginning construction. What is the situation on these studies?

Colonel DRISCOLL. Sir, recognizing the potential water quality problem, the Corps will make a detailed study to determine the potential for reservoir turbidity during the preconstruction planning phase. The turbidity study will be one of the first items in the preconstruction study and will be completed well in advance of construction.

Senator STENNIS. Another concern expressed by the council is that water stored by the project for streamflow augmentation might eventually be appropriated for other purposes, thereby eliminating a key project benefit. Would you comment on this possibility?

Colonel DRISCOLL. Yes, sir. The State of Oregon has indicated that it has the powers and will take appropriate action to prevent the possibility of streamflow augmentation water being used for other than authorized purposes.

Senator STENNIS. The council offers the opinion that possible nonstructural solutions to the flood problem have been inadequately addressed by the Corps, specifically land use planning together with the Federal flood insurance program, as an alternative.

Colonel DRISCOLL. Sir, nonstructural measures have been considered in the studies. However, nonstructural measures would be applicable only as a single-purpose partial solution to the flood problem. Flood plain zoning has now been adopted in Douglas County. This zoning will be complementary to structural measures for flood control, but will not eliminate the need for them. Nonstructural measures would not provide flow augmentation for fish life enhancement, irrigation, municipal and industrial water supply, recreation, and water quality control.

Senator STENNIS. What is your reaction to the proposal that funding for the construction of this project be withheld except for support of studies to resolve environmental questions?

Colonel DRISCOLL. Sir, under the terms of the Water Resources Development Act of 1974, this project is authorized to proceed only through the preconstruction planning phase. At this point, Congress must again review the project and decide if construction is to be authorized. The preconstruction planning will include a detailed restudy of the project, preliminary design of project features, and the development of a final environmental impact statement.

ELK CREEK LAKE, OREG.

Senator STENNIS. The budget request was $1,500,000. The House has included $1,500,000, and local interests have requested $5,500,000. What is your capability on this project?

General Morris. Our capability on this project is $5,500,000, Mr. Chairman.

Senator Stennis. What would be accomplished with the additional $4 million?

General Morris. The additional amount would be used to advance the award of the main dam contract from April 1975 to December 1974 which would provide a full construction season after mobilization and advance completion of project from June 1979 to June 1978.

OPPOSITION

Senator Stennis. The Oregon Environmental Council represented by Ms. Judith A. Neilson, has expressed opposition to the Elk Creek project, Oreg. The council points out that the environmental impact statement is inadequate and that critical turbidity studies have not been completed. The problem of turbidity was raised last year as a matter of principal concern. How are you progressing in resolving this issue?

Colonel Driscoll. Mr. Chairman, as I reported last year a great deal of basic data collection had been carried out for use in a mathematical model that is designed to predict turbidity levels and evaluate alternative operating procedures for turbidity control. Data from these studies will be available this summer for review and discussion with interested agencies. This will result in the development of project design features and operational procedures that, we are confident, will eliminate turbidity control as a serious concern. The environmental impact statement will be supplemented to reflect the results of these turbidity studies. A draft statement is scheduled for completion in the third quarter of fiscal year 1975 and a final by the second quarter of fiscal year 1976.

Scappose Drainage District, Oreg.

Senator Stennis. The budget request was $100,000. The House has included $280,000, and local interests have requested $580,000. What is your capability on this project?

General Morris. Our capability on this project is $580,000, Mr. Chairman.

Senator Stennis. What would be accomplished with the additional $480,000?

General Morris. The additional amount would be used to award a contract in fiscal year 1975 for the levee and pumping plant which would advance project completion from June 1977 to December 1976.

Willow Creek Lake, Oreg.

Senator Stennis. There is nothing in the budget, and local interests have requested $500,000. What is your capability on this project?

General Morris. Sir, we have no capability since the project, as now proposed, is significantly different from the authorized project and will require enactment of modifications to the authorizing legislation prior to initiation of construction. During our phase 1 general design memorandum studies it was determined that storage for irrigation, water supply, and water quality control should be deleted from the project.

Since deleting irrigation and water supply would change the local cost-sharing requirements specified in the authorizing legislation, we now regard congressional authorization of the modified plan to be necessary.

POINT MARION LOCK, PA.

Senator STENNIS. There is nothing in the budget. The House has included $75,000, and local interests have requested $75,000. What is your capability on this project?

General MORRIS. Mr. Chairman, our capability on this project is $75,000 to initiate preconstruction planning.

Senator STENNIS. Would you submit a statement for the record?

General MORRIS. Yes, sir.

[The statement follows:]

Project: Point Marion Lock, Monongahela River, Pennsylvania

Summarized Financial Data:

Estimated Federal Cost (Corps of Engineers)	$29,800,000
Estimated non-Federal Cost	108,000
Total Estimated Project Cost	29,908,000
Allocations to date	0
Balance to Complete (Corps of Engineers)	29,800,000
Preconstruction Planning Estimate	775,000
Amount that could be used in FY 1975	75,000

Authorization: 1909 River and Harbor Act, Section 6.

Location and Description: The proposed project is located in Greene and Fayette Counties, Pennsylvania, in the vinicity of Point Marion, 90.8 miles above the mouth of the river at Pittsburgh, Pennsylvania. The project will consist of replacement of the existing 56' x 360' lock with a modern 84' x 720' lock, landward and adjacent to the existing lock.

Proposed Operations: The amount of $75,000 would be used to initiate preconstruction planning for the replacement of the existing Lock 8, Monongahela River, Pennsylvania.

Justification: Replacement of existing Lock 8 is a unit in the overall plan of improvement along the Monongahela River for orderly replacement of old and obsolete navigation facilities. The replacement of Lock 8 together with the construction of Grays Landing Lock and Dam to replace existing Lock and Dam 7, will complete the currently planned modernization program in the middle and upper reaches of the river except for the future replacement of Locks 4.

Existing Lock 8, which was constructed during the period 1923-1926, is obsolete and is near the end of its economic life. The dam was reconstructed in 1958-1959 to provide a movable crest and raise Pool 8 by four feet. The existing 56-foot by 360-foot lock is inadequate to efficiently pass the present and prospective volume of traffic. Consequently, the existing and growing traffic demand on the existing facilities will accelerate structural deterioration with a consequent increase in breakdowns and in the cost of maintenance and repairs. The resulting interruptions to traffic required to make such repairs will pyramid delays to navigation to the point of creating intolerable conditions. Therefore, the early replacement of the existing locks is essential to maintain and extend the efficient and economical operation of the Monongahela River navigation system.

The proposed project is located in Fayette and Greene Counties, Pennsylvania. Fayette County has been designated a redevelopment area under Title IV of Section 401 (a)(1) of P.L. 89-136 by the Secretary of Commerce. Fayette and Greene Counties are located in Appalachia as well as all the surrounding counties.

The benefit-cost ratio is 1.3 to 1. The total annual benefits of $2,947,000 are broken down as follows:

Navigation	$2,480,000
Area Redevelopment	467,000
Total	$2,947,000

Status of Environmental Impact Statement: The Final Environmental Statement was filed with CEQ on 18 October 1973.

Presque Isle Peninsula, Pa.

Senator Stennis. There is nothing in the budget, and local interests have requested $750,000. What is your capability on this project?

General Morris. Mr. Chairman, our capability on this project is $750,000 to reimburse the Commonwealth of Pennsylvania for the Federal share of the costs of beach replenishment.

Senator Stennis. Would you submit a statement for the record?

General Morris. Yes, sir.

[The statement follows:]

Presque Isle Peninsula, Erie, Pa. (Reimbursement)

Summarized financial data

Estimated Federal cost	$5,646,000
Estimated non-Federal cost	3,983,000
Cash contribution	0
Other	3,983,000
Total estimated project cost	9,629,000
Allocations to date	2,186,000
Balance to complete	3,460,000
Amount that could be utilized in fiscal year 1975	750,000

Authorization.—1954 and 1960 River and Harbor Acts, and 1974 Water Resources Development Act.

Location and Description.—Presque Isle Peninsula, located on the south shore of Lake Erie at Erie, Pennsylvania, is a sand spit projecting from the mainland shore and has a lake shore line over 6 miles long. The project consists of a seawall and groins and provides for Federal participation in the cost for periodic replenishment of sand.

Proposed Operations.—The amount of $750,000 would be used to reimburse the Commonwealth of Pennsylvania for the Federal share of the costs of beach replenishment to be initiated in August 1974 and completed in June 1975.

Justification.—Presque Isle Peninsula is a sand spit projecting from the mainland shore and has a lake shore line over 6 miles long. The large bay between the peninsula and the mainland provides a spacious harbor which has been improved by the Federal Government under the navigation project for Erie Harbor. The peninsula provides valuable protection to the harbor. Presque Isle State Park comprising about 3,200 acres occupies practically the entire peninsula. The park is a popular area for bathing, boating, fishing and other forms of outdoor recreation. The average annual attendance for the past nine years was over 3,000,000 persons who have had free and unrestricted access to the park. The lake shore of the peninsula is exposed to wave attack causing recession of the shoreline and erosion of the sand beach. On several occasions the narrow neck of the peninsula was breached by storm wave action. The supply of beach material from bluffs and streams has been insufficient to replace material eroded. The River and Harbor Act of 1954 provided for artificial placement and periodic replenishment of sand fill and construction of a seawall, bulkhead and a groin system to protect against erosion. Modification to six of the groins was necessary to insure stability and proper function. Studies of sand movement after completion of construction of the protective structures confirmed the necessity for periodic nourishment to maintain a suitable protective and recreational beach. The River and Harbor Act of 1960 authorized Federal participation in the cost of periodic replenishment for a period of 10 years from the date of the first major replenishment. The 1974 Water Resources Development Act reinstated and extended Federal participation in accordance with the provisions of the 1960 River and Harbor Act, for a period of five years from the date of enactment (March 7, 1974). The benefit-cost ratio is 1.8 to 1.

Status of Environmental Impact Statement.—An environmental impact statement will not be prepared. This is a continuing beach replenishment project and anticipated environmental impacts are not of sufficient significance to warrant formal filing of an EIS.

RAYSTOWN LAKE, PA.

Senator STENNIS. The budget request was $2,200,000. The House has included $2,500,000, and local interests have requested $4,500,000. What is your capability on this project?

General MORRIS. Our capability on this project is $4,500,000, Mr. Chairman.

Senator STENNIS. What would be accomplished with the additional $2,300,000?

General MORRIS. The additional amount would be used to advance completion of the project 5 months to June 1976.

TIOGA-HAMMOND LAKES, PA.

Senator STENNIS. The budget request was $18 million. The House has included $18 million, and local interests have requested $22,400,000. What is your capability on this project?

General MORRIS. Our capability on this project is $22,400,000, Mr. Chairman.

Senator STENNIS. What would be accomplished with the additional $4,400,000?

General MORRIS. The additional amount would be used to continue construction. The additional amount would expedite work placement of the dam and appurtenances contracts to assure project completion date of November 1977.

TOCKS ISLAND LAKE, PA., N.J., AND N.Y.

Senator STENNIS. The budget request was $6,040,000. The House has included $8,490,000, and local interests have requested $8,490,000. What is your capability on this project?

General MORRIS. Our capability on this project is $8,490,000, Mr. Chairman.

Senator STENNIS. What would be accomplished with the additional $2,450,000?

General MORRIS. The additional amount would be used to continue real estate aquisition and initiate construction, subject to successful resolution of (1) questions raised by CEQ concerning eutrophication, and (2) questions raised within the Delaware River Basin Commission concerning secondary effects upon feeder highways that may result from the planned level of recreational development.

EFFECT OF INFLATION

Senator STENNIS. Please update the committee on the effect of inflation on the Corps construction program.

General MORRIS. On a June-to-June basis over the past 4 years, increases in the Engineering News Record construction index have varied from 15.2 percent, to 8.7 percent, to 10.7 percent, and to the present 5.1 percent annual rate. The rate of increase appears to be lessening, but the rate is irregular and still substantial. Increases of this magnitude and irregular nature detrimentally affect the program in two ways. First and most obvious, is that it costs more for the same

work. Second and less obvious, is that contractor bids undoubtedly include greater contingency amounts in view of the irregular rate at which costs to the contractor are increasing. The effect is greater as the contract performance period is longer because the uncertainties become greater.

LAND ACQUISITION POLICY

Senator STENNIS. Colonel Withers, there have been some allegations made with respect to land acquisition practices at the Tocks Island Lake and Delaware Water Gap National Recreation Area. What is generally the Corps of Engineers' policy with respect to land acquisition at these projects?

Colonel WITHERS. In the acquisition of land required for Federal projects, it is our objective to pay a price that is fair to the landowner as well as the Government. Before negotiations are initiated with owners for the purchase of their land, the properties are appraised by a qualified appraiser on the staff of the Army Corps of Engineers or by a professional appraiser under contract with the army. The appraisal is developed on the basis of concepts of fair market value as defined by the Federal courts. Each completed appraisal is reviewed by a senior reviewing appraiser to assure that it is properly prepared, adequately supported by open market transactions of comparable properties, and consistent with the appraisal of other similar properties. Negotiations with the owners are based on the approved appraisal estimate and are conducted in the same manner as normally practiced between willing buyers and willing sellers. Landowners are furnished with brochures regarding their rights under the Uniform Relocation Assistance and Real Property Act of 1970, Public Law 91–646. In such actions, Corps representatives are available to answer any questions that the landowners may have regarding the acquisition of their property and any rights they may have under Public Law 91–646.

Senator STENNIS. There has been a statement made regarding the acquisition of Minisink Island. Could you briefly state the background of that acquisition?

Colonel WITHERS. Yes, sir. The acquisition of that property consisted of two tracts, 379 acres comprising Minisink Island and a 271 acre portion including riverbank lots on the adjacent shore. This property was acquired by the United States for $650,000 on May 23, 1973, following negotiations which extended over a period of 14 weeks. The negotiations were based on an appraisal in the amount of $608,700 which was prepared as of November 12, 1971, by a professional appraiser under contract with the Government. The appraisal report cited seven open market sales of comparable properties in the vicinity in support of the estimate of fair market value. The appraiser was aware of the fact that between 1968 and 1969 the subject property sold for a total of $396,600, but after extensive conversation with both the buyers and the sellers, the appraiser concluded that the property was sold below market value. In fact, one of the sellers admitted that he believed he received less than the market value, but at that time he was anxious to sell. Furthermore, the value of a parcel of real estate is not based entirely on its purchase price but on what it would sell for on the current open market. The negotiations with the owners were conducted in accordance with our established procedure. The Gov-

ernment's negotiator was receptive to an open discussion of the land value and gave consideration to the owners' views in resolving the difference of opinions as to what constituted a fair and reasonable price. The Government's initial offer in the amount of the approved appraisal estimate was rejected and a counteroffer of $1 million was made. Continued negotiations resulted in the receipt of a final counteroffer of $650,000, which was accepted an behalf of the Government.

Senator STENNIS. There has been some testimony regarding the acquisition of property from Mr. and Mrs. Anderson who owned a summer home in the Walpack Township, N.J., and who have not yet received the money for the property. Could you explain this?

Colonel WITHERS. Mr. and Mrs. John F. Anderson owned an interest in a tract of land which has been designated as 6245. This tract is in the Skyline Acres Development which overlapped an earlier development of the Blue Mountain Lake Development Co., Harding Lake Subdivision. When it became impossible to ascertain the respective interests of the owners in these properties, a complaint in condemnation was filed and the Federal courts requested to determine the owners in each tract. On June 27, 1974, there will be a hearing in the Post Office and Court Office Building in Newark, N.J., at 10 o'clock. The Andersons should have received notice of this hearing. It is unfortunate that the Andersons could not have been paid earlier since they did sign an offer to sell to the Government in 1969. However, they were aware their title to the property was bad and I hope this matter can be cleared up by the Federal courts in the near future.

Senator STENNIS. Colonel Withers, there has been a statement that several elderly people, including Miss Anna Fernlund and Mrs. Anne Oftedal have had to remain in their homes after they sold to the Government because they cannot find comparable replacement property.

Colonel WITHERS. With respect to Miss Fernlund, her property was originally appraised when the dwelling was partially completed, that is, there was no heat, no toilet facilities, no water or other utilities. At that time, Miss Fernlund lived in New York City, and was not living on the property in the project area. We were able to reach agreement as to the price and although she signed an offer to sell she refused to sign a deed. Subsequent to the acceptance of her offer to sell, she finished her house and moved in.

Since Miss Fernlund would not give us a deed we had to condemn this property. However, I understand that this case has now been settled. As to Mrs. Oftedal, an offer to sell was accepted in June 1969. She was permitted to remain in her house until August 14, 1970. Although she no longer has any legal right to possession, she has remained on the property. She has not filed a claim for any other expenses to which she may be entitled. Our relocations people have contacted her to see if they can give her any assistance in relocating. However, they will contact her again and if she is not able to come to our office we will bring her to the project office and make all information available to her.

RELOCATION ASSISTANCE

Senator STENNIS. Colonel Withers, in this regard what kind of relocation assistance do you give to people?

Colonel WITHERS. The Corps project office at East Stroudsburg, Pa., has compiled a considerable amount of material regarding relocations. Since it is of considerable bulk, it can not be taken out of the office; however, it is available to anyone who must move because of Government acquisition. In fact, people do use this material at the office every day. As I stated earlier, if people are not able to come in by themselves, the Corps will bring them into the office to make use of this material. A Corps representative is always available to assist people in using these records. Our records are updated daily to show the current home situation in this area. People are also available to assist claimants in the filing of their claims and we request any landowner to come into the office for assistance.

Senator STENNIS. In areas where you acquire these properties who maintains the roads?

Colonel WITHERS. The dedicated roads are being maintained by the political subdivision which has responsibility in that area. As to the nondedicated roads, it was the prior practice of the property owners to maintain these roads at their expense. In the Delaware Water Gap National Recreation Area these nondedicated roads may not be maintained because the landowners' association who provided the money for such maintenance may not be in existence. These roads are not being maintained by the Federal Government or local government since they are not Federal, State, or county roads, but only privately owned roads.

Senator STENNIS. As I recall, in last year's testimony, there was considerable space given to the concerns of Mrs. Mina Haefele concerning land acquisition practices. Mrs. Haefele has provided testimony again this year stating that no action has been taken to investigate last year's complaints. Can you enlighten me on this?

CORRESPONDENCE

Colonel WITHERS. Sir, as a result of Mrs. Haefele's comments last year, we tried to investigate the situations which she brought to your attention. We wrote to Mrs. Haefele and I would like to include her response in the record. Without the names of the persons involved or more specific identification, we have been unable to verify any of her complaints. However, we are continuing to work with the Department of Justice in an attempt to gather any facts relating to Mrs. Haefele's allegations.

Senator STENNIS. The letter to which you referred will be included in the record at this point.

[The letter follows:]

SAVE THE DELAWARE COALITION,
Philadelphia, Pa., November 27.

Colonel SELLECK,
Corps of Engineers, Department of the Army,
Philadelphia, Pa.

DEAR COLONEL SELLECK: Thank you for your letter of November 23. I regret that I have been unable until now to follow up on the call of Major TenBrook's secretary.

I have written Senator Clifford Case to the effect that I do not feel that a meeting could or would be productive for either the Army Corps of Engineers or for the Delaware Valley Conservation Association. This is for the following reasons:

(1) Discrepancies in prices paid for properties in the Tocks Island area. This

issue obviously cannot be resolved by the quoting of selected excerpts from appraisal reports either by the Army Corps of Engineers or by the Delaware Valley Conservation Association. It would seem that the only way this data can be objectively and fairly assessed would be by an independent and impartial review by a board of appraisors not party to the discussion.

(2) Examples of intimidation and harassment. As I have already informed the Senator, the DVCA cannot reveal to you the names and addresses of persons referred to in my May 14 testimony. These individuals were only willing to talk to the DVCA after we had promised to protect their identity. It is clear that the incidents cited in the May 14 testimony can only be verified or denied if the individuals involved are identified. This is a step the DVCA will be very willing to take when a third party, neutral, unbiased agency or committee is involved in the investigation.

Given these circumstances we see no way in which a meeting can be useful. If there is any information aside from the material mentioned in this letter that I feel I can provide you with, I would be happy to do so. Thank you for your interest and consideration.

Sincerely yours,

MINA HAEFELE, *Vice-President.*

OPPOSITION

Senator STENNIS. Mr. Joel M. Pickelner, Conservation Counsel for the National Wildlife Federation, made the statement that the Tocks Island Lake project should not move ahead until the Corps of Engineers has resolved some serious environmental questions particularly with respect to the probable eutrophication of the reservoir, nonpoint pollution sources above the dam mainly from poultry and other farming operations, and maintenance of fishery resources in the dam area. Mr. Thomas H. Cahill also raises the question of eutrophication.

Colonel WITHERS. These points are of great concern and have been raised by others in previous years. With respect to euthrophication, the Corps, acting on its own initiative and in close coordination with the Delaware River Basin Commission, has thoroughly investigated the lake water quality with emphasis on predicted eutrophic conditions. The essence of the findings of several independent investigations into the matter is that euthrophication is not likely to occur. As an added precaution, we have also investigated the most conservative, or worst case, situation of "assuming eutrophication, what would the implications then be?" Our analysis of this unlikely contingency shows that Tocks Island Lake could be managed by routine water quality management programs in such a way as to keep the eutrophication process under control and within acceptable limits. These operating procedures would be comparable to those employed at other lakes and reservoirs throughout the Nation. In sum, we do not believe that Tocks Island Lake will eutrophy, but if remedial measures are proven necessary, we expect that their costs will be insignificant with respect to the project's total cost.

With respect to nonpoint pollution sources above the dam, this is, of course, also related to the water quality in Tocks Island Lake. Actions have been taken by the Delaware River Basin Commission and by the State and Federal Governments to abate problems created by the influx of nutrients into the impoundment areas. The DRBC and the three States bordering upon the project already have established water quality standards which are to be enforced by the States. These standards are applicable to both point and nonpoint sources. With respect particularly to poultry farming, there has been a trend develop-

ing over the past 3 years which shows the poultry population of the upstream area has been reduced by 0.4 to 0.5 million birds, diminishing significantly the phosphate input into the basin. This trend, however, does not negate the reguirement for DRBC and State actions to meet water quality standards.

The sport fishery question was addressed at length in the July 1971 report of the U.S. Fish and Wildlife Service. The report, the work of an interdisciplinary task force, found that a good-to-excellent diverse fishery was anticipated for Tocks Island Lake. There will be fish passage provisions during the construction period. The design of the fish ladder has been coordinated with the affected interests through the Fish and Wildlife Technical Advisory Committee and has been specifically designed to meet their standards.

PRESERVATION OF HISTORIC STRUCTURES

Senator STENNIS. I notice in testimony offered by Ms. Jean D. Zipser, the Delaware Valley Conservation Association, and Owen Kanzler, and in newspaper articles in the Blairstown Press, New Jersey, the Express, New Jersey, and The Pocono Record, Pennsylvania, that neither the Corps of Engineers nor the National Park Service are taking the required steps to preserve the historic structures within the project. Can you please comment on this?

CORRESPONDENCE

Colonel WITHERS. Yes, sir. The Corps of Engineers has been working very closely with the National Park Service in an effort to preserve the history of cultural development in the area as well as to preserve historic structures within the requirements of Executive Order No. 11593. In many instances the two agencies share costs to accomplish these preservation actions. The preservation program is utilizing the best expertise available, whether from Federal or State governments or from colleges, universities, and historical societies. I would like to include, for the record, a copy of a letter dated October 4, 1973 from the National Park Service in reply to a letter from Ms. Jean D. Zipser dated September 10, 1973.

Senator STENNIS. Without objection the letters will be placed in the record at this point.

[The letters follow:]

United States Department of the Interior
NATIONAL PARK SERVICE
NORTHEAST REGION
143 SOUTH THIRD STREET
PHILADELPHIA, PA. 19106

October 4, 1973

Ms. Jean D. Zipser
River Road
Columbia, New Jersey 07832

Dear Ms. Zipser:

We appreciate the opportunity to supply information concerning the questions raised in your letter dated September 10 to Congressman Maraziti, regarding the National Park Service treatment of historical and cultural resources in the Delaware Water Gap National Recreation Area.

Beginning in 1963, with the contract for Lehigh University to inventory the historical resources of the proposed area, the National Park Service has expended a great deal of effort and talent in identifying and evaluating such resources, and planning for their optimum use and preservation as a part of the park's interpretive programs. Following this, an Historic Structures Study, Part I, for the entire area was completed. This included a careful examination of 213 buildings. A breakdown follows:

Buildings surveyed in Pennsylvania		73
In flood zone	50	
Outside flood zone	23	
Buildings surveyed in New Jersey		140
In flood zone	54	
Outside flood zone	86	

In the summer of 1967, treatment of selected buildings was begun by the Historic American Buildings Survey Team. Before the program was temporarily halted at the conclusion of the 1971 season, 37 structures were measured, photographed, and historic narratives prepared. These were almost equally divided between the States of Pennsylvania and New Jersey.

Thirty structures have been recommended for inclusion in the State and Federal Registers of Historic Sites, with a number including the Millbrook Historic District yet to be recommended. It is anticipated that the Charles S. Peirce House in Pike County, Pennsylvania, and possibly others, will be added shortly.

A combination of 162 major structures and dependencies were recommended for retention for interpretive and other culturally oriented purposes in the national recreation area. Twenty-two located in the flood zone are scheduled for removal from the reservoir by the U. S. Army Corps of Engineers for project uses elsewhere in the area. Seven in the reservoir area will be saved in place by diking. Nine structures were removed from the list because they have been found structurally unsuited for relocation.

All of our actions regarding buildings have been guided by the National Park Service procedures for preservation of historical values. Although buildings are periodically razed as a part of the acquisition process, they are nonetheless subject to comparable consideration and review for historical values.

With respect to the Millbrook Village assemblage, our classification of buildings to be retained is not based principally on historical values, but on potential for providing settings that would enhance cultural interpretive programs and general visitor interest.

Sincerely yours,

Joseph J. Konkoski
Acting Regional Director
Northeast Region

NUCLEAR POWERPLANT COOLING WATER

Senator STENNIS. Some of the testimony provided implies that the main purpose of the Tocks Island Lake project is to provide cooling water for nuclear powerplants sited downstream of the project. Would you care to comment on this?

Colonel WITHERS. Yes, sir. The studies by the Corps of Engineers which led to the authorization of Tocks Island Lake did not identify cooling water for nuclear plants as a major requirement of the project. The major needs to be met were for domestic and industrial water supply and agricultural use. While the needs may vary over time, we still do not envision that cooling water will be an output of the project. It should be noted, however, that the allocation of water for water supply purposes is within the province of the Delaware River Basin Commission, not the Corps of Engineers. The Commission has provided assurances that it has an ultimate need for all of the water supply storage capability of the project but has not specified whether any will be allocated for cooling water purposes. I might add that the eight Delaware River basin projects authorized by the Congress under the Flood Control Act of 1962 will only be adequate to meet the projected water supply needs to the year 2000.

FEASIBILITY OF POWER

Senator STENNIS. Testimony offered by the Lenni Lenape League seems to imply that neither conventional power nor pumped-storage power are economically feasible at this project. Can you explain this?

Colonel WITHERS. Sir, I would like to emphasize that both conventional power and pumped-storage power are economically feasible at this project, otherwise, neither method of power development could be a project purpose under the rules of formulation set forth in Senate Document No. 97. It is true that the quantity of power which could be developed by conventional hydroelectric power concepts at this project would be relatively small, about 70 megawatts. This is because the dam is a low-head dam and the quantity of water available for development of power is relatively small when compared to the large power dams in the West. Pumped-storage power, on the other hand, can produce 1,250 megawatts of power, or approximately 18 times as much power as that which can be produced by conventional means. This type of power is sorely needed in the basin and this is the most feasible site for such a development in the basin. If this type power is not developed, the needed capability must be provided by additional fossil fuel, gas turbines, or nuclear plants, all of which have associated environmental problems.

PROJECT ALTERNATIVES

Senator STENNIS. I cannot help but notice, in so much of the testimony in opposition to this project, that reference is continually made to other available alternatives to the project. I understand that Congressman Maraziti also makes this point. Exactly what are these alternatives?

Colonel WITHERS. Sir, the Tocks Island Lake project is the least costly alternative available consistent with the needs of the basin area. Other alternatives evaluated include: Flood plain zoning; flood proofing of structures; a series of dams on the tributaries which would provide an equivalent amount of storage; high-flow skimming; desalinization of salt water; importation of water; fossil fuel generating plants; gas turbine generating plants; alternative recreation sites; and, of course, the alternative of no project. The available alternatives first of all do not develop the available resource to the highest and best use as is the objective for water resource development, also, the available alternatives result in fragmented developments to meet the basin needs, require a substantially higher development cost, and additionally have related environmental effects which also are objected to by some of the opponents of Tocks Island. Sir, we firmly believe that we have exhausted all possibilities of finding a more feasible alternative than that authorized.

Senator STENNIS. As I recall, there has been testimony given at previous hearings and again this year, to the effect that a project comparable to the proposed Tocks Island project could be constructed on tributaries to the Delaware, rather than on the main stem. Would you care to comment on this?

Colonel WITHERS. Yes, sir. During formulation of the comprehensive plan for development of the water resources of the Delaware River basin, an inventory was made of possible reservoir projects in the basin. This inventory listed 193 reservoir sites which were then listed in an "order of merit" based on indices of cost and worth of short-term and long-term storage. Based on this "order of merit," it would require the construction of seven reservoirs on tributaries of the Delaware to obtain storage capacity equivalent to that what would be available at the Tocks Island project. Construction of those seven alternative reservoirs would, of course, be much more costly than the proposed project in terms of construction cost, operations and maintenance costs, and environmental impact.

Senator STENNIS. Many sportsmen, such as the New Jersey State Federation of Sportsmen's Clubs, the Sierra Club, the Federation of Fly Fishermen, and others have spoken out against this project because of its possible impact on fish and wildlife.

Colonel WITHERS. The Corps of Engineers has a great concern for the preservation and enhancement of the fish and wildlife populations at its projects. With respect to this project, we believe the thorough investigations and planning that have been conducted show that we will not only mitigate the suggested losses to fish and wildlife, but improve the situation and provide a better opportunity for conservation than would otherwise exist under uncontrolled development patterns, which, experience indicates, will occur with the passage of time.

WATER SUPPLY ALLOCATION

Senator STENNIS. Would you briefly review for me the presently projected allocations for use of the water supply from this project?

Colonel WITHERS. Sir, I can best do this by giving you percentages of consumptive use of the water for the various purposes as projected for the year 2000 in a study by the Delaware River Basin Commission.

	Percent		Percent
Rural domestic	0.4	Irrigation	20.0
Municipal	11.3	Livestock water	.5
Industrial, self-supplied	16.1	Exportation	37.8
Steam electric power	13.9		
		Total	100.0

Of the projected 1,227 million gallons per day required in the basin to replace depleted water by the year 2000, the eight federally authorized Delaware River basin projects can provide 1,021 million gallons per day with 633 million gallons per day of this amount scheduled to be provided by the Tocks Island Lake. The added function which the Tocks Island Lake project provides is the yield of 194 million gallons per day to adequately control the salinity condition in the estuary and prevent the intrusion of salt water above the mouth of the Schuylkill River.

Senator STENNIS. Various testimony received, such as that from the Appalachian Mountain Club, indicates that the organizations would prefer that the Delaware Water Gap National Recreation Area be developed without the Tocks Island Lake project. Do you have any comment on this?

Colonel WITHERS. Sir, we feel that the construction of the Delaware Water Gap National Recreation Area without Tocks Island Lake would severely curtail recreational opportunities for bathing, boating, and fishing. Essentially this same comment was made last year and our position has not changed. Last year at the recall hearings, we stated:

> Subsequent to authorization of the Tocks Island Lake project the recreational potential of the project area was recognized. In 1965, the Delaware Water Gap National Recreation Area was authorized by Public Law 89–158 as part of the Tocks Island project. With regard to separating the National Recreation Area from the Tocks Island project, it is the opinion of the Corps of Engineers that Public Law 89–158 makes existence of the National Recreation Area contingent upon existence of the Tocks Island project and that no authority exists for completion of the National Recreation Area if the Tocks Island project is not built.

Senator STENNIS. Dr. L. M. Rymon of the East Stroudsburg State College seems to conclude from his analysis that the project will be a detriment to wildlife. Would you please comment on this?

Colonel WITHERS. Yes, sir. The total land acreage to be acquired for both projects is approximately 75,000 acres. Of this, approximately 12,500 acres will be inundated by the lake and perhaps another 2,500 acres will be set aside for high-intensity use. The remaining 60,000 will be available for low-intensity use and management of wildlife. This will allow ample space for secluded game lands and activities by man will be monitored and controlled in these areas to prevent degradation of the wildlife habitat and reduction of species.

COORDINATION OF EIS

Senator STENNIS. I note here in the testimony by the environmental defense fund that the environmental impact statement which was

prepared by the Corps of Engineers was not coordinated with the Delaware River Basin Commission. Is this true?

Colonel WITHERS. No, sir. The Basin Commission reviewed the statement and submitted their comments to the Philadelphia District Engineer in a letter dated October 6, 1970. This letter is reproduced as pages H–1 and H–2 of the impact statement.

Senator STENNIS. Was the Tocks Island Lake project evaluated by itself or was it evaluated as part of the basin plan?

Colonel WITHERS. As you know, sir, the Tocks Island Lake project was one of the eight projects authorized for construction by the Congress as a result of the basin-wide comprehensive study. This project has been analyzed both by itself and as part of the basin plan.

IMPACT ON SPORT FISHERIES

Senator STENNIS. Several of the organizations and persons who provided testimony seem to conclude that the project will have a negative effect on the sport fisheries. What can you tell me about this?

Colonel WITHERS. The project will have little, if any, negative effect on the sport fisheries. Some anadromous fish, such as the sea bass, do not transit the river as far north as the project. Shad, however, transit the river even beyond Hamilton, N.Y., to reach spawning grounds. A fish ladder will be provided in the project at a cost in excess of $7,750,000 to pass an estimated prospective upstream migration of 1 million shad annually. This ladder is so designed that it will also effectively pass the downstream migration. A fish-counting station will be provided to monitor species and numbers of fish transiting the dam. The lake will be so managed as to provide good sport fishing while still controlling the "trash" fish population. Some of the best fishing in the area should be available at the outfall for the lake. Trout will still be available upstream and downstream of the project and in the tributaries to the lake. Species such as pike, pickerel, muskellunge and bass should be available in large quantities in the impoundment. Strategically placed fishing piers will provide an added attraction.

Senator STENNIS. It seems that much of the opposition to this project centers in those counties where the project is located. As I recall, these counties are Pike and Monroe Counties in Pennsylvania and Warren and Sussex Counties in New Jersey. Is there a reason for this?

Colonel WITHERS. Yes, sir, there is. The reason for this opposition on the part of those residing in the area is due to the need to displace many of the inhabitants who live in this scenic valley. The project brings with it disruption to their life style, which some have known over a long period of time. There is no question that the project will have a significant impact on those residents affected. In addition, the counties, for the most part, will not benefit from the flood control capability of the project, nor will these people benefit from the project storage to provide the needed water supply in the areas downstream of the project. I might add that the inhabitants in the project area enjoy a bountiful supply of water and have an ample supply of power for the relatively sparse population existing there. Concern also exists that a project of this magnitude will bring a large influx of people to the residents' rather private area. I might add, sir, that with the reloca-

tion of people and subsequent decrease in the tax rate base, an additional temporary tax burden will be placed on those residents remaining. So you see, sir, the residents in the area affected do not appear to have a great deal to gain.

PORTUGUES AND BUCANA RIVERS, P.R.

Senator STENNIS. There is nothing in the budget, the House has included $1,500,000, and local interests have requested $1,500,000. What is your capability on this project?

General MORRIS. Mr. Chairman, our capability on this project is $1,500,000 to initiate construction.

Senator STENNIS. Would you submit a statement for the record?

General MORRIS. Yes, sir.

[The statement follows:]

Project: Portugues and Bucana Rivers, P.R.

Summarized Financial Data:

Estimated Total Appropriation Requirement		$ 92,900,000	
Future non-Federal Reimbursement		27,079,000	
Estimated Federal Cost (Ultimate-Corps of Engineers)			$ 65,821,000
Estimated non-Federal Cost			54,819,000
Cash Contribution	$ 27,740,000		
Reimbursement:			
Water Supply	25,685,000		
Recreation & Fish & Wildlife Enhancement		$ 1,374,000	
Total Estimated Project Cost			120,640,000
Allocations to Date			897,200
Balance to Complete (Corps of Engineers)			92,002,800
Preconstruction Planning Estimate			897,200
Amount that could be used in FY 1975			1,500,000

Authorization: 1970 Flood Control Act.

Location and Description: The proposed improvements are in and near Ponce in the Portugues and Bucana Rivers on the south coast of Puerto Rico. The proposed work consists of: enlargement of about 5.7 miles of Bucana River with 0.2 mile of tieback levee at the upper end; enlargement of about 2.1 miles of Portugues River with 0.5 mile of tieback levee at the upper end; construction of a diversion dam and 1.3 miles of diversion canal to connect Portugues River to Bucana River. The diversion dam provides a gated culvert to maintain low flows in Portugues River downstream of the diversion canal. The proposed improvements will provide essentially full standard project flood protection to the Ponce area. A multipurpose dam and lake will be constructed in each of the two rivers, Portugues and Bucana, which will provide flood protection, dependable water supply for Ponce, and recreational features. The dams will be rockfilled with uncontrolled overflow spillways, intake towers and outlet conduits.

Proposed Operations: The $1,500,000 could be used to initiate construction of the project.

Justification: The topographic and rainfall characteristics of the Portugues, Cerrillos, and Bucana Rivers Basins produce extremely high runoff rates and frequent flooding in Ponce. A major flood on today's development would result in catastrophic property loss and a serious threat to life. The Ponce area also lacks a dependable source of water for urban, industrial, and agricultural needs. The project is in a redevelopment area. Numerous residential and commercial expansion programs contigent on project flood protection are underway or in advance planning stages. Also, several proposed new highways crossing the lower basin are ready for construction or under design. The channel project, therefore, has a very high Commonwealth priority. The benefit-cost ratio is 1.6 to 1. Average annual benefits are broken down as follows:

Flood Control	$ 8,975,100
Water Supply	2,899,600
Recreation	763,600
Area Redevelopment	320,800
TOTAL	12,959,100

Status of Environmental Impact Statement: An updated final EIS was filed with CEQ 25 February 1974.

Cooper River-Charleston Harbor, S.C.

Senator Stennis. There is nothing in the budget, and local interests have requested $1,825,000. What is your capability on this project?

General Morris. Mr. Chairman, our capability on this project is $1,825,000 to initiate construction.

Senator Stennis. Would you submit a statement for the record?

General Morris. Yes, sir.

[The statement follows:]

Project: Cooper River - Charleston Harbor, S.C.

Summarized Financial Data:

Estimated Federal Cost (Corps of Engineers)	$74,000,000	1/
Estimated non-Federal Cost	0	
Total Estimated Project Cost	74,000,000	
Allocations to Date	1,500,000	
Balance to Complete Corps of Engineers)	72,500,000	
Preconstruction Planning Estimate	1,500,000	
Amount that could be used in FY 1975	1,825,000	

Authorization: 1968 River & Harbor Act.

Location and Description: The Cooper River is located in Charleston and Berkeley Counties, South Carolina. The project objective is solution of the shoaling problem in Charleston Harbor stemming from high freshwater discharges into the harbor via Cooper River. This fresh-water inflow, in addition to being silt laden, creates a silt trapping effect in the harbor through a saltwater-freshwater density current phenomenen. The recommendations include construction of a diversion canal from Lake Moultrie, on the Cooper River, to the Santee River to divert 80 percent of the discharges from the harbor. Water diverted to Santee River via the project canal will be utilized to generate electrical energy with an 84,000 kw hydroelectric power plant to replace that energy lost due to reduction of flow into the Cooper River.

Proposed Operations: The $1,825,000 could be used to initiate construction of the project, subject to submission of a Post Authorization Change.

Justification: Project justification is based on benefits to navigation through reduction in maintenance dredging, substantial benefits to commercial shipping, and recreational benefits from fish and wildlife enhancement. The spoil area availability in Charleston Harbor has reached a critical position. Adequate nearby lands on which to deposit future dredged materials are limited at the present rate of sediment deposition; however, under project conditions the useful life of present spoil areas will be greatly extended. The benefit cost ratio is 2.5 to 1. Average annual benefits are broken down as follows:

(Exclusive of net power benefits)		
Navigation	$5,256,000	
Fish and Wildlife	244,000	
Area Redevelopment	194,000	
TOTAL	$ 5,694,000	1/

1/ Pending approval

Status of Environmental Impact Statement: The draft EIS was submitted to CEQ 22 February 1974. The final EIS is scheduled to be submitted to CEQ June 1974.

Other Information: A Post Authorization Change covering increases in costs and benefits is scheduled to be submitted to OMB June 1974.

REEDY RIVERS, S.C.

Senator STENNIS. The budget request was $130,000 and House has not included any funds. What is your capability on this project?

General MORRIS. We have no capability on this project, Mr. Chairman. After the budget was prepared, we received a letter withdrawing local support for the project. We cannot use the $130,000 in the budget request.

MISSOURI RIVER, S. DAK., NEBR., N. DAK. AND MONT. (INCLUDING MISSOURI RIVER, ADDITIONAL HYDROPOWER)

Senator STENNIS. Senator Metcalf of Montana has testified before this committee concerning his strong interest in the study of additional hydropower on the Missouri River.

Senator Metcalf indicated that the study of additional hydropower at existing dams on the Missouri River was to have been completed in 1973. Would you comment on this statement?

Colonel RUSH. A preliminary estimate, prepared in the spring of 1969, recommended completion of the study in three fiscal years with initial funding in fiscal year 1970. This schedule anticipated that the estimated study cost of $600,000 would be funded in approximately equal amounts for each of these years.

Senator STENNIS. When were funds initially provided and what was the schedule for completion at that time?

Colonel RUSH. In fiscal year 1971, $27,000 was appropriated to initiate the study. Based on a more detailed evaluation and still assuming a rather high level of funding, the study was expected to require about four years with completion funds scheduled in fiscal year 1975. Actual amounts made available were $110,000 in 1972, $93,000 in 1973, and $122,000 in 1974.

CURRENT STATUS

Senator STENNIS. Concerns relative to the hydropower aspects of this study were expressed last year. Last year, $90,000 was added by Congress to expedite hydropower studies. We note that only $122,000 was allotted to the study in fiscal year 1974. Please explain the status of the study, your plans for expediting, and whether you will submit an interim report.

Colonel RUSH. Let me assure the Committee that we are expediting the hydropower studies. "Savings and slippages" reductions of $28,000 applied in fiscal year 1974 were for phases of the study other than hydropower. The first of two major study phases is scheduled to be completed this summer. As part of the current phase, cost estimates for potential additional hydropower units at each of the six main stem dams have been completed and economic feasibility is being evaluated in coordination with the Bureau of Reclamation and the Federal Power Commission. Data assembly and preliminary evaluation of alternative courses of action for other problems and opportunities within the study area are also being accomplished. The current study phase will be used to determine the scope of the detailed studies which need to be made. Recommendations for additional hydropower installations will depend on favorable economic

findings, our ability to isolate other study aspects, and the preparation of an EIS for filing with CEQ. If these are all favorable, an interim report on potential hydropower development could be prepared. It must be recognized that people of this region at a series of public hearings have expressed more concerns over the reservoir operations than hydropower generation.

Senator STENNIS. How many authorized investigations have been combined into this study and what is the rationale for such combination?

Colonel RUSH. This survey reflects a combination of 13 congressional resolutions and four authorities from river and harbor acts which until mid-1972 were grouped into six separate investigations. These studies have been combined to achieve a coordinated, effective study effort and to reduce study costs.

Senator STENNIS. Is the study on schedule? If not, do you have a capability for expediting?

Colonel RUSH. Because of fiscal year 1975 budgetary constraints, the report will be delayed about 6 months or until February 1977. Subject to the usual qualifications we have a fiscal year 1975 capability of $250,000. This would advance report completion 6 months, from February 1977 to August 1976.

EFFECTS ON MAIN STEM DAMS

Senator STENNIS. Your justification sheet points out a number of detrimental effects being experienced by your main stem dams and many feel you have made a good case for never building another dam. Please comment on this problem.

Colonel RUSH. Beneficial effects of operation far exceed the detrimental effects. The vastness of the beneficial effects does not diminish the desirability of ameliorating the detrimental effects where feasible.

Senator STENNIS. Please explain the relative severity of the problems you are considering.

Colonel RUSH. Bank erosion, water logging, and shoaling and sedimentation problems are very severe in local areas and present harsh and difficult consequences to individual interests. In total, these problems loom large and when coupled with the opportunities associated with increased utilization of water resources for additional hydropower, or other water use, environmental enhancement or protection, and other possible options of the main stem system, we are faced with a complex study in which all problems and opportunities interrelate and are hard to isolate.

Senator STENNIS. Are there opportunities, other than hydrounits at the main stem dams, for increasing electric energy generation in the upper Missouri?

Colonel RUSH. Yes, sir. These are limited, however, to a reach of river above the Fort Peck project in Montana, and in the open river reach between Fort Peck and the Garrison project. We will look at this potential before we complete the investigation.

Senator STENNIS. What is the relative priority of this study in relationship to your total program?

Colonel RUSH. We attach a relatively high priority to this study because of its energy implications.

SACRED HEART HOSPITAL, EMERGENCY BANK STABILIZATION, YANKTON, S. DAK.

Senator STENNIS. There is nothing in the budget. The House has included $125,000, and local interests have requested $125,000. What is your capability on this project?

General MORRIS. Mr. Chairman, our capability on this project is $125,000 to initiate construction.

Senator STENNIS. Would you submit a statement for the record?

General MORRIS. Yes, sir.

[The statement follows:]

Sacred Heart Hospital, Emergency Bank Stabilization,
Yankton, South Dakota

Summarized Financial Data:

Estimated Federal Cost	$ 250,000
Estimated non-Federal Cost	2,000
Total Estimated Project Cost	$ 252,000
Allocations to Date	0
Balance to Complete	$ 252,000
Preconstruction Planning Estimate	$ 25,000
Amount that could be used in Fiscal Year 1975	$ 125,000

Authorization: Water Resources Development Act of 1974 (P.L. 93-251).

Location and Description: The project is located on the left bank of the Missouri River in Yankton, South Dakota, 3½ miles downstream from Gavins Point Dam. The plan of improvement provides for construction of bank stabilization structures which would gradually direct the river away from the Yankton Sacred Heart Hospital property bankline and would greatly limit erosion at several other downstream locations, including the Yankton city water plant and Highway Bridge abutments.

Proposed Operations: The amount of $125,000 could be used to initiate construction.

Justification: A very severe erosion problem exists along the left bank of the Missouri River at Yankton, South Dakota which is threatening future operations of the Yankton Sacred Heart Hospital. This is a 225 bed facility with a plant value in excess of $10 million. Major medical and surgical services are provided to over 6,000 patients annually. The recommended plan will eliminate the erosion threat to the hospital and would reduce or eliminate other erosion problems in the Yankton area. B/C ratio not applicable.

STATUS OF ENVIRONMENTAL IMPACT STATEMENT: An environmental impact statement will be prepared during preconstruction planning.

1/ The capability amount of $25,000 considers this project by itself without regard to the Corps overall program capability, fiscal constraints, or the Administration's assessment of appropriate national priorities for Federal investments.

AQUILLA LAKE, TEX.

Senator STENNIS. The budget request was $400,000. The House has included $596,000, and local interests have requested $1,096,000. What is your capability on this project?

General MORRIS. Our capability on this project is $1,096,000, Mr. Chairman.

Senator STENNIS. What would be accomplished with the additional $696,000?

General MORRIS. The additional amount would be used to complete preconstruction planning ($196,000), and to initiate construction ($500,000).

AUBREY LAKE, TEX.

Senator STENNIS. There is nothing in the budget. The House has included $5 million, and local interests have requested $6 million. What is your capability on this project?

General MORRIS. Mr. Chairman, our capability on this project is $6 million to initiate construction.

Senator STENNIS. Would you submit a statement for the record?

General MORRIS. Yes, sir.

[The statement follows:]

Project: Aubrey Lake, Texas

Summarized Financial Data:

Estimated Total Appropriation Requirement		$110,000,000	
Future non-Federal Reimbursement		67,361,000	
Estimated Federal Cost (Ultimate)			$ 42,639,000
Estimated non-Federal Cost			67,361,000
Reimbursement:			
Water Supply	$ 60,761,000		
Recreation	6,600,000		
Other	0		
Non-reimbursable Relocations	4,368,000		
Total Estimated Project Cost			110,000,000
Allocations to Date			1,289,000
Balance to Complete			110,000,000
Preconstruction Planning Estimate			1,289,000
Amount that could be utilized in FY 1975			6,000,000

Authorization: R & H Act of 1965

Location and Description: The damsite, approximately 40 miles north of Dallas, is located on the Elm Fork of the Trinity River in northeast Denton County, between the towns of Sanger and Aubrey, Texas. It is 30 miles upstream from the existing Lewisville Dam and is approximately 10 airline miles northeast of Denton, Texas. The lake will be formed by an earthfill dam 14,680 feet long, a spillway consisting of an uncontrolled conduit for flood control and four 3 x 4 foot low flow outlets. The total controlled storage will be 908,100 acre-feet including 252,800 acre-feet for flood control, 600,700 acre-feet for water supply and 54,600 acre-feet for sediment deposition.

Proposed Operations: The $6,000,000 would be used to initiate construction, assuming that the General Design Memorandum submitted to the Office, Chief of Engineers, will be reviewed and Advance Engineering and Design will be completed in sufficient time to permit initiation of construction in FY 1975.

Justification: The project is an authorized element in the plan for improvement of the Trinity River Basin. The flood control storage in Aubrey Lake will allow reallocation of storage in the lake behind Lewisville Dam downstream to increase the storage allocated to water supply. Under estimated conditions of watershed development by the year 2035 and re-currence of the worst drought of record, the project will provide 63.7 million gallons daily for municipal and industrial water supply and satisfy recreation needs of 5,485,000 user days annually. The water supply yield resulting from construction of Aubrey Lake will be needed by 1980. The cities of Dallas and Denton will share the water supply storage. Neither Denton nor Cooke County has been classified as a redevelopment area. Grayson County, adjacent to the project on the northeast, recently was designated by the Economic Development Administration for assistance under Section 401 of the Public Works and Economic Development Act of 1965, as amended. However, available labor resources are concentrated in the northeast portion of the county, beyond reasonable commuting distance to the major work site. The benefit-to-cost ratio is 2.4 to 1. Average annual benefits are broken down as follows:

Water Supply	$ 4,725,400
Recreation	6,394,600
Total	11,120,000

Status of Environmental Statement: Final statement filed with CEQ on 4 March 1974.

CARL L. ESTES DAM AND LAKE, TEX.

Senator STENNIS. The budget request was $360,000. The House has included $360,000, and local interests have requested $500,000. What is your capability on this project?

General MORRIS. Our capability on this project is $500,000, Mr. Chairman.

Senator STENNIS. What would be accomplished with the additional $140,000?

General MORRIS. The additional amount would be used to advance preconstruction planning by 3 months.

COOPER LAKE AND CHANNELS, TEX.

Senator STENNIS. The budget request was $2 million. The House has included $2,200,000, and local interests have requested $2,200,000. What is your capability on this project?

General MORRIS. Our capability on this project is $2,200,000, Mr. Chairman.

Senator STENNIS. What would be accomplished with the additional $200,000?

General MORRIS. The additional amount would be used to advance land acquisition.

CORPUS CHRISTI SHIP CHANNEL, TEX.

Senator STENNIS. The budget request was $3,500,000. The House has included $4,500,000, and local interests have requested $4,500,000. What is your capability on this project?

General MORRIS. Our capability on this project is $4,500,000, Mr. Chairman.

Senator STENNIS. What would be accomplished with the additional $1 million?

General MORRIS. The additional amount would be used to advance completion of the project by 3 months.

LAKEVIEW LAKE, TEX.

Senator STENNIS. The budget request was $1 million. The House has included $2,500,000, and local interests have requested $1 million. What is your capability on this project?

General MORRIS. Our capability on this project is $3,500,000, Mr. Chairman.

Senator STENNIS. What would be accomplished with the additional $2,500,000?

General MORRIS. The additional amount would be used to advance impoundment by 6 months.

OPPOSITION

Senator STENNIS. Mr. Edward C. Fritz, attorney for the Lakeview Landowners Association, has stated that the environmental impact statement for Lakeview Lake is inadequate and fails to comply with the National Environmental Policy Act of 1969. Is this an accurate statement?

Colonel RAY. Mr. Chairman, the final environmental impact statement for Lakeview Lake was filed with the Council on Environmental Quality on November 2, 1973. It was adequate at the time of filing in that it complied with the National Environmental Policy Act of 1969, CEQ guidelines, and the U.S. Army Corps of Engineers regulations. Furthermore, there has been no material change in the project subsequent to the filing of the EIS; therefore, the EIS is still adequate.

Senator STENNIS. Mr. A. E. Hudson, past president of the Lakeview Reservoir Landowners Association, claims that the Corps recommended plan E of the restudy does not comply with the terms of the request for the restudy by Congress dated October 1972. Is this true?

Colonel RAY. Mr. Chairman, our 1973 restudy presented nine separate alternative plans with various combinations and degrees of project purposes. Both the local sponsor, Trinity River Authority, and the Corps feels that plan E is the most favorable plan. The restudy was forwarded to Congress by the Secretary of the Army on January 16, 1974 and is included in the President's recommended budget for fiscal year 1975 as a new construction start.

BENEFIT-COST RATIO

Senator STENNIS. Mr. Hudson is also claiming that the benefit-cost ratio by the Corps is in error. Would you please comment?

Colonel RAY. The amount of benefits for water supply is based on the most economical alternative source available. Our studies have revealed this to be a single-purpose water supply project at the recommended site. Based on our studies, the cost of water at the single-purpose project would be approximately $0.64 per thousand gallons; however, the cost of water with the multiple-purpose project would be approximately $0.19 per thousand gallons.

WATER SUPPLY NEEDS

Senator STENNIS. Mr. Oscar H. Skinner, president of the Lakeview Reservoir Landowners Association, claims there is an existing 72-inch waterline and a proposed 84-inch waterline available for sufficient water supply; therefore, there is no need for a water supply reservoir.

Colonel RAY. Mr. Chairman, the 72-inch line referred to by Mr. Skinner is for municipal water supply for the city of Fort Worth. It was previously stated in the recall hearings for fiscal year 1973 that:

> The Tarrant County Water Control and Improvement District No. 1, owners of the pipeline, have not solicited and do not intend to solicit subscribers for the water which is conveyed by the pipeline. This water is intended solely for use by the city of Fort Worth. The continuing growth of the suburban areas of the Dallas-Fort Worth urban complex underscores the critical need to provide water to these communities. Prior to designation of the Trinity River Authority by the Texas Water Commission as the State agency responsible for contracting with the Federal Government for the water supply of Lakeview Lake, the cities of Cedar Hill, DeSoto, Duncanville, Grand Prairie, Mansfield, Arlington, Midlothian, and Irving, as well as the Tarrant County Water Control and Improvement District No. 1, made appication to the commission for use of water supply storage of the project.

Since the recall hearings for fiscal year 1973 the city of Arlington has made contractual arrangements to receive water from the city of Fort

Worth. This arrangement utilizes Lake Arlington, constructed by the city of Arlington, as a holding reservoir for the pumpage of water from Cedar Creek Lake. This contractual arrangement saved the Tarrant County Water Control and Improvement District No. 1 the necessity of building a holding facility. The 84-inch pipeline referred to by Mr. Skinner was proposed as an interim water-quality and supply facility in the survey report; however, the Environmental Protection Agency on January 31, 1973, withdrew their recommendation to include water quality control storage in Tennessee Colony Lake. In compliance with the Environmental Protection Agency we are deleting the 84-inch pipeline from Tennessee Colony Lake in the phase 1 general design memorandum of the Trinity River project.

Senator STENNIS. Mr. Skinner claims that there has been very little flooding in the 62 years that he has been farming in this area. He claims that he has lost no crops or livestock and that a flood control project is not warranted.

Colonel RAY. Mr. Chairman, our studies have revealed that there have been 23 damaging floods in this area since 1908. These floods have caused an estimated $84 million in damages with the latest in October 1973 causing an estimated $1,500,000 in damages. With the project in operation and at current conditions and prices the project would have prevented an estimated $22 million in damages.

LAND COSTS

Senator STENNIS. Mr. Skinner has stated that the cost of land in the area has continued to rise since their association appeared before the committee 2 years ago at which time you gentlemen felt this cost of land made the project unfeasible. The Corps says that it has been rising at a rate of 24 percent a year but in many instances it has been higher—nearer 50 percent.

Colonel RAY. Mr. Chairman, the proposed Lakeview Lake extends up Mountain Creek approximately 11 miles and up Walnut Creek approximately 8 miles from the damsite. The lands near Interstate Highway 20 and near the intersection of I.H. 20 and State Highway 360 are experiencing the greatest increases in prices. The lands to the south and near the southern part of the project are experiencing the least increases in price. The 24 percent rate of increase covers the entire project. Some parts of the project have experienced a greater increase in value than 24 percent and some farther away from the I.H. 20 and S.H. 360 influences have experienced less growth in value than the 24 percent factor.

Senator STENNIS. Mr. Skinner also states that in 1 mile there are 20 homes in the price range of $50,000 to $100,000 and that most of them have been built in the past 5 years. Will you please respond to this statement?

Colonel RAY. Yes, sir. The Corps is aware of the number of homes and has included an estimate of value for each one in the real estate estimates. Each real estate estimate includes a contingency factor that will provide for expected additional homes to be built within the project area. As previously stated in the fiscal year 1973 recall hearings, these expensive homes are the exception rather than the rule. The area is periodically field inspected by Corps personnel and market value ap-

praisals of improvements, not replacement costs, are the basis for the Corps value conclusions. These appraisals of properties are based on their market value at the time of acquisition regardless of price ranges.

Senator STENNIS. Mr. Skinner also claims that the lake will block access and that the roads are overcrowded and future roads between Dallas and Fort Worth will not be constructed.

Colonel RAY. Mr. Chairman, as previously reported Interstate Highway 20 is immediately downstream of the damsite and U.S. 287 traverses the reach immediately upstream of the lake area. Adjacent roads will be constructed on both the east and west sides of the lake and will provide adequate access.

PROJECT BENEFITS

Senator STENNIS. The association has testified that the amount of benefits for water supply is wrong and this makes the benefits for flood control and recreation wrong. Would you please comment on this statement?

Colonel RAY. Yes, sir. As previously stated our studies show that the flood control is warranted and the benefits are based on the Corps procedure presently estimated to be approximately 29 percent of the total benefits. The water supply benefits are approximately 28 percent and the recreation benefits are approximately 43 percent of the total benefits. The benefits are based on standardized methods and procedures and are considered accurate and are not guesses.

LAKE TEXOMA, TEX. AND OKLA. (IMPROVE PERIMETER ACCESS)

Senator STENNIS. There is nothing in the budget, and local interests have requested $200,000. What is your capability on this project?

General MORRIS. Mr. Chairman, our capability on this project is $200,000 to initiate and complete planning for the first contract award.

Senator STENNIS. Would you submit a statement for the record?

General MORRIS. Yes, sir.

[The statement follows:]

LAKE TEXOMA, TEX. AND OKLA., IMPROVE PERIMETER ACCESS

Summarize financial data

Estimated Federal cost	$3,000,000
Estimated non-Federal cost	0
Cash contribution	0
Other	0
Total estimated project cost	3,000,000
Allocations to date	0
Balance to complete	3,000,000
Amount that could be utilized in fiscal year 1975	200,000

Authorization.—Water Resources Development Act of 1974.

Location and Description.—The project is located on Red River at mile 725.9, 5 miles northwest of Denton, Texas. The plan of improvement consists of improving perimeter access at the project, utilizing existing roads to the extent feasible.

Proposed Operations.—The amount of $200,000 would be used to initiate and complete planning for the first contract award.

Justification.—The Secretary of the Army, acting through the Chief of Engineers, is authorized and directed to improve perimeter access at Lake Texoma, Texas and Oklahoma, utilizing existing roads to the extent feasible. The benefit-to-cost ratio is not applicable on this project.

Status of Environmental Statement.—The draft statement is scheduled for submission to CEQ in September 1974. The final statement is scheduled for submission to CEQ in December 1974.

Lavon Lake Modification and East Fork Channel Improvement, Tex.

Senator Stennis. The budget request was $5,400,000. The House has included $5,400,000, and local interests have requested $5,600,000. What is your capability on this project?

General Morris. Our capability on this project is $5,600,000, including $200,000 for Collin County Road 115, Mr. Chairman.

Senator Stennis. What would be accomplished with the additional $200,000?

General Morris. The additional amount would be used for the Collin County Road 115 item as authorized in the Water Resource Development Act of 1974.

Lower Rio Grande Basin, Tex. (Phase 1 Advance Engineering and Design)

Senator Stennis. There is nothing in the budget, the House has provided no funds, and local interests have requested $150,000. What is your capability on this project?

General Morris. Mr. Chairman, our capability on this project is $150,000 to initiate preconstruction planning.

Senator Stennis. Would you submit a statement for the record?

General Morris. Yes, sir.

[The statement follows:]

Project: Lower Rio Grande Valley Project, Texas (1974 Act) (Phase I Advance Engineering and Design Stage)

Summarized Financial Data:

Estimated Federal Cost (Corps of Engineers		$46,000,000
Estimated Federal Cost (US Coast Guard)		0
Estimated Non-Federal Cost		15,000,000
Cash Contribution	$ 0	
Other	15,000,000	
Total Estimated Project Cost		$61,000,000
Allocations to Date		0
Balance to Complete		46,000,000
Preconstruction Planning Estimate		2,000,000
Phase I Estimated Cost		600,000
Balance to Complete Preconstruction Planning		1,400,000
Amount that could be utilized in FY 1975		150,000

Authorization: Water Resources Development Act of 1974

Location and Description: Project is located in Lower Rio Grande Valley in Willacy, Hidalgo, and Cameron Counties, Texas. Improvement provides for 164 miles of floodwater channels in the locations designated as the Willacy-Hidalgo Floodwater Bypass, the Laguna Madre Floodwater Channel, and the North Floodway Channel.

Proposed Operations: The amount of $150,000 would be used to initiate preconstruction planning.

Justification: At present, floodwaters interrupt transportation, inundate many acres of valuable and productive agricultural land, flood homes and commercial buildings, interrupt utilities and contaminate local water supplies. Rainfall and associated surface runoff tends to pond because of local flat topography, lack of natural channels and inadaquate drainage systems. The Water Resource Development Act of 1974 authorized the Corps of Engineers to undertake the Phase I Advance Engineering and Design Stage of the project recommended as Phase I in the comprehensive study and plan of development, Lower Rio Grande Basin, Texas, dated July 1969, prepared by the United States Department of Agriculture. A benefit to cost ratio has not yet been determined for the authorized project. The economic justification contained in the earlier report was for the entire comprehensive plan of development.

MILLICAN LAKE, TEX.

Senator STENNIS. The budget request was $370,000. The House has included $500,000, and the local interests have requested $500,000. What is your capability on this project?

General MORRIS. Our capability on this project is $500,000, Mr. Chairman.

Senator STENNIS. What would be accomplished with the additional $130,000?

General MORRIS. The additional amount would be used to advance preconstruction planning by 3 months.

OPPOSITION

Senator STENNIS. Mr. Coulter Hoppess, president of the Navasota River Improvement Association which represents a broad cross section of persons in both the business, financial, and farming economy of Robertson, Leon, Brazos, Madison, and Grimes Counties, Tex., has presented statements of their position on development of the Navasota River. Mr. Hoppess specifically suggests that any funds appropriated be used and designated for reviewing and updating House Document No. 431, 19th Congress, 2d session, to determine the present feasibility of the Millican Lake project under existing conditions. What is your reply?

Colonel RAY. Mr. Chairman, the very thing that Mr. Hoppess suggests is required by law. As I stated last year, the Environmental Protection Act of 1969 requires adequate studies to insure an understanding of the environmental tradeoffs involved in the proposed project. Also, section 122 of Public Law 91–611 added the requirements that the economics and social effects of a project be displayed. Sir, we are in the process of developing a general design memorandum, phase 1, which is essentially an updated survey report, and it will display the social, economic, and environmental effects of the project under the present conditions.

Senator STENNIS. Mr. Hoppess has pointed out that the Brazos River Authority is working with Texas Utilities Co. and is planning to build a major impoundment on the Navasota River in Robertson County. How does this affect your current planning studies?

Colonel RAY. The Brazos River Authority has submitted a plan which calls for three reservoirs upstream of the Navasota No. 2 lake. One lake on Steel Creek and one lake on Duck Creek to be built by Texas Utility Services, Inc., and one on the Navasota to be built by the Brazos River Authority. Studies have been made which show that the dependable water supply yields of Millican and Navasota No. 2 projects will be reduced. We are currently analyzing the amount of this reduction and its effect on the overall project.

LOSS OF PETROLEUM RESOURCES

Senator STENNIS. Mr. Hoppess has presented statements that indicate that the area to be inundated by Millican Lake has known provable, producible petroleum resources in the form of gas and oil. He also pointed out that the city of Bryan has an independent engineering

report indicating that reserves are capable of producing gas needed at the rate of 2 million cubic feet per day in winter months and 1 million cubic feet per day in the other months. Have you considered this in your planning of the Millican Lake?

Colonel RAY. Sir, the Bureau of Mines, U.S. Department of the Interior, Denver, Colo., completed a mineral resources examination and evaluation of the proposed Millican Lake area in August 1973. This study revealed in part:

> Millican Lake would inundate a substantial quantity of low-quality sand and gravel, and possibly some lignite deposits, but these mineral resources are abundant in east Texas.

Senator STENNIS. Did this report cover the specific points that Mr. Hoppess has raised about gas and oil?

Colonel RAY. Yes, sir.

Senator STENNIS. Mr. Hoppess has stated that the dam will inundate an area which has known provable, producible petroleum resources of gas and oil. Is this correct?

Colonel RAY. Mr. Chairman, our planning concerning oil and gas reserves is proceeding based on the Bureau of Mines report which states in part:

> A small quantity of proved oil and gas reserves, and an unknown amount of shallow oil and gas resources could be lost as a result of the project. Probing of the deeper sediments under the lake from the lake perimeter would be possible although expensive should such exploration become desirable in the future.
>
> From the standpoint of mineral resources, inundation by the reservoir would result in increased drilling and operating costs for oil and gas and, therefore, some loss in leasehold values. This appears to be the only mineral-related factor that should be weighed against anticipated benefits of the Millican Lake project as proposed by the Corps of Engineers.

Senator STENNIS. Mr. Hoppess made the statement:

> The existing, predictable shortage of petroleum fuel, both oil and gas, in the United States and the comparative price being paid for same because of the continuing international situation, argues strongly that the known, producible, oil and gas in the Millican Dam Basin is of substantial greater value than any water which can be placed there at the present time.

Do you agree with this position?

Colonel RAY. Certainly the value of oil and gas reserves in the basin is substantially greater than any previous report indicated. Studies now underway will give proper consideration to the marketable value of all minerals and the value of water supply aspects of the project.

MINERAL RIGHTS

Senator STENNIS. At what period in your planning will you make your policy known concerning payment for damages or loss in mineral leasehold values?

Colonel RAY. The acquisition of lands and mineral rights will be accomplished in accordance with the "joint policies of the Departments of Interior and of the Army relative to reservoir project lands." The current policies published in the Code of Federal Regulations, title 43, part 8, contain the following provision:

> Mineral, oil, and gas rights will not be acquired except where the development thereof would interfere with project purposes, but mineral rights not acquired

will be subordinated to the Government's right to regulate their development in a manner that will not interfere with the primary purposes of the project, including public access.

The limits of land to be acquired will be explained to landowners at a public meeting prior to acquisition. The price offered to each landowner will be based on an appraisal of the land value prior to initiation of negotiations.

LAND COSTS

Senator STENNIS. Mr. Hoppess also presented a list of recent real estate transactions which indicates a substantial increase in land prices over those used in House Document No. 431, 19th Cong., 2d sess. Have you updated your land cost?

Colonel RAY. Sir, as we reported last year, the formulation portion of the preconstruction planning now in progress will update the real estate cost of the entire project.

Senator STENNIS. Does your study indicate a substantial increase in land prices in the project area?

Colonel RAY. Yes, sir. In our project cost estimate as presented to the committee last year and again this year, we increased the cost for lands and damages by approximately 15 percent each year.

Senator STENNIS. Mr. Hoppess has specifically requested that the fiscal year 1975 appropriation be limited to preparation of the Environmental Statement and making an up-to-date review of land acquisition cost. How would this affect your current planning?

Colonel RAY. Sir, limiting the fiscal year 1975 appropriation or any future preconstruction planning funds to specific items would not be desirable. Construction and relocation cost, as well as many other aspects of the project, must be considered along with the environmental impact and land cost. If any items are left out, then we are not doing an adequate job in our planning.

SAN GABRIEL RIVER PROJECT, TEX.

Senator STENNIS. The budget request was $9 million. The House has included $10 million, and local interests have requested $11,200,000 What is your capability on this project?

General MORRIS. Our capability on this project is $11,200,000, Mr. Chairman.

Senator STENNIS. What would be acomplished with the additional $2,200,000?

General MORRIS. The additional amount would be used to advance completion of the project by 6 months.

WALLISVILLE, LAKE, TEX.

Senator STENNIS. There is nothing in the budget and the House has included nothing. Local interests have requested $3,100,000. What is your capability on this project?

General MORRIS. Mr. Chairman, we have no capability on this project. Construction has been stopped by a court injunction.

Buena Vista, Va.

Senator Stennis. There is nothing in the budget. The House has included $250,000, and local interests have requested $250,000. What is your capability on this project?

General Morris. Mr. Chairman, our capability on this project is $250,000 to initiate phase I preconstruction planning.

Senator Stennis. Would you submit a statement for the record?

General Morris. Yes, sir.

[The statement follows:]

Buena Vista, Va. (Phase I Advance Engineering and Design Stage)

Summarized financial data

Estimated Federal cost	$12,650,000
Estimated non-Federal cost	550,000
Cash contribution	0
Other costs	550,000
Total estimated project cost	13,200,000
Allocations to date	0
Preconstruction planning estimate	1,000,000
Phase I estimated cost	665,000
Balance to complete after phase I	335,000
Amount that could be used in fiscal year 1975	250,000

Authorization.—Water Resource Development Act of 1974, for phase I stage of advance engineering and design.

Location and description.—The project is located in the city of Buena Vista along the Maury River about 11 miles upstream of its confluence with the main steam of the James River. The project will consist of an improved channel, Earth levees, floodwalls, and interior drainage facilities along the river for nearly the full length of the city.

Proposed operations.—The amount of $250,000 would be used to initiate phase I preconstruction planning in fiscal year 1975.

Justification.—The city of Buena Vista has been subject to severe damage from flooding of the Maury River. The flood of 1969 caused damages in excess of $13 million, the loss of two lives, and flooded over 420 acres. The improvement would provide protection for a flood six feet higher than the 1969 flood and provide average annual flood control benefits of $1,125,000. The benefit-cost ratio is 1.3 to 1.

Status of environmental impact statement.—The final EIS was filed with CEQ on February 28, 1973.

Four Mile Run, Va.

Senator Stennis. There is nothing in the budget. The House has included $2 million, and local interests have requested $5,600,000. What is your capability on this project?

General Morris. Mr. Chairman, our capability on this project is $5,600,000 to continue construction.

Senator Stennis. Would you submit a statement for the record?

General Morris. Yes, sir.

[The statement follows:]

Project: Fourmile Run, Virginia

Summarized Financial Data:

Estimated Federal Cost		$ 29,981,000
Estimated non-Federal Cost		8,569,000
Cash Contribution	$ 2,439,000	
Other Costs	6,130,000	
Total Estimated Project Cost		38,550,000
Allocations to Date		3,781,000
Amount that could be used in FY 1975		5,600,000

Authorization: Water Resources Development Act of 1974.

Location and Description: The project is located in the City of Alexandria and in Arlington County, Virginia, on Fourmile Run immediately above its confluence with the Potomac River at Washington, D. C. The improvement provides for a levee and floodwall protection system with associated interior drainage facilities, an improved channel, and replacement of two highway and four railroad bridges.

Proposed Operations: The amount of $5,600,000 would be used to continue construction in FY 1975.

Justification: The project is needed to protect areas along Fourmile Run in the City of Alexandria and Arlington County, Virginia, which have experienced flood damages to residential, commercial, and industrial properties. Major floods have occurred along Fourmile Run in August 1963, August 1967, July 1969, August 1969, July 1970, and June 1972. The June 1972 flood resulted in a record stage at Mount Vernon Avenue that caused estimated damages in the project area of $14 million. Early completion of the project is essential for eliminating repetition of past flood experience. In addition, the project would eliminate the filth and disease that usually accompany floods and would greatly improve the general welfare and security of the people of the basin. The benefit-cost ratio is 1.6 to 1. Average annual benefits are estimated at $3,536,000 as follows:

Flood Control	$3,428,000
Recreation	108,000
TOTAL	$ 3,536,000

Status of Environmental Impact Statement: The Final EIS was filed with CEQ in October 1970. A supplement, reflecting current design, was filed with CEQ in April 1973.

Gathright Lake, Va.

Opposition

Senator Stennis. Mr. Brent Blackwelder representing the Environmental Policy Center submitted, for our consideration, an article in the Engineering News Record of May 16, 1974, concerning foundation problems for the Gathright Dam. Would you comment on this?

Colonel Withers. During the advance design of the rock-filled earth dam it was discovered that limestone strata in the upper portion of the left abutment were extremely weathered and would require special treatment. Initially it was thought that this area could be treated by grouting, but further investigation indicated a cavernous condition which could not be economically treated in this manner. After consultation with experts it was decided to rotate the axis of the dam and provide a positive cutoff by constructing an 8-foot thick concrete membrane in the abutment. These features were included in a contract awarded for the dam and spillway in April 1973. After construction was commenced the contractor experienced difficulties in excavating for the concrete membrane and it was determined that steel shoring should be substituted for timber which was specified in the original contract. The Corps of Engineers is presently negotiating with the contractor for the additional costs related to this substitution. Conditions encountered in construction to date validate the selection and design of the concrete membrane for treatment of this abutment problem; we are confident that the overall extent of the problem is defined and that the safety of the dam is not in question.

Senator Stennis. Would you comment on environmental objections reported in this same article?

Colonel Withers. Environmental issues have been discussed at length in an environmental impact statement prepared in accordance with the National Environmental Policy Act and in a court-ordered supplement which also contains the findings of the district court which ordered the Corps to proceed with the project. The district court finding was later upheld by the circuit court of appeals.

Senator Stennis. Mr. Blackwelder also submitted a copy of an editorial from the Engineering News Record of May 23, 1974, questioning justification of the project in light of additional costs. Would you comment on this?

Colonel Withers. Costs associated with special foundation treatment have been included in previous budget submissions to your committee with the most recent benefit-cost ratio calculated to be 1.1. Additional costs associated with substitution of steel for timber shoring in the excavation work are being negotiated with the contractor. It is not anticipated, however, that they will cause the benefit-cost ratio of the project to fall below 1. The Gathright Lake project is strongly supported by State and local governing bodies, benefits of the project cannot reasonably be attained except through completion of work for which approximately $23 million has now been expended.

Verona Lake, Va. (Phase 1 Advance Engineering and Design)

Senator Stennis. There is nothing in the budget and local interests have requested $1,400,000. What is your capability on this project?

General Morris. Mr. Chairman, our capability on this project is $300,000 to initiate phase 1 preconstruction planning.

Senator Stennis. Would you submit a statement for the record?

General Morris. Yes, sir.

[The statement follows:]

Project: Verona Lake, Virginia (Phase I Advance Engineering and Design Stage)

Summarized Financial Data:

Estimated Total Appropriation Requirement		$44,300,000
Estimated Federal Cost (Ultimate)		19,253,000
Estimated non-Federal Cost		25,047,000
Reimbursement:		
Water Supply	$ 22,495,000	
Recreation	2,552,000	
Total Estimated Project Cost		44,300,000
Allocations to Date		0
Balance to Complete		44,300,000
Preconstruction Planning Estimate		3,000,000
Phase I Estimated Cost		750,000
Balance to Complete After Phase I		2,250,000
Amount that could be used in FY 1975		300,000

Authorization: Water Resources Development Act of 1974, for Phase I stage of advance engineering and design.

Location and Description: The project is located in Augusta County, Virginia, about nine miles northeast of Staunton, Virginia, on the Middle River Branch of the South Fork Shenandoah River. The plan of improvement provides a concrete-gravity dam with gated outlet conduits and a gate-controlled spillway as integral parts of the concrete-gravity structure.

Proposed Operations: The amount of $300,000 would be used to initiate Phase I preconstruction planning in FY 1975.

Justification: The project will provide 104,000 acre-feet of storage for water supply and recreation. The urgency of need for additional water supply is apparent comparing the dependable (minimum) flow of 338 million gallons per day (MGD) during the 1966 drought with the projected average daily demands for the Washington Metropolitan Area of 800, 1,320, and 1,930 MGD in years 1980, 2000, and 2020, respectively. The project will increase the dependable flow about 110 MGD, and together with the Bloomington Lake project (137 MGD) and the sixes Bridge Lake project (85 MGD) would provide a interim solution to the increasing water supply requirements of the area until about 1985. Releases would also be made to help meet the flow requirement needed to maintain the stream's natural flow and environment in the reach adjacent to Washington, below the Area's water supply intakes. The water-based recreational opportunities created by the lake include provision for 350,000 visitor days annually and would increase fishing activity by 87,500 fisherman days. The benefit-cost ratio is 2.0 to 1. The average annual benefits of $6,431,000 are as follows:

Local water supply	$ 944,000
Downstream water supply	2,762,000
Recreation	883,000
Stream Enhancement	1,842,000
TOTAL	6,431,000

Status of Environmental Impact Statement: The Final EIS was filed on 13 November 1970 with CEQ. A supplement was filed on 14 November 1973 with CEQ. The statement will be updated during preconstruction planning.

VIRGINIA BEACH, VA. (PHASE 1 ADVANCE ENGINEERING AND DESIGN

Senator STENNIS. There is nothing in the budget. The House has included nothing, and local interests have requested $150,000. What is your capability on this project?

General MORRIS. Mr. Chairman, our capability on this project is $150,000 to initiate phase 1 preconstruction planning.

Senator STENNIS. Would you submit a statement for the record?

General MORRIS. Yes, sir.

[The statement follows:]

Project: Virginia Beach, Virginia (Phase I Advance Engineering and Design Stage)

Summarized Financial Data:

Estimated Federal Cost		$17,274,000
Estimated non-Federal Cost		9,010,000
Cash Contribution	$8,913,000	
Other Costs	97,000	
Total Estimated Project Cost		26,284,000
Allocations to Date		0
Preconstruction Planning Estimate		1,200,000
Phase I Estimated Cost		954,000
Balance to Complete after Phase I		246,000
Amount that could be used in FY 1975		150,000

Authorization: Water Resources Development Act of 1974, for Phase I stage of advance engineering and design.

Location and Description: The project is located in the City of Virginia Beach. The project area includes 28 miles of oceanfront and 10 miles of bay front. The plan includes raising the beach in the 6-mile reach of shoreline between Rudee Inlet and 89th Street; sheet pile wall between Rudee Inlet and 57th Street; and strengthening of existing dunes between 57th Street and 89th Street.

Proposed Operations: The amount of $150,000 would be used to initiate Phase I preconstruction planning in FY 1975.

Justification: The proposed improvement of the existing shoreline from Rudee Inlet to 89th Street would reduce the existing hazard to human life, reduce the threat of damage and/or destruction of the existing residential, public and commercial property behind the seawall, save the existing beach from erosion and create recreational opportunities for 16.4 million visitor days in 2025, and decrease indirect losses resulting from delays in use of facilities, cessation of business, and interruption of traffic. The benefit-cost ratio is 1.6 to 1.

Average annual benefits of 3,440,000 are as follows:

Beach Erosion Control(Recreation)	$1,330,000
Hurricane Protection	2,110,000
TOTAL	$ 3,440,000

Status of Environmental Impact Statement: The Final EIS was filed with CEQ on 21 September 1972.

ANACORTES-MARCH POINT AREA, WASH., NAVIGATION STUDY

Senator STENNIS. Senator Magnuson wishes me to ask the following questions. First, the Pacific Northwest Waterways Association recom-

mended in its testimony to the subcommittee that $80,000 be added to the Corps fiscal year 1975 budget for the preparation by this time next year of a report on general navigation channels in the Anacortes-March Point Area, Wash. Are you familiar with that proposal?

General MORRIS. Yes, sir. Local interests have indicated the need for a navigation study in the area to assess the advisability of a Federal project. As the initial phase of this planning process, local port and community authorities have requested that a preliminary reconnaissance report on engineering feasibility be prepared and made available to facilitate local planning efforts.

Senator STENNIS. Do you have authority to make the proposed study?

General MORRIS. Yes, sir. Authority for the Corps to study the navigation channel requirements in the area exists under the Puget Sound and adjacent waters comprehensive study authorized by section 209 of Public Law 87-874.

Senator STENNIS. Do you have the $80,000 fiscal year 1975 capability?

General MORRIS. Yes, sir.

Senator STENNIS. What would be covered by the report?

General MORRIS. Sir, the preliminary report would cover hydrographic surveys of alternate channel routes, general exploration of bottom materials, engineering studies, and cost estimates of alternative improvements, and preliminary coordination with other agencies.

ASOTIN CREEK FLOOD CONTROL, WASH.

Senator STENNIS. Another concern of Senator Magnuson is that approximately $1 million damage was caused this winter when Asotin Creek in southeastern Washington flooded. Has the Corps made any studies to determine what steps must be taken to prevent such flooding in the future? If so, what steps must be taken? What is the Corps' fiscal year 1975 capability to take any of those steps? If the Corps has not made such studies, why hasn't it? What would the Corps' fiscal year 1975 capability be for such studies?

General MORRIS. Sir, a reconnaissance study was completed by the Corps of Engineers in June 1970 which investigated the flooding potential of Asotin Creek and considered structural solutions, such as permanent levees and upstream storage of flood waters. It was determined that a structural solution was not economically feasible. The steep stream gradient and resultant high velocity flows result in high costs as compared to the benefits to be realized in the relatively small, mostly rural flood plain.

In the absence of feasible structural improvements, damages can be reduced through implementation of flood plain management measures by local interests. The Corps of Engineers can, as part of its flood plain management services program, prepare a flood plain information report for Asotin Creek. This report would be furnished to the appropriate local governments to assist them in their land use planning for the flood plain. Requests for flood plain information studies originate from local interests and are sent to the State for ultimate assignment to the Corps. Efforts by Washington State to establish flood plain zoning along Asotin Creek were rejected by the citizens

of Asotin County in 1970. With the exception of the flood plain management potential, there are no feasible physical solutions to the flood problem and accordingly we have no fiscal year 1975 capability.

EDIZ HOOK, WASH.

Senator STENNIS. Again, for Senator Magnuson, what is the Corps' fiscal year 1975 capability for advance engineering and design for the permanent construction work on Ediz Hook at Port Angeles, Wash.? Given those funds in fiscal year 1975, when would the Corps be ready to commence actual construction?

General MORRIS. The Corps has a capability to utilize $250,000 in fiscal year 1975 for advance engineering and design for permanent construction of the Ediz Hook project. Should these funds be made available, actual construction could begin in the spring of 1977.

Senator STENNIS. Would you submit a statement for the record?

General MORRIS. Yes, sir.

[The statement follows:]

Project: Ediz Hook, Washington

Summarized Financial Data:

Estimated Federal Cost (Corps of Engineers)		$ 5,760,000
Estimated non-Federal Cost		430,000
Cash Contribution:	$430,000	
Other Costs	0	
Total Estimated Project Cost		$ 6,190,000
Allocations to Date		0
Balance to Complete (Corps of Engineers)		5,760,000
Preconstruction Planning Estimate		400,000
Amount that could be utilized in Fiscal Year 1975		250,000

Authorization: Water Resources Development Act of 1974.

Location and Description: Ediz Hook is located adjacent to the city of Port Angeles, along the Strait of Juan de Fuca, in Challam County, Washington, about 100 miles northwest of Seattle. The plan of improvement provides for construction of 10,000 lineal feet of rock revetment, initial beach replenishment and annual nourishment.

Proposed Operations: The amount of $250,000 could be used to initiate preconstruction planning.

Justification: Ediz Hook is a natural peninsula which provides protection to the natural deep-draft harbor at Port Angeles. A Coast Guard station is located on the outer end of Ediz Hook. In the past, adequate littoral material was provided to maintain the integrity of the Hook. However, in recent years, private developments to the west of the Hook have interfered with the source of littoral material and, consequently, Ediz Hook is no longer naturally sustained. Without provision of adequate protection and nourishment Ediz Hook will be breached, destroying the land connection between the mainland and the Coast Guard Station, and subjecting harbor facilities to severe damage. Without the protection provided by Ediz Hook the Port Angeles Harbor would be unusable. The benefit-to-cost ratio is 15.1 to 1. Average annual benefits are listed below:

Annual Benefits	Amount
Navigation	$7,630,000
Beach Erosion & General Recreation	550,000
TOTAL	$8,180,000

STATUS OF ENVIRONMENTAL STATEMENT: The Final Environmental Impact Statement was filed with CEQ 13 November 1970.

Gray's Harbor and Chehalis River, Wash.

Senator Stennis. The President's budget requests $1.7 million for operation and maintenance of Gray's Harbor and the Chehalis River projects. You have an additional capability of $700,000 in fiscal year 1975 for initiating rehabilitation of the Gray's Harbor north jetty. Does the Corps have full legal authority to perform that work if funds are appropriated?

General Morris. Yes, sir. This is an authorized navigation project and the work on the north jetty is normal maintenance required to insure proper functioning of the project in the interest of navigation.

FISCAL YEAR 1975 CAPABILITY

Senator Stennis. The budget request was $1,700,000. The House has included $2,400,000, and local interests have requested $2,400,000. What is your capability on this project?

General Morris. Our capability on this project is $2,400,000, Mr. Chairman.

Senator Stennis. What would be accomplished with the additional $700,000?

General Morris. The additional amount would be used to initiate rehabilitation of the north jetty.

Lower Monumental Additional Units, Wash.

Senator Stennis. The budget request was $200,000. The House has included $450,000, and local interests have requested $450,000. What is your capability on this project?

General Morris. Our capability on this project is $450,000, Mr. Chairman.

Senator Stennis. What would be accomplished with the additional $250,000?

General Morris. The additional amount would be used to initiate construction.

Okanogan River and Tributaries

Senator Stennis. The State of Washington has formally recommended that $25,000 be added to the President's budget for the Corps studies of storage potential within the Okanogan Basin and an accurate assessment of all benefits and disbenefits associated with selected sites partially or wholly within the U.S. and British Columbia, Canada. Does the Corps have this capability in fiscal year 1975?

General Morris. Yes, sir. This is an ongoing study and the additional funding would permit a 4-month advancement of the completion date.

Flood Control Storage, Skagit County, Wash.

Senator Stennis. There is considerable official concern in Skagit County, Wash., over the need for additional Federal flood control efforts. Has the Corps made an evaluation of that need?

General MORRIS. Yes, sir, the Corps has completed evaluation of requirement for additional flood control in the Skagit River Basin and confirmed that the need exists.

Senator STENNIS. Has the Corps evaluated the need for additional flood control storage space in the Upper Baker Reservoir owned by Puget Sound Power and Light Co.?

General MORRIS. Yes, sir. The need for additional flood control storage in Upper Baker Reservoir, first identified in the interagency Puget Sound and Adjacent Waters Comprehensive Study, completed in 1971, has been confirmed by Corps current studies.

Senator STENNIS. What additional storage capability would the Corps require in that reservoir in fiscal year 1975 to provide sufficient flood control?

General MORRIS. Sir, about 58,000 acre-feet of additional flood control storage capacity would be required in fiscal year 1975.

Senator STENNIS. The Federal Power Commission license for the Upper Baker Reservoir requires the licensee to make additional flood control storage capacity available upon the Corps request provided the licensee is appropriately reimbursed. How much would be required in additional fiscal year 1975 funds to permit the Corps to fulfill the requirements of the FPC license so it could obtain the additional flood control storage capacity required in the reservoir in fiscal year 1975?

General MORRIS. Currently there is no authority from the Congress for the Corps of Engineers to acquire the flood control storage and to compensate the power company. However, if authority and funds were made available we would need $80,000 additional fiscal year 1975 funds to pay for replacement power provided to Puget Sound Power and Light for the additional flood control storage capacity made available during the 1974–75 winter flood season in fulfillment of the requirements of the PFC license, based on the greatest power loss possible through change of reservoir operation.

Senator STENNIS. What, specifically, would be the reimbursement arrangement?

General MORRIS. Sir, the fiscal year 1975 funds would be used by the Corps to pay Bonneville Power Administration for replacement power provided to the power company as compensation for power losses resulting from additional flood control storage. The Corps would be a preferential customer of BPA with the power provided to the company at a point of system interconnection.

WYNOOCHEE LAKE, WASH. (FISH HATCHERY FACILITIES)

Senator STENNIS. There is nothing in the budget, and local interests have requested $696,000. What is your capability on this project?

General MORRIS. Mr. Chairman, our capability on this project is $696,000 for construction of fish hatchery facilities.

Senator STENNIS. Would you submit a statement for the record?

General MORRIS. Yes, sir.

[The statement follows:]

WYNOOCHEE LAKE, WASH. (FISH HATCHERY FACILITIES)

Summarized financial data

Estimated Federal cost (Corps of Engineers)	[1] $696,000
Estimated non-Federal cost	0
Total estimated project cost	[1] 696,000
Allocations to date	0
Balance to complete (Corps of Engineers)	[1] 696,000
Amount that could be used in fiscal year 1975	[1] 696,000

[1] This amount is in addition to the approximate amount of $22,760,000 which has been allocated for the completion of the basic project.

Authorization.—Water Resources Development Act of 1974.

Proposed Operations.—The amount of $696,000 would be transferred to the State of Washington for construction of fish hatchery facilities.

Justification.—Section 47 of the Water Resources Development Act of 1974 modified the Wynoochee Lake project to provide that the Secretary of the Army, acting through the Chief of Engineers is authorized and directed to transfer to the State of Washington, as a part of project costs, an amount not to exceed $696,000 for construction of fish hatchery facilities for mitigation of losses of natural spawning areas for anadromous trout occasioned by project construction.

YAKIMA REGIONAL STUDY, WASH.

Senator STENNIS. What would be the relationship, if any, between the Yakima regional water management study the Corps has been authorized to make and the Yakima Valley total water management study that the Bureau of Reclamation has been authorized to make?

General MORRIS. Sir, these two studies are compatible and complementary with the USBR responsibilities primarily related to agricultural areas and their existing irrigation project and possible future modifications or expansions. The Corps study would deal primarily with the needs of urban communities for water pollution control and abatement, storm water drainage, and related water resource development. Assistance would be provided to USBR in system operation studies leading to improved control of the Yakima River and its tributaries in the interest of flood and water quality control. Respective study plans would be coordinated between USBR and Corps of Engineers, as well as with other State and Federal agencies.

Senator STENNIS. What is the Corps fiscal year 1975 capability for its authorized study?

General MORRIS. Sir, the fiscal year 1975 capability is $200,000.

ZINTEL CANYON DAM, WASH.

Senator STENNIS. There is nothing in the budget, and local interests have requested $250,000. What is your capability on the project?

General MORRIS. Mr. Chairman, our capability on this project is $250,000 to initiate construction.

Senator STENNIS. Would you submit a statement for the record?

General MORRIS. Yes, sir.

[The statement follows:]

Project: Zintel Canyon Dam, Washington

Summarized Financial Data:

Estimated Appropriation Requirement	$ 3,150,000	
Estimated Federal Cost (Corps of Engineers)		$ 3,150,000
Estimated non-Federal Cost		370,000
Cash Contributions	0	
Other Costs	370,000	
Total Estimated Project Cost		$ 3,520,000
Allocations to Date		339,000
Balance to Complete (Corps of Engineers)		$ 2,811,000
Amount that could be utilized in Fiscal Year 1975		$ 250,000

Authorization: Section 201 of 1965 Flood Control Act (Authorized 1970)

Location and Description: Zintel Canyon runs north to the Columbia River, in and adjacent to the city of Kennewick, Benton County, Washington. The project would consist of a rock fill dam 119 feet high, with uncontrolled spillway and outlet works that would create a reservoir of 2,500 acre-feet of capacity. The storage comprises 2,100 acre-feet for flood control and 400 acre-feet for sediment. In addition, the project would include a channel with a capacity of 400 cfs.

Proposed Operations: The amount of $250,000 could be used to initiate construction.

Justification: The plan of improvement would provide protection against heavy rainfall, snowmelt, and thunderstorm floods to the city of Kennewick, Washington. It is estimated that a recurrence of the February 1907 flood of record would cause damages of about $800,000 to $1,000,000 under present conditions. Average annual benefits, all flood control, are estimated to be $341,800. The benefit-to-cost ratio is 1.7 to 1.

STATUS OF ENVIRONMENTAL IMPACT STATEMENT: An updated Final Environmental Impact Statement was filed with CEQ on 8 February 1974.

Burnsville Lake, W. Va.

Senator Stennis. The budget request was $9,100,000. The House has included $9,100,000, and local interests have requested $9,600,000. What is your capability on this project?

General Morris. Our capability on this project is $9,600,000, Mr. Chairman.

Senator Stennis. What would be accomplished with the additional $500,000?

General Morris. The additional amount would be used to advance project completion by 6 months.

Coal River, W. Va.

Senator Stennis. The budget request was $147,000. The House has included $197,000, and local interests have requested $197,000. What is your capability on this project?

General Morris. Our capability on this project is $197,000, Mr. Chairman.

Senator Stennis. What would be accomplished with the additional $50,000?

General Morris. The additional amount would be used to initiate construction of the project.

Lower Guyandot River Basin, W. Va.

Senator Stennis. There is nothing in the budget, and local interests have requested $500,000. What is your capability on this project?

General Morris. Mr. Chairman, our capability on this project is $500,000 to complete preconstruction planning and initiate construction.

Senator Stennis. Would you submit a statement for the record?

General Morris. Yes, sir.

[The statement follows:]

Project: Lower Guyandot River Basin - Channel Cleanout, West Virginia

Summarized Financial Data:

Estimated Federal Cost (Corps of Engineers)	$2,000,000
Estimated non-Federal Cost	1/
Total Estimated Project Cost	1/
Allocations to Date	25,000
Balance to Complete (Corps of Engineers)	1,975,000

1/ Not available at present time.

Amount that could be used in Fiscal Year 1975 500,000

Authorization: Water Resources Development Act of 1974 (Section 60).

Location and Description: The proposed project is located in Wyoming, Logan and Lincoln Counties, West Virginia, below the R. D. Bailey Dam, along the Guyandot River and its tributaries. The proposed work would consist of channel cleanout and snagging and clearing for selected streams in the lower Guyandot River Basin.

Proposed Operation:

The amount of $500,000 could be utilized in FY 1975 to complete preconstruction planning and to initiate construction.

Justification: The authorizing legislation limits work to interim measures which can be implemented prior to flood control operation of R. D. Bailey Lake. Thus it is anticipated that such measures will generally be limited to removal of major mainstream channel restrictions and to cleanout of the lower reaches of tributary streams, i.e. those reaches affected by Guyandot River backwater. This emergency-type channel modification work would be beneficial in reducing flood damages from frequently occurring floods prior to operation of R. D. Bailey Lake and will reduce tributary stream headwater flood damages for an extended period.

The project is located in Appalachia. Logan County, W. Va., qualifies for consideration as (1) and Lincoln County as (1,1) under TitleIV of the Public Works and Economic Development Act of 1965 (P.L. 89-136). The benefit to cost ratio is not applicable for this project.

Status of Environmental Impact Statement: Environmental Impact Statement will be prepared and submitted concurrently with the General Design Memo.

R. D. Bailey Lake, W. Va.

Senator Stennis. The budget request was $17,600,000. The House has included $17,600,000, and local interests have requested $18,600,000. What is your capability on this project?

General Morris. Our capability on this project is $18,600,000, Mr. Chairman.

Senator Stennis. What would be accomplished with the additional $1 million?

General Morris. The additional amount would be used to advance project completion by 6 months.

LaFarge Lake and Channel Improvement, Wis.

Senator Stennis. The budget request was $3 million. The House has included $4 million, and local interests have requested $3 million. What is your capability on this project?

General Morris. Our capability on this project is $4,300,000, Mr. Chairman.

Senator Stennis. What would be accomplished with the additional $1,300,000?

General Morris. The additional amount would be used to advance the project's completion by 4 months.

Prairie du Chien, Wis.

Senator Stennis. There is nothing in the budget. The House has included $30,000, and local interests have requested $30,000. What is your capability on this project?

General Morris. Mr. Chairman, our capability on this project is $30,000 to initiate preconstruction planning.

Senator Stennis. Would you submit a statement for the record?

General Morris. Yes, sir.

[The statement follows:]

Project: Prairie Du Chien, Wisconsin

Summarized Financial Data:

Estimated Federal Cost		$ 2,480,000
Estimated non-Federal Cost		620,000
Cash Contribution	$ 539,000	
Other	81,000	
Total Estimated Project Cost		3,100,000
Allocations to Date		0
Balance to Complete		2,480,000
Preconstruction Planning Estimate		100,000
Amount that could be utilized in FY 1975		30,000

Authorization: Section 2 of the Water Resources Development Act of 1974.

Location and Description: Prairie du Chien is located in Crawford County in southwestern Wisconsin on the left bank of the Mississippi River. The plan of improvement combines flood plain evacuation with flood proofing and land use control measures to provide reduction of flood damages. Evacuation would be accomplished by purchase and relocation of all structures not meeting the land use criteria for floodway and flood plain areas, as established by State law and adopted city ordinances. Only those structures in flood plain areas that could be economically flood proofed or practically elevated above the design water surface and meet State sanitary requirements would be allowed to remain at their present sites. About 33 buildings would be relocated, 172 buildings would be purchased and demolished, 7 existing business and industrial structures would be flood proofed, and 33 residential structures would be raised above the design water surface elevation.

Proposed Operations: The $30,000 would be used to initiate preconstruction planning.

Justification: Prairie du Chien lies in the Mississippi River Valley and has frontage on nearly 3 miles of the east channel of the Mississippi River. A portion of the city is located on an island formed by the Marais de St. Friol of backwater channel of the Mississippi River. The city, founded in the early 1820's, has a long and bitter flood history. Historical records show that, even at this early date, two severe floods had occurred, causing Fort Crawford on St. Friol Island to be relocated to the mainland. Since 1880, St. Friol Island has been flooded 13 times. During the 1965 record flood, much of the flood plain at Prairie du Chien was inundated to depths of over 8 feet. About 1,000 people were evacuated from 250 homes, about 25 businesses were damaged, transportation and communication facilities were disrupted and public utilities were severely damaged. Should a flood of this magnitude occur under present conditions, the city would suffer about $3,200,000 in damages, with businesses suffering about half the damages. The 1965 flood at Prairie du Chien also caused one drowning. The average annual flood damages are estimated at $259,000 and are of a serious magnitude and will continue to pose a serious economic restraint in the community and a threat to human life and health. The benefit-to-cost ratio is 1.5 to 1. The average annual benefits, all flood control, are estimated at $212,000.

Status of Environmental Impact Statement: A final statement was filed in June 1971 with the Council on Environmental Quality. During the Phase I advance engineering and design studies additional environmental investigations will be made and the statement on file with CEQ revised or supplemented as determined necessary.

EFFECT OF INFLATION

Senator STENNIS. Please update the committee on the effect of inflation on the Corps construction program.

General MORRIS. During calendar year 1973, construction costs increased 6.8 percent. Projections for calendar year 1974 are for an additional 10 percent increase in construction costs. Uncertainties on prices and availability of construction materials could cause some variations regionally in construction prices. Increases of this magnitude and irregular nature detrimentally affect the program in two ways. First, and most obvious, is that it costs more for the same work. Second, and less obvious, is that contractor bids undoubtedly include greater contingency amounts in view of the irregular rate at which costs to the contractor are increasing. The effect is greater as the contract performance period is longer because the uncertainties become greater.

OPERATION AND MAINTENANCE

Senator STENNIS. I note that the House has made a net reduction of $4,123,000 in the Corps' operation and maintenance program. Will the funds provided in the House bill be sufficient to allow proper operation and maintenance and what impact will this reduction have on the Corps-wide O. & M. program?

General MORRIS. The funds provided in the House bill represent a reduction of $7,830,000 from the budgeted works. Since there were specific increases of $3,707,000 assigned to various projects, the net House amount will not be sufficient to allow proper operation and maintenance of our projects. This will cause an increase in the backlog of deferred maintenance. The high river stages experienced in the Mississippi River during fiscal year 1974 resulted in extreme shoaling in the navigation channels to the extent traffic was seriously impeded. To relieve this critical condition emergency dredging measures were taken requiring diversion of O. & M. funds scheduled for dredging other important commercial waterways. As a result of this funds diversion the maintenance dredging requirements on these projects have now reached the critical stage and unless sufficient funds are available to provide for this dredging in fiscal year 1975 navigation will be seriously affected. To this end, the Corps will have to realine its O. & M. program on a priority basis to lessen the impact of this reduction on the overall program. However, even with such adjustments it is expected that the funds shortage will result in a deferral of essential maintenance on a significant number of projects.

TIME REQUIRED FOR HYDROPOWER STUDIES

Senator STENNIS. The subcommittee has heard testimony critical of the length of time frequently taken by the Corps in completing studies of proposed hydropower projects. How can this process be expedited?

General MORRIS. Sir, our experience does indicate that time required in project planning has been extensive and has become longer as the need to fulfill all the formal requirements of the National Environmental Policy Act and other legislative requirements pertaining to

the planning process have come into being. Perhaps congressional action to streamline provisions of NEPA, section 122 of the River and Harbor Act of 1970 and similar legislation, with respect to hydropower studies, would help decrease the required study time. We are giving emphasis to meeting these requirements as expeditiously as possible in view of the recent energy shortages. Hydropower planning is further complicated by the range of possible alternative energy sources, such as nuclear, gas, oil, coal, solar, and geothermal projects. In the past few years there have been objections to all forms of energy generation. It has only been due to the recent energy shortage that the public as a whole has become aware of the energy crisis. In this regard, a Federal policy on energy development would establish a better definition of power needs and the advantages and disadvantages of each source. This would help develop public knowledge on the desirability of a specific source such as hydropower.

HOPPER DREDGES

Senator STENNIS. What actions, specifically, would the Congress have to take in acting on the Corps fiscal year 1975 budget to provide for sufficient hopper dredge service in fiscal year 1975?

General MORRIS. The total number of seagoing hopper dredges operated by the Corps was recently reduced to 15 due to the sinking and loss of the *MacKenzie* as a result of being rammed by a tanker in the Galveston entrance channel. The annual dredging workload requirements for seagoing hopper dredges, coupled with an unusual amount of shoaling in the Mississippi River entrance channel due to the floods over the past 2 years, have taxed our production capabilities. The loss of the *MacKenzie* will make it even more difficult to provide authorized depths in the entrance channels of the major ports of the country. There is an action which could be taken by the Congress on the fiscal year 1975 budget to improve hopper dredge service on a national basis. The action, which would provide immediate and long-term benefits, would be to modify the moratorium on the replacement or modification of all corps dredges. The exclusion of hopper dredges from the moratorium would permit us to proceed immediately with modifications which are urgently needed to improve the reliability and performance of existing hopper dredges. In addition, we could proceed with the planning and submission of justifications to the Congress for replacement of existing obsolete dredges and the construction of additional dredges to meet the navigation requirements over the next 5 to 10 years.

OPPOSITION TO CORPS APPROPRIATIONS

Senator STENNIS. Mr. Brent Blackwelder, representing the Environmental Policy Center, testified again this year before this subcommittee in opposition to further funds for the Corps program. Mr. Blackwelder has stated that by spending money on waste treatment plant construction, mass transit construction, national health insurance, and social security programs, more jobs can be created than by spending the same amount of money on Corps projects.

General MORRIS. We believe that the use of public works programs, as those of the Corps, has an important place in stimulating local and

regional economic activity and job opportunities. Where specific regions are lagging behind the Nation in economic growth, it is possible to schedule needed public works in a manner which fosters economic development and has important job impact effects. The work in Appalachia is a good example of this timely use of public investment in the natural resources field. It is true that economic development frequently requires a package of development efforts including roads, job training, as well as water resources projects; but it is important to recognize that there are many areas where this is the best way to approach the problem of economic stimulation.

Increases in social security benefits are no doubt appropriate and valuable when there is a general depression of the whole economy. The value of public works projects is that they may be directed to the specific area of need. This element of flexibility should not be overlooked. Economic depression, while often local or regional in character, may have national implications.

Senator STENNIS. Mr. Blackwelder further states that it is not correct that hydropower is pollution-free energy because they sometimes inundate wildlife habitats and drown stretches of White Water River. He also criticized the Corps for misleading the committee about supposed energy saving advantages of barge haul over rail haul.

General MORRIS. Inundation of wildlife habitats and freeflowing streams by hydropower reservoirs is not pollution, but rather an environmental tradeoff for economic gains.

Although there have been several studies addressing the question of energy efficiency of the various modes of transport, at the present time no study has reflected all the variables which are necessary for a complete and overall assessment of the subject. Such variables include energy consumption per unit of distance, circuitry considerations, short- versus long-haul problems, equipment utilization, seasonal adjustments, comparable grades, and system delays.

In this regard, it is understood that the subject is being given additional study by several private institutions and Federal agencies.

In a recent statement before the House Appropriations Subcommittee on March 5, 1974, Secretary Brinegar of the Department of Transportation compared the relative efficiency of water, rail, and truck modes as shown in the following table:

AVERAGE ENERGY USAGE AND EFFICIENCIES

Freight mode	Fuel usage, thousand barrels per day (1973)	Freight ton miles per gallon of fuel (1973)
Water	120	300
Rail	300	180
Truck	1,450	50

RECREATION FACILITIES AT COMPLETED PROJECTS OPPOSITION TO COST SHARING POLICY

Senator STENNIS. In his testimony before this committee, Mr. Joel Pickelner, Conservation Counsel for the National Wildlife Federation, raised objections to the cost sharing principles for which $20

million is included in the fiscal year 1975 budget. His concern is that local governments with their limited tax bases and scarce revenue-producing resources will have difficulty in financing their share of the recreation development. Could you briefly outline the administration policy regarding cost sharing of recreation facilities at completed projects?

General MORRIS. Yes, sir, under the current administration policy, the corps cannot expend funds for development of recreation facilities at completed projects unless a contract has been entered into with a non-Federal public agency which agrees to pay not less than 50 percent of the development costs and assume responsibility for operation and maintenance of the recreation area. However, we have been permitted to include $5 million in our fiscal year budget for upgrading sanitary facilities to be consistent with current Federal and State pollution abatement laws.

Senator STENNIS. How has the new cost sharing policy impacted on the distribution of these funds in your fiscal year 1975 budget request?

General MORRIS. Sir, funds included in the fiscal year 1975 budget for recreation facilities at completed projects are for facilities in 30 States including cost sharing in 23 States. There are certainly recreation development needs at Corps reservoirs in other States and other reservoirs in the 23 States. However, additional development at these locations is not included in our budget request.

Senator STENNIS. Does this mean that these recreation needs will not be met?

General MORRIS. It would appear that under current policy these needs will not be met. In other words, those States that are willing to cost-share and have the financial resources will be receiving priority over those that do not. I might add that the cost-sharing contracts also call for non-Federal maintenance after the new facilities are built.

ICE ENGINEERING FACILITY OPPOSITION

Senator STENNIS. General Morris, as you know, Mr. Jack W. Lewis, president of Arctec, Inc., has appeared before this committee and expressed concern about the Corps proposal to construct an ice engineering facility. He expressed the opinion that your effort would be in competition with small business and duplicates a facility his company is constructing. Would you please inform me and the committee on this problem?

General MORRIS. Senator Stennis, the proposed facility is an addition to the Corps' Cold Regions Research and Engineering Laboratory in Hanover, N.H. The mission of this laboratory is to conduct and coordinate cold regions research throughout the world. A study conducted during the past year indicated a need to initiate a long-range research program to resolve problems related to the effects and damage caused by ice costing in excess of $100 million a year. The proposed facility is not identical to the one at Arctec. Arctec's facility is primarily a ship towing basin, which reflects the Coast Guard background of the company's founders. The CRREL facility is designed to meet the Corps' and Nation's needs in ice engineering. Prior to Arctec's

actions, the concept for an ice engineering facility was developed as part of the Great Lakes-St. Lawrence Seaway navigation season extension demonstration program. There was further discussion of this concept during Senate and House hearings on section 107 of 1970 Omnibus River and Harbor Flood Control Act for the Great Lakes.

Senator STENNIS. Was the Arctec Laboratory the first cold regions modeling basin in North America?

General MORRIS. No, sir. The first refrigerated test basin that we know of was built by the Navy in San Diego, Calif. It was at this test basin that the U.S. Coast Guard conducted model studies in 1967–69 of their new icebreakers and the tanker Manhattan. I believe that the four original staff members of the Arctec, including Mr. Lewis, were part of the Coast Guard team that conducted these tests. The Navy tank or basin was designed for submarine research and is not fully suited as a towing basin. Other existing facilities in the United States are somewhat specialized to evaluate problems related to ship design. The Corps examined the capabilities of five laboratories in the United States before concluding that its special needs warranted development of the proposed laboratory.

Senator STENNIS. Does Arctec have a patent for their refrigeration process?

General MORRIS. Yes, sir. Their system uses liquid nitrogen spray as the refrigerant. This produces an ice cover more rapidly, but we have some concern about the safety of the method. From a technical viewpoint, it is also difficult to maintain a constant thickness of ice for any period of time using this method.

Senator STENNIS. Mr. Lewis stated that he learned last year that the Corps of Engineers was planning to build a facility that would have identical capabilities as his. When did the Corps begin to plan their facility and will it have capabilities identical to Arctec's?

General MORRIS. Ice engineering research is not new to the Corps of Engineers. The Cold Regions Research and Engineering Laboratory, which is a Corps laboratory, has facilities completed in 1960 for conducting research on ice and ice-related problems. They, CRREL, first discussed plans for expansion in 1968. In 1969, Congress, in section 107 of the 1970 Omnibus River and Harbor and Flood Control Act, approved the design and construction of a complete ice laboratory. This is stated in the House and Senate discussions of the Bill. Section 107 of the bill was the Great Lakes-St. Lawrence Seaway season extension demonstration program. During 1971, the first year of the demonstration program, a report was prepared which included the justification, specifications, and a preliminary plan of the proposed ice engineering facility. The report was submitted to the winter navigation board in September 1972 and was included in their first annual report. A copy was also provided to Mr. Rodrick Edwards, vice president of Arctec, in December 1972. Due to lack of funding approval, construction was delayed. The urgent need for the addition to the Corps present facilities was underscored when a recent study conducted for the Office, Chief of Engineers, estimated that each year the costs of the effects and damage caused by ice are in excess of $100 million. Based on this, the Chief of Engineers recommended a long range research program in ice engineering with the objective of conducting studies to provide technical analysis, techniques, and designs for the

solution of ice problems. The solution of these problems is expected to save our country millions of dollars. The initial requirement for implementing an adequate long range multipurpose program is the availability of an adequate laboratory facility.

The capabilities of the proposed Corps laboratory are different from those of Arctec and other facilities in the United States. The other facilities are capable of addressing only a narrow range of specific ice engineering problems. In comparing the Arctic and Corps laboratories there is only a superficial similarity. For example, the test basin in the Corps laboratory will be used to study ice problems at navigation locks, hydroelectric dams, and ice damage to shore and offshore structures. To accomplish these studies the basin has to have flow-through capabilities and water level control. The Arctec facility, designed primarily for model studies of icebreaking vessels, has neither of these capabilities. The large cold room and model area of the Corps facility will be the first such room in the entire world. It is urgently needed to study river ice jams, shore erosion, ice control structures and construction materials used in cold regions.

The Arctec facility has no plans for such a large refrigerated room. The Corps facility includes a refrigerated flume for studies of frazil ice (a mush-like ice), theory of ice jam formation, ice control techniques, and ice suppression methods. The Arctec facility has no refrigerated flume. In summary, the capabilities of all known facilities in the world were considered in detail in determining the need for a Corps facility to assure that there would be no unnecessary duplication of ice engineering capability. Our evaluation indicates that an ice engineering facility is urgently needed by our Cold Regions Research and Engineering Laboratory so that we can conduct comprehensive research investigations on a Corps-wide basis of ice phenomena, particularly in those cases which relate to rivers, lakes, harbors, and other navigable waters.

Senator STENNIS. Will the Corps facility be in direct competition with Arctec's new facility?

General Morris. No, sir. In fact, the two facilities should complement one another. The Arctec facility is primarily a refrigerated towing basin for ship model testing. The Corps has no plans to conduct model studies of icebreaking vessels.

Senator STENNIS. Does the Corps plan to undertake research for other Government agencies?

General MORRIS. The planned Corps program in ice engineering will keep the laboratory occupied nearly full time. When time is available the CRREL facility, will, of course, be open to them on a reimbursable basis. The U.S. Coast Guard has expressed an interest in utilizing these facilities to resolve some of their problems not related to ship design.

Senator STENNIS. Will Arctec's clients be able to obtain answers to their problems from the Corps at no cost?

General MORRIS. The Corps plans to answer its own research and engineering problems. Contrary to the practice of private firms, the results of Corps studies are available to anyone. Thus, any basic research information may be of value to potential Arctec clients, but it will not answer their client's specific engineering problems. If CRREL's unique facilities are required to provide a solution for a non-Corps organiza-

tion, it will be possible to conduct the study for them if the workload permits. However, to do so the client must pay the full cost which includes salaries, operating costs, amortization of plant and equipment overheads and, if a non-government agency, a 15-percent surcharge. In no sense is work done at no cost for any customer.

Senator STENNIS. Why hasn't the Corps of Engineers contracted ice engineering studies to other organizations?

General MORRIS. The Corps of Engineers has and will continue to make use of other organizations, facilities and talents. For example, in ice engineering we have on-going contracts to the University of Iowa, New York University, and Clarkson College for investigations on specialized aspects of ice problems. In our opinion, Arctec's unique talents lie in naval architecture as related to ice problems, which is outside the Corps mission. The requirements of the Corps cannot be met by the limited facilities of Arctec.

Senator STENNIS. How did the Corps actually determine the need for additional laboratory space at CRREL?

General MORRIS. As the Corps and other Federal agencies developed the scope of work for the demonstration program of the Great Lakes-St. Lawrence Seaway Navigation Season Extension Study, they found that additional facilities would be needed to solve future problems. The Chief of Engineers wanted a more definite long-term justification and therefore sponsored a baseline study to determine the Nation's annual ice damage.

The study was accomplished by an interdisciplinary team of engineers and scientists who made extensive contact with all Corps offices, other Federal agencies, universities, and private firms.

The study report was reviewed by the Corps, over 20 Federal agencies, the National Science Foundation, the National Academy of Engineering, and the National Academy of Sciences. All of the reviewers recognized the need for a long-range research program in ice engineering and all but the Maritime Administration endorsed the need for additional facilities.

Senator STENNIS. If other Government agencies use the Arctec facility, why doesn't the Corps?

General MORRIS. The other agencies using the Arctec facilities did so primarily for model studies of ships operating in ice. The study for the St. Lawrence Seaway Development Corporation was a system analysis and therefore no facility was required. It might be pointed out that CRREL recommended that the Maritime Administration and Navy contract to Arctec to solve their specific problems.

FLOOD CONTROL, MISSISSIPPI RIVER AND TRIBUTARIES, GENERAL INVESTIGATION

Senator STENNIS. Now, the budget request for surveys and studies for M.R. & T. is $1,360,000. The House has allowed $1,700,000. What is your capability for survey in the Mississippi River and tributaries project?

General MORRIS. Sir, our capability for general investigations is $2,345,000.

Senator STENNIS. Would you submit a statement for the record?

General MORRIS. Yes, sir.

[The information follows:]

rroject: Flood Control, Mississippi River and Tributaries, General Investigations

The FY 1975 budget contains $1,360,000 for surveys of which:

$65,000 will be used to continue the Bayou du Chien, Kentucky study;
$135,000 will be used to complete the Bayou Rapides, Boeuf and Cocodrie and Outlets, Louisiana study;
$40,000 will be used to continue the Mississippi River Phillips County, Arkansas study;
$55,000 will be used to continue the Lake Providence, Louisiana study;
$105,000 will be used to complete the Mississippi River, Memphis, Tennessee study:
$40,000 will be used to continue the Obion and Forked Deer Rivers and Tributaries, Kentucky and Tennessee study;
$550,000 will be used to continue the Atchafalaya Basin (Water and Land Resources), Louisiana study;
$70,000 will be used to continue the St. Francis River Basin below Wappapello, Arkansas and Missouri study;
$200,000 will be used to continue the St. Johns Bayou and New Madrid Floodway, Missouri study;
$25,000 will be used to complete the Yazoo River Basin, Mississippi study;
$75,000 will be used to continue the Wolf-Loosahatchie Rivers and Nonconnah Creek, Tennessee and Mississippi study.

An additional amount of $590,000 could be used for budgeted surveys in Fiscal Year 1975. Of this amount:

$20,000 would be used to advance the St. Francis River Basin below Wappapello, Missouri and Arkansas study;
$15,000 would be used to advance the Bayou du Chien, Kentucky study;
$45,000 would be used to advance the Lake Providence, Louisiana study;
$20,000 would be used to advance the Mississippi River, Memphis, Tennessee study;
$340,000 would be used to advance the Atchafalaya Basin (Water and Land Resources), Louisiana study;
$100,000 would be used to advance the Yazoo River Basin, Mississippi study; and
$50,000 would be used to advance the Wolf and Loosahatchie Rivers and Nonconnah Creek, Tennessee and Mississippi.

In addition for unbudgeted surveys the following amounts could be used in FY 1975.

$10,000 could be used to initiate the Berwick Lock-Atchafalaya River Basin, Louisiana study;
$20,000 could be used to initiate the East Bank Levees, Mississippi River, Louisiana study;
$70,000 could be used to initiate the St. Francis River, Missouri and Arkansas (Fish and Wildlife);
$20,000 could be used to initiate the Laconia Circle Area, Desha County, Arkansas;
$10,000 could be used to initiate the Louisiana State Penitentiary Levee, Mississippi River, Louisiana study;
$25,000 could be used to initiate the Walnut-Roundaway Bayou, Louisiana study;
$100,000 could be used to initiate the Mississippi River, Cairo, Illinois to Baton Rouge, Louisiana study; and
$20,000 could be used to initiate the Larto Lake-Saline Lake Area, Louisiana study.

Mississippi River Levees

Senator Stennis. The budget request was $32,200,000. The House has included $33,700,000, and local interests have requested $55,190,000 What is your capability on this project?

General Morris. Our capability on this project is $55,190,000, Mr. Chairman.

Senator Stennis. What would be accomplished with the additional $11,950,000?

General Morris. The additional amount would be used to raise levees in critical areas and to advance construction of levee enlargement, floodwalls and gravel roads at various locations.

Mud Lake Pumping Plant, Tenn.

Senator Stennis. There is nothing in the budget. The House has included $30,000. What is your capability on this project?

General Morris. Mr. Chairman, our capability on this project is $30,000 to initiate preconstruction planning.

Senator Stennis. Would you submit a statement for the record?

General Morris. Yes, sir.

[The statement follows:]

Project: Mud Lake Pumping Plant, Tennessee

Summarized Financial Data:

Estimated Federal Cost		$910,000
Estimated Non-Federal Cost		22,000
Cash Contribution	$ 0	
Other	22,000	
Total Estimated Project Cost		$932,000
Allocations to Date		0
Balance to Complete		910,000
Preconstruction Planning Estimate		190,000
Amount that could be utilized in FY 1975		30,000

Authorization: Approved December 1970 under Section 201 of the Flood Control Act of 1965.

Location and Description: The project is located southwest of Ridgely in Lake County, Tennessee. Mud Lake has a drainage area of 8-1/2 square miles and is located within the authorized Harris Ditch drainage area. When river stages permit, Mud Lake drains through the existing Mud Lake culverts under the Mississippi River levee. The project provides for construction of a new inlet channel from a point 2,000 feet upstream from the existing Mud Lake culverts northward to the Mississippi River levee; a 150-cfs pumping station, without a gravity outlet; and an outlet channel to carry the pumping station discharge to the Mississippi River.

Proposed Operations: The amount of $30,000 would be used to initiate preconstruction planning.

Justification: The area, a highly developed agricultural area, suffers from damaging floods, with durations from 3 to 15 days annually. The flood of June 1970 caused damages estimated at $50,000. A recurrence of the flood of record, the 1927 flood, would cause a loss of $110,000. The project will provide channels which will contain a 10-year frequency flood and will lower stages resulting from greater floods. Estimated average annual damages without the project are $25,700. With the project, residual average annual damages would be $700. The benefit-to-cost ratio is 1.05 to 1. The estimated average annual benefits are broken down as follows:

Flood Control	$52,000
Area Redevelopment	8,000
Total	$60,000

Status of Environmental Impact Statement: The environmental impact statement will be prepared during the preconstruction planning.

Senator STENNIS. The budget request was $35 million. The House has included $36 million, and local interests have requested $76 million. What is your capability on this project?

General MORRIS. Our capability on this project is $76,500,000, Mr. Chairman.

Senator STENNIS. What would be accomplished with the additional $41,500,000?

General MORRIS. The additional amount would be used to advance dredging work and construction of revetment and dikes in certain areas.

OLD RIVER

Senator STENNIS. The budget request was $1 million. The House included $1 million, and local interests have requested $2,700,000. What is your capability on this project?

General MORRIS. Our capability on this project is $2,700,000 Mr. Chairman.

Senator STENNIS. What would be accomplished with the additional $1,700,000?

General MORRIS. The additional amount would be used to advance construction of revetments at Long Lake and Turnbull Island.

ST. FRANCIS BASIN

Senator STENNIS. The budget request was $10 million. The House has included $13,600,000, and local interests have requested $16,500,000. What is your capability on this project?

General MORRIS. Our capability on this project is $16,500,000, Mr. Chairman.

Senator STENNIS. What would be accomplished with the additional $6,500,000?

General MORRIS. The additional amount would be used to advance land acquisition, relocations, and construction of channels, levees, and recreation facilities.

LOWER WHITE RIVER, AUGUSTA TO CLARENDON LEVEE, ARK.

Senator STENNIS. There is nothing in the budget, and local interests have requested $100,000. What is your capability on this project?

General MORRIS. Mr. Chairman, our capability on this project is $100,000 to continue construction.

Senator STENNIS. Would you submit a statement for the record?

General MORRIS. Yes, sir.

[The statement follows:]

Project: Lower White River, Augusta to Clarendon Levee, Arkansas

Summarized Financial Data:

Estimated Federal Cost		$3,800,500
Estimated Non-Federal Cost		674,800
Cash Contribution	$ 0	
Other	674,800	
Total Estimated Project Cost		$4,475,300
Allocations to Date		1,378,200
Balance to Complete		2,422,300
Amount that could be utilized in FY 1975		100,000

Authorization: 1941 Flood Control Act.

Location and Description: The project is located on the east bank of White River from Augusta, Arkansas (Mile 203) to Clarendon, Arkansas (Mile 100), and on the west bank at Georgetown, Arkansas (Mile 173). The project is located in Woodruff, Monroe, and Prairie Counties, Arkansas. The plan provides for a levee along the east bank of White River from the vicinity of Augusta to Clarendon, a levee around the town of Georgetown on the west bank, and structures to care for interrupted drainage.

Proposed Operations: The amount of $100,000 would be used to continue construction.

Justification: The construction of the protective works from Augusta to Clarendon gives protection against the maximum recorded stages to a large area of farm lands. The flood plain consist of approximately 450,000 acres, of which, the major portion is highly productive farm lands. The urban areas are Georgetown, Des Arc and Devalls Bluff. The benefit-to-cost ratio, which has not been computed since 1960, is 3.4 to 1. The average annual benefits are broken down as follows:

Flood Control	$419,000
Area Redevelopment	47,000
Total	$466,000

Lower White River (Big Creek and Tributaries), Ark.

Senator Stennis. There is nothing in the budget, and local interests have requested $50,000. What is your capability on this project?

General Morris. Mr. Chairman, our capability on this project is $50,000 to initiate construction.

Senator Stennis. Would you submit a statement for the record?

General Morris. Yes, sir.

[The statement follows:]

Project: Lower White River (Big Creek & Tributaries), Arkansas

Summarized Financial Data:

Estimated Federal Cost		$ 16,385,000
Estimated non-Federal Cost		3,825,500
Cash Contributions	$ 0	
Other	$ 3,825,500	
Total Estimated Project Cost		$ 20,210,500
Allocations to Date		360,000
Balance to Complete		19,850,500
Amount that could be utilized in FY 1975		50,000

Authorization: 1965 Flood Control Act

Location and Description: The project is located in St. Francis, Lee, Monroe, and Phillips Counties, Arkansas. Big Creek rises near the Woodruff-St. Francis County line east of Hunter, Arkansas. It flows southeasterly for about 50 miles to Poplar Grove; thence, southwesterly for about 40 miles to join the White River about 50 miles upstream from the Mississippi River. The plan of improvement provides for straightening, enlarging, and cleaning out the channels of Big Creek and its upper tributaries consisting of Crooked Creek, Spring Creek, Hog Tusk Creek, Piney Fork Ditch, and Flat Fork Little River. The plan also provides for the installation of low dams in the stream channels.

Proposed Operations: The amount of $50,000 would be used to initiate construction.

Justification: The area within the Big Creek watershed is a highly developed agricultural area. An area of about 58,000 acres is affected by flooding from the once in 10-year flood on Big Creek and its tributaries. Flood damages consist predominately of loss of crop production. Other losses include damages to local roads, buildings, and farm improvements. The benefit-cost ratio is 1.3 to 1. The average annual benefits for the project are broken down as follows:

Flood Control	$ 1,069,000
Area Redevelopment	121,000
TOTAL	$ 1,190,000

Status of Environmental Impact Statement: The draft environmental impact statement was filed with the Council of Environmental Quality on 8 July 1971. The final statement is scheduled for submission in January 1975.

Reelfoot Lake—Lake No. 9, Tenn. and Ky.

Senator Stennis. The budget request was $700,000. The House has included $1,800,000, and local interests have requested $1,800,000. What is your capability on this project?

General Morris. Our capability on this project is $1,800,000, Mr. Chairman.

Senator Stennis. What would be accomplished with the additional $1,100,000?

General Morris. The additional amount would be used to accelerate construction of a floodgate.

Cache Basin

Senator Stennis. The budget request was $300,000. The House has included $1,300,000, and local interests have requested $2,090,000. What is your capability on this project?

General Morris. Our capability on this project is $2,090,000, Mr. Chairman.

Senator Stennis. What would be accomplished with the additional $1,790,000?

General Morris. The additional amount would be used to advance acquisition of fish and wildlife mitigation lands and to advance construction of bridge alterations and channel improvements.

West Tennessee Tributaries

Senator Stennis. The budget request was $300,000. The House has included $1,710,000, and local interests have requested $1,710,000. What is your capability on this project?

General Morris. Our capability on this project is $1,710,000, Mr. Chairman.

Senator Stennis. What would be accomplished with the additional $1,410,000?

General Morris. The additional amount would be used to advance relocations, channel construction and acquisition of fish and wildlife mitigation lands.

Tensas Basin, Boeuf and Tensas Rivers

Senator Stennis. The budget request was $800,000. The House has included $800,000, and local interests have requested $9,600,000. What is your capability on this project?

General Morris. Our capability on this project is $9,600,000, Mr. Chairman.

Senator Stennis. What would be accomplished with the additional $8,800,000?

General Morris. The additional amount would be used to advance relocations and construction of channel improvements and to initiate construction of Lake Chicot pumping plant.

Tensas Basin, Red River Backwater

Senator Stennis. The budget request was $1,400,000. The House has included $1,900,000, and local interests have requested $7,400,000. What is your capability on this project?

General Morris. Our capability on this project is $7,400,000, Mr. Chairman.

Senator Stennis. What would be accomplished with the additional $6,000,000?

General Morris. The additional amount would be used to advance levee construction and initiate construction of Tensas-Cocodrie pumping plant.

Yazoo Basin, Arkabutla Lake

Senator Stennis. The budget request was $55,000. The House has included $255,000, and local interests have requested $855,000. What is your capability on this project?

General Morris. Our capability on this project is $855,000, Mr. Chairman.

Senator Stennis. What would be accomplished with the additional $800,000?

General Morris. The additional amount would be used to advance construction of recreation facilities.

Yazoo Basin, Enid Lake

Senator Stennis. The budget request was $15,000. The House has included $265,000, and local interests have requested $865,000. What is your capability on this project?

General Morris. Our capability on this project is $865,000, Mr. Chairman.

Senator Stennis. What would be accomplished with the additional $850,000?

General Morris. The additional amount would be used to advance construction of recreation facilities.

Yazoo Basin, Grenada Lake

Senator Stennis. The budget request was $10,000. The House has included $260,000, and local interests have requested $1,060,000. What is your capability on this project?

General Morris. Our capability on this project is $1,060,000, Mr. Chairman.

Senator Stennis. What would be accomplished with the additional $1,050,000?

General Morris. The additional amount would be used to advance construction of recreation facilities.

Yazoo Basin, Sardis Lake

Senator Stennis. The budget request was $35,000. The House has included $685,000, and local interests have requested $1,085,000. What is your capability on this project?

General Morris. Our capability on this project is $1,085,000, Mr. Chairman.

Senator Stennis. What would be accomplished with the additional $1,050,000?

General Morris. The additional amount would be used to advance construction of recreation facilities.

Yazoo Basin, Ascalmore-Tippo and Opossum Bayous

Senator Stennis. The budget request was $850,000. The House has included $2,350,000, and local interests have requested $2,350,000. What is your capability on this project?

General Morris. Our capability on this project is $2,350,000, Mr. Chairman.

Senator Stennis. What would be accomplished with the additional $650,000?

General Morris. The additional amount would be used to advance relocations and construction of channels and levees.

Yazoo Basin, Tributaries (All Work Except Ascalmore-Tippo and Opossum Bayous)

Senator Stennis. The budget request was $1 million. The House has included $1 million, and local interests have requested $2,550,000. What is your capability on this project?

General Morris. Our capability on this project is $2,550,000, Mr. Chairman.

Senator Stennis. What would be accomplished with the additional $1,550,000?

General Morris. The additional amount would be used to advance relocations and construction of channels and levees.

Yazoo Basin, Mississippi Streambank Erosion Control Evaluation and Demonstration

Senator Stennis. There is nothing in the budget. The House has included $2 million, and local interests have requested $4 million. What is your capability on this project?

General Morris. Mr. Chairman, our capability on this project is $4 million to initiate planning and construction.

Senator Stennis. Would you submit a statement for the record?

General Morris. Yes, sir.

[The statement follows:]

Project: Yazoo Basin, Mississippi, Streambank Erosion Control Evaluation and Demonstration

Summarized Financial Data:

Estimated Federal Cost	$ 12,200,000
Estimated Non-Federal Cost	0
Total Estimated Project Cost	12,200,000
Allocations to Date	0
Balance to Complete	12,200,000
Amount that could be utilized in FY 1975	4,000,000

Authorization: 1974 Water Resources Development Act.

Location and Description: The Yazoo Basin comprises 13,400 square miles in northwestern Mississippi. Some 6,600 square miles are a part of the alluvial flood plain of the Mississippi with the additional 6,800 square miles in the hill area. The project provides for a coordinated program for planning and construction of streambank at locations in both delta and hill portions of the Yazoo Basin.

Proposed Operations: The amount of $4,000,000 would be used for initiation of planning and construction of streambank erosion control.

Justification: The streams in the Yazoo Basin experience varying degrees of streambank erosion problems. Streambank erosion control will prevent the loss of highly productive lands and improvements from destruction and will prevent damage to flood control works in the basin. A majority of the counties in the project area are designated Redevelopment Areas. The construction of the project would have a beneficial effect on the economy of the area by alleviating unemployment and under employment and raising the general level of income. A study of approximately 125 miles of streambank erosion control works, at a cost of $43,000,000, found justified in the Yazoo Basin shows a benefit-cost ratio of 1.6 to 1. Average annual benefits for the 125 miles of streambank erosion control are estimated as follows:

Prevention of Bank Caving	$ 5,890,000
Area Redevelopment	841,000
TOTAL	$ 6,731,000

Remarks: Although approximately 125 miles of streambank erosion control works, at a cost of $43,000,000, have been found needed and economically justified in the Yazoo Basin, it is considered that a pilot program for this work in the basin would be most beneficial at the present time. This pilot program of construction of various types and combinations of structures in prototype, and an analysis of the results, could be accomplished for $12,200,000.

YAZOO BASIN, BIG SUNFLOWER RIVER, INCLUDING STEELE BAYOU

Senator STENNIS. The budget request was $1,285,000. The House has included $2,485,000, and local interests have requested $2,485,000. What is your capability on this project?

General MORRIS. Our capability on this project is $2,485,000, Mr. Chairman.

Senator STENNIS. What would be accomplished with the additional $1,200,000?

General MORRIS. The additional amount would be used to advance construction of channel improvement.

YAZOO BASIN, YAZOO BACKWATER (EXCEPT MUDDY BAYOU)

Senator STENNIS. The budget request was $3,515,000. The House has included $4,740,000, and local interests have requested $6,015,000. What is your capability on this project?

General MORRIS. Our capability on this project is $6,015,000, Mr. Chairman.

Senator STENNIS. What would be accomplished with the additional $2,500,000?

General MORRIS. The additional amount would be used to advance construction of channel improvement.

LOWER RED RIVER—SOUTH BANK LEVEES, LA.

Senator STENNIS. There is nothing in the budget. The House has included $545,000, and local interests have requested $1,130,000. What is your capability on this project?

General MORRIS. Mr. Chairman, our capability on this project is $1,130,000 to continue construction.

Senator STENNIS. Would you submit a statement for the record?

General MORRIS. Yes, sir.

[The statement follows:]

Project: Lower Red River - South Bank Levees, Louisiana

Summarized Financial Data:

Estimated Federal Cost	$ 26,400,000
Estimated Non-Federal Cost	0 1/
Total Estimated Project Cost	26,400,000
Allocations to Date	10,872,000
Balance to Complete	15,528,000
Amount that could be utilized in FY 1975	1,130,000

1/ Prior to project authorization in 1928, the levee district, with the help of the State of Louisiana had constructed 54 miles of levee on the south bank of the Red River between Boyce and Moncla and 7.6 miles of levee on the south bank of Bayou Rapides from its juncture with Red River (at Alexandria) upstream to Cooper Place. Bayou Rapides was closed in vicinity of Alexandria and a floodgate constructed in the closure. Costs of the construction works are not known.

Authorization: 1928, 1941, and 1965 Flood Control Acts

Location and Description: The project extends from the hills at Hot Wells, La. along the south bank of Bayou Jean de Jean to the Red River in the vicinity of Boyce, Louisiana, thence southward along the right descending bank of the Red River to Moncla, La. The project provides for approximately 60 miles of levees and levee protection as required to maintain the integrity of the levee system.

Proposed Operations: The amount of $1,130,000 would be used to continue construction.

Justification: The South Bank Red River - Lower Red River Levee system protects 1,739 square miles of urban, agricultural and wooded lands. The entire area would sustain either direct or indirect damages by levee failure or overtopping. Flood of the lower areas would be extensive and in the higher areas to a lesser degree.

The South Bank Red River - Lower Red River project is one of the components which comprise the plan of improvement for the control of floods of the Mississippi River and its tributaries. The contribution of each element to the overall plan is inseparably related to those made by the others. Therefore, their benefits are inseparable, and a composite B/C ratio for the Main Stem Levees, Channel Improvement, South Bank Arkansas and South Bank Red River Levees, the Atchafalaya Basin, Old River and a few miscellaneous items. The benefit-cost ratio of 18.7 to 1 was derived by measuring the total benefits credited to these Main Stem components against their total cost. Average annual benefits for the composite of Main Stem features follows:

Breakdown of Benefits	Amount
Flood Control	$1,892,323,000
Navigation	350,660,000
Area Redevelopment	11,439,000
Recreation	12,650,000
Less Benefits Creditable to Upstream Reservoir	-10,000,000
Total Annual Benefits	$ 2,257,072,000

Status of Environmental Impact Statement: The draft environmental impact statement is scheduled for submission to the Council of Environmental Quality in September 1974.

Bayou Cocodrie and Tributaries, La.

Senator Stennis. There is nothing in the budget. The House has included $100,000, and local interests have requested $160,000. What is your capability on this project?

General Morris. Mr. Chairman, our capability on this project is $160,000 to continue construction.

Senator Stennis. Would you submit a statement for the record?

General Morris. Yes, sir.

[The statement follows:]

Project: Bayou Cocodrie and Tributaries, Louisiana

Summarized Financial Data:

Estimated Federal Cost	$ 11,800,000
Estimated non-Federal Cost	210,000
Total Estimated Project Cost	$ 12,010,000
Allocations to Date	3,424,000
Balance to Complete	8,586,000
Amount that could be utilized in FY 1975	160,000

Authorization: 1941 Flood Control Act and 1974 Water Resources Development Act.

Location and Description: The project is located in central Louisiana in the Parishes of Rapides, Avoyelles, Evangeline and St. Landry. The project provides for improved drainage of large areas from floodwaters during high stages of Red River when the capacity of the pumping station at Alexandria, La. is exceeded.

Proposed Operations: The amount of $160,000 would be used to continue construction.

Justification: Large areas of land are now held in a nonproductive status or in a state of limited development because of inadequate drainage. Construction of facilities for diversion of flow from the Bayou Rapides area will provide relief from floodwaters during high stages of Red River when the capacity of the pumping station at Alexandria, La. is exceeded. The project will reduce flood losses on approximately 61,700 acres of crop and pasture land and permit increased utilization of about 39,500 acres of cleared and wooded land. Irrigation benefits will accure to about 2,000 acres. Enlargement of Bayou Courtableau will resolve the flood problem in the area from 3.7 miles north of Washington to Courtableau. The benefit-cost ratio is 1.5 to 1. The average annual benefits are broken down as follows:

Flood Control	$ 490,000
Irrigation	11,000
Area Redevelopment	22,000
TOTAL	$ 523,000

ATCHAFALAYA BASIN

Senator STENNIS. The budget request was $3 million. The House has included $3 million, and local interests have requested $50 million. What is your capability on this project?

General MORRIS. Our capability on this project is $50 million, Mr. Chairman.

Senator STENNIS. What would be accomplished with the additional $47 million?

General MORRIS. The additional amount would be used to advance dredging and construction of floodwalls and levees.

TECHE-VERMILION BASINS, LA. (ADDITIONAL SURFACE WATER SUPPLY)

Senator STENNIS. The budget request was $235,000. The House has included $235,000, and local interests have requested $335,000. What is your capability on this project?

General MORRIS. Our capability on this project is $388,000, Mr. Chairman.

Senator STENNIS. What would be accomplished with the additional $153,000?

General MORRIS. The additional amount would be used to advance preconstruction planning.

WEST KENTUCKY TRIBUTARIES

Senator STENNIS. The budget request was $50,000. The House has included $150,000, and local interests have requested $250,000. What is your capability on this project?

General MORRIS. Our capability on this project is $250,000, Mr. Chairman.

Senator STENNIS. What would be accomplished with the additional $200,000?

General MORRIS. The additional amount would be used to advance railroad bridge alterations.

EASTERN RAPIDES AND SOUTH-CENTRAL AVOYELLES PARISHES, LA.

Senator STENNIS. The budget request was $50,000. The House has included $50,000, and local interests have requested $250,000. What is your capability on this project?

General MORRIS. Our capability on this project is $250,000, Mr. Chairman.

Senator STENNIS. What would be accomplished with the additional $200,000?

General MORRIS. The additional amount would be used to advance preconstruction planning.

BUSHLEY BAYOU, LA. (PHASE 1 ADVANCE ENGINEERING AND DESIGN STAGE)

Senator STENNIS. There is nothing in the budget. The House has included $200,000, and local interests have requested $200,000. What is your capability on this project?

General MORRIS. Mr. Chairman, our capability on this project is $200,000 to initiate preconstruction planning.

Senator STENNIS. Would you submit a statement for the record?

General MORRIS. Yes, sir.

[The statement follows:]

Project: Bushley Bayou, Louisiana (Phase I Advance Engineering and Design Stage)

Summarized Financial Data:

Estimated Federal Cost		$15,500,000
Estimated Non-Federal Cost		0
Total Estimated Project Cost		15,500,000
Allocations to Date		0
Balance to Complete		15,500,000
Preconstruction Planning Estimate		1,100,000
Phase I Estimated Cost	$300,000	
Balance to Complete After Phase I	800,000	
Amount that could be used in FY 1975		200,000

Authorization: 1974 Water Resources Development Act for Phase I stage of advance engineering and design.

Location and Description: The Bushley Bayou Area is located in east-central Louisiana about 35 miles northeast of Alexandria. It has a drainage area of about 210 square miles of which about 95 square miles are in the backwater area of the Mississippi and Red Rivers. The area is bounded on the east by the Ouachita River and on the south by the Little and Old Rivers. The proposed work includes modification of the Mississippi River and Tributaries Project to provide for works in the Bushley Bayou area. These works include 32.2 miles of levees, a 1,500 cubic-foot-per-second pumping plant combined with a gravity floodgate structure of 600 square feet of opening; a 36-inch floodgate; 7.4 miles of new channel; and fish and wildlife mitigation features consisting of a fixed weir, three water management control structures, a 50 cubic-foot-per-second pumping plant, and acquisition of 3,000 acres of woodlands.

Proposed Operations: The amount of $200,000 would be used to initiate Phase I of preconstruction planning.

Justification: Backwater from the Mississippi and Red Rivers and high peak runoff from small hill tributaries cause flooding of nearly 61,000 acres of cropland and woodland. Major damages occur to rural residences, farm improvements, crops, roads, and public utilities. Duration of flooding varies from 7 to 225 days annually and averages 70 days. Construction of the proposed improvements would provide backwater flood protection for about 57,300 acres and would eliminate 88 percent of the total flood damages due to backwater flooding in the area providing substantial social and economic benefits. The benefit-to-cost ratio is 1.6 to 1. The average annual benefits are estimated as follows:

Flood Control	$1,698,200
Area Redevelopment	77,700
Total	$1,775,900

Status of Environmental Impact Statement: The final environmental impact statement was filed with the Council of Environmental Quality on 20 September 1973.

Mississippi River, East Bank, Vicksburg-Yazoo Area, Miss. (Phase 1 Advance Engineering and Design Stage)

Senator Stennis. There is nothing in the budget. The House has included $50,000. What is your capability on ths project?

General Morris. Mr. Chairman, our capability on this project is $50,000 to initiate preconstruction planning.

Senator Stennis. Would you submit a statement for the record?

General Morris. Yes, sir.

[The statement follows:]

Project: Mississippi River, East Bank, Vicksburg-Yazoo Area, Mississippi (Phase I Advance Engineering and Design Stage)

Summarized Financial Data:

Estimated Federal Cost		$ 9,800,000
Estimated Non-Federal Cost:		1,200,000
Cash Contributions	$ 0	
Other	1,200,000	
Total Estimated Project Cost		$11,000,000
Allocations to Date		0
Balance to Complete		9,800,000
Preconstruction Planning Estimate		550,000
Phase I Estimated Cost	$ 150,000	
Balance to Complete After Phase I	400,000	
Amount that could be used in FY 1975		50,000

Authorization: 1974 Water Resources Development Act for Phase I stage of advance engineering and design.

Location and Description: The Vicksburg-Yazoo Area is located completely within Warren County, north of the city of Vicksburg, Mississippi. It is bounded on the north and east by U. S. Highway 61, on the west by the Yazoo River and on the south by the Yazoo River Diversion Canal. There are approximately 16,000 acres in this area of the flood plain. The proposed work provides for construction of 11.3 miles of levee to protect about 10,100 acres against the Mississippi River Project Flood, a 200 cubic-foot-per-second pumping plant, two 9-foot by 9-foot floodgates and concrete culverts, and 16.1 miles of channel improvements.

Proposed Operations: The amount of $50,000 would be used to initiate Phase I of preconstruction planning.

Justification: The Vicksburg-Yazoo Area is frequently flooded by backwaters of the Mississippi River causing damages to agricultural crops, public and farm roads, churches, and to some of the 350 permanent homes. These floods also adversely affect the physical, as well as spiritual, well-being of the 1,500 permanent residents of the area. Business firms and industries located in the flood plain are also subject to flooding by major floods. The average annual damages from flooding under existing conditions is about $160,000. The supply of industrial lands in the Vicksburg area is nearly exhausted, and the residential and commercial lands near the center of economic activity are already developed. There is a need for level, flood-free land for industrial, commercial and residential development. Construction of the protective works would prevent 97 percent of the flood damages and make feasible the conversion of lands to higher land uses. The benefit-to-cost ratio is 1.4 to 1. The average annual benefits are estimated as follows:

Flood Control	$927,000
Area Redevelopment	66,000
Total	$993,000

Status of Environmental Impact Statement: The final environmental impact statement was filed with the Council of Environmental Quality on 30 August 1973.

Greenville Harbor, Miss. (Phase 1 Advance Engineering and Design Stage)

Senator Stennis. There is nothing in the budget. The House has included $200,000, and local interests have requested $200,000. What is your capability on this project?

General Morris. Mr. Chairman, our capability on this project is $200,000 to initiate preconstruction planning.

Senator Stennis. Would you submit a statement for the record?

General Morris. Yes, sir.

[The statement follows:]

Project: Greenville Harbor, Mississippi (Phase I Advance Engineering and Design Stage)

Summarized Financial Data:

Estimated Federal Cost		$16,600,000
Estimated Non-Federal Cost:		3,000,000
Cash Contributions	$ 0	
Other	3,000,000	
Total Estimated Project Cost		$19,600,000
Allocations to Date		0
Balance to Complete		16,600,000
Preconstruction Planning Estimate		1,320,000
Phase I Estimated Cost	$ 200,000	
Balance to Complete After Phase I	1,120,000	
Amount that could be used in FY 1975		200,000

Authorization: 1974 Water Resources Development Act for Phase I stage of advance engineering and design.

Location and Description: Greenville, Mississippi, is about 145 miles south of Memphis, Tennessee, and 84 miles north of Vicksburg, Mississippi. The harbor is about 2½ miles downstream from Greenville on the east bank of Lake Ferguson and is about 2 miles from the Mississippi River navigation channel. The plan of improvement provides for widening the channel into Greenville Harbor, dredging an inner harbor channel into the undeveloped lands adjacent to the existing port area, and dredging a channel into the La Grange Crevasse. Dredged material will be spoiled so as to provide 310 acres of fill at elevation 148 feet, mean sea level, and 80 acres of fill to elevation 136, mean sea level, which will be subject to 25 year frequency flooding.

Proposed Operations: The amount of $200,000 would be used to initiate and complete Phase I of preconstruction planning.

Justification: All usable waterfront industrial sites, including the existing port area, have been developed or committed to development; and there are no suitable sites contiguous to water that are available for industrial development or expansion. The present public terminal is rapidly approaching capacity and additional waterfront lands will be needed to satisfy the area's water-oriented industrial growth and to provide lands suitable for expansion of the public terminal. Construction of the proposed harbor improvements would provide waterfront access for approximately 390 acres of raised industrial landfill. The new waterfront industrial lands would satisfy the area's projected waterfront land needs to about the year 2005. The benefit-to-cost ratio is 2.9 to 1. The average annual benefits are estimated as follows:

Navigation	$4,071,000
Area Redevelopment	159,000
Total	$4,230,000

Status of Environmental Impact Statement: The final environmental impact statement was filed with the Council of Environmental Quality on 31 August 1973.

FLOOD CONTROL, MISSISSIPPI RIVER AND TRIBUTARIES, MAINTENANCE

Senator STENNIS. Now the budget request for maintenance was $35 million and the House has included $36,272,000 for fiscal year 1975. What is your capability on this project?

General MORRIS. Our capability is $52,857,000 for fiscal year 1975.

Senator STENNIS. How would the additional $17,857,000 be utilized?

General MORRIS. Mr. Chairman, I would like to provide that for the record.

[The information follows:]

FLOOD CONTROL, MISSISSIPPI RIVER AND TRIBUTARIES, MAINTENANCE

The total capability in fiscal year 1975 for "Maintenance" is $52,857,000; an increase of $17,857,000 over the budget request of $35 million.

The additional amount of $17,857,000 would be applied as follows:

Atchafalaya Basin	$4,200,000
Bayou Cocodrie and tributaries	4,000
Dredging	3,450,000
Revetments and dikes	5,340,000
Inspection of completed works	10,000
Lower Arkansas River, north bank	45,000
Lower Arkansas River, south bank	325,000
Lower Red River	104,000
Mapping	5,000
Mississippi River levees	907,000
Old River	321,000
St. Francis River and tributaries	220,000
Wappapello Lake	50,000
Boeuf and Tensas Rivers	155,000
Red River backwater	35,000
Yazoo Basin	2,686,000
Arkabutla Lake	564,000
Big Sunflower River	31,000
Enid Lake	643,000
Greenwood	11,000
Grenada Lake	625,000
Main Stem	105,000
Sardis Lake	543,000
Tributaries	20,000
Will M. Whittington auxiliary channel	119,000
Yazoo backwater	25,000
Total	17,857,000

SOUTHWEST PASS

Senator STENNIS. All right. Now, let me direct your attention to a matter that Senator Bible has already mentioned. You can pick up these spots that are giving trouble in the Southwest Pass.

Please bring the committee up to date now on the severe problems encountered in the Southwest Pass which is seriously threatening full and free navigation from the gulf up the Mississippi to New Orleans, Baton Rouge, Vicksburg and beyond.

You have been having special problems there. I hear about it in a lot of ways from telephone calls at night.

Give us that picture and what special attention is required.

General MORRIS. Senator, when the high water of the 1973 flood receded, as anticipated, a large amount of silt had been deposited in

the critical areas of the Mississippi, particularly in the area below Baton Rouge down the Southwest Pass.

Again this year we had more high water and an additional amount of silt was deposited. As a consequence, as everyone so well knows, there was a period of time when we were operating the project authorized at 40 feet at 26 feet.

Senator STENNIS. When you say "accumulation," you are talking about in the bed of the river?

General MORRIS. Yes, sir, in the ship channel.

The situation became so serious there in late March that we moved to the Southwest Pass all hopper dredge capability we could afford to put there, including the largest dredge we have, a ship from New York, the dredge *Essayons*. We also placed in service as many contract pipeline dredges as could effectively be used. We initially intended to assign the *Essayons* in New Orleans for about a month. Due to the extended critical nature of the shoaling we were obliged to extend it an additional 2½ months, and finally moved it back to New York just this past week. As a result of this concentrated effort of hopper dredges—and as I recall we had 5 of our total of 15 working there including some of our largest dredges, plus as many pipeline dredges as the contractors could effectively use—we are able as of this date to report, in the main, we have restored channel depth in the Southwest Pass to 40 feet, except in one or two places where we are between 38 and 39 feet.

We have had more high water recently. While the authorized depth is being maintained for the most part, we are experiencing some narrowing of the channel and we hope that as the water is now going down it will stay down and we will be able to keep ahead of the problem. It has been a tough situation.

Some of the major shipping companies reduced their shipping into New Orleans and one company actually made strong statements about moving out of the Port of New Orleans. Its been a big problem and certainly does demonstrate that there is a need to have a good flexible capability in the dredging field.

I think we are on top of it now.

Senator STENNIS. Well, a gentleman called me the other night and he said that in the Natchez area in places maybe the river would be 100 feet deep, but a little further up it would be 9 feet, and you are not surprised at that, are you? He was told by one of your fellow officers down there about those conditions. It illustrates what you are up against. The currents just piled it in there and that happens at the mouth of some of these small streams too, that lead into the Mississippi, isn't that correct?

General MORRIS. Yes. Any place that the flow of the river slows down, we will have sediment deposits.

Senator STENNIS. Getting down to the numbers, what are your fiscal 1975 requirements to cope with this matter? You have already said you will give it special attention and are getting on top of it, but do you have a further need in the budget?

CAPABILITY

General MORRIS. Yes; our capability in fiscal year 1975 is $20 million. The budget includes funds in the amount of $8,025,000, and, as a result of these problems that I have mentioned, that requirement has gone up and the capability is $20 million.

Senator STENNIS. This is not a new project; it is simply keeping the channel open?

General MORRIS. Yes, sir. I might point out $5 million of the $20 million we need to pay back money we borrowed from other parts of the country to do that work.

Senator STENNIS. This comes out of your O. & M. fund?

General MORRIS. Yes; it is in the O. & M. fund.

Senator HATFIELD. To emphasize a point about this example that you cite, I believe you brought in three hopper dredges from the Atlantic and one from the Texas Coast. If you had had the House language applied to that situation, would you have been able to do that type of dredging in the Mississippi?

General MORRIS. Technically, no, because these hopper dredges were working well up in the pass, not on the bar.

Senator HATFIELD. They couldn't have done that in the Mississippi?

General MORRIS. Not if the House language were applied.

Senator STENNIS. I understand.

Senator HATFIELD. Thank you, General.

WOLF AND LOOSAHATCHIE RIVERS AND NONCONNAH CREEK, TENN. AND MISS.

Senator STENNIS. Now, here is a matter in Tennessee and Mississippi, on page 4 of the House report. This matter is listed down there, the fourth item from the bottom figure. This is just General Investigation, survey money, I believe, $75,000.

What is your capability there, on the Wolf and Loosahatchie Rivers, Tennessee and Mississippi rivers? Another name goes with it—Nonconnah Creek Reservoir.

General MORRIS. Nonconnah Creek is not an authorized project at this time. The survey is presently being reviewed for submission to the Congress for authorization. It is not authorized so there is no funding capability.

Senator STENNIS. It is in the survey stage?

General MORRIS. Yes, sir.

Senator STENNIS. Well, I don't see it listed here.

Mr. Jones thinks it comes under the Wolf and Loosahatchie study. What I want to know, do you have enough money here to take care of that investigation?

General MORRIS. Sir, I understand the problem. This has to do with the study of the flooding in the five upper counties of Mississippi downstream from the Nonconnah project, which happens to be in Tennessee.

As I understand the question, do we have sufficient funds available to study that area, and if not, what will we need? I would like to provide that for the record.

Senator STENNIS. Provide that for the record.

[The information follows:]

The Corps of Engineers fiscal year 1975 capability is $125,000, which would advance overall study completion by six months. The Nonconnah Creek interim report is fully funded.

ST. LUCIE INLET, FLA.

Senator STENNIS. All right. I think that covers the point we had.

Now, let me call your attention to the Saint Lucie Inlet, Fla., problem. The project has recently been authorized. The committee understands this inlet is presently closed to safe navigation and that urgent remedial action should proceed.

Is that correct? What is your capability there?

General MORRIS. Yes sir, Colonel Withers will answer that question.

Colonel WITHERS. Sir, the capability is $125,000 to initiate preconstruction planning.

Senator STENNIS. What is the need? What is the urgency, if any, in connection with it?

Colonel WITHERS. The need is three-fold, sir. There is a need to provide safe navigation for the inlet. The inlet has been quite dangerous. There have been lives lost and property loss.

Second, the need is to control erosion on the beach south of the inlet. It has eroded away.

And the third need is to reduce the excessive maintenance costs for keeping that inlet open.

Senator STENNIS. Yes. Well, you consider it, then, a project that you should give special attention to now?

Colonel WITHERS. Yes sir, it has a high priority.

Senator STENNIS. And the money involved, how much is that?

Colonel WITHERS. The total amount involved is $3,834,000. That is the estimated Federal cost.

General MORRIS. This project was just recently authorized, by resolution of the Senate during the last week, and it is coming up as a new item at this time.

Senator STENNIS. No hearings have been held yet on that?

General MORRIS. Yes, sir, there were hearings held before the Senate.

Senator STENNIS. Authorization?

General MORRIS. Yes, sir.

Senator STENNIS. None for the appropriation?

General MORRIS. That is right.

Senator STENNIS. All right, Senator Bible.

Senator BIBLE. No further questions.

CROSS FLORIDA BARGE CANAL RESTUDY

Senator STENNIS. Again down in Florida, the Cross-Florida Barge Canal, we have a recent court decision there. Did the court set up a date that you have to complete that environmental impact study?

General MORRIS. Senator Stennis, the judge in his decision said that we would have the environmental impact statement completed within

6 months. That would be this fall. We are going back to the judge and ask for an extension. Later, of course, we will have to pursue this.

Senator STENNIS. Well, do you have the money?

General MORRIS. No, sir.

Senator STENNIS. To make the study?

General MORRIS. When the project was stopped, $150,000 was made available to prepare environmental impact statements. Those funds were put in reserve until the judge made his decision that we would proceed to complete the impact statement and other studies. That $150,000 is now available. It is insufficient and because of the complexity of this environmental analysis our estimate is that it will cost $1,800,000 to do the environmental impact assessment. We have completed the plan of study and we anticipate it will take an additional amount of money and approximately 18 months to 2 years to do it. So the need for funds in addition to the $150,000 is $1,650,000.

Senator STENNIS. Well, you want to resume the study?

General MORRIS. Yes, sir.

Senator STENNIS. You are under court order to make a study?

General MORRIS. We feel a very deep responsibility to do this study and to do it properly.

Senator STENNIS. The court didn't give you any money? The court didn't give you any money to do it with? [Laughter.]

General MORRIS. No, sir, they gave us the job and no money.

Senator STENNIS. Who is going to conduct the study? Are you going to do it or is an outside agency to be employed, or what?

General MORRIS. The responsibility for the study rests with the Chief of Engineers, and the Secretary of the Army. We intend to assume full responsibility for the final product. To reach that point we unquestionably will have to have some assistance from outside agencies.

One thing we are interested in is preparing an environmental impact analysis which will be fully credible.

As you know, this has been an extremely controversial project so in many cases we feel using outside agencies would be a hard step in the direction of credibility, but we will have to use our own forces to some extent and we will use other Federal agencies to some extent. The responsibility, however, is with the Chief of Engineers.

Senator STENNIS. Well, it is a large controversial project and it is important to a lot of people. One of your problems, I think, even though you are not allowed to ask for money, there is a court decision there and you wouldn't object to some additional money being put in here, would you? The order of the court should be complied with, I believe. You wouldn't object?

General MORRIS. No, sir. I certainly wouldn't We feel we should get on with this requirement and it came up after the President's budget was submitted.

Senator STENNIS. Well, you didn't have the last word with the court, they have the last word. We will see if we can't scrape up a little money.

Senator BIBLE. They are under court order. There isn't much they can do about it.

Senator STENNIS. All right, General Morris, do you have something else you would like to say?

General MORRIS. Sir, I would like to correct a statement I made to Senator Bible. The amount of $250,000 is not enough to finish the planning on the Humboldt River project. It would essentially complete the initial phase, but not all required planning.

Senator BIBLE. It is not enough?

General MORRIS. We will have additional preconstruction planning in the years to follow.

Senator BIBLE. I thought that might be true, and how far would you project in the following fiscal year. You can supply it for the record.

General MORRIS. Yes, sir, about $1,180,000 to go.

Senator BIBLE. About $1,180,000 to go after the $250,000?

GENERAL MORRIS. Yes, sir.

Senator STENNIS. All right. That will conclude with the Corps. We will have a brief recess.

DEPARTMENT OF THE INTERIOR

Bureau of Reclamation

STATEMENT OF J. J. O'BRIEN, ACTING COMMISSIONER, BUREAU OF RECLAMATION

ACCOMPANIED BY:

D. D. ANDERSON, ASSISTANT COMMISSIONER, ADMINISTRATION
H. F. AVERY, ACTING ASSISTANT COMMISSIONER, RESOURCE DEVELOPMENT
W. D. BETTENBERG, DEPUTY DIRECTOR OF BUDGET, OFFICE OF THE SECRETARY

INTRODUCTION OF ASSOCIATES

Senator Bible (presiding). The hearing will come to order. This is the time that we set for hearing the Bureau of Reclamation on recall items and I would be very happy to hear from you, Mr. O'Brien. You are here as the acting commissioner of the Bureau of Reclamation.

First, introduce your associates, then please proceed to make any comments you wish to make.

Mr. O'Brien. Thank you, Mr. Chairman, We are indeed happy to be here. I have with me the assistant commissioner Donald Anderson, and Mr. Harry Avery, who is acting assistant commissioner for resource development.

PREPARED STATEMENT

I have a short prepared statement which I would like to be included in the record at this point, Mr. Chairman.

Senator Bible. Without objection, it will be included in the record.

[The statement follows:]

The House bill is very favorable to the Reclamation program and would do much to accelerate construction activities and add emphasis to the planning and research efforts. Nevertheless we support the amount for Reclamation within the President's budget as a reasonable share of the overall total. Appeal statements on the House bill will support this position with one exception. The one exception involves a write-in of $500,000 for the San Felipe Division of the Central Valley Project, California. This is a high priority project which will remedy a critical water situation and we propose that this increase as proposed by the House be retained.

The House Report provided an increase of $39,067,000 in the Bureau's FY 1975 program. Their action would increase the total appropriations for the Bureau from the $460,705,000 requested in the President's budget to $499,772,000. When compared to FY 1974, this represents an increase of $67,244,000.

The General Investigations appropriation request of $17,020,000 was increased by $1,506,000 to permit twelve new investigations and accelerate activity on seven other programs. $12,025,000 was requested for the Loan Program and $1,800,000 was added for the start of construction on two new loan program projects.

Additional funds were provided for the Construction and Rehabilitation and the Colorado River Basin Program appropriations while the Upper Colorado River Storage Project total was decreased. The total in the House Report for all construction activities including the Loan Program is $360 million. In Construction and Rehabilitation, initial advance planning funds were recommended for two projects and new construction starts were proposed on two additional projects. More intensive activity was recommended on 13 other projects.

In the Upper Colorado River Storage Project appropriation, the House provided for one new construction start and added funds to reschedule construction on two other projects funded as new starts in earlier years but deferred because of budget constraints. Funds were reduced on the Lyman Project and on the Colorado River Storage Transmission Division program. A reduction was also made in the overall program of the Storage Project, primarily to recognize program slippage in FY 1974.

The Colorado River Basin Program was increased $11,550,000 to permit a FY 1975 budget of $60,800,000.

$3,000,000 was added to the President's budget request of $94,000,000 for the Operation and Maintenance appropriation to provide urgently needed replacements and additions.

This is in general a summary of the House action on the Reclamation budget.

We will be pleased to answer any questions you may have on the funding requests for our program.

PRESIDENTIAL BUDGET SUPPORTED

Mr. O'BRIEN. We have, of course, reviewed the House report. We note that it would accelerate construction activities and also the planning and research efforts for the Bureau of Reclamation. Nevertheless, we support the amount included for Reclamation within the President's budget.

Senator BIBLE. Are you in Reclamation asking us to reduce the bill back to the President's budget?

Mr. O'BRIEN. No, I am saying we support the amount within the President's budget——

Senator BIBLE. I heard what you said. I wanted to clarify it.

Mr. O'BRIEN [continuing]. As the reasonable share of the overall total request of the President.

Senator BIBLE. That is because you are mandated to do so. That is not what the Bureau of Reclamation really believes? You don't need to answer the question, I will answer it for you.

Mr. O'BRIEN. An appeal statement on the House bill will be furnished which supports this position with one exception.

Senator BIBLE. When will they be furnished? We are about ready to mark this up. You already have them?

SAN FELIPE DIVISION, CENTRAL VALLEY PROJECT, CALIF.

Mr. O'BRIEN. We have the appeal statement with us. The one exception involves this $500,000 write-in for the San Felipe division of the Central Valley project in California. This is a high priority project and we propose that the increase proposed by the House for this project be retained.

Senator BIBLE. I haven't had the benefit of going over any of these appeals and decreases. Do you have any affecting the State of Washington or the State of Oregon? They are all within the budget, as I understand it. Let's see, Washington and Nevada—what about San Felipe?

Mr. O'BRIEN. The San Felipe increase would be the only exception on the appeal statement.

Senator BIBLE. I want to get my understanding clear, I am not clear on it yet.

Mr. O'BRIEN. We are appealing back to the President's budget with one exception.

Senator BIBLE. You want to go back to the President's budget?

Mr. O'BRIEN. With one exception.

PACIFIC NORTHWEST-PACIFIC SOUTHWEST INTERTIE

Senator BIBLE. I am clear. You have the Pacific Northwest-Pacific Southwest Intertie, $1,120,000, and the House allowed $1,120,000. So you are not appealing anything on that item. What will you do with the $1,120,000?

Mr. O'BRIEN. This is on the——

Senator BIBLE. Pacific Northwest-Southwest Intertie.

Mr. ANDERSON. These funds will be utilized to furnish and install series capacitors on the Mead-Liberty line north of Phoenix.

Senator BIBLE. That is on the line as it runs from Hoover down to Phoenix?

Mr. AVERY. That is right.

Senator BIBLE. I wanted to find the geography of it.

I would first defer to Senator Hatfield, who may have questions in his area.

BUTTE VALLEY UNIT, CALIF. AND OREG.

Senator HATFIELD. Thank you, Mr. Chairman. I want to also understand what the appeal is. Are you appealing that we deduct $50,000 for the Butte Valley unit study in the State of Oregon?

Mr. O'BRIEN. Yes, sir. California and Oregon.

Senator HATFIELD. Especially Oregon.

Mr. O'BRIEN. Yes, sir.

Senator HATFIELD. You are appealing to me to deduct $50,000 that the House added?

Mr. O'BRIEN. Yes, sir. [Laughter.]

Senator HATFIELD. Now, Mr. Chairman, I have a question on behalf of Senator Young who had to go to another meeting.

GARRISON DIVERSION UNIT, N. DAK. AND S. DAK.

Can you tell the committee what the capability is for Garrison Diversion Unit?

Mr. ANDERSON. Yes, sir; our capability is $3.8 million above the budget request. The budget request was $10,555,000 and adding that capability would provide a total program of $14,355,000.

Senator HATFIELD. So the capability is $3.8 million over——

Mr. ANDERSON. The President's budget. Yes, sir.

Senator HATFIELD. Thank you very much. I have no further questions.

Pyramid Lake Fishery

Senator Bible. I will ask just a few more before we have to go to the floor for a vote in just a few minutes.

Can you give me the status, if you are familiar with the problem—if you are not, obviously take it back downtown and give it to the people in the Bureau who may have some handle on this problem. This is about that Pyramid Lake Fishery problem on which there has been some discussion and some dispute as to whether the responsibility for the continued funding of the fish hatchery is the responsibility of BIA or the responsibility of OEO or the responsibility of the Bureau of Reclamation.

Now, before you answer or respond, let me tell you that this morning I questioned the Bureau of Indian Affairs on this, and if I understood the answer correctly, they said that this matter was now under discussion between the agencies involved, OEO, Reclamation, and BIA.

Will you update me on that?

Mr. Bettenberg. It is under discussion between those three agencies, yes, sir.

Senator Bible. I indicated to them and I will indicate the same thing to you, that we probably will not be marking up this bill until sometime around the middle of July. I would hope between now and then—I see there Frank Wiles in the back, he heard me say the same thing to BIA. I would hope between now and then you can exert your influence to find out, first, where the responsibility finally settles. It seems to me it is a worthwhile project and it seems to get kicked from one agency to another agency.

I would hope that this problem can be resolved and additionally, some response made so that we can put money in. Whether or not you can get a budget request from OMB I don't know, but the project started. It seems to me it would be very, very pound foolish to stop it in the middle of what is almost ready to be completed. Who has that in your shop, Mr. Commissioner?

Mr. O'Brien. This is handled actually by the Commissioner himself very closely and also by the Assistant Commissioner for Resource Management, Mr. Ed Sullivan.

Senator Bible. Will you carry that message back. I don't know. Are you in agreement with the agencies involved or is this purely and simply an OMB problem?

Mr. O'Grien. I would ask Mr. Bettenberg to respond to that.

Mr. Bettenberg. The Department has considered it should be a Bureau of Reclamation responsibility.

Senator Bible. Does BIA agree with that?

Mr. Bettenberg. BIA agrees with that.

Senator Bible. Does OEO agree with it?

Mr. Bettenberg. I don't know OEO's position. OMB does not necessarily agree with that.

Senator Bible. Do they agree for putting dollars in there no matter which agency they came to?

Mr. BETTENBERG. They have not informed us of their view on that.

Senator BIBLE. You hope to get that view resolved between now and the time we get to markup?

Mr. BETTENBERG. We would certainly hope so.

WASHOE PROJECT

Senator BIBLE. You are not OMB. Maybe we would have better luck if you were. But, I wish you would just use your best efforts to try to get that resolved.

Let me ask you a couple of questions on the Washoe project. You can find it on page 53 of the House report. $4,024,000 is for construction of Washoe, as allowed in the budget request. What can you do with that?

Mr. O'BRIEN. This would provide for continuation of construction on the Marble Bluff Dam and the Pyramid Lake Fishway.

Senator BIBLE. And after receiving funding, and I assume you will be permitted to spend this money, because it is a budgeted project. How many additional dollars do you need to complete the project?

Mr. ANDERSON. We would have to supply that for the record.

Senator BIBLE. And also the time involved, it seems to me it is about a total of 3 years. Was this a 3-year project?

Mr. ANDERSON. My recollection tells me it could be completed in fiscal year 1976.

Senator BIBLE. Could you firm that impression of yours, and there are two items I want.

What is the total cost required to complete, what is the total length of time required to complete.

[The information follows:]

WASHOE PROJECT

Schedule and cost estimate for Marble Bluff Dam and Pyramid Lake Fishway.

	Total estimated cost
Marble Bluff Dam	$4,825,000
Pyramid Lake Fishway	2,377,000
Total	7,202,000
Appropriation to date	3,180,155
Fiscal year 1975 appropriation request	3,953,000
Balance to complete after fiscal year 1975	68,845

Construction started December 1973. Scheduled completion date, August 1975.

IMPOUNDED FUNDS FOR HYDROPOWER PLANTS

Senator BIBLE. Now, how much money has OMB impounded of the dollars we appropriated to try to realistically meet the energy crisis by putting dollars into hydroplants and putting the generating units into slots in the Northwest?

Mr. ANDERSON. For the Bureau of Reclamation?

Senator BIBLE. I am only talking about the Bureau of Reclamation.

Mr. ANDERSON. There is no money in budgetary reserves on any power projects in the Bureau. Our budgetary reserves are strictly for the irrigation projects.

Senator BIBLE. I am talking about power first. Well, then, you have a green light to go ahead with the dollars that we added, substantially last year, because it seems to me this is one of the areas where we could best cope with this energy shortage and without the environmental and pollution problems.

I think it has proved that way in the past. I am delighted that they have released it all, taken it all out of the budgetary reserves.

Tell me about the irrigation projects.

BUDGETARY RESERVES

Mr. ANDERSON. We have in reserve $1,055,000 on Columbia Basin project for the Bacon Tunnel and Siphon. We also have $1,150,000 reserved on the Upper Colorado River Basin fund covering the Jensen unit, and also the Dallas Creek, Fruitland Mesa and Saver-Pot Hook projects.

Senator BIBLE. That is for a total of what?

Mr. ANDERSON. $2,205,000.

Senator BIBLE. Now, is there any effort being made by Interior or OMB to reprogram that and put it somewhere else?

Mr. ANDERSON. The administration recommended in the 1975 budget that the $1,055,000 on Bacon Tunnel and Siphon be reprogramed and used for ongoing construction.

Senator BIBLE. Well, I would assume that our senior colleague, I suppose he is almost second senior on this committee, Senator Magnuson of Washington, might take a dim view of that reprograming.

Mr. Anderson. Yes, sir.

Senator BIBLE. I just want to get that into the record and you wouldn't dare reprogram it without coming to this committee and getting approval of reprograming.

Mr. ANDERSON. That is true.

Senator BIBLE. You will come back and get congressional blessing. I am sure they will check it out with Senator Magnuson, and he can register his own opinions at that time.

LYMAN PROJECT

Senator McGee has asked us to ask you a question, Mr. Commissioner, and I am reading from page 57 of the House report. It says, "The Comittee's recommendation includes a reduction of $834,000 for the Lyman Reclamation project in Wyoming, since the current benefit-cost ratio is below unity * * *"

Now, is the Lyman Reclamation project an ongoing, feasible, and viable project?

Mr. O'BRIEN. We are in the process of reformulating that project and have identified an alternative damsite. We believe the Stateline Dam site will be a feasible project with the benefit-cost ratio in excess of 1-to-1. This study has not yet been completed. The planning has not yet been completed. The environmental impact statement has not been completed.

Our present schedule calls for us to file a final environmental impact statement in May 1975, which indicates that our capability on this project in fiscal year 1975 has been substantially reduced.

Senator BIBLE. You have all the money you need now then or can use in the study of the viability of Lyman Reclamation project?

Mr. O'BRIEN. We could use about $300,000 in fiscal year 1975.

Senator BIBLE. What are you studying as the alternate project to that?

Mr. O'BRIEN. Its called Stateline Dam site, near the Wyoming-Utah State boundary.

Senator BIBLE. What river or stream is that on?

Well, it doesn't make any difference, it has to be on some river.

Supply the river for the record.

I know that part of the West pretty well but I didn't know that. Wyoming is a pretty dry State.

[The information follows:]

The Stateline Dam site is on Smith Fork Creek, a tributary of Green River.

COLORADO RIVER BASIN SALINITY CONTROL PROJECT

Senator BIBLE. What is the status of the Colorado River Basin Salinity Control Project? I know Congress passed the law, and I guess it is awaiting the return of the President within the next few days, and I assume, though I am not positive of course, the President will sign this legislation. If he does sign it, under the new authorization, how will the Bureau proceed?

Mr. O'BRIEN. We have proposed a budget amendment for fiscal year 1975 to OMB to realign and combine the funds in the President's budget for the construction of the International Salinity Control project. This would include the $95 million for the desalting plant and the $21 million for the Coachella Canal lining. These amounts are consistent with the totals for these purposes now included in the President's budget for the International Boundary and Water Commission, United States section, and the Bureau of Reclamation.

Senator BIBLE. You are going to be the lead agency as far as construction is concerned?

Mr. O'BRIEN. We anticipate that will be so.

Senator BIBLE. And, of course, the question may be a little premature because you can't move with the project until you know whether the President signs or vetos it.

Mr. O'BRIEN. That is right.

Senator BIBLE. I would be hopeful he would sign it.

I suppose there is urgency in this problem. This is the way it was presented to us when we were in the Interior Committee, as the Senator from Oregon well knows. I would hope that he would sign it and sign it on the day he returned or shortly thereafter. We could get off this project and both carry out the agreement of the minutes involved in the Mexican Treaty as well as work out some of our salinity problems in the Colorado River Basin.

Mr. O'BRIEN. The President certainly does place a priority on the international aspects of the project.

Senator BIBLE. That is fine. I sure hope he signs the bill.

Senator HATFIELD. I have one question on the Tualatin project. What is the projected time schedule on the project for which we now have $4.2 million requested and the House has added $300,000 for a total of $4,500,000?

Mr. ANDERSON. We anticipate the project will be substantially complete in fiscal year 1978.

Senator HATFIELD. What is the amount of money that will be required to finish it as far as from fiscal year 1976 on?

Mr. ANDERSON. We have scheduled $14,595,000 after fiscal year 1975.

Senator HATFIELD. Thank you very much.

Senator BIBLE. There are some additional questions which I would like to ask now. These are questions that have been raised by Members of Congress and public witnesses in regard to your fiscal year 1975 budget request.

GENERAL INVESTIGATIONS

ATMOSPHERIC WATER RESOURCES MANAGEMENT PROGRAM

We see in your fiscal year 1975 budget request that you indicate that the amount of funds for the High Plains cooperative program would allow full research for only one of the three proposed locations. What additional funds would be needed to fully implement this program?

Mr. O'BRIEN. The fiscal year 1975 budget request includes $1,275,000 for the High Plains cooperative program. This will permit intensive field research to begin at Miles City, Mont., with some preliminary studies at Colby, Kans., and Big Spring, Tex. Additional funds in the amount of $1,725,000 would be required for full research efforts at all three sites plus full funding of environmental impact and downwind effects studies.

Senator BIBLE. There is great interest in the establishment of a drought abatement program. Would you describe this program?

Mr. O'BRIEN. Using available summer cumulus seeding techniques, mobile teams of weather radar units and aircraft would demonstrate the effectiveness of cloud seeding to help prevent and reduce the crippling effects of drought. Rainfall would be increased during opportune periods to enhance soil moisture carryover into dry periods. Seeding activities would be coordinated with State and local authorities and be subject to State regulations and overall guidance as to priority assignment of the mobile teams.

Senator BIBLE. What funding is required in fiscal year 1975 to launch a drought abatement program?

Mr. O'BRIEN. A total of $1,650,000 would be required to implement a drought abatement demonstration program.

BASALT PROJECT—COLO.

Senator BIBLE. There is no appropriation request but local interests have asked for $75,000. No funds were provided by the House. What is your capability on the Basalt project?

Mr. O'BRIEN. Mr. Chairman, we do not have an immediate capability on this project but feel that it is a potentially high priority investigation. We are currently reviewing a status report on the proposal, including several promising alernative plans. Any additional funds

would be for the purpose of completing the feasibility report. Our lack of capability is related to current regional manpower limitations combined with the need to concentrate efforts on other Colorado projects for which there is equally as great a need or greater and more immediate need.

BATTLEMENT MESA, COLO.

Senator BIBLE. There is nothing in the budget. Local interests requested $75,000 and the House provided nothing. What is your capability?

Mr. O'BRIEN. Mr. Chairman, we do not have an immediate capability on this project. The project may represent a viable near future potential related to irrigation and municipal and industrial development as well as some possible oil shale water supplies. The occurrence of other greater priority studies, currently underway and proposed in Colorado will constrain our ability to move quickly on the Battlement Mesa study.

BUTTE DIVISION, KLAMATH PROJECT, CALIF. AND OREG.

Senator BIBLE. The House Subcommittee on Appropriations has provided an additional $50,000 with which to initiate a feasibility investigation on the Butte Division of the Klamath project. What is the purpose of the study and funds required?

Mr. O'BRIEN. In this study, the feasibility of providing powerplant cooling water, irrigating new and presently irrigated lands, potential power, and pump-storage in Siskiyou County, Calif., and Klamath County, Oreg., would be investigated.

Water supply could be provided from the Klamath River for cooling of a possible coal-fired or nuclear powerplant. Klamath River flows would be lifted through a series of pumps to a reshaped twin-cell Meiss Lake for storage as required. From Meiss Lake, canals and pumps would convey and lift water to areas of use. Return flows would, depending on quality, be mixed or stored in the smaller Meiss Lake cell for disposal after the irrigation season.

The Long-Round Lake complex with a total combined capacity of about 2,000,000 acre-feet could fully develop the offstream storage capability of two sites and provide up to 2,000 megawatts of peaking power. Reservoirs would provide adequate carryover storage during the dry periods to meet future water requirements and improve water quality in the Klamath River.

Write-in funds of $50,000 as proposed could be used to begin work on the evaluation of existing data, necessary water requirements, and studies involving hydrology, geology, and power.

CENTRAL CALIFORNIA COASTAL MANAGEMENT STUDY, CALIF.

Senator BIBLE. There is no appropriation request for this study and the House did not provide for an allowance. However, local interests have requested $60,000 for the study. What is your capability on this work?

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Mr. O'BRIEN. Mr. Chairman, our capability on the Central California Coastal Management Study is $60,000. The funds would be used to initiate a study plan in cooperation with the agencies, entities, and organizations and the public who will have an interest, and to initiate study of the most promising elements which will probably include the reuse of municipal wastewater in Santa Barbara and San Luis Obispo Counties, Calif.

This investigation will consist of the studies required to determine where, how, and to what extent reclaimed wastewater can be utilized to serve the increasing demands for water for multiple uses by the expanding population. The multiple uses considered will consist of water-oriented recreation, fish and wildlife maintenance and/or enhancement, ground-water recharge, municipal and industrial uses, and irrigation. The information derived from these studies will be used to assist in formulating a total water management plan of development which would make it possible to utilize reclaimed wastewater in conjunction with fresh water supplies from existing and proposed projects for beneficial purposes.

CENTRAL VALLEY PROJECT, CALAVERAS COUNTY DIVISION, CALIF.

Senator BIBLE. There is no appropriation request, but local interests have asked for $75,000. The House decided not to make any provision. What is your capability on this study?

Mr. O'BRIEN. Mr. Chairman, our capability on this is $75,000. The funds would be used to initiate, analyze, and collect data and coordinate the participation of interested local, State, and Federal agencies. Water needs, power potentials, and possible fishery and recreational opportunities would be evaluated including preliminary operation studies to meet these needs. Alternative plans will be considered. Solutions to the area's problems requiring additional environmental and geologic data would assist in the designs of potential project facilities.

This investigation will involve an appraisal of water requirements for Calaveras County, available water supplies from all sources, including the three major steam systems, New Hogan and New Malones Reservoirs and a desirable plan for meeting those requirements. The study area includes a rapidly rising recreation-home water requirement, and increasing agricultural demand and an esthetically pleasing environment. A plan would be developed to meet the water requirements and provide for fishery, water quality, power, and recreation needs.

CENTRAL VALLEY PROJECT, EAST SIDE DIVISION, EAST SIDE CROSS VALLEY CANAL, CALIF.

Senator BIBLE. The budget request for this project is $50,000 while local interests have requested $100,000. The House allowed $100,000 for the study. What is your capability?

Mr. O'BRIEN. Our capability is $100,000, an increase of $50,000 above the appropriation request.

Senator BIBLE. What would be accomplished with the additional $50,000?

Mr. O'BRIEN. An increase of $50,000 in fiscal year 1975 above the budget of $50,000 would be used for groundwater, drainage, and fish and wildlife studies and additional considerations and studies on alternatives associated with selection of the final plan. Further consideration is required of subsidence occurring and projected in the area and its estimated effects on both the facilities proposed and the groundwater basin itself.

The East Side Cross Valley Canal plan envisions that approximately 500,000 acre-feet of water might be delivered to the east side area through use of existing Federal and State conveyance facilities on the west side of the valley, construction of a cross valley canal to the east side of the valley, possible modifications of the Friant-Kern Canal and Madera Canal, and possible construction of additional storage facilities on the east side and provision of drainage facilities.

CENTRAL UTAH PROJECT, UTE INDIAN UNIT, UTAH

Senator BIBLE. The budget request for the central Utah project investigation is $500,000. Of this amount, $450,000 is scheduled to be used on the Ute Indian unit study. The House allowance would not change this budgeted amount. Local interests have, however, requested $1 million for the project. What is your capability on the Ute Indian unit?

Mr. O'BRIEN. The $450,000 scheduled for the study of the Ute Indian unit for fiscal year 1975 is our full capability. This budget will provide sufficient funds to continue planning under the Water Resource Council's principles and standards, to continue field surveys, and to collect additional design data. The investigation is being broadened to include total water management aspects of planning including a review of current interrelated water resources, potentials for more efficient use of water on existing and planned projects, water re-use, wider public involvement, and greater environmental and social enhancements. The budget will maintain progress at a rate with which to meet scheduled completion of the feasibility report in fiscal year 1978. We could not effectively utilize the $550,000 additional request by the local interests.

CENTRAL UTAH PROJECT, UINTAH UNIT, UTAH

Senator BIBLE. The budget request for the Uintah unit portion of the central Utah project study is $50,000, while local interests have requested $1 million. The House allowed $150,000. What is your capability?

Mr. O'BRIEN. Our total capability agrees with the House allowance of $150,000, an increase of $100,000 above the appropriation request.

Senator BIBLE. What do you envision would be accomplished within your capability of $150,000?

Mr. O'BRIEN. Such funds would assure that current investigations, leading to completion of a revised feasibility report, would be accomplished as scheduled for completion in fiscal year 1975. We do not have the capability to effectively utilize the additional $850,000 requested by the local interests from Utah.

The project could provide water for irrigation of Indian and non-Indian lands, municipal and industrial water, recreation, and fish and wildlife enhancement, flood control, and environmental enhancement.

COLORADO RIVER WATER QUALITY IMPROVEMENT PROGRAM

Senator BIBLE. The budget request for this project is $1,899,000, the same as allowed by the House. Local interests have requested $2,824,000. What is your capability?

Mr. O'BRIEN. Our capability is $2,824,000, an increase of $925,000 above the appropriation request.

Senator BIBLE. What would be accomplished with the additional $925,000?

Mr. O'BRIEN. The increased funding would enable the collection and processing of data for applications of the Colorado River simulation model. The effects of power production, compact agreements, court decrees, and implementation of salinity control measures will all be included in the model evaluations to provide guidance in establishing salinity control standards on the river.

The additional funding would also accelerate the completion dates of several feasibility reports. Expediting availability of these reports will allow better identification of the alternative means of salt removal from the system. This will assist in selecting standards that are enforceable, reasonable, equitable, and technically sound.

The purpose of this investigation is to develop plans for controlling the rise in salinity in the flows of the Colorado River. The mineral burden of the Colorado River carries both interstate and international implications. Continued development of the water resources is expected to generate additional salinity increases with concomitant economic losses to agriculture and M. & I. users if the salinity is not controlled.

COLUMBUS BEND PROJECT, TEX.

Senator BIBLE. The House subcommittee on appropriations has provided an additional $150,000 to resume studies of the potential Columbus Bend project, Tex. Describe the purpose of resuming the investigation.

Mr. O'BRIEN. A feasibility study was completed for the Columbus Bend project, Tex., in 1960. The report anticipated a growing demand for municipal and industrial use in the area; however, because the demand was not imminent at that time, construction was not authorized. A formal request to renew the project investigation was received from the Lower Colorado River Authority, Tex., in January 1974. That Authority indicated that a substantial portion of the yield is presently needed and the remainder will be needed in the very near future. Considering the age of the feasibility report, current energy crisis, and right-of-way problems resulting from development in the project area, it is felt that a new feasibility study should be made using the new principles and standards guidelines for planning. In addition to the increased need for municipal and industrial water, there has developed a critical demand for increased power. The study will investigate the potential for developing instream hydro-power de-

velopment and offstream pump-back storage. We are also proposing a change of the study name to Colorado coastal plain water project, Tex., at insistence of local supporters. This feasibility investigation will require 3 years to complete.

Gallup Project, N. Mex.

Senator Bible. The budget request for this project is $51,000 while local interests have requested $350,000. The House allowed $51,000. What is your capability?

Mr. O'Brien. Our capability is $350,000, an increase of $299,000 above the appropriation request.

Senator Bible. What would be accomplished with a program of $350,000?

Mr. O'Brien. Feasibility-grade investigations are underway to further develop plans for supplying additional municipal and industrial water to the city of Gallup, N. Mex. Appraisal investigations, which have been completed, proposed three plans that would convey 7,500 acre-feet annually from Navajo Reservoir to Gallup. However, additional investigations of ground water resources must be conducted before a final determination can be made. The additional funding could be used in fiscal year 1975 to award contracts for these ground water investigations.

The investigations will provide plans for meeting projected municipal and industrial water needs primarily for Gallup, N. Mex., but to include other possible customers in the project area.

Geothermal Resource Investigations, Calif.

Senator Bible. The budget request for this project is $1,320,000 while local interests have requested $4,320,000. The House did not alter the budget request. What is your capability.

Mr. O'Brien. Our capability is $4,320,000, an increase of $3 million above the appropriation request.

Senator Bible. What would be accomplished with the additional $3 million?

Mr. O'Brien. The additional $3 million could be effectively utilized to provide for the drilling of four additional production wells and two additional injection wells; for access roads to the six wells; for pipelines from the wells to the current test site; for additional surface plumbing at the test site; for equipment and testing of heat exchangers for heat pump, air conditioning, and other uses at the geothermal test site; and for site preparation. These facilities would provide for the installation by others of a 10-megawatt powerplant and an expanded geothermal field laboratory for use by other Government agencies and private industries.

As a result of a decision made at the secretarial level in 1973, the Bureau of Reclamation's research and development program was limited to the Mesa anomaly in Imperial Valley, Imperial County, Calif., and appraisal studies in Arizona, California, Nevada, western New Mexico, and southern Utah.

The research and development portion of this investigation will develop the required technology and determine the feasibility of de-

salting geothermal fluids as a usable and dependable water supply to augment the Colorado River, to help meet the Mexican Treaty water obligations, and for future development in this arid portion of the Nation. An appraisal portion of this investigation will locate and identify those potential geothermal fields in the Lower Colorado region, which could help meet the water needs of this area.

KANSAS STATE WATER PLAN, PHASE 2, KANS.

Senator BIBLE. There is no appropriation request, but local interests have requested $100,000 and the House allowed $90,000 for the plan. What is your capability on this project?

Mr. O'BRIEN. Mr. Chairman, we have a capability of $90,000. The funds would be used to assure continuity of the phase 2 studies. The phase 1 report will be published in fiscal year 1974. The phase 1 and phase 2 studies together comprise a comprehensive appraisal type investigation of the water and related land resources in the State of Kansas.

The phase 2 study will array alternate solutions to problems and needs identified in the phase 1 long range water supply problems report, and evaluate their feasibility on the basis of physical and economic considerations. The studies will recognize the correlation of interbasin supplies and potential land developments, and the possibilities for further development of water supplies with particular emphasis upon ground water.

The Kansas State water plan—phase 2 studies would establish priorities for meeting the needs identified in the phase I report, present potential solutions to supplement in part or in full the future supplies in water short areas of the State.

LAKE-YOLO COUNTIES STUDY, CALIF.

Senator BIBLE. There is no appropriation request on this study but local interests have asked for $50,000 and the House agreed. What is your capability on this project?

Mr. O'BRIEN. Mr. Chairman, our capability is $50,000. These funds would be utilized to obtain adequate baseline data for evaluating existing conditions and the probable effect of retaining more water in Clear Lake. This will be necessary before fishery, wildlife, and environmental factors can be properly assessed and appropriate solutions identified for implementation.

Lake County needs a comprehensive water plan to determine how best to meet future county water demands. They have also been troubled with a continuing eutrophication problem in Clear Lake which has been detrimental to recreational potential, a prime industry in the lake vicinity. Yolo County wishes to augment their irrigation water supply to meet water demands from new areas being irrigated in response to increasing food and fiber shortages.

LOWER YAMPA PROJECT, COLO.

Senator BIBLE. Local interests have asked for $100,000 on this study. There is no budget request and nothing was allowed by the House. What is your capability on the Lower Yampa project?

Mr. O'BRIEN. Mr. Chairman, our capability on this project is $100,000. The Lower Yampa project investigation would be continued with these funds applying the Water Resources Council new principles and standards for project evaluations. Current mineral-energy related potentials of this water supply project, especially because of oil shale development possibilities, has provided renewed interest in this study.

The project is located in the area adjacent to the Yampa River and its tributaries. The Yampa River from its headwaters to the Colorado State line contains large coal deposits and an abundant but uncontrolled water supply. These resources are conducive to the construction of large coal-fired powerplants and coal gasification plants, which will require water supplies and plans for necessary conveyance systems.

MENDOCINO COUNTY STUDY, CALIF.

Senator BIBLE. There is no appropriation request on this study. Local interests requested $50,000 and the House included this amount in their allowance. What is your capability on this study?

Mr. O'BRIEN. Mr. Chairman, our capability is $50,000. These funds would be utilized to obtain the needed baseline data and a review of water resources problems in the area. Studies of alternative solutions will also be initiated including a look at land use, fish and wildlife, municipal and industrial water, flood control, recreation, and possible irrigation potentials. Mendocino County is lacking a comprehensive water and related land use plan. The study will provide a basis for such a plan and identify problems as well as related solutions.

MIDDLE PARK PROJECT, COLO.

Senator BIBLE. Local interests requested $114,000 for a study on the Middle Park project. There was no budget request and the House provided no funds. What is your capability on this project?

Mr. O'BRIEN. Mr. Chairman, we do not have an immediate capability on this project. We are reluctant to show capability at this time because of the preponderance of other higher priority planning work in the western Colorado area. The relative remoteness of the project's water supplies from potential high priority development such as the mineral energy resources of the region also indicate a need to delay the study.

NAPA COUNTY STUDY, CALIF.

Senator BIBLE. There is no appropriation request on this project but local interests have asked for $50,000. The House included $50,000 in their allowance. What is your capability on this project?

Mr. O'BRIEN. Mr. Chairman, our capability is $50,000. The funds would be used to study problems related to a serious lack of water supplies in the area in the face of rapidly increasing demands. Plans are needed to satisfy increasing concern in Napa County about the lack of available water supplies to meet rapidly increasing demands for both irrigation and municipal and industrial water. There is insufficient water available in Napa County to provide frost protection for the growing grape acreages through sprinkler irrigation. Like-

wise, municipalities are beginning to experience midsummer shortages. A potential water supply to county water users is from Lake Berryessa, an existing reclamation facility.

NEW MEXICO STATE WATER PLAN, N. MEX.

Senator BIBLE. There is no appropriation request for the New Mexico State water plan and the House did not provide any funds. Local interests have, however, asked for $50,000. What is your capability on this plan?

Mr. O'BRIEN. Mr. Chairman, our capability on this work is $50,000. These additional funds would be utilized to continue studies and obtain more detailed information that is required before final determinations can be made and presented in a final State water plan report.

The investigations, being accomplished in cooperation with the State of New Mexico, will consist of an inventory of the natural resources of New Mexico and the current state of development and use of those resources; the development of projections of the distribution of population and economic activities within the State; derivation of water requirements for the optimum development of the natural resources and for the projected distribution of population and economic activities; and determination of water requirements in excess of those which can be met from available surface and ground water resources within the State and how such requirements can be met through change in use, desalinization of saline waters, and interregional importation of water.

NORTH COAST FISH AND WILDLIFE STUDIES, CALIF.

Senator BIBLE. Local interests have requested $200,000 on these studies. Nothing was allowed by the House and there is no budget request. What is your capability on the North Coast Fish and Wildlife study?

Mr. O'BRIEN. Mr. Chairman, our estimated capability on this item is $200,000. Funds would be used to obtain adequate baseline data for use in evaluating existing conditions and the probable contribution of manmade changes or natural changes in the river basin's regime. The funds would also be used to inform the public of steady progress and involve the public in the early stages of planning and problem solutions. This is necessary before indicated degradation of the fishery, wildlife, and other environmental factors can be assessed properly and appropriate solutions identified and implemented. In view of the complexity of the Trinity River Basin problem and the intense local interest in an early resolution of those problems the following information has been prepared to summarize the status of activities in the area.

In October 1973 the California Department of Fish and Game recommended that present water releases for fisheries downstream from Lewiston Dam be increased from 120,000 acre-feet per year to 315,000 acre-feet per year in the Trinity River on an experimental basis for a minimum of 3 years.

In February 1974 we provided the Department of Fish and Game with an evaluation of the various impacts that releasing an additional

195,000 acre-feet annually down the Trinity River would have on the Central Valley project. The conclusion was that the additional fish releases would impose a major adverse economic and operational impact upon the project. Thus, the Bureau proposed that a comprehensive Trinity River Basin action plan involving an interagency and multidisciplinary approach be initiated to resolve the fish and wildlife and other interrelated problems of the basin.

The Trinity River Fish and Wildlife Task Force, composed of the Director of the Department of Fish and Game and Regional Directors of the Bureau of Sport Fisheries and Wildlife and the Bureau of Reclamation, met on March 13 to discuss our proposal for a comprehensive action program. The task force was in favor of an action program, and the membership was expanded to include representatives from Trinity County, Humboldt County, Bureau of Land Management, Forest Service, and the California Department of Water Resources.

However, congressional interests in the area recently requested, through the Bureau of Sport Fisheries and Wildlife, initiation of a more immediate action program proposal. Such a proposal is being developed by representatives of the Federal and State agencies of the task force.

By cooperating in this manner, we are attempting to identify and resolve the Trinity River fish and wildlife problems. If the increased water releases proposed by the Department of Fish and Game were to be accommodated, such an action would require congressional approval.

OKLAHOMA STATE WATER PLAN, OKLA.

Senator BIBLE. There is no appropriation request, but local interests have requested $100,000 and the House agreed with the request. What is your capability on this project?

Mr. O'BRIEN. Mr. Chairman, our capability on this is $100,000. This amount would be used to continue investigations of the Oklahoma State water plan. There is a need to evaluate potential water resources for the northwest portion of the State. Reappraisal of existing plans and development of new data would facilitate a program to permit optimum use of the State's water resources for meeting local, State, and national needs.

The area of investigation will be in the northwest portion of the State, consisting of some 19 counties. The study will develop a plan that will provide optimum use of the water resources in the project area and determine potential import requirements for water from surplus areas which are located primarily in the eastern portion of the State. Current projected needs for the study area indicate that local resources cannot meet the demand.

SAN FRANCISCO BAY AREA WASTEWATER RECLAMATION, CALIF.

Senator BIBLE. There is no appropriation request on this item although the local interests have requested $75,000. The House included nothing. What is your capability on this project?

Mr. O'BRIEN. Mr. Chairman, the project would need specific authorization as a feasibility level study. If this legislation is accomplished

in early fiscal year 1975 a total of $75,000 could be used. These funds would be used to initiate identification of study elements, expand the data base, both in the municipal sewerage systems and in areas of potential reuse, and hold public meetings.

There is an estimated 700,000 to 1,000,000 acre-feet of return flows from municipal use anticipated from the metropolitan bay area by 1990–2000. With a high local growth rate, this area has a great potential for reclamation and reuse wastewater. The municipalities are in the process of requesting Federal and State grants to enlarge and upgrade their treatment and disposal systems, some of which would not be necessary if reclamation was one of their objectives. A more extensive reuse of wastewater would remove some of the water resource pressure created by the adoption of State and Federal water quality standards for the Sacramento-San Joaquin Delta. The wastewater could be reused for irrigation water in the San Joaquin Valley, ocean salinity repulsion, waterfowl marsh habitat management, and powerplant cooling water.

San Joaquin Valley Drainage Investigation, Calif.

Senator Bible. The House provided $50,000 for this study although there is no appropriation request for the item. Local interests had requested $50,000. What is your capability on this investigation?

Mr. O'Brien. Mr. Chairman, our capability on this is $50,000. The additional funds will be used to develop the study plan with the agencies, entities and organizations who have an interest; to identify various alternatives for management of agricultural wastewater including reuse for powerplant cooling, aquaculture, marsh management and Sacramento-San Joaquin Delta outflow; to identify the most urgent drainage problem; to evaluate the possibility of staging construction of master drainage facilities; to consider reauthorization of the San Luis unit to include San Luis drain service to the lower San Joaquin Valley; and to consider steps necessary to safely dispose of the wastewater.

There is a very strong need in the area to develop a plan and appropriate facilities to protect agricultural lands from waterlogging and high salinity. The Bureau has deferred completion of the San Luis Drain due to a delay in the completion of the San Luis Unit service area water distribution systems and drainage laterals. The California State Water Resources Control Board is presently completing basin water control plans required under the 1972 amendment to the Water Pollution Control Act. These very general plans emphasize the severe agricultural drainage and salinity problems within the San Joaquin Valley. The 1972 amendment also requires that Federal permits be issued to all agricultural drainage point source discharges by December 1974. This is causing much concern to local districts and control agencies, and a plan is required for dealing with related problems.

Solano County Total Water Management Study, Calif.

Senator Bible. Local interests have requested $60,000 for this study and the House approved this funding although there was no budget request on item. What is your capability on this project?

Mr. O'BRIEN. Mr. Chairman, our capability is $60,000. Funds would be used to expand and complete the data base for all study elements, identify sensitive conditions and problem areas among study elements, and for public involvement meetings.

The purpose of this study is to develop a water resource management plan for Solano County and to analyze the potential for implementation. The results of the study will also serve as a basis of making decisions on scheduling of water service expansion, timing of required import water, development of potential ground water-surface water conjunctive use, and potential areas of wastewater reuse and disposal.

SUISUN MARSH MANAGEMENT STUDY, CALIF.

Senator BIBLE. Local interests have asked for $50,000 on this study and the House included this amount in their allowance. There was no budget request on this study. What is your capability on this project?

Mr. O'BRIEN. Mr. Chairman, our capability is $50,000. Funds would be used to develop the study plan along with other agencies, entities and organizations who have an interest. The study would also identify the most promising marsh management alternatives in relationship to water supply, facility requirements, management procedures and the environmental impacts.

The study would identify and evaluate various sources of water which could be made available to the marsh, and the facilities and management practices required to utilize this water to protect and enhance the existing waterfowl habitats.

UNCOMPAHGRE PROJECT EXTENSION, COLO.

Senator BIBLE. There is no appropriation request for this project, but local interests have asked for $75,000, which is the amount allowed by the House. What is your capability on this project?

Mr. O'BRIEN. Mr. Chairman, our capability on this is $75,000. These funds would be used to initiate a feasibility investigation of the potential Dominquez Dam and Reservoir. The study was authorized under Public Law 92–577, October 27, 1972, as the "Dominquez Reservoir Project." The reservoir project would provide releases for hydropower production, municipal and industrial water, recreation, and fish and wildlife enhancement. The reservoir would improve water quality and reduce sediment transported by the Gunnison River. The reservoir could also become an important source of water supply for potential oil shale and coal development in the area.

UPPER YAMPA PROJECT, COLO.

Senator BIBLE. There is no appropriation request but local interests have asked for $170,000. The House didn't provide anything. What is your capability on the Upper Yampa Project?

Mr. O'BRIEN. Our reluctance to indicate immediate capability is related to other higher priority planning work ongoing or proposed for the western Colorado area and the remoteness of the proposed project area and possible water supplies from location of high priority development such as oil shale and other municipal and industrial potentials.

Wagner Unit, P–SMBP, S. Dak.

Senator Bible. The House subcommittee has acted to add $15,000 in fiscal year 1975 for resuming studies on the Wagner unit. What will these funds accomplish?

Mr. O'Brien. Local interests wish to acquire detailed land classification and drainage information for the purposed study area. Assembly of information and data in which they are interested will take about 6 months to complete. This work will be accomplished in lieu of the more costly alternative of competing the feasibility study at this time. Programs with higher priority than irrigation will be emphasized in fiscal year 1975, thereby, deferring completion of the Wagner unit feasibility study to a later date.

Yakima Indian Reservation Investigations, Wash.

Senator Bible. Local interests have asked for $75,000 on the Yakima Reservation studies. There was no appropriation requested and the House did not provide any funds. What is your capability on this investigation?

Mr. O'Brien. Mr. Chairman, our capability on this is limited to $40,000 in fiscal year 1975. These funds would be used to initiate an appraisal, leading to feasibility investigations.

The study would focus on the problems of the tribe in the Mabton-Satus and Toppenish-Simcoe areas and on problems of both the tribe and non-Indians in the Ahtanum Creek area and explore the interrelationship between the three potential projects, and make recommendations in regard to actions needed to take consolidated action. The fiscal year 1975 appraisal could support feasibility study authorization and reduce the total time required for such studies. A feasibility study would be required prior to recommending the project for construction authorization under the reclamation program.

Yakima Project, Bumping Lake Enlargement Reformulation, Wash.

Senator Bible. There is no appropriation request but the House provided $50,000 in line with local interest's request. What is your capability on such a reformulation?

Mr. O'Brien. Mr. Chairman, our capability on this is $50,000. The funds would be utilized to reformulate plans of the Bumping Lake feasibility study to reflect the Water Resources Council's new principles and standards for water resources project planning evaluations. This project is designed to correct severe water shortages that adversely affect irrigation, water quality, and anadromous fish runs. In addition, recreational use of the river would be improved and winter floodflows curtailed on the Tieton River.

Yakima Valley, Total Water Management Study, Wash.

Senator Bible. There is no appropriation request on this item. Local interests requested $50,000 and this amount was included in the House allowance. What is your capability?

Mr. O'BRIEN. Mr. Chairman, our capability is $50,000 with which a proposed study would be initiated.

The funds would be used to establish a working program with the State, other Federal agencies and local interests and, with their assistance, make a current definition of and quantify present water uses and water needs.

This would be followed by evaluation of means for improving utilization of existing water supplies with emphasis on the Yakima project. This would include evaluating present water yield risks, determining if current operation criteria produce optimum water use, and proposing actions to improve present irrigation distribution systems and farm management practices. Institutional and legal restraints governing water use would be analyzed in light of present and projected priorities. Studies would be made to determine means for increasing water supplies to help solve unmet needs. This would include an evaluation of waste water reuse and analyses of storage and ground water development opportunities. As acceptable programs are identified, reports will be prepared and proposals for implementation made.

YELLOW JACKET, COLO.

Senator BIBLE. There is no appropriation request and the House made no provision for the study. Local interests have requested $100,000. What is your capability on the Yellow Jacket project?

Mr. O'BRIEN. Mr. Chairman, our capability on this project is $100,000. However, no additional funds are required for this work as we can cover this need by reprograming from other programs. Funds in fiscal year 1975 would be utilized for conducting meetings with public and environmental groups and State and Federal interests, as well as oil shale and coal companies, and for revising the current project plan and developing an acceptable environmental statement. In addition, preliminary studies have been completed on alternative plans which would satisfy many previously voiced objections and still fulfill meaningful objections. The investigation and proposed report will be revised under the new principles and standards required for project evaluation.

The project is planned largely to provide water for industrial, municipal, and domestic use in connection with anticipated development of oil shale and local coal reserves. The project would also increase irrigation supplies for the production of livestock feeds and would benefit recreation, fish and wildlife, and flood control.

YOLO AND SOLANO COUNTIES WASTEWATER COLLECTION SYSTEM, CALIF.

Senator BIBLE. There is no appropriation request and no funds in the House report of this item. Local interests have, however, asked for $50,000. What is your capability on this study?

Mr. O'BRIEN. Mr. Chairman, our capability on this study is $50,000. Those funds would be used to obtain initial data for use in evaluating agricultural drainage needs, municipal and industrial effect disposal needs, and the water fowl and wildlife enhancement of the Suisun Marsh.

The study will evaluate the need for a collection facility along the eastern portion of Yolo and Solano Counties to intercept drainage effluent during winter flooding periods when the Sacramento River and Yolo Bypass are filled. This same facility could serve to bypass all irrigation and municipal and industrial return flows during the summer interval. This would help alleviate a growing problem of where local communities in the two counties should dispose of their treated sewage effluent.

Calaveras County Water District, Calif.

LOAN PROGRAM

Senator Bible. There was no appropriation request for the district but local interests have asked for $900,000. The House did not provide any funds for Calaveras. What is your capability on this loan?

Mr. O'Brien. Mr. Chairman, we originally indicated our capability on this loan as $900,000. But this assumed that the application for the Calaveras County Water District would have been approved by the Secretary of the Interior and forwarded to the Interior and Insular Affairs Committees. The application has not reached this point, and we cannot now support a capability as Public Law 84–984 stipulates the application must lie before the committees for 60 days without adverse committee resolution before appropriation can be made.

Central Nebraska Public Power and Irrigation District, Nebr.

Senator Bible. There is no appropriation request for this loan but local interests have requested $1,500,000. The House allowance provided $1,500,000. What is your capability on this project?

Mr. O'Brien. Mr. Chairman, we could use the $1,500,000 as supported by local interests and included in the House allowance for fiscal year 1975. Those funds would be used for the preparation of design and specifications and the award of a contract by the district for the construction of Elwood Dam and Reservoir.

Senator Bible. Since this was not an item in the 1975 budget request, submit a statement on this project for the record.

Mr. O'Brien. Yes, sir.

[The statement follows:]

Summarized Financial Data:

Total Estimated Federal Cost	$10,000,000
Allocation to date including FY 1974	0
Budget Request FY 1975	0
Balance to complete after FY 1975	10,000,000
Additional capability in FY 1975	1,500,000

Authorization: Small Reclamation Projects Act of 1956 (P.L. 84-984)

Status and Capability:

The application report and draft environmental impact statement are under review. The final statement is expected to be filed with the Council on Environmental Quality in October 1974. A repayment contract is expected by January 1975.

Funds in the amount of $1,500,000 could be used in fiscal year 1975 for the preparation of design and specifications and the award of a contract by the district for the construction of Elwood Dam and Reservoir.

Problem Areas:

None.

Location and Description:

The project is located in Gosper and Phelps Counties in south-central Nebraska. The proposal will provide supplemental water to 33,700 acres and full water supply to an additional 9,100 acres. The development plan includes the construction of Elwood Dam and Reservoir, a 40,500 acre-foot pump storage facility. Under the proposal, an additional 27,000 acre-feet annually will be diverted from the Platte River. Fish and wildlife, as well as recreation benefits, will also be provided.

The downward trend of the ground water table due to the continued pumping to meet the ever-increasing water demand will be halted and the ground water table is expected to be stabilized.

Consolidated Irrigation District, Calif.

Senator Bible. Although there was no appropriation request, local interests have asked for $1,600,000. The House made no allowance for this loan. What is your capability on the Consolidated Irrigation District loan?

Mr. O'Brien. Mr. Chairman, we originally indicated our capability on this loan as $1,600,000. However, this assumed that the application for the Consolidated Irrigation District would have been approved by the Secretary of the Interior and forwarded to the Interior and Insular Affairs Committees. The application has not reached this point, and we cannot now support a capability as Public Law 84–984 stipulates the application must lie before the committees for 60 days without adverse committee resolution before appropriation can be made.

La Branza Water District, Calif.

Senator Bible. There is no appropriation request for a loan to the district but local interests have asked for $300,000. The House did provide $300,000 for the loan. What is your capability on this project?

Mr. O'Brien. Mr. Chairman, our capability for this loan is also $300,000. Those funds would be used to initiate surveys, designs, and specifications for the project.

Senator Bible. Since this was not an item in the 1975 budget request, submit a statement on this project for the record.

Mr. O'Brien. Yes, sir.

[The statement follows:]

Summarized Financial Data:

Total estimated Federal cost	$2,268,000
Allocation to date, including FY 1974	.....
Budget request, FY 1975	.....
Balance to complete after FY 1975	2,268,000
Additional capability in FY 1975	300,000

Authorization: P.L. 84-130, July 4, 1955.

Status and Capability:

Funds in the amount of $300,000 could be used in FY 1975 to begin surveys, designs, and specifications.

The Bureau has submitted the advance draft environmental study to the Commissioner January 1974. The repayment contract is expected to be validated in January 1975.

Problem Areas:

The La Branza water service contract requires payment of $30,000 annually upon the availability of Buchanan water, whether or not the district has the capability to use it. Buchanan water will be available in 1976, therefore, payment would start January 1977, two years after repayment contract is scheduled to be validated.

Location and Description:

The La Branza Water Districe office is located in Madera about 22 miles north of Fresno, California. The district service area is primarily in Merced County but extends into Madera County and comprises about 14,000 acres, of which 13,000 acres are considered productive. The district has contracted with the Bureau of Reclamation and with the Chowchilla Water District for a partial water supply, consisting of water developed from the Buchanan Dam Project on the Chowchilla River and Class II water from the Madera Canal of the Central Valley Project. The purpose of the project is to obtain a surface-water supply to replace, in part, the present ground-water supply. The ground water table is declining by about 3 feet annually under the pumping load. The district has no alternative source of water.

Nevada Irrigation District, Calif.

Senator Bible. There is no appropriation request but local interests have requested $1,600,000. Nothing was provided for the district in the House allowance. What is your capability on such a loan to the Nevada Irrigation District?

Mr. O'Brien. Mr. Chairman, we previously indicated our capability on the Nevada Irrigation District loan to be $1,600,000. This assumed that the application for the loan would have been approved by the Secretary of the Interior and forwarded to the Interior and Insular

Affairs Committees. The application has not reached this point, and we cannot now support a capability as Public Law 84–984 states the application must lie before the committees for 60 days without adverse committee resolution before appropriation can be made.

Redwood Valley County Water District, Calif.

Senator Bible. There is no appropriation request but local interests have requested $900,000. No allowance was provided by the House. What is your capability on this project?

Mr. O'Brien. Mr. Chairman, we previously indicated our capability on the Redwood Valley County Water District loan to be $900,000. This assumed that the application for the loan would have been approved by the Secretary of the Interior and forwarded to the Interior and Insular Affairs Committees. The application has not reached this point, and we cannot now support a capability as Public Law 84–984 states the application must lie before the committees for 60 days without adverse committee resolution before appropriation can be made.

Valley Center Municipal Water District, Calif.

Senator Bible. There is no appropriation request but local interests have asked for $2 million. The House made no allowance for the district. What is your capability on this project?

Mr. O'Brien. Mr. Chairman, previously we indicated our capability on the Valley Center loan as $2 million. This was based on the assumption that the loan would have been approved by the Secretary of the Interior and forwarded to the Interior and Insular Affairs Committees. Unfortunately, the application has not reached this point. Therefore we cannot now support a capability as Public Law 84–984 stipulates the application must lie before the committees for 60 days without adverse committee resolution before appropriation can be made.

Brantley Project, N. Mex.

CONSTRUCTION AND REHABILITATION

Senator Bible. There was no appropriation request for this project but local interests have requested $1,625,000 for start of construction. I note the House allowed $1,600,000 for this purpose. What is your capability on this project?

Mr. O'Brien. Mr. Chairman, our capability on this project is also $1,600,000. These funds would be used to initiate construction of the project and provide for acquisition of right-of-way, contract repayment negotiations, award of relocation contracts and preconstruction on Brantley Dam.

Senator Bible. Please supply a statement on the Brantley project for the record since it is not in the fiscal year 1975 budget.

Mr. O'Brien. Yes, sir.

[The statement follows:]

Summarized Financial Data:
(Prices as of January 1973)

Total Estimated Federal Cost	$50,050,000
Allocations to date, including FY 1974	325,000
Budget Request, FY 1975	.....
Balance to complete after FY 1975	49,725,000
Additional Capability in FY 1975	1,600,000

Authorization: Public Law 92-514, October 20, 1972

Status and Capability:

Activities were started in FY 1974 with write-in funds included in the FY 1974 appropriation act, and the Definite Plan Report is scheduled for completion by June 30, 1974.

The amount of $1,600,000 could be used in fiscal year 1975 for acquisition of right-of-way, contract repayment negotiations, award of relocation contracts and preconstruction on Brantley Dam.

Location and Description:

The project is located on the Pecos River in Eddy County, New Mexico, about midway between the cities of Artesia and Carlsbad. The plan consists of construction of Brantley Dam and Reservoir. The project provides for replacement of irrigation storage for McMillan Reservoir which is losing its effectiveness because of sediment accumulation. Brantley Reservoir will provide storage for flood control not presently available in McMillan and Avalon Reservoirs. In addition, minimum pools would be provided for fish and wildlife enhancement and for recreational opportunities.

Based on reevaluation statement of August 1971, the benefit-cost ratio for this project is 1.07 to 1.0. The average annual benefits of $3,068,700 are broken down as follows:

Irrigation	$ 70,000
Flood control	967,600
Safety of dams	1,576,200
Recreation	297,200
Fish and Wildlife	157,700
Total	$3,068,700

CENTRAL VALLEY PROJECT, AUBURN-FOLSOM SOUTH UNIT, CALIF.

Senator BIBLE. The budget request for this project is $8,500,000 and the House gave you $12,950,000. Local interests requested $12,950,000. What is your capability?

Mr. O'BRIEN. Our capability of $12,950,000 agrees with the local requests and the House Report. This amount is an increase of $4,450,000 above the budget.

Senator BIBLE. What would be accomplished with the additional amount?

Mr. O'BRIEN. $4,200,000 would be used to advance purchase of right-of-way in the Auburn Reservoir area and to make an earlier award of the contract to relocate State Highway 49. The city of Auburn is anxious to have the Bureau proceed on the highway relocation as the existing road facilities will be extremely taxed by visitor and construction-oriented traffic. The extra capability would advance the highway relocation by 1 year. An additional $150,000 is needed to cover the cost of the Auburn Administration Building beyond the previous estimate. And last of all, $100,000 is needed to continue the study on in the Folsom South Canal area.

CENTRAL VALLEY PROJECT, MISCELLANEOUS PROJECT PROGRAMS, CALIF.

Senator BIBLE. The budget request for this project is $4,580,000, while the House allowed $6,280,000. Local interests have requested $9,780,000. What is your capability?

Mr. O'BRIEN. Our capability is $9,430,000, an increase of $4,850,000 above the appropriation request.

Senator BIBLE. What would be accomplished with your additional capability?

Mr. O'BRIEN. $3,150,000 is for raising and rehabilitating lining on the Delta-Mendota and the Friant-Kern Canals. The performance of this corrective work will permit the Bureau to resume full water delivery service to a number of its customers. The House did not provide anything for the canal linings. We have additional capability of $200,000 for preconstruction work on the El Dorado Main No. 2 in the Gold Hill area which will ultimately provide a supplementary means of transporting more water to the El Dorado Irrigation District for distribution. The House allowed $200,000 for preconstruction. We also have capability of $1,500,000 for the construction of the outlet works and reservoir A, and the main conduit in the Pleasant Oak area of the El Dorado distribution system. The El Dorado Irrigation District is anxious that work begin on these facilities soon before escalating prices necessitate the renegotiation of their repayment contract. The full capability of $1,500,000 was allowed by the House.

Senator BIBLE. In what way does your capability differ from the local interest request?

Mr. O'BRIEN. They asked for $350,000 on the Contra Costa Canal rehabilitation which was considered as a part of the construction program in their request. We have included the item under operation and maintenance.

CENTRAL VALLEY PROJECT, SACRAMENTO RIVER DIVISION, CALIF.

Senator BIBLE. The budget request for this project is $2,390,000, while the House provided $5,455,000. Local interests have requested $6,490,000. What is your capability?

Mr. O'BRIEN. Our capability of $6,490,000 agrees with the local requests. This amount is an increase of $4,100,000 above the budget.

Senator BIBLE. What would be accomplished with the House allowance of $3,065,000?

Mr. O'BRIEN. $755,000 would be used to purchase right-of-way and advance the contract on Reach 5 by 3 months; $1,435,000 would be used to purchase right-of-way and advance the contract award on Reach 6 by 1 year. By using $650,000 for preconstruction costs, work will be advanced by 1 year on Reaches 7 and 8; $125,000 would be used to prepare the anchorage and silt disposal area of the Tehama-Colusa Canal fish facilities. In addition, $100,000 could be used to continue preconstruction work on the Orland-Artois Water District distribution system. This would advance construction on the system so that initial delivery of water could be made in the service area by early 1978.

CENTRAL VALLEY PROJECT, SAN FELIPE, CALIF.

Senator BIBLE. The budget request for this project is $200,000, limited to advance planning, while local interests have requested $700,000 for a start on construction. The House agreed and allowed $700,000 to resume construction on the Pacheco Tunnel. What is your capability?

Mr. O'BRIEN. Our capability of $700,000 agrees with the local request and the House allowance.

Senator BIBLE. What would be accomplished with the additional $500,000?

Mr. O'BRIEN. It would be used to purchase right-of-way and begin construction on the completion contract for Pacheco Tunnel. Preconstruction activities would continue on Santa Clara Canal. By starting construction in fiscal year 1975, water could be available in fiscal year 1979 to meet urgent municipal and industrial and irrigation needs.

CENTRAL VALLEY PROJECT, SAN LUIS UNIT, CALIF.

Senator BIBLE. The budget request for the San Luis Unit is $23,170,000 while the House provided $29,170,000. Local interests asked for $34,170,000. What is your capability?

Mr. O'BRIEN. Our capability is similar to the local request. That is an increase of $11 million above the amount in the budget.

Senator BIBLE. Would you tell us first what could be accomplished with the House increase of $6,000,000 and then advise us what additional work could be accomplished within the further capability of $5,000,000?

Mr. O'BRIEN. Of the total additional capability, the House provided $4,400,000 for use on construction of the Westlands distribution system. These funds would advance contract 1–D of the drainage collector system by 1 year and advance construction contract 13 by 3

months. $1 million was allowed to advance the contract award by 1 year on the San Luis drain between Laguna Avenue and Kettleman City and to purchase right-of-way. One hundred thousand dollars was provided for canal turnout facilities that will supply irrigation water to the Panoche Water District from the San Luis Canal. The House also provided $500,000 needed for recreation facilities at the San Luis Reservoir to provide additional camping and day-use facilities in concert with the State of California.

The balance of the capability above the House total includes $700,000 for contract 14B; $1,750,000 for traveling screens in the distribution system headworks at the San Luis Canal; $1,350,000 for preconsolidation work, and $1 million for purchase of water metering devices, all of which could be advanced by 1 year. $200,000 could be used to cover increased earnings for the pipeline contract 13.

Senator BIBLE. The Bureau requested $170,000 in the fiscal year 1975 budget to continue work on the San Luis drain portion of the San Luis Unit, Central Valley project, Calif. What is the Bureau's capability for the project in fiscal year 1975?

Mr. O'BRIEN. We have an additional capability of $1 million to advance the contract award by 1 year on the San Luis drain between Laguna Avenue and Kettleman City and to purchase right-of-way. This would permit the construction of a 26-mile section to the San Luis drain and thereby enable the Westlands Water District to convey water drained from irrigated land to the Kesterson Reservoir. Until the drainage water is disposed in this manner, salts will continue to build up in the soil.

CHIEF JOSEPH DAM, FOSTER CREEK DIVISION, WASH.

Senator BIBLE. There is no budget for this project, but local interests have requested $145,000. The House provided $145,000. What is your capability on this project?

Mr. O'BRIEN. Mr. Chairman, our capability on this project agrees with the local request and House allowance of $145,000. These funds would be used to replace the 2.7 miles of lateral pipelines on the Bridgeport Bar Unit. The badly corroded pipe needs to be replaced because of excessive leakage.

Senator BIBLE. Would you submit a statement on this project for the record since it is not in the fiscal year 1975 budget?

Mr. O'BRIEN. Yes, sir.

[The statement follows:]

Summarized Financial Data:

Total Estimated Federal Cost	$3,240,000
Allocation to date, including FY 1974	3,055,514
Budget Request, FY 1975	-
Balance to complete after FY 1975	184,486
Additional capability in FY 1975	145,000

Authorization: P.L. 540, July 27, 1954

Status and Capability:

Construction of the Foster Creek Division was completed in FY 1958 to serve 2,860 acres. Because of excessive leakage and low pressure, replacement of smaller pipe on the Brewster Flat Unit and lining of larger pipe on both the Brewster Flat and Bridgeport Bar Units was completed in FY 1973.

Funds in the amount of $145,000 could be used in FY 1975 for replacing the 2.7 miles of lateral pipelines on the Bridgeport Bar Unit.

The pipeline distribution system of the Bridgeport Bar and Brewster Flat Units was completed in the early 1950's. In recent years the operating district has experienced considerable difficulty with low operating pressures and leaks. It was found the metal pipes were badly corroded in many areas and rust nodules and other deposits on the inside of the pipe had reduced the water carrying capacity of the system. Mortar lining of the larger pipes and replacing smaller pipes have been completed except for replacement of the smaller pipes in the Bridgeport Bar Unit which has had to be deferred because of the budgetary situation.

Location and Description:

The Bridgeport Bar and Brewster Flat Units are located adjacent to the Columbia River in north-central Washington, midway between the Wenatchee and Okanogan fruit belts.

The benefit cost ratio for the Bridgeport Bar Unit is 2.72 to 1 and the average annual benefits of $73,620 were associated with irrigation. The benefit cost ratio for Brewster Flat is 5.41 to 1 and the average annual irrigation benefits are $693,930.

Columbia Basin Project, Bacon Siphon and Tunnel No. 2, Wash.

Senator Bible. Congress appropriated $1,055,000 in fiscal year 1972 to begin construction on the second Bacon siphon and tunnel. Now we understand that you wish to reprogram these funds for work on other parts of the Columbia Basin project. Local interests are opposed to the diversion of these earmarked funds. Please comment on this proposal.

Mr. O'Brien. Mr. Chairman, we propose to apply the $1,055,000 to other project work in fiscal year 1975. As you know funds for the Bacon siphon and tunnel have been held in reserve for several years because of the demands the structure would place on future year budgets. Rather than continue to hold these funds in reserve, it appeared that it would be in order to apply them to ongoing project work.

IRRIGATION FACILITIES

Senator Bible. The budget request for the irrigation facilities is $10,045,000. In addition to this request, local interests have asked that an additional $300,000 be provided to construct wasteways in the block 81 area of the project. The House allowed the budget request and also provided the additional $300,000. What is your capability for block 81?

Mr. O'Brien. The Bureau has an additional capability of $300,000 to initiate construction of two wasteways for the lateral serving the 13,000-acre block 81 in the West Canal area. The lateral is over 20 miles in length with a single wasteway at the end. Drifting sand and weeds from adjacent dry-farmed areas, require cleaning of the canal during the irrigation season. With only one wasteway at the end, water must be turned out of the entire length of the canal. To correct this situation, intermediate wasteways are needed at mile 6.8 and mile 12.8.

CAPABILITY TO STUDY ALTERNATIVES

Senator Bible. The Columbia Basin Development League asked that the Bureau of Reclamation conduct a 1-year in-depth study of all alternatives whereby the Columbia Basin project could be completed under your present capabilities. What is your capability to do this work?

Mr. O'Brien. We can accomplish the work within the budget request for the Columbia Basin project. The total estimated cost of the study is $150,000 and it would be scheduled for completion in fiscal year 1976.

Senator Bible. Explain how you are able to conduct a study of alternatives within the present authorizing Columbia Basin project act.

Mr. O'Brien. This project was authorized by the Columbia Basin project act of March 10, 1943. This project like many other projects at authorization have plans, while defined, are not in great detail. Also, because of lengthy period of construction of initial phases and because of recent trends in higher demand for agricultural products it often becomes necessary to reexamine and update our projects to meet current and modern needs of the area. The planning goes on concurrently with construction as we attempt to make the best investment. This study would not be unusual in our development of the project.

Columbia Basin Project, Third Powerplant, Wash.

Senator Bible. The budget request for the third powerplant is $58,055,000, while local interests have requested $64,555,000. The House provided $64,555,000 in its allowance. What is your capability?

Mr. O'Brien. Our capability is the same as the local requests and the House allowance. This represents an increase of $6,500,000 above the appropriation request.

Senator Bible. What would be accomplished with the additional funds?

Mr. O'Brien. $6,500,000 could be used for earnings with Canadian General Electric for furnishing and installing the second set of three turbines and generators. In our budget we covered the contractor's indicated earnings of $14,863,000. The contractor now has indicated the need for additional funds in fiscal year 1975 to meet the current on-line dates for the next three units.

Teton Basin Project, Lower Teton Division, Idaho

Senator Bible. The budget request for this project is $11,675,000. The House has allowed $13,675,000, the same as requested by local interests. What is your capability?

Mr. O'Brien. Our capability of $13,675,000 agrees with the local requests and the House allowances. This amount is an increase of $2 million above the appropriation request.

Senator Bible. What would be accomplished with the additional funds?

Mr. O'Brien. It could be used for payment of contract earnings on the prime contract for construction of Teton Dam and the power and pumping plant. The prime contractor now anticipates that his earnings in fiscal year 1975 will be greater than previously planned. The additional capability would also provide for the initiation of construction of irrigation facilities. Since water will be available in Teton Reservoir by the spring of 1976, it is in order to begin construction on the irrigation facilities now, so that water could be conveyed to users of the Fremont-Madison Irrigation District at the earliest opportunity.

Palmetto Bend, Tex.

Senator Bible. Judy Clark, representing the Palmetto Citizens Group, appeared in opposition to the Palmetto Bend Project. Have you reviewed her statement and would you care to comment on it?

Mr. O'Brien. Yes, we have reviewed her rather lengthy statement and at this time I would like to reaffirm that the project is an economically justified, multiobjective water resource development project and is being constructed in compliance with the project authorization and other legal requirements. Any delay in the orderly construction of the project would result in unnecessary higher costs to the Federal Government and local people; therefore, I recommend that the project continue to be funded to our full capability. If I may, to conserve the committee's time, I would like to insert my further comments into the record.

Senator Bible. Without objection, your additional comments will be placed in the record at this point.

[The information follows:]

STATEMENT OF JUDY U. CLARK

Public Sentiment Toward the Project

The local people, the Lavaca-Navidad River Authority, and the Texas Water Development Board expressed the need for the project at hearings held by the Subcommittee on Irrigation and Reclamation of the Committee on Interior and Insular Affairs of the House of Representatives at Washington, D.C., on August 14, 1967, and at Edna, Texas, on December 8, 1967. In 1967 the local citizens passed a bond issue authorizing the Lavaca-Navidad River Authority to enter into a repayment contract with the Texas Water Development Board and the United States of America for project construction costs and to assume operation and maintenance costs of the project. Public Law 90-562 was approved on October 12, 1968, and authorized the Secretary of Interior to construct, operate, and maintain the Palmetto Bend Project. Construction of the dam is scheduled to begin about September 1974. This process was based on, and could not have developed without, full local support for the project.

The Palmetto Citizens Group conducted a public opinion poll during the early part of 1974 to try to determine those in favor or opposed to construction of Palmetto Bend Dam. The poll produced 694 replies for and 732 against the project. However, over 63 percent of those polled did not reply. We cannot agree with Mrs.Clark that a majority of Jackson Countians now oppose the project: A majority of the citizens did not reply or participate in the poll sponsored by the plaintiffs.

The oil and/or natural gas wells in the reservoir area are located within the Texana field discovered in 1939, the Hornbuckle field in 1956, and the North Texana field in 1969. Production is from various formations ranging in depth from 6,000 to 7,600 feet. The oil and gas wells involved in the project area are declining in production and are

approaching their economic limit. Twelve producing oil and gas wells and three saltwater disposal wells will be affected by the dam and reservoir. Production from these existing wells in the reservoir area has been depleted to the point that it now appears more economical to purchase the wells rather than provide replacement. The wells can always be redrilled (directional drilled) and the remaining production recovered. The mineral rights will be available for lease should it become desirous to recover the oil production.

Lack of Established Need for the Project

The need for this project is quite evident when one considers that Municipal and Industrial water requirements are expected to increase from 81,028 acre feet in 1970 to 311,656 by 2020 and an additional 20,000 acre feet of irrigation water will be required at that time.

Development of the project is needed to meet the specific goal set by the State of Texas for providing an adequate high quality water supply for the citizens in this area. The State seeks orderly and balanced development of its natural resources to provide opportunities for its people to share in the wealth and to live in an attractive environment. It feels that development of the Palmetto Bend Project at this time meets those goals.

The October 1963 plan of development utilized the best population projections which were available at the time. Population projections presently being used are December 1972 Population Projections of the Texas Water Development Board. The population projections for the Counties of Goliad, Jackson, Victoria, and Calhoun are 1970, 89,441; 1980, 101,600; 2000, 132,400; and 2020, 170,600.

Ground water supply alternatives have been considered as an alternative to Palmetto Bend Reservoir. The Texas Water Development Board has provided a detailed analysis of the quantity and quality of ground water in the vicinity of the project. Sufficient ground water is available for development as an alternative provided it is confined to northwestern Victoria and southern Lavaca Counties. Development in this area would not interfere with irrigation in the remainder of the study area The cost of development of a ground water alternative was estimated to be 20 cents per 1,000 gallons for untreated water, while untreated and undelivered reservoir water from Palmetto Bend is estimated to be 9.5 cents per 1,000 gallons.

Incompatibility of Palmetto Bend with Present Economy

The need for developing the Palmetto Bend Project has been discussed under the heading Lack of Established Need for the Project.

Escalating Costs of Palmetto Bend

As you are aware construction costs are increasing rates on all projects and, not just the Palmetto Bend Project. This is why I again advise you of the importance of continued funding of the project to the Bureau's full capacity. In spite of rising costs the Palmetto Bend Project is still economically justified.

Questionable Assumption About the Recreational Benefits of the Project

The project is located near the 16-county area extending from Houston to Corpus Christi containing a population of nearly 2,500,000. Matagorda Bay and the adjoining Gulf of Mexico provide ample saltwater-based recreation while public freshwater-based recreational opportunities are limited. An estimated 11,400 man-days of recreational activity are provided annually by the present freshwater area within the project,

while Palmetto Bend would provide 229,300 man-days of recreational activity annually.

Recreational aspects and effects of fish and wildlife were evaluated by the Bureau of Outdoor Recreation and the Bureau of Sport Fisheries and Wildlife. Those agencies are well known for their expertise in these fields and we accepted their evaluations.

Valuable Historical and Archeological Sites to be Inundated

During the 1964 to 1967 period, the Texas Archeological Salvage Project conducted a preliminary archeological survey of the proposed Palmetto Bend Reservoir. The Texas Historical Survey Committee conducted an extensive archeological survey in 1972. Thirteen of the recorded 19 sites would be in the reservoir area. No national historic properties and only the Texana site, a State historic property, will be inundated. The Bureau of Reclamation will make funds available to the National Park Service for mitigation operations within the stage 1 rights-of-way, and the Texana historical marker relocation will be coordinated with the local historical society and the Lavaca-Navidad River Authority.

Harmful Effects on the River Bottom

The Navidad River ranges from about 10 feet wide and 1 foot deep near its headwaters to about 90 feet wide and 12 feet deep near the damsite. The better quality fishery is in the lower 32 miles of the river. The Palmetto Bend Project will permanently inundate 11,000 acres and periodically inundate 12,500 acres. Forty-seven miles of stream will be inundated. Clearing will occur on 7,400 acres of which 4,900 acres will be in woody vegetation.

The water level is expected to stay at or above top of conservation pool (elevation 44) about 50 percent of the time, while 85 percent of the time it would be expected to remain above elevation 40. Approximately 500 acres of reservoir land will be exposed per foot of water level decline between elevations 44 and 40.

A littoral zone will develop along the lake shore which would include aquatic flora and fauna and extensive spawning and feeding areas would be provided for fish. The presence of a large body of water is expected to attract many types of water-oriented birds. Shallow-flat areas attract waterfowl. The Bureau of Sport Fisheries and Wildlife estimates that about 20,000 to 30,000 waterfowl would use the reservoir annually. Other aquatic and semiaquatic animals will utilize the reservoir area.

Possible Detrimental Effects
on the Bay and Estuary System

Freshwater depletions to Lavaca Bay and Matagorda Bay resulting from project operation under ultimate demand conditions will be less than 10 percent and 3 percent, respectively. The reduction in freshwater inflow is not expected to alter historic water conditions in a manner that would significantly affect the estuarine environment of the bays. This observation is supported by hydrodynamic and modeling studies undertaken by the Texas Water Development Board. The board's analysis indicates that salinity ranges and water quality, as well as flow patterns in the bays will remain essentially unaffected by project operation. It is not anticipated that this freshwater depletion rate would have any significant impact on estuarine life.

Uncertain Legal Status of the Project

The Bureau of Reclamation issued a plan of development for Palmetto Bend Project, Texas, in April 1963 revised October 1963. At that time, total environmental considerations were not required for Federal projects. The initial plan of development provided for construction of the Palmetto Bend Dam and Reservoir in two stages. The first stage (Navidad River portion), as originally set out in the plan of development, was authorized by Congress on October 12, 1968. A final environmental impact statement was filed with the Council on Environmental Quality (CEQ) on May 19, 1972. Subsequent to filing of the final EIS, the Texas Water Rights Commission held hearings and granted a "Permit to Appropriate State Water" to the Lavaca-Navidad River Authority and the Texas Water Development Board. On August 20, 1973, the Sierra Club, Palmetto Citizens Group, and Wayne L. Legro filed a Plaintiff's Motion for a Summary Judgment and Alternative Motion for Preliminary Injunction against the Secretary of the Interior and others to prevent construction of the project. This action is still pending in court. The Bureau issued a new draft environmental impact statement for the Palmetto Bend Project which was filed with CEQ on April 30, 1974, to present new data compiled since the final EIS was filed with CEQ. A public hearing, as required by law, will be held on this draft statement.

As previously stated the project is being constructed in compliance with the authorizing legislation and other legal requirements.

Pick-Sloan Missouri Basin Program, Garrison Diversion Unit, N. Dak.

Senator Bible. The Environmental Policy Center is opposed to the Garrison diversion unit because of the salinity problems it is creating in this country and Canada. Please tell us what efforts are being made to minimize the salinity conditions on this project which is nearly 20 percent complete.

Mr. O'Brien. When the return flows are mixed with the natural flows of the Souris River, the resultant river flow will contain about 885 parts per million of total dissolved solids, compared to a historic average of 796 parts per million. The Bureau of Reclamation has conducted studies to define the quantity and salinity of return flows from Garrison diversion unit irrigation in the Souris loop area and the resulting effect on flows of the Souris River. These studies include an initial salinity study of return flows to the Souris River which was completed in 1972 and subsequent investigations which were completed in 1974. The subsequent investigations include selection of irrigable lands to reduce salinity of return flows, imposition of a 10-year development period upon accruals to the river, and inclusion of canal seepage and operational wastes in the return flow computations. Results of the subsequent investigations along with other financial and operational considerations, have provided information for changing the project to reduce salinity levels of return flows from those computed in the first study.

During evaluation of results from the 1972 salinity study of return flows from Garrison diversion unit irrigation in the Souris loop area, it was found that return flows from two of the seven major landforms of the area were extremely saline. Land classification of the Souris loop area was then reviewed to determine if these lands could be replaced with lands that would have less saline return flows. This review showed that there are sufficient areas that would have less saline return flows that could be included in the 116,000-acre project area in the middle Souris area. The salinity study was recomputed to find the quantity and quality of return flows from the resulting area. Average annual return flow salinity under equilibrium conditions was reduced from about 1,520 parts per million as computed in the 1972 study to about 1,150 parts per million by this shift of lands.

Sprinkler systems will probably be used to irrigate nearly all lands of the Garrison diversion unit. Since gravity methods were originally anticipated for irrigation of the Unit, the use of sprinkler systems would result in better ability to manage water applications and reduce the quantity of return flows.

The quantity of return flow from sprinkler systems is expected to be less than from gravity systems, but the salinity concentration of those accruals is usually higher. However, the total volume of salt, or total dissolved solids, carried into natural streams by the return flows is lower under sprinkler irrigation conditions. Landowners in the Garrison diversion unit are being urged to employ sprinkler irrigation systems in the application of water to their lands when that water becomes available.

In evaluating the effects of return flows upon the Souris River, it was found that a development period must be considered for irrigated lands of the unit. In practice, it will take about 10 years for full irrigation of all of the lands in the Souris loop area to be achieved after water has been made available to the area. When the development period was superimposed upon salinity studies discussed above, the high salinity levels and the average total dissolved solids concentration of return flows from the area during the leaching period would be reduced to about 1,200 parts per million. The equilibrium level of return flow salinity would be the same as shown previously, about 1,150 parts per million.

The inclusion of canal seepage and project operational wastes from the unit in the analysis results in further reduction of salinity levels of return flows. Thus, in the overall analysis, the average salinity level of the return flows will be about 980 parts per million of total dissolved solids.

PICK-SLOAN MISSOURI, BASIN PROGRAM, NARROWS UNIT, COLO.

Senator BIBLE. Has the Bureau considered alternative dam and reservoir sites for the Narrows unit?

Mr. O'BRIEN. Yes, we actually considered six dam sites of which only two were considered potentially viable and warranted additional detailed study. The latter two were the present Narrows site and the Weld County site, approximately 25 miles upstream. Our comparative studies indicated that a dam at either site would offer essentially the same benefits, but at a substantial less cost at the Narrows site. The more favorable cost of the Narrows site was confirmed by consulting engineering firms, retained by State of Colorado, who endorsed the project to be constructed by the Bureau at the Narrows unit.

PICK-SLOAN MISSOURI BASIN PROGRAM, OAHE UNIT, S. DAK.

Senator BIBLE. The budget request for this project is $4,535,000 while local interests have requested $8,035,000. The House provided $5,535,000 for this work. What is your capability?

Mr. O'BRIEN. Our capability of $8,035,000 agrees with the local requests. This amount is an increase of $3,500,000 above the appropriation request.

Senator BIBLE. What could be accomplished with the additional amount?

Mr. O'BRIEN. The additional capability of $3,500,000 would be used to advance the award for the Medicine Creek Knoll cut of Pierre Canal and accelerate land acquisitions for Blunt Reservoir and Pierre Canal. Consequently construction would begin 1 year earlier on the canal, and we can avoid ill-will among the many landowners who are eager to dispose of their property now.

PICK-SLOAN MISSOURI BASIN PROGRAM, OAHE UNIT, S. DAK.

Senator BIBLE. The Environmental Policy Center representative spoke in opposition to the Oahe unit. He maintains that the unre-

solved salinity conditions continue to exist on this unit and therefore construction should be deferred until this question is settled. Would you explain what progress is being made to clear up this matter?

Mr. O'BRIEN. The Bureau of Reclamation is currently conducting a water quality and return flow study for the Oahe unit to show the quantity and quality of return flows that will accrue from irrigation in the unit, to establish existing conditions of streamflow in the James River, and to determine the streamflow that will result following mixing of these flows. Detailed analyses of soils from the Dakota Lake Plain of South Dakota—the area to be irrigated—have been conducted and are being used to estimate return flow volume and quality constituent levels—salinity, sodium, calcium, magnesium, bicarbonate, sulfate, chloride, and nitrate. Sophisticated models of the Bureau of Reclamation's Engineering and Research Center are being used in these studies.

Detailed analyses have also been conducted on the impoundment of Missouri River water and its suitability for use on the Oahe unit. These data are included in the analysis of return flows from the unit.

A large portion of our water quality and return flow study for the Oahe unit focuses on flows of the James River and releases of project water to the river to maintain applicable water quality standards at Huron. There will be no significant degradation of Huron's water supply from present conditions.

CLOSED BASIN DIVISION, SAN LUIS VALLEY PROJECT, COLO.

ADVANCE PLANNING

Senator BIBLE. There is no appropriation request but local interests have requested $100,000. The House allowed $100,000 for the advance planning work. What is your capability on this project?

Mr. O'BRIEN. Mr. Chairman, our capability on this project is also $100,000 which would be used to perform advance planning studies. These include detailed surveys and collection of design data, and preparation of a report. The project was authorized in 1972 but advance planning work has been deferred because of budgetary restraints.

Senator BIBLE. Since this was not an item in the 1975 budget request, would you submit a statement on this project for the record?

Mr. O'BRIEN. Yes, sir.

[The statement follows:]

Summarized Financial Data:
(Prices as of April 1972)

Total Estimated Federal Cost	$18,246,000
Allocation to date, including FY 1974	.....
Budget Request, FY 1975	.....
Balance to complete after FY 1975	18,246,000
Additional capability in FY 1975	100,000

Authorization: Public Law 92-514, October 20, 1972

Status and Capability:

The FY 1975 budget request does not include any funds to initiate advance planning on this project. An amount of $100,000 could be effectively utilized during FY 1975 to perform advance planning studies. These would include detailed surveys and collection of design data, and preparation of the Definite Plan Report.

Location and Description:

The project is located in south-central Colorado in Saguache and Alamosa Counties. The project is designed to facilitate the optimum salvage and delivery to the Rio Grande water now being nonbeneficially consumed within the Closed Basin. The plan provides for installation of a system of wells, pumping plants, laterals, and main canals to salvage ground and surface waters within the adopted salvage areas. This development will salvage an average of about 101,700 acre-feet of water annually.

The benefit-cost ratio for this project is 1.6 to 1.0. The average annual benefits of $2,027,000 are broken down as follows:

Water Salvage	$1,791,000
Fish and Wildlife Enhancement	66,000
Recreation	102,000
Area Redevelopment	68,000
Total	$2,027,000

Solano Flood Control and Water Conservation District, Calif.

Senator Bible. What is the current status of the Solano Irrigation District loan request for $250,000 to replace bridges along the Putah South Canal of the Solano project?

Mr. O'Brien. We are looking at the possibility of doing this work in our rehabilitation and betterment program.

Senator Bible. What is the Bureau's capability in fiscal year 1975?

Mr. O'BRIEN. Mr. Chairman, provided suitable repayment arrangements can be negotiated, we have the capability of using $250,000 in fiscal year 1975 in this rehabilitation program of replacing the badly deteriorated timber bridges on the Putah South Canal on the Solano project.

Senator BIBLE. Since this was not an item in the fiscal year budget request, would you submit a statement on this project for the record?

Mr. O'BRIEN. Yes, sir.

[The statement follows:]

Summarized Financial Data:

Total Estimated Federal Cost	$672,000
Allocation to date, including FY 1974	-
Budget Request, FY 1975	-
Balance to complete after FY 1975	672,000
Additional capability in FY 1975	250,000

Authorization: P.L. 81-335, October 7, 1949.

Status and Capability:

The Solano County Flood Control and Water Conservation District could use $250,000 in FY 1975 to rehabilitate badly deteriorated bridges. These crossings are unusable and in danger of falling into the Putah South Canal.

Concerning environmental status, a negative determination numbered NDN 73-38-(MP) was completed on November 12, 1973. The repayment contract is scheduled for execution in July 1974.

Location and Description:

The Solano Project is located in Solano County, California, and is designed to irrigate 75,000 acres of land and furnish municipal and industrial water to the principal cities in Solano County.

The Solano Flood Control and Water Conservation District proposes to rehabilitate approximately 49 farm and operating bridges on the Putah South Canal. These bridges are in various degrees of deterioration. The FY 1975 capability includes rehabilitation of bridges that are no longer safe for use. Further deterioration could conceivably affect the safe operation of the canal. The balance of the rehabilitation of the bridges should be completed the following two fiscal years.

Rehabilitation will consist of repairing, replacing with precast concrete or removing bridges along the canal. It is important that the bridges scheduled for FY 1975 be replaced as they are unsafe and causing increased operation and maintenance costs due to inability to reach parts of the canal with maintenance equipment.

Tualatin Project, Oreg.

Senator Bible. The budget request for this project is $4,235,000 while the House provided $4,535,000. Local interests asked for $4,535,-000. What is your capability?

Mr. O'Brien. Our capability of $4,535,000 agrees with the local request and the House allowance. This amount is an increase of $300,000 above the appropriation request.

Senator Bible What would be accomplished with the additional capability?

Mr. O'Brien. The $300,000 could be used for rights-of-way acquisition and initiation of construction of the block 4 laterals. The block 4 laterals are the last major feature to be constructed and would advance irrigation water to 6,911 acres by 1 year.

Tumalo Irrigation District, Oreg.

Senator Bible. The budget request for this project is $1,264,000 while local interests have asked for $2,164,000. The House agreed and allowed $2,164,000 for the Tumalo district. What is your capability?

Mr. O'Brien. Our capability of $2,164,000 agrees with the local requests and the House allowance. This amount is an increase of $900,000 above the budget.

Senator Bible. What would be accomplished with the additional $900,000?

Mr. O'Brien. These funds would be used in fiscal year 1975 to fully fund the contract work which will replace three of the most critical flumes and line the tunnel. These features provide the entire water supply for 8,000 acres of irrigated land.

Upper Snake River Project, Salmon Falls Division, Idaho

ADVANCE PLANNING

Senator Bible. There is no budget for this item but local interests have requested $100,000. The House made no allowance for this project. What is your capability on the Salmon Falls division?

Mr. O'Brien. Mr. Chairman, our capability on this project is $100,-000. These funds could be used for land classification, geologic and construction material investigations, environmental studies, procurement of design data, intensive ground water investigations, and repayment contract and right-of-way negotiations. This project was authorized by Congress through Public Law 92–514, October 20, 1972, and advance planning work has been delayed because of restraint on the budget.

Senator Bible. Since this was not an item in the 1975 budget request, please submit a statement on this project for the record.

Mr. O'Brien. Yes, sir.

[The statement follows:]

Summarized Financial Data:

Total estimated Federal Cost (1972)	$57,056,000
Allocation to date, including FY 1974	0
Budget request, FY 1975	0
Balance to complete after FY 1975	57,056,000
Capability in FY 1975	100,000

Authorization: Public Law 92-514, October 20, 1972

Status and Capability:

Advance planning on this project has not been funded yet. The $100,000 could be used in FY 1975 for land classification, geologic and construction material investigations, environmental studies, procurement of design data, intensive ground water investigations, and repayment contract and right-of-way negotiations.

Location and Description:

The Salmon Falls Division is located south of the Snake River in Twin Falls and Cassia Counties, Idaho, near the City of Twin Falls. Construction of this division is needed to furnish supplemental water supplies to two areas now suffering inadequate irrigation water supplies and to conserve and enhance the area's wildlife resources.

Ground water levels in the Milner-Cottonwood area are steadily declining to the point many irrigators have had to deepen their wells to get an adequate water supply, the other wells have been abandoned. The Idaho Department of Water Administration has declared much of this area critical ground water area which prohibits further ground water development. Construction of the Salmon Falls Division would significantly increase upland game and waterfowl populations and reduce hunting pressure.

Proposed features include Milner Pumping Plant on the Snake River upstream from the existing Milner Dam, the 47-mile-long Milner-Salmon Falls Canal, Hollister Relift Pumping Plant, ground water wells, irrigation distribution and drainage systems, and wildlife habitat development.

Upper Colorado River Storage Project, Central Utah Project, Bonneville Unit, Utah

Senator Bible. The budget request on the Bonneville unit is $9,121,000. Local interests have requested a construction program of $22,500,000. The House allowance was $10,121,000. What is your capability?

Mr. O'Brien. Our capability in fiscal year 1975 depends considerably on our success in accomplishing working arrangements with the Ute Indian Tribe. We have agreed to work jointly with the tribe to reexamine and review the Indian needs for water and the means and methods for meeting them, and have agreed to suspend construction on the Strawberry Aqueduct and collection system east of Current Creek, pending resolution of the objectives stated in the formal agreement signed by the Secretary and the Tribe on April 30, 1974. While we are optimistic that solutions to the problems will be accomplished at an early date, we believe it prudent to limit the fiscal year 1975 capability at this time to the budget amount of $9,121,000.

Central Utah Project, Jensen Unit, Utah

Senator Bible. There is no appropriation request but local interests have requested $1 million. The House provided $300,000 in their allowance for the unit. What is your capability on the Jensen unit?

Mr. O'Brien. Mr. Chairman, our capability on this project agrees with the House allowance of $300,000. This could be utilized for preconstruction activities that include collection of design data and initiation of designs and specifications for Tyzack Dam, award of contract for relocation of the county road, and purchase of right-of-way for Tyzack Dam and Reservoir. Since we cannot begin construction until after the environmental impact statement is approved sometime after January 1, the Bureau has only the time to accomplish the preliminary construction outlined in our capability.

Senator Bible. Besides the House allowance, the outside witnesses are anxious that an additional $700,000 of work be accomplished in fiscal year 1975. What did they have in mind?

Mr. O'Brien. They want to accelerate the construction of Tyzack Dam and the access road, which we do think is possible.

Senator Bible. Please submit a statement on the Jensen unit for the record since it is not in the fiscal year 1975 budget.

Mr. O'Brien. Yes, sir.

[The statement follows:]

Summarized Financial Data:

Total Estimated Federal Cost	$17,138,000
Allocation to date, including FY 1974	1,846,698
Budget Request, FY 1975	--
Balance to complete after FY 1975	15,291,302
Additional capability in FY 1975	1/ 300,000

Authorization: P.L. 84-485, April 11, 1956

Status and Capability:
Work on updating the definite plan report, repayment contract negotiations, preparation of the Environmental Statement and collection of design data are underway. A repayment contract with Uintah Water Conservancy District is scheduled to be executed in January 1975 following filing of the final environmental impact statement in December 1974.

Funds in the amount of $300,000 could be effectively utilized during FY 1975 for preconstruction activities, including collection of design data and initiation of designs and specifications for Tyzack Dam, award of contract for relocation of the County Road, and purchase of right-of-way for Tyzack Dam and Reservoir.

Location and Description:
The project is located in Uintah County in Eastern Utah near the town of Jensen on the Green River and Brush Creek. Primary benefits from this multipurpose project would be obtained from furnishing 7,200 acre-feet of municipal and industrial water. A supplemental water supply would be provided for 3,640 acres, along with fish and wildlife, recreation and flood control benefits. Crude oil wells exist nearby and the area is a tourist center for Dinosaur National Monument. Ashley Valley is in the heart of the Utah oil shale lease area.

The unit area is included within the Four Corners Economic Development Region--a depressed area.

The benefit-cost ratio for this project is 1.4 to 1. The average annual benefits of $975,600 are broken down as follows:

M&I	$758,000
Irrigation	168,000
Fish and Wildlife	16,600
Recreation	13,200
Flood Control	19,800
Total	$975,600

1/ Does not include $150,000 previously appropriated for contract award on County Road and held in budgetary reserve.

Central Utah Project, Utah

UTE INDIAN TRIBE WATER RIGHTS

Senator Bible. Mr. Brent Blackwelder, Washington representative of the Environmental Policy Center appeared in opposition to the central Utah project because of problems the Ute Indian Tribe has with the project. Mr. Blackwelder asserts that because of the great expense to build the project and the likely environmental damage the project will cause, it never will be completed. As a result the Indians will not get the promised water facilities in exchange for water. Would you comment on your agreement with the Ute Indian Tribe and describe the status of meeting the Government's commitment to them?

Mr. O'Brien. I have examined Mr. Blackwelder's comments and have prepared a rather comprehensive reply. I suggest that I furnish it for insert in the record and with your permission I will do so along with a copy of the agreement itself.

Senator Bible. Without objection the information will be included in the record.

[The information follows:]

Ute Indian Water Resources Planning Agreement

The Ute Indian Tribe has at all times strongly supported the Central Utah Project, parts of which have no direct benefit to the tribe. The tribe has been permitted the use of some of its water along the Wasatch front of the Bonneville Basin.

On April 30, 1974, the Ute Indian Water Resources Planning Agreement was signed by the Secretary of the Interior; representatives of the Central Utah Water Conservancy District, Ute Indian Tribe of the Uintah and Ouray Reservation, and the individual Ute Indians; and approved by the State of Utah. This agreement sets forth the steps necessary for the development of water and related land resources for the Uintah Unit. The Department of the Interior and the Bureau of Reclamation are working expeditiously toward a resolution of the Indian desires outlined in the agreement.

An earlier agreement among the Ute Indian Tribe, the Central Utah Water Conservancy District (repayment contractor for the Bonneville Unit) and the United States, acting through the Bureau of Reclamation and the Bureau of Indian Affairs, was entered into on September 20, 1965. This agreement was acknowledged by the Congress by Public Law 90-539 dated September 30, 1968. Among other things, the agreement provides for the deferment of certain Indian water rights so that construction could proceed on the Bonneville Unit of the Central Utah Project without objection from the Ute Tribe or the Bureau of Indian Affairs. Members of the Ute Tribe have expressed their feeling that further delay is not warranted, and they would view activity on the unit as an indication of good faith on the part of the United States to make good on its promise of Indian development under existing deferral agreements.

The Ute Indian Tribe reports that it is trying through several avenues of development to reduce unemployment on the reservation which is about four times the national average. The development of the Uintah Unit would be

of great benefit to the Ute Indian Tribe and its members through the supplemental water that would be developed together with the new acreages of land that could be farmed.

Following a meeting with tribal officials in November 1973, the Bureau of Reclamation has been expediting the completion of a feasibility report on the Uintah Unit. Indian self-determination developments have a high national priority and the socio-economic amenities and policy relating thereto are currently being examined and will be reported. Indian interests have been asked to participate in and be a part of the possible development of oil, gas, coal, and oil shale underlying the Uintah and Ouray Indian Reservations. Indian involvement and concurrence would be essential to participation in such a program.

The Uintah Unit is located in eastern Duchesne and western Uintah Counties. The plan, as currently envisioned, could provide for irrigation of Indian and non-Indian lands, municipal and industrial water supplies, recreational opportunities, fish and wildlife enhancement, flood control, and environmental enhancement.

Two storage reservoirs (at the Jintah and Whiterocks sites) could be developed as the main project features. The unit could increase the usable water supply by 53,000 acre-feet, of which 75 percent would directly benefit Indian lands. A municipal water supply could also be included for the water-short city of Roosevelt. Thirteen upstream reservoirs would be stabilized for fish and wildlife and recreational uses, inasmuch as they would be relieved of their current irrigation function.

A report certifying feasibility of the Uintah Unit will be transmitted to Congress at the earliest possible date, possibly by the end of this calendar year.

A copy of the agreement of April 30, 1974, follows:

UTE INDIAN WATER RESOURCES
PLANNING AGREEMENT

The parties to this agreement are:

The United States of America acting through the Secretary of the Interior; the Ute Indian Tribe of the Uintah and Ouray Reservation acting through its Business Committee; the Central Utah Water Conservancy District; and certain individual Ute Indians listed at the end of this agreement.

The parties agree as follows:

1. There have been significant changed conditions since the Ute Indian Deferral Agreement (Contract No. 14-06-W-194) was executed in 1965.

2. It was always contemplated that further water agreements would be necessary among the parties to the Ute Indian Deferral Agreement.

3. Some of the facilities contemplated by the Ute Indian Deferral Agreement, such as Bottle Hollow, have now been constructed. However, there are not at the present time any further definite and final plans for meeting the total commitments to the Ute Indian Tribe contained in the Ute Indian Deferral Agreement and reaffirmed by the Secretary of the Interior, Morton, in his press release of November 13, 1973, for replacing the deferred water and for delivering irrigation or municipal and industrial water to Indian lands.

4. It is agreed that concrete steps toward such development of the water resources of the Uintah and Ouray Reservation for the benefit of the Ute Indian Tribe and its members as are desired by it, must be expedited.

5. The parties shall jointly re-examine and review the Indian needs for water in light of the events and developments which have occurred since the execution of the Ute Indian Deferral Agreement, and

shall use their best efforts and good faith to agree, prior to construction, if any, of the Strawberry Aqueduct and Collection System east of Currant Creek, on the nature and extent of any increased Indian needs for water and on the means and methods of meeting them, and will endeavor to achieve these objectives by February 1, 1975. All parties to this agreement hereby covenant not to commence litigation prior to February 1, 1975, at which time, if agreement is not reached, the parties may litigate such issues as then exist.

6. In the event such litigation is initiated by any party hereto, construction will not commence on any features of the Strawberry Aqueduct and Collection System east of Currant Creek until November 15, 1975, at the earliest.

7. In the event the parties are not able to reach agreement, as stated in paragraph 5 herein, with respect to the future development and utilization of the water resources and water rights of the Uintah and Ouray Reservation all parties reserve all rights and defenses as they now have or may later acquire, including the right to litigate any and all issues relating to the Ute Indian Deferral Agreement and the Central Utah Project, or any portion thereof, including, but not limited to, standing, sovereign immunity, jurisdiction, indispensable parties, the validity of the Ute Indian Deferral Agreement, compliance or lack of compliance with any applicable environmental laws or regulations, the boundaries of the reservation and rights appurtenant to lands within the exterior boundaries of the reservation, and claims to rights for downstream releases from Currant Creek Dam and Reservoir to maintain fisheries sufficient to fulfill fishery rights, if any, as may be established in such litigation by a court of competent jurisdiction for benefit of the members of the Ute Indian Tribe in and to Currant Creek, or to fulfill the Tribe's water rights. Nothing in this agreement shall abridge, alter, diminish, or in any way affect the sovereignty of the Ute Indian Tribe or the powers of the Ute Business Committee under the Constitution and By-laws, and Corporate Charter of the Ute Indian Tribe of the Uintah

and Ouray Reservation; nor shall it vest powers lawfully held by the Ute Business Committee in any other person, persons or entity. Should litigation be commenced by any party to this agreement or any other party, nothing in this agreement shall inhibit the Tribe from raising defenses, issues and arguments based upon sovereign immunity, standing, jurisdiction, indispensable party or any other grounds and the Tribe expressly reserves the right to raise such defenses, arguments and issues.

8. In all negotiations and discussions relating to the Ute Indian Deferral Agreement and the utilization and development of the water resources and water rights of the Ute Indian Tribe, the members of the Ute Indian Tribe will be fully informed of every step of the planning process to the extent practicable. All reasonable efforts will be made by the Secretary of the Interior to inform all of the members of the Ute Indian Tribe regarding the consequences of all proposals which are considered, alternatives to them, the various possible uses of the Tribe's water rights and water resources, and of all meetings held to discuss such matters. General tribal meetings shall be held to discuss and convey information relating to the utilization and development of the water resources and water rights of the Uintah and Ouray Indian Reservation. All enrolled members of the Ute Indian Tribe may attend all meetings, formal negotiations and discussions and may fully participate at such negotiations, discussions and meetings. Notices of all meetings, negotiations and discussions referred to in this paragraph shall be posted in appropriate places in all of the major communities throughout the Uintah and Ouray Reservation at least three days prior to the meeting.

9. Any amendment, supplement, or modification of the Ute Indian Deferral Agreement or any other commitment of water resources relating to the Central Utah Project, after approval by the Business Committee, shall be submitted by the Business Committee to a popular referendum pursuant to Article IX of the Constitution of the Ute Indian

Tribe of the Uintah and Ouray Reservation and shall be subject to approval of the Secretary of the Interior or his authorized representative in the form and manner provided by law and consistent with said Constitution of the Ute Indian Tribe.

10. The construction of Currant Creek Dam and appurtenant facilities now being advertised may proceed. Provided, however, that no provision of this agreement will be affected in any way by any judgment or order of the court in the case of Sierra Club v. Stamm, Civil No. C-74-9, in the United States District Court for the District of Utah.

11. Notwithstanding the fact that the design and operation of Currant Creek Dam and Reservoir are connected to Strawberry Aqueduct and Collection System, as presently planned, the Secretary of the Interior and the Central Utah Water Conservancy District represent that it is feasible for the Currant Creek Dam and Reservoir to exist independently of the remainder of the Strawberry Aqueduct and Collection System east of Currant Creek Dam and the Currant Creek facilities will physically permit the bypass of the entire streamflow of Currant Creek, except extreme flood flows, if found necessary.

12. The understanding of the parties hereto, recited in paragraphs 1 through 11, formalized in this agreement is an attempt to avoid litigation of the issues referred to herein.

Dated this 30th day of April, 1974.

UNITED STATES OF AMERICA

By Rogers C. B. Morton
Rogers C. B. Morton
Secretary of the Interior

UTE INDIAN TRIBE OF THE
UINTAH AND OURAY RESERVATION

By Lester Mack Chapoose
Lestor Mack Chapoose
Chairman, Business Committee

CENTRAL UTAH WATER CONSERVANCY DISTRICT

By Edward C. Clyde
Edward Clyde
Attorney

INDIVIDUAL UTE INDIANS

By _____

Robert S. Pelcyger, Attorney for
Floyd Wopsock, Colleen Redfoot,
Velmon Johnson, Charles Redfoot,
Maxine Manning, Bert Tapoof,
Edith Sereech, Adelbert Tapoof,
Gloria Martinez, Mary Tapoof,
Angela Starr, Joseph Tapoof,
Lydia Watts, Eva Atwine Sakinkent,
Jensen Jack, Richard Jenks,
Albert Cornpeach, John Wopsock,
Jakey Cuch, Virginia Duncan,
Grace Root, Vincent Sereech,
Charice Ignacio, Katherine Jenks

APPROVED:

STATE OF UTAH

_____

Dallin Jensen, Attorney

Central Utah Project, Upalco Unit, Utah

ADVANCE PLANNING

Senator Bible. There is no appropriation request for this project. Nevertheless, local interests have asked for $1 million to start construction. Nothing was provided for the Upalco unit in the House allowance. What is your capability on this project?

Mr. O'Brien. Mr. Chairman, the capability on the Upalco unit is limited to $220,000. Such funds could be utilized during fiscal year 1975 for preconstruction activities, including repayment contract negotiations, collection of design data and initiation of specification designs, and completion of the environmental statement. We do not have a capability above the $220,000 level because construction cannot begin until the environmental impact statement is approved. That will not be accomplished until sometime after fiscal year 1975.

Senator Bible. Would you furnish a statement on this project for the record since it is not in the fiscal year 1975 budget?

Mr. O'Brien. Yes, sir.

[The statement follows:]

Summarized financial data

Total estimated Federal cost	$22,632,000
Allocation to date including fiscal year 1974	1,406,384
Budget Request, fiscal year 1975	0
Balance to complete after fiscal year 1975	21,225,616
Additional capability in fiscal year 1975	220,000

Authorization: P.L. 84-485, April 11, 1956

Status and Capability.—Advance planning studies are complete and a report was approved June 20, 1969. Current activities on the Upalco Unit consist of revising the definite plan report to include M&I water uses for Duchesne and other parts of the Uintah Basin. Preparation of an environmental statement would also be initiated.

Funds in the amount of $220,000 could be effectively utilized during FY 1975 for preconstruction activities, including repayment contract negotiations, collections of design data and initiation of specification designs, and completion of the environmental statement.

Location and Description.—The Upalco Unit of the Central Utah Project is located in Duchesne County near Roosevelt, Utah, on the Lake Fork and Yellowstone Rivers. This is a multipurpose project which will supply supplemental irrigation water to approximately 27,500 acres of non-Indian lands and 15,000 acres of Indian lands. Recreation and fish and wildlife and flood control benefits will also result from the project.

The Upalco Unit would serve an economically depressed segment of Duchesne County. The County has both high unemployment and under employment. In 1972, the available Indian Labor Force on the Uintah and Ouray Reservation was 456. The total employed on both permanent and temporary jobs was 296, leaving 160 or 35% unemployed. By comparison the average unemployment rate for the State of Utah is 6%. The Unit is designed primarily to stabilize and improve on existing substandard economy.

The benefit-cost ratio for this project is 1.3 to 1. The average annual benefits of $1,122,700 are broken down as follows:

Irrigation	$813,000
Fish and wildlife	203,300
Recreation	75,600
Flood control	12,800
Area redevelopment	18,000
Total	1,122,700

Dallas Creek Project, Colo.

Senator Bible. The budget request for this project is $204,000 for advance planning. The local interests have requested that this amount be increased by $400,000 to allow start of construction. Thus they request $604,000 in new funds. They also request that reserved funds of $250,000 for land acquisition be released in 1975 to allow a total program of $854,000. The House agreed with their request and provided the $604,000 in new funds in the House allowance. What is your capability?

Mr. O'Brien. Our capability of $604,000 is in agreement with the local requests and the House allowance. This is an increase of $400,000 above the appropriation request that you mentioned.

Senator Bible. What would be accomplished with the additional $400,000 in your capability?

Mr. O'Brien. An additional $400,000 could be used in the start of construction on the following: $210,000 for purchase of land and rights, $100,000 for design and estimates for the Ridgway Dam, and $90,000 for the construction camp.

Fruitland Mesa Project, Colo.

Senator Bible. There is no appropriation request but local interests have requested $6,500,000. The House asked that the Bureau begin construction with the funds already appropriated to the project. What is your capability on Fruitland Mesa?

Mr. O'Brien. Mr. Chairman, our capability on this project is $700,000, which includes the $500,000 now held in budgetary reserve for land acquisition, and an additional $200,000 in new funds to collect and submit specification design data for Soap Park Dam and Reservoir, to award a contract for Soap Creek access road and the O&M headquarters, and to perform preconstruction activities including completion of the environmental statement. Our capability is limited because it is not possible to complete the necessary preconstruction activities prior to July 1975.

Senator Bible. Would you furnish a statement on this project for the record since it is not in the fiscal year 1975 budget?

Mr. O'Brien. Yes, sir.

[The statement follows:]

Summarized Financial Data:

Total Estimated Federal Cost	1/	$ 42,545,967
Allocation to date, including FY 1974	1/	2,144,682
Budget Request, FY 1975		--
Balance to complete after FY 1975		40,401,285
Additional capability in FY 1975		200,000

Authorization: P.L. 88-568, September 2, 1964

Status and Capability:

The Definite Plan Report was completed in June 1967. The Gould Canal Structures Replacement contract was completed in FY 1973. A $500,000 Congressional write-in for FY 1973 has been held in budgetary reserve. The Repayment contract has been executed.

The $500,000 now held in budgetary reserve and an additional $200,000 could be utilized in FY 1975 to purchase all the project right-of-way, to collect and submit specification design data for Soap Park Dam and Reservoir, to award a contract for Soap Creek Access Road and the O&M Headquarters, and to perform pre-construction activities including completion of the Environmental Statement.

Location and Description:

The project is located in the Gunnison River Basin of the Upper Colorado River Basin in Montrose and Delta Counties. This is a multipurpose project which would provide supplemental water for 7,010 acres of presently inadequately irrigated land and a full supply of irrigation water to 15,870 acres of land. In addition, recreation and fish and wildlife benefits will be provided.

The benefit cost ratio for this project is 1.23 to 1. The average annual benefits of $2,043,200 are broken down as follows:

Irrigation	$1,876,500
Recreation	151,200
Fish and Wildlife	13,000
Timber Production	2,500
Total	$2,043,200

1/ Includes the Gould Canal which has been completed.

Recreation, Fish and Wildlife Facilities

Senator Bible. The budget request for these recreation and fish and wildlife facilities is $1,200,000 while local interests have asked for $2,684,000. The House allowance is $1,654,000. What is your capability?

Mr. O'Brien. Our capability is $3,813,000, an increase of $2,613,000 above the appropriation request.

Senator Bible. What would be accomplished with the additional $1,484,000 requested by outside interests?

Mr. O'Brien. It would be used to complete designs and to award a contract for the access road and parking at Starvation Reservoir as the first of several phases in providing recreational facilities. Construction would be started on the access road and boat ramp at Strawberry Reservoir while it is still possible to work in the area before water flows into the new Soldier Creek Dam. Also we would be able to conduct water temperature studies for the Flaming Gorge unit.

Savery-Pot Hook, Colo. and Wyo.

Senator Bible. There is no appropriation request but local interests have requested $550,000. The House allowance provided $300,000. What is your capability on the Savery-Pot Hook project?

Mr. O'Brien. Mr. Chairman, our capability from new funds on this project is $300,000, the same as the House allowance. This additional capability plus the budgetary reserve of $250,000 would provide a total program of $550,000. These funds would be effectively used for preconstruction and construction activities including execution of the repayment contract, assembly of design data, and award of contracts for permanent and temporary camps, relocation of county roads, and purchase of right-of-way for Pot Hook Dam and Reservoir. This project was authorized 10 years ago and the local interests are anxious that efforts be made to initiate construction.

Senator Bible. Would you submit a statement on this project for the record since it is not in the fiscal year 1975 budget?

Mr. O'Brien. Yes, sir.

[The statement follows:]

Summarized Financial Data:

Total Estimated Federal Cost	$ 47,000,000
Allocation to date, including FY 1974	1,002,952
Budget Request, FY 1975	--
Balance to complete after FY 1975	45,997,048
Additional capability in FY 1975	1/ 300,000

Authorization: P. L. 88-568, September 2, 1964

Status and Capability:

A Definite Plan Report was completed in June 1971.

Funds in the amount of $300,000 plus the budgetary reserve of $250,000 could be effectively used for preconstruction and construction activities including execution of the repayment contract, assembly of design data, and award contracts for permanent and temporary camps, relocate county roads, and purchase right-of-way for Pot Hook Dam and Reservoir.

Location and Description:

The project is located in the Little Snake River Basin in Moffatt County, Colorado and in Carbon County, Wyoming. This is a multipurpose project which would provide a full supply of irrigation water to 17,920 acres of land and a supplemental water supply to 14,330 acres of inadequately irrigated land. The project will also provide benefits for recreation, fish and wildlife, and flood control.

The benefit cost ratio for this project is 1.39 to 1.2/ The average annual benefits of $2,387,000 are broken down as follows:

Irrigation	$2,265,400
Recreation	39,200
Fish and Wildlife	51,900
Flood Control	30,700
Total	$2,387,000

1/ Does not include $250,000 previously appropriated but held in budgetary reserve.

2/ January 1971 price index.

Colorado River Basin Project, Central Arizona Project, Ariz. and N. Mex.

Senator Bible. The budget request for the water development part of the project is $17,950,000 while local interests have requested $39,550,000. The House provided $28 million for this work and directed that no funds be included for acquisition of Indian lands since the negotiations for that land have not been completed. What is your capability?

Mr. O'Brien. Our capability of $39,550,000 agrees with the local requests. This amount is an increase of $21,600,000 above the appropriation request.

Senator Bible. What would be accomplished with the additional $21,600,000?

Mr. O'Brien. $11,500,000 would provide for construction starts on the Buckskin Mountains tunnel and the Aqua Fria, New River and Salt River siphons; $10 million would be used for land acquisition for Orme Dam and Reservoir, and $100,000 to initiate advance planning studies of Hooker Dam and Reservoir and the Gila River. Construction to date on the project has been limited to minor activity including the preparation of the Havasu Pumping Plant site and intake channel, and the construction of a section of the Granite Reef Canal.

Senator Bible. What would you do with the $28 million as included in the House report?

Mr. O'Brien. We could not use the full $28 million with the limitation imposed by the House report which states that no funds are to be included for acquisition of Indian lands. With this limitation our program should be $22,600,000 for fiscal year 1975. We feel that we would have more flexibility in our negotiations if this restriction were not applied to the project. It would be useful in our negotiations if we had as one of our alternatives a possibility of offering some initial payment. If there are concerns about the amount used from the 1975 appropriation for Indian land acquisition, we suggest report language that would limit such expenditures to $5.4 million. This would give us the flexibility we feel is necessary in the negotiation process and assure the Congress that this action will not infringe on other aspects of the project program.

Disregarding the question on acquisition of land, the additional as provided in the House report would allow construction to be started on Buckskin Mountains tunnel, and the Aqua Fria, New River, and Salt River siphons.

OPPOSITION

Senator Bible. Mr. Brent Blackwelder, Washington representative of the Environmental Policy Center, appeared in opposition to the Central Arizona project because the Yavapai Apache Indians are being forced off the Fort McDowell Reservation. Please provide a thorough explanation justifying such a necessity.

Mr. O'Brien. Orme Dam, a feature of the Central Arizona project would be located in Maricopa County about 25 miles northeast of Phoenix at the confluence of the Salt and Verde Rivers. The reservoir would inundate portions of the Salt River Indian Reservation, Fort McDowell Indian Reservation, and the Tonto National Forest.

The Fort McDowell Mohave-Apache Indian community will not be forced off the reservation but will be relocated to areas above the reservoir. A new tribal headquarters building for the Fort McDowell community has recently been constructed outside of the reservoir area and seven new residences are planned for construction nearby. The Bureau of Reclamation will be responsible for relocating all residents prior to the start of construction on Orme Reservoir. We plan to proceed immediately with an appraisal of Indian lands required for Orme Dam and Reservoir. As soon as the appraisal becomes available, negotiations will be initiated with both Indian communities for an equitable settlement of losses incurred. Existing water rights will be retained by both Indian communities.

In considering several alternative sites, no other single site offers the degree of flood control protection to the Phoenix metropolitan area that the present site offers. Construction of a dam at the alternative Granite Reef site would not increase benefits to the Fort McDowell Indian community, and would have generally the same impact on the Indians as the Orme site, but the structural cost would be greater.

Another possibility would be the Coons Bluff site on the Salt River. However, this site offers no flood control because of backwater effects on the existing Stewart Mountain Dam. With flood control, as proposed at Orme Dam, a 500-foot wide channel through the Phoenix metropolitan area would be adequate to pass the design flood. Without it, extensive channelization through the Phoenix metropolitan area would be required. Past proposals included a 2,000-foot-wide channel.

ENVIRONMENTAL POLICY CENTER OPPOSITION

Senator BIBLE. A representative of the Environmental Policy Center enumerated a number of reclamation projects in construction status which do not merit funding because of environmental, economic, or priority reasons. He listed the following projects in the construction and rehabilitation appropriation: Auburn Dam of the Central Valley project, Teton Dam of the Teton Basin project, and Nebraska Mid-State division, North Loup division, and the O'Neill unit, all of the Pick-Sloan Missouri Basin program. Would you care to comment on their recommendation?

Mr. O'BRIEN. The projects mentioned are all being developed in strict accordance with the National Environmental Policy Act and with the planning requirements established by the Water Resources Planning Act. Environmental impact statements have either been filed with CEQ or are in the process of being developed. The public is involved in the development of these projects to the maximum extent possible and expertise of other State and Federal agencies and a wide range of disciplines are being consulted.

The economics of these projects are being approached in compliance with national objectives and priorities and established guidelines and policies. As authorized these projects are engineeringly and economically justified. Modifications in the project formulation are made to conform with changed conditions and national objectives and new legislation during the advanced planning stage prior to construction. In this manner, project development is as responsive as possible to the demands and designs of the people.

Senator BIBLE. Mr. Blackwelder also objected to some projects under the Upper Colorado River storage project appropriation because of environmental, economic or priority considerations. The projects enumerated were: Animas-LaPlata, Dallas Creek, Dolores Creek, San Miguel, and West Divide. Do you have anything to say in response to these?

Mr. O'BRIEN. The five projects mentioned were authorized in 1968 for construction as participating projects concurrently with central Arizona project by Public Law 90–537 referred to as the Colorado River Basin Project Act. A major authorized purpose of these projects was irrigation. With the increasing pressure for energy development in the area, these projects are being reevaluated in the advance planning stage to determine the potentials for reformulating plans to provide additional water for municipal and industrial purposes. The projects are being reevaluated in accordance with current economic policies to establish their economic justification. During the advanced planning on these projects every effort is made to minimize the impact on and to enhance the environment to the maximum extent possible. The contribution to the salinity of the Colorado River system from development of these five projects is being studied is part of the ongoing advance planning program and salinity reports will soon be made available. The relative timing of these projects in the basin sequence of development is a key point that will require careful consideration at both the State and Federal levels of government. The local area residents and sponsors are being appraised or consulted regarding all aspects of project plan formulation and implementation so that the projects will be responsive to local needs and desires as well as national objectives.

NORTH PLATTE PROJECT, WYO.

OPERATION AND MAINTENANCE

Senator BIBLE. I understand that the Bureau of Reclamation plans to provide improved free public access to the east shoreline of Pathfinder Reservoir. In a letter dated May 30, 1974, to Chairman Alan Bible, Senator Gale McGee indicated that it would cost approximately $20,000 to repair the existing low water crossing and that you have considered several other proposals to provide access to the public. Please tell us about your present plan and the other alternatives.

Mr. O'BRIEN. Our present plan to provide public access across the North Platte River downstream from Pathfinder Reservoir is to repair the low water crossing which was constructed by Casper Job Corps Camp personnel in 1966. This crossing consists of concrete culverts with earth approaches from both riverbanks. These earth approaches were washed out last year and again this year. We plan to replace the earth approaches to the concrete structure in the middle of the river at an approximate cost of $20,000 and to do the construction by force account, using our personnel and equipment. We expect the flow in the river to be low enough to permit us to do the work in the middle of July. The work will take about a week, weather permitting.

We recognize that the low-water crossing will serve only as a temporary crossing and have considered other more permanent alternatives, including construction of a conventional bridge across the river, the installation of a series of large diameter culverts, and the purchase of permanent easements through private property, all of which would be expensive. We have not prepared firm estimates of the cost of those alternatives. We have made initial contacts with the two private landowners who have tentatively indicated that permanent easements might be acceptable.

Contra Costa Canal, Calif.

Senator Bible. What is the current status of the Contra Costa Canal project?

Mr. O'Brien. The Contra Costa Canal facilities have been constructed and there is a need to rehabilitate a 4-mile intake channel of the Contra Costa Canal. The channel has silted due to sedimentation and erosion of canal banks and will no longer convey canal capacity.

Senator Bible. What is the Bureau's fiscal year 1975 capability for the project?

Mr. O'Brien. This item would require about $350,000. We can accommodate this work within our operation and maintenance appropriations.

Questions from Senator Magnuson

Senator Bible. Finally, I have a series of questions submitted to the subcommittee from Senator Magnuson that deal with several projects in the Pacific Northwest region.

I will simply give them to you and ask you to answer them for the record.

Mr. O'Brien. I will be happy to do so, Mr. Chairman.

[The questions and answers follow:]

Columbia Basin Project, Grand Coulee Dam Third Powerplant Extension, Wash.

Question. The Bureau has told the Subcommittee that the additional generating units at Grand Coulee that are now under study will be required by the mid-1980's. Additionally, the Bureau has testified that an "optimistic" prediction would be that the first such unit would be on-line in September, 1984. In light of the mid-1980's deadline and the "optimistic" nature of the September, 1984 prediction, can the Bureau expedite completion of the feasibility study of the additional units?

Answer. You may be assured that we will do all that we can to minimize that time required for feasibility studies. We feel the current schedule is near optimum for a feasibility study of the magnitude, detail, and interagency participation required to support authorization legislation. The total estimated cost of the study is $315,000. The study will take 33 months with completion scheduled for the end of fiscal year 1977.

Question. How much sooner could the study be completed and what would be the additional amount required in fiscal year 1975 to accomplish that speed-up?

Answer. We believe that any speed-up in the feasibility study will be nominal. A month or two of speed-up might be accomplished if indeed it is possible at all. The reason for this uncertainty is that it is difficult to speed up the environmental impact statement and interagency cooperative aspects of the study. The sequence of proposal, reaction, and implementation time for interagency and other public involvement is probably critical in any attempt to reduce overall study time and

is fraught with some degree of uncertainty. Thus, any possible speed-up would be accomplished within available funding as the opportunity presents itself. Therefore, additional funding in fiscal year 1975 would not be required.

COLVILLE INDIAN RESERVATION AND ADJACENT AREAS, WASH.

Question. The Subcommittee heard testimony urging that funds be added to the Bureau's budget to permit it to work with the Colville Confederated Tribes in making an appraisal of water resource development opportunities on the Colville Reservation. What is the Bureau's fiscal year 1975 capability for such an appraisal?

Answer. The Bureau could effectively use $50,000 in fiscal year 1975 to make an appraisal study.

Question. When could the appraisal be completed?

Answer. The study could be concluded in two years at an estimated total cost of $170,000.

Question. How would the Bureau propose to work with the Colville's in making the appraisal?

Answer. We expect the tribe could provide certain important inputs to the study. We would negotiate with them concerning the degree of involvement and would coordinate with them throughout the study and construction period.

Question. In testimony before the Subcommittee, the Colville Confederated Tribes requested that $325,000 be added to the Bureau's fiscal year 1975 budget to restore ferry service between Inchelium and Gifford. What amounts would the Bureau estimate it would require in fiscal year 1975 to (a) purchase a large-type ferry with a 15-auto capacity; (b) install the necessary ramps, approaches, etc.; and (c) operate and maintain such a ferry during fiscal year 1975?

Answer. We expect that $325,000 would be sufficient to cover the cost of the ferry, the construction of ramps and approaches, as well as the operation and maintenance cost for one year's operation.

Question. Given sufficient funds, does the Bureau have legal authority to purchase and operate the ferry and install the necessary ramps, approaches, etc.?

Answer. We would need special authority for those purposes.

Question. Could the Bureau legally hire Indians from the Colville Reservation to operate the ferry?

Answer. Yes, if we have the special authority to operate and maintain the ferry facilities.

Question. Pending restoration of ferry service, what steps can the Bureau take immediately to provide for emergency Inchelium-Gifford transportation?

Answer. The Bureau does not have authority to provide emergency transportation.

Question. Has the Bureau reached a written agreement with the Colville's for the location and construction of a water supply system for Inchelium?

Answer. No sir, we have not as yet obtained a written agreement. However, an agreement is being negotiated.

Question. When will the proposed system be completed?

Answer. If an agreement can be reached within a reasonable period of time, we would expect to complete work on the system in fiscal year 1975.

Question. How much in additional funds, if any, will the Bureau require for this work in FY 1975?

Answer. $100,000 is now included in the FY 1974 program and the FY 1975 budget to provide a water supply system for Inchelium. This will include a new well and main supply line to an existing distribution facility. The work is programed on the Columbia Basin Project, Construction and Rehabilitation appropriation, as a part of the entry identified as Indian Reservation Water Resource Development.

Question. What is the status of planning for a sewage treatment plant in Inchelium?

Answer. We have not been requested to conduct such a study. The Indian Health Service would normally instigate or arrange for a study of that nature.

Question. What is the Bureau's capability for planning and/or construction of a sewage treatment system in FY 1975?

Answer. In view of the fact that we have no authority to provide a sewage treatment system, the matter of capability has not been considered. If such authority did exist, the Bureau probably would have some capability to assist in planning a sewage treatment system. We would be pleased to provide that service.

Question. Are sufficient funds requested in the President's budget for this work?

Answer. If given the authority, we have sufficient funds within the project to adequately provide for the planning of the sewage treatment system.

Question. I understand the Bureau will complete installation of water supply and sewage treatment facilities in Keller on the Colville Reservation by the first week in July 1974. Is that correct?

Answer. Yes. Informal discussions were initiated between the Bureau and the Colville Indian Tribe late in 1973 concerning the lack of irrigation and municipal and industrial water. Formal meetings were held on January 17, February 20, March 22, and April 5, 1974. The tribe indicated that their first priorities were the Keller and Inchelium water supply systems, next the ferry at Inchelium, and finally planning studies. We are assisting the Indian Health Service of the Department of Health, Education and Welfare in providing a water supply system for the community of Keller.

Within available funds, the Bureau is providing a water supply system to the community of Keller. The main line of the system is almost complete; the service lines are about 50 percent complete; the water supply well has been test pumped; and treatment facilities are under construction. Service to the community should be available by the end of June or the first week in July of this year.

We are not involved in constructing sewage treatment facilities at Keller. On June 14 we contacted the Superintendent's office of the Bureau of Indian Affairs at the Colville Indian Reservation and they expressed satisfaction with the Keller sewage facilities.

Yakima Indian Reservation, Wash.

Question. I understand the Bureau could effectively use $40,000 in FY 1975 to make a one-year appraisal study of the engineering and environmental interrelationships of the proposed Mabton Project, Toppenish-Simcoe Project, and the Ahtanum Unit of the Yakima Project. Is that correct?

Answer. Yes, sir. We have the capability to use $40,000 to provide an appraisal of three projects in fiscal year 1975. We could effectively use those funds to provide a firm basis for supporting a comprehensve feasibility study of the engineering and environmental inter-relationships of the Mabton and Toppenish-Simcoe Project studies of which were sponsored by the Bureau of Indian Affairs, and the Yakima Project, Ahtanum Unit, an authorized Reclamation feasibility study. Specific legislation will be required for a feasibility study of the combined areas.

Question. Why cannot the Bureau proceed with these projects in FY 1975, i.e., why is further study necessary?

Answer. The Bureau has studied the possibility of developing storage on Ahtanum Creek whereas the Mabton Project and Toppenish-Simcoe Project are potential projects of the Bureau of Indian Affairs. Severe flooding in the Yakima Valley this past winter has focused attention on combining the three projects into a single coordinated proposal. Such an undertaking would require additional study. In order to develop the potential project under Reclamation Law it would be necessary to complete feasibility level investigation priority to congressional authorization for construction.

Yakima Valley Total Water Management Study, Wash.

Question. The State of Washington has formally recommended that $40,000 be added to the Bureau's FY 1975 Budget to permit its close participation with the State and Corps of Engineers in the development of a total water management plan for the Yakima Basin. Does the Bureau have that capability?

Answer. Yes sir. We have the capability to effectively use $50,000 to initiate the Yakima Valley Total Water Management study in fiscal year 1975.

Question. What would be the Bureau's role in this connection?

Answer. The Bureau would concentrate on arriving at plans for improving water use efficiencies and operations on existing irrigation projects and to determine the extents of improvements required to rehabilitate existing systems. We would also evaluate the urgency and magnitude of municipal and industrial water requirements in the valley and integrate, through a basin-wide systems analysis, multipurpose needs of the area and alternative plans for satisfying those needs. We feel justified in participating in a coordinated total water management study in the valley because of our long term historic role in the develop-

ment of existing Yakima Project facilities. It is our present understanding that the Corps of Engineers would concentrate its activities on a resolution of flood plain management problems, channelization needs, sewage water reuse, and other main stream water quality and flood control problems.

Question. The Bureau has told the subcommittee it has a FY 75 capability of $50,000 to initiate the Total Water Management Study for the Yakima Project. What, if any, would be the relationship between this study and the Yakima Valley Regional Water Management Study which the Corps of Engineers has been authorized to make?

Answer. Bureau representatives have been attending public meetings held by the Corps of Engineers in the Yakima Valley area to keep abreast of its activities and have also been coordinating multiagency activities through the Northwest River Basin Commission. Due to the prominent historic role of Reclamation in the Yakima Valley development of existing multipurpose Yakima Project facilities, there is significant local and State support for our participation in any water management studies of the area. Tentatively, it appears that the Corps of Engineers will work on flood plain management in the area including possible channelization, dikes and other flood control measures and in municipal and industrial waste water reuse and water quality aspects of water management. They would concentrate on main stream problems. In contrast, we will look at total water management potentials including the possible need for operational changes on existing projects, more efficient use of irrigation water, potential new municipal and industrial water requirements, rehabilitation and betterment of existing systems, as well as opportunities for fisheries, wildlife and recreational enhancements. It is anticipated that those studies will be fully coordinated in a systems approach to efficient water use and total water management in the valley.

Columbia Basin Project, Third Powerplant, Wash.

Question. The Bureau has told the Subcommittee that it must have $6.5 million above the President's budget request to keep construction of the Third Powerplant at Grand Coulee on schedule. This is necessary because of developments that have occurred since the President's budget was submitted to Congress. Has the Bureau recommended to OMB that a budget amendment for the $6.5 million be sent to the Congress?

Answer. No, sir, we have not. They have been informally advised of the increased requirement, however. It is our intention to determine first if the additional funding could be accomplished by reprograming internally within the appropriation for Construction and Rehabilitation. Lacking that possibility we would seek a supplemental appropriation for FY 1975. We advised the subcommittee about the problem during the hearings on the 1975 bill in keeping with our practice to advise the Congress of potential trouble spots in the program.

Operation and Maintenance

Question. The Pacific Northwest Waterways Association recommended in its testimony to the Subcommittee that $882,000 be added to the President's FY 75 Budget for operation and maintenance of Bureau projects in the Pacific Northwest Region. Does the Bureau have that additional capability?

Answer. Yes, the Bureau would have that additional capability.

Question. What work, specifically, could be accomplished with those additional funds?

Answer. The work pertains to urgently needed replacements, additions and repairs at several projects in the Pacific Northwest Region. Some of the items of work which could be scheduled with an additional $882,000 are as follows: At the Grand Coulee Powerplant and Pumping Plant, Columbia Basin Project, transformer repair, spare armature winding, paint inside of pump discharge line No. 5 of pumping plant. At Hungry Horse Project, construction of an equipment storage building, construction of boat ramps. At the Boise and Minidoka Project, installation of a hydromet system.

CLOSING REMARKS

Senator Bible. I appreciate your appearance here today. We are going to have two quick votes back-to-back on the floor. I will return shortly when we'll continue with the Bonneville Power Administration.

[A short recess was taken.]

BONNEVILLE POWER ADMINISTRATION

STATEMENT OF WILLIAM H. CLAGETT, ASSISTANT ADMINISTRATOR

ACCOMPANIED BY WILLIAM BETTENBERG, DEPUTY DIRECTOR, OFFICE OF BUDGET OFFICE OF THE SECRETARY

INTRODUCTION

Senator BIBLE. The hearing will resume. Next we turn to the Bonneville Power Administration and Mr. Clagett.

Mr. CLAGETT. Mr. Chairman, my name is William Clagett, I am the Assistant Administrator responsible for the Bonneville Power Administration's Washington, D.C. office. Beside me is Mr. William Bettenberg of the Office of the Budget.

HOUSE DOCUMENT 93–306 AND JUSTIFICATIONS

Senator BIBLE. After the House committee marked up the bill the President submitted a budget amendment in the amount of $20 million. It is contained in House Document 93–306, which will be made part of the record at this time followed by Bonneville's justification for the increase.

[The information follows:]

93D CONGRESS
2d Session
HOUSE OF REPRESENTATIVES
DOCUMENT
No. 93-306

PROPOSED BUDGET AMENDMENTS FOR FISCAL YEAR 1975 IN BUDGET AUTHORITY FOR THE DEPARTMENT OF THE INTERIOR

COMMUNICATION

FROM

THE PRESIDENT OF THE UNITED STATES

TRANSMITTING

A PROPOSED BUDGET AMENDMENT FOR FISCAL YEAR 1975 IN BUDGET AUTHORITY FOR THE DEPARTMENT OF THE INTERIOR

MAY 30, 1974.—Referred to the Committee on Appropriations and ordered to be printed

THE WHITE HOUSE,
Washington, May 30, 1974.

The SPEAKER OF THE HOUSE OF REPRESENTATIVES.

SIR: I ask the Congress to consider a proposed budget amendment for fiscal year 1975 in the amount of $20,000,000 in budget authority for the Department of the Interior.

The details of this proposed amendment are set forth in the enclosed letter from the Director of the Office of Management and Budget, with whose comments and observations I concur.

Respectfully,

RICHARD NIXON.

[Estimate No. 36, 93d Congress, second sess.]

EXECUTIVE OFFICE OF THE PRESIDENT,
OFFICE OF MANAGEMENT AND BUDGET,
Washington, D.C., May 30, 1974.

The PRESIDENT,
The White House.

SIR: I have the honor to submit for your consideration an amendment to the request for appropriations transmitted in the budget for the fiscal year 1975, involving an increase in the amount of $20,000,000 for the Department of the Interior as follows:

DEPARTMENT OF THE INTERIOR

BONNEVILLE POWER ADMINISTRATION

CONSTRUCTION

Budget appendix page	Heading	Request pending	Previous amendment, H. Doc. 93–209	Proposed amendment	Revised request
	BONNEVILLE POWER ADMINISTRATION				
575	Construction	$108,444,000	$5,500,000	$20,000,000	$133,944,000

This proposed budget amendment is necessary to maintain completion schedules for transmission lines being constructed by the Bonneville Power Administration. $20 million is necessary to cover increased costs in materials and labor that have occurred since fiscal years 1974 and 1975 budget estimates were developed.

I have carefully reviewed the proposed budget amendment contained in this document and am satisfied that the request is necessary at this time. I recommend, therefore, that this proposal be transmitted to the Congress.

Respectfully,

ROY L. ASH, *Director.*

JUSTIFICATION

Reference	Heading	1975 request pending	1975 proposed amendment	1975 revised request
H. Doc. No. 93–209 p. 2	Construction	$113,944,000	$20,000,000	$133,944,000

Construction

For construction and acquisition of transmission lines, substations, and appurtenant facilities, as authorized by law, [and purchase of one aircraft for replacement only, $97,500,000] $133,944,000 to remain available until expended.

(16 U.S.C. 825s; 16 U.S.C. 832–8321; 43 U.S.C. 389, 485a, 485h(c), 485i; 59 Stat. 10, 21–22; Public Works for Water and Power Development and Atomic Energy Commission Appropriation Act, 1974).

Program and Financing

Identification code
10-64-0326-0-1-401

Heading	1975 Request pending 1/	1975 Proposed amendments	1975 Revised request
Program by activities:			
Direct Program:			
1. System construction	116,618	8,000	124,618
2. Undistributed reduction based on anticipated delays	-4,024	--	-4,024
Total direct program costs, funded	112,594	8,000	120,594
Change in selected resources (stores, due-in, undelivered orders, and deferred items)	1,350	12,000	13,350
Total direct obligations	113,944	20,000	133,944
Reimbursable Program:			
3. Operation and maintenance	2,530	--	2,530
4. Other agencies	1,500	--	1,500
5. Trust Fund Accounts	350	--	350
Total Reimbursable Program	4,380	--	4,380
10 Total obligations	118,324	20,000	138,324
Financing:			
Receipts and reimbursements from:			
11 Federal funds (-)	-4,030	--	-4,030
13 Trust funds (-)	-350	--	-350
21 Unobligated balance available, start of year	--	--	--
24 Unobligated balance available, end of year	--	--	--
Budget Authority	113,944	20,000	133,944

Program and Financing

Identification code 10-64-0326-0-1-401	1975 Request pending 1/	1975 Proposed amendments	1975 Revised request
Budget authority:			
40 Appropriation	113,944	20,000	133,944
41 Transferred to other accounts	--	--	--
43 Appropriation (adjusted)	113,944	20,000	133,944
Relation of obligations to outlays:			
71 Obligations incurred, net	113,944	20,000	133,944
72 Obligated balance, start of year	81,100	--	81,100
74 Obligated balance, end of year (-)	-90,535	-12,000	-102,535
90 Outlays	104,509	8,000	112,509

OBJECT CLASSIFICATION (in thousands of dollars)

Identification code 10-64-0326-0-1-401 Heading	1975 Request pending 1/	1975 Proposed amendments	1975 Revised request
Direct Obligations:			
Personnel compensation:			
11.1 Permanent positions	26,800	--	26,800
11.3 Positions other than permanent	3,200	--	3,200
11.5 Other personnel compensation	600	--	600
11.8 Special personal services payments	--	--	--
Total personnel compensation	30,600	--	30,600
Personnel benefits:			
12.1 Civilian	2,550	--	2,550
13.0 Benefits for former personnel	--	--	--
21.0 Travel and transportation of persons	2,650	--	2,650
22.0 Transportation of things	1,300	--	1,300
23.0 Rent, communications, and utilities	2,315	--	2,315
24.0 Printing and reproduction	50	--	50
25.0 Other services	4,369	--	4,369
26.0 Supplies and materials	22,390	11,000	33,390
31.0 Equipment	29,310	--	29,310
32.0 Lands and structures	18,400	9,000	27,400
42.0 Insurance claims and indemnities	10	--	10
44.0 Refunds	--	--	--
Total Direct Obligations	113,944	20,000	133,944

OBJECT CLASSIFICATION (in thousands of dollars)

Identification Code 10-64-0326-0-1-401 Heading	1975 Request pending 1/	1975 Proposed amendments	1975 Revised request
Reimbursable Obligations:			
Personnel compensation:			
11.1 Permanent positions	1,510	--	1,510
11.3 Positions other than permanent	530	--	530
11.5 Other personnel compensation	40	--	40
11.8 Special personal services payments	--	--	--
Total personnel compensation	2,080	--	2,080
Personnel benefits:			
12.1 Civilian	180	--	180
21.0 Travel and transportation of persons	150	--	150
22.0 Transportation of things	130	--	130
23.0 Rent, communications, and utilities	160	--	160
24.0 Printing and reproduction	--	--	--
25.0 Other services	1,100	--	1,100
26.0 Supplies and materials	500	--	500
31.0 Equipment	80	--	80
32.0 Lands and structures	--	--	--
44.0 Refunds	--	--	--
Total Reimbursable Obligations	4,380	--	4,380
99.0 Total obligations	118,324	20,000	138,324

Personnel Summary

Identification code 10-64-0326-0-1-401 Heading	19 actual 1975 Request pending 1/	19 estimate 1975 Proposed amendments	19 estimate 1975 Revised request
Total number of permanent positions ..	1,950	--	1,950
Full-time equivalent of other positions	402	--	402
Average number of all employees	2,145	--	2,145
Average GS grade	9.2	--	9.2
Average GS salary	$15,685	--	$15,685
Average salary of ungraded positions .	$14,293	--	$14,293

DEPARTMENT OF THE INTERIOR
BONNEVILLE POWER ADMINISTRATION
CONSTRUCTION

Program and Financing (in thousands of dollars)

10-64-0326-0-1-401	Costs to this appropriation					Analysis of 1975 Planning			
	Total Estimate	To June 30, 1972	1973 Actual	1974 Estimate	1975 Estimate	Deduct selected resources and unobligated balance, start of year	Add selected resources and unobligated balance, end of year	Appropriation required for 1975	Appropriation required to complete
Program by Activities:									
Direct Program:									
1. System Construction	845,176	227,649	87,005	119,546	124,618	64,533	90,345	150,430	196,013
2. Undistributed reduction based on anticipated delays	...	...	...	-3,717	-4,024	3,717	-8,745	-16,486	16,486
Total direct program costs, funded			87,005	115,829	120,594	68,250	81,600	133,944	212,499
Change in selected resources (stores, due-in, undelivered orders, and deferred items)			8,150	-17,468	13,350				
Total direct obligations			95,155	98,361	133,944				
Reimbursable Program:									
3. Operation and Maintenance			1,989	2,310	2,530				
4. Other agencies			1,566	1,500	1,500				
5. Trust fund accounts			420	350	350				
Total reimbursable program			3,975	4,160	4,380				
Total obligations			99,130	102,521	138,324				

1975 BUDGET AMENDMENT

Construction $20,000,000

An amendment to the proposed Bonneville Power Administration Fiscal Year 1975 construction appropriation providing an additional $20,000,000 is requested to assure timely construction and energization of transmission facilities which are critically needed to deliver power to customers on a reliable basis. A description of the problem and justification of need are discussed below.

THE PROBLEM

The BPA Fiscal Year 1974 construction budget was based on price levels in effect during the summer of 1972 and the Fiscal Year 1975 request was based on price levels which prevailed in the summer of 1973. Since that time several factors were encountered which resulted in cost increases above budgeted estimates. The major increases occurred because of escalation of labor, material and contract construction cost; longer material delivery time; and in increased costs due to delays caused by litigation brought under the National Environmental Policy Act. These unbudgeted cost increases, amounting to $9,000,000 which accumulated from the summer of 1972 to 1973, required a thorough reassessment of Bonneville Power Administration's Fiscal Year 1974 construction program in order to make the required program adjustments to fit the funds available. As the result of such reassessment, the increased costs were temporarily met by the decision to defer the Grand Coulee-Raver transmission line one year, thereby assuming the risk of further degrading reliability of service to the Puget Sound Area. The cost escalations that made the deferral of this major facility necessary inevitably carry forward to and must be added to the cost escalation experienced in the period from the summer of 1973 to the present time.

Material and construction cost escalation, compounded by material shortages and extended delivery times, continues to be a problem and is resulting in extensive dislocations of program schedules. For instance, prices have risen from 35-65 percent for various tower steel contracts in just one year, with delivery times extended by six months or more. The price of aluminum conductor, increasingly difficult to obtain, has escalated by 50 percent in one year and then is only available when contracted early with provision for "price adjustment at time of shipment." Many types of insulators have almost doubled in cost since 1971, 30 percent of that increase occurring the last year.

We have identified material cost increases and early obligations of materials on major items contained in the Fiscal Year 1975 budget which have increased $13,500,000 since the original estimates were made. When this is added to the previously mentioned deferral of the Grand Coulee-Raver project, a $22,500,000 increase in Fiscal Year 1975 is required. Thus, even with a $20,000,000 budget amendment, before the start of Fiscal Year 1975 we will be forced to identify approximately $2,500,000 that we must reschedule into Fiscal Year 1976. Obviously, rescheduling the entire amount would not be possible without seriously compromising BPA's ability to provide reliable power service to the region. Without funding proposed in this amendment an equivalent increase in the projected Fiscal Year 1976 budget would be required.

JUSTIFICATION

BPA's ability to fulfill its contractual commitments to deliver firm power with an acceptable standard of reliability is severely threatened unless

current energization schedules for transmission system additions are met. Although BPA has given top priority to the construction of a reliable system within financial limitations, we do not meet all FPC reliability criteria. However, the BPA reliability criteria are consistent with the minimum criteria adopted by the Western States Coordination Council and the North American Power System Interconnections Committee.

The one-year deferral of the Grand Coulee-Raver transmission line energization will reduce reliability in the Puget Sound area far below the BPA reliability criteria. Without an amendment to the FY 1975 budget request, if a decision had to be made now, the effect would be that a major portion of each of the following transmission system projects would be deferred.

Allston-Skipanon (Item 161 and 164) FY 1975 Amount $5,132,000

These facilities are needed to supply the increasing power requirements in the vicinity of Astoria, Oregon, and will provide reliable service to the lower Columbia River area. To meet these requirements we propose to construct a 20-mile, 500-kV, Allston-Driscoll line with terminal facilities at Allston, and a 900,000 kVA, 500/230-kV Skipanon Substation. A delay in these facilities would result in an overload on one of the two 230-kV circuits serving the Astoria area for an outage of the other. It would be necessary to curtail 70 MW of industrial load to avoid damage to facilities.

Raver-Maple Valley (Item 167) FY 1975 Amount $8,700,000

These facilities are needed to supply the growing loads in the Seattle, Washington, area and maintain system reliability in accordance with BPA reliability criteria. We propose to construct an 18-mile, 500-kV, double-circuit line and install a 500/230-kv, 1,600,000 kVA transformer and terminal facilities at Maply Valley Substation. This project was originally scheduled for energization in 1972. It has been delayed twice; once due to budgetary constraints; the second time due to insurmountable problems in obtaining right-of-way. Our studies indicate that by the winter of 1974-75, an outage of the 230-kV Covington-South Sub-line will overload other facilities. To prevent damage to facilities, the Covington-Duwamish 230-kV line would be opened to prevent damage due to overload. This extreme measure is outside our own reliability criteria, but would be necessary during the winters of 1974-75 and 1975-76. If these facilities are delayed one year, even these extreme measures will not be sufficient to prevent overloads on other equipment. It would be necessary to curtail as much as 100 MW of residential and commercial load.

Service to AMAX Pacific (Item 112) FY 1975 Amount $3,367,000

AMAX Pacific Aluminum Corporation, a subsidiary of American Metal Climax Company, Inc., is constructing an aluminum reduction plant at Warrenton, Oregon. The first potline is scheduled to be in operation in December 1976 and the second in June of 1977. To provide service to this plant, BPA will construct the Wm. C. Miller Substation at the plant site, a seven-mile, 230-kV line from Clatsop Substation to Miller Substation, a 29-mile line, 500-kV construction, 230-kV operation, from Driscoll Substation to Miller Substation and terminal

facilities at Clatsop and Driscoll. If these facilities are delayed, we would be unable to provide service to this customer and consequently we would be unable to meet our contractual commitments.

Okanogan Area Service (Item 605) FY 1975 Amount $2,000,000

These facilities are required to provide reliable service to the Okanogan County, PUD and Okanogan Valley. We propose to construct a 30-mile 230-kV Bridgeport-Okanogan line (115-kV initial operation) and a 27-mile Okanogan-Tonasket 115-kV line with terminal facilities. A delay of these facilities would require curtailment of up to 50 MW of residential and commercial load for loss of either the Grand Coulee-Okanogan or the Okanogan-Oroville 115-kV line.

Customer Service (Item 770) FY 1975 Amount $1,040,000

These projects are required to meet increasing loads which will overload equipment at existing points of delivery or to meet contractual commitments to customers. If these facilities were delayed, the following impacts would occur:

Sacheen Service -Up to 8MW of residential and commercial load would have to be curtailed during the peak load period.

San Juan Island Service - Up to 4 MW of residential and commerical load would have to be curtailed during the peak load period.

Sappho Service - Under normal system conditions, with all facilities in service, the voltage at Sappho would be under our contracted delivery voltage limits. Under outage conditions, the voltage may fall to a point where up to 30 MW of residential and commercial load must be dropped.

	FY 1975 Amount	
General Structures (Item 810)		$ 740,000
Power System Control (Item 820)		500,000
Preliminary Engineering (Item 840)		500,000
Miscellaneous Capital Additions (Item 880)		521,000

Various portions of these budget items will be deferred to make up the balance of the program adjustment. Delay of these facilities would affect system reliability through reduced efficiency of BPA operation and maintenance activities. Outdated sanitation facilities existing at some substations would be continued even though more acceptable alternates are available. Anticipated savings due to improved methods would be foregone and needed appearance improvements at various substations could not be accomplished.

Total FY 1975 Program Increase	$22,500,000
Less Unidentified portions to be delayed until FY 1976	-2,500,000
FY 1975 Budget Amendment Required	$20,000,000

STATEMENT OF WILLIAM H. CLAGETT

Senator BIBLE. Review briefly the additional budget request that is proposed.

Mr. CLAGETT. Mr. Chairman, I have a prepared statement which discusses the proposed budget amendment.

Senator BIBLE. Mr. Clagett, since your statement is short, you may read it.

Mr. CLAGETT. Mr. Chairman and members of the committee: It is my pleasure to be here today and provide any additional information desired in consideration of our fiscal year 1975 budget.

I would like to comment on two items of current interest which have been brought to the attention of this committee since Donald P. Hodel, Bonneville Power Administrator, appeared before the Appropriations Subcommittee on March 19, 1974.

CONSTRUCTION PROGRAM

The committee has a request before it for a fiscal year 1975 budget amendment of $20 million for Bonneville's construction program. Major increases above budget estimates for fiscal year 1974 and fiscal year 1975 have occurred because of escalated labor, material, and contract construction costs; longer material delivery time; and in increased costs due to delays caused by litigation brought under the National Environmental Policy Act.

It has already been necessary to defer the Grand Coulee-Raver 500-kv transmission line 1 year, assuming the risk of further degradation of service to the Puget Sound area, in order to live within funds available for fiscal year 1974. The deferral of a major portion of several additional facilities will be necessary without additional funds in fiscal year 1975 to meet cost increases. This additional funding of $20 million is necessary to assure timely construction and energization of transmission facilities which are needed to deliver power on a reliable basis.

TRAVEL AND TRANSPORTATION FUNDS

In the House report on Bonneville Power Administration's appropriations, O. & M. cuts include $40,000 for personnel travel and $25,000 for transportation of things. We understand the intent is to emphasize the need to think and practice energy conservation as part of our way of life. As a bureau directly involved in energy supply, we heartily concur. We feel, however, some comment on our travel needs is appropriate. With over 12,000 miles of transmission lines and over 330 substations, travel to these widely dispersed facilities by workers in the field constitutes approximately 90 percent of our personnel travel costs. Nearly 86 percent of these costs are for per diem, while only the relatively small balance remains for energy consuming transportation. Transportation of things is quite dependent on fuel, the cost of which has risen 170 percent since this budget was prepared. These costs are, of course, a necessary part of maintaining a reliable electrical system. It will be extremely difficult to absorb cutbacks in travel and transportation in the face of increasing costs. However, we wish to assure

the committee that we will make every effort possible to use our transportation dollars wisely with full consideration for conservation of energy.

BPA ADMINISTRATOR

Senator BIBLE. Who is the present Administrator of the Bonneville Power Administration?

Mr. CLAGETT. Donald Hodel.

Senator BIBLE. What happened to Mr. Richmond?

Mr. CLAGETT. He retired.

Senator BIBLE. Oh. I recall.

GRAND COULEE-RAVER LINE DELAY

Senator BIBLE. What impact will the 1-year delay of the Grand Coulee-Raver line have on customer service in the Puget Sound area?

Mr. CLAGETT. Mr. Chairman, whenever a needed line is delayed in a system such as Bonneville, especially a major line such as the Grand Coulee-Raver line, you are going to experience reduced reliability of service. In this particular case we will have to reduce deliveries during peak loads, which would involve a need to reduce deliveries to industrial customers and reduce power sales to California utilities.

Senator BIBLE. The materials you have used to justify your position show a total increase in fiscal year 1975 of $22,500,000 is actually required. What will be the effect of slipping the $2.5 million over and above the $20 million requested into fiscal year 1976? Do you understand the question?

Mr. CLAGETT. Yes sir. Normally in a construction program such as ours there is going to be some slippage. We expect we will be fully able to apply the $20 million to high-priority items within the list of items totaling $22.5 million submitted as part of our amendment.

Senator BIBLE. The justification lists several projects that will be affected if the $20 million request is deferred. Were all of these projects included in the regular fiscal year 1975 budget?

Mr. CLAGETT. Yes sir.

INPACT OF COST INCREASES

Senator BIBLE. Specifically what is BPA doing to reduce the impact of cost increases on their construction program?

Mr. CLAGETT. Could I give you a comprehensive answer on that for the record?

Senator BIBLE. Yes, if you do it quickly, because we are trying to get this all printed and certainly you can consult your people with that. You might have to go back to the field to do it.

[The information follows:]

Because of the nature of carrying out its power marketing responsibilities and operating a large transmission system, we believe BPA has been managed as a business type of organization for quite some time. We have always endeavored to apply advanced management techniques to the planning and design of the transmission system in order to keep costs as low as possible. This must include such things as financial control by work center, the "milestone" construction control program, and utilization of computers as management tools.

BPA's research and development activities yield important economies which in turn help to reduce the impact of cost increases on the construction program. However, with the recent rapid escalation of construction costs, it is impossible for research and development alone, short of major technological breakthroughs, to fully offset the effects of inflation. Most of the increases in construction costs must be met with an increase in funding. When funding is not adequate or is not obtained on a timely basis, the only alternative left to stay within approved budgets is to defer construction of transmission facilities.

PROJECTED COSTS

Senator BIBLE. What is BPA's present projection of material and other construction-related costs in the Pacific Northwest area?

Mr. CLAGETT. Mr. Chairman, the cost that we have been experiencing in the last many months is an annual escalation of approximately 10 percent.

Senator BIBLE. It seems to be running pretty well through all of these types of agency requests.

QUESTIONS SUBMITTED BY SENATOR MAGNUSON

There is a series of questions here Senator Magnuson wants to ask. I will furnish them to you and you can supply the answers for the record and get them back as quickly as you can.

Did Senator Hatfield have any questions?

Mr. JONES. I don't believe so.

Senator BIBLE. We will give you these questions, and get them back as quickly as you can. We hope to get around to markup sometime next week, so be sure you get them in.

[The questions and answers follow:]

QUESTIONS FROM SENATOR MAGNUSON

Q. I understand BPA has been consulted by the Corps of Engineers with respect to the possibility of the Corps' obtaining additional flood control storage space in the Upper Baker Reservoir on the Skagit in Washington State. How would BPA be effected if the Corps were to acquire that additional space? Would that effect have any funding implications for BPA in FY 1975? If so, what would they be, specifically?

A. BPA has consulted with the Corps of Engineers concerning additional flood control storage space in Upper Baker Reservoir on the Skagit River in Washington State. If the Corps obtains the additional space BPA would provide a maximum of 6.3 megawatts capacity and 1.117 average megawatts energy to the Corps of Engineers in order for them to satisfy their obligation to Puget Sound Power and Light Company for the Company's power loss under the added flood control operation. It is anticipated that these maximum amounts would seldom be required and only the actual losses, if any, would be reimbursed to the Company each year.

This would not have any effect on BPA funding in FY 1975 since the amounts of power are quite small and the proposed legislation provides that sufficient funds ($80,000) will be appropriated to the Secretary of the Army to be used solely for the purpose of acquiring from Bonneville Power Administration such replacement power at BPA's regular rates.

Q. I note that unbudgeted cost increases of $9,000,000 from the summer of 1972 to 1973 were met by your decision to defer construction of the Grand Coulee-Raver line by one year. Could deferral of this important line have been avoided by requesting supplemental funds for your current year's budget?

A. Yes. However, due to the need for evaluating the overall escalation of construction costs for fiscal year 1975 as well as those for fiscal year 1974, the

Administration felt that the escalation would be better met through an amendment to our FY 1975 budget estimate. That amendment, in the amount of $20,000,000, has been submitted to Congress. It should be noted that a supplemental would not have been available more than a month or two before the availability of funds through the regular FY 1975 appropriations act.

Q. In addition to degrading service to the Puget Sound Area, does not this one year deferral actually increase your costs? Of course, the rate payers of the region have to pay these costs. Do you have any idea how much this deferral costs?

A. It is estimated that deferral of the Grand Coulee-Raver line for one year will increase the total construction cost because of rising cost of labor and materials approximately $1,000,000 which represents an increase of slightly over 1%.

Q. Now, in addition to the cost increases you have experienced in FY 1975 (the $9,000,000) which carry forward into FY 1975, you have experienced further cost escalation from the summer of 1973 to the present time, according to your 1975 budget amendment. The items all add up to an increased FY 1975 need of $22,500,000 for which you are asking an additional $20,000,000.

In your estimating procedures do you provide anything for such contingencies?

A. Preparation of individual items included in the BPA budget is based upon data (both engineering and economic) which reflect the most current costs and plans available at the time the budget proposal is fixed. Under standard federal budgeting practice, no escalation factor is included for anticipated future cost increases. The Federal budget process (Departmental review, OMB review, Congressional Committee hearings, etc.) is such that there is more than a one-year lapse between establishment of our budget planning allowance and the Congressional apropriation. Therefore, all project estimates in the budget are at least one year old. Because of this and the accumulated affect from prior years, we have analyzed our program and identified a need for the additional $2,000,000 of construction appropriation in FY 1975 to keep our construction program on schedule.

Q. BPA testified earlier that it had recommended to OMB that funds be requested in the President's FY 1975 budget to begin construction of a 500-kV transmission line from Hot Springs, Montana to Bell Substation in Spokane. Additionally, BPA testified that line would serve two purposes: (a) to carry power from the Colstrip facility beginning in 1978–79 and (b) to carry power from additional generating units at Libby Dam beginning in October 1982. What would be the (a) cost and (b) energy benefit of constructing the line now over delaying that construction until necessary to meet the October 1982 date?

A. Assuming that a braking resistor is utilized for integrating, marginally, Unit No. 3 of the investor owned project at Colstrip, Montana, the line would be needed in 1979 to integrate Unit No. 4 into the BPA System. Our construction cost estimates indicate a 1978 energization of the Hot Springs-Bell line would be $57.9 million. Using the 10 percent escalation factor we are now experiencing, a 1979 energization construction cost would be $63.6 million and 1982 would be $84.8 million. If the line is not available to coincide with the Unit No. 4 on-line date, the Pacific Northwest would have to treat the 700 NW Unit No. 4 as an interruptible resource.

Q. Outside witnesses have also brought to our attention the problem of inflationary effects and their requests to increase funding of Northwest projects to maintain schedules. Apparently, Grand Coulee is one of those projects.

Several outside witnesses have recommended that funds be added to your budget to start construction of the Hot Springs-Bell 500-kV transmission line. Do you have any construction funds in your FY 1975 budget request for this line?

A. There are no specific funds in our 1975 budget for this project. However, we expect to obligate some Preliminary Engineering funds for line reconnaissance and environmental studies.

Q. Other witnesses have stated that the Hot Springs-Bell 500-kV line should properly be Federally built—do you agree? Please explain the need for this line.

A. The Hot Springs-Bell 500-kV line will ultimately be a multi-purpose line. It not only integrates power from Colstrip units #3 and #4, but also becomes part of the Northwest Power Grid. In 1982 it will be used to integrate the additional power from Libby Dam. Later, when an additional Grand Coulee-Bell line is required, the Hot Springs-Bell line becomes part of a 500-kV loop involving

Coulee, Hanford, Lower Monumental, Lower Snake Transmission and Dworshak-Hot Springs 500-kV lines. This loop provides added reliability to the Spokane, Idaho and Western Montana areas. Initially, the Hot Springs-Bell line is needed to integrate Colstrip units #3 and #4 into the Northwest Grid. At present unit #3 is scheduled for 1978 and unit #4 in 1979. With the line in service, some 1310 MW of Colstrip power can be reliably integrated into the Northwest Grid to serve load in the Spokane, Seattle and Portland areas.

Q. What is the required energization date for the Hot Springs-Bell line? Also, what happens if it is not completed on time?

A. BPA long range planning estimate the Hot Springs-Bell line is needed in 1982 to integrate additional generation at Libby Dam. The Colstrip project currently being developed by several private utilities in the Northwest would result in a total of 1310 MW to be integrated into the Northwest by July 1979. Montana Power Company plans to construct two 500-kV lines from Colstrip to Hot Springs with intermediate switching to Broadview and Helena. The first line would be completed in 1978 to transmit power from unit #3 and the second line would be completed in 1979 when unit #4 comes on line.

Energization of the Hot Springs-Bell line in 1978 would provide reliable service for integrating both units #3 and #4. If the line is delayed a year, the #3 unit can be integrated into the system by the application of high-speed breakers at Hot Springs and by advancing the installation of a 750 MW braking resistor by one year. The resultant system would provide marginal reliability. Until such time as the Hot Springs-Bell line is constructed, the #4 unit would be treated as a non-firm resource,

Q. Assuming the self-financing legislation is enacted, what action would be needed by this Committee to allow BPA to begin construction of the Hot Springs-Bell line?

A. S. 3362 is consistent with the Government Corporation Control Act which provides for annual submission of budgets to Congress for review. Construction of facilities proposed by BPA such as the Hot Springs-Bell line would be considered approved following presentation to Congress provided action is not taken to disapprove the new facility. We anticipate that the budget would continue to come to this subcommittee.

Q. It occurs to me that what you have described today gives added justification for the need of BPA to go into a self-financing program as is provided in the legislation now pending before Congress (S. 3362). Do you envision that you could build these transmission lines on a more timely and economical schedule if you had this authority?

A. Yes, the primary purpose of the proposed legislation is to assure the needed transmission facilities are constructed as needed in as timely and economical schedule as possible. Occasionally, because of budgetary constraints quite unrelated to power requirements in the Northwest, construction of facilities must be slipped from one fiscal year to the next, thus increasing reliability risks and economic costs. Under the provisions of S. 3362 BPA would no longer seek appropriations to carry out its program purposes, but would secure its financing from the use of power receipts and the proceeds of sales of revenue bonds. Once a transmission facility has been included in an annual budget and has cleared the review process, it is anticipated that BPA will be able to do those things necessary to complete construction of such a facility in a timely and business-like manner even though the financing and completion of construction of such facility may extend over a period of several years.

Q. With 1978 or 1979 as energization dates for the Hot Springs-Bell line, and the need to fully consider environmental and property owners desires, is not FY 1976 for initial funding going to create a tight construction schedule?

What would be normal for a line of this size?

A. A FY 78 energization is not possible with FY 76 initial funding. In order to meet a 1978 energization date for the Hot Springs-Bell 500–kV line (170 miles), even with FY 75 funding, every function in the "Work Schedule" would have to progress with optimum efficiency. Meeting this optimum schedule is highly unlikely since we can logically expect problems to occur in the environmental, land acquisition, and material procurement functions. In the advent of strikes or unsuitable weather conditions, completion of the line construction contracts could also be delayed.

A 7/79 energization is very tight with FY 76 initial funding. It provides minimum time for consideration of the environmental impact and property owners desires. While we recognize and have provided for the increased material lead times that have been experienced to date, no slack time has been provided for further such increases.

A normal schedule for a line similar to Hot Springs-Bell, under today's conditions, would allow five years from initial funding. A comparable line is the 500-kV line from Ashe Substation (on the Hanford reservation) to the Willamette Valley south of Portland, Oregon, which is initially funded in the FY 1975 budget by $1,120,000 in anticipation of a 1979 energization.

CONCLUDING REMARKS

Senator BIBLE. Your office is right here in Washington?

Mr. CLAGETT. Yes, sir.

Senator BIBLE. I have been advised by staff that probably by and large $20 million for the amended budget is almost entirely attributable to the inflationary costs. Is that correct?

Mr. CLAGETT. Yes, sir.

Senator BIBLE. Is that a correct statement?

Mr. CLAGETT. That is correct.

Senator BIBLE. Thank you for being here. We stand in recess.

Mr. CLAGETT. Thank you, sir.

CONCLUSION OF HEARINGS

Senator BIBLE. If there are no other witnesses or matters to take up before the subcommittee today, then this will bring the hearings on the Public Work-AEC appropriation bill for fiscal year 1975 to a conclusion.

Thank you all very much.

[Whereupon, at 4:45 p.m., Wednesday, June 19, the hearings were concluded and the subcommittee was recessed, to reconvene at the call of the Chair.]

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